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Contents

Intellectual Property Rights	2
Legal Notice	2
Modal verbs terminology.....	2
Foreword.....	17
1 Scope	18
2 References	18
3 Definitions and abbreviations.....	20
3.1 Definitions	20
3.2 Abbreviations	21
4 General	22
4.1 Procedure specification principles.....	22
4.2 Forwards and backwards compatibility.....	23
4.3 Specification notations	23
5 F1AP services.....	23
6 Services expected from signalling transport.....	24
7 Functions of F1AP	24
8 F1AP procedures	24
8.1 List of F1AP Elementary procedures	24
8.2 Interface Management procedures	30
8.2.1 Reset	30
8.2.1.1 General	30
8.2.1.2 Successful Operation.....	30
8.2.1.2.1 Reset Procedure Initiated from the gNB-CU	30
8.2.1.2.2 Reset Procedure Initiated from the gNB-DU.....	31
8.2.1.3 Abnormal Conditions	32
8.2.2 Error Indication.....	32
8.2.2.1 General	32
8.2.2.2 Successful Operation.....	32
8.2.2.3 Abnormal Conditions	33
8.2.3 F1 Setup	33
8.2.3.1 General	33
8.2.3.2 Successful Operation.....	33
8.2.3.3 Unsuccessful Operation	35
8.2.3.4 Abnormal Conditions	35
8.2.4 gNB-DU Configuration Update.....	35
8.2.4.1 General	35
8.2.4.2 Successful Operation.....	36
8.2.4.3 Unsuccessful Operation	38
8.2.4.4 Abnormal Conditions	38
8.2.5 gNB-CU Configuration Update	38
8.2.5.1 General	38
8.2.5.2 Successful Operation.....	39
8.2.5.3 Unsuccessful Operation	41
8.2.5.4 Abnormal Conditions	41
8.2.6 gNB-DU Resource Coordination.....	41
8.2.6.1 General	41
8.2.6.2 Successful Operation.....	42
8.2.7 gNB-DU Status Indication.....	42
8.2.7.1 General	42
8.2.7.2 Successful Operation.....	42
8.2.7.3 Abnormal Conditions	43

8.2.8	FI Removal.....	43
8.2.8.1	General.....	43
8.2.8.2	Successful Operation.....	43
8.2.8.3	Unsuccessful Operation	44
8.2.8.4	Abnormal Conditions	44
8.2.9	Network Access Rate Reduction	44
8.2.9.1	General.....	44
8.2.9.2	Successful operation.....	45
8.2.9.3	Abnormal Conditions	45
8.2.10	Resource Status Reporting Initiation	45
8.2.10.1	General.....	45
8.2.10.2	Successful Operation.....	45
8.2.10.3	Unsuccessful Operation	47
8.2.10.4	Abnormal Conditions	47
8.2.11	Resource Status Reporting.....	47
8.2.11.1	General.....	47
8.2.11.2	Successful Operation.....	47
8.2.11.3	Unsuccessful Operation	48
8.2.11.4	Abnormal Conditions	48
8.3	UE Context Management procedures.....	48
8.3.1	UE Context Setup	48
8.3.1.1	General.....	48
8.3.1.2	Successful Operation.....	48
8.3.1.3	Unsuccessful Operation	55
8.3.1.4	Abnormal Conditions	56
8.3.2	UE Context Release Request (gNB-DU initiated)	56
8.3.2.1	General.....	56
8.3.2.2	Successful Operation.....	56
8.3.2.3	Abnormal Conditions	57
8.3.3	UE Context Release (gNB-CU initiated)	57
8.3.3.1	General.....	57
8.3.3.2	Successful Operation.....	57
8.3.3.4	Abnormal Conditions	58
8.3.4	UE Context Modification (gNB-CU initiated).....	58
8.3.4.1	General.....	58
8.3.4.2	Successful Operation.....	58
8.3.4.3	Unsuccessful Operation	68
8.3.4.4	Abnormal Conditions	68
8.3.5	UE Context Modification Required (gNB-DU initiated).....	69
8.3.5.1	General.....	69
8.3.5.2	Successful Operation.....	69
8.3.5.2A	Unsuccessful Operation	71
8.3.5.3	Abnormal Conditions	71
8.3.6	UE Inactivity Notification	71
8.3.6.1	General.....	71
8.3.6.2	Successful Operation.....	71
8.3.6.3	Abnormal Conditions	72
8.3.7	Notify.....	72
8.3.7.1	General.....	72
8.3.7.2	Successful Operation.....	72
8.3.7.3	Abnormal Conditions	72
8.3.8	Access Success	72
8.3.8.1	General.....	72
8.3.8.2	Successful Operation.....	73
8.3.8.3	Abnormal Conditions	73
8.4	RRC Message Transfer procedures	73
8.4.1	Initial UL RRC Message Transfer	73
8.4.1.1	General.....	73
8.4.1.2	Successful operation.....	73
8.4.1.3	Abnormal Conditions	74
8.4.2	DL RRC Message Transfer.....	74
8.4.2.1	General.....	74

8.4.2.2	Successful operation.....	74
8.4.2.3	Abnormal Conditions	75
8.4.3	UL RRC Message Transfer.....	75
8.4.3.1	General	75
8.4.3.2	Successful operation.....	75
8.4.3.3	Abnormal Conditions	76
8.4.4	RRC Delivery Report.....	76
8.4.4.1	General	76
8.4.4.2	Successful operation.....	76
8.4.4.3	Abnormal Conditions	76
8.5	Warning Message Transmission Procedures	76
8.5.1	Write-Replace Warning	76
8.5.1.1	General	76
8.5.1.2	Successful Operation.....	77
8.5.1.3	Unsuccessful Operation	77
8.5.1.4	Abnormal Conditions	77
8.5.2	PWS Cancel.....	78
8.5.2.1	General	78
8.5.2.2	Successful Operation.....	78
8.5.2.3	Unsuccessful Operation	78
8.5.2.4	Abnormal Conditions	78
8.5.3	PWS Restart Indication.....	79
8.5.3.1	General	79
8.5.3.2	Successful Operation.....	79
8.5.3.3	Abnormal Conditions	79
8.5.4	PWS Failure Indication.....	79
8.5.4.1	General	79
8.5.4.2	Successful Operation.....	79
8.5.4.3	Abnormal Conditions	79
8.6	System Information Procedures	80
8.6.1	System Information Delivery.....	80
8.6.1.1	General	80
8.6.1.2	Successful Operation.....	80
8.6.1.3	Abnormal Conditions	80
8.7	Paging procedures	80
8.7.1	Paging	80
8.7.1.1	General	80
8.7.1.2	Successful Operation.....	81
8.7.1.3	Abnormal Conditions	82
8.8	Trace Procedures	82
8.8.1	Trace Start.....	82
8.8.1.1	General	82
8.8.1.2	Successful Operation.....	82
8.8.1.3	Abnormal Conditions	82
8.8.2	Deactivate Trace	82
8.8.2.1	General	82
8.8.2.2	Successful Operation.....	83
8.8.2.3	Abnormal Conditions	83
8.8.3	Cell Traffic Trace.....	83
8.8.3.1	General	83
8.8.3.2	Successful Operation.....	83
8.8.3.3	Abnormal Conditions	83
8.9	Radio Information Transfer procedures	84
8.9.1	DU-CU Radio Information Transfer.....	84
8.9.1.1	General	84
8.9.1.2	Successful operation.....	84
8.9.1.3	Abnormal Conditions	84
8.9.2	CU-DU Radio Information Transfer.....	84
8.9.2.1	General	84
8.9.2.2	Successful operation.....	84
8.9.2.3	Abnormal Conditions	85
8.10	IAB Procedures	85

8.10.0	General.....	85
8.10.1	BAP Mapping Configuration.....	85
8.10.1.1	General.....	85
8.10.1.2	Successful Operation.....	85
8.10.1.A	Unsuccessful Operation	86
8.10.1.3	Abnormal Conditions	86
8.10.2	gNB-DU Resource Configuration.....	87
8.10.2.1	General.....	87
8.10.2.2	Successful Operation.....	87
8.10.2.B	Unsuccessful Operation	87
8.10.2.3	Abnormal Conditions	88
8.10.3	IAB TNL Address Allocation.....	88
8.10.3.1	General.....	88
8.10.3.2	Successful Operation.....	88
8.10.3.C	Unsuccessful Operation	89
8.10.3.3	Abnormal Conditions	89
8.10.4	IAB UP Configuration Update.....	89
8.10.4.1	General.....	89
8.10.4.2	Successful Operation.....	89
8.10.4.3	Unsuccessful Operation	90
8.10.4.4	Abnormal Conditions	90
8.11	Self Optimisation Support procedures.....	90
8.11.1	Access and Mobility Indication	90
8.11.1.1	General.....	90
8.11.1.2	Successful Operation.....	91
8.11.1.3	Abnormal Conditions	91
8.12	Reference Time Information Reporting procedures.....	91
8.12.1	Reference Time Information Reporting Control.....	91
8.12.1.1	General.....	91
8.12.1.2	Successful Operation.....	91
8.12.1.3	Abnormal Conditions	92
8.12.2	Reference Time Information Report	92
8.12.2.1	General.....	92
8.12.2.2	Successful Operation.....	92
8.12.2.3	Abnormal Conditions	92
8.13	Positioning Procedures	92
8.13.1	Positioning Assistance Information Control.....	92
8.13.1.1	General.....	92
8.13.1.2	Successful Operation.....	93
8.13.1.3	Abnormal Conditions	93
8.13.2	Positioning Assistance Information Feedback.....	93
8.13.2.1	General.....	93
8.13.2.2	Successful Operation.....	94
8.13.2.3	Abnormal Conditions	94
8.13.3	Positioning Measurement	94
8.13.3.1	General.....	94
8.13.3.2	Successful Operation.....	94
8.13.3.3	Unsuccessful Operation	95
8.13.3.4	Abnormal Conditions	96
8.13.4	Positioning Measurement Report.....	96
8.13.4.1	General.....	96
8.13.4.2	Successful Operation.....	96
8.13.4.3	Unsuccessful Operation	96
8.13.4.4	Abnormal Conditions	96
8.13.5	Positioning Measurement Abort	96
8.13.5.1	General.....	96
8.13.5.2	Successful Operation.....	97
8.13.5.3	Unsuccessful Operation	97
8.13.5.4	Abnormal Conditions	97
8.13.6	Positioning Measurement Failure Indication	97
8.13.6.1	General.....	97
8.13.6.2	Successful Operation.....	97

8.13.6.3	Unsuccessful Operation	97
8.13.6.4	Abnormal Conditions	98
8.13.7	Positioning Measurement Update	98
8.13.7.1	General	98
8.13.7.2	Successful Operation.....	98
8.13.7.3	Unsuccessful Operation	98
8.13.7.4	Abnormal Conditions	98
8.13.8	TRP Information Exchange	98
8.13.8.1	General	98
8.13.8.2	Successful Operation.....	99
8.13.8.3	Unsuccessful Operation	99
8.13.9	Positioning Information Exchange	100
8.13.9.1	General	100
8.13.9.2	Successful Operation.....	100
8.13.9.3	Unsuccessful Operation	100
8.13.10	Positioning Activation	101
8.13.10.1	General	101
8.13.10.2	Successful Operation.....	101
8.13.10.3	Unsuccessful Operation	101
8.13.10.4	Abnormal Conditions	102
8.13.11	Positioning Deactivation.....	102
8.13.11.1	General	102
8.13.11.2	Successful Operation.....	102
8.13.11.3	Unsuccessful Operation	102
8.13.11.4	Abnormal Conditions	102
8.13.12	E-CID Measurement Initiation	102
8.13.12.1	General	102
8.13.12.2	Successful Operation.....	103
8.13.12.3	Unsuccessful Operation	103
8.13.13	E-CID Measurement Failure Indication.....	103
8.13.13.1	General	103
8.13.13.2	Successful Operation.....	104
8.13.13.3	Unsuccessful Operation	104
8.13.14	E-CID Measurement Report	104
8.13.14.1	General	104
8.13.14.2	Successful Operation.....	104
8.13.14.3	Unsuccessful Operation	104
8.13.15	E-CID Measurement Termination	105
8.13.15.1	General	105
8.13.15.2	Successful Operation.....	105
8.13.15.3	Unsuccessful Operation	105
8.13.16	Positioning Information Update.....	105
8.13.16.1	General	105
8.13.16.2	Successful Operation.....	105
8.13.16.3	Unsuccessful Operation	106
8.13.16.4	Abnormal Conditions	106
8.13.17	PRS Configuration Exchange	106
8.13.17.1	General	106
8.13.17.2	Successful Operation.....	106
8.13.17.3	Unsuccessful Operation	106
8.13.17.4	Abnormal Conditions	107
8.13.18	Measurement Preconfiguration.....	107
8.13.18.1	General	107
8.13.18.2	Successful Operation.....	107
8.13.18.3	Unsuccessful Operation	107
8.13.19	Measurement Activation.....	108
8.13.19.1	General	108
8.13.19.2	Successful Operation.....	108
8.13.19.3	Unsuccessful Operation	108
8.13.20	Positioning System Information Delivery.....	108
8.13.20.1	General	108
8.13.20.2	Successful Operation.....	108

8.13.20.3	Abnormal Conditions	109
8.14	NR MBS Procedures	109
8.14.1	Broadcast Context Setup	109
8.14.1.1	General	109
8.14.1.2	Successful Operation	109
8.14.1.3	Unsuccessful Operation	110
8.14.1.4	Abnormal Conditions	110
8.14.2	Broadcast Context Release	110
8.14.2.1	General	110
8.14.2.2	Successful Operation	110
8.14.2.3	Unsuccessful Operation	110
8.14.2.4	Abnormal Conditions	111
8.14.3	Broadcast Context Release Request	111
8.14.3.1	General	111
8.14.3.2	Successful Operation	111
8.14.3.3	Unsuccessful Operation	111
8.14.3.4	Abnormal Conditions	111
8.14.4	Broadcast Context Modification	111
8.14.4.1	General	111
8.14.4.2	Successful Operation	112
8.14.4.3	Unsuccessful Operation	113
8.14.4.4	Abnormal Conditions	113
8.14.5	Multicast Group Paging	113
8.14.5.1	General	113
8.14.5.2	Successful Operation	113
8.14.5.3	Abnormal Conditions	114
8.14.6	Multicast Context Setup	114
8.14.6.1	General	114
8.14.6.2	Successful Operation	114
8.14.6.3	Unsuccessful Operation	115
8.14.6.4	Abnormal Conditions	115
8.14.7	Multicast Context Release	115
8.14.7.1	General	115
8.14.7.2	Successful Operation	115
8.14.7.3	Unsuccessful Operation	115
8.14.7.4	Abnormal Conditions	116
8.14.8	Multicast Context Release Request	116
8.14.8.1	General	116
8.14.8.2	Successful Operation	116
8.14.8.3	Unsuccessful Operation	116
8.14.8.4	Abnormal Conditions	116
8.14.9	Multicast Context Modification	116
8.14.9.1	General	116
8.14.9.2	Successful Operation	117
8.14.9.3	Unsuccessful Operation	118
8.14.9.4	Abnormal Conditions	118
8.14.10	Multicast Distribution Setup	118
8.14.10.1	General	118
8.14.10.2	Successful Operation	118
8.14.10.3	Unsuccessful Operation	119
8.14.10.4	Abnormal Conditions	119
8.14.11	Multicast Distribution Release	119
8.14.11.1	General	119
8.14.11.2	Successful Operation	119
8.14.11.3	Unsuccessful Operation	120
8.14.11.4	Abnormal Conditions	120
8.15	PDC Measurement Reporting procedures	120
8.15.1	PDC Measurement Initiation	120
8.15.1.1	General	120
8.15.1.2	Successful Operation	120
8.15.1.3	Unsuccessful Operation	121
8.15.2	PDC Measurement Report	121

8.15.2.1	General	121
8.15.2.2	Successful Operation.....	121
8.15.2.3	Unsuccessful Operation	121
8.15.3	PDC Measurement Termination	121
8.15.3.1	General	121
8.15.3.2	Successful Operation.....	122
8.15.3.3	Unsuccessful Operation	122
8.15.3.4	Abnormal Conditions	122
8.15.4	PDC Measurement Failure Indication.....	122
8.15.4.1	General	122
8.15.4.2	Successful Operation.....	122
8.15.4.3	Unsuccessful Operation	122
8.15.4.4	Abnormal Conditions	123
8.16	QMC Procedures	123
8.16.1	QoE Information Transfer	123
8.16.1.1	General	123
8.16.1.2	Successful operation.....	123
8.16.1.3	Abnormal Conditions	123
9	Elements for F1AP Communication	123
9.1	General	123
9.2	Message Functional Definition and Content	124
9.2.1	Interface Management messages	124
9.2.1.1	RESET	124
9.2.1.2	RESET ACKNOWLEDGE	124
9.2.1.3	ERROR INDICATION	125
9.2.1.4	F1 SETUP REQUEST	125
9.2.1.5	F1 SETUP RESPONSE	126
9.2.1.6	F1 SETUP FAILURE	128
9.2.1.7	GNB-DU CONFIGURATION UPDATE.....	128
9.2.1.8	GNB-DU CONFIGURATION UPDATE ACKNOWLEDGE.....	130
9.2.1.9	GNB-DU CONFIGURATION UPDATE FAILURE	131
9.2.1.10	GNB-CU CONFIGURATION UPDATE	131
9.2.1.11	GNB-CU CONFIGURATION UPDATE ACKNOWLEDGE	135
9.2.1.12	GNB-CU CONFIGURATION UPDATE FAILURE	136
9.2.1.13	GNB-DU RESOURCE COORDINATION REQUEST	137
9.2.1.14	GNB-DU RESOURCE COORDINATION RESPONSE	137
9.2.1.15	GNB-DU STATUS INDICATION.....	138
9.2.1.16	F1 REMOVAL REQUEST.....	138
9.2.1.17	F1 REMOVAL RESPONSE.....	138
9.2.1.18	F1 REMOVAL FAILURE.....	138
9.2.1.19	NETWORK ACCESS RATE REDUCTION	138
9.2.1.20	RESOURCE STATUS REQUEST.....	139
9.2.1.21	RESOURCE STATUS RESPONSE.....	141
9.2.1.22	RESOURCE STATUS FAILURE.....	141
9.2.1.23	RESOURCE STATUS UPDATE	142
9.2.2	UE Context Management messages.....	144
9.2.2.1	UE CONTEXT SETUP REQUEST.....	144
9.2.2.2	UE CONTEXT SETUP RESPONSE.....	152
9.2.2.3	UE CONTEXT SETUP FAILURE.....	156
9.2.2.4	UE CONTEXT RELEASE REQUEST	157
9.2.2.5	UE CONTEXT RELEASE COMMAND	157
9.2.2.6	UE CONTEXT RELEASE COMPLETE	158
9.2.2.7	UE CONTEXT MODIFICATION REQUEST.....	159
9.2.2.8	UE CONTEXT MODIFICATION RESPONSE.....	172
9.2.2.9	UE CONTEXT MODIFICATION FAILURE.....	179
9.2.2.10	UE CONTEXT MODIFICATION REQUIRED.....	179
9.2.2.11	UE CONTEXT MODIFICATION CONFIRM	182
9.2.2.11A	UE CONTEXT MODIFICATION REFUSE.....	184
9.2.2.12	UE INACTIVITY NOTIFICATION	185
9.2.2.13	NOTIFY	185
9.2.2.14	ACCESS SUCCESS	186

9.2.3	RRC Message Transfer messages.....	186
9.2.3.1	INITIAL UL RRC MESSAGE TRANSFER.....	186
9.2.3.2	DL RRC MESSAGE TRANSFER.....	188
9.2.3.3	UL RRC MESSAGE TRANSFER.....	189
9.2.3.4	RRC DELIVERY REPORT.....	189
9.2.4	Warning Message Transmission Messages.....	189
9.2.4.1	WRITE-REPLACE WARNING REQUEST.....	189
9.2.4.2	WRITE-REPLACE WARNING RESPONSE.....	190
9.2.4.3	PWS CANCEL REQUEST.....	191
9.2.4.4	PWS CANCEL RESPONSE.....	192
9.2.4.5	PWS RESTART INDICATION.....	193
9.2.4.6	PWS FAILURE INDICATION.....	193
9.2.5	System Information messages.....	194
9.2.5.1	SYSTEM INFORMATION DELIVERY COMMAND.....	194
9.2.6	Paging messages.....	194
9.2.6.1	PAGING.....	194
9.2.7	Trace Messages.....	196
9.2.7.1	TRACE START.....	196
9.2.7.2	DEACTIVATE TRACE.....	196
9.2.7.3	CELL TRAFFIC TRACE.....	196
9.2.8	Radio Information Transfer messages.....	197
9.2.8.1	DU-CU RADIO INFORMATION TRANSFER.....	197
9.2.8.2	CU-DU RADIO INFORMATION TRANSFER.....	197
9.2.9	IAB messages.....	198
9.2.9.1	BAP MAPPING CONFIGURATION.....	198
9.2.9.2	BAP MAPPING CONFIGURATION ACKNOWLEDGE.....	200
9.2.9.2A	BAP MAPPING CONFIGURATION FAILURE.....	200
9.2.9.3	GNB-DU RESOURCE CONFIGURATION.....	200
9.2.9.4	GNB-DU RESOURCE CONFIGURATION ACKNOWLEDGE.....	206
9.2.9.4A	GNB-DU RESOURCE CONFIGURATION FAILURE.....	206
9.2.9.5	IAB TNL ADDRESS REQUEST.....	207
9.2.9.6	IAB TNL ADDRESS RESPONSE.....	207
9.2.9.6A	IAB TNL ADDRESS FAILURE.....	208
9.2.9.7	IAB UP CONFIGURATION UPDATE REQUEST.....	208
9.2.9.8	IAB UP CONFIGURATION UPDATE RESPONSE.....	209
9.2.9.9	IAB UP CONFIGURATION UPDATE FAILURE.....	210
9.2.10	Self Optimisation Support Messages.....	210
9.2.10.1	ACCESS AND MOBILITY INDICATION.....	210
9.2.11	Reference Time Information Reporting messages.....	211
9.2.11.1	REFERENCE TIME INFORMATION REPORTING CONTROL.....	211
9.2.11.2	REFERENCE TIME INFORMATION REPORT.....	212
9.2.12	Messages for Positioning Procedures.....	212
9.2.12.1	POSITIONING ASSISTANCE INFORMATION CONTROL.....	212
9.2.12.2	POSITIONING ASSISTANCE INFORMATION FEEDBACK.....	212
9.2.12.3	POSITIONING MEASUREMENT REQUEST.....	213
9.2.12.4	POSITIONING MEASUREMENT RESPONSE.....	215
9.2.12.5	POSITIONING MEASUREMENT FAILURE.....	216
9.2.12.6	POSITIONING MEASUREMENT REPORT.....	216
9.2.12.7	POSITIONING MEASUREMENT ABORT.....	217
9.2.12.8	POSITIONING MEASUREMENT FAILURE INDICATION.....	217
9.2.12.9	POSITIONING MEASUREMENT UPDATE.....	218
9.2.12.10	TRP INFORMATION REQUEST.....	218
9.2.12.11	TRP INFORMATION RESPONSE.....	219
9.2.12.12	TRP INFORMATION FAILURE.....	219
9.2.12.13	POSITIONING INFORMATION REQUEST.....	220
9.2.12.14	POSITIONING INFORMATION RESPONSE.....	220
9.2.12.15	POSITIONING INFORMATION FAILURE.....	220
9.2.12.16	POSITIONING ACTIVATION REQUEST.....	221
9.2.12.17	POSITIONING ACTIVATION RESPONSE.....	221
9.2.12.18	POSITIONING ACTIVATION FAILURE.....	222
9.2.12.19	POSITIONING DEACTIVATION.....	222
9.2.12.20	E-CID MEASUREMENT INITIATION REQUEST.....	222

9.2.12.21	E-CID MEASUREMENT INITIATION RESPONSE	224
9.2.12.22	E-CID MEASUREMENT INITIATION FAILURE	224
9.2.12.23	E-CID MEASUREMENT FAILURE INDICATION	224
9.2.12.24	E-CID MEASUREMENT REPORT	224
9.2.12.25	E-CID MEASUREMENT TERMINATION COMMAND	225
9.2.12.26	POSITIONING INFORMATION UPDATE	225
9.2.12.27	PRS CONFIGURATION REQUEST	225
9.2.12.28	PRS CONFIGURATION RESPONSE	226
9.2.12.29	PRS CONFIGURATION FAILURE	226
9.2.12.30	MEASUREMENT PRECONFIGURATION REQUIRED	227
9.2.12.31	MEASUREMENT PRECONFIGURATION CONFIRM	227
9.2.12.32	MEASUREMENT PRECONFIGURATION REFUSE	228
9.2.12.33	MEASUREMENT ACTIVATION	228
9.2.12.34	POSITIONING SYSTEM INFORMATION DELIVERY COMMAND	228
9.2.13	Broadcast Context Management messages	229
9.2.13.1	BROADCAST CONTEXT SETUP REQUEST	229
9.2.13.2	BROADCAST CONTEXT SETUP RESPONSE	230
9.2.13.3	BROADCAST CONTEXT SETUP FAILURE	230
9.2.13.4	BROADCAST CONTEXT RELEASE COMMAND	231
9.2.13.5	BROADCAST CONTEXT RELEASE COMPLETE	231
9.2.13.5a	BROADCAST CONTEXT RELEASE REQUEST	231
9.2.13.6	BROADCAST CONTEXT MODIFICATION REQUEST	231
9.2.13.7	BROADCAST CONTEXT MODIFICATION RESPONSE	233
9.2.13.8	BROADCAST CONTEXT MODIFICATION FAILURE	234
9.2.14	Multicast Context Management messages	235
9.2.14.1	MULTICAST GROUP PAGING	235
9.2.14.2	MULTICAST CONTEXT SETUP REQUEST	235
9.2.14.3	MULTICAST CONTEXT SETUP RESPONSE	236
9.2.14.4	MULTICAST CONTEXT SETUP FAILURE	237
9.2.14.5	MULTICAST CONTEXT RELEASE COMMAND	237
9.2.14.6	MULTICAST CONTEXT RELEASE COMPLETE	237
9.2.14.6a	MULTICAST CONTEXT RELEASE REQUEST	238
9.2.14.7	MULTICAST CONTEXT MODIFICATION REQUEST	238
9.2.14.8	MULTICAST CONTEXT MODIFICATION RESPONSE	240
9.2.14.9	MULTICAST CONTEXT MODIFICATION FAILURE	240
9.2.14.10	MULTICAST DISTRIBUTION SETUP REQUEST	241
9.2.14.11	MULTICAST DISTRIBUTION SETUP RESPONSE	241
9.2.14.12	MULTICAST DISTRIBUTION SETUP FAILURE	242
9.2.14.13	MULTICAST DISTRIBUTION RELEASE COMMAND	242
9.2.14.14	MULTICAST DISTRIBUTION RELEASE COMPLETE	243
9.2.15	PDC Measurement Reporting messages	243
9.2.15.1	PDC MEASUREMENT INITIATION REQUEST	243
9.2.15.2	PDC MEASUREMENT INITIATION RESPONSE	244
9.2.15.3	PDC MEASUREMENT INITIATION FAILURE	244
9.2.15.4	PDC MEASUREMENT REPORT	244
9.2.15.5	PDC MEASUREMENT TERMINATION COMMAND	244
9.2.15.6	PDC MEASUREMENT FAILURE INDICATION	245
9.2.16	QMC messages	245
9.2.16.1	QOE INFORMATION TRANSFER	245
9.3	Information Element Definitions	245
9.3.1	Radio Network Layer Related IEs	245
9.3.1.1	Message Type	245
9.3.1.2	Cause	246
9.3.1.3	Criticality Diagnostics	249
9.3.1.4	gNB-CU UE F1AP ID	250
9.3.1.5	gNB-DU UE F1AP ID	250
9.3.1.6	RRC-Container	251
9.3.1.7	SRB ID	251
9.3.1.8	DRB ID	251
9.3.1.9	gNB-DU ID	251
9.3.1.10	Served Cell Information	251
9.3.1.11	Transmission Action Indicator	256

9.3.1.12	NR CGI	257
9.3.1.13	Time To wait.....	257
9.3.1.14	PLMN Identity	257
9.3.1.15	Transmission Bandwidth.....	257
9.3.1.16	Void.....	258
9.3.1.17	NR Frequency Info.....	258
9.3.1.18	gNB-DU System Information	260
9.3.1.19	E-UTRAN QoS	260
9.3.1.20	Allocation and Retention Priority	261
9.3.1.21	GBR QoS Information	262
9.3.1.22	Bit Rate	263
9.3.1.23	Transaction ID.....	263
9.3.1.24	DRX Cycle.....	263
9.3.1.25	CU to DU RRC Information	263
9.3.1.26	DU to CU RRC Information	265
9.3.1.27	RLC Mode.....	268
9.3.1.28	SUL Information	268
9.3.1.29	5GS TAC	269
9.3.1.29a	Configured EPS TAC.....	269
9.3.1.30	RRC Reconfiguration Complete Indicator	269
9.3.1.31	UL Configuration.....	269
9.3.1.32	C-RNTI	269
9.3.1.33	Cell UL Configured.....	270
9.3.1.34	RAT-Frequency Priority Information	270
9.3.1.35	LCID	270
9.3.1.36	Duplication activation	270
9.3.1.37	Slice Support List.....	270
9.3.1.38	S-NSSAI	271
9.3.1.39	UE Identity Index value	271
9.3.1.40	Paging DRX	271
9.3.1.41	Paging Priority	271
9.3.1.42	gNB-CU System Information.....	271
9.3.1.43	RAN UE Paging identity.....	272
9.3.1.44	CN UE Paging Identity	272
9.3.1.45	QoS Flow Level QoS Parameters.....	273
9.3.1.46	GBR QoS Flow Information	273
9.3.1.47	Dynamic 5QI Descriptor	274
9.3.1.48	NG-RAN Allocation and Retention Priority	276
9.3.1.49	Non Dynamic 5QI Descriptor	277
9.3.1.50	Maximum Packet Loss Rate.....	278
9.3.1.51	Packet Delay Budget	279
9.3.1.52	Packet Error Rate	279
9.3.1.53	Averaging Window	279
9.3.1.54	Maximum Data Burst Volume	279
9.3.1.55	Masked IMEISV	279
9.3.1.56	Notification Control	279
9.3.1.57	RAN Area Code	280
9.3.1.58	PWS System Information.....	280
9.3.1.59	Repetition Period.....	280
9.3.1.60	Number of Broadcasts Requested	280
9.3.1.61	Void.....	281
9.3.1.62	SIType List.....	281
9.3.1.63	QoS Flow Identifier.....	281
9.3.1.64	Served E-UTRA Cell Information	281
9.3.1.65	Available PLMN List.....	281
9.3.1.66	RLC Failure Indication	282
9.3.1.67	Uplink TxDirectCurrentList Information	282
9.3.1.68	Service Status.....	282
9.3.1.69	RLC Status	282
9.3.1.70	RRC Version.....	283
9.3.1.71	RRC Delivery Status.....	283
9.3.1.72	QoS Flow Mapping Indication.....	283

9.3.1.73	Resource Coordination Transfer Information	283
9.3.1.74	E-UTRA PRACH Configuration	283
9.3.1.75	Resource Coordination E-UTRA Cell Information	284
9.3.1.76	Extended Available PLMN List	286
9.3.1.77	Associated SCell List	286
9.3.1.78	Cell Direction	286
9.3.1.79	Paging Origin	286
9.3.1.80	E-UTRA Transmission Bandwidth	286
9.3.1.81	Message Identifier	287
9.3.1.82	Serial Number	287
9.3.1.83	UAC Assistance Information	288
9.3.1.84	UAC Action	288
9.3.1.85	UAC reduction Indication	289
9.3.1.86	Additional SIB Message List	289
9.3.1.87	Cell Type	289
9.3.1.87a	Configured TAC Indication	290
9.3.1.88	Trace Activation	290
9.3.1.89	Intended TDD DL-UL Configuration	292
9.3.1.90	Additional RRM Policy Index	294
9.3.1.91	DU-CU RIM Information	294
9.3.1.92	CU-DU RIM Information	294
9.3.1.93	gNB Set ID	295
9.3.1.94	Lower Layer Presence Status Change	295
9.3.1.95	Traffic Mapping Information	295
9.3.1.96	IP-to-layer-2 traffic mapping Information List	296
9.3.1.97	IP Header Information	296
9.3.1.98	BAP layer BH RLC channel mapping Information List	296
9.3.1.99	Mapping Information to Remove	297
9.3.1.100	Mapping Information Index	297
9.3.1.101	IAB TNL Addresses Requested	298
9.3.1.102	IAB TNL Address	298
9.3.1.103	Uplink BH Non-UP Traffic Mapping	298
9.3.1.104	Non-UP Traffic Type	299
9.3.1.105	IAB Info IAB-donor-CU	299
9.3.1.106	IAB Info IAB-DU	299
9.3.1.107	gNB-DU Cell Resource Configuration	299
9.3.1.108	Multiplexing Info	302
9.3.1.109	IAB STC Info	304
9.3.1.110	BAP Routing ID	305
9.3.1.111	BAP Address	305
9.3.1.112	BAP Path ID	305
9.3.1.113	BH RLC Channel ID	305
9.3.1.114	BH Information	305
9.3.1.115	Control Plane Traffic Type	306
9.3.1.116	NR V2X Services Authorized	307
9.3.1.117	LTE V2X Services Authorized	307
9.3.1.118	LTE UE Sidelink Aggregate Maximum Bit Rate	307
9.3.1.119	NR UE Sidelink Aggregate Maximum Bit Rate	307
9.3.1.120	SL DRB ID	307
9.3.1.121	PC5 QoS Flow Identifier	307
9.3.1.122	PC5 QoS Parameters	308
9.3.1.123	Alternative QoS Parameters Set Index	308
9.3.1.124	Alternative QoS Parameters Set Notify Index	309
9.3.1.125	Alternative QoS Parameters Set List	309
9.3.1.126	Non Dynamic PQI Descriptor	309
9.3.1.127	Dynamic PQI Descriptor	310
9.3.1.128	TNL Capacity Indicator	310
9.3.1.129	Radio Resource Status	310
9.3.1.130	Composite Available Capacity Group	313
9.3.1.131	Composite Available Capacity	313
9.3.1.132	Cell Capacity Class Value	313
9.3.1.133	Capacity Value	314

9.3.1.134	Slice Available Capacity	314
9.3.1.135	Number of Active UEs	315
9.3.1.136	Hardware Load Indicator	315
9.3.1.137	NR Carrier List	315
9.3.1.138	SSB Positions In Burst	316
9.3.1.139	NR PRACH Configuration	316
9.3.1.140	NR PRACH Configuration List	317
9.3.1.141	TSC Traffic Characteristics	319
9.3.1.142	TSC Assistance Information	319
9.3.1.143	Periodicity	320
9.3.1.144	Burst Arrival Time	320
9.3.1.145	Extended Packet Delay Budget	320
9.3.1.146	RLC Duplication Information	320
9.3.1.147	Reporting Request Type	321
9.3.1.148	Time Reference Information	321
9.3.1.149	Reference Time	321
9.3.1.150	MDT Configuration	322
9.3.1.151	MDT PLMN List	322
9.3.1.152	M5 Configuration	323
9.3.1.153	M6 Configuration	323
9.3.1.154	M7 Configuration	323
9.3.1.155	NID	324
9.3.1.156	NPN Support Information	324
9.3.1.157	NPN Broadcast Information	324
9.3.1.158	Broadcast SNPN ID List	324
9.3.1.159	Broadcast NID List	325
9.3.1.160	Broadcast CAG-Identifier List	325
9.3.1.161	CAG ID	325
9.3.1.162	Broadcast PNI-NPN ID Information	325
9.3.1.163	Available SNPN ID List	326
9.3.1.164	Void	326
9.3.1.165	Extended Slice Support List	326
9.3.1.166	Positioning Measurement Result	326
9.3.1.167	UL Angle of Arrival	327
9.3.1.168	UL RTOA Measurement	327
9.3.1.169	Additional Path List	328
9.3.1.170	gNB Rx-Tx Time Difference	329
9.3.1.171	Time Stamp	330
9.3.1.172	TRP Measurement Quality	330
9.3.1.173	Measurement Beam Information	331
9.3.1.174	NG-RAN Access Point Position	331
9.3.1.175	Requested SRS Transmission Characteristics	332
9.3.1.176	TRP Information	334
9.3.1.177	PRS Configuration	336
9.3.1.178	DL-PRS Muting Pattern	338
9.3.1.179	Spatial Direction Information	338
9.3.1.180	SRS Resource Set ID	338
9.3.1.181	Spatial Relation Information	338
9.3.1.182	SRS Resource Trigger	339
9.3.1.183	Relative Time 1900	339
9.3.1.184	Geographical Coordinates	340
9.3.1.185	DL-PRS Resource Coordinates	341
9.3.1.186	Relative Geodetic Location	342
9.3.1.187	Relative Cartesian Location	343
9.3.1.188	Reference Point	343
9.3.1.189	Location Uncertainty	344
9.3.1.190	NG-RAN High Accuracy Access Point Position	344
9.3.1.191	Positioning Broadcast Cells	345
9.3.1.192	SRS Configuration	345
9.3.1.193	SRS Resource	347
9.3.1.194	Positioning SRS Resource	347
9.3.1.195	SRS Resource Set	349

9.3.1.196	Positioning SRS Resource Set.....	349
9.3.1.197	TRP ID	350
9.3.1.198	NR-PRS Beam Information	350
9.3.1.199	E-CID Measurement Result	351
9.3.1.200	Cell Portion ID	351
9.3.1.201	Pathloss Reference Information	351
9.3.1.202	SSB Information	352
9.3.1.203	SSB Time/Frequency Configuration	352
9.3.1.204	Search Window Information	353
9.3.1.205	Extended gNB-DU Name	354
9.3.1.206	Extended gNB-CU Name.....	354
9.3.1.207	F1-C Transfer Path.....	354
9.3.1.208	SFN Offset	354
9.3.1.209	Transmission Stop Indicator.....	354
9.3.1.210	Spatial Relation Information per SRS Resource	355
9.3.1.211	CCO Assistance Information	355
9.3.1.212	Affected Cells and Beams	355
9.3.1.213	Coverage Modification Notification	356
9.3.1.214	Cells for SON List.....	356
9.3.1.215	Neighbour NR Cells for SON List	357
9.3.1.216	NR Mode Info Rel16.....	357
9.3.1.217	Frequency Info Rel16.....	358
9.3.1.218	MBS Session ID.....	358
9.3.1.219	gNB-CU MBS F1AP ID	358
9.3.1.220	gNB-DU MBS F1AP ID	358
9.3.1.221	MBS Area Session ID	359
9.3.1.222	MBS Service Area	359
9.3.1.223	MBS Service Area information.....	359
9.3.1.224	MRB ID	359
9.3.1.225	MBS CU to DU RRC Information.....	360
9.3.1.226	MBS Broadcast Neighbour Cell List	360
9.3.1.227	IAB Congestion Indication	360
9.3.1.228	F1-C Transfer Path NRDC.....	361
9.3.1.229	IAB TNL Address Exception.....	361
9.3.1.230	RB Set Configuration.....	361
9.3.1.231	Survival Time.....	362
9.3.1.232	PDC Measurement Result	362
9.3.1.233	SCG Activation Request	363
9.3.1.234	SCG Activation Status	363
9.3.1.235	Requested DL PRS Transmission Characteristics.....	363
9.3.1.236	Start Time and Duration.....	363
9.3.1.237	PRS Transmission Off Information.....	364
9.3.1.238	UL-AoA Assistance Information	364
9.3.1.239	Zenith Angle of Arrival Information.....	365
9.3.1.240	On-demand PRS TRP Information	366
9.3.1.241	LCS to GCS Translation	368
9.3.1.242	Response Time	368
9.3.1.243	ARP Location Information.....	368
9.3.1.244	ARP ID.....	369
9.3.1.245	Multiple UL AoA.....	369
9.3.1.246	UL SRS-RSRPP.....	369
9.3.1.247	SRS Resource type.....	370
9.3.1.248	Extended Additional Path List	370
9.3.1.249	LoS/NLoS Information	370
9.3.1.250	Requested DL-PRS Resource List	371
9.3.1.251	Void.....	372
9.3.1.252	TRP Tx TEG Association	372
9.3.1.253	TRP TEG Information.....	372
9.3.1.254	Measurement Characteristics Request Indicator	372
9.3.1.255	UE Reporting Information	373
9.3.1.256	TRP Beam Antenna Information.....	373
9.3.1.257	TRP Beam Antenna Angles	374

9.3.1.258	NR Paging eDRX Information.....	376
9.3.1.259	NR Paging eDRX Information for RRC INACTIVE.....	376
9.3.1.260	QoE Metrics	376
9.3.1.261	CG-SDT Session Info	376
9.3.1.262	SDT Information	376
9.3.1.263	Path Switch Configuration	377
9.3.1.264	Sidelink Relay Configuration.....	377
9.3.1.265	PC5 RLC Channel ID.....	377
9.3.1.266	Uu RLC Channel ID.....	377
9.3.1.267	Remote UE Local ID.....	378
9.3.1.268	5G ProSe Authorized	378
9.3.1.269	PEIPS Assistance Information	378
9.3.1.270	UE Paging Capability.....	378
9.3.1.271	gNB-DU UE Slice Maximum Bit Rate List.....	379
9.3.1.272	Multicast MBS Session List.....	379
9.3.1.273	TAI NSAG Support List	379
9.3.1.274	MDT PLMN Modification List.....	380
9.3.1.275	MRB RLC Configuration.....	380
9.3.1.276	Timing Error Margin.....	381
9.3.1.277	SDT Bearer Configuration Info.....	381
9.3.1.278	PosSIType List	381
9.3.1.279	IAB-DU Cell Resource Configuration-Mode-Info	381
9.3.1.280	TRP Rx TEG Information.....	383
9.3.1.281	TRP Tx TEG Information	383
9.3.1.282	TRP RxTx TEG Information.....	383
9.3.1.283	Uplink TxDirectCurrentTwoCarrierList Information	383
9.3.1.284	Uplink TxDirectCurrentMoreCarrierList Information	383
9.3.1.285	Extended UE Identity Index Value	384
9.3.2	Transport Network Layer Related IEs	384
9.3.2.1	UP Transport Layer Information.....	384
9.3.2.2	GTP-TEID.....	384
9.3.2.3	Transport Layer Address.....	384
9.3.2.4	CP Transport Layer Information	384
9.3.2.5	Transport Layer Address Info	385
9.3.2.6	URI.....	386
9.3.2.7	BC Bearer Context F1-U TNL Info	386
9.3.2.8	MBS Multicast F1-U Context Descriptor	386
9.3.2.9	Void.....	387
9.3.2.10	MBS PTP Retransmission Tunnel Required.....	387
9.3.2.11	Multicast F1-U Context Reference F1	387
9.3.2.12	MRB Progress Information	387
9.3.2.13	Multicast F1-U Context Reference CU.....	388
9.4	Message and Information Element Abstract Syntax (with ASN.1).....	388
9.4.1	General.....	388
9.4.2	Usage of private message mechanism for non-standard use.....	388
9.4.3	Elementary Procedure Definitions.....	389
9.4.4	PDU Definitions	406
9.4.5	Information Element Definitions	505
9.4.6	Common Definitions.....	661
9.4.7	Constant Definitions	661
9.4.8	Container Definitions.....	679
9.5	Message Transfer Syntax	684
9.6	Timers	684
10	Handling of unknown, unforeseen and erroneous protocol data.....	684
Annex A (informative):	Change History	685
History		692

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

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1 Scope

The present document specifies the 5G radio network layer signalling protocol for the F1 interface. The F1 interface provides means for interconnecting a gNB-CU and a gNB-DU of a gNB within an NG-RAN, or for interconnecting a gNB-CU and a gNB-DU of an en-gNB within an E-UTRAN. The F1 Application Protocol (F1AP) supports the functions of F1 interface by signalling procedures defined in the present document. F1AP is developed in accordance to the general principles stated in TS 38.401 [4] and TS 38.470 [2].

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] 3GPP TS 38.470: "NG-RAN; F1 general aspects and principles".
- [3] 3GPP TS 38.413: "NG-RAN; NG Application Protocol (NGAP)".
- [4] 3GPP TS 38.401: "NG-RAN; Architecture Description".
- [5] ITU-T Recommendation X.691 (2002-07): "Information technology - ASN.1 encoding rules - Specification of Packed Encoding Rules (PER)".
- [6] 3GPP TS 38.300: "NR; Overall description; Stage-2".
- [7] 3GPP TS 37.340: "NR; Multi-connectivity; Overall description; Stage-2".
- [8] 3GPP TS 38.331: "NR; Radio Resource Control (RRC); Protocol specification".
- [9] 3GPP TS 36.423: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN); X2 Application Protocol (X2AP)".
- [10] 3GPP TS 23.401: "General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access".
- [11] 3GPP TS 23.203: "Policy and charging control architecture".
- [12] ITU-T Recommendation X.680 (07/2002): "Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation".
- [13] ITU-T Recommendation X.681 (07/2002): "Information technology – Abstract Syntax Notation One (ASN.1): Information object specification".
- [14] 3GPP TR 25.921: (version.7.0.0): "Guidelines and principles for protocol description and error".
- [15] 3GPP TS 36.413: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN); S1 Application Protocol (S1AP)".
- [16] 3GPP TS 38.321: "NR; Medium Access Control (MAC) protocol specification".
- [17] 3GPP TS 38.104: "NR; Base Station (BS) radio transmission and reception".

- [18] 3GPP TS 29.281: "General Packet Radio System (GPRS); Tunnelling Protocol User Plane (GTPv1-U) ".
- [19] 3GPP TS 38.414: "NG-RAN; NG data transport".
- [20] 3GPP TS 36.300: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2".
- [21] 3GPP TS 23.501: "System Architecture for the 5G System".
- [22] 3GPP TS 38.472: "NG-RAN; F1 signalling transport".
- [23] 3GPP TS 23.003: "Numbering, addressing and identification".
- [24] 3GPP TS 38.304: "NR; User Equipment (UE) procedures in Idle mode and RRC Inactive state ".
- [25] 3GPP TS 36.104: "Base Station (BS) radio transmission and reception".
- [26] 3GPP TS 38.101-1: "NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone".
- [27] 3GPP TS 36.211: "Evolved Universal Terrestrial Radio Access (E-UTRA); Physical channels and modulation".
- [28] 3GPP TS 38.423: "NG-RAN; Xn application protocol (XnAP)".
- [29] 3GPP TS 32.422: "Trace control and configuration management".
- [30] 3GPP TS 38.340: "NR; Backhaul Adaptation Protocol (BAP) specification".
- [31] 3GPP TS 38.213: "NR; Physical layer procedures for control".
- [32] 3GPP TS 38.314: " NR; Layer 2 measurements".
- [33] 3GPP TS 38.211: "NR; Physical channels and modulation".
- [34] 3GPP TS 38.214: "NR; Physical layer procedures for data".
- [35] 3GPP TS 37.320: "Radio measurement collection for Minimization of Drive Tests (MDT)".
- [36] 3GPP TS 23.032:"Technical Specification Group Services and System Aspects; Universal Geographical Area Description (GAD)".
- [37] 3GPP TS 38.455: "NG-RAN; NR Positioning protocol A (NRPPa)".
- [38] 3GPP TS 38.133: "NR; Requirements for support of radio resource management".
- [39] 3GPP TS 37.355: "LTE Positioning Protocol (LPP)".
- [40] 3GPP TS 23.287: "Architecture enhancements for 5G System (5GS) to support Vehicle-to-Everything (V2X) services".
- [41] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification".
- [42] 3GPP TS 38.305: "NG Radio Access Network (NG-RAN); Stage 2 functional specification of User Equipment (UE) positioning in NG-RAN".
- [43] 3GPP TS 38.215: "NR; Physical layer (PHY); Measurements".
- [44] 3GPP TS 23.304: "Proximity based Services (ProSe) in the 5G System (5GS)".
- [45] Void
- [46] 3GPP TS 37.213: "NR; Physical layer procedures for shared spectrum channel access".
- [47] 3GPP TS 37.483: "E1 Application Protocol (E1AP)".

3 Definitions and abbreviations

3.1 Definitions

elementary procedure: F1AP consists of Elementary Procedures (EPs). An Elementary Procedure is a unit of interaction between gNB-CU and gNB-DU. These Elementary Procedures are defined separately and are intended to be used to build up complete sequences in a flexible manner. If the independence between some EPs is restricted, it is described under the relevant EP description. Unless otherwise stated by the restrictions, the EPs may be invoked independently of each other as standalone procedures, which can be active in parallel. The usage of several F1AP EPs together is specified in stage 2 specifications (e.g., TS 38.470 [2]).

An EP consists of an initiating message and possibly a response message. Two kinds of EPs are used:

- **Class 1:** Elementary Procedures with response (success and/or failure).
- **Class 2:** Elementary Procedures without response.

For Class 1 EPs, the types of responses can be as follows:

Successful:

- A signalling message explicitly indicates that the elementary procedure successfully completed with the receipt of the response.

Unsuccessful:

- A signalling message explicitly indicates that the EP failed.
- On time supervision expiry (i.e., absence of expected response).

Successful and Unsuccessful:

- One signalling message reports both successful and unsuccessful outcome for the different included requests. The response message used is the one defined for successful outcome.

Class 2 EPs are considered always successful.

BH RLC channel: as defined in TS 38.300 [6].

Conditional handover: as defined in TS 38.300 [6].

Conditional PSCell Addition: as defined in TS 37.340 [7].

Conditional PSCell Change: as defined in TS 37.340 [7].

DAPS Handover: as defined in TS 38.300 [6].

EN-DC operation: Used in this specification when the F1AP is applied for gNB-CU and gNB-DU in E-UTRAN.

gNB: as defined in TS 38.300 [6].

gNB-CU: as defined in TS 38.401 [4].

gNB-CU UE F1AP ID: as defined in TS 38.401 [4].

gNB-DU: as defined in TS 38.401 [4].

gNB-DU UE F1AP ID: as defined in TS 38.401 [4].

en-gNB: as defined in TS 37.340 [7].

IAB-MT: as defined in TS 38.300 [6].

IAB-DU: as defined in TS 38.300 [6].

IAB-node: as defined in TS 38.300 [6].

IAB-donor: as defined in TS 38.300 [6].

IAB-donor-CU: as defined in TS 38.401 [4].

IAB-donor-DU: as defined in TS 38.401 [4].

MBS session resource: as defined in TS 38.401 [4].

MBS-associated signalling: When F1AP messages associated to one MBS session uses the MBS-associated logical F1-connection for association of the message to the MBS session in gNB-DU and gNB-CU.

MBS-associated logical F1-connection: The MBS-associated logical F1-connection uses the identities *GNB-CU MBS F1AP ID* and *GNB-DU MBS F1AP ID* according to the definition in TS 38.401 [4]. For a received MBS-associated F1AP message the gNB-CU identifies the associated MBS session based on the *GNB-CU MBS F1AP ID IE* and the gNB-DU identifies the associated MBS session based on the *GNB-DU MBS F1AP ID IE*.

MBS Session context in a gNB-DU: as defined in TS 38.401 [4].

Multicast F1-U Context: as defined in TS 38.401 [4].

Public network integrated NPN: as defined in TS 23.501 [21].

Stand-alone Non-Public Network: as defined in TS 23.501 [21].

UE-associated signalling: When F1AP messages associated to one UE uses the UE-associated logical F1-connection for association of the message to the UE in gNB-DU and gNB-CU.

UE-associated logical F1-connection: The UE-associated logical F1-connection uses the identities *GNB-CU UE F1AP ID* and *GNB-DU UE F1AP ID* according to the definition in TS 38.401 [4]. For a received UE associated F1AP message the gNB-CU identifies the associated UE based on the *GNB-CU UE F1AP ID IE* and the gNB-DU identifies the associated UE based on the *GNB-DU UE F1AP ID IE*. The UE-associated logical F1-connection may exist before the F1 UE context is setup in gNB-DU.

U2N Relay UE: a UE that provides functionality to support connectivity to the network for U2N Remote UE(s).

U2N Remote UE: a UE that communicates with the network via a U2N Relay UE.

Uu Relay RLC channel: as defined in TS 38.300 [6].

PC5 Relay RLC channel: as defined in TS 38.300 [6].

SRAP: Sidelink relay adaptation protocol, as defined in TS 38.300 [6].

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

5GC	5G Core Network
5QI	5G QoS Identifier
AMF	Access and Mobility Management Function
ARP	Antenna Reference Point
ARPI	Additional RRM Policy Index
BH	Backhaul
CAG	Closed Access Group
CN	Core Network
CG	Cell Group
CG-SDT	Configured Grant-Small Data Transmission
CGI	Cell Global Identifier
CHO	Conditional Handover

CP	Control Plane
CPA	Conditional PSCell Addition
CPC	Conditional PSCell Change
DAPS	Dual Active Protocol Stack
DL	Downlink
DL-PRS	Downlink Positioning Reference Signal
EN-DC	E-UTRA-NR Dual Connectivity
EPC	Evolved Packet Core
FSA ID	MBS Frequency Selection Area (FSA) ID
IAB	Integrated Access and Backhaul
IMEISV	International Mobile station Equipment Identity and Software Version number
LMF	Location Management Function
MBS	Multicast/Broadcast Service
NID	Network Identifier
NPN	Non-Public Network
NSAG	Network Slice AS Group
NSSAI	Network Slice Selection Assistance Information
PDC	Propagation Delay Compensation
PEIPS	Paging Early Indication with Paging Subgrouping
posSIB	Positioning SIB
PNI-NPN	Public Network Integrated NPN
PTP	Point to Point
PTM	Point to Multipoint
QMC	QoE Measurement Collection
QoE	Quality of Experience
RANAC	RAN Area Code
RedCap	Reduced Capability
RIM	Remote Interference Management
RIM-RS	RIM Reference Signal
RRC	Radio Resource Control
RSRP	Reference Signal Received Power
SDT	Small Data Transmission
SNPN	Stand-alone Non-Public Network
S-NSSAI	Single Network Slice Selection Assistance Information
SUL	Supplementary Uplink
TAC	Tracking Area Code
TAI	Tracking Area Identity
TEG	Timing Error Group
TRP	Transmission-Reception Point
U2N	UE-to-Network
UL-AoA	Uplink Angle of Arrival
UL-RTOA	Uplink Relative Time of Arrival
UL-SRS	Uplink Sounding Reference Signal
Z-AoA	Zenith Angles of Arrival

4 General

4.1 Procedure specification principles

The principle for specifying the procedure logic is to specify the functional behaviour of the terminating node exactly and completely. Any rule that specifies the behaviour of the originating node shall be possible to be verified with information that is visible within the system.

The following specification principles have been applied for the procedure text in clause 8:

- The procedure text discriminates between:
 - 1) Functionality which "shall" be executed.

The procedure text indicates that the receiving node "shall" perform a certain function Y under a certain condition. If the receiving node supports procedure X but cannot perform functionality Y requested in the REQUEST message of a Class 1 EP, the receiving node shall respond with the message used to report unsuccessful outcome for this procedure, containing an appropriate cause value.

- 2) Functionality which "shall, if supported" be executed.

The procedure text indicates that the receiving node "shall, if supported," perform a certain function Y under a certain condition. If the receiving node supports procedure X, but does not support functionality Y, the receiving node shall proceed with the execution of the EP, possibly informing the requesting node about the not supported functionality.

- Any required inclusion of an optional IE in a response message is explicitly indicated in the procedure text. If the procedure text does not explicitly indicate that an optional IE shall be included in a response message, the optional IE shall not be included. For requirements on including *Criticality Diagnostics* IE, see clause 10.

4.2 Forwards and backwards compatibility

The forwards and backwards compatibility of the protocol is assured by mechanism where all current and future messages, and IEs or groups of related IEs, include ID and criticality fields that are coded in a standard format that will not be changed in the future. These parts can always be decoded regardless of the standard version.

4.3 Specification notations

For the purposes of the present document, the following notations apply:

Procedure	When referring to an elementary procedure in the specification the Procedure Name is written with the first letters in each word in upper case characters followed by the word "procedure", e.g. Handover Preparation procedure.
Message	When referring to a message in the specification the MESSAGE NAME is written with all letters in upper case characters followed by the word "message", e.g. HANDOVER REQUEST message.
IE	When referring to an information element (IE) in the specification the <i>Information Element Name</i> is written with the first letters in each word in upper case characters and all letters in Italic font followed by the abbreviation "IE", e.g. <i>E-RAB ID</i> IE.
Value of an IE	When referring to the value of an information element (IE) in the specification the "Value" is written as it is specified in the specification enclosed by quotation marks, e.g. "Value".

5 F1AP services

F1AP provides the signalling service between gNB-DU and the gNB-CU that is required to fulfil the F1AP functions described in clause 7. F1AP services are divided into two groups:

Non UE-associated services:	They are related to the whole F1 interface instance between the gNB-DU and gNB-CU utilising a non UE-associated signalling connection.
UE-associated services:	They are related to one UE. F1AP functions that provide these services are associated with a UE-associated signalling connection that is maintained for the UE in question.
MBS-associated services:	They are related to one MBS service. F1AP functions that provide these services are associated with a MBS-associated signalling connection that is maintained for the MBS service in question.

Unless explicitly indicated in the procedure specification, at any instance in time one protocol endpoint shall have a maximum of one ongoing F1AP procedure related to a certain UE.

Unless explicitly indicated in the procedure specification, at any instance in time one protocol endpoint shall have a maximum of one ongoing F1AP procedure related to a certain MBS session.

All considerations of gNB-DU in this specification also apply to the IAB-DU and IAB-donor-DU, unless stated otherwise. All considerations of gNB-CU in this specification apply to the IAB-donor-CU as well, unless stated otherwise.

6 Services expected from signalling transport

The signalling connection shall provide in sequence delivery of F1AP messages. F1AP shall be notified if the signalling connection breaks.

7 Functions of F1AP

The functions of F1AP are described in TS 38.470 [2].

8 F1AP procedures

8.1 List of F1AP Elementary procedures

In the following tables, all EPs are divided into Class 1 and Class 2 EPs (see subclause 3.1 for explanation of the different classes):

Table 1: Class 1 procedures

Elementary Procedure	Initiating Message	Successful Outcome	Unsuccessful Outcome
		Response message	Response message
Reset	RESET	RESET ACKNOWLEDGE	
F1 Setup	F1 SETUP REQUEST	F1 SETUP RESPONSE	F1 SETUP FAILURE
gNB-DU Configuration Update	GNB-DU CONFIGURATION UPDATE	GNB-DU CONFIGURATION UPDATE ACKNOWLEDGE	GNB-DU CONFIGURATION UPDATE FAILURE
gNB-CU Configuration Update	GNB-CU CONFIGURATION UPDATE	GNB-CU CONFIGURATION UPDATE ACKNOWLEDGE	GNB-CU CONFIGURATION UPDATE FAILURE
UE Context Setup	UE CONTEXT SETUP REQUEST	UE CONTEXT SETUP RESPONSE	UE CONTEXT SETUP FAILURE
UE Context Release (gNB-CU initiated)	UE CONTEXT RELEASE COMMAND	UE CONTEXT RELEASE COMPLETE	
UE Context Modification (gNB-CU initiated)	UE CONTEXT MODIFICATION REQUEST	UE CONTEXT MODIFICATION RESPONSE	UE CONTEXT MODIFICATION FAILURE
UE Context Modification Required (gNB-DU initiated)	UE CONTEXT MODIFICATION REQUIRED	UE CONTEXT MODIFICATION CONFIRM	UE CONTEXT MODIFICATION REFUSE
Write-Replace Warning	WRITE-REPLACE WARNING REQUEST	WRITE-REPLACE WARNING RESPONSE	
PWS Cancel	PWS CANCEL REQUEST	PWS CANCEL RESPONSE	
gNB-DU Resource Coordination	GNB-DU RESOURCE COORDINATION REQUEST	GNB-DU RESOURCE COORDINATION RESPONSE	
F1 Removal	F1 REMOVAL REQUEST	F1 REMOVAL RESPONSE	F1 REMOVAL FAILURE
BAP Mapping Configuration	BAP MAPPING CONFIGURATION	BAP MAPPING CONFIGURATION ACKNOWLEDGE	BAP MAPPING CONFIGURATION FAILURE
GNB-DU Resource Configuration	GNB-DU RESOURCE CONFIGURATION	GNB-DU RESOURCE CONFIGURATION ACKNOWLEDGE	GNB-DU RESOURCE CONFIGURATION FAILURE
IAB TNL Address Allocation	IAB TNL ADDRESS REQUEST	IAB TNL ADDRESS RESPONSE	IAB TNL ADDRESS FAILURE
IAB UP Configuration Update	IAB UP CONFIGURATION UPDATE REQUEST	IAB UP CONFIGURATION UPDATE RESPONSE	IAB UP CONFIGURATION UPDATE FAILURE
Resource Status Reporting Initiation	RESOURCE STATUS REQUEST	RESOURCE STATUS RESPONSE	RESOURCE STATUS FAILURE
Positioning Measurement	POSITIONING MEASUREMENT REQUEST	POSITIONING MEASUREMENT RESPONSE	POSITIONING MEASUREMENT FAILURE
Positioning Information Exchange	POSITIONING INFORMATION REQUEST	POSITIONING INFORMATION RESPONSE	POSITIONING INFORMATION FAILURE
TRP Information Exchange	TRP INFORMATION REQUEST	TRP INFORMATION RESPONSE	TRP INFORMATION FAILURE
Positioning Activation	POSITIONING ACTIVATION REQUEST	POSITIONING ACTIVATION RESPONSE	POSITIONING ACTIVATION FAILURE
E-CID Measurement Initiation	E-CID MEASUREMENT INITIATION REQUEST	E-CID MEASUREMENT INITIATION RESPONSE	E-CID MEASUREMENT INITIATION FAILURE
Broadcast Context Setup	BROADCAST CONTEXT SETUP REQUEST	BROADCAST CONTEXT SETUP RESPONSE	BROADCAST CONTEXT SETUP FAILURE

Broadcast Context Release	BROADCAST CONTEXT RELEASE COMMAND	BROADCAST CONTEXT RELEASE COMPLETE	
Broadcast Context Modification	BROADCAST CONTEXT MODIFICATION REQUEST	BROADCAST CONTEXT MODIFICATION RESPONSE	BROADCAST CONTEXT MODIFICATION FAILURE
Multicast Context Setup	MULTICAST CONTEXT SETUP REQUEST	MULTICAST CONTEXT SETUP RESPONSE	MULTICAST CONTEXT SETUP FAILURE
Multicast Context Release	MULTICAST CONTEXT RELEASE COMMAND	MULTICAST CONTEXT RELEASE COMPLETE	
Multicast Context Modification	MULTICAST CONTEXT MODIFICATION REQUEST	MULTICAST CONTEXT MODIFICATION RESPONSE	MULTICAST CONTEXT MODIFICATION FAILURE
Multicast Distribution Setup	MULTICAST DISTRIBUTION SETUP REQUEST	MULTICAST DISTRIBUTION SETUP RESPONSE	MULTICAST DISTRIBUTION SETUP FAILURE
Multicast Distribution Release	MULTICAST DISTRIBUTION RELEASE COMMAND	MULTICAST DISTRIBUTION RELEASE COMPLETE	
PDC Measurement Initiation	PDC MEASUREMENT INITIATION REQUEST	PDC MEASUREMENT INITIATION RESPONSE	PDC MEASUREMENT INITIATION FAILURE
PRS Configuration Exchange	PRS CONFIGURATION REQUEST	PRS CONFIGURATION RESPONSE	PRS CONFIGURATION FAILURE
Measurement Preconfiguration	MEASUREMENT PRECONFIGURATION REQUIRED	MEASUREMENT PRECONFIGURATION CONFIRM	MEASUREMENT PRECONFIGURATION REFUSE

Table 2: Class 2 procedures

Elementary Procedure	Message
Error Indication	ERROR INDICATION
UE Context Release Request (gNB-DU initiated)	UE CONTEXT RELEASE REQUEST
Initial UL RRC Message Transfer	INITIAL UL RRC MESSAGE TRANSFER
DL RRC Message Transfer	DL RRC MESSAGE TRANSFER
UL RRC Message Transfer	UL RRC MESSAGE TRANSFER
UE Inactivity Notification	UE INACTIVITY NOTIFICATION
System Information Delivery	SYSTEM INFORMATION DELIVERY COMMAND
Paging	PAGING
Notify	NOTIFY
PWS Restart Indication	PWS RESTART INDICATION
PWS Failure Indication	PWS FAILURE INDICATION
gNB-DU Status Indication	GNB-DU STATUS INDICATION
RRC Delivery Report	RRC DELIVERY REPORT
Network Access Rate Reduction	NETWORK ACCESS RATE REDUCTION
Trace Start	TRACE START
Deactivate Trace	DEACTIVATE TRACE
DU-CU Radio Information Transfer	DU-CU RADIO INFORMATION TRANSFER
CU-DU Radio Information Transfer	CU-DU RADIO INFORMATION TRANSFER
Resource Status Reporting	RESOURCE STATUS UPDATE
Access And Mobility Indication	ACCESS AND MOBILITY INDICATION
Reference Time Information Reporting Control	REFERENCE TIME INFORMATION REPORTING CONTROL
Reference Time Information Report	REFERENCE TIME INFORMATION REPORT
Access Success	ACCESS SUCCESS
Cell Traffic Trace	CELL TRAFFIC TRACE
Positioning Assistance Information Control	POSITIONING ASSISTANCE INFORMATION CONTROL
Positioning Assistance Information Feedback	POSITIONING ASSISTANCE INFORMATION FEEDBACK
Positioning Measurement Report	POSITIONING MEASUREMENT REPORT
Positioning Measurement Abort	POSITIONING MEASUREMENT ABORT
Positioning Measurement Failure Indication	POSITIONING MEASUREMENT FAILURE INDICATION
Positioning Measurement Update	POSITIONING MEASUREMENT UPDATE
Positioning Deactivation	POSITIONING DEACTIVATION
E-CID Measurement Failure Indication	E-CID MEASUREMENT FAILURE INDICATION
E-CID Measurement Report	E-CID MEASUREMENT REPORT
E-CID Measurement Termination	E-CID MEASUREMENT TERMINATION COMMAND
Positioning Information Update	POSITIONING INFORMATION UPDATE
Multicast Group Paging	MULTICAST GROUP PAGING
Broadcast Context Release Request	BROADCAST CONTEXT RELEASE REQUEST
Multicast Context Release Request	MULTICAST CONTEXT RELEASE REQUEST
PDC Measurement Report	PDC MEASUREMENT REPORT
PDC Measurement Termination	PDC MEASUREMENT TERMINATION COMMAND
PDC Measurement Failure Indication	PDC MEASUREMENT FAILURE INDICATION

PDC Measurement Termination	PDC MEASUREMENT TERMINATION COMMAND
Measurement Activation	MEASUREMENT ACTIVATION
QoE Information Transfer	QOE INFORMATION TRANSFER
Positioning System Information Delivery	POSITIONING SYSTEM INFORMATION DELIVERY COMMAND

8.2 Interface Management procedures

8.2.1 Reset

8.2.1.1 General

The purpose of the Reset procedure is to initialise or re-initialise the F1AP UE-related contexts, in the event of a failure in the gNB-CU or gNB-DU. This procedure does not affect the application level configuration data exchanged during, e.g., the F1 Setup procedure.

The procedure uses non-UE associated signalling.

8.2.1.2 Successful Operation

8.2.1.2.1 Reset Procedure Initiated from the gNB-CU

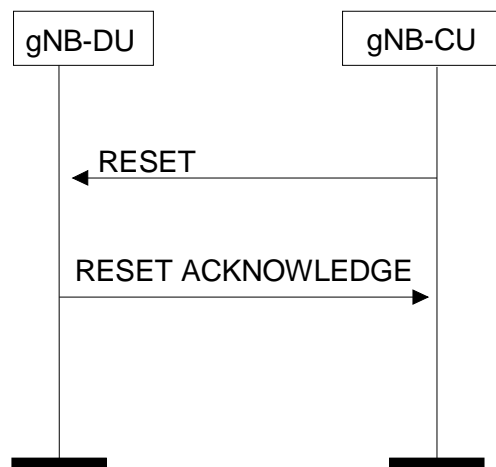


Figure 8.2.1.2.1-1: Reset procedure initiated from the gNB-CU. Successful operation

In the event of a failure at the gNB-CU, which has resulted in the loss of some or all transaction reference information, a RESET message shall be sent to the gNB-DU.

At reception of the RESET message the gNB-DU shall release all allocated resources on F1 and radio resources related to the UE association(s) indicated explicitly or implicitly in the RESET message and remove the indicated UE contexts including F1AP ID.

After the gNB-DU has released all assigned F1 resources and the UE F1AP IDs for all indicated UE associations which can be used for new UE-associated logical F1-connections over the F1 interface, the gNB-DU shall respond with the RESET ACKNOWLEDGE message. The gNB-DU does not need to wait for the release of radio resources to be completed before returning the RESET ACKNOWLEDGE message.

If the RESET message contains the *UE-associated logical F1-connection list* IE, then:

- The gNB-DU shall use the *gNB-CU UE F1AP ID* IE and/or the *gNB-DU UE F1AP ID* IE to explicitly identify the UE association(s) to be reset.

- The gNB-DU shall include in the RESET ACKNOWLEDGE message, for each UE association to be reset, the *UE-associated logical F1-connection Item IE* in the *UE-associated logical F1-connection list IE*. The *UE-associated logical F1-connection Item IEs* shall be in the same order as received in the RESET message and shall include also unknown UE-associated logical F1-connections. Empty *UE-associated logical F1-connection Item IEs*, received in the RESET message, may be omitted in the RESET ACKNOWLEDGE message.
- If the *gNB-CU UE F1AP ID IE* is included in the *UE-associated logical F1-connection Item IE* for a UE association, the gNB-DU shall include the *gNB-CU UE F1AP ID IE* in the corresponding *UE-associated logical F1-connection Item IE* in the RESET ACKNOWLEDGE message.
- If the *gNB-DU UE F1AP ID IE* is included in the *UE-associated logical F1-connection Item IE* for a UE association, the gNB-DU shall include the *gNB-DU UE F1AP ID IE* in the corresponding *UE-associated logical F1-connection Item IE* in the RESET ACKNOWLEDGE message.

Interactions with other procedures:

If the RESET message is received, any other ongoing procedure (except for another Reset procedure) on the same F1 interface related to a UE association, indicated explicitly or implicitly in the RESET message, shall be aborted.

8.2.1.2.2 Reset Procedure Initiated from the gNB-DU

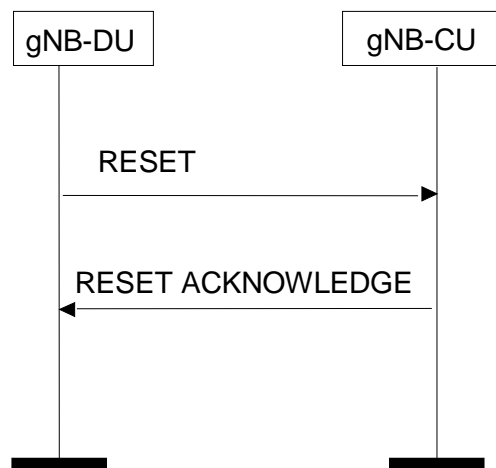


Figure 8.2.1.2.2-1: Reset procedure initiated from the gNB-DU. Successful operation

In the event of a failure at the gNB-DU, which has resulted in the loss of some or all transaction reference information, a RESET message shall be sent to the gNB-CU.

At reception of the RESET message the gNB-CU shall release all allocated resources on F1 related to the UE association(s) indicated explicitly or implicitly in the RESET message and remove the F1AP ID for the indicated UE associations.

After the gNB-CU has released all assigned F1 resources and the UE F1AP IDs for all indicated UE associations which can be used for new UE-associated logical F1-connections over the F1 interface, the gNB-CU shall respond with the RESET ACKNOWLEDGE message.

If the RESET message contains the *UE-associated logical F1-connection list IE*, then:

- The gNB-CU shall use the *gNB-CU UE F1AP ID IE* and/or the *gNB-DU UE F1AP ID IE* to explicitly identify the UE association(s) to be reset.
- The gNB-CU shall in the RESET ACKNOWLEDGE message include, for each UE association to be reset, the *UE-associated logical F1-connection Item IE* in the *UE-associated logical F1-connection list IE*. The *UE-associated logical F1-connection Item IEs* shall be in the same order as received in the RESET message and shall include also unknown UE-associated logical F1-connections. Empty *UE-associated logical F1-connection Item IEs*, received in the RESET message, may be omitted in the RESET ACKNOWLEDGE message.

- If the *gNB-CU UE FIAP ID IE* is included in the *UE-associated logical F1-connection Item IE* for a UE association, the *gNB-CU* shall include the *gNB-CU UE FIAP ID IE* in the corresponding *UE-associated logical F1-connection Item IE* in the RESET ACKNOWLEDGE message.
- If the *gNB-DU UE FIAP ID IE* is included in a *UE-associated logical F1-connection Item IE* for a UE association, the *gNB-CU* shall include the *gNB-DU UE FIAP ID IE* in the corresponding *UE-associated logical F1-connection Item IE* in the RESET ACKNOWLEDGE message.

Interactions with other procedures:

If the RESET message is received, any other ongoing procedure (except for another Reset procedure) on the same F1 interface related to a UE association, indicated explicitly or implicitly in the RESET message, shall be aborted.

8.2.1.3 Abnormal Conditions

Not applicable.

8.2.2 Error Indication

8.2.2.1 General

The Error Indication procedure is initiated by a node in order to report detected errors in one incoming message, provided they cannot be reported by an appropriate failure message.

If the error situation arises due to reception of a message utilising UE associated signalling, then the Error Indication procedure uses UE associated signalling. Otherwise the procedure uses non-UE associated signalling.

8.2.2.2 Successful Operation

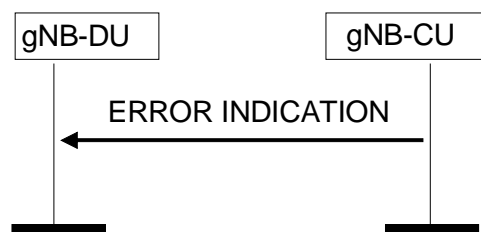


Figure 8.2.2.2-1: Error Indication procedure, gNB-CU originated. Successful operation

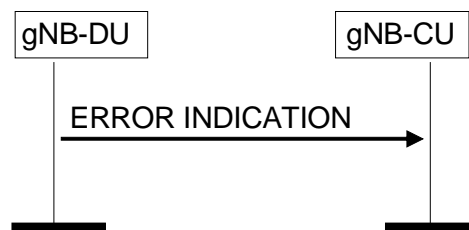


Figure 8.2.2.2-2: Error Indication procedure, gNB-DU originated. Successful operation

When the conditions defined in clause 10 are fulfilled, the Error Indication procedure is initiated by an ERROR INDICATION message sent from the receiving node.

The ERROR INDICATION message shall contain at least either the *Cause IE* or the *Criticality Diagnostics IE*. In case the Error Indication procedure is triggered by utilising UE associated signalling the *gNB-CU UE FIAP ID IE* and *gNB-DU UE FIAP ID IE* shall be included in the ERROR INDICATION message. If one or both of the *gNB-CU UE FIAP ID IE* and the *gNB-DU UE FIAP ID IE* are not correct, the cause shall be set to appropriate value, e.g., "Unknown or already allocated gNB-CU UE FIAP ID", "Unknown or already allocated gNB-DU UE FIAP ID" or "Unknown or inconsistent pair of UE FIAP ID".

8.2.2.3 Abnormal Conditions

Not applicable.

8.2.3 F1 Setup

8.2.3.1 General

The purpose of the F1 Setup procedure is to exchange application level data needed for the gNB-DU and the gNB-CU to correctly interoperate on the F1 interface. This procedure shall be the first F1AP procedure triggered for the F1-C interface instance after a TNL association has become operational.

NOTE: If F1-C signalling transport is shared among multiple F1-C interface instances, one F1 Setup procedure is issued per F1-C interface instance to be setup, i.e. several F1 Setup procedures may be issued via the same TNL association after that TNL association has become operational.

NOTE: Exchange of application level configuration data also applies between the gNB-DU and the gNB-CU in case the DU does not broadcast system information other than for radio frame timing and SFN, as specified in the TS 37.340 [7]. How to use this information when this option is used is not explicitly specified.

The procedure uses non-UE associated signalling.

This procedure erases any existing application level configuration data in the two nodes and replaces it by the one received. This procedure also re-initialises the F1AP UE-related contexts (if any) and erases all related signalling connections in the two nodes like a Reset procedure would do.

8.2.3.2 Successful Operation

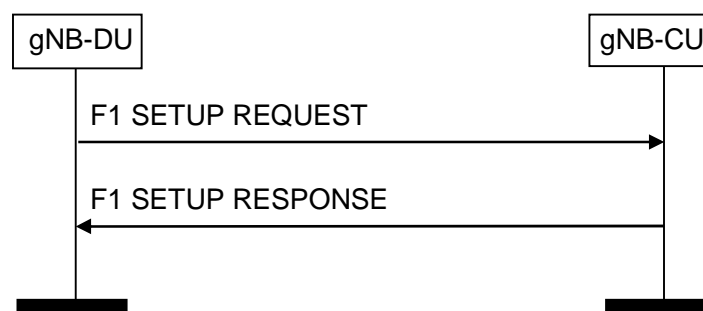


Figure 8.2.3.2-1: F1 Setup procedure: Successful Operation

The gNB-DU initiates the procedure by sending a F1 SETUP REQUEST message including the appropriate data to the gNB-CU. The gNB-CU responds with a F1 SETUP RESPONSE message including the appropriate data.

The exchanged data shall be stored in respective node and used as long as there is an operational TNL association. When this procedure is finished, the F1 interface is operational and other F1 messages may be exchanged.

If the F1 SETUP REQUEST message contains the *gNB-DU Name* IE, the gNB-CU may use this IE as a human readable name of the gNB-DU. If the F1 SETUP REQUEST message contains the *Extended gNB-DU Name* IE, the gNB-CU may use this IE as a human readable name of the gNB-DU and shall ignore the *gNB-DU Name* IE if included.

If the F1 SETUP RESPONSE message contains the *gNB-CU Name* IE, the gNB-DU may use this IE as a human readable name of the gNB-CU. If the F1 SETUP RESPONSE message contains the *Extended gNB-CU Name* IE, the gNB-DU may use this IE as a human readable name of the gNB-CU and shall ignore the *gNB-CU Name* IE if included.

If the F1 SETUP REQUEST message contains the *gNB-DU Served Cells List* IE, the gNB-CU shall take into account as specified in TS 38.401 [4].

For NG-RAN, the gNB-DU shall include the *gNB-DU System Information* IE and the *TAI Slice Support List* IE in the F1 SETUP REQUEST message.

The gNB-CU may include the *Cells to be Activated List* IE in the F1 SETUP RESPONSE message. The *Cells to be Activated List* IE includes a list of cells that the gNB-CU requests the gNB-DU to activate. The gNB-DU shall activate the cells included in the *Cells to be Activated List* IE and reconfigure the physical cell identity for cells for which the *NR PCI* IE is included.

If *Cells to be Activated List Item* IE is included in the F1 SETUP RESPONSE message, and the information for the cell indicated by the *NR CGI* IE includes the *IAB Info IAB-donor-CU* IE, the gNB-DU shall, if supported, apply the *IAB STC Info* IE therein to the indicated cell.

For NG-RAN, the gNB-CU shall include the *gNB-CU System Information* IE in the F1 SETUP RESPONSE message.

For NG-RAN, the gNB-DU may include the *RAN Area Code* IE in the F1 SETUP REQUEST message. The gNB-CU may use it according to TS 38.300 [6].

For NG-RAN, the gNB-DU may include *Supported MBS FSA ID List* IE in the *Served Cell Information* IE in the F1 SETUP REQUEST message. The gNB-CU may use it according to TS 38.300 [6].

For NG-RAN, the gNB-CU may include *Available PLMN List* IE, and optionally also *Extended Available PLMN List* IE in the F1 SETUP RESPONSE message, if the available PLMN(s) are different from what gNB-DU has provided in F1 SETUP REQUEST message, gNB-DU shall take this into account and only broadcast the PLMN(s) included in the received Available PLMN list(s).

For NG-RAN, the gNB-CU may include *Available SNPN ID List* IE in the F1 SETUP RESPONSE message. If the available SNPN(s) are different from what gNB-DU has provided in F1 SETUP REQUEST message, gNB-DU shall take this into account and only broadcast the SNPN(s) included in the received Available SNPN ID list.

The *Latest RRC Version Enhanced* IE shall be included in the F1 SETUP REQUEST message and in the F1 SETUP RESPONSE message.

If in F1 SETUP REQUEST message, the *Cell Direction* IE is present, the gNB-CU should use it to understand whether the cell is for UL or DL only. If in F1 SETUP REQUEST message, the *Cell Direction* IE is omitted in the *Served Cell Information* IE it shall be interpreted as that the Cell Direction is Bi-directional.

If the *Intended TDD DL-UL Configuration* IE is present in the F1 SETUP REQUEST message, the receiving gNB-CU shall use the received information for Cross Link Interference management and/or NR-DC power coordination. The gNB-CU may merge the Intended TDD DL-UL Configuration information received from two or more gNB-DUs. The gNB-CU shall consider the received *Intended TDD DL-UL Configuration* content valid until reception of an update of the IE for the same cell(s).

If the *Aggressor gNB Set ID* IE is included in the *Served Cell Information* IE in the F1 SETUP REQUEST message, the gNB-CU shall, if supported, take it into account.

If the *Victim gNB Set ID* IE is included in the *Served Cell Information* IE in the F1 SETUP REQUEST message, the gNB-CU shall, if supported, take it into account.

If the F1 SETUP REQUEST message contains the Transport Layer Address Info IE, the gNB-CU shall, if supported, take into account for IPsec tunnel establishment.

If the *SFN Offset* IE is contained in the *Served Cell Information* IE in the F1 SETUP REQUEST message, the gNB-CU shall, if supported, use this information to deduce the SFN0 offset of the reported cell.

If the F1 SETUP RESPONSE message contains the *Transport Layer Address Info* IE, the gNB-DU shall, if supported, take into account for IPsec tunnel establishment.

If the F1 SETUP RESPONSE message contains the *Uplink BH Non-UP Traffic Mapping* IE, the gNB-DU shall, if supported, consider the information therein for mapping of non-UP uplink traffic.

If the *BAP Address* IE is included in the F1 SETUP REQUEST, the receiving gNB-CU shall, if supported, consider the information therein for discovering the collocation of an IAB-DU and an IAB-MT.

If the F1 SETUP REQUEST message is received from an IAB-donor-DU, the gNB-CU shall, if supported, include the *BAP Address* IE in the F1 SETUP RESPONSE message.

NOTE: How to identify the IAB-donor-DU is up to gNB-CU implementation.

If the F1 SETUP RESPONSE message contains the *BAP Address* IE, the gNB-DU shall, if supported, store the received BAP address and use it as specified in TS 38.340 [30].

If the *NR Cell PRACH Configuration* IE is included in the *Served Cell Information* IE contained in the F1 SETUP REQUEST message, the gNB-CU may store the information, and forward it to other RAN nodes for RACH optimisation.

If the *RedCap Broadcast Information* IE is included in the *Served Cell Information* IE in the F1 SETUP REQUEST message, the gNB-CU may use this information to determine a suitable target in case of subsequent outgoing mobility involving RedCap UEs.

If the *TAI NSAG Support List* IE is included in the *Served Cell Information* IE in the F1 SETUP REQUEST message, the gNB-CU shall, if supported, use this information as specified in TS 23.501 [21].

8.2.3.3 Unsuccessful Operation

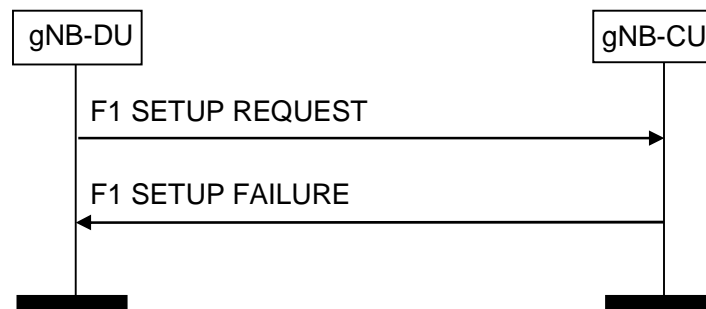


Figure 8.2.3.3-1: F1 Setup procedure: Unsuccessful Operation

If the gNB-CU cannot accept the setup, it should respond with a F1 SETUP FAILURE and appropriate cause value.

If the F1 SETUP FAILURE message includes the *Time To Wait* IE, the gNB-DU shall wait at least for the indicated time before reinitiating the F1 setup towards the same gNB-CU.

8.2.3.4 Abnormal Conditions

Not applicable.

8.2.4 gNB-DU Configuration Update

8.2.4.1 General

The purpose of the gNB-DU Configuration Update procedure is to update application level configuration data needed for the gNB-DU and the gNB-CU to interoperate correctly on the F1 interface. This procedure does not affect existing UE-related contexts, if any. The procedure uses non-UE associated signalling.

NOTE: Update of application level configuration data also applies between the gNB-DU and the gNB-CU in case the DU does not broadcast system information other than for radio frame timing and SFN, as specified in the TS 37.340 [7]. How to use this information when this option is used is not explicitly specified.

8.2.4.2 Successful Operation

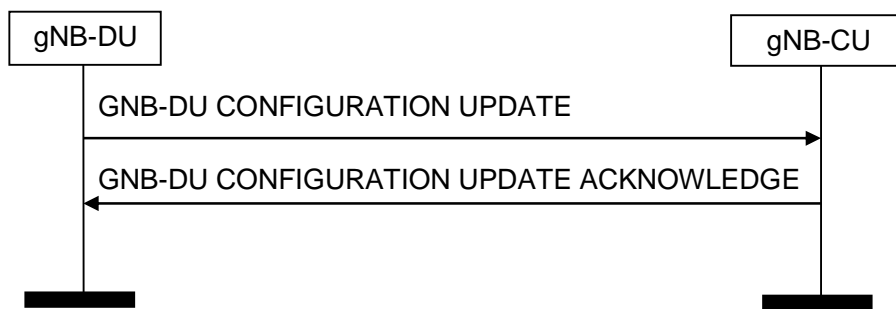


Figure 8.2.4.2-1: gNB-DU Configuration Update procedure: Successful Operation

The gNB-DU initiates the procedure by sending a GNB-DU CONFIGURATION UPDATE message to the gNB-CU including an appropriate set of updated configuration data that it has just taken into operational use. The gNB-CU responds with GNB-DU CONFIGURATION UPDATE ACKNOWLEDGE message to acknowledge that it successfully updated the configuration data. If an information element is not included in the GNB-DU CONFIGURATION UPDATE message, the gNB-CU shall interpret that the corresponding configuration data is not changed and shall continue to operate the F1-C interface with the existing related configuration data.

The updated configuration data shall be stored in both nodes and used as long as there is an operational TNL association or until any further update is performed.

If *gNB-DU ID IE* is contained in the GNB-DU CONFIGURATION UPDATE message for a newly established SCTP association, the gNB-CU will associate this association with the related gNB-DU.

If *Served Cells To Add Item IE* is contained in the GNB-DU CONFIGURATION UPDATE message, the gNB-CU shall add cell information according to the information in the *Served Cell Information IE*. For NG-RAN, the gNB-DU shall include the *gNB-DU System Information IE*.

If *Served Cells To Modify Item IE* is contained in the GNB-DU CONFIGURATION UPDATE message, the gNB-CU shall modify information of cell indicated by *Old NR CGI IE* according to the information in the *Served Cell Information IE* and overwrite the served cell information for the affected served cell. Further, if the *gNB-DU System Information IE* is present the gNB-CU shall store and replace any previous information received.

If *Served Cells To Delete Item IE* is contained in the GNB-DU CONFIGURATION UPDATE message, the gNB-CU shall delete information of cell indicated by *Old NR CGI IE*.

If *Cells Status Item IE* is contained in the GNB-DU CONFIGURATION UPDATE message, the gNB-CU shall update the information about the cells, as described in TS 38.401 [4]. If if the *Switching Off Ongoing IE* is present in the *Cells Status Item IE*, contained in the GNB-DU CONFIGURATION UPDATE message, and the corresponding *Service State IE* is set to "Out-of-Service", the gNB-CU shall ignore the *Switching Off Ongoing IE*.

If *Cells to be Activated List Item IE* is contained in the GNB-DU CONFIGURATION UPDATE ACKNOWLEDGE message, the gNB-DU shall activate the cell indicated by *NR CGI IE* and reconfigure the physical cell identity for cells for which the *NR PCI IE* is included.

If *Cells to be Activated List Item IE* is contained in the GNB-DU CONFIGURATION UPDATE ACKNOWLEDGE message and the indicated cells are already activated, the gNB-DU shall update the cell information received in *Cells to be Activated List Item IE*.

If *Cells to be Activated List Item IE* is included in the GNB-DU CONFIGURATION UPDATE ACKNOWLEDGE message, and the information for the cell indicated by the *NR CGI IE* includes the *IAB Info IAB-donor-CU IE*, the gNB-DU shall, if supported, apply the *IAB STC Info IE* therein to the indicated cell.

If *Cells to be Deactivated List Item IE* is contained in the GNB-DU CONFIGURATION UPDATE ACKNOWLEDGE message, the gNB-DU shall deactivate all the cells with NR CGI listed in the IE.

If *Dedicated SI Delivery Needed UE List IE* is contained in the GNB-DU CONFIGURATION UPDATE message, the gNB-CU should take it into account when informing the UE of the updated system information via the dedicated RRC message.

For NG-RAN, the gNB-CU shall include the *gNB-CU System Information* IE in the GNB-DU CONFIGURATION UPDATE ACKNOWLEDGE message. The *SIB type to Be Updated List* IE shall contain the full list of SIBs to be broadcast.

For NG-RAN, the gNB-DU may include the *RAN Area Code* IE in the GNB-DU CONFIGURATION UPDATE message. The gNB-CU shall store and replace any previously provided *RAN Area Code* IE by the received *RAN Area Code* IE.

For NG-RAN, the gNB-DU may include the *Supported MBS FSA ID List* IE in the *Served Cell Information* IE in the GNB-DU CONFIGURATION UPDATE message. The gNB-CU shall store and replace any previously provided *MBS FSA ID list* IE by the received *MBS FSA ID list* IE.

If *Available PLMN List* IE, and optionally also *Extended Available PLMN List* IE, is contained in GNB-DU CONFIGURATION UPDATE ACKNOWLEDGE message, the gNB-DU shall overwrite the whole available PLMN list and update the corresponding system information.

If *Available SNPN ID List* IE is contained in GNB-DU CONFIGURATION UPDATE ACKNOWLEDGE message, the gNB-DU shall overwrite the whole available SNPN ID list and update the corresponding system information.

If in GNB-DU CONFIGURATION UPDATE message, the *Cell Direction* IE is present, the gNB-CU should use it to understand whether the cell is for UL or DL only. If in GNB-DU CONFIGURATION UPDATE message, the *Cell Direction* IE is omitted in the *Served Cell Information* IE it shall be interpreted as that the Cell Direction is Bi-directional.

If the GNB-DU CONFIGURATION UPDATE message includes *gNB-DU TNL Association To Remove List* IE, and the *Endpoint IP address* IE and the *Port Number* IE for both TNL endpoints of the TNL association(s) are included in the *gNB-DU TNL Association To Remove List* IE, the gNB-CU shall, if supported, consider that the TNL association(s) indicated by both received TNL endpoints will be removed by the gNB-DU. If the *Endpoint IP address* IE, or the *Endpoint IP address* IE and the *Port Number* IE for one or both of the TNL endpoints is included in the *gNB-DU TNL Association To Remove List* IE in GNB-DU CONFIGURATION UPDATE message, the gNB-CU shall, if supported, consider that the TNL association(s) indicated by the received endpoint IP address(es) will be removed by the gNB-DU.

If the *Intended TDD DL-UL Configuration* IE is present in the GNB-DU CONFIGURATION UPDATE message, the receiving gNB-CU shall use the received information for Cross Link Interference management and/or NR-DC power coordination. The gNB-CU may merge the *Intended TDD DL-UL Configuration* information received from two or more gNB-DUs. The gNB-CU shall consider the received *Intended TDD DL-UL Configuration* IE content valid until reception of an update of the IE for the same cell(s).

If the *Aggressor gNB Set ID* IE is included in the *Served Cell Information* IE in the GNB-DU CONFIGURATION UPDATE message, the gNB-CU shall, if supported, take it into account.

If the *Victim gNB Set ID* IE is included in the *Served Cell Information* IE in the GNB-DU CONFIGURATION UPDATE message, the gNB-CU shall, if supported, take it into account.

If the GNB-DU CONFIGURATION UPDATE message includes *Transport Layer Address Info* IE, the gNB-CU shall, if supported, take into account for IPsec tunnel establishment.

If the GNB-DU CONFIGURATION UPDATE ACKNOWLEDGE message includes *Transport Layer Address Info* IE, the gNB-DU shall, if supported, take into account for IPsec tunnel establishment.

If the GNB-DU CONFIGURATION UPDATE ACKNOWLEDGE message contains the *Uplink BH Non-UP Traffic Mapping* IE, the gNB-DU shall, if supported, consider the information therein for mapping of non-UP uplink traffic.

If the *SFN Offset* IE is contained in the *Served Cell Information* IE in GNB-DU CONFIGURATION UPDATE message, the gNB-CU shall, if supported, use this information to deduce the SFN0 offset of the reported cell.

If the *NR Cell PRACH Configuration* IE is included in the *Served Cell Information* IE contained in the GNB-DU CONFIGURATION UPDATE message, the gNB-CU may store the information, and forward it to other RAN nodes for RACH optimisation.

If the GNB-DU CONFIGURATION UPDATE ACKNOWLEDGE message contains the *BAP Address* IE, the gNB-DU shall, if supported, store the received BAP address and use it as specified in TS 38.340 [30].

If the *Coverage Modification Notification* IE is contained in the GNB-DU CONFIGURATION UPDATE message, the gNB-CU shall, if supported, take it into account for Coverage and Capacity Optimization.

If the *Cells for SON* IE is present in the GNB-DU CONFIGURATION UPDATE ACKNOWLEDGE message, the gNB-DU may store or update this information and behaves as follows:

- For each served cell indicated by the *NR CGI* IE included within the *Cells for SON Item* IE, the gNB-DU may adjust the PRACH configuration of this served cell.
- If the *Neighbour NR Cells for SON List* IE is present in the *Cells for SON Item* IE, the gNB-DU may take the PRACH configuration of neighbour cells included in the *Neighbour NR Cells for SON List* IE into consideration when adjusting the PRACH configuration of the served cell.

If the *RedCap Broadcast Information* IE is contained in the *Served Cell Information* IE in the GNB-DU CONFIGURATION UPDATE message, the gNB-CU may use this information to determine a suitable target in case of subsequent outgoing mobility involving RedCap UEs.

If the *TAI NSAG Support List* IE is included in the *Served Cell Information* IE in the GNB-DU CONFIGURATION UPDATE message, the gNB-CU shall, if supported, use this information as specified in TS 23.501 [21].

If the *gNB-DU Name* IE is included in the GNB-DU CONFIGURATION UPDATE message, the gNB-CU may store it or update this IE value if already stored, and use it as a human readable name of the gNB-DU. If the *Extended gNB-DU Name* IE is included in the GNB-DU CONFIGURATION UPDATE message, the gNB-CU may store it or update this IE value if already stored, and use it as a human readable name of the gNB-DU and shall ignore the *gNB-DU Name* IE if also included.

8.2.4.3 Unsuccessful Operation

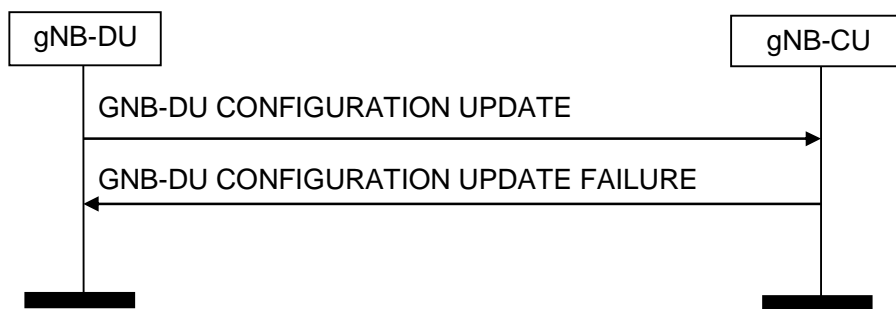


Figure 8.2.4.3-1: gNB-DU Configuration Update procedure: Unsuccessful Operation

If the gNB-CU cannot accept the update, it shall respond with a GNB-DU CONFIGURATION UPDATE FAILURE message and appropriate cause value.

If the GNB-DU CONFIGURATION UPDATE FAILURE message includes the *Time To Wait* IE, the gNB-DU shall wait at least for the indicated time before reinitiating the GNB-DU CONFIGURATION UPDATE message towards the same gNB-CU.

8.2.4.4 Abnormal Conditions

Not applicable.

8.2.5 gNB-CU Configuration Update

8.2.5.1 General

The purpose of the gNB-CU Configuration Update procedure is to update application level configuration data needed for the gNB-DU and gNB-CU to interoperate correctly on the F1 interface. This procedure does not affect existing UE-related contexts, if any. The procedure uses non-UE associated signalling.

8.2.5.2 Successful Operation

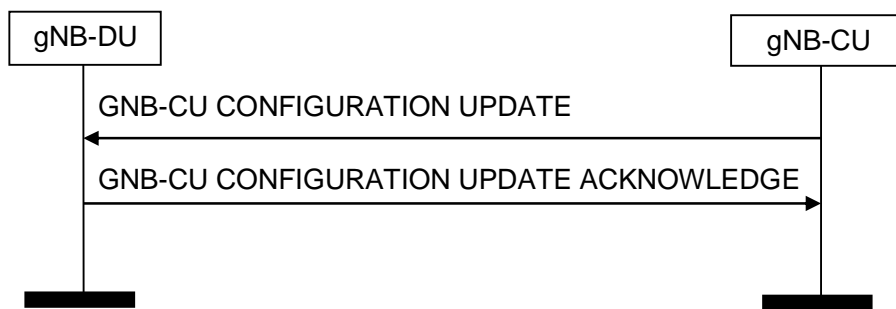


Figure 8.2.5.2-1: gNB-CU Configuration Update procedure: Successful Operation

The gNB-CU initiates the procedure by sending a GNB-CU CONFIGURATION UPDATE message including the appropriate updated configuration data to the gNB-DU. The gNB-DU responds with a GNB-CU CONFIGURATION UPDATE ACKNOWLEDGE message to acknowledge that it successfully updated the configuration data. If an information element is not included in the GNB-CU CONFIGURATION UPDATE message, the gNB-DU shall interpret that the corresponding configuration data is not changed and shall continue to operate the F1-C interface with the existing related configuration data.

The updated configuration data shall be stored in the respective node and used as long as there is an operational TNL association or until any further update is performed.

If *Cells to be Activated List Item* IE is contained in the GNB-CU CONFIGURATION UPDATE message, the gNB-DU shall activate the cell indicated by *NR CGI* IE and reconfigure the physical cell identity for which the *NR PCI* IE is included.

If *Cells to be Deactivated List Item* IE is contained in the GNB-CU CONFIGURATION UPDATE message, the gNB-DU shall deactivate the cell indicated by *NR CGI* IE.

If *Cells to be Activated List Item* IE is contained in the GNB-CU CONFIGURATION UPDATE message and the indicated cells are already activated, the gNB-DU shall update the cell information received in *Cells to be Activated List Item* IE.

If *Cells to be Activated List Item* IE is included in the GNB-CU CONFIGURATION UPDATE message, and the information for the cell indicated by the *NR CGI* IE includes the *IAB Info IAB-donor-CU* IE, the gNB-DU shall, if supported, apply the *IAB STC Info* IE therein to the indicated cell.

If the *gNB-CU System Information* IE is contained in the gNB-CU CONFIGURATION UPDATE message, the gNB-DU shall include the *Dedicated SI Delivery Needed UE List* IE in the GNB-CU CONFIGURATION UPDATE ACKNOWLEDGE message for UEs that are unable to receive system information from broadcast.

If *Dedicated SI Delivery Needed UE List* IE is contained in the GNB-CU CONFIGURATION UPDATE ACKNOWLEDGE message, the gNB-CU should take it into account when informing the UE of the updated system information via the dedicated RRC message.

If the *gNB-CU TNL Association To Add List* IE is contained in the gNB-CU CONFIGURATION UPDATE message, the gNB-DU shall, if supported, use it to establish the TNL association(s) with the gNB-CU. The gNB-DU shall report to the gNB-CU, in the gNB-CU CONFIGURATION UPDATE ACKNOWLEDGE message, the successful establishment of the TNL association(s) with the gNB-CU as follows:

- A list of TNL address(es) with which the gNB-DU successfully established the TNL association shall be included in the *gNB-CU TNL Association Setup List* IE;
- A list of TNL address(es) with which the gNB-DU failed to establish the TNL association shall be included in the *gNB-CU TNL Association Failed To Setup List* IE.

If the GNB-CU CONFIGURATION UPDATE message includes *gNB-CU TNL Association To Remove List* IE, and the *Endpoint IP address* IE and the *Port Number* IE for both TNL endpoints of the TNL association(s) are included in the *gNB-CU TNL Association To Remove List* IE, the gNB-DU shall, if supported, initiate removal of the TNL association(s) indicated by both received TNL endpoints towards the gNB-CU. If the *Endpoint IP address* IE, or the *Endpoint IP address* IE and the *Port Number* IE for one or both of the TNL endpoints is included in the *gNB-CU TNL*

Association To Remove List IE, the gNB-DU shall, if supported, initiate removal of the TNL association(s) indicated by the received endpoint IP address(es).

If the *gNB-CU TNL Association To Update List* IE is contained in the gNB-CU CONFIGURATION UPDATE message the gNB-DU shall, if supported, overwrite the previously stored information for the related TNL Association(s).

If in the gNB-CU CONFIGURATION UPDATE message the *TNL Association usage* IE is included in the *gNB-CU TNL Association To Add List* IE or the *gNB-CU TNL Association To Update List* IE, the gNB-DU node shall, if supported, use it as described in TS 38.472 [22].

For NG-RAN, the gNB-CU shall include the *gNB-CU System Information* IE in the GNB-CU CONFIGURATION UPDATE message. The *SIB type to Be Updated List* IE shall contain the full list of SIBs to be broadcast.

If *Protected E-UTRA Resources List* IE is contained in the GNB-CU CONFIGURATION UPDATE message, the gNB-DU shall protect the corresponding resource of the cells indicated by *E-UTRA Cells List* IE for spectrum sharing between E-UTRA and NR.

If the GNB-CU CONFIGURATION UPDATE message contains the *Protected E-UTRA Resource Indication* IE, the receiving gNB-DU should forward it to lower layers and use it for cell-level resource coordination. The gNB-DU shall consider the received *Protected E-UTRA Resource Indication* IE when expressing its desired resource allocation during gNB-DU Resource Coordination procedure. The gNB-DU shall consider the received *Protected E-UTRA Resource Indication* IE content valid until reception of a new update of the IE for the same gNB-DU.

If *Available PLMN List* IE, and optionally also *Extended Available PLMN List* IE, is contained in GNB-CU CONFIGURATION UPDATE message, the gNB-DU shall overwrite the whole available PLMN list and update the corresponding system information.

If *Available SNPN ID List* IE is contained in GNB-CU CONFIGURATION UPDATE message, the gNB-DU shall overwrite the whole available SNPN ID list and update the corresponding system information.

If *Cells Failed to be Activated Item* IE is contained in the GNB-CU CONFIGURATION UPDATE ACKNOWLEDGE message, the gNB-CU shall consider that the indicated cells are out-of-service as defined in TS 38.401 [4].

If the *Neighbour Cell Information List* IE is present in the GNB-CU CONFIGURATION UPDATE message, the receiving gNB-DU shall use the received information for Cross Link Interference management and/or NR-DC power coordination. The gNB-DU shall consider the received *Neighbour Cell Information List* IE content valid until reception of an update of the IE for the same cell(s). If the *Intended TDD DL-UL Configuration NR* IE is absent from the *Neighbour Cell Information List* IE, whereas the corresponding *NR CGI* IE is present, the receiving gNB-DU shall remove the previously stored *Neighbour Cell Information* IE corresponding to the NR CGI.

If the GNB-CU CONFIGURATION UPDATE message includes *Transport Layer Address Info* IE, the gNB-DU shall, if supported, take into account for IPsec tunnel establishment.

If the GNB-CU CONFIGURATION UPDATE ACKNOWLEDGE message includes *Transport Layer Address Info* IE, the gNB-CU shall, if supported, take into account for IPsec tunnel establishment.

If the GNB-CU CONFIGURATION UPDATE message contains the *Uplink BH Non-UP Traffic Mapping* IE, the gNB-DU shall, if supported, consider the information therein for mapping of non-UP uplink traffic.

If the *IAB Barred* IE is included in the GNB-CU CONFIGURATION UPDATE message, the gNB-DU shall, if supported, consider it as an indication of whether the cell allows IAB-node access or not.

If the *BAP Address* IE is included in the GNB-CU CONFIGURATION UPDATE message, the gNB-DU shall, if supported, store the received BAP address and use it as specified in TS 38.340 [30].

If the *CCO Assistance Information* IE is contained in the GNB-CU CONFIGURATION UPDATE message, and the *NR CGI* IE contained in the *Affected Cells and Beams* IE is served by the gNB-DU, the gNB-DU may use it to determine a new cell and/or beam configuration.

If the *CCO Assistance Information* IE is contained in the GNB-CU CONFIGURATION UPDATE message and the *NR CGI* IE contained in the *Affected Cells and Beams* IE is not served by the gNB-DU, the gNB-DU may use it to adjust coverage of its cells.

If the *Cells for SON* IE is present in the GNB-CU CONFIGURATION UPDATE message, the gNB-DU may store or update this information and it behaves as follows:

- For each served cell indicated by the *NR CGI* IE included within the *Cells for SON Item* IE, the gNB-DU may adjust the PRACH configuration of this served cell.
- If the *Neighbour NR Cells for SON List* IE is present in the *Cells for SON Item* IE, the gNB-DU may take the PRACH configuration of neighbour cells included in the *Neighbour NR Cells for SON List* IE into consideration when adjusting the PRACH configuration of the served cell.

If the *gNB-CU Name* IE is included in the GNB-CU CONFIGURATION UPDATE message, the gNB-DU may store it or update this IE value if already stored, and use it as a human readable name of the gNB-CU. If the *Extended gNB-CU Name* IE is included in the GNB-CU CONFIGURATION UPDATE message, the gNB-DU may store it or update this IE value if already stored, and use it as a human readable name of the gNB-CU and shall ignore the *gNB-CU Name* IE if also included.

8.2.5.3 Unsuccessful Operation

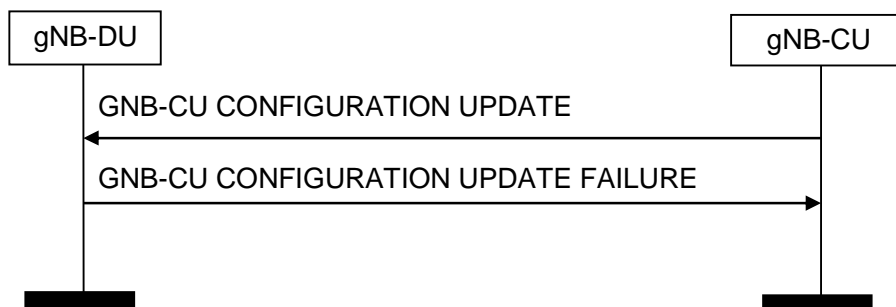


Figure 8.2.5.3-1: gNB-CU Configuration Update: Unsuccessful Operation

If the gNB-DU cannot accept the update, it shall respond with a GNB-CU CONFIGURATION UPDATE FAILURE message and appropriate cause value.

If the GNB-CU CONFIGURATION UPDATE FAILURE message includes the *Time To Wait* IE, the gNB-CU shall wait at least for the indicated time before reinitiating the GNB-CU CONFIGURATION UPDATE message towards the same gNB-DU.

8.2.5.4 Abnormal Conditions

Not applicable.

8.2.6 gNB-DU Resource Coordination

8.2.6.1 General

The purpose of the gNB-DU Resource Coordination procedure is to enable coordination of radio resource allocation between a gNB-CU and a gNB-DU for the purpose of spectrum sharing between E-UTRA and NR. This procedure is to be used only for the purpose of spectrum sharing between E-UTRA and NR.

The procedure uses non-UE-associated signalling.

8.2.6.2 Successful Operation

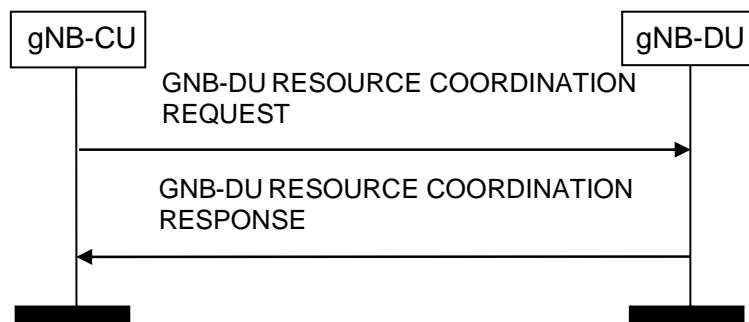


Figure 8.2.6.2-1: gNB-DU Resource Coordination, successful operation

A gNB-CU initiates the procedure by sending the GNB-DU RESOURCE COORDINATION REQUEST message to a gNB-DU over the F1 interface.

The gNB-DU extracts the *E-UTRA – NR Cell Resource Coordination Request Container* IE and it replies by sending the GNB-DU RESOURCE COORDINATION RESPONSE message.

In case of NR-initiated gNB-DU Resource Coordination procedure, the *Ignore Coordination Request Container* IE shall be present and set to "yes" and the *E-UTRA – NR Cell Resource Coordination Request Container* IE in the GNB-DU RESOURCE COORDINATION REQUEST message shall be ignored.

8.2.7 gNB-DU Status Indication

8.2.7.1 General

The purpose of the gNB-DU Status Indication procedure is informing the gNB-CU that the gNB-DU is overloaded so that overload reduction actions can be applied. This procedure is also used to inform the IAB-donor-CU about a downlink congestion at an IAB-DU or an IAB-donor-DU. The procedure uses non-UE associated signalling.

8.2.7.2 Successful Operation

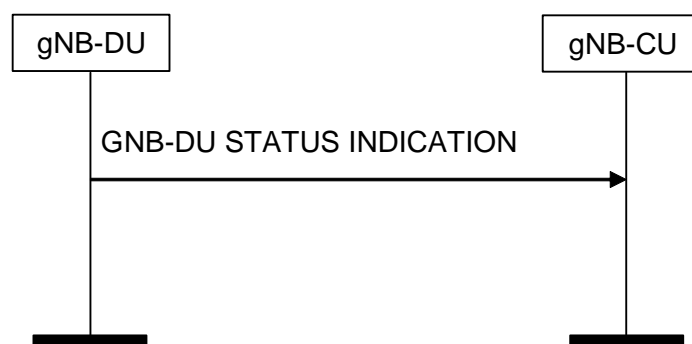


Figure 8.2.7.2-1: gNB-DU Status Indication procedure

If the *gNB-DU Overload Information* IE in the GNB-DU STATUS INDICATION message indicates that the gNB-DU is overloaded, the gNB-CU shall apply overload reduction actions until informed, with a new GNB-DU STATUS INDICATION message, that the overload situation has ceased.

The detailed overload reduction policy is up to gNB-CU implementation.

If the gNB-DU is an IAB-DU or an IAB-donor-DU, and if the *IAB Congestion Indication* IE is present in the GNB-DU STATUS INDICATION message and only includes the *Child Node Identifier* IE, the gNB-CU shall, if supported, consider that the backhaul link between the gNB-DU and the node identified by the *Child Node Identifier* IE is congested. If the *IAB Congestion Indication* IE is present in the GNB-DU STATUS INDICATION message and includes both the *Child Node Identifier* IE and the *BH RLC CH ID* IE, the gNB-CU shall, if supported, consider that

congestion occurs on the corresponding BH RLC channel(s) over the link towards the node identified by the *Child Node Identifier* IE.

8.2.7.3 Abnormal Conditions

Void.

8.2.8 F1 Removal

8.2.8.1 General

The purpose of the F1 Removal procedure is to remove the interface instance and all related resources between the gNB-DU and the gNB-CU in a controlled manner. If successful, this procedure erases any existing application level configuration data in the two nodes.

NOTE: In case the signalling transport is shared among several F1-C interface instances, and the TNL association is still used by one or several F1-C interface instances, the initiating node should not initiate the removal of the TNL association.

The procedure uses non-UE-associated signaling.

8.2.8.2 Successful Operation

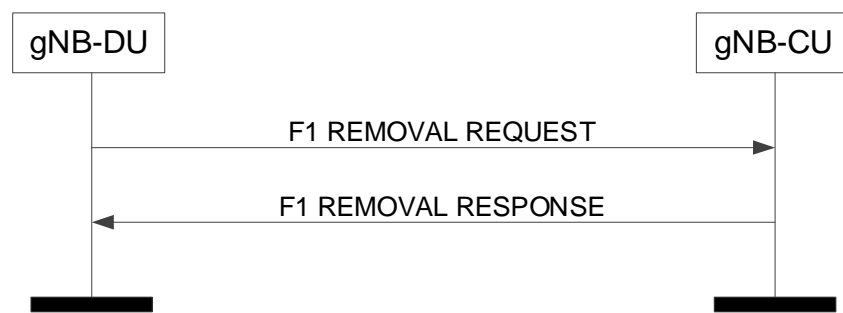


Figure 8.2.8-1: F1 Removal, gNB-DU initiated, successful operation

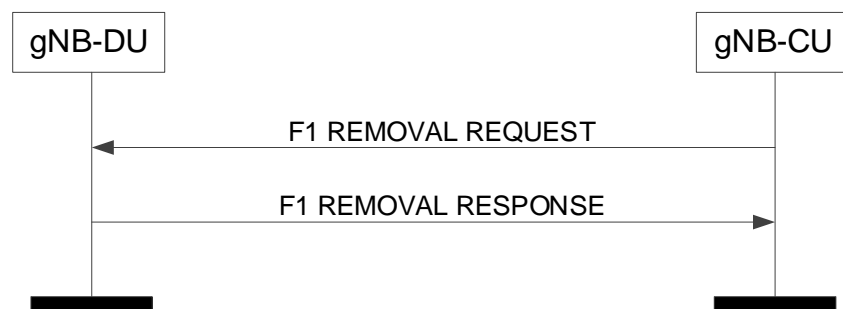


Figure 8.2.8-2: F1 Removal, gNB-CU initiated, successful operation

Successful F1 Removal, gNB-DU initiated

The gNB-DU initiates the procedure by sending the F1 REMOVAL REQUEST message to the gNB-CU. Upon reception of the F1 REMOVAL REQUEST message the gNB-CU shall reply with the F1 REMOVAL RESPONSE message. After receiving the F1 REMOVAL RESPONSE message, the gNB-DU may initiate removal of the TNL association towards the gNB-CU, if applicable, and may remove all resources associated with that interface instance. The gNB-CU may then remove all resources associated with that interface instance.

Successful F1 Removal, gNB-CU initiated

The gNB-CU initiates the procedure by sending the F1 REMOVAL REQUEST message to the gNB-DU. Upon reception of the F1 REMOVAL REQUEST message the gNB-DU shall reply with the F1 REMOVAL RESPONSE

message. After receiving the F1 REMOVAL RESPONSE message, the gNB-CU may initiate removal of the TNL association towards the gNB-DU, if applicable, and may remove all resources associated with that interface instance. The gNB-DU may then remove all resources associated with that interface instance.

8.2.8.3 Unsuccessful Operation

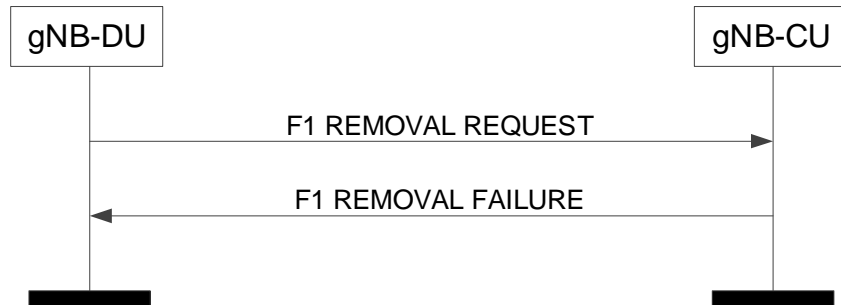


Figure 8.2.8.3-1: F1 Removal, gNB-DU initiated, unsuccessful operation

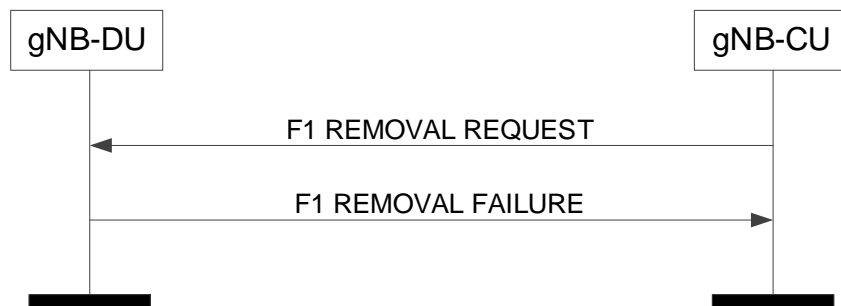


Figure 8.2.8.3-2: F1 Removal, gNB-CU initiated, unsuccessful operation

Unsuccessful F1 Removal, gNB-DU initiated

If the gNB-CU cannot accept to remove the interface instance with the gNB-DU it shall respond with an F1 REMOVAL FAILURE message with an appropriate cause value.

Unsuccessful F1 Removal, gNB-CU initiated

If the gNB-DU cannot accept to remove the interface instance with the gNB-CU it shall respond with an F1 REMOVAL FAILURE message with an appropriate cause value.

8.2.8.4 Abnormal Conditions

Not applicable.

8.2.9 Network Access Rate Reduction

8.2.9.1 General

The purpose of the Network Access Rate Reduction procedure is to indicate to the gNB-DU that the rate at which UEs are accessing the network need to be reduced from its current level.

The procedure uses non-UE associated signalling.

8.2.9.2 Successful operation

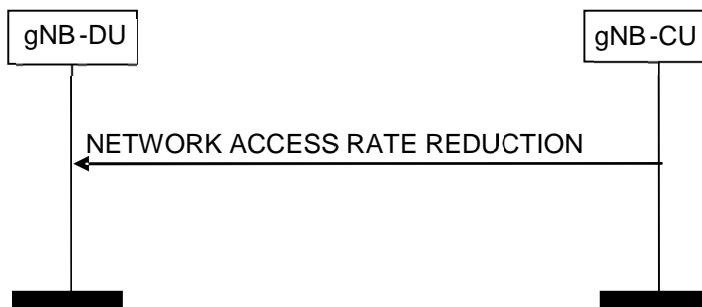


Figure 8.2.9.2-1: Network Access Rate Reduction, Successful operation

The gNB-CU initiates the procedure by sending a NETWORK ACCESS RATE REDUCTION message to the gNB-DU. When receiving the NETWORK ACCESS RATE REDUCTION message the gNB-DU should take into account the information contained in the *UAC assistance information* to set the parameters for Unified Access Barring.

If the *NID* IE is contained in the NETWORK ACCESS RATE REDUCTION message, the gNB-DU should take it into account and combine the *NID* IE with the *PLMN Identity* IE to identify the SNPN.

8.2.9.3 Abnormal Conditions

Not applicable

8.2.10 Resource Status Reporting Initiation

8.2.10.1 General

This procedure is used by an gNB-CU to request the reporting of load measurements to gNB-DU.

The procedure uses non UE-associated signalling.

8.2.10.2 Successful Operation

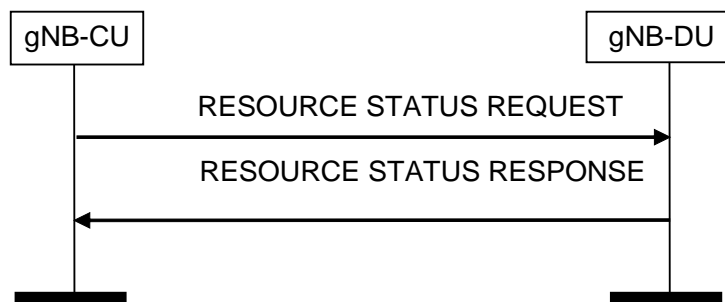


Figure 8.2.10.2-1: Resource Status Reporting Initiation, successful operation

gNB-CU initiates the procedure by sending the RESOURCE STATUS REQUEST message to gNB-DU to start a measurement, stop a measurement, or add cells to report for a measurement. Upon receipt, gNB-DU:

- shall initiate the requested measurement according to the parameters given in the request in case the *Registration Request* IE set to "start"; or
- shall stop all cells measurements and terminate the reporting in case the *Registration Request* IE is set to "stop"; or

- shall add cells indicated in the *Cell To Report List* IE to the measurements initiated before for the given measurement IDs, in case the *Registration Request* IE is set to "add". If measurements are already initiated for a cell indicated in the *Cell To Report List* IE, this information shall be ignored.

If the *Registration Request* IE is set to "start" in the RESOURCE STATUS REQUEST message and the *Report Characteristics* IE indicates cell specific measurements, the *Cell To Report List* IE shall be included.

If *Registration Request* IE is set to "add" in the RESOURCE STATUS REQUEST message, the *Cell To Report List* IE shall be included.

If gNB-DU is capable to provide all requested resource status information, it shall initiate the measurement as requested by gNB-CU, and respond with the RESOURCE STATUS RESPONSE message.

Interaction with other procedures

When starting a measurement, the *Report Characteristics* IE in the RESOURCE STATUS REQUEST indicates the type of objects gNB-DU shall perform measurements on. For each cell, gNB-DU shall include in the RESOURCE STATUS UPDATE message:

- the *Radio Resource Status* IE, if the first bit, "PRB Periodic" of the *Report Characteristics* IE included in the RESOURCE STATUS REQUEST message is set to 1. If the cell for which *Radio Resource Status* IE is requested to be reported supports more than one SSB, the *Radio Resource Status* IE for such cell shall include the *SSB Area Radio Resource Status Item* IE for all SSB areas supported by the cell. If the *SSB To Report List* IE is included for a cell, the *Radio Resource* IE for such cell shall only include the *SSB Area Radio Resource Status List* IE; If the cell for which *Radio Resource Status* IE is requested to be reported supports more than one slice, and if the *Slice To Report List* IE is included for a cell, the *Radio Resource Status* IE for such cell shall, if supported, include the requested *Slice Radio Resource Status Item* IE if the cell for which *Radio Resource Status* IE is requested to be reported supports MIMO the *Radio Resource Status* IE for such cell shall include the *MIMO PRB usage Information* IE;
- the *TNL Capacity Indicator* IE, if the second bit, "TNL Capacity Ind Periodic" of the *Report Characteristics* IE included in the RESOURCE STATUS REQUEST message is set to 1;
- the *Composite Available Capacity Group* IE, if the third bit, "Composite Available Capacity Periodic" of the *Report Characteristics* IE included in the RESOURCE STATUS REQUEST message is set to 1. If *Cell Capacity Class Value* IE is included within the *Composite Available Capacity Group* IE, this IE is used to assign weights to the available capacity indicated in the *Capacity Value* IE. If the cell for which *Composite Available Capacity Group* IE is requested to be reported supports more than one SSB the *Composite Available Capacity Group* IE for such cell shall include the *SSB Area Capacity Value List* IE for all SSB areas supported by the cell, providing the SSB area capacity with respect to the *Cell Capacity Class Value* IE. If the *SSB To Report List* IE is included for a cell, the *Composite Available Capacity Group* IE for such cell shall include the requested *SSB Area Capacity Value List* IE providing the SSB area capacity with respect to the Cell Capacity Class Value. If the cell for which *Composite Available Capacity Group* IE is requested to be reported supports more than one slice, and if the *Slice To Report List* IE is included for a cell, the *Slice Available Capacity* IE for such cell shall include the requested *Slice Available Capacity Value Downlink* IE and *Slice Available Capacity Value Uplink* IE, providing the slice capacity with respect to the Cell Capacity Class Value.
- the *Hardware Load Indicator* IE, if the fourth bit, " HW LoadInd Periodic " of the *Report Characteristics* IE included in the RESOURCE STATUS REQUEST message is set to 1;
- the *Number of Active UEs* IE, if the fifth bit, "Number of Active UEs Periodic" of the *Report Characteristics* IE included in the RESOURCE STATUS REQUEST message is set to 1;
- the *NR-U Channel List* IE, if the sixth bit, " NR-U Channel List Periodic" of the *Report Characteristics* IE included in the RESOURCE STATUS REQUEST message is set to "1".

If the Reporting Periodicity IE in the RESOURCE STATUS REQUEST is present, this indicates the periodicity for the reporting of periodic measurements. The gNB-DU shall report once, unless otherwise requested within the *Reporting Periodicity* IE.

8.2.10.3 Unsuccessful Operation

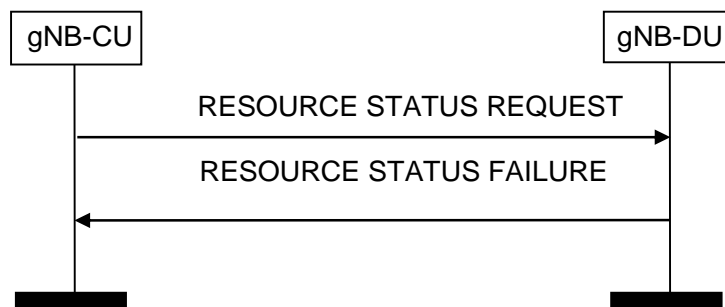


Figure 8.2.10.3-1: Resource Status Reporting Initiation, unsuccessful operation

If any of the requested measurements cannot be initiated, gNB-DU shall send the RESOURCE STATUS FAILURE message with an appropriate cause value.

8.2.10.4 Abnormal Conditions

If the initiating gNB-CU does not receive either RESOURCE STATUS RESPONSE message or RESOURCE STATUS FAILURE message, the gNB-CU may reinitiate the Resource Status Reporting Initiation procedure towards the same gNB-DU, provided that the content of the new RESOURCE STATUS REQUEST message is identical to the content of the previously unacknowledged RESOURCE STATUS REQUEST message with the same Transaction ID.

If the *Report Characteristics* IE bitmap is set to "0" (all bits are set to "0") in the RESOURCE STATUS REQUEST message then gNB-DU shall initiate a RESOURCE STATUS FAILURE message with an appropriate cause value.

If the gNB-DU receives a RESOURCE STATUS REQUEST message which includes the *Registration Request* IE set to "start" and the *gNB-CU Measurement ID* IE corresponding to an existing on-going load measurement reporting, for which a different Transaction ID is used, then gNB-DU shall initiate a RESOURCE STATUS FAILURE message with an appropriate cause value.

8.2.11 Resource Status Reporting

8.2.11.1 General

This procedure is initiated by gNB-DU to report the result of measurements admitted by gNB-DU following a successful Resource Status Reporting Initiation procedure.

The procedure uses non UE-associated signalling.

8.2.11.2 Successful Operation



Figure 8.2.11.2-1: Resource Status Reporting, successful operation

The gNB-DU shall report the results of the admitted measurements in RESOURCE STATUS UPDATE message. The admitted measurements are the measurements that were successfully initiated during the preceding Resource Status Reporting Initiation procedure.

If some results of the admitted measurements in RESOURCE STATUS UPDATE message are missing, the gNB-CU shall consider that these results were not available at the gNB-DU.

8.2.11.3 Unsuccessful Operation

Not applicable.

8.2.11.4 Abnormal Conditions

Void.

8.3 UE Context Management procedures

8.3.1 UE Context Setup

8.3.1.1 General

The purpose of the UE Context Setup procedure is to establish the UE Context including, among others, SRB, DRB, BH RLC channel, Uu Relay RLC channel, PC5 Relay RLC channel, and SL DRB configuration. The procedure uses UE-associated signalling.

8.3.1.2 Successful Operation

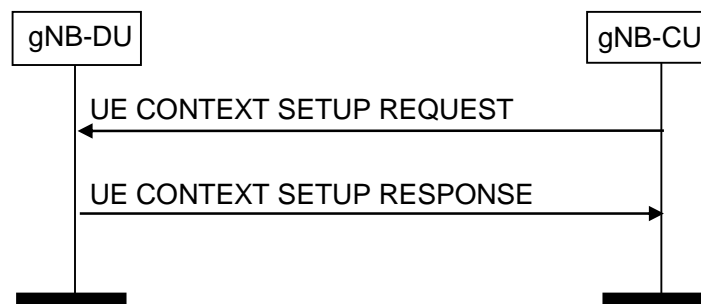


Figure 8.3.1.2-1: UE Context Setup Request procedure: Successful Operation

The gNB-CU initiates the procedure by sending UE CONTEXT SETUP REQUEST message to the gNB-DU. If the gNB-DU succeeds to establish the UE context, it replies to the gNB-CU with UE CONTEXT SETUP RESPONSE. If no UE-associated logical F1-connection exists, the UE-associated logical F1-connection shall be established as part of the procedure. Except for RACH based SDT, the gNB-CU shall perform RRC Reconfiguration or RRC connection resume to send UE to the RRC_CONNECTED state as described in TS 38.331 [8], and in this case, the *CellGroupConfig* IE shall transparently be signaled to the UE as specified in TS 38.331 [8]. In the case of RACH based SDT procedure, the *CellGroupConfig* IE shall be ignored by the gNB-CU.

If the *UE-CapabilityRAT-ContainerList* IE is included in the UE CONTEXT SETUP REQUEST, the gNB-DU shall take this information into account for UE specific configurations.

If the *servingCellMO* IE is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall configure *servingCellMO* for the indicated SpCell accordingly.

If the *servingCellMO List* IE is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, select *servingCellMO* after determining the list of BWPs for the UE and include the list of *servingCellMOs* that have been encoded in *CellGroupConfig* IE as *ServingCellMO-encoded-in-CGC List* IE in the UE CONTEXT SETUP RESPONSE message.

If the *SpCell UL Configured* IE is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall configure UL for the indicated SpCell accordingly.

If the *SCell To Be Setup List* IE is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall consider it as a list of candidate SCells to be set up. If the *SCell UL Configured* IE is included in the UE CONTEXT

SETUP REQUEST message, the gNB-DU shall configure UL for the indicated SCell accordingly. If the *servingCellMO* IE is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall configure *servingCellMO* for the indicated SCell accordingly.

If the *DRX Cycle* IE is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall use the provided value from the gNB-CU.

If the *UL Configuration* IE in *DRB to Be Setup Item* IE is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall take it into account for UL scheduling.

If the *SRB To Be Setup List* IE is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall act as specified in TS 38.401 [4]. If *Duplication Indication* IE is contained in the *SRB To Be Setup List* IE, the gNB-DU shall, if supported, setup two RLC entities for the indicated SRB. If the *Additional Duplication Indication* IE is contained in the *SRB To Be Setup List* IE, the gNB-DU shall, if supported, setup the indicated RLC entities for the indicated SRB. If the *SDT RLC Bearer Configuration* IE is contained in the *SRB To Be Setup List* IE, the gNB-DU shall, if supported, use it for packet transmission belonging to the SDT SRB indicated by the *SRB ID* IE. If the *SRB Mapping Info* IE is contained in the *SRB To Be Setup List* IE, the gNB-DU shall, if supported, store the mapping information indicated in the *SRB Mapping Info* IE for the SRB identified by the *SRB ID* IE and the Uu Relay RLC channel identified by the *SRB Mapping Info* IE. The gNB-DU shall use the mapping information stored for the mapping of SRB data to Uu Relay RLC channel.

If the *DRB To Be Setup List* IE is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall act as specified in TS 38.401 [4]. If the *QoS Flow Mapping Indication* IE is included in the *DRB To Be Setup List* IE for a QoS flow, the gNB-DU may take it into account that only the uplink or downlink QoS flow is mapped to the indicated DRB. If the *SDT RLC Bearer Configuration* IE is contained in the *DRB To Be Setup List* IE, the gNB-DU shall, if supported, use it for packet transmission belonging to the SDT DRB indicated by the *DRB ID* IE. If the *DRB Mapping Info* IE is contained in the *DRB To Be Setup List* IE, the gNB-DU shall, if supported, store the mapping information indicated in the *DRB Mapping Info* IE for the DRB identified by the *DRB ID* IE and the Uu Relay RLC channel identified by the *DRB Mapping Info* IE. The gNB-DU shall use the mapping information stored for the mapping of DRB data to Uu Relay RLC channel.

For each GBR DRB, if the *Alternative QoS Parameters Sets* IE is included in the *GBR QoS Flow Information* IE in the UE CONTEXT SETUP REQUEST message, gNB-DU shall, if supported, behave the same as the NG-RAN node in the PDU Session Resource Setup procedure, specified in TS 38.413 [3].

If the *BH Information* IE is included in the *UL UP TNL Information to be setup List* IE or the *Additional PDCP Duplication TNL List* IE for a DRB, the gNB-DU shall, if supported, use the indicated BAP Routing ID and BH RLC channel for transmission of the corresponding GTP-U packets to the IAB-donor, as specified in TS 38.340 [30].

If the *BH RLC Channel To Be Setup List* IE is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall act as specified in TS 38.401 [4]. If the *Traffic Mapping Information* IE is included in the *BH RLC Channel To Be Setup Item IEs* IE for a BH RLC Channel, the gNB-DU shall, if supported, process the *Traffic Mapping Information* IE as follows:

- if the *IP to layer2 Traffic Mapping Info* IE is included, the gNB-DU shall store the mapping information contained in the *IP to layer2 Traffic Mapping Info To Add* IE, if present, for the egress BH RLC channel identified by the *BH RLC CH ID* IE, and shall remove the previously stored mapping information as indicated by the *IP to layer2 Mapping Traffic Info To Remove* IE, if present. The gNB-DU shall use the mapping information stored for the mapping of IP traffic to layer 2, as specified in TS 38.340 [30].
- if the *BAP layer BH RLC channel Mapping Info* IE is included, the gNB-DU shall store the mapping information contained in the *BAP layer BH RLC channel Mapping Info To Add* IE, if present, for the egress or ingress BH RLC channel identified by the *BH RLC CH ID* IE, and shall remove the previously stored mapping information as indicated by the *BAP layer BH RLC channel Mapping Info To Remove* IE, if present. The gNB-DU shall use the mapping information stored when forwarding traffic on BAP sublayer, as specified in TS 38.340 [30].

If two *UL UP TNL Information* IEs are included in UE CONTEXT SETUP REQUEST message for a DRB, gNB-DU shall include two *DL UP TNL Information* IEs in UE CONTEXT SETUP RESPONSE message and setup two RLC entities for the indicated DRB. gNB-CU and gNB-DU use the *UL UP TNL Information* IEs and *DL UP TNL Information* IEs to support packet duplication for intra-gNB-DU CA as defined in TS 38.470 [2]. The first *UP TNL Information* IE of the two *UP TNL Information* IEs is for the primary path.

If one or two *Additional PDCP Duplication UP TNL Information* IEs are included in the UE CONTEXT SETUP REQUEST message for a DRB, the gNB-DU shall, if supported, include one or two *Additional PDCP Duplication UP*

TNL Information IEs in the UE CONTEXT SETUP RESPONSE message and setup one or two additional RLC entities for the indicated DRB. The gNB-CU and the gNB-DU use the *Additional PDCP Duplication UP TNL Information* IEs to support packet duplication for intra-gNB-DU CA as defined in TS 38.470 [2].

If *Duplication Activation IE* is included in the UE CONTEXT SETUP REQUEST message for a DRB, gNB-DU should take it into account when activating/deactivating CA based PDCP duplication for the DRB. If the *RLC Duplication State List IE* is included in the *RLC Duplication Information IE* contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, take it into account when activating/deactivating CA based PDCP duplication for the DRB with more than two RLC entities.

If *DC Based Duplication Configured IE* is included in the UE CONTEXT SETUP REQUEST message for a DRB, gNB-DU shall regard that DC based PDCP duplication is configured for this DRB if the value is set to be "true" and it should take the responsibility of PDCP duplication activation/deactivation. If *DC Based Duplication Activation IE* is included in the UE CONTEXT SETUP REQUEST message for a DRB, gNB-DU should take it into account when activating/deactivating DC based PDCP duplication for this DRB. If the *RLC Duplication State List IE* is included in the *RLC Duplication Information IE* contained in the UE CONTEXT SETUP REQUEST message for a DRB, the gNB-DU shall, if supported, take it into account when activating/deactivating DC based PDCP duplication for the DRB with more than two RLC entities. If the *Primary Path Indication IE* is included in the *RLC Duplication Information IE*, the gNB-DU shall, if supported, take it into account when performing DC based PDCP duplication for the DRB with more than two RLC entities.

If *UL PDCP SN length IE* is included in the UE CONTEXT SETUP REQUEST message for a DRB, gNB-DU shall, if supported, store this information and use it for lower layer configuration.

For EN-DC operation, and if the *Subscriber Profile ID for RAT/Frequency priority IE* is received from an MeNB, the UE CONTEXT SETUP REQUEST message shall contain the *Subscriber Profile ID for RAT/Frequency priority IE*. If the *Additional RRM Policy Index IE* is received from an MeNB, the UE CONTEXT SETUP REQUEST message shall, if supported, contain the *Additional RRM Policy Index IE*. The gNB-DU shall store the received Subscriber Profile ID for RAT/Frequency priority in the UE context and use it as defined in TS 36.300 [20]. The gNB-DU shall, if supported, store the received Additional RRM Policy Index in the UE context and use it as defined in TS 36.300 [20].

If the *Index to RAT/Frequency Selection Priority IE* is available at the gNB-CU, the *Index to RAT/Frequency Selection Priority IE* shall be included in the UE CONTEXT SETUP REQUEST. The gNB-DU may use it for RRM purposes.

The gNB-DU shall report to the gNB-CU, in the UE CONTEXT SETUP RESPONSE message, the result for all the requested DRBs, SRBs, BH RLC channels, Uu RLC channels, PC5 Relay RLC channels, and SL DRBs in the following way:

- A list of DRBs which are successfully established shall be included in the *DRB Setup List IE*;
- A list of DRBs which failed to be established shall be included in the *DRB Failed to Setup List IE*;
- A list of SRBs which failed to be established shall be included in the *SRB Failed to Setup List IE*.
- A list of successfully established SRBs with logical channel identities for primary path shall be included in the *SRB Setup List IE* only if CA based PDCP duplication is initiated for the concerned SRBs.
- A list of BH RLC channels which are successfully established shall be included in the *BH RLC Channel Setup List IE*;
- A list of BH RLC channels which failed to be established shall be included in the *BH RLC Channel Failed to be Setup List IE*;
- A list of SL DRBs which are successfully established shall be included in the *SL DRB Setup List IE*;
- A list of SL DRBs which failed to be established shall be included in the *SL DRB Failed to Setup List IE*.
- A list of Uu Relay RLC channels which are successfully established shall be included in the *Uu RLC Channel Setup List IE*;
- A list of Uu Relay RLC channels which failed to be established shall be included in the *Uu RLC Channel Failed to be Setup List IE*;
- A list of PC5 Relay RLC channels which are successfully established shall be included in the *PC5 RLC Channel Setup List IE*;

- A list of PC5 Relay RLC channels which failed to be established shall be included in the *PC5 RLC Channel Failed to be Setup List IE*;

When the gNB-DU reports the unsuccessful establishment of a DRB or SRB or SL DRB or a BH RLC channel or a Uu RLC channel or a PC5 Relay RLC channel, the cause value should be precise enough to enable the gNB-CU to know the reason for the unsuccessful establishment.

For EN-DC operation, the gNB-CU shall include in the UE CONTEXT SETUP REQUEST the *E-UTRAN QoS IE*. The allocation of resources according to the values of the *Allocation and Retention Priority IE* included in the *E-UTRAN QoS IE* shall follow the principles described for the E-RAB Setup procedure in TS 36.413 [15].

For NG-RAN operation, the gNB-CU shall include in the UE CONTEXT SETUP REQUEST the *DRB Information IE*.

For DC operation, the *CG-ConfigInfo IE* shall be included in the *CU to DU RRC Information IE* at the gNB acting as secondary node. If the *CG-ConfigInfo IE* is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall regard it as a reconfiguration with sync as defined in TS 38.331 [8].

For sidelink operation, the *CG-ConfigInfo IE* shall be included in the *CU to DU RRC Information IE* if the gNB-CU receives sidelink related UE information from UE. If the *CG-ConfigInfo IE* is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall regard it as an indication of V2X sidelink information as defined in TS 38.331 [8].

If the *HandoverPreparationInformation IE* is included in the *CU to DU RRC Information IE* in the UE CONTEXT SETUP REQUEST message, the gNB-DU of the gNB acting as master node shall regard it as a reconfiguration with sync as defined in TS 38.331 [8]. The gNB-CU shall only initiate the UE Context Setup procedure for handover or secondary node addition when at least one DRB is setup for the UE, or at least one BH RLC channel is set up for IAB-MT. If the *HandoverPreparationInformation IE* containing the sidelink related UE information is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall regard it as an indication of V2X sidelink information as defined in TS 38.331 [8].

If the received *CU to DU RRC Information IE* does not include source cell group configuration, the gNB-DU shall generate the cell group configuration using full configuration. Otherwise, delta configuration is allowed.

If the gNB-CU includes the SMTC information of the measured frequency(ies) in the *MeasurementTimingConfiguration IE* of the *CU to DU RRC Information IE* that is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall generate the measurement gaps based on the received SMTC information. Then the gNB-DU shall send the measurement gaps information to the gNB-CU in the *MeasGapConfig IE* of the *DU to CU RRC Information IE* that is included in the UE CONTEXT SETUP RESPONSE message.

If the *MeasConfig IE* is included in the *CU to DU RRC Information IE* in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall deduce that changes to the measurements configuration need to be applied. If the *measObjectToAddModList IE* is included in the *MeasConfig IE*, then the frequencies added in such IE are to be activated. Then the gNB-DU shall decide if measurement gaps are needed or not and, if needed, the gNB-DU shall send the measurement gaps information to the gNB-CU in the *MeasGapConfig IE* of the *DU to CU RRC Information IE* that is included in the UE CONTEXT SETUP RESPONSE message. If the *measObjectToRemoveList IE* is included in the *MeasConfig IE*, the gNB-DU shall ignore it.

If the *NeedForGapsInfoNR IE* is included in the *CU to DU RRC Information IE* in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use it as described in TS 38.331 [8]. If the *NeedForGapNCSG-InfoNR IE* is included in the *CU to DU RRC Information IE* in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use it as described in TS 38.331 [8]. If the *NeedForGapNCSG-InfoEUTRA IE* is included in the *CU to DU RRC Information IE* in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use it as described in TS 38.331 [8].

For EN-DC operation, if the gNB-CU includes the *Resource Coordination Transfer Information IE* in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use it for the purpose of resource coordination. If the *Ignore PRACH Configuration IE* is present and set to "true" the *E-UTRA PRACH Configuration IE* in the UE CONTEXT SETUP REQUEST message shall be ignored. If the gNB-CU received the MeNB Resource Coordination Information as defined in TS 36.423 [9], it shall transparently transfer it to the gNB-DU via the *Resource Coordination Transfer Container IE* in the UE CONTEXT SETUP REQUEST message. The gNB-DU shall use the information received in the *Resource Coordination Transfer Container IE* for reception of MeNB Resource Coordination Information at the gNB acting as secondary node as described in TS 36.423 [9]. If the *Resource Coordination E-UTRA Cell Information IE* is included in the *Resource Coordination Transfer Information IE*, the gNB-

DU shall store the information replacing previously received information for the same E-UTRA cell, and use the stored information for the purpose of resource coordination.

For NGEN-DC or NE-DC operation, if the gNB-CU includes the *Resource Coordination Transfer Information* IE in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use it for the purpose of resource coordination. If the gNB-CU received the MR-DC Resource Coordination Information as defined in TS 38.423 [28], it shall transparently transfer it to the gNB-DU via the *Resource Coordination Transfer Container* IE in the UE CONTEXT SETUP REQUEST message. The gNB-DU shall use the information received in the *Resource Coordination Transfer Container* IE for reception of MR-DC Resource Coordination Information at the gNB as described in TS 38.423 [28].

The *UEAssistanceInformation* IE shall be included in *CU to DU RRC Information* IE in the UE CONTEXT SETUP REQUEST message if the gNB-CU received this IE from the UE; if the *UEAssistanceInformation* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, take it into account when configuring resources for the UE.

The *UEAssistanceInformationEUTRA* IE shall be included in *CU to DU RRC Information* IE in the UE CONTEXT SETUP REQUEST message if the gNB-CU received this IE from the UE; if the *UEAssistanceInformationEUTRA* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, take it into account when configuring LTE sidelink resources for the UE.

If the *Resource Coordination Transfer Container* IE is included in the UE CONTEXT SETUP RESPONSE, the gNB-CU shall transparently transfer this information for the purpose of resource coordination as described in TS 36.423 [9], TS 38.423 [28].

If the *Masked IMEISV* IE is contained in the UE CONTEXT SETUP REQUEST message the gNB-DU shall, if supported, use it to determine the characteristics of the UE for subsequent handling.

If the *SCell Failed To Setup List* IE is contained in the UE CONTEXT SETUP RESPONSE message, the gNB-CU shall regard the corresponding SCell(s) failed to be set up with an appropriate cause value for each SCell failed to setup.

If the *Inactivity Monitoring Request* IE is contained in the UE CONTEXT SETUP REQUEST message, gNB-DU may consider that the gNB-CU has requested the gNB-DU to perform UE inactivity monitoring. If the *Inactivity Monitoring Response* IE is contained in the UE CONTEXT SETUP RESPONSE message and set to "Not-supported", the gNB-CU shall consider that the gNB-DU does not support UE inactivity monitoring for the UE.

If the *Full Configuration* IE is contained in the UE CONTEXT SETUP RESPONSE message, the gNB-CU shall consider that the gNB-DU has generated the *CellGroupConfig* IE using full configuration.

If the *C-RNTI* IE is included in the UE CONTEXT SETUP RESPONSE, the gNB-CU shall consider that the C-RNTI has been allocated by the gNB-DU for this UE context.

The UE Context Setup Procedure is not used to configure SRB0.

If the UE CONTEXT SETUP REQUEST message contains the *RRC-Container* IE, the gNB-DU shall send the corresponding RRC message to the UE via SRB1.

If the *Notification Control* IE is included in the *DRB to Be Setup List* IE contained in the UE CONTEXT SETUP REQUEST message and it is set to active, the gNB-DU shall, if supported, monitor the QoS of the DRB and notify the gNB-CU if the QoS cannot be fulfilled any longer or if the QoS can be fulfilled again. The *Notification Control* IE can only be applied to GBR bearers.

If the *UL PDU Session Aggregate Maximum Bit Rate* IE is included in the *QoS Flow Level QoS Parameters* IE contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall store the received UL PDU Session Aggregate Maximum Bit Rate and use it when enforcing uplink traffic policing for non-GBR Bearers for the concerned UE as specified in TS 23.501 [21].

The gNB-DU shall store the received gNB-DU UE Aggregate Maximum Bit Rate Uplink and use it for non-GBR Bearers for the concerned UE.

If the UE CONTEXT SETUP REQUEST message contains the *QoS Flow Mapping Indication* IE, the gNB-DU may take it into account that only the uplink or downlink QoS flow is mapped to the DRB.

If the UE CONTEXT SETUP REQUEST message contains the *New gNB-CU UE FIAP ID IE*, the gNB-DU shall, if supported, replace the value received in the *gNB-CU UE FIAP ID IE* by the value of the *New gNB-CU UE FIAP ID* and use it for further signalling.

If the *RAN UE ID IE* is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall store and replace any previous information received.

If the *Trace Activation IE* is included in the UE CONTEXT SETUP REQUEST message the gNB-DU shall, if supported, initiate the requested trace function as described in TS 32.422 [29].

In particular, the gNB-DU shall, if supported:

- if the *Trace Activation IE* includes the *MDT Activation IE* set to "Immediate MDT and Trace", initiate the requested trace session and MDT session as described in TS 32.422 [29];
- if the *Trace Activation IE* includes the *MDT Activation IE* set to "Immediate MDT Only", initiate the requested MDT session as described in TS 32.422 [29] and the gNB-DU shall ignore *Interfaces To Trace IE*, and *Trace Depth IE*. If the *Management Based MDT PLMN List IE* is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, store the received information in the UE context, and use this information to allow subsequent selection of the UE for management based MDT defined in TS 32.422 [29].

For each QoS flow whose DRB has been successfully established and the *QoS Monitoring Request IE* was included in the *QoS Flow Level QoS Parameters IE* contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall store this information, and, if supported, perform delay measurement and QoS monitoring, as specified in TS 23.501 [21].

If the UE CONTEXT SETUP REQUEST message contains the *Configured BAP Address IE*, the gNB-DU shall, if supported, store this BAP address configured for the corresponding child IAB-node and use it as specified in TS 38.340 [30].

If the *BAP Control PDU Channel IE* is included in the *BH RLC Channel to be Setup List IE*, the gNB-DU shall, if supported, consider that the configured BH RLC channel can be used to transmit BAP Control PDUs, and use this BH RLC channel as specified in TS 38.340 [30].

If the *F1-C Transfer Path IE* is included in UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, take it into account.

If the *NR V2X Services Authorized IE* is contained in the UE CONTEXT SETUP REQUEST message and it contains one or more IEs set to "authorized", the gNB-DU node shall, if supported, consider that the UE is authorized for the relevant service(s).

If the *LTE V2X Services Authorized IE* is contained in the UE CONTEXT SETUP REQUEST message and it contains one or more IEs set to "authorized", the gNB-DU node shall, if supported, consider that the UE is authorized for the relevant service(s).

If the *NR UE Sidelink Aggregate Maximum Bit Rate IE* is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use it for the concerned UE's sidelink communication in network scheduled mode for NR V2X services.

If the *LTE UE Sidelink Aggregate Maximum Bit Rate IE* is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use it for the concerned UE's sidelink communication in network scheduled mode for LTE V2X services.

If the *PC5 Link Aggregate Bit Rate IE* is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use it for the concerned UE's sidelink communication in network scheduled mode for NR V2X services as defined in TS 23.287 [40].

If the *TSC Traffic Characteristics IE* is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, take into account the corresponding information received in the *TSC Traffic Characteristics IE*.

If the *Conditional Inter-DU Mobility Information IE* is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall consider that the request concerns a conditional handover or conditional PSCell addition or conditional PSCell change for the included *SpCell ID IE* and shall include it as the *Requested Target Cell ID IE* in the UE CONTEXT SETUP RESPONSE message. The gNB-DU shall regard it as a reconfiguration with sync as defined in TS 38.331 [8].

If the *Target gNB-DU UE FIAP ID IE* is contained in the *Conditional Inter-DU Mobility Information IE* included in the UE CONTEXT SETUP REQUEST message, then the gNB-DU shall replace the existing prepared conditional handover or conditional PSCell addition or conditional PSCell change identified by the *Target gNB-DU UE FIAP ID IE* and the *SpCell ID IE*.

If the *Serving NID IE* is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall combine the *Serving NID IE* with the *Serving PLMN IE* to identify the serving NPN, and may take it into account for UE context establishment.

If the *Estimated Arrival Probability IE* is contained in the *Conditional Inter-DU Mobility Information IE* included in the UE CONTEXT SETUP REQUEST message, then the gNB-DU may use the information to allocate necessary resources for the UE.

If for a given E-RAB for EN-DC operation the *ENB DL Transport Layer Address IE* is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use it as part of its ACL functionality configuration actions, if such ACL functionality is deployed.

If for a given Qos flow for NG-RAN operation the *PDCP Terminating Node DL Transport Layer Address IE* is included in the UE CONTEXT SETUP REQUEST message, then the gNB-DU shall, if supported, use it as part of its ACL functionality configuration actions, if such ACL functionality is deployed.

If the *F1-C Transfer Path NRDC IE* is included in UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, take it into account.

If the *MDT Polluted Measurement Indicator IE* is included in the UE CONTEXT SETUP REQUEST, the gNB-DU shall take this information into account as specified in TS 38.401 [4].

If the *SCG Activation Request IE* is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU may use it to configure SCG resources as specified in TS 37.340 [7], and if supported, shall include the *SCG Activation Status IE* in the UE CONTEXT SETUP RESPONSE message. If the *SCG Activation Request IE* in the UE CONTEXT SETUP REQUEST message is set to "Activate SCG", the gNB-DU shall activate the SCG resources and set the *SCG Activation Status IE* in the UE CONTEXT SETUP RESPONSE message to "SCG Activated".

If the *Old CG-SDT Session Info IE* is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, retrieve the old CG-SDT resource configuration and old UE context based on the indicated gNB-CU FIAP UE ID and gNB-DU FIAP UE ID.

If the *5G ProSe Authorized IE* is contained in the UE CONTEXT SETUP REQUEST message and it contains one or more IEs set to "authorized", the gNB-DU node shall, if supported, consider that the UE is authorized for the relevant service(s).

If the *5G ProSe UE PC5 Aggregate Maximum Bit Rate IE* is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use it for the concerned UE's sidelink communication in network scheduled mode for 5G ProSe services.

If the *5G ProSe PC5 Link Aggregate Bit Rate IE* is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use it for the concerned UE's sidelink communication in network scheduled mode for 5G ProSe services as defined in TS 23.304 [44].

If the *Uu RLC Channel To Be Setup List IE* is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, act as specified in TS 38.401 [4]. gNB-DU generates the Uu Relay RLC channel configurations for a L2 U2N Relay UE.

If the *PC5 RLC Channel To Be Setup List IE* is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, act as specified in TS 38.401 [4]. gNB-DU generates the PC5 Relay RLC channel configurations for a L2 U2N Remote UE.

If the *Path Switch Configuration IE* is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use it to configure the path switch from direct path to indirect path as specified in TS 38.401 [4].

If the *MUSIM-GapConfig IE* is contained in the *CU to DU RRC Information IE* included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, decide to use this IE for MUSIM gap configuration or select another one based on the received *UEAssistanceInformation IE*. If gNB-DU selects a different MUSIM gap configuration from received *UEAssistanceInformation IE*, then it shall include the selected MUSIM gap information to

the gNB-CU in the *MUSIM-GapConfig* IE of the *DU to CU RRC Information* IE that is included in the UE CONTEXT SETUP RESPONSE message.

If *MUSIM-GapConfig* IE is not contained in the *CU to DU RRC Information* IE, then gNB-DU shall, if supported, send the selected MUSIM gap configuration based on the received *UEAssistanceInformation* IE, to the gNB-CU in the *MUSIM-GapConfig* IE of the *DU to CU RRC Information* IE that is included in the UE CONTEXT SETUP RESPONSE message. When *MUSIM-GapConfig* IE is received, the gNB-CU should use this value.

If the *gNB-DU UE Slice Maximum Bit Rate List* IE is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, store and use the information for the uplink traffic policing for each concerned slice as specified in TS 23.501 [21].

If the *Multicast MBS Session Setup List* IE is contained in the UE CONTEXT SETUP REQUEST message the gNB-DU shall, if supported, store and use the information for configuring MBS Session Resources, if applicable.

If the *UE Multicast MRB To Be Setup List* IE is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, take it into account for configuring MBS Session Resources, if applicable. And if the *MBS PTP Retransmission Tunnel Required* IE is included in the *UE Multicast MRB to Be Setup Item IEs* IE, the gNB-DU shall, if supported trigger the establishment of the MBS PTP Retransmission F1-U tunnel. If the *MBS PTP Forwarding Tunnel Required Information* IE is included in the *UE Multicast MRB to Be Setup Item IEs* IE, the gNB-DU shall, if supported trigger the establishment of the MBS PTP Forwarding F1-U tunnel. If the *Source MRB ID* IE is included in the *UE Multicast MRB to Be Setup Item IEs* IE, the DU shall, if supported, use it to identify the MRB configuration as provided to the UE in the source cell and take it into account for configuring MBS Session Resources.

If the *InterFrequencyConfig-NoGap* IE is included in the *DU to CU RRC Information* IE contained in the UE CONTEXT SETUP RESPONSE message, the gNB-CU shall, if supported, use it as described in TS 38.331 [8].

If the *ul-GapFR2-Config* IE is contained in the *DU to CU RRC Information* IE that is included in the UE CONTEXT SETUP RESPONSE message, the gNB-CU shall, if supported, use it as described in TS 38.331 [8].

If the *TwoPHRModeMCG* IE or the *TwoPHRModeSCG* IE is contained in the *DU to CU RRC Information* IE that is included in the UE CONTEXT SETUP RESPONSE message, the gNB-CU shall, if supported, use this value as described in TS 38.331 [8].

8.3.1.3 Unsuccessful Operation

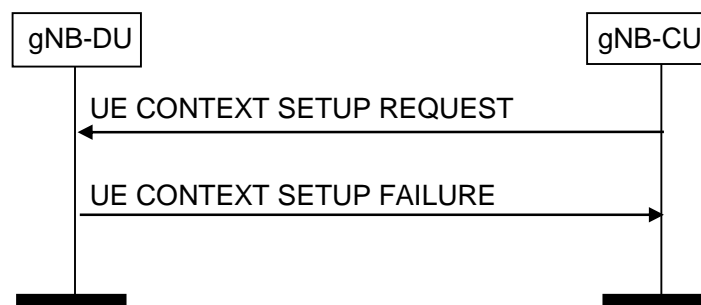


Figure 8.3.1.3-1: UE Context Setup Request procedure: unsuccessful Operation

If the gNB-DU is not able to establish an F1 UE context, or cannot even establish one bearer it shall consider the procedure as failed and reply with the UE CONTEXT SETUP FAILURE message. If the *Conditional Inter-DU Mobility Information* IE was included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall include the received *SpCell ID* IE as the *Requested Target Cell ID* IE in the UE CONTEXT SETUP FAILURE message.

If the gNB-DU is not able to accept the *SpCell ID* IE in UE CONTEXT SETUP REQUEST message, it shall reply with the UE CONTEXT SETUP FAILURE message with an appropriate cause value. Further, if the *Candidate SpCell List* IE is included in the UE CONTEXT SETUP REQUEST message and the gNB-DU is not able to accept the *SpCell ID* IE, the gNB-DU shall, if supported, include the *Potential SpCell List* IE in the UE CONTEXT SETUP FAILURE message and the gNB-CU should take this into account for selection of an opportune SpCell. The gNB-DU shall include the cells in the *Potential SpCell List* IE in a priority order, where the first cell in the list is the one most desired and the last one is the one least desired (e.g., based on load conditions). If the *Potential SpCell List* IE is present but no *Potential SpCell Item* IE is present, the gNB-CU should assume that none of the cells in the *Candidate SpCell List* IE are acceptable for the gNB-DU.

8.3.1.4 Abnormal Conditions

If the gNB-DU receives a UE CONTEXT SETUP REQUEST message containing a *E-UTRAN QoS* IE for a GBR QoS DRB but where the *GBR QoS Information* IE is not present, the gNB-DU shall report the establishment of the corresponding DRB as failed in the *DRB Failed to Setup List* IE of the UE CONTEXT SETUP RESPONSE message with an appropriate cause value. If the gNB-DU receives a UE CONTEXT SETUP REQUEST message containing a *DRB QoS* IE for a GBR QoS DRB but where the *GBR QoS Flow Information* IE is not present, the gNB-DU shall report the establishment of the corresponding DRBs as failed in the *DRB Failed to Setup List* IE of the UE CONTEXT SETUP RESPONSE message with an appropriate cause value.

If the *Delay Critical* IE is included in the *Dynamic 5QI Descriptor* IE within the *DRB QoS* IE in the UE CONTEXT SETUP REQUEST message and is set to the value "delay critical" but the *Maximum Data Burst Volume* IE is not present, the gNB-DU shall report the establishment of the corresponding DRB as failed in the *DRB Failed to Setup List* IE of the of the UE CONTEXT SETUP RESPONSE message with an appropriate cause value.

In case of "CHO-replace" when the *Target gNB-DU UE FIAP ID* IE is included, if the candidate cell in the *SpCell ID* IE included in the UE CONTEXT SETUP REQUEST message was not prepared using the same UE-associated signaling connection, the gNB-DU shall ignore this candidate cell.

8.3.2 UE Context Release Request (gNB-DU initiated)

8.3.2.1 General

The purpose of the UE Context Release Request procedure is to enable the gNB-DU to request the gNB-CU to release the UE-associated logical F1-connection or candidate cells in conditional handover or conditional PSCell addition or conditional PSCell change. The procedure uses UE-associated signalling.

8.3.2.2 Successful Operation

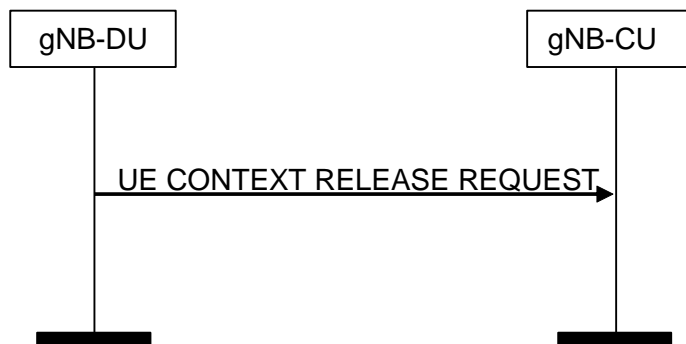


Figure 8.3.2.2-1: UE Context Release (gNB-DU initiated) procedure. Successful operation

The gNB-DU controlling a UE-associated logical F1-connection initiates the procedure by generating a UE CONTEXT RELEASE REQUEST message towards the affected gNB-CU node.

The UE CONTEXT RELEASE REQUEST message shall indicate the appropriate cause value.

If the *Candidate Cells To Be Cancelled List* IE is included in the UE CONTEXT RELEASE REQUEST message, the gNB-CU shall consider that the only the resources reserved for the candidate cells identified by the included NR CGIs and associated to the UE-associated signaling identified by the *gNB-CU UE FIAP ID* IE and the *gNB-DU UE FIAP ID* IE are about to be released by the gNB-DU.

Interactions with UE Context Release procedure:

The UE Context Release procedure may be initiated upon reception of a UE CONTEXT RELEASE REQUEST message.

Interactions with UE Context Setup procedure:

The UE Context Release Request procedure may be performed before the UE Context Setup procedure to request the release of an existing UE-associated logical F1-connection and related resources in the gNB-DU.

8.3.2.3 Abnormal Conditions

If one or more candidate cells in the *Candidate Cells To Be Cancelled List* IE included in the UE CONTEXT RELEASE REQUEST message were not prepared using the same UE-associated signaling connection, the gNB-CU shall ignore those non-associated candidate cells.

8.3.3 UE Context Release (gNB-CU initiated)

8.3.3.1 General

The purpose of the UE Context Release procedure is to enable the gNB-CU to order the release of the UE-associated logical connection or candidate cells in conditional handover or conditional PSCell addition or conditional PSCell change. The procedure uses UE-associated signalling.

8.3.3.2 Successful Operation

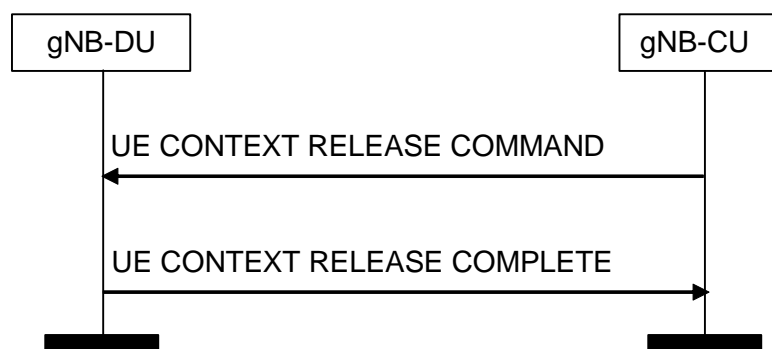


Figure 8.3.3.2-1: UE Context Release (gNB-CU initiated) procedure. Successful operation

The gNB-CU initiates the procedure by sending the UE CONTEXT RELEASE COMMAND message to the gNB-DU.

Upon reception of the UE CONTEXT RELEASE COMMAND message, the gNB-DU shall release all related signalling and user data transport resources and reply with the UE CONTEXT RELEASE COMPLETE message. If the *CG-SDT Kept Indicator* IE is contained in the UE CONTEXT RELEASE COMMAND message and set to "true", the gNB-DU shall, if supported, consider that the UE is sent to RRC_INACTIVE state with CG-SDT configuration and store the configured CG-SDT resources, C-RNTI, CS-RNTI, the CG-SDT related RLC configurations and F1-U connections associated with the SDT bearers while releasing the UE context.

If the *old gNB-DU UE F1AP ID* IE is included in the UE CONTEXT RELEASE COMMAND message, the gNB-DU shall additionally release the UE context associated with the old gNB-DU UE F1AP ID.

If the UE CONTEXT RELEASE COMMAND message contains the *RRC-Container IE*, the gNB-DU shall send the RRC container to the UE via the SRB indicated by the *SRB ID IE*.

If the UE CONTEXT RELEASE COMMAND message includes the *Execute Duplication IE*, the gNB-DU shall perform CA based duplication, if configured, for the SRB for the included *RRC-Container IE*.

If the *Candidate Cells To Be Cancelled List IE* is included in the UE CONTEXT RELEASE COMMAND message, the gNB-DU shall consider that the gNB-CU is cancelling only the conditional handover or conditional PSCell addition or conditional PSCell change associated to the cells identified by the included NR CGIs and associated to the UE-associated signalling identified by the *gNB-CU UE F1AP ID IE* and the *gNB-DU UE F1AP ID IE*.

If the *Positioning Context Reservation Indication IE* is included in the UE CONTEXT RELEASE COMMAND message, the gNB-DU shall not release the positioning context including the SRS configuration for the UE.

Interactions with UE Context Setup procedure:

The UE Context Release procedure may be performed before the UE Context Setup procedure to release an existing UE-associated logical F1-connection and related resources in the gNB-DU, e.g. when gNB-CU rejects UE access it shall trigger UE Context Release procedure with the cause value of UE rejection.

8.3.3.4 Abnormal Conditions

If one or more candidate cells in the *Candidate Cells To Be Cancelled List* IE included in the UE CONTEXT RELEASE COMMAND message were not prepared using the same UE-associated signalling connection, the gNB-DU shall ignore those non-associated candidate cells.

8.3.4 UE Context Modification (gNB-CU initiated)

8.3.4.1 General

The purpose of the UE Context Modification procedure is to modify the established UE Context, e.g., establishing, modifying and releasing radio resources or sidelink resources. This procedure is also used to command the gNB-DU to stop data transmission for the UE for mobility (see TS 38.401 [4]). The procedure uses UE-associated signalling.

8.3.4.2 Successful Operation

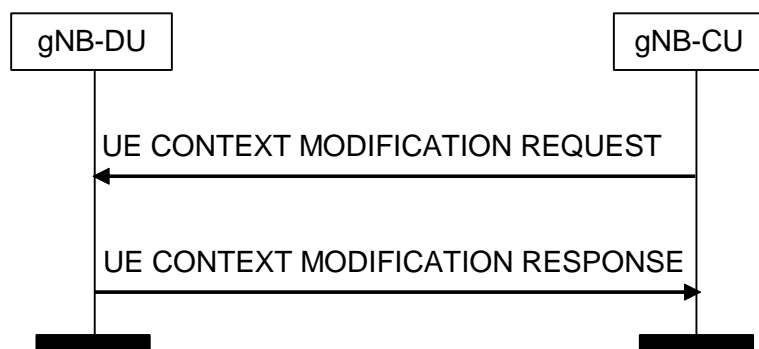


Figure 8.3.4.2-1: UE Context Modification procedure. Successful operation

The UE CONTEXT MODIFICATION REQUEST message is initiated by the gNB-CU.

Upon reception of the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall perform the modifications, and if successful reports the update in the UE CONTEXT MODIFICATION RESPONSE message.

If the *SpCell ID* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall replace any previously received value and regard it as a reconfiguration with sync as defined in TS 38.331 [8]. If the *ServCellIndex* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall take this into account for the indicated SpCell. If the *SpCell UL Configured* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall configure UL for the indicated SpCell accordingly. If the *servingCellMO* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall configure servingCellMO for the indicated SpCell accordingly. If the *servingCellMO List* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, configure servingCellMO after determining the list of BWPs for the UE and include the list of servingCellMOs that have been encoded in *CellGroupConfig* IE as *ServingCellMO-encoded-in-CGC List* IE in the UE CONTEXT MODIFICATION RESPONSE message.

If the *SCell To Be Setup List* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall consider it as a list of candidate SCells to be set up. If the *SCell To Be Setup List* IE is included in the UE CONTEXT MODIFICATION REQUEST message and the indicated SCell(s) are already setup, the gNB-DU shall replace any previously received value. If the *SCell UL Configured* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall configure UL for the indicated SCell accordingly. If the *servingCellMO* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall configure servingCellMO for the indicated SCell accordingly.

If the *SCell To Be Removed List* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall consider it as a list of SCells to be removed.

If the *DRX Cycle* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall use the provided value from the gNB-CU. If the *DRX configuration indicator* IE is contained in the UE CONTEXT MODIFICATION REQUEST message and set to "release", the gNB-DU shall release DRX configuration.

If the *SL DRX Cycle list* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, use the provided value from the gNB-CU for the indicated RX UE of this UE. If the *SL DRX configuration indicator* IE is contained in the UE CONTEXT MODIFICATION REQUEST message and set to "release", the gNB-DU shall, if supported, release SL DRX configuration for the indicated RX UE of this UE.

If the *SRB To Be Setup List* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall act as specified in the TS 38.401 [4], and replace any previously received value. If *Duplication Indication* IE is contained in the *SRB To Be Setup List* IE, the gNB-DU shall, if supported, setup two RLC entities for the indicated SRB if the value is set to be "true", or delete the RLC entity of secondary path if the value is set to be "false". If the *Additional Duplication Indication* IE is contained in the *SRB To Be Setup List* IE, the gNB-DU shall, if supported, setup the indicated RLC entities for the indicated SRB. If the *SRB Mapping Info* IE is contained in the *SRB To Be Setup List* IE, the gNB-DU shall, if supported, store the mapping information indicated in the *SRB Mapping Info* IE for the SRB identified by the *SRB ID* IE and the Uu Relay RLC channel identified by the *SRB Mapping Info*. The gNB-DU shall use the mapping information stored for the mapping of SRB data to Uu Relay RLC channel.

If the *DRB To Be Setup List* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall act as specified in the TS 38.401 [4]. If the *DRB Mapping Info* IE is contained in the *DRB To Be Setup List* IE, the gNB-DU shall, if supported, store the mapping information indicated in the *DRB Mapping Info* IE, if present, for the DRB identified by the *DRB ID* IE and the Uu Relay RLC channel identified by the *DRB Mapping Info*. The gNB-DU shall use the mapping information stored for the mapping of DRB data to Uu Relay RLC channel.

If the *BH Information* IE is included in the *UL UP TNL Information to be setup List* IE or the *Additional PDCP Duplication TNL List* IE for a DRB, the gNB-DU shall, if supported, use the indicated BAP Routing ID and BH RLC channel for transmission of the corresponding GTP-U packets to the IAB-donor, as specified in TS 38.340 [30].

If the *BH RLC Channel To Be Setup List* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall act as specified in TS 38.401 [4]. If the *Traffic Mapping Information* IE is included in the *BH RLC Channel To Be Setup Item IEs* IE for a BH RLC Channel, the gNB-DU shall, if supported, process the *Traffic Mapping Information* IE following the behaviour described for the UE Context Setup procedure.

If the *BH RLC Channel To Be Modified List* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall act as specified in TS 38.401 [4]. If the *Traffic Mapping Information* IE is included in the *BH RLC Channel To Be Modified Item IEs* IE for a BH RLC Channel, the gNB-DU shall, if supported, process the *Traffic Mapping Information* IE following the behaviour described for the UE Context Setup procedure.

If the *BH RLC Channel To Be Released List* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall release the BH RLC channels in the list.

If two *UL UP TNL Information* IEs are included in UE CONTEXT MODIFICATION REQUEST message for a DRB, the gNB-DU shall include two *DL UP TNL Information* IEs in UE CONTEXT MODIFICATION RESPONSE message and setup two RLC entities for the indicated DRB. gNB-CU and gNB-DU use the *UL UP TNL Information* IEs and *DL UP TNL Information* IEs to support packet duplication for intra-gNB-DU CA as defined in TS 38.470 [2]. The first *UP TNL Information* IE of the two *UP TNL Information* IEs is for the primary path.

If one or two *Additional PDCP Duplication UP TNL Information* IEs are included in the UE CONTEXT MODIFICATION REQUEST message for a DRB, the gNB-DU shall, if supported, include one or two *Additional PDCP Duplication UP TNL Information* IEs in the UE CONTEXT MODIFICATION RESPONSE message and setup one or two additional RLC entities for the indicated DRB. The gNB-CU and the gNB-DU use the *Additional PDCP Duplication UP TNL Information* IEs to support packet duplication for intra-gNB-DU CA as defined in TS 38.470 [2].

If *Duplication Activation* IE is included in the UE CONTEXT MODIFICATION REQUEST message for a DRB, the gNB-DU should take it into account when activating/deactivating CA based PDCP duplication for the DRB. If the *RLC Duplication State List* IE is included in the *RLC Duplication Information* IE contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, take it into account for the DRB with more than two RLC entities.

If *DC Based Duplication Configured* IE is included in the UE CONTEXT MODIFICATION REQUEST message for a DRB, the gNB-DU shall regard that DC based PDCP duplication is configured for this DRB if the value is set to be "true" and it should take the responsibility of PDCP duplication activation/deactivation. Otherwise, the gNB-DU shall regard that DC based PDCP duplication is de-configured for this DRB if the value is set to be "false", and it should stop PDCP duplication activation/deactivation by MAC CE. If *DC Based Duplication Activation* IE is included in the UE CONTEXT MODIFICATION REQUEST message for a DRB, the gNB-DU should take it into account when activating/deactivating DC based PDCP duplication for this DRB. If the *RLC Duplication State List* IE is included in the *RLC Duplication Information* IE contained in the UE CONTEXT MODIFICATION REQUEST message for a

DRB, the gNB-DU shall, if supported, take it into account when activating/deactivating DC based PDCP duplication for the DRB with more than two RLC entities. If the *Primary Path Indication* IE is included in the *RLC Duplication Information* IE, the gNB-DU shall, if supported, take it into account when performing DC based PDCP duplication for the DRB with more than two RLC entities.

For a certain DRB which was allocated with two GTP-U tunnels, if such DRB is modified and given one GTP-U tunnel via the UE Context Modification procedure, the gNB-DU shall consider that the CA based PDCP duplication for the concerned DRB is de-configured. If such UE Context Modification procedure occurs, the *Duplication Activation* IE shall not be included for the concerned DRB.

If the *UL Configuration* IE in *DRB to Be Setup Item* IE or *DRB to Be Modified Item* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall take it into account for UL scheduling.

If the *RRC Reconfiguration Complete Indicator* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall consider the ongoing reconfiguration procedure involving changes of the L1/L2 configuration at the gNB-DU signalled to the gNB-CU via the *CellGroupConfig* IE for MR-DC operation or standalone operation has been successfully performed when such IE is set to 'true'; otherwise (when such IE is set to 'failure'), the gNB-DU shall consider the ongoing reconfiguration procedure has been failed and it shall continue to use the old L1/L2 configuration.

If *DL PDCP SN length* IE is included in the UE CONTEXT MODIFICATION REQUEST message for a DRB, gNB-DU shall, if supported, store this information and use it for lower layer configuration.

If *UL PDCP SN length* IE is included in the UE CONTEXT MODIFICATION REQUEST message for a DRB, gNB-DU shall, if supported, store this information and use it for lower layer configuration.

If the *RLC Failure Indication* IE is included in UE CONTEXT MODIFICATION REQUEST message, the gNB-DU should consider that the RLC entity indicated by such IE needs to be re-established when the CA-based packet duplication is active, and the gNB-DU may include the *Associated SCell List* IE in UE CONTEXT MODIFICATION RESPONSE by containing a list of SCell(s) associated with the RLC entity indicated by the *RLC Failure Indication* IE.

If the UE CONTEXT MODIFICATION REQUEST message contains the *RRC-Container* IE, the gNB-DU shall send the corresponding RRC message to the UE. If the UE CONTEXT MODIFICATION REQUEST message includes the *Execute Duplication* IE, the gNB-DU shall perform CA based duplication, if configured, for the SRB for the included *RRC-Container* IE.

If the UE CONTEXT MODIFICATION REQUEST message contains the *Transmission Action Indicator* IE, the gNB-DU shall stop or restart (if already stopped) data transmission for the UE, according to the value of this IE. It is up to gNB-DU implementation when to stop or restart the UE scheduling.

For EN-DC operation, if the *DRB to Be Setup List* IE is present in the UE CONTEXT MODIFICATION REQUEST message the gNB-CU shall include the *E-UTRAN QoS* IE. The allocation of resources according to the values of the *Allocation and Retention Priority* IE included in the *E-UTRAN QoS* IE shall follow the principles described for the E-RAB Setup procedure in TS 36.413 [15]. For NG-RAN operation, the gNB-CU shall include the *DRB Information* IE in the UE CONTEXT MODIFICATION REQUEST message.

If the gNB-CU includes the SMTC information of the measured frequency(ies) in the *MeasurementTimingConfiguration* IE of the *CU to DU RRC Information* IE that is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall generate the measurement gaps based on the received SMTC information. Then the gNB-DU shall send the measurement gaps information to the gNB-CU in the *MeasGapConfig* IE of the *DU to CU RRC Information* IE that is included in the UE CONTEXT MODIFICATION RESPONSE message.

If the *MeasConfig* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall deduce that changes to the measurements' configuration need to be applied. The gNB-DU shall take the received info, e.g. the *measObjectToAddModList* IE, and/or the *measObjectToRemoveList* IE into account, when generating measurement gap and when deciding if a measurement gap is needed or not.

If the *NeedForGapsInfoNR* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, use it as described in TS 38.331 [8]. If the *NeedForGapNCSG-InfoNR* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, use it as described in TS 38.331 [8]. If the *NeedForGapNCSG-InfoEUTRA* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, use it as described in TS 38.331 [8].

For DC operation, if the gNB-CU includes the *CG-Config* IE in the *CU to DU RRC Information* IE that is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU may initiate low layer parameters coordination taking this information into account.

For sidelink operation, the *CG-ConfigInfo* IE shall be included in the *CU to DU RRC Information* IE if the gNB-CU receives sidelink related UE information from UE. If the *CG-ConfigInfo* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall regard it as an indication of V2X sidelink information as defined in TS 38.331 [8].

For EN-DC operation, if the gNB-CU includes the *Resource Coordination Transfer Information* IE in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, use it for the purpose of resource coordination. If the gNB-CU received the MeNB Resource Coordination Information as defined in TS 36.423 [9], after completion of UE Context Setup procedures, the gNB-CU shall transparently transfer it to the gNB-DU via the *Resource Coordination Transfer Container* IE in the UE CONTEXT MODIFICATION REQUEST message. The gNB-DU shall use the information received in the *Resource Coordination Transfer Container* IE for reception of MeNB Resource Coordination Information at the gNB acting as secondary node as described in TS 36.423 [9]. If the *Resource Coordination E-UTRA Cell Information* IE is included in the *Resource Coordination Transfer Information* IE, the gNB-DU shall store the information replacing previously received information for the same E-UTRA cell, and use the stored information for the purpose of resource coordination. If the *Ignore PRACH Configuration* IE is present and set to "true" the *E-UTRA PRACH Configuration* IE in the UE CONTEXT MODIFICATION REQUEST message shall be ignored.

For NGEN-DC or NE-DC operation, if the gNB-CU includes the *Resource Coordination Transfer Information* IE in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, use it for the purpose of resource coordination. If the gNB-CU received the MR-DC Resource Coordination Information as defined in TS 38.423 [28], after completion of UE Context Setup procedures, the gNB-CU shall transparently transfer it to the gNB-DU via the *Resource Coordination Transfer Container* IE in the UE CONTEXT MODIFICATION REQUEST message. The gNB-DU shall use the information received in the *Resource Coordination Transfer Container* IE for reception of MR-DC Resource Coordination Information at the gNB as described in TS 38.423 [28].

For EN-DC operation, and if the *Subscriber Profile ID for RAT/Frequency priority* IE is received from an MeNB, the UE CONTEXT MODIFICATION REQUEST message shall contain the *Subscriber Profile ID for RAT/Frequency priority* IE. If the *Additional RRM Policy Index* IE is received from an MeNB, the UE CONTEXT MODIFICATION REQUEST message shall, if supported, contain the *Additional RRM Policy Index* IE. The gNB-DU shall store the received Subscriber Profile ID for RAT/Frequency priority in the UE context and use it as defined in TS 36.300 [20]. The gNB-DU shall, if supported, store the received Additional RRM Policy Index in the UE context and use it as defined in TS 36.300 [20].

If the *Index to RAT/Frequency Selection Priority* IE is modified at the gNB-CU, the *Index to RAT/Frequency Selection Priority* IE shall be included in the UE CONTEXT MODIFICATION REQUEST. The gNB-DU may use it for RRM purposes.

Only one of the following IEs shall be contained in the UE CONTEXT MODIFICATION REQUEST message: the *Uplink TxDirectCurrentList Information* IE or the *Uplink TxDirectCurrentTwoCarrierList Information* IE or the *Uplink TxDirectCurrentMoreCarrierList Information* IE. If the UE CONTEXT MODIFICATION REQUEST message contains one of the *Uplink TxDirectCurrentList Information* IE or the *Uplink TxDirectCurrentTwoCarrierList Information* IE or the *Uplink TxDirectCurrentMoreCarrierList Information* IE, the gNB-DU may take that into account when selecting L1 configuration.

The *UEAssistanceInformation* IE shall be included in *CU to DU RRC Information* IE in the UE CONTEXT MODIFICATION REQUEST message if the gNB-CU received this IE from the UE; if the *UEAssistanceInformation* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, take it into account when configuring resources for the UE.

The *UEAssistanceInformationEUTRA* IE shall be included in *CU to DU RRC Information* IE in the UE CONTEXT MODIFICATION REQUEST message if the gNB-CU received this IE from the UE; if the *UEAssistanceInformationEUTRA* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, take it into account when configuring LTE sidelink resources for the UE.

The gNB-DU shall report to the gNB-CU, in the UE CONTEXT MODIFICATION RESPONSE message, the result for all the requested or modified DRBs, SRBs, BH RLC Channels, Uu Relay RLC channels, PC5 Relay RLC channels, and SL DRBs in the following way:

- A list of DRBs which are successfully established shall be included in the *DRB Setup List* IE;
- A list of DRBs which failed to be established shall be included in the *DRB Failed to be Setup List* IE;

- A list of DRBs which are successfully modified shall be included in the *DRB Modified List IE*;
- A list of DRBs which failed to be modified shall be included in the *DRB Failed to be Modified List IE*;
- A list of SRBs which failed to be established shall be included in the *SRB Failed to be Setup List IE*.
- A list of successfully established SRBs with logical channel identities for primary path shall be included in the *SRB Setup List IE* only if CA based PDCP duplication is initiated for the concerned SRBs.
- A list of successfully modified SRBs with logical channel identities for primary path shall be included in the *SRB Modified List IE* only if CA based PDCP duplication is initiated for the concerned SRBs.
- A list of BH RLC channels which are successfully established shall be included in the *BH RLC Channel Setup List IE*;
- A list of BH RLC channels which failed to be established shall be included in the *BH RLC Channel Failed to be Setup List IE*;
- A list of BH RLC channels which are successfully modified shall be included in the *BH RLC Channel Modified List IE*;
- A list of BH RLC channels which failed to be modified shall be included in the *BH RLC Channel Failed to be Modified List IE*;
- A list of Uu Relay RLC channels which are successfully established shall be included in the *Uu RLC Channel Setup List IE*;
- A list of Uu Relay RLC channels which failed to be established shall be included in the *Uu RLC Channel Failed to be Setup List IE*;
- A list of Uu Relay RLC channels which are successfully modified shall be included in the *Uu RLC Channel Modified List IE*;
- A list of Uu Relay RLC channels which are failed to be modified shall be included in the *Uu RLC Channel Failed to be Modified List IE*;
- A list of PC5 Relay RLC channels which are successfully established shall be included in the *PC5 RLC Channel Setup List IE*;
- A list of PC5 Relay RLC channels which failed to be established shall be included in the *PC5 RLC Channel Failed to be Setup List IE*;
- A list of PC5 Relay RLC channels which are successfully modified shall be included in the *PC5 RLC Channel Modified List IE*;
- A list of PC5 Relay RLC channels which failed to be modified shall be included in the *PC5 RLC Channel Failed to be Modified List IE*;
- A list of SL DRBs which are successfully established shall be included in the *SL DRB Setup List IE*;
- A list of SL DRBs which failed to be established shall be included in the *SL DRB Failed to be Setup List IE*;
- A list of SL DRBs which are successfully modified shall be included in the *SL DRB Modified List IE*;
- A list of SL DRBs which failed to be modified shall be included in the *SL DRB Failed to be Modified List IE*.

For each GBR DRB, if the *Alternative QoS Parameters Sets IE* is included in the *GBR QoS Flow Information IE* in the UE CONTEXT MODIFICATION REQUEST message, gNB-DU shall, if supported, behave the same as the NG-RAN node in the PDU Session Resource Setup procedure, specified in TS 38.413 [3].

If the *BAP Control PDU Channel IE* is included in the *BH RLC Channel to be Setup List IE*, the gNB-DU shall, if supported, consider that the configured BH RLC channel can be used to transmit BAP Control PDUs, and use this BH RLC channel as specified in TS 38.340 [30].

If the *BAP Control PDU Channel IE* is included in the *BH RLC Channel to be Modified List IE*, the gNB-DU shall, if supported, consider that the configured BH RLC channel can be used to transmit BAP Control PDUs, and use this BH RLC channel as specified in TS 38.340 [30]. Otherwise, if the *BAP Control PDU Channel IE* is not present for any BH

RLC channel, any available BH RLC channel can be used to transmit BAP Control PDUs as specified in TS 38.340 [30].

If the *F1-C Transfer Path* IE is included in UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, take it into account.

When the gNB-DU reports the unsuccessful establishment of a DRB or SRB or SL DRB or a BH RLC channel or a Uu Relay RLC channel or a PC5 Relay RLC channel, the cause value should be precise enough to enable the gNB-CU to know the reason for the unsuccessful establishment.

If the *Resource Coordination Transfer Container* IE is included in the UE CONTEXT MODIFICATION RESPONSE, the gNB-CU shall transparently transfer this information for the purpose of resource coordination as described in TS 36.423 [9], TS 38.423 [28].

If the *DU to CU RRC Information* IE is included in the UE CONTEXT MODIFICATION RESPONSE message, except for the CG-SDT procedure, the gNB-CU shall perform RRC Reconfiguration as described in TS 38.331 [8]. The *CellGroupConfig* IE shall transparently be signaled to the UE as specified in TS 38.331 [8]. In the case of CG-SDT, the *CellGroupConfig* IE shall be ignored by the gNB-CU.

If the *UE-CapabilityRAT-ContainerList* IE is included in the UE CONTEXT SETUP MODIFICATION REQUEST, the gNB-DU shall take this information into account for UE specific configurations.

If the *SCell Failed To Setup List* IE is contained in the UE CONTEXT MODIFICATION RESPONSE message, the gNB-CU shall regard the corresponding SCell(s) failed to be set up with an appropriate cause value for each SCell failed to setup.

If the *C-RNTI* IE is included in the UE CONTEXT MODIFICATION RESPONSE, the gNB-CU shall consider that the C-RNTI has been allocated by the gNB-DU for this UE context.

If the *Inactivity Monitoring Request* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, gNB-DU may consider that the gNB-CU has requested the gNB-DU to perform UE inactivity monitoring. If the *Inactivity Monitoring Response* IE is contained in the UE CONTEXT MODIFICATION RESPONSE message and set to "Not-supported", the gNB-CU shall consider that the gNB-DU does not support UE inactivity monitoring for the UE.

The UE Context Modify Procedure is not used to configure SRB0.

If in the UE CONTEXT MODIFICATION REQUEST, the *Notification Control* IE is included in the *DRB to Be Setup List* IE or the *DRB to Be Modified List* IE and it is set to active, the gNB-DU shall, if supported, monitor the QoS of the DRB and notify the gNB-CU if the QoS cannot be fulfilled any longer or if the QoS can be fulfilled again. The *Notification Control* IE can only be applied to GBR bearers.

If the *UL PDU Session Aggregate Maximum Bit Rate* IE is included in the *QoS Flow Level QoS Parameters* IE contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall replace the received UL PDU Session Aggregate Maximum Bit Rate and use it as specified in TS 23.501 [21].

If the *gNB-DU UE Aggregate Maximum Bit Rate Uplink* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall:

- replace the previously provided gNB-DU UE Aggregate Maximum Bit Rate Uplink with the new received gNB-DU UE Aggregate Maximum Bit Rate Uplink;
- use the received gNB-DU UE Aggregate Maximum Bit Rate Uplink for non-GBR Bearers for the concerned UE.

The *gNB-DU UE Aggregate Maximum Bit Rate Uplink* IE shall be sent in the UE CONTEXT MODIFICATION REQUEST if *DRB to Be Setup List* IE is included and the gNB-CU has not previously sent it. The gNB-DU shall store and use the received *gNB-DU UE Aggregate Maximum Bit Rate Uplink* IE.

If the *RLC Status* IE is included in the UE CONTEXT MODIFICATION RESPONSE message, the gNB-CU shall assume that RLC has been reestablished at the gNB-DU and may trigger PDCP data recovery.

If the *GNB-DU Configuration Query* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, gNB-DU shall include the *DU To CU RRC Information* IE in the UE CONTEXT MODIFICATION RESPONSE message.

If the *Bearer Type Change* IE is included in *DRB to Be Modified List* IE in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall either reset the lower layers or generate a new LCID for the affected bearer as specified in TS 37.340 [7].

For NE-DC operation, if *NeedforGap* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall generate measurement gap for the SeNB.

If the *QoS Flow Mapping Indication* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, replace any previously received value and take it into account that only the uplink or downlink QoS flow is mapped to the DRB.

If the *Lower Layer presence status change* IE set to "suspend lower layers" is included in the UE CONTEXT MODIFICATION REQUEST, the gNB-DU shall keep all lower layer configuration for UEs, and not transmit or receive data from UE.

If the *Lower Layer presence status change* IE set to "resume lower layers" is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall use the previously stored lower layer configuration for the UE.

If the *Full Configuration* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall generate a *CellGroupConfig* IE using full configuration and include it in the UE CONTEXT MODIFICATION RESPONSE.

If the *Full Configuration* IE is contained in the UE CONTEXT MODIFICATION RESPONSE message, the gNB-CU shall consider that the gNB-DU has generated the *CellGroupConfig* IE using full configuration.

For each QoS flow whose DRB has been successfully established or modified and the *QoS Monitoring Request* IE was included in the *QoS Flow Level QoS Parameters* IE contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall store this information, and, if supported, perform delay measurement and QoS monitoring, as specified in TS 23.501 [21].

If the *NR V2X Services Authorized* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, update its V2X services authorization information for the UE accordingly. If the *NR V2X Services Authorized* IE includes one or more IEs set to "not authorized", the gNB-DU shall, if supported, initiate actions to ensure that the UE is no longer accessing the relevant service(s).

If the *LTE V2X Services Authorized* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, update its V2X services authorization information for the UE accordingly. If the *LTE V2X Services Authorized* IE includes one or more IEs set to "not authorized", the gNB-DU shall, if supported, initiate actions to ensure that the UE is no longer accessing the relevant service(s).

If the *LTE UE Sidelink Aggregate Maximum Bit Rate* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported:

- replace the previously provided UE LTE Sidelink Aggregate Maximum Bit Rate, if available in the UE context, with the received value;
- use the received value for the concerned UE's sidelink communication in network scheduled mode for LTE V2X services.

If the *NR UE Sidelink Aggregate Maximum Bit Rate* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported:

- replace the previously provided UE NR Sidelink Aggregate Maximum Bit Rate, if available in the UE context, with the received value;
- use the received value for the concerned UE's sidelink communication in network scheduled mode for NR V2X services.

If the *PC5 Link Aggregate Maximum Bit Rate* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported:

- replace the previously provided UE PC5 Link Aggregate Bit Rate, if available in the UE context, with the received value;

- use the received value for the concerned UE's sidelink communication in network scheduled mode for NR V2X services as defined in TS 23.287 [40].

If the *TSC Traffic Characteristics* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, take into account the corresponding information received in the *TSC Traffic Characteristics* IE.

If the *CPAC MCG Information* IE is included in the UE CONTEXT MODIFICATION REQUEST message and the CPAC Trigger is set to "CPAC-preparation", the gNB-DU shall, if supported, consider that the request concerns a conditional PSCell addition or conditional PSCell change. The gNB-DU takes the included *CG-Config* and/or *CG-ConfigInfo* IE into account, and may provide a corresponding *CellGroupConfig* IE for MCG configuration preparation in the UE CONTEXT MODIFICATION RESPONSE message. The UE CONTEXT MODIFICATION RESPONSE message also includes a *Requested Target Cell ID* IE corresponding to the *PSCell ID* IE in the UE CONTEXT MODIFICATION REQUEST message.

If the *CPAC MCG Information* IE is included in the UE CONTEXT MODIFICATION REQUEST message and the CPAC Trigger is set to "CPAC-executed", the gNB-DU shall, if supported, consider that, for the included *PSCell ID* IE corresponding to the selected PSCell, the UE has successfully executed the CPAC preparation. The gNB-DU shall apply the corresponding *CellGroupConfig* IE for MCG configuration.

If the *Conditional Intra-DU Mobility Information* IE is included in the UE CONTEXT MODIFICATION REQUEST message and the CHO Trigger is set to "CHO-initiation", the gNB-DU shall consider that the request concerns a conditional handover or conditional PSCell addition or conditional PSCell change for the included *SpCell ID* IE and shall include it as the *Requested Target Cell ID* IE in the UE CONTEXT MODIFICATION RESPONSE message. The gNB-DU shall regard it as a reconfiguration with sync as defined in TS 38.331 [8].

If the *Conditional Intra-DU Mobility Information* IE is included in the UE CONTEXT MODIFICATION REQUEST message and the CHO Trigger is set to "CHO-replace", the gNB-DU shall replace the existing prepared conditional mobility identified by the *gNB-DU UE FIAP ID* IE and the *SpCell ID* IE.

If the *Conditional Intra-DU Mobility Information* IE is included in the UE CONTEXT MODIFICATION REQUEST message and the CHO Trigger is set to "CHO-cancel", the gNB-DU shall consider that the gNB-CU is about to remove any reference to, and release any resources previously reserved for the candidate cells associated to the UE-associated signalling identified by the *gNB-CU UE FIAP ID* IE and the *gNB-DU UE FIAP ID* IE. If the *Candidate Cells To Be Cancelled List* IE is also included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall consider that only the resources reserved for the cells identified by the included NR CGIs are about to be released by the gNB-CU.

If the *Transmission Stop Indicator* IE is included within the *DRB to Be Modified Item* IE in the UE CONTEXT MODIFICATION REQUEST message and set to "true", the gNB-DU shall, if supported, stop the data transmission for the DRB. It is up to gNB-DU implementation when to stop the UE scheduling for that DRB.

If the *SCG Indicator* IE is contained in the UE CONTEXT MODIFICATION REQUEST message and it is set to "released", the gNB-DU shall, if supported, deduce that an SCG is removed.

If the *Estimated Arrival Probability* IE is contained in the *Conditional Intra-DU Mobility Information* IE included in the UE CONTEXT MODIFICATION REQUEST message, then the gNB-DU may use the information to allocate necessary resources for the UE.

If the *Location Measurement Information* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, take it into account when configuring measurement gaps for the UE.

If the *FI-C Transfer Path NRDC* IE is included in UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, take it into account.

If for a given E-RAB for EN-DC operation the *ENB DL Transport Layer Address* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, use it as part of its ACL functionality configuration actions, if such ACL functionality is deployed.

If for a given Qos flow for NG-RAN operation the *PDCP Terminating Node DL Transport Layer Address* IE is included in the UE CONTEXT MODIFICATION REQUEST message, then the gNB-DU shall, if supported, use it as part of its ACL functionality configuration actions, if such ACL functionality is deployed.

If the gNB-DU is an IAB-DU, and if the *IAB Conditional RRC Message Delivery Indication* IE is included in the UE CONTEXT MODIFICATION REQUEST message together with the *RRC-Container* IE, and if its value is set to "true", and if the *RRC-Container* IE is for a child IAB-MT of the gNB-DU, the gNB-DU shall, if supported, withhold the RRC message until one of the following conditions is met:

If the gNB-DU belongs to a migrating IAB-node, whose co-located IAB-MT has successfully performed the random-access procedure to the target parent node, and if the migrating IAB-node has one or more routing entries for the target path.

The gNB-DU receives a subsequent F1AP message including an *RRC-Container IE* for the same child node.

If the gNB-DU belongs to a descendant node of the migrating IAB-node, whose co-located IAB-MT has received an *RRCReconfiguration* message including the intra-donor migration configurations, e.g., new TNL address(es) and the new default UL BAP routing ID.

If the gNB-DU belongs to a migrating IAB-node, whose co-located IAB-MT has successfully performed RLF recovery after handover failure, and if the migrating IAB-node has one or more routing entries for the target path.

If the *MDT Polluted Measurement Indicator* IE is included in the UE CONTEXT MODIFICATION REQUEST, the gNB-DU shall take this information into account as specified in TS 38.401 [4].

If the *SCG Activation Request* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU may use it to configure SCG resources as specified in TS 37.340 [7], and if supported, shall include the *SCG Activation Status* IE in the UE CONTEXT MODIFICATION RESPONSE message.

If the *CG-SDT Query Indication* IE is included in the UE CONTEXT MODIFICATION REQUEST message and set to 'true', the gNB-DU shall, if supported, provide the CG-SDT related resource configuration for the bearers indicated as SDT bearers in the *SDT-MAC-PHY-CG-Config* IE within the *DU to CU RRC Information* IE contained in the UE CONTEXT MODIFICATION RESPONSE message to the gNB-CU. If the *SDT-MAC-PHY-CG-Config* IE is also included in the UE CONTEXT MODIFICATION REQUEST message within the *CU to DU RRC Information* IE, the gNB-DU may provide the delta signalling version of the *SDT-MAC-PHY-CG-Config* IE within the *DU to CU RRC Information* IE contained in the UE CONTEXT MODIFICATION RESPONSE message to the gNB-CU.

If the *5G ProSe Authorized* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, update its 5G ProSe services authorization information for the UE accordingly. If the *5G ProSe Authorized* IE includes one or more IEs set to "not authorized", the gNB-DU shall, if supported, initiate actions to ensure that the UE is no longer accessing the relevant service(s).

If the *SDT Bearer Configuration Query Indication* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, provide the RLC bearer configuration in the *SDT Bearer Configuration Info* IE in the UE CONTEXT MODIFICATION RESPONSE message for each bearer indicated as SDT bearer.

If the *5G ProSe UE PC5 Aggregate Maximum Bit Rate* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported:

- replace the previously provided 5G ProSe UE PC5 Aggregate Maximum Bit Rate, if available in the UE context, with the received value;
- use the received value for the concerned UE's sidelink communication in network scheduled mode for 5G ProSe services.

If the *5G ProSe PC5 Link Aggregate Bit Rate* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported:

- replace the previously provided 5G ProSe PC5 Link Aggregate Bit Rate, if available in the UE context, with the received value;
- use the received value for the concerned UE's sidelink communication in network scheduled mode for 5G ProSe services as defined in TS 23.304 [44].

If the *Updated Remote UE Local ID* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, replace the previously provided Remote UE Local ID, if available in the UE context, with the received value.

If the *Uu RLC Channel To Be Setup List* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, act as specified in TS 38.401 [4].

If the *Uu RLC Channel To Be Modified List* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, act as specified in TS 38.401 [4].

If the *Uu RLC Channel To Be Release List* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, release the Uu Relay RLC channels in the list.

If the *PC5 RLC Channel To Be Setup List* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, act as specified in TS 38.401 [4]. gNB-DU generates the PC5 Relay RLC channel configurations for a L2 U2N Remote UE or U2N Relay UE. If the F1AP-IDs are associated with a U2N Relay UE, the *PC5 RLC Channel to be Setup Item IEs* IE shall include the *Remote UE Local ID* and correspondingly, the *PC5 RLC Channel Setup Item IEs* IE and the *PC5 RLC Channel Failed to be Setup Item* IE in the UE CONTEXT MODIFICATION RESPONSE message shall include the *Remote UE Local ID* IE.

If the *PC5 RLC Channel To Be Modified List* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, act as specified in TS 38.401 [4]. gNB-DU generates the PC5 Relay RLC channel configurations for a L2 U2N Remote UE or U2N Relay UE. If the F1AP-IDs are associated with a U2N Relay UE, the *PC5 RLC Channel to be Modified Item IEs* IE shall include the *Remote UE Local ID* IE and correspondingly, the *PC5 RLC Channel Modified Item IEs* IE and the *PC5 RLC Channel Failed to be Modified Item IEs* IE in the UE CONTEXT MODIFICATION RESPONSE message shall include the *Remote UE Local ID* IE.

If the *PC5 RLC Channel To Be Release List* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, release the PC5 Relay RLC channels in the list. If the F1AP-IDs are associated with a U2N Relay UE, the *PC5 RLC Channel to be Released Item IEs* IE shall include the *Remote UE Local ID* IE.

If the *Path Switch Configuration* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, use it to configure the path switch from direct path to indirect path as specified in TS 38.401 [4].

If the *MUSIM-GapConfig* IE is contained in the *CU to DU RRC Information* IE included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, decide to use this IE for MUSIM gap configuration or select another one based on the received *UEAssistanceInformation* IE. If gNB-DU selects a different MUSIM gap configuration from received *UEAssistanceInformation* IE, then it shall include the selected MUSIM gap information to the gNB-CU in the *MUSIM-GapConfig* IE of the *DU to CU RRC Information* IE that is included in the UE CONTEXT MODIFICATION RESPONSE message.

If *MUSIM-GapConfig* IE is not contained in the *CU to DU RRC Information* IE, then gNB-DU shall, if supported, send the selected MUSIM gap configuration based on the received *UEAssistanceInformation* IE, to the gNB-CU in the *MUSIM-GapConfig* IE of the *DU to CU RRC Information* IE that is included in the UE CONTEXT MODIFICATION RESPONSE message. When *MUSIM-GapConfig* IE is received, the gNB-CU should use this value.

If the *gNB-DU UE Slice Maximum Bit Rate List* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported,

- store and replace the previously provided gNB-DU UE Slice Maximum Bit Rate List, if any, with the new received *gNB-DU UE Slice Maximum Bit Rate List*;
- use the received *gNB-DU UE Slice Maximum Bit Rate List* for the uplink traffic policing for each concerned slice as specified in TS 23.501 [21].

If the *Multicast MBS Session Setup List* IE or the *Multicast MBS Session Remove List* IE or both IEs are contained in the UE CONTEXT MODIFICATION REQUEST message the gNB-DU shall, if supported, store and use the information for configuring MBS Session Resources, if applicable.

If the *UE Multicast MRB To Be Setup at Modify List* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, take it into account for configuring MBS Session Resources, if applicable, and shall include the *Multicast F1-U Context Reference CU* IE, if available, in the UE CONTEXT MODIFICATION RESPONSE message. And if the *MBS PTP Retransmission Tunnel Required* IE is included in the *UE Multicast MRB to Be Setup at Modify Item IEs* IE, the gNB-DU shall, if supported trigger the establishment of the MBS PTP Retransmission F1-U tunnel.

If the *MBS PTP Forwarding Tunnel Required Information IE* is included in the *UE Multicast MRB to Be Setup at Modify Item IEs IE*, the gNB-DU shall, if supported trigger the establishment of the MBS PTP Forwarding F1-U tunnel.

If the *Management Based MDT PLMN Modification List IE* is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, overwrite any previously stored Management Based MDT PLMN List information in the UE context and use the received information to determine subsequent selection of the UE for management based MDT defined in TS 32.422 [29].

If the *InterFrequencyConfig-NoGap IE* is included in the *DU to CU RRC Information IE* contained in the UE CONTEXT MODIFICATION RESPONSE message, the gNB-CU shall, if supported, use it as described in TS 38.331 [8].

If the *ul-GapFR2-Config IE* is contained in the *DU to CU RRC Information IE* that is included in the UE CONTEXT MODIFICATION RESPONSE message, the gNB-CU shall, if supported, use it as described in TS 38.331 [8].

If the *TwoPHRModeMCG IE* or the *TwoPHRModeSCG IE* is contained in the *DU to CU RRC Information IE* that is included in the UE CONTEXT MODIFICATION RESPONSE message, the gNB-CU shall, if supported, use this value as described in TS 38.331 [8].

8.3.4.3 Unsuccessful Operation

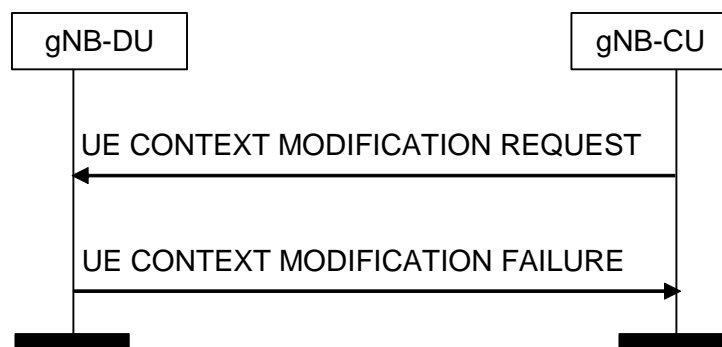


Figure 8.3.4.3-1: UE Context Modification procedure. Unsuccessful operation

In case none of the requested modifications of the UE context can be successfully performed, the gNB-DU shall respond with the UE CONTEXT MODIFICATION FAILURE message with an appropriate cause value. If the *Conditional Intra-DU Mobility Information IE* was included in the UE CONTEXT MODIFICATION REQUEST message and set to "CHO-initiation", the gNB-DU shall include the received *SpCell ID IE* as the *Requested Target Cell ID IE* in the UE CONTEXT MODIFICATION FAILURE message.

If the gNB-DU is not able to accept the *SpCell ID IE* in UE CONTEXT MODIFICATION REQUEST message, it shall reply with the UE CONTEXT MODIFICATION FAILURE message.

If the *Conditional Intra-DU Mobility Information IE* was included and set to "CHO-initiation" or "CHO-replace" but the *SpCell ID IE* was not included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall respond with the UE CONTEXT MODIFICATION FAILURE message with an appropriate cause value.

8.3.4.4 Abnormal Conditions

If the gNB-DU receives a UE CONTEXT MODIFICATION REQUEST message containing a *E-UTRAN QoS IE* for a GBR QoS DRB but where the *GBR QoS Information IE* is not present, the gNB-DU shall report the establishment of the corresponding DRB as failed in the *DRB Failed to Setup List IE* of the UE CONTEXT MODIFICATION RESPONSE message with an appropriate cause value.

If the gNB-DU receives a UE CONTEXT MODIFICATION REQUEST message containing a *DRB QoS IE* for a GBR QoS DRB but where the *GBR QoS Flow Information IE* is not present, the gNB-DU shall report the establishment of the corresponding DRBs as failed in the *DRB Failed to Setup List IE* of the UE CONTEXT MODIFICATION RESPONSE message with an appropriate cause value.

If the *Delay Critical IE* is included in the *Dynamic 5QI Descriptor IE* within the *DRB QoS IE* in the UE CONTEXT MODIFICATION REQUEST message and is set to the value "delay critical" but the *Maximum Data Burst Volume IE*

is not present, the gNB-DU shall report the establishment of the corresponding DRB as failed in the *DRB Failed to Setup List* IE of the of the UE CONTEXT MODIFICATION RESPONSE message with an appropriate cause value.

If one or more candidate cells in the *Candidate Cells To Be Cancelled List* IE included in the UE CONTEXT MODIFICATION REQUEST message were not prepared using the same UE-associated signaling connection, the gNB-DU shall ignore those non-associated candidate cells.

In case of "CHO-replace" when the *Target gNB-DU UE FIAP ID* IE is included, if the candidate cell in the *SpCell ID* IE included in the UE CONTEXT MODIFICATION REQUEST message was not prepared using the same UE-associated signalling connection, the gNB-DU shall ignore this candidate cell.

If more than one of the following IEs, i.e., the *Uplink TxDirectCurrentList Information* IE or the *Uplink TxDirectCurrentTwoCarrierList Information* IE or the *Uplink TxDirectCurrentMoreCarrierList Information* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall consider it as a logical error.

8.3.5 UE Context Modification Required (gNB-DU initiated)

8.3.5.1 General

The purpose of the UE Context Modification Required procedure is to modify the established UE Context, e.g., modifying and releasing radio bearer resources, or sidelink radio bearer resources or candidate cells in conditional handover or conditional PSCell addition or conditional PSCell change. The procedure uses UE-associated signalling.

8.3.5.2 Successful Operation

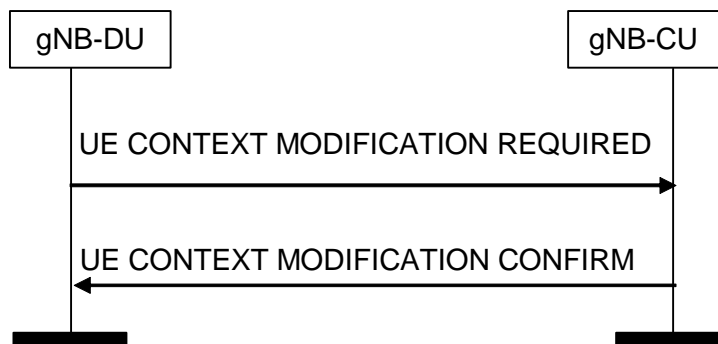


Figure 8.3.5.2-1: UE Context Modification Required procedure. Successful operation

The FIAP UE CONTEXT MODIFICATION REQUIRED message is initiated by the gNB-DU.

The gNB-CU reports the successful update of the UE context in the UE CONTEXT MODIFICATION CONFIRM message.

For a given bearer for which PDCP CA duplication was already configured, if two *DL UP TNL Information* IEs are included in UE CONTEXT MODIFICATION REQUIRED message for a DRB, the gNB-CU shall include two *UL UP TNL Information* IEs in UE CONTEXT MODIFICATION CONFIRM message. The gNB-CU and gNB-DU use the *UL UP TNL Information* IEs and *DL UP TNL Information* IEs to support packet duplication for intra-gNB-DU CA as defined in TS 38.470 [2], and the first *UP TNL Information* IE is still for the primary path.

For a given bearer for which PDCP CA duplication was already configured, if one or two *Additional PDCP Duplication UP TNL Information* IEs are included in the UE CONTEXT MODIFICATION REQUIRED message for a DRB, the gNB-CU shall, if supported, include one or two *Additional PDCP Duplication UP TNL Information* IEs in the UE CONTEXT MODIFICATION CONFIRM message. The gNB-CU and gNB-DU use the *Additional PDCP Duplication UP TNL Information* IEs to support packet duplication for intra-gNB-DU CA as defined in TS 38.470 [2].

If the *BH Information* IE is included in the *UL UP TNL Information to be setup List* IE or the *Additional PDCP Duplication TNL List* IE for a DRB, the gNB-DU shall, if supported, use the indicated BAP Routing ID and BH RLC channel for transmission of the corresponding GTP-U packets to the IAB-donor, as specified in TS 38.340 [30].

If the *Resource Coordination Transfer Container* IE is included in the UE CONTEXT MODIFICATION REQUIRED, the gNB-CU shall transparently transfer this information for the purpose of resource coordination as described in TS 36.423 [9], TS 38.423 [28].

For EN-DC operation, if the gNB-CU includes the *Resource Coordination Transfer Information* IE in the UE CONTEXT MODIFICATION CONFIRM message, the gNB-DU shall, if supported, use it for the purpose of resource coordination. If the gNB-CU received the MeNB Resource Coordination Information as defined in TS 36.423 [9], after completion of UE Context Modification Required procedures, the gNB-CU shall transparently transfer it to the gNB-DU via the *Resource Coordination Transfer Container* IE in the UE CONTEXT MODIFICATION CONFIRM message. The gNB-DU shall use the information received in the *Resource Coordination Transfer Container* IE for reception of MeNB Resource Coordination Information at the gNB acting as secondary node as described in TS 36.423 [9]. If the *Resource Coordination E-UTRA Cell Information* IE is included in the *Resource Coordination Transfer Information* IE, the gNB-DU shall store the information replacing previously received information for the same E-UTRA cell, and use the stored information for the purpose of resource coordination. If the *Ignore PRACH Configuration* IE is present and set to "true" the *E-UTRA PRACH Configuration* IE in the UE CONTEXT MODIFICATION CONFIRM message shall be ignored.

For NGEN-DC or NE-DC operation, if the gNB-CU includes the *Resource Coordination Transfer Information* IE in the UE CONTEXT MODIFICATION CONFIRM message, the gNB-DU shall, if supported, use it for the purpose of resource coordination. If the gNB-CU received the MR-DC Resource Coordination Information as defined in TS 38.423 [28], after completion of UE Context Modification Required procedures, the gNB-CU shall transparently transfer it to the gNB-DU via the *Resource Coordination Transfer Container* IE in the UE CONTEXT MODIFICATION CONFIRM message. The gNB-DU shall use the information received in the *Resource Coordination Transfer Container* IE for reception of MR-DC Resource Coordination Information at the gNB as described in TS 38.423 [28].

If the *DU to CU RRC Information* IE is included in the UE CONTEXT MODIFICATION REQUIRED message, the gNB-CU shall perform RRC Reconfiguration as described in TS 38.331 [8]. The *CellGroupConfig* IE shall transparently be signaled to the UE as specified in TS 38.331 [8].

If the UE CONTEXT MODIFICATION CONFIRM message includes the *Execute Duplication* IE, the gNB-DU shall perform CA based duplication, if configured, for the SRB for the included *RRC-Container* IE.

If the UE CONTEXT MODIFICATION REQUIRED message contains the *RLC Status* IE, the gNB-CU shall assume that RLC has been reestablished at the gNB-DU and may trigger PDCP data recovery.

If the *Candidate Cells To Be Cancelled List* IE is included in the UE CONTEXT MODIFICATION REQUIRED message, the gNB-CU shall consider that only the resources reserved for the candidate cells identified by the included NR CGIs and associated to the UE-associated signaling identified by the *gNB-CU UE FIAP ID* IE and the *gNB-CU UE FIAP ID* IE are about to be released by the gNB-DU.

If the *PC5 RLC Channel Required to be Modified List* IE or the *PC5 RLC Channel Required to be Released List* IE is included in the UE CONTEXT MODIFICATION REQUIRED message and the F1AP-IDs is associated with a U2N Relay UE, the *PC5 RLC Channel Required to be Modified List* IE or the *PC5 RLC Channel Required to be Released List* shall include the *Remote UE Local ID* and correspondingly, the *PC5 RLC Channel Modified Item IEs* in the UE CONTEXT MODIFICATION CONFIRM message shall include the *Remote UE Local ID* IE.

If the *UE Multicast MRB Required to Be Modified List* IE is included in the UE CONTEXT MODIFICATION REQUIRED message

- containing for an MRB the *MRB type reconfiguration* IE set to "true" the gNB-CU shall take the *MRB Reconfigured RLC mode* IE into account to reconfigure the UE and to decide whether to request a PDCP status report as specified in TS 38.300 [6] and include the *MBS PTP Retransmission Tunnel Required* IE in the *UE Multicast MRB Confirmed to Be Modified Item IEs* IE.
- containing for an MRB the *Multicast F1-U Context Reference CU* IE the gNB-CU shall, if supported, replace previously provided information by the newly received and take it into account when retrieving MRB progress information.

Interaction with the Multicast Distribution Setup procedure:

If the UE CONTEXT MODIFICATION CONFIRM message contains for an MRB the *MBS PTP Retransmission Tunnel Required* IE in the *UE Multicast MRB Confirmed to Be Modified Item IEs* IE the gNB-DU shall, if supported, trigger the Multicast Distribution Setup procedure to setup requested F1-U resources, if applicable.

8.3.5.2A Unsuccessful Operation

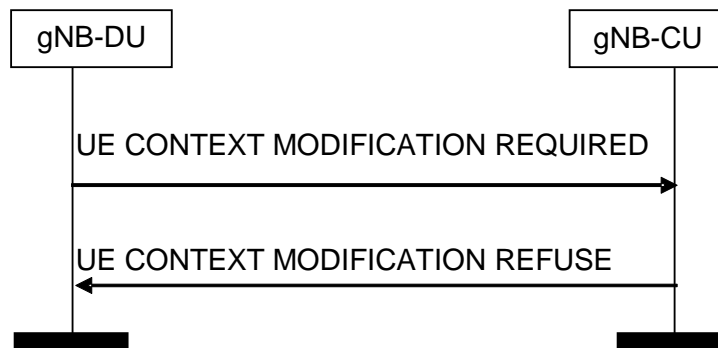


Figure 8.3.5.2A-1: UE Context Modification Required procedure. Unsuccessful operation.

In case none of the requested modifications of the UE context can be successfully performed, the gNB-CU shall respond with the UE CONTEXT MODIFICATION REFUSE message with an appropriate cause value.

8.3.5.3 Abnormal Conditions

If one or more candidate cells in the *Candidate Cells To Be Cancelled List* IE included in the UE CONTEXT MODIFICATION REQUIRED message were not prepared using the same UE-associated signaling connection, the gNB-CU shall ignore those non-associated candidate cells.

8.3.6 UE Inactivity Notification

8.3.6.1 General

This procedure is initiated by the gNB-DU to indicate the UE activity event.

The procedure is also used to request the termination of SDT session.

The procedure uses UE-associated signalling.

8.3.6.2 Successful Operation



Figure 8.3.6.2-1: UE Inactivity Notification procedure.

The gNB-DU initiates the procedure by sending the UE INACTIVITY NOTIFICATION message to the gNB-CU.

If the *DRB ID* IE is included in the *DRB Activity Item* IE in the UE INACTIVITY NOTIFICATION message, the *DRB Activity* IE shall also be included

If the gNB-CU receives the *SDT Termination Request* IE in the UE INACTIVITY NOTIFICATION message, the gNB-CU shall, if supported, consider that the termination of the ongoing SDT transaction is requested from the gNB-DU for this UE and act as specified in TS 38.300 [6].

8.3.6.3 Abnormal Conditions

Not applicable.

8.3.7 Notify

8.3.7.1 General

The purpose of the Notify procedure is to enable the gNB-DU to inform the gNB-CU that the QoS of an already established GBR DRB cannot be fulfilled any longer or that it can be fulfilled again. The procedure uses UE-associated signalling.

8.3.7.2 Successful Operation



Figure 8.3.7.2-1: Notify procedure. Successful operation.

The gNB-DU initiates the procedure by sending a NOTIFY message.

The NOTIFY message shall contain the list of the GBR DRBs associated with notification control for which the QoS is not fulfilled anymore or for which the QoS is fulfilled again by the gNB-DU. The gNB-DU may also indicate an alternative QoS parameters set which it can currently fulfil in the *Current QoS Parameters Set Index* IE.

Upon reception of the NOTIFY message, the gNB-CU may identify which are the affected PDU sessions and QoS flows. The gNB-CU may inform the 5GC that the QoS for these PDU sessions or QoS flows is not fulfilled any longer or it is fulfilled again.

8.3.7.3 Abnormal Conditions

Not applicable.

8.3.8 Access Success

8.3.8.1 General

The purpose of the Access Success procedure is to enable the gNB-DU to inform the gNB-CU of which cell the UE has successfully accessed during conditional handover or conditional PSCell addition or conditional PSCell change. The procedure uses UE-associated signalling.

8.3.8.2 Successful Operation



Figure 8.3.8.2-1: Access Success procedure. Successful operation.

The gNB-DU initiates the procedure by sending a ACCESS SUCCESS message.

Upon reception of the ACCESS SUCCESS message, the gNB-CU shall consider that the UE successfully accessed the cell indicated by the included *NR CGI* IE in this gNB-DU and consider all the other CHO preparations or conditional PSCell addition or conditional PSCell change preparations accepted for this UE under the same UE-associated signaling connection in this gNB-DU as cancelled.

Interaction with other procedure:

The gNB-CU may initiate UE Context Release procedure toward the other signalling connections or other candidate gNB-DUs for this UE, if any.

8.3.8.3 Abnormal Conditions

If the ACCESS SUCCESS message refers to a context that does not exist, the gNB-CU shall ignore the message.

8.4 RRC Message Transfer procedures

8.4.1 Initial UL RRC Message Transfer

8.4.1.1 General

The purpose of the Initial UL RRC Message Transfer procedure is to transfer the initial RRC message to the gNB-CU. The procedure uses non-UE-associated signaling.

8.4.1.2 Successful operation

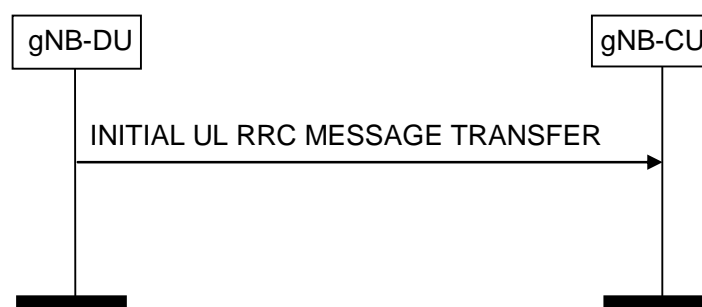


Figure 8.4.1.2-1: Initial UL RRC Message Transfer procedure.

The gNB-DU initiates the procedure by sending an INITIAL UL RRC MESSAGE TRANSFER. The establishment of the UE-associated logical F1-connection shall be initiated as part of the procedure.

If neither the *DU to CU RRC Container IE* nor the *Sidelink Configuration Container IE* in the *Sidelink Relay Configuration IE* is included in the INITIAL UL RRC MESSAGE TRANSFER, the gNB-CU should reject the UE under the assumption that the gNB-DU is not able to serve such UE. If the gNB-DU is able to serve the UE, the gNB-DU shall include the *DU to CU RRC Container IE* or the *Sidelink Configuration Container IE* in the *Sidelink Relay Configuration IE* and the gNB-CU shall configure the UE as specified in TS 38.331 [8]. The gNB-DU shall not include the *ReconfigurationWithSync* field in the *CellGroupConfig IE* as defined in TS 38.331 [8] of the *DU to CU RRC Container IE*.

If the *SUL Access Indication IE* is included in the INITIAL UL RRC MESSAGE TRANSFER, the gNB-CU shall consider that the UE has performed access on SUL carrier.

If the *RRC-Container-RRCSetupComplete IE* is included in the INITIAL UL RRC MESSAGE TRANSFER, the gNB-CU shall take it into account as specified in TS 38.401 [4].

If the *NR RedCap UE Indication IE* is included in the INITIAL UL RRC MESSAGE TRANSFER message, the gNB-CU shall, if supported, consider that the accessing UE is a RedCap UE.

If the *SDT Information IE* is included in the INITIAL UL RRC MESSAGE TRANSFER, the gNB-CU shall, if supported, consider that the UE is accessing for SDT as defined in TS 38.300 [6], and may use the information contained in the *SDT Assistant Information IE*, if any, for context retrieval.

If the *Sidelink Relay Configuration IE* is included in the INITIAL UL RRC MESSAGE TRANSFER, the gNB-CU shall, if supported, consider that the UE is a NR ProSe Layer-2 U2N Remote UE identified by the *Remote UE Local ID IE*, and it is connected to the U2N Relay UE indicated by the *gNB-DU UE FIAP ID of Relay UE IE*.

8.4.1.3 Abnormal Conditions

Not applicable.

8.4.2 DL RRC Message Transfer

8.4.2.1 General

The purpose of the DL RRC Message Transfer procedure is to transfer an RRC message. The procedure uses UE-associated signalling.

8.4.2.2 Successful operation



Figure 8.4.2.2-1: DL RRC Message Transfer procedure

The gNB-CU initiates the procedure by sending a DL RRC MESSAGE TRANSFER message. If a UE-associated logical F1-connection exists, the DL RRC MESSAGE TRANSFER message shall contain the *gNB-DU UE FIAP ID IE*, which should be used by gNB-DU to lookup the stored UE context. If no UE-associated logical F1-connection exists, the UE-associated logical F1-connection shall be established at reception of the DL RRC MESSAGE TRANSFER message.

If the *Index to RAT/Frequency Selection Priority IE* is included in the DL RRC MESSAGE TRANSFER, the gNB-DU may use it for RRM purposes. If the *Additional RRM Policy Index IE* is included in the DL RRC MESSAGE TRANSFER, the gNB-DU may use it for RRM purposes.

The DL RRC MESSAGE TRANSFER message shall include, if available, the *old gNB-DU UE FIAP ID* IE so that the gNB-DU can retrieve the existing UE context in RRC connection reestablishment procedure, as defined in TS 38.401 [4].

The DL RRC MESSAGE TRANSFER message shall include, if SRB duplication is activated, the *Execute Duplication* IE, so that the gNB-DU can perform CA based duplication for the SRB.

If the gNB-DU identifies the UE-associated logical F1-connection by the *gNB-DU UE FIAP ID* IE in the DL RRC MESSAGE TRANSFER message and the *old gNB-DU UE FIAP ID* IE is included, it shall release the old gNB-DU UE FIAP ID and the related configurations associated with the old gNB-DU UE FIAP ID.

If the *UE Context not retrievable* IE set to "true" is included in the DL RRC MESSAGE TRANSFER, the DL RRC MESSAGE TRANSFER may contain the *Redirected RRC message* IE and use it as specified in TS 38.401 [4].

If the *UE Context not retrievable* IE set to "true" is included in the DL RRC MESSAGE TRANSFER, the DL RRC MESSAGE TRANSFER may contain the *PLMN Assistance Info for Network Sharing* IE, if available at the gNB-CU and may use it as specified in TS 38.401 [4].

If the DL RRC MESSAGE TRANSFER message contains the *New gNB-CU UE FIAP ID* IE, the gNB-DU shall, if supported, replace the value received in the *gNB-CU UE FIAP ID* IE by the value of the *New gNB-CU UE FIAP ID* and use it for further signalling.

If the DL RRC MESSAGE TRANSFER contains the *SRB Mapping Info* IE, the gNB-DU shall, if supported, use it for the Remote UE's SRB0 transfer.

Interactions with UE Context Release Request procedure:

If the *UE Context not retrievable* IE set to "true" is included in the DL RRC MESSAGE TRANSFER, the gNB-DU may trigger the UE Context Release Request procedure, as specified in TS 38.401 [4].

8.4.2.3 Abnormal Conditions

Not applicable.

8.4.3 UL RRC Message Transfer

8.4.3.1 General

The purpose of the UL RRC Message Transfer procedure is to transfer an RRC message as an UL PDCP-PDU to the gNB-CU. The procedure uses UE-associated signalling.

8.4.3.2 Successful operation



Figure 8.4.3.2-1: UL RRC Message Transfer procedure

The gNB-DU initiates the procedure by sending a UL RRC MESSAGE TRANSFER message. When the gNB-DU has received from the radio interface an RRC message to which a UE-associated logical F1-connection for the UE exists, the gNB-DU shall send the UL RRC MESSAGE TRANSFER message to the gNB-CU including the RRC message as a *RRC-Container* IE.

If the *Selected PLMN ID* IE is contained in the UL RRC MESSAGE TRANSFER message, the gNB-CU may use it as specified in TS 38.401 [4].

If the UL RRC MESSAGE TRANSFER message contains the *New gNB-DU UE FIAP ID* IE, the gNB-CU shall, if supported, replace the value received in the *gNB-DU UE FIAP ID* IE by the value of the *New gNB-DU UE FIAP ID* and use it for further signalling.

8.4.3.3 Abnormal Conditions

Not applicable.

8.4.4 RRC Delivery Report

8.4.4.1 General

The purpose of the RRC Delivery Report procedure is to transfer to the gNB-CU information about successful delivery of DL PDCP-PDUs including RRC messages. The procedure uses UE-associated signalling.

8.4.4.2 Successful operation



Figure 8.4.4.2-1: RRC Delivery Report procedure.

The gNB-DU initiates the procedure by sending an RRC DELIVERY REPORT message. When the gNB-DU has successfully delivered an RRC message to the UE for which the gNB-CU has requested a delivery report, the gNB-DU shall send the RRC DELIVERY REPORT message to the gNB-CU containing the *RRC Delivery Status* IE and the *SRB ID* IE.

8.4.4.3 Abnormal Conditions

Not applicable.

8.5 Warning Message Transmission Procedures

8.5.1 Write-Replace Warning

8.5.1.1 General

The purpose of Write-Replace Warning procedure is to start or overwrite the broadcasting of warning messages. The procedure uses non UE-associated signalling.

8.5.1.2 Successful Operation

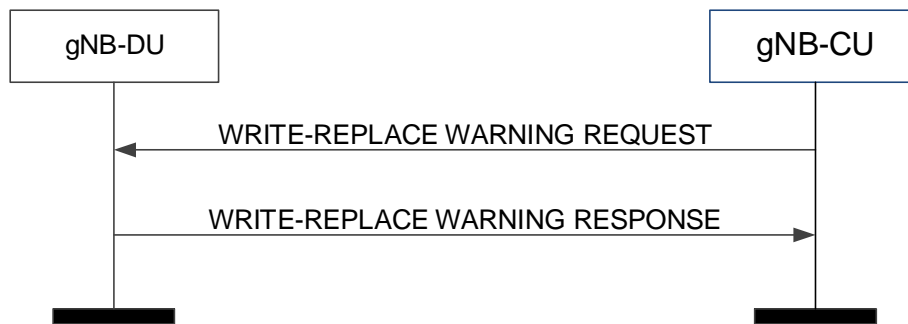


Figure 8.5.1.2-1: Write-Replace Warning procedure: successful operation

The gNB-CU initiates the procedure by sending a WRITE-REPLACE WARNING REQUEST message to the gNB-DU.

Upon receipt of the WRITE-REPLACE WARNING REQUEST message, the gNB-DU shall prioritise its resources to process the warning message.

The gNB-DU acknowledges the WRITE-REPLACE WARNING REQUEST message by sending a WRITE-REPLACE WARNING RESPONSE message to the gNB-CU.

Upon receipt of the WRITE-REPLACE WARNING REQUEST message, the gNB-DU shall include the *Dedicated SI Delivery Needed UE List* IE in the WRITE-REPLACE WARNING RESPONSE message for UEs that are unable to receive system information from broadcast.

If *Dedicated SI Delivery Needed UE List* IE is contained in the WRITE-REPLACE WARNING RESPONSE message, the gNB-CU should take it into account when informing the UE of the updated system information via the dedicated RRC message.

Upon reception of the *Notification Information* IE in the *PWS System Information* IE in the WRITE-REPLACE WARNING REQUEST message, the gNB-DU shall use this information to avoid that duplications trigger new broadcast or replace existing broadcast.

If the gNB-DU receives a WRITE-REPLACE WARNING REQUEST message with the *Notification Information* IE in the *PWS System Information* IE which are different from those of ongoing broadcast warning messages, and if the *SIB Type* IE is set to "8", the gNB-DU shall broadcast the received warning message concurrently with other ongoing messages.

If the gNB-DU receives a WRITE-REPLACE WARNING REQUEST message with the *Notification Information* IE in the *PWS System Information* IE which are different from those of ongoing broadcast warning messages, and if the *SIB Type* IE is set to the value other than '8', the gNB-DU shall use the newly received one to replace the ongoing broadcast warning message with the same value of *SIB Type* IE.

If the *SIB Type* IE in the *PWS System Information* IE in the WRITE-REPLACE WARNING REQUEST message is set to "8" and if a value "0" is received in the *Number of Broadcast Requested* IE and if the *Repetition Period* IE is different from "0", the gNB-DU shall broadcast the received warning message indefinitely.

If *Additional SIB Message List* IE is included in *PWS System Information* IE, the gNB-DU shall store all SIB message(s) in *PWS System Information* IE, and consider that the first segment of public warning message is included in *SIB message* IE, and the remaining segments are listed in *Additional SIB Message List* IE in segmentation sequence order.

8.5.1.3 Unsuccessful Operation

Not applicable.

8.5.1.4 Abnormal Conditions

If the gNB-DU receives a WRITE-REPLACE WARNING REQUEST message which does not include the *Notification Information* IE in the *PWS System Information* IE, the gNB-DU shall consider it as a logical error.

8.5.2 PWS Cancel

8.5.2.1 General

The purpose of the PWS Cancel procedure is to cancel an already ongoing broadcast of a warning message. The procedure uses non UE-associated signalling.

8.5.2.2 Successful Operation

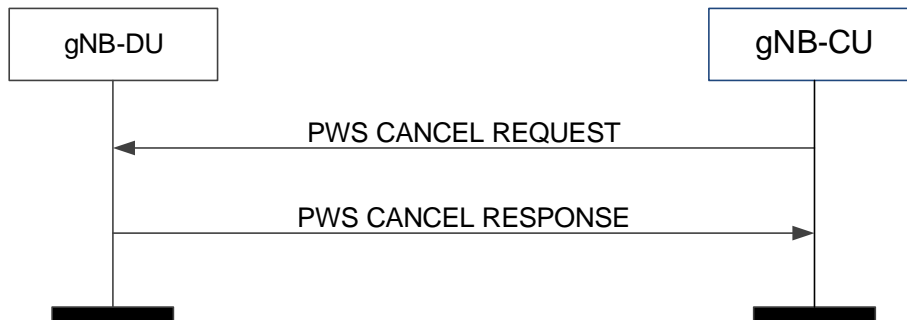


Figure 8.5.2.2-1: PWS Cancel procedure: successful operation

The gNB-CU initiates the procedure by sending a PWS CANCEL REQUEST message to the gNB-DU.

The gNB-DU shall acknowledge the PWS CANCEL REQUEST message by sending the PWS CANCEL RESPONSE message.

If the *Cancel-All Warning Messages Indicator* IE is present in the PWS CANCEL REQUEST message, then the gNB-DU shall stop broadcasting and discard all warning messages for the area as indicated in the *Cell Broadcast To Be Cancelled List* IE or in all the cells of the gNB-DU if the *Cell Broadcast To Be Cancelled List* IE is not included. The gNB-DU shall acknowledge the PWS CANCEL REQUEST message by sending the PWS CANCEL RESPONSE message, and shall, if there is area to report where an ongoing broadcast was stopped successfully, include the *Cell Broadcast Cancelled List* IE with the *Number of Broadcasts* IE set to 0.

If the *Cell Broadcast To Be Cancelled List* IE is not included in the PWS CANCEL REQUEST message, the gNB-DU shall stop broadcasting and discard the warning message identified by the *Message Identifier* IE and the *Serial Number* IE in the *Notification Information* IE in all of the cells in the gNB-DU.

If the *Notification Information* IE is included in the PWS CANCEL REQUEST, the gNB-DU shall cancel broadcast of the public warning message identified by the *Notification Information* IE.

If an area included in the *Cell Broadcast To Be Cancelled List* IE in the PWS CANCEL REQUEST message does not appear in the *Cell Broadcast Cancelled List* IE in the PWS CANCEL RESPONSE, the gNB-CU shall consider that the gNB-DU had no ongoing broadcast to stop for the public warning message identified, if present, by the *Notification Information* IE in that area.

If the *Cell Broadcast Cancelled List* IE is not included in the PWS CANCEL RESPONSE message, the gNB-CU shall consider that the gNB-DU had no ongoing broadcast to stop for the public warning message identified, if present, by the *Notification Information* IE.

8.5.2.3 Unsuccessful Operation

If the gNB-DU receives a PWS CANCEL REQUEST message which contains neither the *Cancel-all Warning Messages Indicator* IE nor the *Notification Information* IE, the gNB-DU shall consider it as a logical error.

8.5.2.4 Abnormal Conditions

Not applicable.

8.5.3 PWS Restart Indication

8.5.3.1 General

The purpose of PWS Restart Indication procedure is to inform the gNB-CU that PWS information for some or all cells of the gNB-DU are available for reloading from the CBC if needed. The procedure uses non UE-associated signalling.

8.5.3.2 Successful Operation

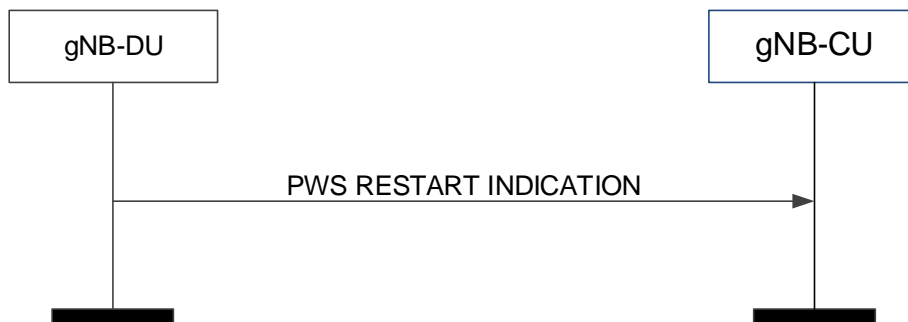


Figure 8.5.3.2-1: PWS restart indication

The gNB-DU initiates the procedure by sending a PWS RESTART INDICATION message to the gNB-CU.

8.5.3.3 Abnormal Conditions

Not applicable.

8.5.4 PWS Failure Indication

8.5.4.1 General

The purpose of the PWS Failure Indication procedure is to inform the gNB-CU that ongoing PWS operation for one or more cells of the gNB-DU has failed. The procedure uses non UE-associated signalling.

8.5.4.2 Successful Operation

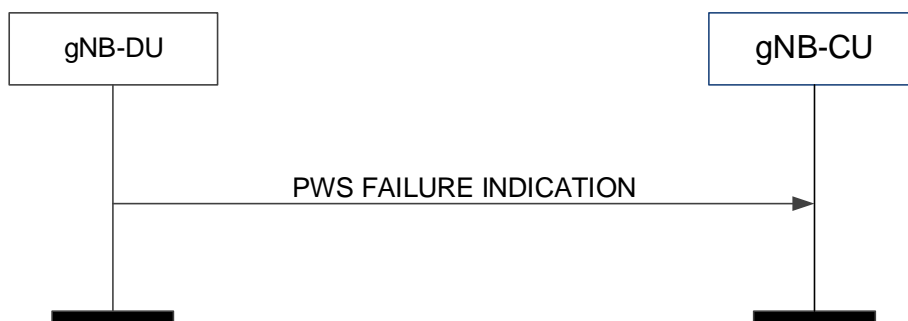


Figure 8.5.4.2-1: PWS failure indication

The gNB-DU initiates the procedure by sending a PWS FAILURE INDICATION message to the gNB-CU.

8.5.4.3 Abnormal Conditions

Not applicable.

8.6 System Information Procedures

8.6.1 System Information Delivery

8.6.1.1 General

The purpose of the System Information Delivery procedure is to command the gNB-DU to broadcast the requested Other SI. The procedure uses non-UE associated signalling.

8.6.1.2 Successful Operation

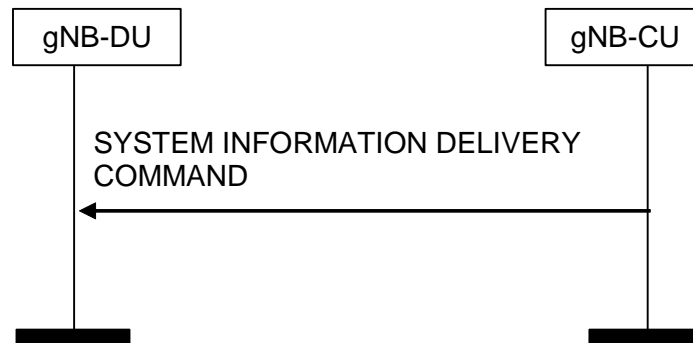


Figure 8.6.1.2-1: System Information Delivery procedure. Successful operation.

The gNB-CU initiates the procedure by sending a SYSTEM INFORMATION DELIVERY COMMAND message to the gNB-DU.

Upon reception of the SYSTEM INFORMATION DELIVERY COMMAND message, the gNB-DU shall broadcast the requested Other SI, and if the UE corresponding to the *confirmed UE ID* IE is not in RRC connected state, delete the UE context, if any.

Interactions with gNB-DU Configuration Update procedure:

Upon reception of SYSTEM INFORMATION DELIVERY COMMAND message, the gNB-DU Configuration Update procedure may be performed, and as part of such procedure the gNB-DU shall include the *Dedicated SI Delivery Needed UE List* IE in GNB-DU CONFIGURATION UPDATE message for UEs that are unable to receive system information from broadcast.

8.6.1.3 Abnormal Conditions

Not applicable.

8.7 Paging procedures

8.7.1 Paging

8.7.1.1 General

The purpose of the Paging procedure is used to provide the paging information to enable the gNB-DU to page a UE. The procedure uses non-UE associated signalling.

8.7.1.2 Successful Operation

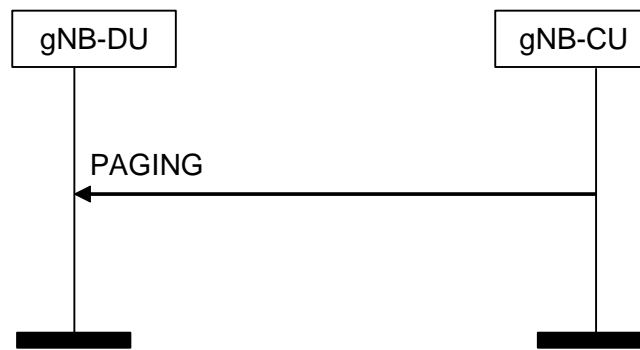


Figure 8.7.1.2-1: Paging procedure. Successful operation.

The gNB-CU initiates the procedure by sending a PAGING message.

The *Paging DRX* IE may be included in the PAGING message, and if present the gNB-DU may use it to determine the final paging cycle for the UE.

The *Paging Priority* IE may be included in the PAGING message, and if present the gNB-DU may use it according to TS 23.501 [21].

At the reception of the PAGING message, the gNB-DU shall perform paging of the UE in cells which belong to cells as indicated in the *Paging Cell List* IE.

The *Paging Origin* IE may be included in the PAGING message, and if present the gNB-DU shall transfer it to the UE.

The *RAN UE Paging DRX* IE may be included in the PAGING message, and if present the gNB-DU may use it according to TS 38.304 [24].

The *CN UE Paging DRX* IE may be included in the PAGING message, and if present the gNB-DU may use it according to TS 38.304 [24].

The *NR Paging eDRX Information* IE may be included in the PAGING message, and if present the gNB-DU may use it according to TS 38.304 [24].

The *NR Paging eDRX Information for RRC INACTIVE* IE may be included in the PAGING message, and if present the gNB-DU shall, if supported, use it according to TS 38.304 [24].

The *Paging Cause* IE may be included in the PAGING message. If present the gNB-DU shall, if supported, send it to UE according to TS 38.331 [8].

The *PEIPS Assistance Information* IE may be included in the PAGING message, and if present the gNB-DU shall, if supported, use it for paging subgrouping of the UE, as specified in TS 38.300 [6].

The *UEID Subgrouping Support Indication* IE may be included in the *UE Paging Capability* IE in the PAGING message, and if present the gNB-DU shall, if supported, use it for paging subgrouping of the UE, as specified in TS 38.300 [6].

The *RedCap Indication* IE may be included in the *UE Paging Capability* IE in the PAGING message, and if present the gNB-DU shall, if supported, use it for paging of RedCap UEs.

The *Last Used Cell Indication* IE may be included in the *Paging Cell Item IEs* IE of the PAGING message, and if present the gNB-DU shall, if supported, consider the cell identified by the *NR CGI* IE as the last used cell of the paged UE, and use it as specified in TS 38.331 [8].

The *PEI Subgrouping Support Indication* IE may be included in the *Paging Cell Item IEs* IE in the PAGING message, and if present the gNB-DU shall, if supported, consider that the cell identified by the *NR CGI* IE is supported by the UE to receive the paging early indication as described in TS 38.300 [6] and TS 38.304 [24].

The *UE Paging Capability* IE may be included in the PAGING message, and if present the gNB-DU shall, if supported, take it into account when paging the UE.

The *Extended UE Identity Index Value* IE may be included in the PAGING message, and if present the gNB-DU shall, if supported, use it according to TS 38.304 [24].

8.7.1.3 Abnormal Conditions

Not applicable.

8.8 Trace Procedures

8.8.1 Trace Start

8.8.1.1 General

The purpose of the Trace Start procedure is to allow the gNB-CU to request the gNB-DU to initiate a trace session for a UE. The procedure uses UE-associated signalling.

8.8.1.2 Successful Operation



Figure 8.8.1.2-1: Trace start procedure: Successful Operation.

The gNB-CU initiates the procedure by sending a TRACE START message. Upon reception of the TRACE START message, the gNB-DU shall initiate the requested trace session for the requested UE, as described in TS 32.422 [29]. In particular, the gNB-DU shall, if supported:

- if the *Trace Activation* IE includes the *MDT Activation* IE set to "Immediate MDT and Trace" initiate the requested trace session and MDT session as described in TS 32.422 [29];
- if the *Trace Activation* IE includes the *MDT Activation* IE set to "Immediate MDT Only" initiate the requested MDT session as described in TS 32.422 [29] and the gNB-DU shall ignore *Interfaces To Trace* IE, and *Trace Depth* IE;

8.8.1.3 Abnormal Conditions

Void.

8.8.2 Deactivate Trace

8.8.2.1 General

The purpose of the Deactivate Trace procedure is to allow the gNB-CU to request the gNB-DU to stop the trace session for the indicated trace reference. The procedure uses UE-associated signalling.

8.8.2.2 Successful Operation



Figure 8.8.2.2-1: Deactivate trace procedure: Successful Operation

The gNB-CU initiates the procedure by sending a DEACTIVATE TRACE message. Upon reception of the DEACTIVATE TRACE message, the gNB-DU shall stop the trace session for the indicated trace reference contained in the *Trace ID* IE, as described in TS 32.422 [29].

8.8.2.3 Abnormal Conditions

Void.

8.8.3 Cell Traffic Trace

8.8.3.1 General

The purpose of the Cell Traffic Trace procedure is to send the allocated Trace Recording Session Reference and the Trace Reference to the gNB-CU. The procedure uses UE-associated signalling.

8.8.3.2 Successful Operation



Figure 8.8.3.2-1: Cell Traffic Trace procedure. Successful operation.

The procedure is initiated with a CELL TRAFFIC TRACE message sent from the gNB-DU to the gNB-CU.

If the *Privacy Indicator* IE is included in the message, the gNB-CU shall store the information so that it can be transferred towards the AMF.

8.8.3.3 Abnormal Conditions

Void.

8.9 Radio Information Transfer procedures

8.9.1 DU-CU Radio Information Transfer

8.9.1.1 General

The purpose of the DU-CU Radio Information Transfer procedure is to transfer radio-related information from the gNB-DU to the gNB-CU. The procedure uses non-UE-associated signalling.

8.9.1.2 Successful operation



Figure 8.9.1.2-1: DU-CU Radio Information Transfer procedure.

The gNB-DU initiates the procedure by sending the DU-CU RADIO INFORMATION TRANSFER message to the gNB-CU.

The gNB-CU considers that the *RIM-RS Detection Status* IE indicates the RIM-RS detection status of the cell identified by *Aggressor Cell ID* IE.

8.9.1.3 Abnormal Conditions

Not applicable.

8.9.2 CU-DU Radio Information Transfer

8.9.2.1 General

The purpose of the CU-DU Radio Information Transfer procedure is to transfer radio-related information from the gNB-CU to the gNB-DU. The procedure uses non-UE-associated signalling.

8.9.2.2 Successful operation



Figure 8.9.2.2-1: CU-DU Radio Information Transfer procedure.

The gNB-CU initiates the procedure by sending the CU-DU RADIO INFORMATION TRANSFER message to the gNB-DU. The gNB-DU considers that the *RIM-RS Detection Status* IE indicates the detection status of RIM-RS associated with *Victim gNB Set ID* IE.

8.9.2.3 Abnormal Conditions

Not applicable.

8.10 IAB Procedures

8.10.0 General

In this version of the specification, the IAB procedures are used to configure IAB-donor-DU or IAB-DU.

NOTE: The IAB procedures are applicable for IAB-nodes and IAB-donor-DU, where the term "gNB-DU" applies to IAB-DU and IAB-donor-DU, and the term "gNB-CU" applies to IAB-donor-CU, unless otherwise specified.

8.10.1 BAP Mapping Configuration

8.10.1.1 General

The BAP Mapping Configuration Procedure is initiated by the gNB-CU to configure the DL/UL routing information and/or traffic mapping information needed for the gNB-DU. The procedure uses non-UE associated signalling.

NOTE: Implementation shall ensure the avoidance of potential race conditions, i.e. it shall ensure that conflicting traffic mapping configurations are not concurrently performed using the non-UE-associated BAP Mapping Configuration procedure and the UE-associated UE Context Management procedures.

8.10.1.2 Successful Operation

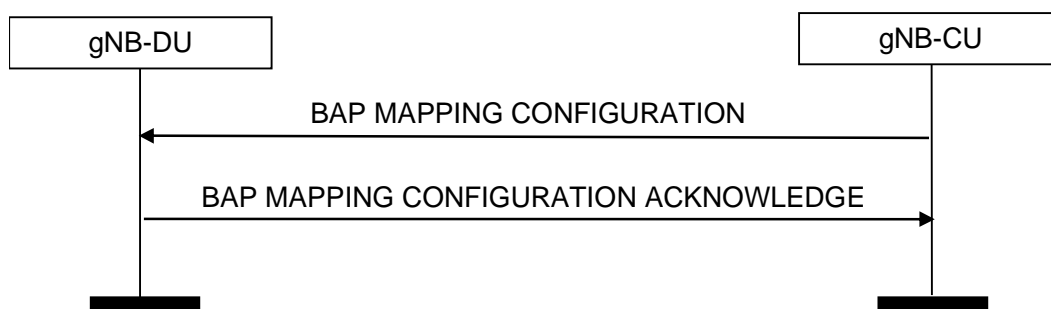


Figure 8.10.1.2-1: BAP Mapping Configuration procedure: Successful Operation

The gNB-CU initiates the procedure by sending BAP MAPPING CONFIGURATION message to the gNB-DU. The gNB-DU replies to the gNB-CU with BAP MAPPING CONFIGURATION ACKNOWLEDGE.

If *BH Routing Information Added List* IE is included in the BAP MAPPING CONFIGURATION message, the gNB-DU shall, if supported, store the BH routing information from this IE and use it for DL/UL traffic forwarding as specified in TS 38.340 [30]. If *BH Routing Information Added List* IE contains information for an existing BAP Routing ID, the gNB-DU shall, if supported, replace the previously stored routing information for this BAP Routing ID with the corresponding information in the *BH Routing Information Added List* IE.

If *BH Routing Information Removed List* IE is included in the BAP MAPPING CONFIGURATION message, the gNB-DU shall, if supported, remove the BH routing information according to such IE.

If the *Traffic Mapping Information* IE is included in the BAP MAPPING CONFIGURATION message, the gNB-DU shall, if supported, process the *Traffic Mapping Information* IE as follows:

- if the *IP to layer2 Traffic Mapping Info* IE is included, the gNB-DU shall store the mapping information contained in the *IP to layer2 Traffic Mapping Info To Add* IE, if present, and remove the previously stored mapping information as indicated by the *IP to layer2 Traffic Mapping Info To Remove* IE, if present. The gNB-DU shall use the mapping information stored for the mapping of IP traffic to layer 2, as specified in TS 38.340 [30].
- if the *BAP layer BH RLC channel Mapping Info* IE is included, the gNB-DU shall store the mapping information contained in the *BAP layer BH RLC channel Mapping Info To Add* IE, if present, and remove the previously stored mapping information as indicated by the *BAP layer BH RLC channel Mapping Info To Remove* IE, if present. The gNB-DU shall use the mapping information stored when forwarding traffic on BAP sublayer, as specified in TS 38.340 [30].

If the *Buffer Size Threshold* IE is included in the BAP MAPPING CONFIGURATION message, the gNB-DU shall, if supported, use it to determine the DL congestion based on the flow control feedback from child IAB-nodes as specified in TS 38.340 [30].

If *BAP Header Rewriting Added List* IE is included in the BAP MAPPING CONFIGURATION message, the gNB-DU shall, if supported, store the BAP header rewriting configuration from this IE, and use it as specified in TS 38.340 [30]. If *BAP Header Rewriting Added List* IE contains information for an existing ingress BAP Routing ID, the gNB-DU shall, if supported, replace the previously stored BAP header rewriting configuration for this ingress BAP Routing ID with the corresponding information in the *BAP Header Rewriting Added List* IE.

If *BAP Header Rewriting Removed List* IE is included in the BAP MAPPING CONFIGURATION message, the gNB-DU shall, if supported, remove the BAP header rewriting configuration according to such IE.

If the *Re-routing Enable Indicator* IE is included in the BAP MAPPING CONFIGURATION message, and the value is set as “false”, the gNB-DU shall, if supported, disable the inter-donor-DU re-routing. If the *Re-routing Enable Indicator* IE is included in the BAP MAPPING CONFIGURATION message, and the value is set as “true”, the gNB-DU shall, if supported, enable the inter-donor-DU re-routing, as specified in TS 38.340 [30].

8.10.1.A Unsuccessful Operation

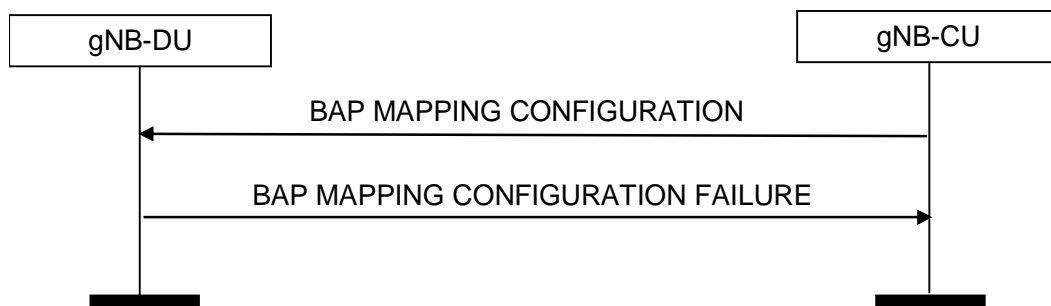


Figure 8.10.1.3-1: BAP Mapping Configuration procedure: Unsuccessful Operation

If the gNB-DU cannot accept the configuration, it shall respond with a BAP MAPPING CONFIGURATION FAILURE and appropriate cause value.

If the BAP MAPPING CONFIGURATION FAILURE message includes the Time To Wait IE, the gNB-CU shall wait at least for the indicated time before reinitiating the BAP MAPPING CONFIGURATION message towards the same gNB-DU.

8.10.1.3 Abnormal Conditions

Not applicable.

8.10.2 gNB-DU Resource Configuration

8.10.2.1 General

The gNB-DU Resource Configuration procedure is initiated by the gNB-CU in order to configure the resource usage for a gNB-DU. The procedure uses non-UE associated signalling.

In this version of the specification, this procedure is used to configure IAB resources.

8.10.2.2 Successful Operation

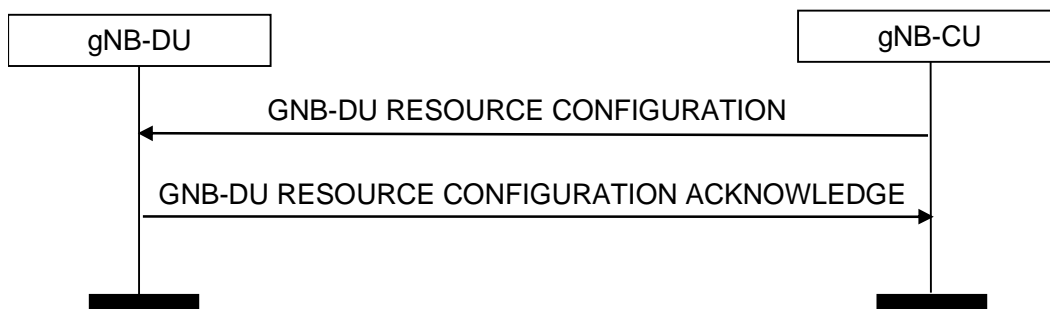


Figure 8.10.2.2-1: gNB-DU Resource Configuration procedure: Successful Operation

The gNB-CU initiates the procedure by sending the GNB-DU RESOURCE CONFIGURATION message to gNB-DU. The gNB-DU replies to the gNB-CU with the GNB-DU RESOURCE CONFIGURATION ACKNOWLEDGE message.

For each cell in the *Activated Cells to Be Updated List* IE of the GNB-DU RESOURCE CONFIGURATION message, the gNB-DU shall store the resource configuration contained in the *IAB-DU Cell Resource Configuration-Mode-Info* IE and use it when performing scheduling in compliance with TS 38.213 [31].

If the *Child-Node List* IE is included in the GNB-DU RESOURCE CONFIGURATION message, for each child-node indicated by the *gNB-CU UE FIAP ID* IE and *gNB-DU UE FIAP ID* IE, and for each cell served by this child node indicated by the *NR CGI* IE in the *Child-Node Cells List* IE, the gNB-DU shall store the received information and use this information for scheduling, in compliance with TS 38.213 [31], clause 14.

If the *Neighbour-Node Cells List* IE is included in the GNB-DU RESOURCE CONFIGURATION message, for each neighbour-node cell indicated by the *NR CGI* IE in the *Neighbour-Node Cells List* IE, the gNB-DU shall store the received information and use this information for cross-link interference management and/or semi-static resource coordination. If the *Peer Parent-Node Indicator* IE is included in the GNB-DU RESOURCE CONFIGURATION message and the value is set as “true”, the gNB-DU shall, consider the cell indicated by the *NR CGI* IE is served by the peer parent node of the IAB-node indicated by the *gNB-CU UE FIAP ID* IE and the *gNB-DU UE FIAP ID* IE.

If the *Serving Cells List* IE is included in the GNB-DU RESOURCE CONFIGURATION message, the gNB-DU shall store the received information and use this information for scheduling, in compliance with TS 38.213 [31], clause 14.

8.10.2.B Unsuccessful Operation

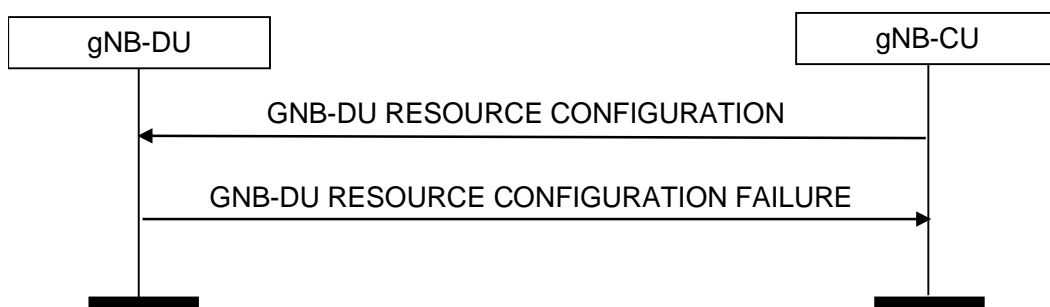


Figure 8.10.2.3-1: gNB-DU Resource Configuration procedure: Unsuccessful Operation

If the gNB-DU cannot accept the configuration, it shall respond with a GNB-DU RESOURCE CONFIGURATION FAILURE and appropriate cause value.

If the GNB-DU RESOURCE CONFIGURATION FAILURE message includes the Time To Wait IE, the gNB-CU shall wait at least for the indicated time before reinitiating the GNB-DU RESOURCE CONFIGURATION message towards the same gNB-DU.

8.10.2.3 Abnormal Conditions

Not applicable.

8.10.3 IAB TNL Address Allocation

8.10.3.1 General

The purpose of the IAB TNL Address Allocation procedure is to allocate TNL addresses to be used by the IAB-node(s). This procedure uses non-UE associated signalling.

NOTE: This procedure is applicable for IAB-donor-DU, where the term "gNB-DU" applies to IAB-donor-DU, and the term "gNB-CU" applies to IAB-donor-CU.

8.10.3.2 Successful Operation

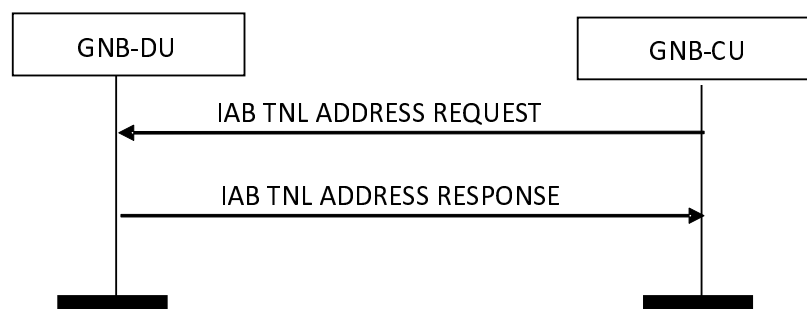


Figure 8.10.3.2-1: IAB TNL Address Allocation procedure: Successful Operation

The gNB-CU initiates the procedure by sending the IAB TNL ADDRESS REQUEST message to the gNB-DU.

If the IAB TNL ADDRESS REQUEST message contains the *IAB IPv4 Addresses Requested* IE, the gNB-DU shall allocate the individual TNL address(es) accordingly and include these IPv4 address(es) in the IAB TNL ADDRESS RESPONSE message.

If the IAB TNL ADDRESS REQUEST message contains the *IAB IPv6 Request Type* IE, the gNB-DU shall allocate the individual IPv6 address(es) or IPv6 address prefix(es) accordingly and include these IPv6 address(es) or IPv6 address prefix(es) in the IAB TNL ADDRESS RESPONSE message.

If the IAB TNL ADDRESS REQUEST message contains the *IAB TNL Addresses To Remove List* IE, the gNB-DU shall consider that the TNL address(es) and/or TNL address prefix(es) therein are no longer used by the IAB-node(s). In addition, if the IAB TNL ADDRESS REQUEST message only contains the *IAB TNL Addresses to Remove List* IE, the gNB-CU shall ignore the *IAB Allocated TNL Address List* IE in the IAB TNL ADDRESS RESPONSE message.

If the IAB TNL ADDRESS RESPONSE message contains the *IAB TNL Address Usage IE* in the *IAB Allocated TNL Address Item* IE, the gNB-CU shall consider the indicated TNL address usage when allocating a TNL address to an IAB-node. Otherwise, the gNB-CU shall consider that the TNL address can be used for all traffic when allocating the TNL address to an IAB-node.

If the *IAB TNL Address Exception* IE is included in the IAB TNL ADDRESS REQUEST message and the gNB-DU is an IAB-donor-DU, the gNB-DU shall, if supported, consider the IP address(es) therein as exempt from TNL address filtering, and forward the packets with the address(es) indicated by this IE, as specified in TS 38.401 [4].

8.10.3.C Unsuccessful Operation

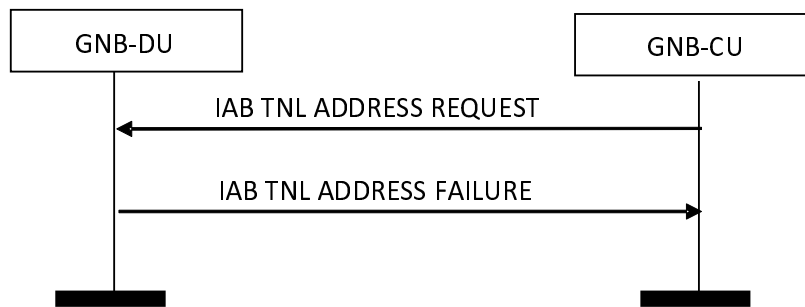


Figure 8.10.3.3-1: IAB TNL Address Allocation procedure: Unsuccessful Operation

If the gNB-DU cannot accept the request, it shall respond with an IAB TNL ADDRESS FAILURE and appropriate cause value.

If the IAB TNL ADDRESS FAILURE message includes the Time To Wait IE, the gNB-CU shall wait at least for the indicated time before reinitiating the IAB TNL ADDRESS REQUEST message towards the same gNB-DU.

8.10.3.3 Abnormal Conditions

Not applicable.

8.10.4 IAB UP Configuration Update

8.10.4.1 General

The purpose of the IAB UP Configuration Update procedure is to update the UP parameters including UL mapping configuration and the UL/DL UP TNL information between IAB-donor-CU and IAB-node. This procedure uses non-UE associated signalling.

NOTE: This procedure is applicable for IAB-nodes, where the term "gNB-DU" applies to IAB-DU, and the term "gNB-CU" applies to IAB-donor-CU.

NOTE: Implementation shall ensure the avoidance of potential race conditions, i.e. it shall ensure that the update of UP configuration (e.g. the UL/DL UP TNL information, UL mapping information) is not concurrently performed using the non-UE-associated IAB UP Configuration Update procedure and the UE-associated procedures for UE Context Management.

8.10.4.2 Successful Operation

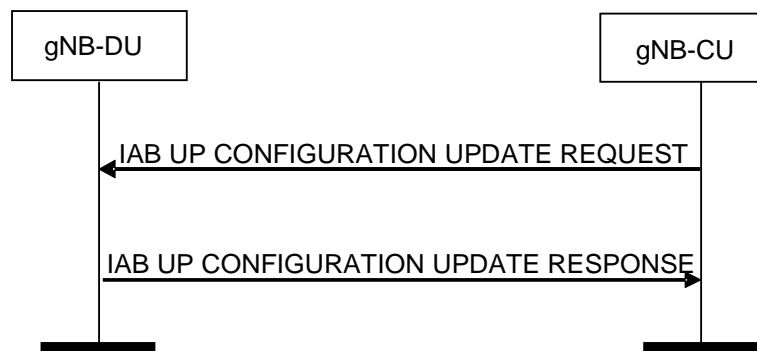


Figure 8.10.4.2-1: IAB UP Configuration Update procedure: Successful Operation

The gNB-CU initiates the procedure by sending the IAB UP CONFIGURATION UPDATE REQUEST message to the gNB-DU. The gNB-DU replies to the gNB-CU with the IAB UP CONFIGURATION UPDATE RESPONSE message.

If the *UL UP TNL Information to Update List* IE is included in the IAB UP CONFIGURATION UPDATE REQUEST message, the gNB-DU shall perform the mapping according to the new received *BH Information* IE for each F1-U GTP tunnel indicated by the *UL UP TNL Information* IE. If the *New UL UP TNL Information* IE is included in *UL UP TNL Information to Update List* IE, the gNB-DU shall use it to replace the information of UL F1-U GTP tunnel indicated by the *UL UP TNL Information* IE.

If the *UL UP TNL Address to Update List* IE is included in the IAB UP CONFIGURATION UPDATE REQUEST message, the gNB-DU shall replace the old TNL address with the new TNL address for all the maintained UL F1-U GTP tunnels corresponding to the old TNL address.

If the *DL UP TNL Address to Update List* IE is included in the IAB UP CONFIGURATION UPDATE RESPONSE message, the gNB-CU shall replace the old TNL address with the new TNL address for all the maintained DL F1-U GTP tunnels corresponding to the old TNL address.

8.10.4.3 Unsuccessful Operation

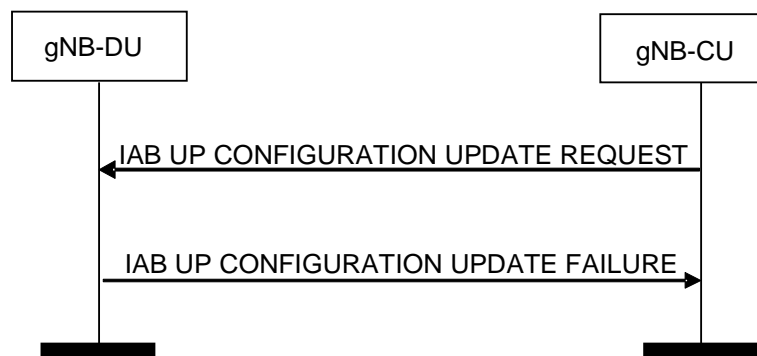


Figure 8.10.4.3-1: IAB UP Configuration Update procedure: Unsuccessful Operation

If the gNB-DU receives an IAB UP CONFIGURATION UPDATE REQUEST message and cannot perform any update accordingly, it shall consider the update procedure as failed and respond with an IAB UP CONFIGURATION UPDATE FAILURE message and an appropriate cause value.

If the IAB UP CONFIGURATION UPDATE FAILURE message includes the *Time To Wait* IE, the gNB-CU shall wait at least for the indicated time before reinitiating the IAB UP CONFIGURATION UPDATE REQUEST message towards the same gNB-DU.

8.10.4.4 Abnormal Conditions

Not applicable.

8.11 Self Optimisation Support procedures

8.11.1 Access and Mobility Indication

8.11.1.1 General

This procedure is initiated by gNB-CU to send the Access and Mobility related Information to gNB-DU.

The procedure uses non-UE-associated signalling.

8.11.1.2 Successful Operation

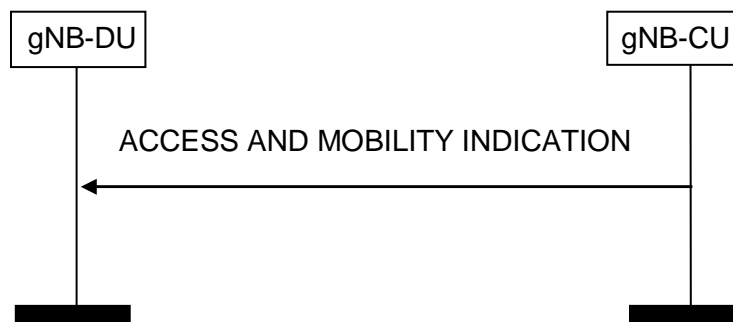


Figure 8.11.1.2-1: Access and Mobility Indication procedure. Successful operation

The Access and Mobility Indication procedure is initiated by ACCESS AND MOBILITY INDICATION message sent from gNB-CU to gNB-DU.

If the ACCESS AND MOBILITY INDICATION message contains the *RACH Report Information List* IE the gNB-DU shall take it into account for optimisation of RACH access procedures.

If the ACCESS AND MOBILITY INDICATION message contains the *RLF Report Information List* IE the gNB-DU shall take it into account for optimisation of mobility parameters.

If the ACCESS AND MOBILITY INDICATION message contains the *Successful HO Report Information List* IE the gNB-DU may take it into account for optimisation of mobility parameters.

8.11.1.3 Abnormal Conditions

Not applicable.

8.12 Reference Time Information Reporting procedures

8.12.1 Reference Time Information Reporting Control

8.12.1.1 General

The purpose of the Reference Time Information Reporting Control procedure is to command the gNB-DU to send the requested accurate reference time information to the gNB-CU. The procedure uses non-UE associated signalling.

8.12.1.2 Successful Operation

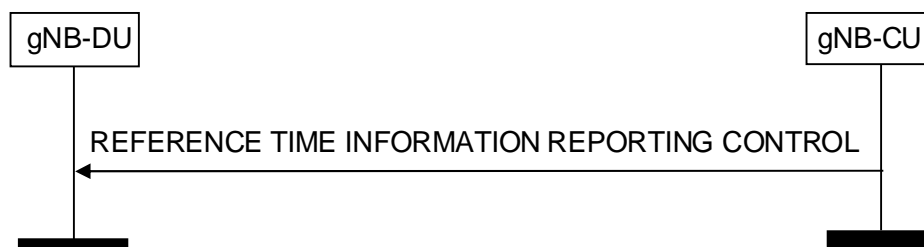


Figure 8.12.1.2-1: Reference Time Information Reporting Control

The gNB-CU initiates the procedure by sending REFERENCE TIME INFORMATION REPORTING CONTROL message to the gNB-DU. Upon reception of the REFERENCE TIME INFORMATION REPORTING CONTROL message, the gNB-DU shall, if supported, perform the requested reference time information reporting action.

The *Report Type* IE indicates to the gNB-DU whether:

- to report on demand;
- to report periodic, with a frequency as specified by the *Report Periodicity* IE;
- to stop periodic reporting.

8.12.1.3 Abnormal Conditions

Not applicable.

8.12.2 Reference Time Information Report

8.12.2.1 General

The purpose of the Reference Time Information Report procedure is to report the accurate reference time information from the gNB-DU to the gNB-CU. The procedure uses non-UE associated signalling.

8.12.2.2 Successful Operation



Figure 8.12.2-1: Reference Time Information Report

The gNB-DU initiates the procedure by sending a REFERENCE TIME INFORMATION REPORT message to the gNB-CU. The REFERENCE TIME INFORMATION REPORT message may be used as a response to the REFERENCE TIME INFORMATION REPORTING CONTROL message.

8.12.2.3 Abnormal Conditions

Not applicable.

8.13 Positioning Procedures

8.13.1 Positioning Assistance Information Control

8.13.1.1 General

The purpose of the Positioning Assistance Information Control procedure is to allow the gNB-CU to signal positioning assistance information to the gNB-DU for positioning assistance information broadcasting. The procedure uses non-UE-associated signalling.

8.13.1.2 Successful Operation



Figure 8.13.1.2-1: Positioning Assistance Information Control procedure

The gNB-CU initiates the procedure by sending a POSITIONING ASSISTANCE INFORMATION CONTROL message.

If the *Positioning Assistance Information IE* is included in the POSITIONING ASSISTANCE INFORMATION CONTROL message, the gNB-DU shall, if supported, replace any previously stored positioning assistance information and use the received information to configure positioning assistance information broadcasting as specified in TS 38.455 [37].

If the *Broadcast IE* is included in the POSITIONING ASSISTANCE INFORMATION CONTROL message and set to "start", the gNB-DU may start broadcasting the positioning assistance information. If the *Broadcast IE* is included in the POSITIONING ASSISTANCE INFORMATION CONTROL message and set to "stop", the gNB-DU may stop broadcasting the positioning assistance information.

If the *Positioning Broadcast Cells IE* is included in the POSITIONING ASSISTANCE INFORMATION CONTROL message, the gNB-DU shall, if supported, consider that the received assistance information is applicable to the cells in this IE.

Interaction with the Positioning Assistance Information Feedback procedure:

If the *Routing ID IE* is included in the POSITIONING ASSISTANCE INFORMATION CONTROL message, the gNB-DU shall, if supported, store this information and include it in any future POSITIONING ASSISTANCE INFORMATION FEEDBACK messages associated to the requested positioning assistance information broadcasting.

8.13.1.3 Abnormal Conditions

If the *Broadcast IE* is included in the POSITIONING ASSISTANCE INFORMATION CONTROL message and set to "start", and no positioning assistance information is available, the gNB-DU shall consider the procedure as failed.

If neither the *Positioning Assistance Information IE* nor the *Broadcast IE* are included in the POSITIONING ASSISTANCE INFORMATION CONTROL message, the gNB-DU shall consider the procedure as failed.

8.13.2 Positioning Assistance Information Feedback

8.13.2.1 General

The purpose of the Positioning Assistance Information Feedback procedure is to allow the gNB-DU to give feedback to the gNB-CU on positioning assistance information broadcasting. The procedure uses non-UE-associated signalling.

8.13.2.2 Successful Operation

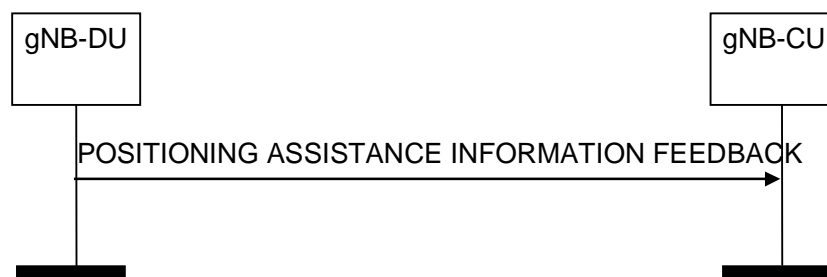


Figure 8.13.2.2-1: Positioning Assistance Information Feedback procedure

The gNB-DU initiates the procedure by sending a POSITIONING ASSISTANCE INFORMATION FEEDBACK message. If the *Positioning Assistance Information Failure List* IE is included in the POSITIONING ASSISTANCE INFORMATION FEEDBACK message, the gNB-CU shall consider that positioning assistance information broadcasting could not be configured for the relevant information.

If the *Positioning Broadcast Cells* IE is included in the POSITIONING ASSISTANCE INFORMATION FEEDBACK message, the gNB-CU shall consider that the feedback provided is applicable to the cells in this IE.

If the *Routing ID* IE is included in the POSITIONING ASSISTANCE INFORMATION FEEDBACK message, the gNB-CU may use this information to identify the positioning assistance information broadcasting for which feedback is provided.

8.13.2.3 Abnormal Conditions

Void.

8.13.3 Positioning Measurement

8.13.3.1 General

The purpose of the Positioning Measurement procedure is to allow the gNB-CU to request one or more TRPs in the gNB-DU to perform and report positioning measurements. The procedure uses non-UE-associated signalling.

8.13.3.2 Successful Operation

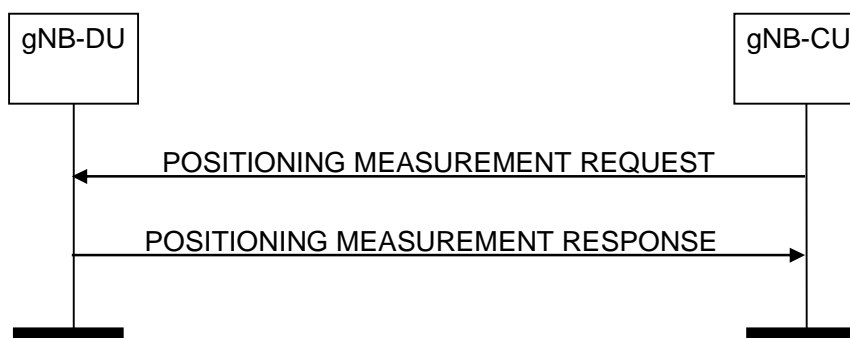


Figure 8.13.3.2-1: Positioning Measurement procedure: successful operation

The gNB-CU initiates the procedure by sending a POSITIONING MEASUREMENT REQUEST message to the gNB-DU, indicating in the *TRP Measurement Request List* IE the TRP(s) from which measurements are requested. The gNB-DU node shall use the included information to configure positioning measurements by the indicated TRP(s). If at least one of the requested measurements has been successful for at least one of the TRPs, the gNB-DU shall reply with the POSITIONING MEASUREMENT RESPONSE message including the *Positioning Measurement Response List* IE.

If the *Positioning Report Characteristics* IE is set to "OnDemand", the gNB-DU shall return the corresponding measurement results in the *Positioning Measurement Result List* IE in the POSITIONING MEASUREMENT RESPONSE message, and the gNB-CU shall consider that this reporting has been terminated by the gNB-DU.

If the *Measurement Beam Information Request* IE is included in the POSITIONING MEASUREMENT REQUEST message, the gNB-DU node shall include the *Measurement Beam Information* IE in the *Positioning Measurement Result* IE of the POSITIONING MEASUREMENT RESPONSE message.

If the *Measurement Quality* IE is included in the *Measurement Result* IE in the POSITIONING MEASUREMENT RESPONSE message, the gNB-CU may use it for further signalling. If the *Measurement Quality* IE includes the *Zenith Quality* IE, the gNB-CU may use it for further signalling.

If the *System Frame Number* IE and/or the *Slot Number* IE are included in the POSITIONING MEASUREMENT REQUEST message, the gNB-DU node shall, if supported, consider that the respective information indicates the activation time of SRS transmission.

If the *Measurement Characteristics Request Indicator* IE is included in the POSITIONING MEASUREMENT REQUEST message, the gNB-DU shall, if supported, take the requested measurement characteristics into account when configuring measurements, and include the requested information, if available, in the POSITIONING MEASUREMENT RESPONSE message.

If the *Number of TRP Rx TEGs* IE is included in the POSITIONING MEASUREMENT REQUEST message, the gNB-DU shall, if supported, use it to measure the same SRS resource with different TRP Rx TEGs for the indicated TRP, and report the corresponding UL-RTOA and/or gNB Rx-Tx time difference measurements.

If the *Number of TRP RxTx TEGs* IE is included in the POSITIONING MEASUREMENT REQUEST message, the gNB-DU shall, if supported, use it to measure the same SRS resource with different TRP RxTx TEGs with the same TRP Tx TEG for the indicated TRP, and report the corresponding gNB Rx-Tx time difference measurements.

If the *Measurement Time Occasion* IE is included in the POSITIONING MEASUREMENT REQUEST message, the gNB-DU may take it into account as the number of SRS measurement time occasions for a measurement instance.

Interaction with the Positioning Measurement Report procedure:

If the *Positioning Report Characteristics* IE is set to "Periodic", the gNB-DU shall initiate the corresponding measurements, and it shall reply with the POSITIONING MEASUREMENT RESPONSE message without including any measurement results in the message. The gNB-DU shall then periodically initiate the Positioning Measurement Report procedure for the corresponding measurements, with the requested reporting periodicity.

If the *Report Characteristics* IE is set to "OnDemand" and the *Response Time* IE is included in the POSITIONING MEASUREMENT REQUEST message, the gNB-DU shall, if supported, return the corresponding measurement results in the POSITIONING MEASUREMENT RESPONSE message within the indicated time.

If the *Positioning Report Characteristics* IE is set to "Periodic" and the *Positioning Measurement Amount* IE is included in the POSITIONING MEASUREMENT REQUEST message, the gNB-DU shall, if supported, take it into account for sending the POSITIONING MEASUREMENT REPORT message.

8.13.3.3 Unsuccessful Operation

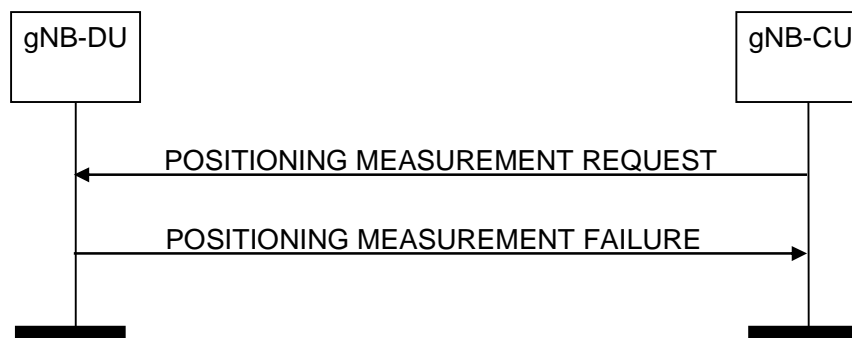


Figure 8.13.3.3-1: Positioning Measurement procedure: unsuccessful operation

If the gNB-DU is unable to configure any of the requested positioning measurements for any of the TRPs in the *TRP Measurement Request List* IE of the POSITIONING MEASUREMENT REQUEST message, it shall respond with a POSITIONING MEASUREMENT FAILURE message.

8.13.3.4 Abnormal Conditions

If the gNB-DU receives a POSITIONING MEASUREMENT REQUEST message containing an LMF Measurement ID corresponding to an ongoing positioning measurement, it shall consider the procedure as failed and initiate local error handling.

8.13.4 Positioning Measurement Report

8.13.4.1 General

The purpose of the Positioning Measurement Report procedure is for the gNB-DU to report positioning measurements to the gNB-CU. The procedure uses non-UE-associated signalling.

8.13.4.2 Successful Operation



Figure 8.13.4.2-1: Positioning Measurement Report procedure: successful operation

The gNB-DU initiates the procedure by sending a POSITIONING MEASUREMENT REPORT message. The POSITIONING MEASUREMENT REPORT message contains the positioning measurement results according to the associated measurement configuration.

8.13.4.3 Unsuccessful Operation

Not applicable.

8.13.4.4 Abnormal Conditions

Not applicable.

8.13.5 Positioning Measurement Abort

8.13.5.1 General

The purpose of the Positioning Measurement Abort procedure is to enable the gNB-CU to abort an on-going measurement. The procedure uses non-UE-associated signalling.

8.13.5.2 Successful Operation

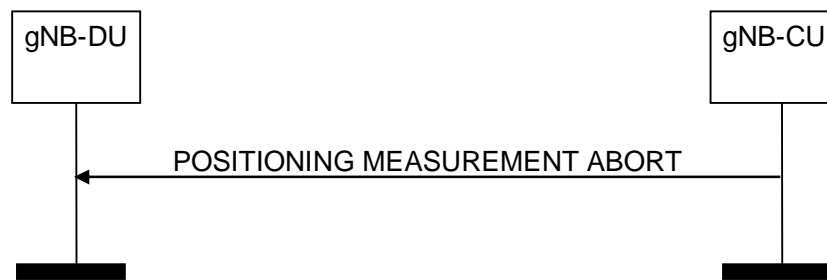


Figure 8.13.5.2-1: Positioning Measurement Abort procedure: successful operation

The gNB-CU initiates the procedure by generating a POSITIONING MEASUREMENT ABORT message. Upon receiving this message, the gNB-DU shall terminate the on-going measurement identified by the *RAN Measurement ID* IE and may release any resources previously allocated for the same measurement.

8.13.5.3 Unsuccessful Operation

Not applicable.

8.13.5.4 Abnormal Conditions

If the gNB-DU cannot identify the previously requested measurement to be aborted, it shall ignore the POSITIONING MEASUREMENT ABORT message.

8.13.6 Positioning Measurement Failure Indication

8.13.6.1 General

The purpose of the Positioning Measurement Failure Indication procedure is for the gNB-DU to notify the gNB-CU that the positioning measurements previously requested with the Positioning Measurement procedure can no longer be reported. The procedure uses non-UE-associated signalling.

8.13.6.2 Successful Operation

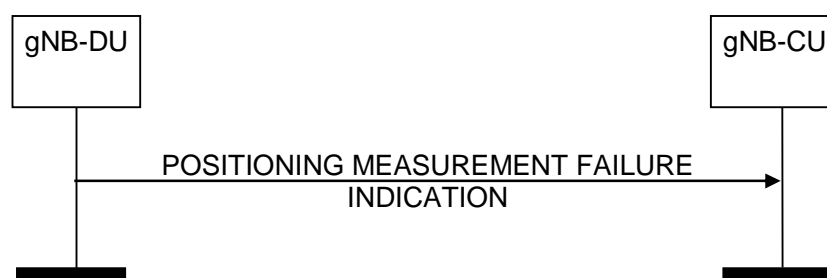


Figure 8.13.6.2-1: Positioning Measurement Failure Indication procedure: successful operation

The gNB-DU initiates the procedure by sending a POSITIONING MEASUREMENT FAILURE INDICATION message. Upon reception of the POSITIONING MEASUREMENT FAILURE INDICATION message, the gNB-CU shall consider that the indicated positioning measurements have been terminated by the gNB-DU.

8.13.6.3 Unsuccessful Operation

Not applicable.

8.13.6.4 Abnormal Conditions

Not applicable.

8.13.7 Positioning Measurement Update

8.13.7.1 General

The purpose of the Positioning Measurement Update procedure is to modify one or more periodic positioning measurements performed by the gNB-DU. The procedure uses non-UE-associated signalling.

8.13.7.2 Successful Operation

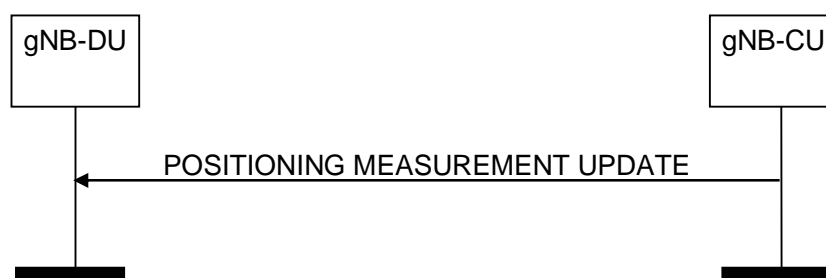


Figure 8.13.7.2-1: Positioning Measurement Update procedure: successful operation

The gNB-CU initiates the procedure by generating a POSITIONING MEASUREMENT UPDATE message. Upon receiving the message, the gNB-DU shall overwrite the previously received measurement configuration for the corresponding measurements.

If the *Number of TRP Rx TEGs* IE is included in the *TRP Measurement Update List* IE in the POSITIONING MEASUREMENT UPDATE message, the gNB-DU shall clear any previously stored information and store the newly received information.

If the *Number of TRP RxTx TEGs* IE is included in the *TRP Measurement Update List* IE in the POSITIONING MEASUREMENT UPDATE message, the gNB-DU shall clear any previously stored information and store the newly received information.

If the *Measurement Characteristics Request Indicator* IE is included in the POSITIONING MEASUREMENT UPDATE message, the gNB-DU shall clear any previously stored information and store the newly received information.

If the *Measurement Time Occasion* IE is included in the POSITIONING MEASUREMENT UPDATE message, the gNB-DU shall clear any previously stored information and store the newly received information.

8.13.7.3 Unsuccessful Operation

Not applicable.

8.13.7.4 Abnormal Conditions

If the gNB-DU cannot identify the given positioning measurements, it shall regard the procedure as failed and initiate local error handling.

8.13.8 TRP Information Exchange

8.13.8.1 General

The purpose of the TRP Information Exchange procedure is to allow the gNB-CU to request the gNB-DU to provide detailed information for TRPs hosted by the gNB-DU. The procedure uses non-UE-associated signalling.

8.13.8.2 Successful Operation

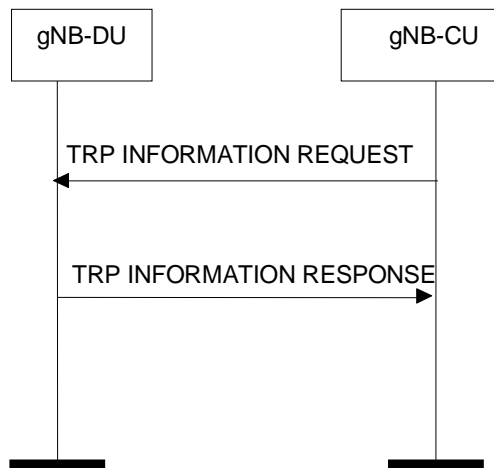


Figure 8.13.8.2-1: TRP Information Exchange procedure, successful operation

The gNB-CU initiates the procedure by sending a TRP INFORMATION REQUEST message. The gNB-DU responds with a TRP INFORMATION RESPONSE message that contains the requested TRP information.

If the *TRP List* IE is included in the TRP INFORMATION REQUEST message, the gNB-DU should include in the TRP INFORMATION RESPONSE message, the requested information for all TRPs included in the *TRP List* IE.

If the *TRP List* IE is not included in the TRP INFORMATION REQUEST message, the gNB-DU should include the requested information for all TRPs hosted by the gNB-DU in the TRP INFORMATION RESPONSE message.

If the *PRS Muting* IE is included in the *PRS Configuration* IE in the TRP INFORMATION RESPONSE message, the gNB-CU may use it for further signaling.

If the *QCL Info* IE is included in the *PRS Configuration* IE in the TRP INFORMATION RESPONSE message, the gNB-CU may use it for further signaling.

If the *DL-PRS Resource Coordinates* IE is included in the *Geographical Coordinates* IE in the *TRP Information* IE in the TRP INFORMATION RESPONSE message, the gNB-CU may use it for further signaling.

8.13.8.3 Unsuccessful Operation

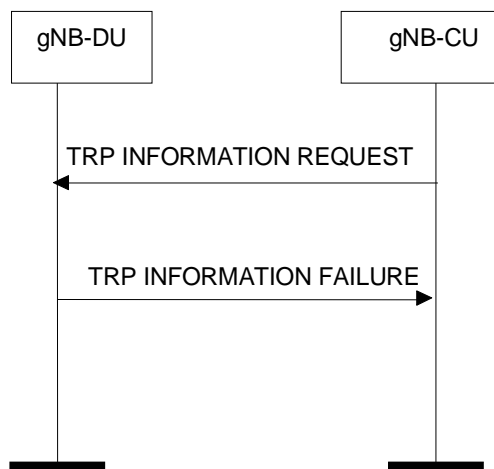


Figure 8.13.8.3-1: TRP Information Exchange procedure, unsuccessful operation

If the gNB-DU cannot provide any of the requested information, the gNB-DU shall respond with a TRP INFORMATION FAILURE message.

8.13.9 Positioning Information Exchange

8.13.9.1 General

The Positioning Information Exchange procedure is initiated by the gNB-CU to indicate to the gNB-DU the need to configure the UE to transmit SRS signals and to retrieve the SRS configuration from the gNB-DU. The procedure uses UE-associated signalling.

8.13.9.2 Successful Operation

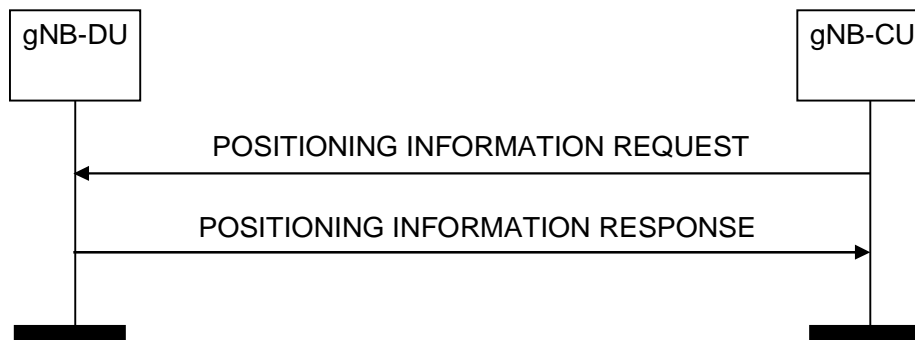


Figure 8.13.9.2-1: Positioning Information Exchange procedure, successful operation

The gNB-CU initiates the procedure by sending a POSITIONING INFORMATION REQUEST message to the gNB-DU.

If the *Requested SRS Transmission Characteristics* IE is included in the POSITIONING INFORMATION REQUEST message, the gNB-DU may take this information into account when configuring SRS transmissions for the UE, and it shall include the *SRS Configuration* IE and the *SFN Initialisation Time* IE in the POSITIONING INFORMATION RESPONSE message. If the *SRS Positioning INACTIVE Query Indication* IE is also included in the POSITIONING INFORMATION REQUEST message and set to 'true', the gNB-DU shall, if supported, include the *SRS-PosRRC-InactiveConfig* IE in the POSITIONING INFORMATION RESPONSE message.

If the *Spatial Relation Information per SRS Resource* IE and the *Periodicity List* IE are both included in the *Requested SRS Transmission Characteristics* IE, the gNB-DU shall consider that the *Spatial Relation per SRS Resource Item* IE and the *Periodicity List Item* IE have one-to-one mapping relation.

If the *UE Reporting Information* IE is included in the POSITIONING INFORMATION REQUEST message, the gNB-DU may take this information into account for allocating proper CG-SDT resources when positioning a UE.

Interaction with the UE Context Modification Required (gNB-DU initiated) procedure:

The UE Context Modification Required (gNB-DU initiated) procedure may be performed before the POSITIONING INFORMATION RESPONSE message.

8.13.9.3 Unsuccessful Operation

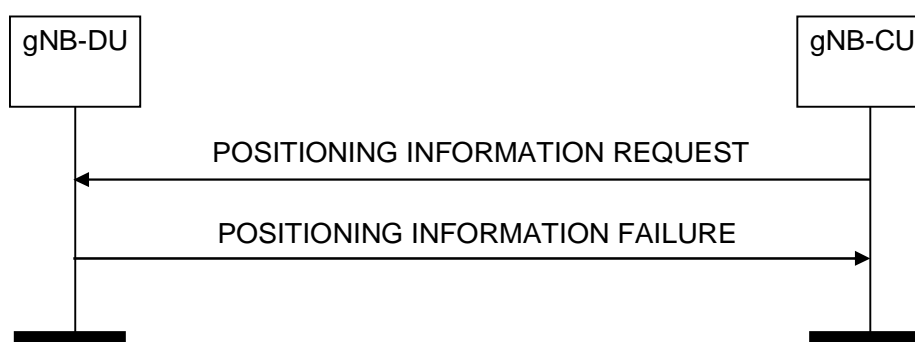


Figure 8.13.9.3-1: Positioning Information Exchange procedure, unsuccessful operation

If the *Requested SRS Transmission Characteristics* IE is included in the POSITIONING INFORMATION REQUEST message and the gNB-DU is unable to configure any SRS transmissions for the UE, the gNB-DU shall respond with a POSITIONING INFORMATION FAILURE message with an appropriate cause value.

If the gNB-DU is unable to provide any of the requested information, the gNB-DU shall respond with a POSITIONING INFORMATION FAILURE message with an appropriate cause value.

8.13.10 Positioning Activation

8.13.10.1 General

The Positioning Activation procedure is initiated by the gNB-CU to request the gNB-DU to activate semi-persistent or trigger aperiodic UL SRS transmission by the UE. The procedure uses UE-associated signalling.

8.13.10.2 Successful Operation

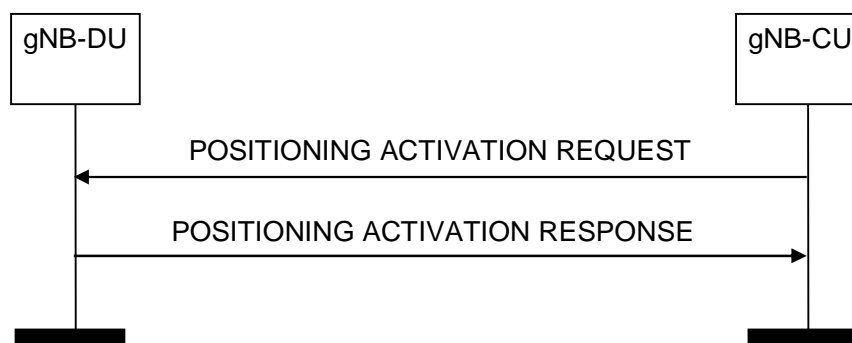


Figure 8.13.10.2-1: Positioning Activation procedure, successful operation

The gNB-CU initiates the procedure by sending a POSITIONING ACTIVATION REQUEST message to the gNB-DU.

For semi-persistent UL SRS, the POSITIONING ACTIVATION REQUEST message includes an indication of the UL SRS resource set to be activated, and may include the spatial relation for the semi-persistent UL SRS resource to be activated. For aperiodic UL SRS, if the *SRS Resource Trigger* IE is included in the POSITIONING ACTIVATION REQUEST message, the gNB-DU shall take the value of this IE into account when triggering aperiodic SRS transmission by the UE.

If the *Activation Time* IE is included in the POSITIONING ACTIVATION REQUEST message, the gNB-DU shall take the indicated value as the requested time for activation of the UE's SRS transmission.

Following successful activation of UL SRS transmission in the UE, the gNB-DU shall respond with a POSITIONING ACTIVATION RESPONSE message. If the POSITIONING ACTIVATION RESPONSE message includes the *System Frame Number* and/or the *Slot Number* IEs, the gNB-CU shall consider that the respective information indicates the activation time of SRS transmission by the UE.

8.13.10.3 Unsuccessful Operation

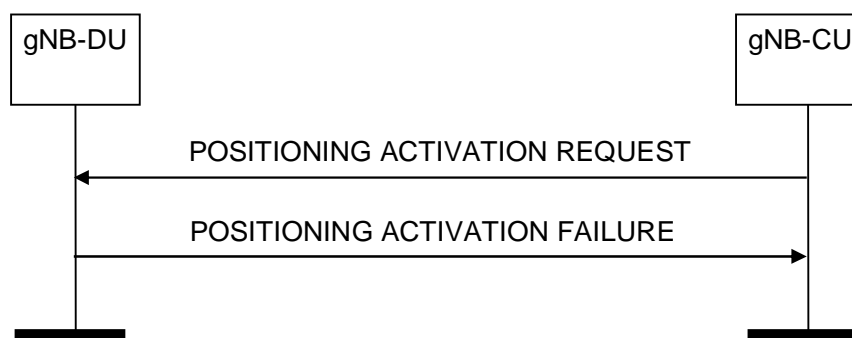


Figure 8.13.10.3-1: Positioning Activation procedure, unsuccessful operation

If the gNB-DU is unable to activate UL SRS transmission in the UE, it shall respond with a POSITIONING ACTIVATION FAILURE message.

If the gNB-DU is unable to trigger the aperiodic SRS transmission with the indicated *SRS Resource Trigger* IE, it shall respond with a POSITIONING ACTIVATION FAILURE message with an appropriate cause value

8.13.10.4 Abnormal Conditions

Void.

8.13.11 Positioning Deactivation

8.13.11.1 General

The Positioning Deactivation procedure is initiated by the gNB-CU to indicate to the gNB-DU node that UL SRS transmission should be deactivated in the UE. The procedure uses UE-associated signalling.

8.13.11.2 Successful Operation



Figure 8.13.11.2-1: Positioning Deactivation procedure, successful operation

The gNB-CU initiates the procedure by sending a POSITIONING DEACTIVATION message to the gNB-DU, including an indication of the UL SRS resources to be deactivated.

8.13.11.3 Unsuccessful Operation

Not Applicable.

8.13.11.4 Abnormal Conditions

Void.

8.13.12 E-CID Measurement Initiation

8.13.12.1 General

The purpose of E-CID Measurement Initiation procedure is to allow the gNB-CU to request the gNB-DU to report E-CID measurements used by LMF to compute the location of the UE. The procedure uses UE-associated signalling.

8.13.12.2 Successful Operation

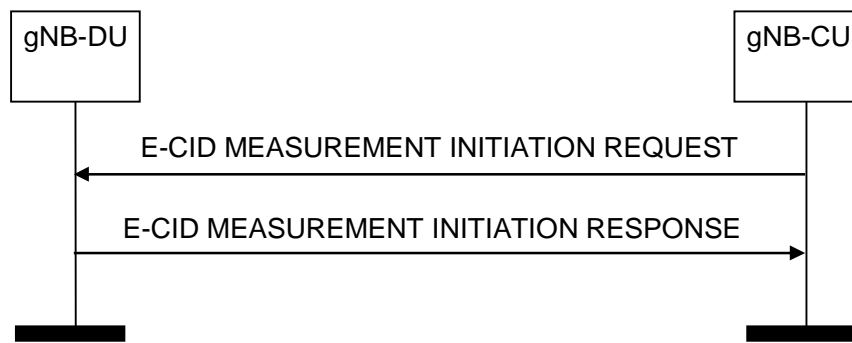


Figure 8.13.12.2-1: E-CID Measurement Initiation procedure, successful operation

The gNB-CU initiates the procedure by sending an E-CID MEASUREMENT INITIATION REQUEST message. If the gNB-DU is able to initiate the requested E-CID measurements, it shall reply with the E-CID MEASUREMENT INITIATION RESPONSE message.

If the *E-CID Report Characteristics* IE is set to "OnDemand", the gNB-DU shall return the result of the measurement in the E-CID MEASUREMENT INITIATION RESPONSE message including, if available, the *Geographical Coordinates* IE in the *E-CID Measurement Result* IE and the *Cell Portion ID* IE, and the gNB-CU shall consider that the E-CID measurements for the UE have been terminated by the gNB-DU. The *Measured Results List* IE shall be included in the *E-CID Measurement Result* IE of the E-CID MEASUREMENT INITIATION RESPONSE message when measurement quantities other than "Default" have been requested.

Interaction with the E-CID Measurement Report procedure:

If the *E-CID Report Characteristics* IE is set to "Periodic", the gNB-DU shall initiate the requested measurements and shall reply with the E-CID MEASUREMENT INITIATION RESPONSE message without including either the *E-CID Measurement Result* IE or the *Cell Portion ID* IE in this message. The gNB-DU shall then periodically initiate the E-CID Measurement Report procedure for the measurements, with the requested reporting periodicity.

8.13.12.3 Unsuccessful Operation

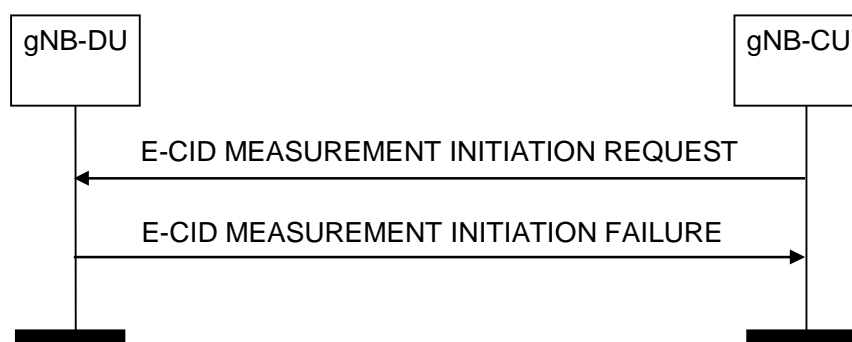


Figure 8.13.12.3-1: E-CID Measurement Initiation procedure, unsuccessful operation

If the gNB-DU is not able to initiate at least one of the requested E-CID measurements, the gNB-DU shall respond with an E-CID MEASUREMENT INITIATION FAILURE message.

8.13.13 E-CID Measurement Failure Indication

8.13.13.1 General

The purpose of the E-CID Measurement Failure Indication procedure is for the gNB-DU to notify the gNB-CU that the E-CID measurements previously requested with the E-CID Measurement Initiation procedure can no longer be reported. The procedure uses UE-associated signalling.

8.13.13.2 Successful Operation

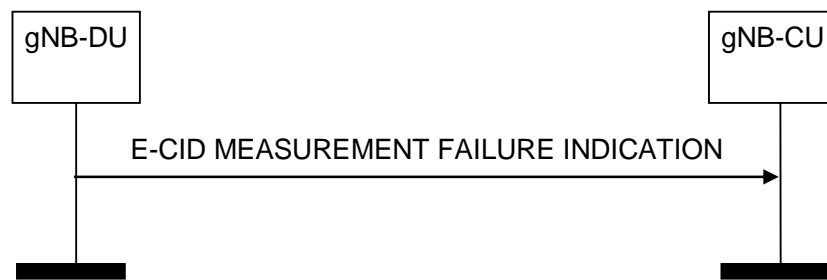


Figure 8.13.13.2-1: E-CID Measurement Failure Indication, successful operation

The gNB-DU initiates the procedure by sending an E-CID MEASUREMENT FAILURE INDICATION message. Upon reception of the E-CID MEASUREMENT FAILURE INDICATION message, the gNB-CU shall consider that the E-CID measurements for the UE have been terminated by the gNB-DU.

8.13.13.3 Unsuccessful Operation

Not applicable.

8.13.14 E-CID Measurement Report

8.13.14.1 General

The purpose of E-CID Measurement Report procedure is for the gNB-DU to provide the E-CID measurements for the UE to the gNB-CU. The procedure uses UE-associated signalling.

8.13.14.2 Successful Operation



Figure 8.13.14.2-1: E-CID Measurement Report procedure, successful operation

The gNB-DU initiates the procedure by sending an E-CID MEASUREMENT REPORT message. The E-CID MEASUREMENT REPORT message contains the E-CID measurement results according to the measurement configuration in the respective E-CID MEASUREMENT INITIATION REQUEST message.

The *Measured Results List* IE shall be included in the *E-CID Measurement Result* IE of the E-CID MEASUREMENT REPORT message when measurement quantities other than "Default" have been requested.

If available, the gNB-DU shall include the *Geographical Coordinates* IE in the *E-CID Measurement Result* IE in the E-CID MEASUREMENT REPORT message.

If available, the gNB-DU shall include the *Cell Portion ID* IE in the E-CID MEASUREMENT REPORT message.

8.13.14.3 Unsuccessful Operation

Not applicable.

8.13.15 E-CID Measurement Termination

8.13.15.1 General

The purpose of E-CID Measurement Termination procedure is to terminate periodical E-CID measurements for the UE performed by the gNB-DU. The procedure uses UE-associated signalling.

8.13.15.2 Successful Operation



Figure 8.13.15.2-1: E-CID Measurement Termination procedure, successful operation

The gNB-CU initiates the procedure by generating an E-CID MEASUREMENT TERMINATION COMMAND message.

8.13.15.3 Unsuccessful Operation

Not applicable.

8.13.16 Positioning Information Update

8.13.16.1 General

The Positioning Information Update procedure is initiated by the gNB-DU to indicate to the gNB-CU that a change has occurred in the SRS configuration. The procedure uses UE-associated signalling.

8.13.16.2 Successful Operation

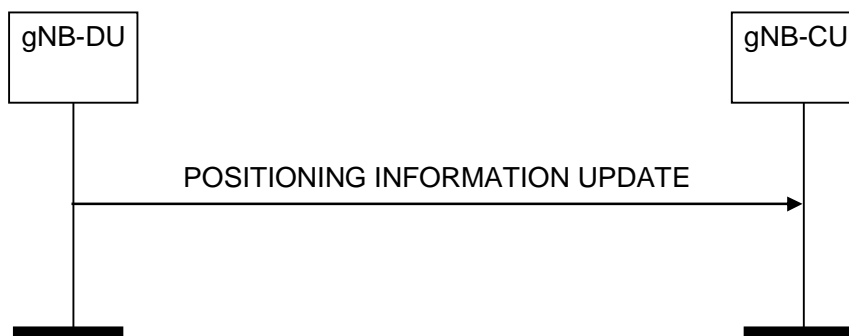


Figure 8.13.16.2-1: Positioning Information Update procedure, successful operation

The gNB-DU initiates the procedure by sending a POSITIONING INFORMATION UPDATE message to the gNB-CU.

If the SRS Configuration IE is included in the POSITIONING INFORMATION UPDATE message, the gNB-CU shall consider this information as the updated SRS Configuration for the UE. If the *SFN Initialisation Time* IE is included in the POSITIONING INFORMATION UPDATE message, the gNB-CU shall consider this information as the SFN Initialisation Time associated to the SRS Configuration.

8.13.16.3 Unsuccessful Operation

Not Applicable.

8.13.16.4 Abnormal Conditions

Void.

8.13.17 PRS Configuration Exchange

8.13.17.1 General

The PRS Configuration Exchange procedure is initiated by the gNB-CU to request the gNB-DU to configure or update (i.e., turn off) the PRS transmissions.

The procedure uses non-UE-associated signalling.

8.13.17.2 Successful Operation

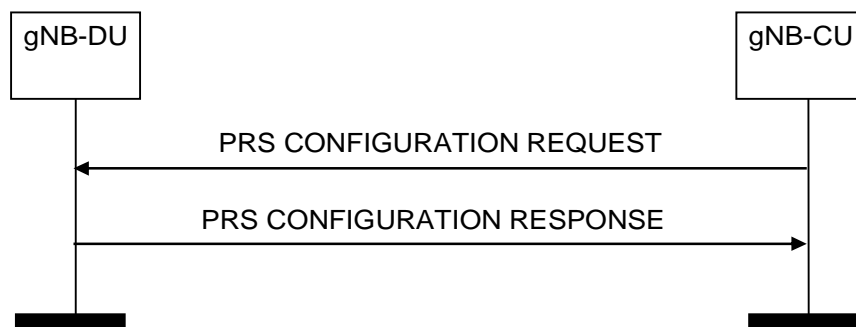


Figure 8.13.17.2-1: PRS Configuration Exchange procedure, successful operation

The gNB-CU initiates the procedure by sending a PRS CONFIGURATION REQUEST message to the gNB-DU.

If the *PRS Configuration Request Type* IE is set to “configure”, the gNB-DU should use the information in the *Requested DL PRS Transmission Characteristics* IE to configure DL-PRS transmission by the indicated TRP(s).

If the *PRS Configuration Request Type* IE is set to “off”, the gNB-DU should, if supported, use the information in the *PRS Transmission Off Information* IE to turn off the DL-PRS transmission for the indicated TRP(s), PRS Resource Set(s), or PRS Resource(s).

If DL-PRS transmission is successfully configured or updated for at least one of the TRPs, the gNB-DU shall respond with the PRS CONFIGURATION RESPONSE message.

8.13.17.3 Unsuccessful Operation

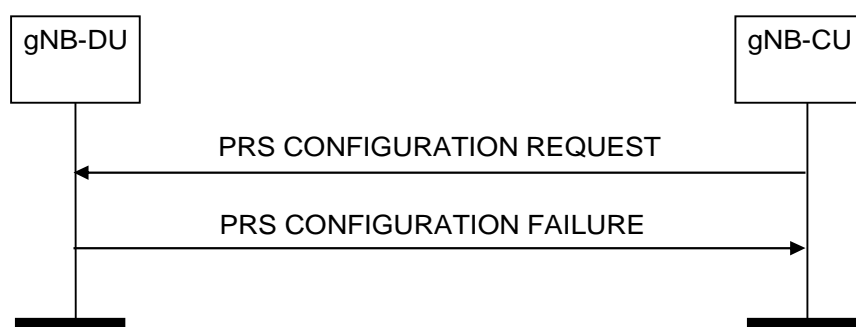


Figure 8.13.17.3-1: PRS Configuration Exchange procedure, unsuccessful operation

If the gNB-DU cannot configure or update DL-PRS transmission for any of the TRPs in the *PRS TRP List* IE of the PRS CONFIGURATION REQUEST message, it shall respond with a PRS CONFIGURATION FAILURE message with an appropriate cause value.

8.13.17.4 Abnormal Conditions

Void.

8.13.18 Measurement Preconfiguration

8.13.18.1 General

The Measurement Preconfiguration procedure allows the gNB-CU to provide necessary information to the serving gNB-DU and request the gNB-DU to preconfigure measurement gap and/or PRS processing window of the UE.

8.13.18.2 Successful Operation

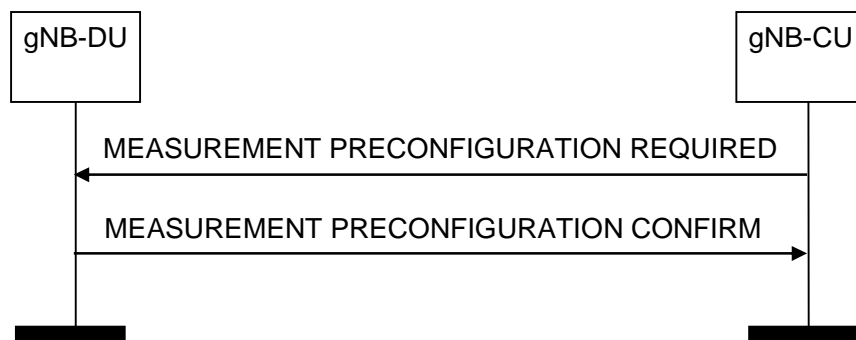


Figure 8.13.18.2-1: Measurement Preconfiguration procedure, successful operation

The gNB-CU initiates the procedure by sending a MEASUREMENT PRECONFIGURATION REQUIRED message.

If the gNB-DU is able to configure measurement gap or PRS processing window, it shall reply with the MEASUREMENT PRECONFIGURATION CONFIRM message.

If the *PosMeasGapPreConfigList* IE is included in the MEASUREMENT PRECONFIGURATION CONFIRM message, the gNB-CU shall, if supported, take the preconfigured measurement gaps information into account.

8.13.18.3 Unsuccessful Operation

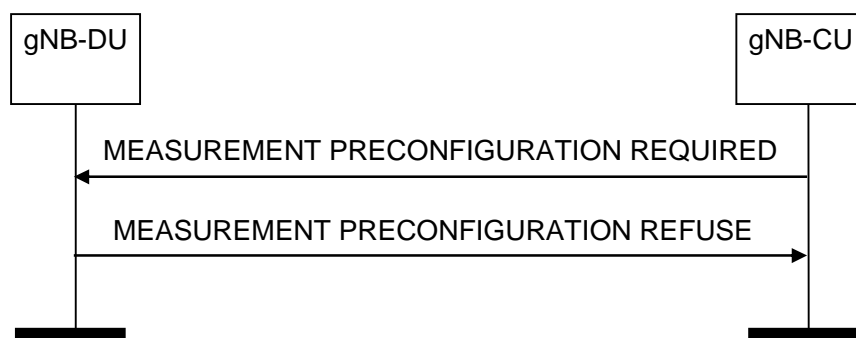


Figure 8.13.18.3-1: Measurement Preconfiguration procedure, unsuccessful operation

If the gNB-DU cannot configure any of the measurement gap or PRS processing window, the gNB-DU shall respond with a MEASUREMENT PRECONFIGURATION REFUSE message.

8.13.19 Measurement Activation

8.13.19.1 General

The Measurement Activation procedure is initiated by the gNB-CU to request the gNB-DU to activate or deactivate the preconfigured measurement gap or PRS processing window for the UE.

8.13.19.2 Successful Operation



Figure 8.13.19.2-1: Measurement Activation procedure, successful operation

The gNB-CU initiates the procedure by sending a MEASUREMENT ACTIVATION message.

If the *PRS Measurement Info List* IE is included in the MEASUREMENT ACTIVATION message, the gNB-DU may take it into account when activating pre-configured measurement gap in the UE.

8.13.19.3 Unsuccessful Operation

Not Applicable.

8.13.20 Positioning System Information Delivery

8.13.20.1 General

The purpose of the Positioning System Information Delivery procedure is to command the gNB-DU to broadcast the requested Positioning SI. The procedure uses non-UE associated signalling.

8.13.20.2 Successful Operation

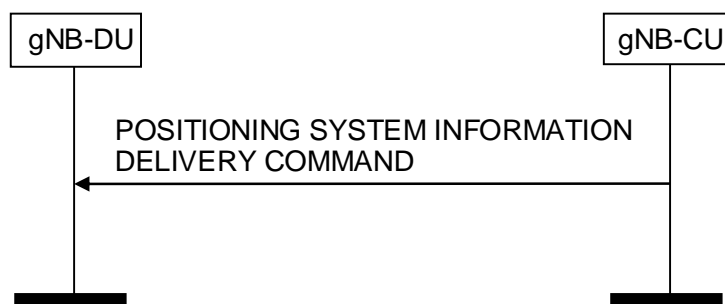


Figure 8.13.20.2-1: Positioning System Information Delivery procedure. Successful operation.

The gNB-CU initiates the procedure by sending a POSITIONING SYSTEM INFORMATION DELIVERY COMMAND message to the gNB-DU.

Upon reception of the POSITIONING SYSTEM INFORMATION DELIVERY COMMAND message, the gNB-DU shall broadcast the requested Positioning SI, and delete the UE context corresponding to the *Confirmed UE ID* IE, if any.

Interactions with gNB-DU Configuration Update procedure:

Upon reception of POSITIONING SYSTEM INFORMATION DELIVERY COMMAND message, the gNB-DU Configuration Update procedure may be performed, and as part of such procedure the gNB-DU shall include the *Dedicated SI Delivery Needed UE List* IE in GNB-DU CONFIGURATION UPDATE message for UEs that are unable to receive system information from broadcast.

8.13.20.3 Abnormal Conditions

Not applicable.

8.14 NR MBS Procedures

8.14.1 Broadcast Context Setup

8.14.1.1 General

The purpose of the Broadcast Context Setup procedure is to establish an MBS Session context for a broadcast session in the gNB-DU.

The procedure uses MBS-associated signalling.

8.14.1.2 Successful Operation

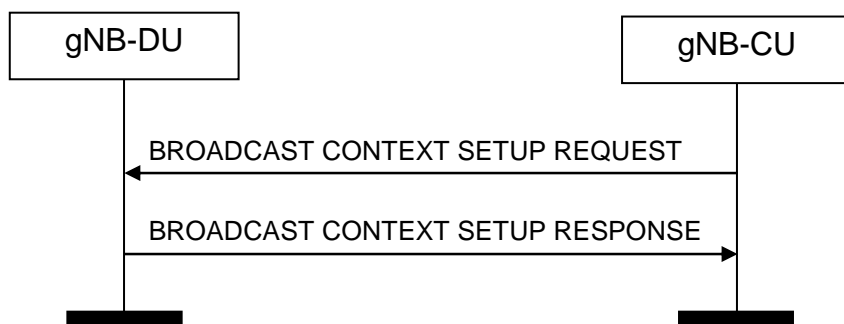


Figure 8.14.1.2-1: Broadcast Context Setup procedure: Successful Operation

The gNB-CU initiates the procedure by sending BROADCAST CONTEXT SETUP REQUEST message to the gNB-DU. If the gNB-DU succeeds to establish the broadcast MBS Session context, it replies to the gNB-CU with BROADCAST CONTEXT SETUP RESPONSE.

If the *MBS Service Area* IE is included in the BROADCAST CONTEXT SETUP REQUEST message, the gNB-DU shall take this information into account for shared F1-U tunnel assignment.

The gNB-DU shall report to the gNB-CU, in the BROADCAST CONTEXT SETUP RESPONSE message, the result of all the requested Broadcast MRBs in the following way:

- A list of MRBs which have been successfully established shall be included in the *Broadcast MRB Setup List* IE;
- A list of MRBs which failed to be established shall be included in the *Broadcast MRB Failed To Be Setup List* IE;

If the *Broadcast MRB Failed To Setup List* IE is contained in the BROADCAST CONTEXT SETUP RESPONSE message, the gNB-CU shall regard the Broadcast MRB(s) failed to be setup with an appropriate cause value for each Broadcast MRB failed to setup.

8.14.1.3 Unsuccessful Operation

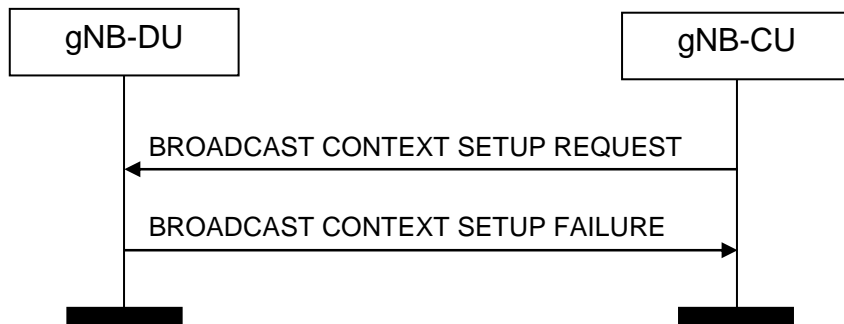


Figure 8.14.1.3-1: Broadcast Context Setup procedure: unsuccessful Operation

If the gNB-DU is not able to establish the requested MBS session context it shall consider the procedure as failed and reply with the BROADCAST CONTEXT SETUP FAILURE message.

8.14.1.4 Abnormal Conditions

Not applicable.

8.14.2 Broadcast Context Release

8.14.2.1 General

The purpose of the Broadcast Context Release procedure is to enable the gNB-CU to order the release of an established MBS Session context for a broadcast session in the gNB-DU.

The procedure uses MBS-associated signalling.

8.14.2.2 Successful Operation

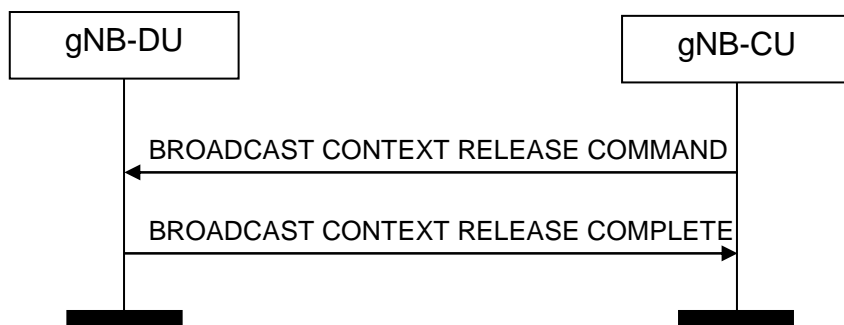


Figure 8.14.2.2-1: Broadcast Context Release procedure. Successful operation

The gNB-CU initiates the procedure by sending the BROADCAST CONTEXT RELEASE COMMAND message to the gNB-DU.

Upon reception of the BROADCAST CONTEXT RELEASE COMMAND message, the gNB-DU shall release all signalling and user data transport resources associated with the context and reply with the BROADCAST CONTEXT RELEASE COMPLETE message.

8.14.2.3 Unsuccessful Operation

Not applicable.

8.14.2.4 Abnormal Conditions

Not applicable.

8.14.3 Broadcast Context Release Request

8.14.3.1 General

The purpose of the Broadcast Context Release Request procedure is to request the gNB-CU to trigger the Broadcast Context Release procedure.

The procedure uses MBS-associated signalling.

8.14.3.2 Successful Operation



Figure 8.14.3.2-1: Broadcast Context Release Request procedure. Successful operation

The gNB-DU initiates the procedure by sending the BROADCAST CONTEXT RELEASE REQUEST message to the gNB-CU.

Interaction with the Broadcast Context Release procedure:

Upon reception of the BROADCAST CONTEXT RELEASE REQUEST message, the gNB-CU should trigger the Broadcast Context Release procedure.

8.14.3.3 Unsuccessful Operation

Not applicable.

8.14.3.4 Abnormal Conditions

Not applicable.

8.14.4 Broadcast Context Modification

8.14.4.1 General

The purpose of the Broadcast Context Modification procedure is to modify an established MBS Session context for a broadcast session in the gNB-DU.

The procedure uses MBS-associated signalling.

8.14.4.2 Successful Operation

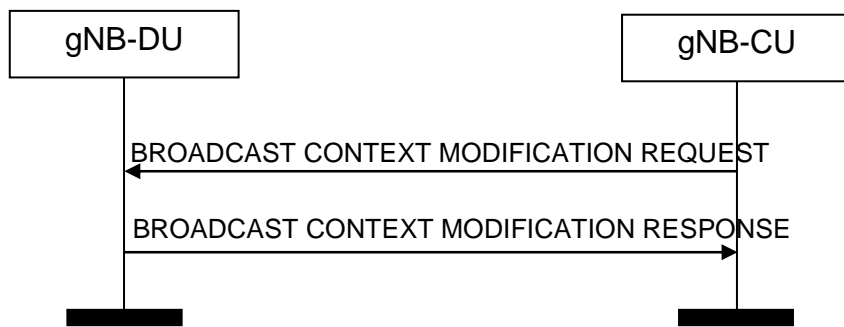


Figure 8.14.4.2-1: Broadcast Context Modification procedure. Successful operation

The BROADCAST CONTEXT MODIFICATION REQUEST message is initiated by the gNB-CU.

Upon reception of the BROADCAST CONTEXT MODIFICATION REQUEST message, the gNB-DU shall perform the modifications, and, if successful, report the update in the BROADCAST CONTEXT MODIFICATION RESPONSE message.

If the *Broadcast MRB To Be Setup List* IE is contained in the BROADCAST CONTEXT MODIFICATION REQUEST message, the gNB-DU shall setup the corresponding resources for the requested MRB(s), and report to the gNB-CU, in the BROADCAST CONTEXT MODIFICATION RESPONSE message, the result of all the requested Broadcast MRBs in the following way:

- A list of MRBs which have been successfully established shall be included in the *Broadcast MRB Setup List* IE;
- A list of MRBs which failed to be established shall be included in the *Broadcast MRB Failed To Be Setup List* IE;

If the *Broadcast MRB Failed To Be Setup List* IE is contained in the BROADCAST CONTEXT MODIFICATION RESPONSE message, the gNB-CU shall regard the setup of the indicated MRB(s) as failed and indicate the reason for the failure with an appropriate cause value for each MRB failed to be setup.

If the *Broadcast MRB To Be Modified List* IE is contained in the BROADCAST CONTEXT MODIFICATION REQUEST message, the gNB-DU shall update the corresponding context and resources for the requested MRB(s), and report to the gNB-CU, in the BROADCAST CONTEXT MODIFICATION RESPONSE message, the modification result of all the requested Broadcast MRBs in the following way:

- A list of MRBs which have been successfully modified shall be included in the *Broadcast MRB Modified List* IE;
- A list of MRBs which failed to be modified shall be included in the *Broadcast MRB Failed To Be Modified List* IE;

If the *Broadcast MRB Failed To Be Modified List* IE is contained in the BROADCAST CONTEXT MODIFICATION RESPONSE message, the gNB-CU shall regard the Broadcast MRB(s) failed to be modified with an appropriate cause value for each Broadcast MRB failed to modify.

8.14.4.3 Unsuccessful Operation

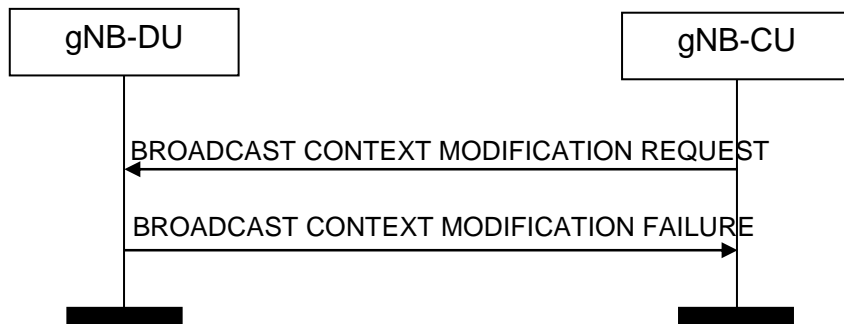


Figure 8.14.4.3-1: Broadcast Context Modification procedure. Unsuccessful operation

In case none of the requested modifications of the broadcast context can be successfully performed, the gNB-DU shall respond with the BROADCAST CONTEXT MODIFICATION FAILURE message with an appropriate cause value.

8.14.4.4 Abnormal Conditions

Not applicable.

8.14.5 Multicast Group Paging

8.14.5.1 General

The purpose of the Multicast Group Paging procedure is used to provide the paging information to enable the gNB-DU to multicast group page UEs which have joined an MBS Session and notify them about its activation. The procedure uses non-UE associated signalling.

8.14.5.2 Successful Operation

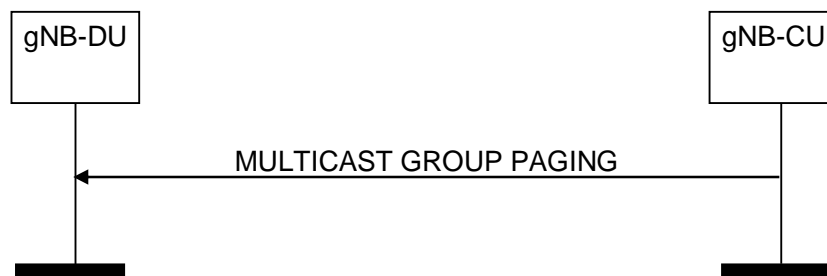


Figure 8.14.5.2-1: Multicast Group Paging

The gNB-CU initiates the Multicast Group Paging procedure by sending the MULTICAST GROUP PAGING message to the gNB-DU.

At the reception of the MULTICAST GROUP PAGING message, the gNB-DU shall perform paging of the MBS Session identified by the *MBS Session ID* IE.

If the *Paging DRX* IE is included in the MULTICAST GROUP PAGING message gNB-DU shall use it according to TS 38.304 [24].

If the *UE Identity List for Paging* IE is included in the MULTICAST GROUP PAGING message, the gNB-DU shall, if supported, use it according to TS 38.304 [24]. If absent, the gNB-DU shall perform multicast group paging of the MBS session in all paging occasions within at least one default paging cycle, as specified in TS 38.304 [24].

8.14.5.3 Abnormal Conditions

Void.

8.14.6 Multicast Context Setup

8.14.6.1 General

The purpose of the Multicast Context Setup procedure is to establish an MBS Session context in the gNB-DU for a multicast session.

The procedure uses MBS-associated signalling.

8.14.6.2 Successful Operation

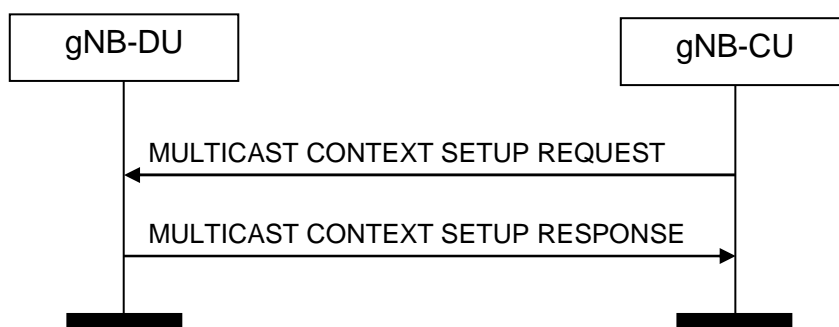


Figure 8.14.6.2-1: Multicast Context Setup procedure: Successful Operation

The gNB-CU initiates the procedure by sending MULTICAST CONTEXT SETUP REQUEST message to the gNB-DU. If the gNB-DU succeeds to establish the multicast MBS Session context, it replies to the gNB-CU with MULTICAST CONTEXT SETUP RESPONSE.

If the *MBS Service Area* IE is included in the MULTICAST CONTEXT SETUP REQUEST message, the gNB-DU shall take this information into account for shared F1-U tunnel assignment.

The gNB-DU shall report to the gNB-CU, in the MULTICAST CONTEXT SETUP RESPONSE message, the result of all the requested Multicast MRBs in the following way:

- A list of MRBs which have been successfully established shall be included in the *Multicast MRB Setup List* IE;
- A list of MRBs which failed to be established shall be included in the *Multicast MRB Failed To Be Setup List* IE;

If the *Multicast MRB Failed To Setup List* IE is contained in the MULTICAST CONTEXT SETUP RESPONSE message, the gNB-CU shall regard the Multicast MRB(s) failed to be setup with an appropriate cause value for each Multicast MRB failed to setup.

Interaction with the Multicast Distribution Context Setup procedure:

Upon reception of the MULTICAST CONTEXT SETUP REQUEST procedure, the gNB-DU shall trigger either per cell or per MBS Area Session ID or for the whole gNB-DU the Multicast Distribution Context Setup procedure to establish per cell or per MBS Area Session ID or the the whole gNB DU per accepted MRB a shared F1-U tunnel.

8.14.6.3 Unsuccessful Operation

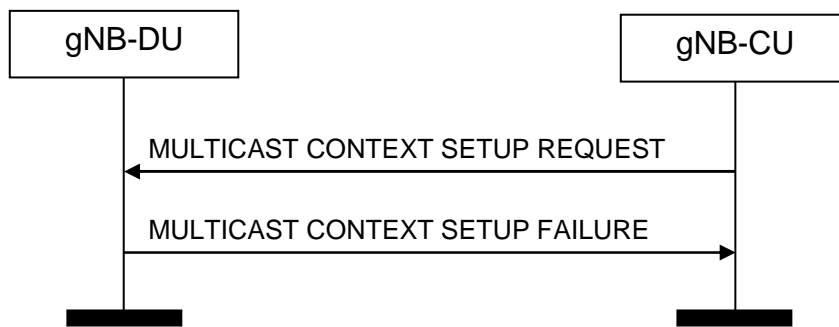


Figure 8.14.6.3-1: Multicast Context Setup procedure: unsuccessful Operation

If the gNB-DU is not able to establish the MBS session context it shall consider the procedure as failed and reply with the MULTICAST CONTEXT SETUP FAILURE message.

8.14.6.4 Abnormal Conditions

Not applicable.

8.14.7 Multicast Context Release

8.14.7.1 General

The purpose of the Multicast Context Release procedure is to enable the gNB-CU to order the release of an established MBS session context in the gNB-DU for a multicast session.

The procedure uses MBS-associated signalling.

8.14.7.2 Successful Operation

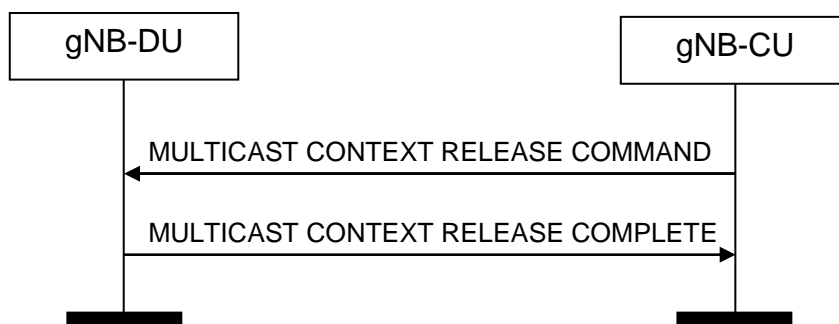


Figure 8.14.7.2-1: Multicast Context Release procedure. Successful operation

The gNB-CU initiates the procedure by sending the MULTICAST CONTEXT RELEASE COMMAND message to the gNB-DU.

Upon reception of the MULTICAST CONTEXT RELEASE COMMAND message, the gNB-DU shall release all signalling and user data transport resources associated with the context and reply with the MULTICAST CONTEXT RELEASE COMPLETE message.

8.14.7.3 Unsuccessful Operation

Not applicable.

8.14.7.4 Abnormal Conditions

Not applicable.

8.14.8 Multicast Context Release Request

8.14.8.1 General

The purpose of the Multicast Context Release Request procedure is to request the gNB-CU to trigger the Multicast Context Release procedure.

The procedure uses MBS-associated signalling.

8.14.8.2 Successful Operation



Figure 8.14.8.2-1: Multicast Context Release Request procedure. Successful operation

The gNB-DU initiates the procedure by sending the MULTICAST CONTEXT RELEASE REQUEST message to the gNB-CU.

Interaction with the Multicast Context Release procedure:

Upon reception of the MULTICAST CONTEXT RELEASE REQUEST message, the gNB-CU should trigger the Multicast Context Release procedure.

8.14.8.3 Unsuccessful Operation

Not applicable.

8.14.8.4 Abnormal Conditions

Not applicable.

8.14.9 Multicast Context Modification

8.14.9.1 General

The purpose of the Multicast Context Modification procedure is to modify an established MBS session context in the gNB-DU for a multicast session.

The procedure uses MBS-associated signalling.

8.14.9.2 Successful Operation

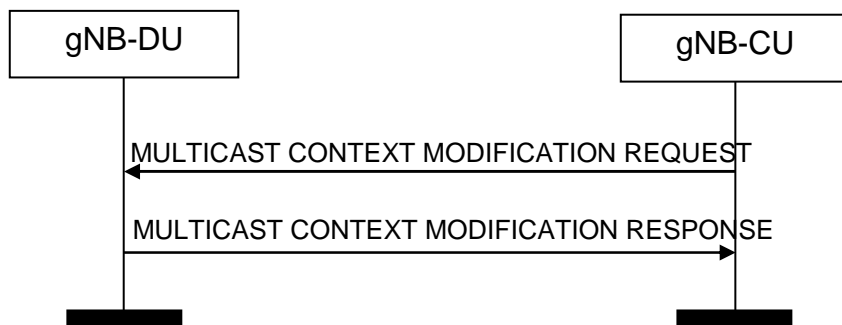


Figure 8.14.9.2-1: Multicast Context Modification procedure. Successful operation

The MULTICAST CONTEXT MODIFICATION REQUEST message is initiated by the gNB-CU.

Upon reception of the MULTICAST CONTEXT MODIFICATION REQUEST message, the gNB-DU shall perform the modifications, and, if successful, report the update in the MULTICAST CONTEXT MODIFICATION RESPONSE message.

If the *Multicast MRB To Be Setup List IE* is contained in the MULTICAST CONTEXT MODIFICATION REQUEST message, the gNB-DU shall setup the corresponding resources for the requested MRB(s), and report to the gNB-CU, in the MULTICAST CONTEXT MODIFICATION RESPONSE message, the result of all the requested Multicast MRBs in the following way:

- A list of MRBs which have been successfully established shall be included in the *Multicast MRB Setup List IE*;
- A list of MRBs which failed to be established shall be included in the *Multicast MRB Failed To Be Setup List IE*;

If the *Multicast MRB Failed To Be Setup List IE* is contained in the MULTICAST CONTEXT MODIFICATION RESPONSE message, the gNB-CU shall regard the setup of the indicated MRB(s) as failed and indicated the resource for the failure with an appropriate cause value for each MRB failed to be setup.

If the *Multicast MRB To Be Modified List IE* is contained in the MULTICAST CONTEXT MODIFICATION REQUEST message, the gNB-DU shall update the corresponding context and resources for the requested MRB(s), and report to the gNB-CU, in the MULTICAST CONTEXT MODIFICATION RESPONSE message, the modification result of all the requested Multicast MRBs in the following way:

- A list of MRBs which have been successfully modified shall be included in the *Multicast MRB Modified List IE*;
- A list of MRBs which failed to be modified shall be included in the *Multicast MRB Failed To Be Modified List IE*;

If the *Multicast MRB Failed To Be Modified List IE* is contained in the MULTICAST CONTEXT MODIFICATION RESPONSE message, the gNB-CU shall regard the Multicast MRB(s) failed to be modified with an appropriate cause value for each Multicast MRB failed to modify.

8.14.9.3 Unsuccessful Operation

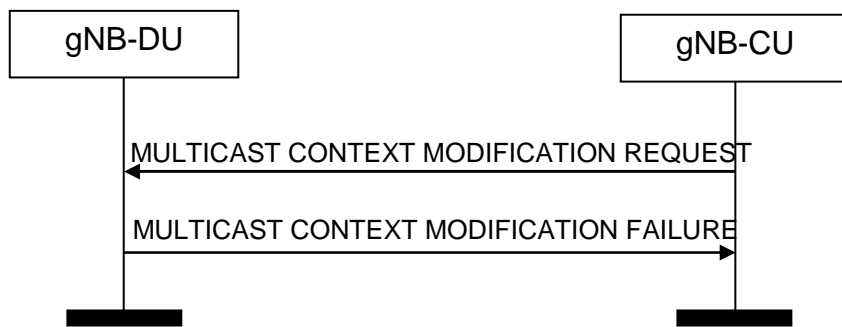


Figure 8.14.9.3-1: Multicast Context Modification procedure. Unsuccessful operation

In case none of the requested modifications of the multicast context can be successfully performed, the gNB-DU shall respond with the MULTICAST CONTEXT MODIFICATION FAILURE message with an appropriate cause value.

8.14.9.4 Abnormal Conditions

Not applicable.

8.14.10 Multicast Distribution Setup

8.14.10.1 General

The purpose of the Multicast Distribution Setup procedure is to establish F1-U bearers for the multicast MBS session.

The procedure uses MBS-associated signalling.

8.14.10.2 Successful Operation

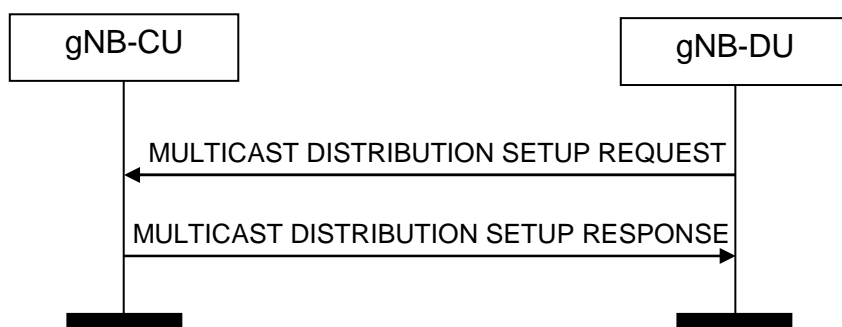


Figure 8.14.10.2-1: Multicast Distribution Setup procedure: Successful Operation

The gNB-DU initiates the procedure by sending MULTICAST DISTRIBUTION SETUP REQUEST message to the gNB-CU. If the gNB-CU succeeds to establish the multicast context, it replies to the gNB-DU with MULTICAST DISTRIBUTION SETUP RESPONSE.

The MULTICAST DISTRIBUTION SETUP REQUEST message shall contain F1-U TNL information for the MRBs accepted for the MBS Session by the gNB-DU and indicate either the NR CGI or the MBS Area Session ID or a UE reference, if the shared F1-U tunnel(s) for the MRB(s) are established on a per NR CGI or per MBS Area Session ID basis or for a ptp MRB leg.

Upon reception of the MULTICAST DISTRIBUTION SETUP REQUEST message the gNB-CU shall allocate F1-U resources and reply accordingly to the gNB-DU in the MULTICAST DISTRIBUTION SETUP RESPONSE message.

If the *MC F1-U Context usage* IE in the *MBS Multicast F1-U Context Descriptor* IE is set to "ptp forwarding" the gNB-CU shall, if supported, use the *MRB Progress Information* IE to determine at which PDCP SN to start transmitting multicast data to the gNB-DU.

8.14.10.3 Unsuccessful Operation

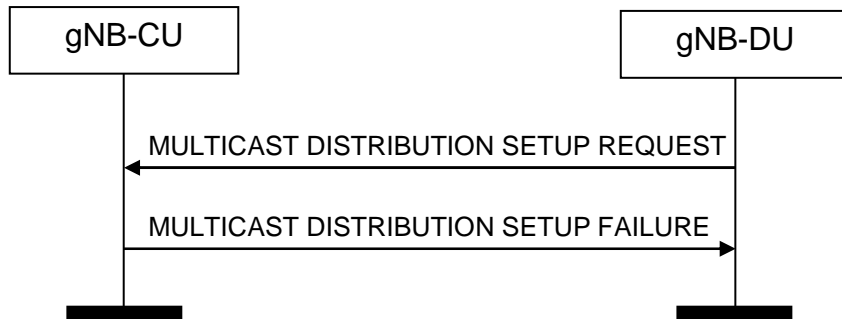


Figure 8.14.10.3-1: Multicast Distribution Setup procedure: unsuccessful Operation

If the gNB-CU is not able to provide the requested resources it shall consider the procedure as failed and reply with the *MULTICAST CONTEXT SETUP FAILURE* message.

8.14.10.4 Abnormal Conditions

Not applicable.

8.14.11 Multicast Distribution Release

8.14.11.1 General

The purpose of the Multicast Distribution Release procedure is to enable the gNB-DU to order the release established shared F1-U tunnels.

The procedure uses MBS-associated signalling.

8.14.11.2 Successful Operation

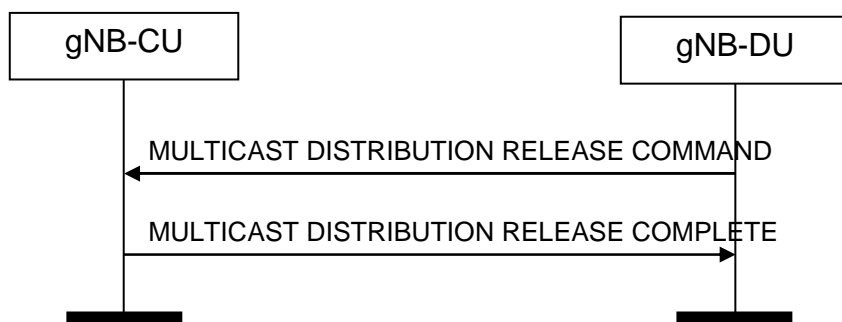


Figure 8.14.11.2-1: Multicast Distribution Release procedure. Successful operation

The gNB-DU initiates the procedure by sending the *MULTICAST DISTRIBUTION RELEASE COMMAND* message to the gNB-CU.

Upon reception of the *MULTICAST DISTRIBUTION RELEASE COMMAND* message, the gNB-DU shall release all signalling and user data transport resources associated with the context and reply with the *MULTICAST DISTRIBUTION RELEASE COMPLETE* message.

8.14.11.3 Unsuccessful Operation

Not applicable.

8.14.11.4 Abnormal Conditions

Not applicable.

8.15 PDC Measurement Reporting procedures

8.15.1 PDC Measurement Initiation

8.15.1.1 General

The purpose of the PDC Measurement Initiation procedure is to enable the gNB-CU to request the gNB-DU to report measurements used for propagation delay compensation at the gNB-CU or UE. The procedure uses UE-associated signalling.

8.15.1.2 Successful Operation

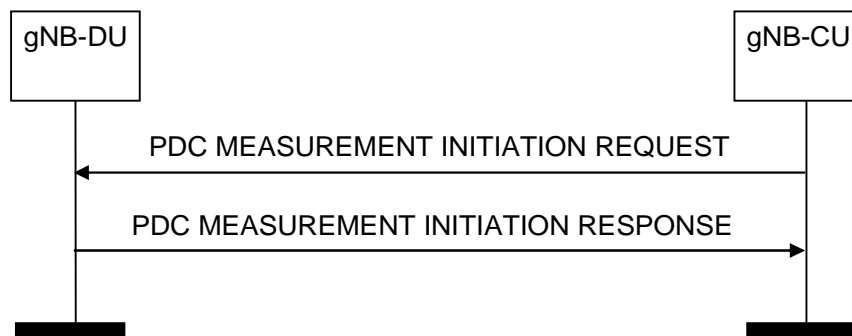


Figure 8.15.1.2-1: PDC Measurement Initiation procedure, successful operation

The gNB-CU initiates the procedure by sending a PDC MEASUREMENT INITIATION REQUEST message. If the gNB-DU is able to initiate the requested PDC measurements, it shall reply with the PDC MEASUREMENT INITIATION RESPONSE message.

If the *PDC Report Type* IE is set to "OnDemand", the gNB-DU shall return the result of the measurement in the PDC MEASUREMENT INITIATION RESPONSE message including the *PDC Measurement Result* IE, and the gNB-CU shall consider that the PDC measurements for the UE have been terminated by the gNB-DU.

Interaction with the PDC Measurement Report procedure:

If the *PDC Report Type* IE is set to "Periodic", the gNB-DU shall initiate the requested measurements and shall reply with the PDC MEASUREMENT INITIATION RESPONSE message without including the *PDC Measurement Result* IE in this message. The gNB-DU shall then periodically initiate the PDC Measurement Report procedure for the measurements, with the requested reporting periodicity.

8.15.1.3 Unsuccessful Operation

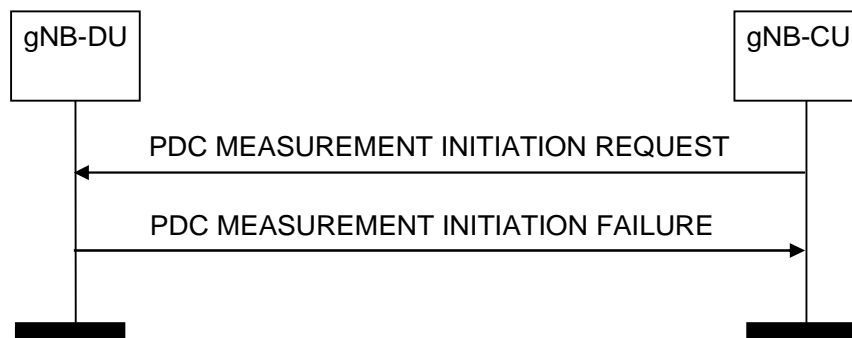


Figure 8.15.1.3-1: PDC Measurement Initiation procedure, unsuccessful operation

If the gNB-DU is not able to initiate at least one of the requested PDC measurements, the gNB-DU shall respond with a PDC MEASUREMENT INITIATION FAILURE message.

8.15.2 PDC Measurement Report

8.15.2.1 General

The purpose of the PDC Measurement Report procedure is for the gNB-DU to provide the PDC measurements for the UE to the gNB-CU. The procedure uses UE-associated signalling.

8.15.2.2 Successful Operation

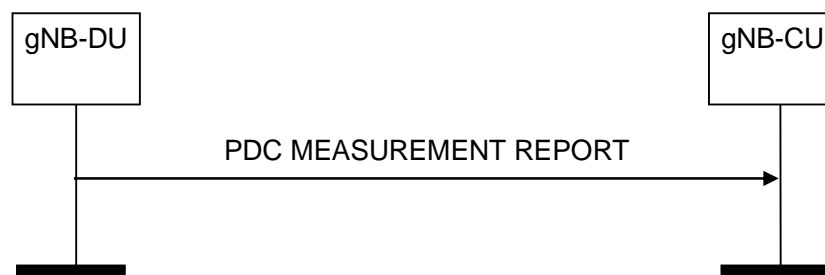


Figure 8.15.2.2-1: PDC Measurement Report procedure, successful operation

The gNB-DU initiates the procedure by sending a PDC MEASUREMENT REPORT message. The PDC MEASUREMENT REPORT message contains the PDC measurement results according to the measurement configuration in the respective PDC MEASUREMENT INITIATION REQUEST message.

8.15.2.3 Unsuccessful Operation

Not applicable.

8.15.3 PDC Measurement Termination

8.15.3.1 General

The purpose of the PDC Measurement Termination procedure is to enable the gNB-CU to terminate an on-going periodical PDC measurement. The procedure uses UE-associated signalling.

8.15.3.2 Successful Operation



Figure 8.15.3.2-1: PDC Measurement Termination procedure: successful operation

The gNB-CU initiates the procedure by sending a PDC MEASUREMENT TERMINATION COMMAND message. Upon receiving this message, the gNB-DU shall terminate the ongoing PDC measurement and may release any resources previously allocated for the same measurement.

8.15.3.3 Unsuccessful Operation

Not applicable.

8.15.3.4 Abnormal Conditions

If the gNB-DU cannot identify the previously requested measurement to be terminated, it shall ignore the PDC MEASUREMENT TERMINATION COMMAND message.

8.15.4 PDC Measurement Failure Indication

8.15.4.1 General

The purpose of the PDC Measurement Failure Indication procedure is for the gNB-DU to notify the gNB-CU that the PDC measurements previously requested with the PDC Measurement Initiation procedure can no longer be reported. The procedure uses UE-associated signalling.

8.15.4.2 Successful Operation

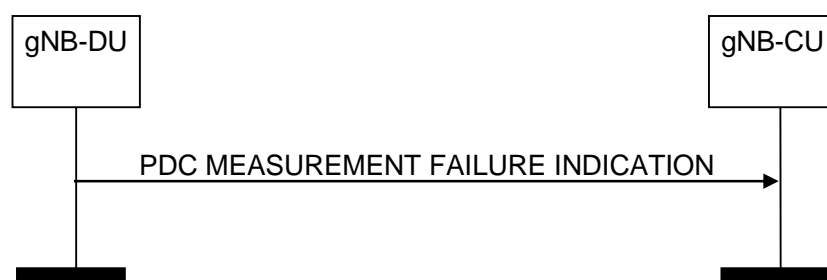


Figure 8.15.4.2-1: PDC Measurement Failure Indication procedure: successful operation

The gNB-DU initiates the procedure by sending a PDC MEASUREMENT FAILURE INDICATION message. Upon reception of the PDC MEASUREMENT FAILURE INDICATION message, the gNB-CU shall consider that the indicated PDC measurements have been terminated by the gNB-DU.

8.15.4.3 Unsuccessful Operation

Not applicable.

8.15.4.4 Abnormal Conditions

Void.

8.16 QMC Procedures

8.16.1 QoE Information Transfer

8.16.1.1 General

The purpose of the QoE Information Transfer procedure is to transfer RAN visible QoE information from the gNB-CU to the gNB-DU. The procedure uses UE-associated signalling.

8.16.1.2 Successful operation

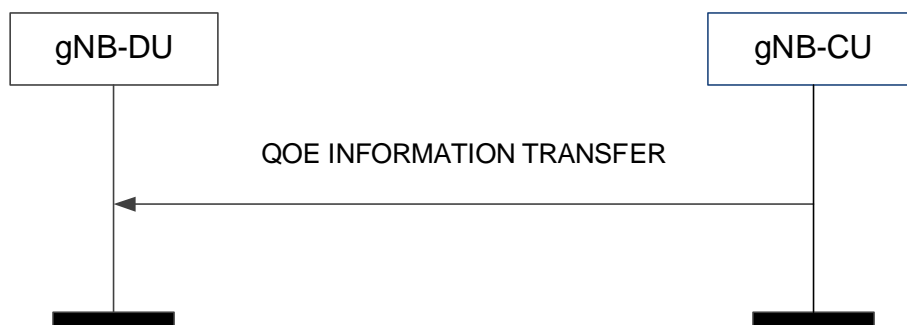


Figure 8.16.1.2-1: QoE Information Transfer procedure

The gNB-CU initiates the procedure by sending the QOE INFORMATION TRANSFER message to the gNB-DU.

If the *QoE Information List* IE is included in QOE INFORMATION TRANSFER message, the gNB-DU may take it into account according to TS 38.300 [6].

8.16.1.3 Abnormal Conditions

Not applicable.

9 Elements for F1AP Communication

9.1 General

Subclauses 9.2 and 9.3 present the F1AP message and IE definitions in tabular format. The corresponding ASN.1 definition is presented in subclause 9.4. In case there is contradiction between the tabular format and the ASN.1 definition, the ASN.1 shall take precedence, except for the definition of conditions for the presence of conditional IEs, where the tabular format shall take precedence.

The messages have been defined in accordance to the guidelines specified in TR 25.921 [14].

When specifying IEs which are to be represented by bitstrings, if not otherwise specifically stated in the semantics description of the concerned IE or elsewhere, the following principle applies with regards to the ordering of bits:

- The first bit (leftmost bit) contains the most significant bit (MSB);
- The last bit (rightmost bit) contains the least significant bit (LSB);

- When importing bitstrings from other specifications, the first bit of the bitstring contains the first bit of the concerned information;

The following attributes are used for the tabular description of the messages and information elements: Presence, Range Criticality and Assigned Criticality. Their definition and use can be found in TS 38.413 [3].

9.2 Message Functional Definition and Content

9.2.1 Interface Management messages

9.2.1.1 RESET

This message is sent by both the gNB-CU and the gNB-DU and is used to request that the F1 interface, or parts of the F1 interface, to be reset.

Direction: gNB-CU → gNB-DU and gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Cause	M		9.3.1.2		YES	ignore
CHOICE <i>Reset Type</i>	M				YES	reject
> <i>F1 interface</i>						
>>Reset All	M		ENUMERATED (Reset all,...)		-	
> <i>Part of F1 interface</i>						
>>UE-associated logical F1-connection list		1			-	
>>>UE-associated logical F1-connection Item		1 .. <maxnoofIndividualF1ConnectionsToReset>			EACH	reject
>>>> gNB-CU UE F1AP ID	O		9.3.1.4		-	
>>>> gNB-DU UE F1AP ID	O		9.3.1.5		-	

Range bound	Explanation
maxnoofIndividualF1ConnectionsToReset	Maximum no. of UE-associated logical F1-connections allowed to reset in one message. Value is 65536.

9.2.1.2 RESET ACKNOWLEDGE

This message is sent by both the gNB-CU and the gNB-DU as a response to a RESET message.

Direction: gNB-DU → gNB-CU and gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
UE-associated logical F1-connection list		0..1			YES	ignore
>UE-associated logical F1-connection Item		1 .. <maxnoofIndividualF1ConnectionsToReset>			EACH	ignore
>>gNB-CU UE F1AP ID	O		9.3.1.4		-	
>>gNB-DU UE F1AP ID	O		9.3.1.5		-	
Criticality Diagnostics	O		9.3.1.3		YES	ignore

Range bound	Explanation
maxnoofIndividualF1ConnectionsToReset	Maximum no. of UE-associated logical F1-connections allowed to reset in one message. Value is 65536.

9.2.1.3 ERROR INDICATION

This message is sent by both the gNB-CU and the gNB-DU and is used to indicate that some error has been detected in the node.

Direction: gNB-CU → gNB-DU and gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23	This IE is ignored if received in UE associated signalling message.	YES	reject
gNB-CU UE F1AP ID	O		9.3.1.4		YES	ignore
gNB-DU UE F1AP ID	O		9.3.1.5		YES	ignore
Cause	O		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.1.4 F1 SETUP REQUEST

This message is sent by the gNB-DU to transfer information associated to an F1-C interface instance.

NOTE: If a TNL association is shared among several F1-C interface instances, several F1 Setup procedures are issued via the same TNL association after that TNL association has become operational.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
gNB-DU ID	M		9.3.1.9		YES	reject
gNB-DU Name	O		PrintableString(SIZE(1..150,...))		YES	ignore
gNB-DU Served Cells List		0.. 1		List of cells configured in the gNB-DU	YES	reject
>gNB-DU Served Cells Item		1.. <maxCellingNBDU>			EACH	reject
>>Served Cell Information	M		9.3.1.10	Information about the cells configured in the gNB-DU	-	
>>gNB-DU System Information	O		9.3.1.18	RRC container with system information owned by gNB-DU	-	
gNB-DU RRC version	M		RRC version 9.3.1.70		YES	reject
Transport Layer Address Info	O		9.3.2.5		YES	ignore
BAP Address	O		9.3.1.111	Indicates a BAP address assigned to the IAB-node.	YES	ignore
Extended gNB-DU Name	O		9.3.1.205		YES	ignore

Range bound	Explanation
maxCellingNBDU	Maximum no. cells that can be served by a gNB-DU. Value is 512.

9.2.1.5 F1 SETUP RESPONSE

This message is sent by the gNB-CU to transfer information associated to an F1-C interface instance.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
gNB-CU Name	O		PrintableString (SIZE(1..150,..))	Human readable name of the gNB-CU.	YES	ignore
Cells to be Activated List		0.. 1			YES	reject
>Cells to be Activated List Item		1.. <maxCellingNBDU>		List of cells to be activated	EACH	reject
>> NR CGI	M		9.3.1.12		-	
>> NR PCI	O		INTEGER (0..1007)	Physical Cell ID	-	
>>gNB-CU System Information	O		9.3.1.42	RRC container with system information owned by gNB-CU	YES	reject
>>Available PLMN List	O		9.3.1.65		YES	ignore
>>Extended Available PLMN List	O		9.3.1.76	This is included if <i>Available PLMN List</i> IE is included and if more than 6 Available PLMNs is to be signalled.	YES	ignore
>>IAB Info IAB-donor-CU	O		9.3.1.105	IAB-related configuration sent by the IAB-donor-CU.	YES	ignore
>>Available SNPN ID List	O		9.3.1.163	Indicates the available SNPN ID list. If this IE is included, the content of the <i>Available PLMN List</i> IE and <i>Extended Available PLMN List</i> IE if present in the <i>Cells to be Activated List Item</i> IE is ignored.	YES	ignore
>>MBS Broadcast Neighbour Cell List	O		9.3.1.226		YES	ignore
gNB-CU RRC version	M		RRC version 9.3.1.70		YES	reject
Transport Layer Address Info	O		9.3.2.5		YES	ignore
Uplink BH Non-UP Traffic Mapping	O		9.3.1.103		YES	reject
BAP Address	O		9.3.1.111	Indicates a BAP address assigned to the IAB-donor-DU.	YES	ignore
Extended gNB-CU Name	O		9.3.1.206		YES	ignore

Range bound	Explanation
maxCellingNBDU	Maximum no. cells that can be served by a gNB-DU. Value is 512.

9.2.1.6 F1 SETUP FAILURE

This message is sent by the gNB-CU to indicate F1 Setup failure.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Cause	M		9.3.1.2		YES	ignore
Time to wait	O		9.3.1.13		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.1.7 GNB-DU CONFIGURATION UPDATE

This message is sent by the gNB-DU to transfer updated information associated to an F1-C interface instance.

NOTE: If F1-C signalling transport is shared among several F1-C interface instances, this message may transfer updated information associated to several F1-C interface instances.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Served Cells To Add List		0..1		Complete list of added cells served by the gNB-DU	YES	reject
>Served Cells To Add Item		1 .. <maxCellingNBD U>			EACH	reject
>>Served Cell Information	M		9.3.1.10	Information about the cells configured in the gNB-DU	-	
>>gNB-DU System Information	O		9.3.1.18	RRC container with system information owned by gNB-DU	-	
Served Cells To Modify List		0..1		Complete list of modified cells served by the gNB-DU	YES	reject
>Served Cells To Modify Item		1 .. <maxCellingNBD U>			EACH	reject
>>Old NR CGI	M		NR CGI 9.3.1.12		-	
>>Served Cell Information	M		9.3.1.10	Information about the cells configured in the gNB-DU	-	

>>gNB-DU System Information	O		9.3.1.18	RRC container with system information owned by gNB-DU	-	
Served Cells To Delete List		0..1		Complete list of deleted cells served by the gNB-DU	YES	reject
>Served Cells To Delete Item		1.. <maxCellingNBD U>			EACH	reject
>>Old NR CGI	M		NR CGI 9.3.1.12		-	
Cells Status List		0..1		Complete list of active cells	YES	reject
> Cells Status Item		0 .. <maxCellingNBD U>			EACH	reject
>> NR CGI	M		9.3.1.12		-	
>>Service Status	M		9.3.1.68		-	
Dedicated SI Delivery Needed UE List		0..1		List of UEs unable to receive system information from broadcast	YES	ignore
> Dedicated SI Delivery Needed UE Item		1 .. <maxnoofUEIDs>			EACH	ignore
>>gNB-CU UE F1AP ID	M		9.3.1.4		-	
>>NR CGI	M		9.3.1.12		-	
gNB-DU ID	O		9.3.1.9		YES	reject
gNB-DU TNL Association To Remove List		0..1			YES	reject
>gNB-DU TNL Association To Remove Item IEs		1.. <maxnoofTNLA ssociation>			EACH	reject
>>TNL Association Transport Layer Address	M		CP Transport Layer Address 9.3.2.4	Transport Layer Address of the gNB-DU.	-	-
>>TNL Association Transport Layer Address gNB-CU	O		CP Transport Layer Address 9.3.2.4	Transport Layer Address of the gNB-CU	-	-

Transport Layer Address Info	O		9.3.2.5		YES	ignore
Coverage Modification Notification	O		9.3.1.213		YES	Ignore
gNB-DU Name	O		PrintableString(SIZE(1..150,...))	Human readable name of the gNB-DU.	YES	ignore
Extended gNB-DU Name	O		9.3.1.205		YES	ignore

Range bound	Explanation
maxCellingNBDU	Maximum no. cells that can be served by a gNB-DU. Value is 512.
maxnoofUEIDs	Maximum no. of UEs that can be served by a gNB-DU. Value is 65536.
maxnoofTNLAassociations	Maximum numbers of TNL Associations between the gNB-CU and the gNB-DU. Value is 32.

9.2.1.8 GNB-DU CONFIGURATION UPDATE ACKNOWLEDGE

This message is sent by a gNB-CU to a gNB-DU to acknowledge update of information associated to an F1-C interface instance.

NOTE: If F1-C signalling transport is shared among several F1-C interface instances, this message may transfer updated information associated to several F1-C interface instances.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Cells to be Activated List		0.. 1		List of cells to be activated	YES	reject
>Cells to be Activated List Item		1.. <maxCellingNBDU>			EACH	reject
>> NR CGI	M		9.3.1.12		-	
>> NR PCI	O		INTEGER (0..1007)	Physical Cell ID	-	
>> gNB-CU System Information	O		9.3.1.42	RRC container with system information owned by gNB-CU	YES	reject
>>Available PLMN List	O		9.3.1.65		YES	ignore
>>Extended Available PLMN List	O		9.3.1.76	This is included if <i>Available PLMN List</i> IE is included and if more than 6 Available PLMNs is to be signalled.	YES	ignore
>>IAB Info IAB-donor-CU	O		9.3.1.105	IAB-related configuration sent by the IAB-donor-CU.	YES	ignore
>>Available SNPN ID List	O		9.3.1.163	Indicates the available SNPN ID list.	YES	ignore

				If this IE is included, the content of the <i>Available PLMN List</i> IE and <i>Extended Available PLMN List</i> IE if present in the <i>Cells to be Activated List</i> IE is ignored.		
>>MBS Broadcast Neighbour Cell List	O		9.3.1.226		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore
Cells to be Deactivated List		0.. 1		List of cells to be deactivated	YES	reject
>Cells to be Deactivated List Item		1.. <maxCellingNBDU>			EACH	reject
>> NR CGI	M		9.3.1.12		-	-
Transport Layer Address Info	O		9.3.2.5		YES	ignore
Uplink BH Non-UP Traffic Mapping	O		9.3.1.103		YES	reject
BAP Address	O		9.3.1.111	Indicates a BAP address assigned to the IAB-donor-DU.	YES	ignore
Cells for SON List	O		9.3.1.214		YES	ignore

Range bound	Explanation
maxCellingNBDU	Maximum no. cells that can be served by a gNB-DU. Value is 512.

9.2.1.9 GNB-DU CONFIGURATION UPDATE FAILURE

This message is sent by the gNB-CU to indicate gNB-DU Configuration Update failure.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Cause	M		9.3.1.2		YES	ignore
Time to wait	O		9.3.1.13		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.1.10 GNB-CU CONFIGURATION UPDATE

This message is sent by the gNB-CU to transfer updated information associated to an F1-C interface instance.

NOTE: If F1-C signalling transport is shared among several F1-C interface instances, this message may transfer updated information associated to several F1-C interface instances.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Cells to be Activated List		0..1		List of cells to be activated or modified	YES	reject
>Cells to be Activated List Item		1.. <maxCellingNBD U>			EACH	reject
>> NR CGI	M		9.3.1.12		-	
>> NR PCI	O		INTEGER (0..1007)	Physical Cell ID	-	
>> gNB-CU System Information	O		9.3.1.42	RRC container with system information owned by gNB-CU	YES	reject
>>Available PLMN List	O		9.3.1.65		YES	ignore
>>Extended Available PLMN List	O		9.3.1.76	This is included if <i>Available PLMN List</i> IE is included and if more than 6 Available PLMNs is to be signalled.	YES	ignore
>>IAB Info IAB-donor-CU	O		9.3.1.105	IAB-related configuration sent by the IAB-donor-CU.	YES	ignore
>>Available SNPN ID List	O		9.3.1.163	Indicates the available SNPN ID list. If this IE is included, the content of the <i>Available PLMN List</i> IE and <i>Extended Available PLMN List</i> IE if present in the <i>Cells to be Activated List Item</i> IE is ignored.	YES	ignore
>>MBS Broadcast Neighbour Cell List	O		9.3.1.226		YES	ignore
Cells to be Deactivated List		0..1		List of cells to be deactivated	YES	reject
>Cells to be Deactivated List Item		1.. <maxCellingNBD U>			EACH	reject
>> NR CGI	M		9.3.1.12		-	

gNB-CU TNL Association To Add List		0..1			YES	ignore
>gNB-CU TNL Association To Add Item IEs		1..<maxnoofTNLA associations>			EACH	ignore
>>TNL Association Transport Layer Information	M		CP Transport Layer Address 9.3.2.4	Transport Layer Address of the gNB-CU.	-	
>>TNL Association Usage	M		ENUMERATED (ue, non-ue, both, ...)	Indicates whether the TNL association is only used for UE-associated signalling, or non-UE-associated signalling, or both. For usage of this IE, refer to TS 38.472 [22].	-	
gNB-CU TNL Association To Remove List		0..1			YES	ignore
>gNB-CU TNL Association To Remove Item IEs		1..<maxnoofTNLA association>			EACH	ignore
>>TNL Association Transport Layer Address	M		CP Transport Layer Address 9.3.2.4	Transport Layer Address of the gNB-CU.	-	
>>TNL Association Transport Layer Address gNB-DU	O		CP Transport Layer Address 9.3.2.4	Transport Layer Address of the gNB-DU.	YES	reject
gNB-CU TNL Association To Update List		0..1			YES	ignore
>gNB-CU TNL Association To Update Item IEs		1..<maxnoofTNLA associations>			EACH	ignore
>>TNL Association Transport Layer Address	M		CP Transport Layer Address 9.3.2.4	Transport Layer Address of the gNB-CU.	-	

>>TNL Association Usage	O		ENUMERATED (ue, non-ue, both, ...)	Indicates whether the TNL association is only used for UE-associated signalling, or non-UE-associated signalling, or both. For usage of this IE, refer to TS 38.472 [22].	-	
Cells to be barred List		0..1		List of cells to be barred.	YES	ignore
>Cells to be barred List Item		1.. <maxCellingNBD U>			EACH	ignore
>>NR CGI	M		9.3.1.12		-	
>>Cell Barred	M		ENUMERATED (barred, not-barred, ...)		-	
>>IAB Barred	O		ENUMERATED (barred, not-barred, ...)		-	
Protected E-UTRA Resources List		0..1		List of Protected E-UTRA Resources.	YES	reject
>Protected E-UTRA Resources List Item		1.. <maxCellineNB>			EACH	reject
>>Spectrum Sharing Group ID	M		INTEGER (1..maxCellineNB)	Indicates the E-UTRA cells involved in resource coordination with the NR cells affiliated with the same Spectrum Sharing Group ID.	-	
>> E-UTRA Cells List		1		List of applicable E-UTRA cells.	-	
>>> E-UTRA Cells List Item		1 .. <maxCellineNB>			-	
>>>>EUTRA Cell ID	M		BIT STRING (SIZE(28))	Indicates the E-UTRAN Cell Identifier IE contained in the ECGI as defined in subclause 9.2.14 in TS 36.423 [9].	-	

>>>>Served E-UTRA Cell Information	M		9.3.1.64		-	
Neighbour Cell Information List		0..1			YES	ignore
>Neighbour Cell Information List Item		1 .. <maxCellingNBDU>			EACH	ignore
>>NR CGI	M		9.3.1.12		-	
>>Intended TDD DL-UL Configuration	O		9.3.1.89		-	
Transport Layer Address Info	O		9.3.2.5		YES	ignore
Uplink BH Non-UP Traffic Mapping	O		9.3.1.103		YES	reject
BAP Address	O		9.3.1.111	Indicates a BAP address assigned to the IAB-donor-DU.	YES	ignore
CCO Assistance Information	O		9.3.1.211	Indicates CCO Assistance Information for cells and beams served by the gNB-DU of the same NG-RAN node or for cells and beams not served by the gNB-DU.	YES	Ignore
Cells for SON List	O		9.3.1.214		YES	ignore
gNB-CU Name	O		PrintableString(SIZE(1..150,...))	Human readable name of the gNB-CU.	YES	ignore
Extended gNB-CU Name	O		9.3.1.206		YES	ignore

Range bound	Explanation
maxCellingNBDU	Maximum numbers of cells that can be served by a gNB-DU. Value is 512.
maxnoofTNLAassociations	Maximum numbers of TNL Associations between the gNB-CU and the gNB-DU. Value is 32.
maxCellineNB	Maximum no. cells that can be served by an eNB. Value is 256.

9.2.1.11 GNB-CU CONFIGURATION UPDATE ACKNOWLEDGE

This message is sent by a gNB-DU to a gNB-CU to acknowledge update of information associated to an F1-C interface instance.

NOTE: If F1-C signalling transport is shared among several F1-C interface instance, this message may transfer updated information associated to several F1-C interface instances.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Cells Failed to be Activated List		0..1		List of cells which are failed to be activated	YES	reject
>Cells Failed to be Activated Item		1.. <maxCellingNBDU>			EACH	reject
>> NR CGI	M		9.3.1.12		-	
>>Cause	M		9.3.1.2		-	
Criticality Diagnostics	O		9.3.1.3		YES	ignore
gNB-CU TNL Association Setup List		0..1			YES	ignore
>gNB-CU TNL Association Setup Item IEs		1..<maxnoofTNLAssociations>			EACH	ignore
>>TNL Association Transport Layer Address	M		CP Transport Layer Address 9.3.2.4	Transport Layer Address of the gNB-CU	-	
gNB-CU TNL Association Failed to Setup List		0..1			YES	ignore
>gNB-CU TNL Association Failed To Setup Item IEs		1..<maxnoofTNLAssociations>			EACH	ignore
>>TNL Association Transport Layer Address	M		CP Transport Layer Address 9.3.2.4	Transport Layer Address of the gNB-CU	-	
>>Cause	M		9.3.1.2		-	
Dedicated SI Delivery Needed UE List		0..1		List of UEs unable to receive system information from broadcast	YES	ignore
>Dedicated SI Delivery Needed UE List		1 .. <maxnoofUEIDs>			EACH	ignore
>>gNB-CU UE F1AP ID	M		9.3.1.4		-	-
>>NR CGI	M		9.3.1.12		-	-
Transport Layer Address Info	O		9.3.2.5		YES	ignore

Range bound	Explanation
maxCellingNBDU	Maximum no. cells that can be served by a gNB-DU. Value is 512.
maxnoofTNLAssociations	Maximum no. of TNL Associations between the gNB-CU and the gNB-DU. Value is 32.
maxnoofUEIDs	Maximum no. of UEs that can be served by a gNB-DU. Value is 65536.

9.2.1.12 GNB-CU CONFIGURATION UPDATE FAILURE

This message is sent by the gNB-DU to indicate gNB-CU Configuration Update failure.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Cause	M		9.3.1.2		YES	ignore
Time to wait	O		9.3.1.13		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.1.13 GNB-DU RESOURCE COORDINATION REQUEST

This message is sent by a gNB-CU to a gNB-DU, to express the desired resource allocation for data traffic, for the sake of resource coordination. The message triggers gNB-DU resource coordination (for NR-initiated resource coordination), to indicate an initial resource offer by the E-UTRA node (for E-UTRA-initiated gNB-DU Resource Coordination), or to indicate the agreed resource allocation that is to be executed.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Request type	M		ENUMERATED (offer, execution, ...)		YES	reject
E-UTRA – NR Cell Resource Coordination Request Container	M		OCTET STRING	Includes the X2AP E-UTRA – NR CELL RESOURCE COORDINATION REQUEST message as defined in subclause 9.1.4.24 in TS 36.423 [9].	YES	reject
Ignore Coordination Request Container	O		ENUMERATED (yes, ...)		YES	reject

9.2.1.14 GNB-DU RESOURCE COORDINATION RESPONSE

This message is sent by a gNB-DU to a gNB-CU, to express the desired resource allocation for data traffic, as a response to the GNB-DU RESOURCE COORDINATION REQUEST.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
E-UTRA – NR Cell Resource Coordination Response Container	M		OCTET STRING	Includes the X2AP E-UTRA – NR CELL RESOURCE COORDINATION RESPONSE message as defined in subclause 9.1.4.25 in TS 36.423 [9].	YES	reject

9.2.1.15 GNB-DU STATUS INDICATION

This message is sent by the gNB-DU to indicate to the gNB-CU its status of overload.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	reject
gNB-DU Overload Information	M		ENUMERATED (overloaded, not-overloaded)		YES	reject
IAB Congestion Indication	O		9.3.1.227		YES	ignore

9.2.1.16 F1 REMOVAL REQUEST

This message is sent by either the gNB-DU or the gNB-CU to initiate the removal of the interface instance and the related resources.

Direction: gNB-DU → gNB-CU, gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject

9.2.1.17 F1 REMOVAL RESPONSE

This message is sent by either the gNB-DU or the gNB-CU to acknowledge the initiation of removal of the interface instance and the related resources.

Direction: gNB-CU → gNB-DU, gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.1.18 F1 REMOVAL FAILURE

This message is sent by either the gNB-DU or the gNB-CU to indicate that removing the interface instance and the related resources cannot be accepted.

Direction: gNB-CU → gNB-DU, gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.3.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.1.19 NETWORK ACCESS RATE REDUCTION

This message is sent by the gNB-CU to indicate to the gNB-DU a need to reduce the rate at which UEs access the network.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	reject
UAC Assistance Information	M		9.3.1.83		YES	reject

9.2.1.20 RESOURCE STATUS REQUEST

This message is sent by gNB-CU to gNB-DU to initiate the requested measurement according to the parameters given in the message.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
gNB-CU Measurement ID	M		INTEGER (1..4095,...)	Allocated by gNB-CU	YES	reject
gNB-DU Measurement ID	C-ifRegistrationRequestStoporAdd		INTEGER (1..4095,...)	Allocated by gNB-DU	YES	ignore
Registration Request	M		ENUMERATED (start, stop, add, ...)	Type of request for which the resource status is required.	YES	ignore
Report Characteristics	C-ifRegistrationRequestStart		BIT STRING (SIZE(32))	Each position in the bitmap indicates measurement object the gNB-DU is requested to report. First Bit = PRB Periodic, Second Bit = TNL Capacity Ind Periodic, Third Bit = Composite Available Capacity Periodic, Fourth Bit = HW LoadInd Periodic, Fifth Bit = Number of Active UEs Periodic, Sixth Bit = NR-U Channel List Periodic. Other bits shall be ignored by the gNB-DU.	YES	ignore
Cell To Report List		0..1		Cell ID list to which the request applies.	YES	ignore
>Cell To Report Item		1 .. <maxCellID>				
>>Cell ID	M		NR CGI 9.3.1.12		-	
>>>SSB To Report List		0..1		SSB list to which the request applies.	-	
>>>>SSB To Report Item		1 .. <maxnoofSSB>			-	
>>>>>SSB index	M		INTEGER (0..63)			
>>>>>Slice To Report List		0..1		S-NSSAI list to which the request applies.	-	
>>>>>>Slice To Report Item		1..<maxnoofPLMNsNR>				
>>>>>>>PLMN Identity	M		9.3.1.14	Broadcast PLMN		
>>>>>>>>S-NSSAI List		1			-	

>>>>S-NSSAI Item		1 .. < maxnoofSlicelItems>			-	
>>>>S-NSSAI	M		9.3.1.38		-	
Reporting Periodicity	O		ENUMERATED (500ms, 1000ms, 2000ms, 5000ms, 10000ms, ...)	Periodicity that can be used for reporting of indicated measurements. Also used as the averaging window length for all measurement object if supported. This IE is ignored if the <i>Registration Request</i> IE is set to "add".	YES	ignore

Condition	Explanation
ifRegistrationRequestStoporAdd	This IE shall be present if the <i>Registration Request</i> IE is set to the value "stop" or "add".
ifRegistrationRequestStart	This IE shall be present if the <i>Registration Request</i> IE is set to the value "start".

Range bound	Explanation
maxCeilingNBDU	Maximum no. cells that can be served by a gNB-DU. Value is 512.
maxnoofSSBAreas	Maximum no. SSB Areas that can be served by a gNB node cell. Value is 64.
maxnoofSlicelItems	Maximum no. of signalled slice support items. Value is 1024.
maxnoofBPLMNsNR	Maximum no. of PLMN Ids. broadcast in a cell. Value is 12.

9.2.1.21 RESOURCE STATUS RESPONSE

This message is sent by gNB-DU to gNB-CU to indicate that the requested measurement is successfully initiated.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
gNB-CU Measurement ID	M		INTEGER (1..4095,...)	Allocated by gNB-CU	YES	reject
gNB-DU Measurement ID	M		INTEGER (1..4095,...)	Allocated by gNB-DU	YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.1.22 RESOURCE STATUS FAILURE

This message is sent by gNB-DU to gNB-CU to indicate that for any of the requested measurement objects the measurement cannot be initiated.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
gNB-CU Measurement ID	M		INTEGER (1..4095,...)	Allocated by gNB-CU	YES	reject
gNB-DU Measurement ID	M		INTEGER (1..4095,...)	Allocated by gNB-DU	YES	ignore
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.1.23 RESOURCE STATUS UPDATE

This message is sent by gNB-DU to gNB-CU to report the results of the requested measurements.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	reject
gNB-CU Measurement ID	M		INTEGER (1..4095,...)	Allocated by gNB-CU	YES	reject
gNB-DU Measurement ID	M		INTEGER (1..4095,...)	Allocated by gNB-DU	YES	ignore
Hardware Load Indicator	O		9.3.1.136		YES	ignore
TNL Capacity Indicator	O		9.3.1.128		YES	ignore
Cell Measurement Result		0..1			YES	ignore
>Cell Measurement Result Item		1 .. <maxCellId ngNB-DU >			-	
>>Cell ID	M		NR CGI 9.3.1.12		-	
>>Radio Resource Status	O		9.3.1.129		-	
>>Composite Available Capacity Group	O		9.3.1.130		-	
>>Slice Available Capacity	O		9.3.1.134		-	
>>Number of Active UEs	O		9.3.1.135		-	
>>NR-U Channel List		0..1			YES	ignore
>>>NR-U Channel Item		1..<maxno ofNR-UChannel Ds>			-	
>>>>NR-U Channel ID	M		INTEGER (1.. maxnoofNR-UChannel IDs, ...)	Identifies a portion of the NR-U Channel Bandwidth on which channel access procedure in shared spectrum has been performed in the last reporting period.	-	
>>>>Channel occupancy time percentage DL	M		INTEGER (0..100)	The percentage of time for which the channel resources have been utilised for DL traffic served by the corresponding NR-U Channel of the serving cell. Value 100 corresponds to the duration between consecutive reporting.	-	
>>>>Energy Detection Threshold DL	M		INTEGER (-100..-50,...)	Average ED Threshold used for DL channel sensing at the gNB. Value is in dBm.	-	

Range bound	Explanation
maxCellingNBDU	Maximum no. cells that can be served by a gNB-DU. Value is 512.
maxnoofNR-UChannelIDs	Maximum no. NR-U Channel IDs in a cell. Value is 16.

9.2.2 UE Context Management messages

9.2.2.1 UE CONTEXT SETUP REQUEST

This message is sent by the gNB-CU to request the setup of a UE context.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	O		9.3.1.5		YES	ignore
SpCell ID	M		NR CGI 9.3.1.12	Special Cell as defined in TS 38.321 [16]. For handover case, this IE is considered as target cell.	YES	reject
ServCellIndex	M		INTEGER (0..31,...)		YES	reject
SpCell UL Configured	O		Cell UL Configured 9.3.1.33		YES	ignore
CU to DU RRC Information	M		9.3.1.25		YES	reject
Candidate SpCell List		0..1			YES	ignore
>Candidate SpCell Item IEs		1 .. <maxnoofCandidateSpCells>			EACH	ignore
>>Candidate SpCell ID	M		NR CGI 9.3.1.12	Special Cell as defined in TS 38.321 [16]	-	
DRX Cycle	O		DRX Cycle 9.3.1.24		YES	ignore
Resource Coordination Transfer Container	O		OCTET STRING	Includes the <i>MeNB Resource Coordination Information</i> IE as defined in subclause 9.2.116 of TS 36.423 [9] for EN-DC case or <i>MR-DC Resource Coordination Information</i> IE as defined in TS 38.423 [28] for NGEN-DC and NE-DC cases.	YES	ignore
SCell To Be Setup List		0..1			YES	ignore
>SCell to Be Setup Item IEs		1.. <maxnoofSCells>			EACH	ignore
>>SCell ID	M		NR CGI 9.3.1.12	SCell Identifier in gNB	-	
>>SCellIndex	M		INTEGER (1..31)		-	
>>SCell UL Configured	O		Cell UL Configured 9.3.1.33		-	
>>servingCellMO	O		INTEGER (1..64)		YES	ignore
SRB to Be Setup List		0..1			YES	reject
>SRB to Be Setup Item IEs		1 .. <maxnoofSRBs>			EACH	reject
>>SRB ID	M		9.3.1.7		-	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>Duplication Indication	O		ENUMERATED (true, ..., false)	If included, it should be set to true. This IE is ignored if the <i>Additional Duplication Indication</i> IE is present.	-	
>>Additional Duplication Indication	O		ENUMERATED (three, four, ...)		YES	ignore
>>SDT RLC Bearer Configuration	O		OCTET STRING	Includes the <i>RLC-BearerConfig</i> IE defined in subclause 6.3.2 of TS 38.331 [8]	YES	ignore
>>SRB Mapping Info	O		Uu RLC Channel ID 9.3.1.266	This IE contains the mapped Uu Relay RLC CH ID for the SRB	YES	ignore
DRB to Be Setup List		0..1			YES	reject
>DRB to Be Setup Item IEs		1 .. <maxnoofDRBs>			EACH	reject
>>DRB ID	M		9.3.1.8		-	
>>CHOICE QoS Information	M				-	
>>>E-UTRAN QoS						
>>>>E-UTRAN QoS	M		9.3.1.19	Shall be used for EN-DC case to convey E-RAB Level QoS Parameters	-	
>>>DRB Information						
>>>>DRB Information		1		Shall be used for NG-RAN cases	YES	ignore
>>>>>DRB QoS	M		9.3.1.45		-	
>>>>>S-NSSAI	M		9.3.1.38		-	
>>>>>Notification Control	O		9.3.1.56		-	
>>>>>Flows Mapped to DRB Item		1 .. <maxnoofQoSFlows>			-	
>>>>>>QoS Flow Identifier	M		9.3.1.63		-	
>>>>>>QoS Flow Level QoS Parameters	M		9.3.1.45		-	
>>>>>>QoS Flow Mapping Indication	O		9.3.1.72		YES	ignore
>>>>>>TSC Traffic Characteristics	O		9.3.1.141	Traffic pattern information associated with the QFI. Details in TS 23.501 [21].	YES	ignore
>>UL UP TNL Information to be setup List		1			-	
>>>UL UP TNL Information to Be Setup Item IEs		1 .. <maxnoofULUPTNLInformation>			-	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>>>UL UP TNL Information	M		UP Transport Layer Information 9.3.2.1	gNB-CU endpoint of the F1 transport bearer. For delivery of UL PDUs.	-	
>>>>BH Information	O		9.3.1.114		YES	ignore
>>>>DRB Mapping Info	O		Uu RLC Channel ID 9.3.1.266	This IE contains the mapped Uu Relay RLC CH ID of the DL tunnel corresponding to such UL tunnel	YES	ignore
>>RLC Mode	M		9.3.1.27		-	
>>UL Configuration	O		UL Configuraiton 9.3.1.31	Information about UL usage in gNB-DU.	-	
>>Duplication Activation	O		9.3.1.36	Information on the initial state of CA based UL PDCP duplication. This IE is ignored if the <i>RLC Duplication Information</i> IE is present.	-	
>>DC Based Duplication Configured	O		ENUMERATED (true, ..., false)	Indication on whether DC based PDCP duplication is configured or not. If included, it should be set to true.	YES	reject
>>DC Based Duplication Activation	O		Duplication Activation 9.3.1.36	Information on the initial state of DC basedUL PDCP duplication. This IE is ignored if the <i>RLC Duplication Information</i> IE is present.	YES	reject
>>DL PDCP SN length	M		ENUMERATED (12bits, 18bits, ...)		YES	ignore
>>UL PDCP SN length	O		ENUMERATED (12bits, 18bits, ...)		YES	ignore
>>Additional PDCP Duplication TNL List		0..1			YES	ignore
>>>>Additional PDCP Duplication TNL Items		1 .. <maxnoofAdditionalPDCPDuplication TNL>			EACH	ignore
>>>>Additional PDCP Duplication UP TNL Information	M		UP Transport Layer Information 9.3.2.1	gNB-CU endpoint of the F1 transport bearer. For delivery of UL PDUs.	-	
>>>>BH Information	O		9.3.1.114		YES	ignore
>>RLC Duplication Information	O		9.3.1.146		YES	ignore

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>SDT RLC Bearer Configuration	O		OCTET STRING	RLC-BearerConfig IE defined in subclause 6.3.2 of TS 38.331 [8]	YES	ignore
Inactivity Monitoring Request	O		ENUMERATED (true, ...)		YES	reject
RAT-Frequency Priority Information	O		9.3.1.34		YES	reject
RRC-Container	O		9.3.1.6	Includes the <i>DL-DCCH-Message</i> message as defined in subclause 6.2 of TS 38.331 [8], encapsulated in a PDCP PDU.	YES	ignore
Masked IMEISV	O		9.3.1.55		YES	ignore
Serving PLMN	O		PLMN ID 9.3.1.14	Indicates the PLMN serving the UE.	YES	ignore
gNB-DU UE Aggregate Maximum Bit Rate Uplink	C-ifDRBSetup		Bit Rate 9.3.1.22	The gNB-DU UE Aggregate Maximum Bit Rate Uplink is to be enforced by the gNB-DU.	YES	ignore
RRC Delivery Status Request	O		ENUMERATED (true, ...)	Indicates whether RRC DELIVERY REPORT procedure is requested for the RRC message.	YES	ignore
Resource Coordination Transfer Information	O		9.3.1.73		YES	ignore
servingCellMO	O		INTEGER (1..64, ...)		YES	ignore
New gNB-CU UE F1AP ID	O		gNB-CU UE F1AP ID 9.3.1.4		YES	reject
RAN UE ID	O		OCTET STRING (SIZE (8))		YES	ignore
Trace Activation	O		9.3.1.88		YES	ignore
Additional RRM Policy Index	O		9.3.1.90		YES	ignore
BH RLC Channel to be Setup List		0..1			YES	reject
>BH RLC Channel to be Setup Item IEs		1 .. <maxnoofB HRLCChannels>			EACH	reject
>>BH RLC CH ID	M		9.3.1.113		-	
>>CHOICE BH QoS Information	M					
>>>BH RLC CH QoS						
>>>>BH RLC CH QoS	M		QoS Flow Level QoS Parameters 9.3.1.45	Shall be used for SA case.		
>>>E-UTRAN BH RLC CH QoS						
>>>>E-UTRAN BH RLC CH QoS	M		E-UTRAN QoS 9.3.1.19	Shall be used for EN-DC case.		

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>>Control Plane Traffic Type						
>>>>Control Plane Traffic Type	M		9.3.1.115			
>>RLC Mode	M		9.3.1.27		-	
>>BAP Control PDU Channel	O		ENUMERATED (true, ...)		-	
>>Traffic Mapping Information	O		9.3.1.95		-	
Configured BAP Address	O		9.3.1.111	The BAP address configured for the corresponding child IAB-node.	YES	reject
NR V2X Services Authorized	O		9.3.1.116		YES	ignore
LTE V2X Services Authorized	O		9.3.1.117		YES	ignore
NR UE Sidelink Aggregate Maximum Bit Rate	O		9.3.1.119	This IE applies only if the UE is authorized for NR V2X services.	YES	ignore
LTE UE Sidelink Aggregate Maximum Bit Rate	O		9.3.1.118	This IE applies only if the UE is authorized for LTE V2X services.	YES	ignore
PC5 Link Aggregate Bit Rate	O		Bit Rate 9.3.1.22	Only applies for non-GBR and unicast QoS Flows.	YES	ignore
SL DRB to Be Setup List		0..1			YES	reject
>SL DRB to Be Setup Item IEs		1 .. <maxnoofSL DRBs>			EACH	reject
>>SL DRB ID	M		9.3.1.120		-	
>>>SL DRB Information		1			YES	ignore
>>>>SL DRB QoS	M		PC5 QoS Parameters 9.3.1.122		-	
>>>>Flows Mapped to SL DRB Item		1 .. <maxnoofPC5QoSFlows>			-	
>>>>>PC5 QoS Flow Identifier			9.3.1.121		-	
>>RLC mode	M		9.3.1.27		-	
Conditional Inter-DU Mobility Information	O				YES	reject
>CHO Trigger	M		ENUMERATED (CHO-initiation, CHO-replace, ...)		-	-
>Target gNB-DU UE F1AP ID	C-ifCHOmod		9.3.1.5	Allocated at the target gNB-DU	-	-
>Estimated Arrival Probability	O		INTEGER (1..100)		YES	ignore
Management Based MDT PLMN List	O		MDT PLMN List 9.3.1.151		YES	ignore
Serving NID	O		9.3.1.155		YES	reject
F1-C Transfer Path	O		9.3.1.207		YES	reject
F1-C Transfer Path NRDC	O		9.3.1.228		YES	reject

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
MDT Polluted Measurement Indicator	O		ENUMERATED (IDC,no-IDC, ...)	Indication on whether MDT Measurement affect (e.g. IDC) is undertaken or not.	YES	ignore
SCG Activation Request	O		9.3.1.233		YES	ignore
Old CG-SDT Session Info	O		CG-SDT Session Info 9.3.1.261		YES	ignore
5G ProSe Authorized	O		9.3.1.268		YES	ignore
5G ProSe UE PC5 Aggregate Maximum Bit Rate	O		NR UE Sidelink Aggregate Maximum Bit Rate 9.3.1.119	This IE applies only if the UE is authorized for 5G ProSe services.	YES	ignore
5G ProSe PC5 Link Aggregate Bit Rate	O		Bit Rate 9.3.1.22	This IE applies only if the UE is authorized for 5G ProSe services, and only applies for non-GBR and unicast QoS Flows.	YES	ignore
Uu RLC Channel to Be Setup List		0..1			YES	reject
>Uu RLC Channel to be Setup Item IEs		1 .. <maxnoofUu RLCChannels>			-	
>>Uu RLC Channel ID	M		9.3.1.266		-	
>>CHOICE Uu RLC Channel QoS Information	M				-	
>>>Uu RLC Channel QoS						
>>>>Uu RLC Channel QoS	M		QoS Flow Level QoS Parameters 9.3.1.45		-	
>>>>Uu Control Plane Traffic Type						
>>>>Uu Control Plane Traffic Type	M		ENUMERATED(SRB0, SRB1, SRB2, ...)	This IE indicates the type of SRB conveyed via the Uu Relay RLC Channel.	-	
>>RLC Mode	M		9.3.1.27		-	
PC5 RLC Channel to Be Setup List		0..1			YES	reject
>PC5 RLC Channel to be Setup Item IEs		1 .. <maxnoofPC5RLCChannels>			-	
>>PC5 RLC Channel ID	M		9.3.1.265		-	
>>Remote UE Local ID	O		9.3.1.267	This IE is not used in this version of the specification.		
>>CHOICE PC5 RLC Channel QoS Information	M				-	
>>>PC5 RLC Channel QoS						

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>>>PC5 RLC Channel QoS	M		QoS Flow Level QoS Parameters 9.3.1.45		-	
>>>PC5 Control Plane Traffic Type						
>>>>PC5 Control Plane Traffic Type	M		ENUMERATED(SRB1, SRB2, ...)	This IE indicates the type of SRB conveyed via the PC5 Relay RLC Channel.	-	
>>RLC Mode	M		9.3.1.27		-	
Path Switch Configuration	O		9.3.1.263		YES	ignore
gNB-DU UE Slice Maximum Bit Rate List	O		9.3.1.271	The Slice Maximum Bit Rate List is the maximum aggregate UL bit rate per slice, to be enforced by the gNB-DU, if feasible. This IE is ignored if the <i>DRB to Be Setup List</i> IE is not present.	YES	ignore
Multicast MBS Session Setup List	O		Multicast MBS Session List 9.3.1.272	The list of MBS Session ID that UE has joined.	YES	reject
UE Multicast MRB to Be Setup List		0..1			YES	reject
>UE Multicast MRB to Be Setup Item IEs		1 .. <maxnoofMRBsforUE>			EACH	reject
>>MRB ID	M		9.3.1.224	MRB ID for the UE.	-	
>>MBS PTP Retransmission Tunnel Required	O		9.3.2.10		-	
>>MBS PTP Forwarding Tunnel Required Information	O		MRB Progress Information 9.3.2.12		-	
>>Source MRB ID	O		9.3.1.224 MRB ID	In case of inter-DU handover, indicates the MRB ID provided to the UE in the source cell.	-	ignore
ServingCellIMO List		0..1		For NCD-SSBs	YES	ignore
>ServingCellIMO Item IEs		1 .. <maxnoofServingCellIMOs>			EACH	ignore
>>servingCellIMO	M		INTEGER (1..64)		-	
>>SSB frequency	M		INTEGER (0..3279165)	ARFCN	-	

Range bound	Explanation
maxnoofSCells	Maximum no. of SCells allowed towards one UE, the maximum value is 32.
maxnoofServingCellMOs	Maximum number of ServingCellMOs for NCD-SSB per cell. Maximum value is 16
maxnoofSRBs	Maximum no. of SRB allowed towards one UE, the maximum value is 8.
maxnoofDRBs	Maximum no. of DRB allowed towards one UE, the maximum value is 64.
maxnoofULUPTNLInformation	Maximum no. of ULUP TNL Information allowed towards one DRB, the maximum value is 2.
maxnoofCandidateSpCells	Maximum no. of SpCells allowed towards one UE, the maximum value is 64.
maxnoofQoSFlows	Maximum no. of flows allowed to be mapped to one DRB, the maximum value is 64.
maxnoofBHRLCChannels	Maximum no. of BH RLC channels allowed towards one IAB-node, the maximum value is 65536.
maxnoofSLDRBs	Maximum no. of SL DRB allowed for NR sidelink communication per UE, the maximum value is 512.
maxnoofPC5QoSFlows	Maximum no. of PC5 QoS flow allowed towards one UE for NR sidelink communication, the maximum value is 2048.
maxnoofAdditionalPDCPDuplicationTNL	Maximum no. of additional UP TNL Information allowed towards one DRB, the maximum value is 2.
maxnoofUuRLCChannels	Maximum no. of Uu Relay RLC channels for L2 U2N relaying per Relay UE, the maximum value is 32.
maxnoofPC5RLCChannels	Maximum no. of PC5 Relay RLC channels allowed for L2 U2N relaying per Remote UE or Relay UE, the maximum value is 512.
maxnoofMRBsforUE	Maximum no. of multicast MRB allowed towards one UE, the maximum value is 64.

Condition	Explanation
ifDRBSetup	This IE shall be present only if the <i>DRB to Be Setup List</i> IE is present.
ifCHOmod	This IE shall be present if the <i>CHO Trigger</i> IE is present and set to "CHO-replace".

9.2.2.2 UE CONTEXT SETUP RESPONSE

This message is sent by the gNB-DU to confirm the setup of a UE context.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
DU To CU RRC Information	M		9.3.1.26		YES	reject
C-RNTI	O		9.3.1.32	C-RNTI allocated at the gNB-DU	YES	ignore
Resource Coordination Transfer Container	O		OCTET STRING	Includes the <i>SgNB Resource Coordination Information</i> IE as defined in subclause 9.2.117 of TS 36.423 [9] for EN-DC case or <i>MR-DC Resource Coordination Information</i> IE as defined in TS 38.423 [28] for NGEN-DC and NE-DC cases.	YES	ignore
Full Configuration	O		ENUMERATED (full, ...)		YES	reject
DRB Setup List		0..1		The List of DRBs which are successfully established.	YES	ignore
>DRB Setup Item list		1 .. <maxnoofDRBs>			EACH	ignore
>>DRB ID	M		9.3.1.8		-	
>>LCID	O		9.3.1.35	LCID for the primary path or for the split secondary path for fallback to split bearer if PDCP duplication is applied.	-	
>>>DL UP TNL Information to be setup List		1			-	
>>>>DL UP TNL Information to Be Setup Item IEs		1 .. <maxnoofDLUPTNLInformation>			-	
>>>>>DL UP TNL Information	M		UP Transport Layer Information 9.3.2.1	gNB-DU endpoint of the F1 transport bearer. For delivery of DL PDUs.	-	
>>>>>>Additional PDCP Duplication TNL List		0..1			YES	ignore

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>>Additional PDCP Duplication TNL Items		1 .. <maxnoofAdditionalPDCPDuplicationTNL>			EACH	ignore
>>>>Additional PDCP Duplication UP TNL Information	M		UP Transport Layer Information 9.3.2.1	gNB-DU endpoint of the F1 transport bearer. For delivery of DL PDUs.	-	
>>Current QoS Parameters Set Index	O		Alternative QoS Parameters Set Index 9.3.1.123	Index to the currently fulfilled alternative QoS parameters set.	YES	ignore
SRB Failed to Setup List		0..1			YES	ignore
>SRB Failed to Setup Item		1 .. <maxnoofSRBs>			EACH	ignore
>>SRB ID	M		9.3.1.7		-	
>>Cause	O		9.3.1.2		-	
DRB Failed to Setup List		0..1			YES	ignore
>DRB Failed to Setup Item		1 .. <maxnoofDRBs>			EACH	ignore
>>DRB ID	M		9.3.1.8		-	
>>Cause	O		9.3.1.2		-	
SCell Failed To Setup List		0..1			YES	ignore
>SCell Failed to Setup Item		1 .. <maxnoofSCells>			EACH	ignore
>>SCell ID	M		NR CGI 9.3.1.12	SCell Identifier in gNB	-	
>>Cause	O		9.3.1.2		-	
Inactivity Monitoring Response	O		ENUMERATED (not-supported, ...)		YES	reject
Criticality Diagnostics	O		9.3.1.3		YES	ignore
SRB Setup List		0..1			YES	ignore
>SRB Setup Item		1 .. <maxnoofSRBs>			EACH	ignore
>>SRB ID	M		9.3.1.7		-	
>>LCID	M		9.3.1.35	LCID for the primary path if PDCP duplication is applied	-	
BH RLC Channel Setup List		0..1		The list of BH RLC channels which are successfully established.	YES	ignore
>BH RLC Channel Setup Item		1 .. <maxnoofBHRLCChannels>			EACH	ignore
>>BH RLC CH ID	M		9.3.1.113		-	
BH RLC Channel Failed to be Setup List		0..1		The list of BH RLC channels whose setup has failed.	YES	ignore
>BH RLC Channel Failed to be Setup Item		1 .. <maxnoofBHRLCChannels>			EACH	ignore

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>BH RLC CH ID	M		9.3.1.113		-	
>>Cause	O		9.3.1.2		-	
SL DRB Setup List		0..1		The List of SL DRBs which are successfully established.	YES	ignore
>SL DRB Setup Item IEs		1 .. <maxnoofSLDRBs>			EACH	ignore
>>SL DRB ID	M		9.3.1.120		-	
SL DRB Failed To Setup List		0..1			EACH	ignore
>SL DRB Failed To Setup Item IE		1 .. <maxnoofSLDRBs>			EACH	ignore
>>SL DRB ID	M		9.3.1.120		-	
>>Cause	O		9.3.1.2		-	
Requested Target Cell ID	O		NR CGI 9.3.1.12	Special Cell indicated in the UE CONTEXT SETUP REQUEST message.	YES	reject
SCG Activation Status	O		9.3.1.234		YES	ignore
Uu RLC Channel Setup List		0..1			YES	ignore
>Uu RLC Channel Setup Item IEs		1 .. <maxnoofUuRLC Channels>			-	
>>Uu RLC Channel ID	M		9.3.1.266		-	
Uu RLC Channel Failed to be Setup List		0..1			YES	ignore
>Uu RLC Channel Failed to be Setup Item IEs		1 .. <maxnoofUuRLC Channels>			-	
>>Uu RLC Channel ID	M		9.3.1.266		-	
>>Cause	O		9.3.1.2		-	
PC5 RLC Channel Setup List		0..1			YES	ignore
>PC5 RLC Channel Setup Item IEs		1 .. <maxnoofPC5RLC Channels>			-	
>>PC5 RLC Channel ID	M		9.3.1.265		-	
>>Remote UE Local ID	O		9.3.1.267	This IE is not used in this version of the specification.		
PC5 RLC Channel Failed to be Setup List		0..1			YES	ignore
>PC5 RLC Channel Failed to be Setup Item IEs		1 .. <maxnoofPC5RLC Channels>			-	
>>PC5 RLC Channel ID	M		9.3.1.265		-	
>>Remote UE Local ID	O		9.3.1.267	This IE is not used in this version of the specification.	-	
>>Cause	O		9.3.1.2		-	
ServingCellMO-encoded-in-CGC List		0..1			YES	ignore

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>ServingCellMO-encoded-in-CGC Item IEs		1 .. <maxNrofBWPs>		The servingCellMO which has been encoded in CellGroupConfig IE.	EACH	ignore
>>ServingCellMO	M		INTEGER (1..64)		-	

Range bound	Explanation
maxnoofSCells	Maximum no. of SCells allowed towards one UE, the maximum value is 32.
maxnoofSRBs	Maximum no. of SRB allowed towards one UE, the maximum value is 8.
maxnoofDRBs	Maximum no. of DRB allowed towards one UE, the maximum value is 64.
maxnoofDLUPTNLInformation	Maximum no. of DL UP TNL Information allowed towards one DRB, the maximum value is 2.
maxnoofBHRLCChannels	Maximum no. of BH RLC channels allowed towards one IAB-node, the maximum value is 65536.
maxnoofSLDRBs	Maximum no. of SL DRB allowed for NR sidelink communication per UE, the maximum value is 512.
maxnoofAdditionalPDCPDuplicationTNL	Maximum no. of additional UP TNL Information allowed towards one DRB, the maximum value is 2.
maxnoofUuRLCChannels	Maximum no. of Uu Relay RLC channels for L2 U2N relaying per Relay UE, the maximum value is 32.
maxnoofPC5RLCChannels	Maximum no. of PC5 Relay RLC channels allowed for L2 U2N relaying per Remote UE or Relay UE, the maximum value is 512.
maxNrofBWPs	Maximum number of BWPs per serving cell, the maximum value is 8.

9.2.2.3 UE CONTEXT SETUP FAILURE

This message is sent by the gNB-DU to indicate that the setup of the UE context was unsuccessful.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	O		9.3.1.5		YES	ignore
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore
Potential SpCell List		0..1			YES	ignore
>Potential SpCell Item IEs		0 .. <maxnoofPotentialSpCells>			EACH	ignore
>>Potential SpCell ID	M		NR CGI 9.3.1.12	Special Cell as defined in TS 38.321 [16]	-	
Requested Target Cell ID	O		NR CGI 9.3.1.12	Special Cell indicated in the UE CONTEXT SETUP REQUEST message.	YES	reject

Range bound	Explanation
maxnoofPotentialSpCells	Maximum no. of SpCells allowed towards one UE, the maximum value is 64.

9.2.2.4 UE CONTEXT RELEASE REQUEST

This message is sent by the gNB-DU to request the gNB-CU to release the UE-associated logical F1 connection or candidate cells in conditional handover or conditional PSCell addition or conditional PSCell change.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
Cause	M		9.3.1.2		YES	ignore
Candidate Cells To Be Cancelled List		0 .. <maxnoofCellsinCHO>			YES	reject
>Target Cell ID	M		NR CGI 9.3.1.12		-	-

Range bound	Explanation
maxnoofCellsinCHO	Maximum no. cells that can be prepared for a conditional mobility. Value is 8.

9.2.2.5 UE CONTEXT RELEASE COMMAND

This message is sent by the gNB-CU to request the gNB-DU to release the UE-associated logical F1 connection or candidate cells in conditional handover or conditional PSCell addition or conditional PSCell change.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
Cause	M		9.3.1.2		YES	ignore
RRC-Container	O		9.3.1.6	Includes the <i>DL-DCCH-Message</i> message as defined in subclause 6.2 of TS 38.331 [8] encapsulated in a PDCP PDU, or the <i>DL-CCCH-Message</i> message as defined in subclause 6.2 of TS 38.331 [8].	YES	ignore
SRB ID	C-ifRRCContainer		9.3.1.7	The gNB-DU sends the RRC message on the indicated SRB.	YES	ignore
old gNB-DU UE F1AP ID	O		9.3.1.5	Include it if RRCReestablishmentRequest is not accepted	YES	ignore
Execute Duplication	O		ENUMERATED (true, ...)	This IE may be sent only if duplication has been configured for the UE.	YES	ignore
RRC Delivery Status Request	O		ENUMERATED (true, ...)	Indicates whether RRC DELIVERY REPORT procedure is requested for the RRC message.	YES	ignore
Candidate Cells To Be Cancelled List		<i>0 .. <maxnoofCellsInCHO></i>			YES	reject
>Target Cell ID	M		NR CGI 9.3.1.12		-	-
Positioning Context Reservation Indication	O		ENUMERATED (True,...)		YES	ignore
CG-SDT Kept Indicator	O		ENUMERATED (true, ...)		YES	ignore

Range bound	Explanation
maxnoofCellsInCHO	Maximum no. cells that can be prepared for a conditional mobility. Value is 8.

Condition	Explanation
ifRRCContainer	This IE shall be present if the <i>RRC container</i> IE is present.

9.2.2.6 UE CONTEXT RELEASE COMPLETE

This message is sent by the gNB-DU to confirm the release of the UE-associated logical F1 connection or candidate cells in conditional handover or conditional PSCell addition or conditional PSCell change.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.2.7 UE CONTEXT MODIFICATION REQUEST

This message is sent by the gNB-CU to provide UE Context information changes to the gNB-DU.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
SpCell ID	O		NR CGI 9.3.1.12	Special Cell as defined in TS 38.321 [16]. For handover case, this IE is considered as target cell.	YES	ignore
ServCellIndex	O		INTEGER (0..31, ...)		YES	reject
SpCell UL Configured	O		Cell UL Configured 9.3.1.33		YES	ignore
DRX Cycle	O		DRX Cycle 9.3.1.24		YES	ignore
CU to DU RRC Information	O		9.3.1.25		YES	reject
Transmission Action Indicator	O		9.3.1.11		YES	ignore
Resource Coordination Transfer Container	O		OCTET STRING	Includes the <i>MeNB Resource Coordination Information</i> IE as defined in subclause 9.2.116 of TS 36.423 [9] for EN-DC case or <i>MR-DC Resource Coordination Information</i> IE as defined in TS 38.423 [28] for NGEN-DC and NE-DC cases.	YES	ignore
RRC Reconfiguration Complete Indicator	O		9.3.1.30		YES	ignore
RRC-Container	O		9.3.1.6	Includes the <i>DL-DCCH-Message</i> message as defined in subclause 6.2 of TS 38.331 [8], encapsulated in a PDCP PDU.	YES	reject
SCell To Be Setup List		0..1			YES	ignore
>SCell to Be Setup Item IEs		1.. <maxnoofS Cells>			EACH	ignore
>>SCell ID	M		NR CGI 9.3.1.12	SCell Identifier in gNB	-	
>>SCellIndex	M		INTEGER (1..31)		-	
>>SCell UL Configured	O		Cell UL Configured 9.3.1.33		-	
>>servicingCellMO	O		INTEGER (1..64)		YES	ignore
SCell To Be Removed List		0..1			YES	ignore
>SCell to Be Removed Item IEs		1.. <maxnoofS Cells>			EACH	ignore

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>SCell ID	M		NR CGI 9.3.1.12	SCell Identifier in gNB	-	
SRB to Be Setup List		0..1			YES	reject
>SRB to Be Setup Item IEs		1..<maxnoof SRBs>			EACH	reject
>>SRB ID	M		9.3.1.7		-	
>>Duplication Indication	O		ENUMERATED (true, ..., false)	This IE is ignored if the <i>Additional Duplication Indication</i> IE is present.	-	
>>Additional Duplication Indication	O		ENUMERATED (three, four, ...)		YES	ignore
>>SRB Mapping Info	O		Uu RLC Channel ID 9.3.1.266	This IE contains the mapped Uu Relay RLC CH ID for the SRB	YES	ignore
>>SDT Indicator Setup	O		ENUMERATED (true, ...)	Indicates SDT SRB.	YES	reject
DRB to Be Setup List		0..1			YES	reject
>DRB to Be Setup Item IEs		1 .. <maxnoof DRBs>			EACH	reject
>>DRB ID	M		9.3.1.8		-	
>>CHOICE QoS Information	M				-	
>>>E-UTRAN QoS						
>>>>E-UTRAN QoS	M		9.3.1.19	Shall be used for EN-DC case to convey E-RAB Level QoS Parameters		
>>>>DRB Information						
>>>>>DRB Information		1		Shall be used for NG-RAN cases	YES	ignore
>>>>>>DRB QoS	M		9.3.1.45		-	
>>>>>>S-NSSAI	M		9.3.1.38		-	
>>>>>>Notification Control	O		9.3.1.56		-	
>>>>>>Flows Mapped to DRB Item		1 .. <maxnoof QoSFlows>			-	
>>>>>>>QoS Flow Identifier	M		9.3.1.63		-	
>>>>>>>QoS Flow Level QoS Parameters	M		9.3.1.45		-	
>>>>>>>QoS Flow Mapping Indication	O		9.3.1.72		YES	ignore
>>>>>>>TSC Traffic Characteristics	O		9.3.1.141	Traffic pattern information associated with the QFI. Details in TS 23.501 [21].	YES	ignore
>>UL UP TNL Information to be setup List		1			-	
>>>UL UP TNL Information to Be Setup Item IEs		1 .. <maxnoof UL UPTNLInformation>			-	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>>>UL UP TNL Information	M		UP Transport Layer Information 9.3.2.1	gNB-CU endpoint of the F1 transport bearer. For delivery of UL PDUs.	-	
>>>>BH Information	O		9.3.1.114		YES	ignore
>>>>DRB Mapping Info	O		Uu RLC Channel ID 9.3.1.266	This IE contains the mapped Uu Relay RLC CH ID of the DL tunnel corresponding to such UL tunnel	YES	ignore
>>RLC Mode	M		9.3.1.27		-	
>>UL Configuration	O		UL Configuration 9.3.1.31	Information about UL usage in gNB-DU.	-	
>>Duplication Activation	O		9.3.1.36	Information on the initial state of CA based UL PDCP duplication. This IE is ignored if the <i>RLC Duplication Information</i> IE is present.	-	
>>DC Based Duplication Configured	O		ENUMERATED (true, ..., false)	Indication on whether DC based PDCP duplication is configured or not. If included, it should be set to true.	YES	reject
>>DC Based Duplication Activation	O		Duplication Activation 9.3.1.36	Information on the initial state of DC based UL PDCP duplication. This IE is ignored if the <i>RLC Duplication Information</i> IE is present.	YES	reject
>>DL PDCP SN length	O		ENUMERATED (12bits, 18bits, ...)		YES	ignore
>>UL PDCP SN length	O		ENUMERATED (12bits, 18bits, ...)		YES	ignore
>>Additional PDCP Duplication TNL List		0..1			YES	ignore
>>>Additional PDCP Duplication TNL Items		1 .. <maxnoofAdditionalPDCPDuplicationTNL>			EACH	ignore
>>>>Additional PDCP Duplication UP TNL Information	M		UP Transport Layer Information 9.3.2.1	gNB-CU endpoint of the F1 transport bearer. For delivery of UL PDUs.	-	
>>>>BH Information	O		9.3.1.114		YES	ignore
>>RLC Duplication Information	O		9.3.1.146		YES	ignore
>>SDT Indicator Setup	O		ENUMERATED (true, ...)	Indicates SDT DRB.	YES	reject
DRB to Be Modified List		0..1			YES	reject

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>DRB to Be Modified Item IEs		1 .. <maxnoofDRBs>			EACH	reject
>>DRB ID	M		9.3.1.8		-	
>>CHOICE QoS Information	O				-	
>>>E-UTRAN QoS						
>>>E-UTRAN QoS	M		9.3.1.19	Used for EN-DC case to convey E-RAB Level QoS Parameters	-	
>>>DRB Information						
>>>>DRB Information		1		Used for NG-RAN cases	YES	ignore
>>>>>DRB QoS	M		9.3.1.45		-	
>>>>>S-NSSAI	M		9.3.1.38		-	
>>>>>Notification Control	O		9.3.1.56		-	
>>>>>Flows Mapped to DRB Item		1 .. <maxnoofQoSFlows>			-	
>>>>>>QoS Flow Identifier	M		9.3.1.63		-	
>>>>>>QoS Flow Level QoS Parameters	M		9.3.1.45		-	
>>>>>>QoS Flow Mapping Indication	O		9.3.1.72		YES	ignore
>>>>>>TSC Traffic Characteristics	O		9.3.1.141	Traffic pattern information associated with the QFI. Details in TS 23.501 [21].	YES	ignore
>>UL UP TNL Information to be setup List		1			-	
>>>UL UP TNL Information to Be Setup Item IEs		1 .. <maxnoofUL UPTNLInformation>			-	
>>>>UL UP TNL Information	M		UP Transport Layer Information 9.3.2.1	gNB-CU endpoint of the F1 transport bearer. For delivery of UL PDUs.	-	
>>>>>BH Information	O		9.3.1.114		YES	ignore
>>>>>DRB Mapping Info	O		Uu RLC Channel ID 9.3.1.266		YES	ignore
>>UL Configuration	O		UL Configuration 9.3.1.31	Information about UL usage in gNB-DU.	-	
>>DL PDCP SN length	O		ENUMERATED(12bits, 18 bits, ...)		YES	ignore
>>UL PDCP SN length	O		ENUMERATED (12bits, 18bits, ...)		YES	ignore
>>Bearer Type Change	O		ENUMERATED (true, ...)		YES	ignore
>>RLC Mode	O		9.3.1.27		YES	ignore

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>Duplication Activation	O		9.3.1.36	Information on the initial state of CA based UL PDCP duplication. This IE is ignored if the <i>RLC Duplication Information</i> IE is present.	YES	reject
>>DC Based Duplication Configured	O		ENUMERATED (true, ..., false)	Indication on whether DC based PDCP duplication is configured or not.	YES	reject
>>DC Based Duplication Activation	O		9.3.1.36	Information on the initial state of DC based UL PDCP duplication. This IE is ignored if the <i>RLC Duplication Information</i> IE is present.	YES	reject
>>Additional PDCP Duplication TNL List		0..1			YES	ignore
>>>Additional PDCP Duplication TNL Items		1 .. <maxnoofAdditionalPDCPDuplication TNL>			EACH	ignore
>>>>Additional PDCP Duplication UP TNL Information	M		UP Transport Layer Information 9.3.2.1	gNB-CU endpoint of the F1 transport bearer. For delivery of UL PDUs.	-	
>>>>BH Information	O		9.3.1.114		YES	ignore
>>RLC Duplication Information	O		9.3.1.146		YES	ignore
>>Transmission Stop Indicator	O		9.3.1.209		YES	ignore
>>SDT Indicator Modify	O		ENUMERATED (true, false, ...)	Indicates SDT DRB or not.	YES	reject
SRB To Be Released List		0..1			YES	reject
>SRB To Be Released Item IEs		1.. <maxnoofSRBs>			EACH	reject
>>SRB ID	M		9.3.1.7			
DRB to Be Released List		0..1			YES	reject
>DRB to Be Released Item IEs		1 .. <maxnoofDRBs>			EACH	reject
>>DRB ID	M		9.3.1.8		-	
Inactivity Monitoring Request	O		ENUMERATED (true, ...)		YES	reject
RAT-Frequency Priority Information	O		9.3.1.34		YES	reject
DRX configuration indicator	O		ENUMERATED (release, ..)		YES	ignore
RLC Failure Indication	O		9.3.1.66		YES	ignore
Uplink TxDirectCurrentList Information	O		9.3.1.67		YES	ignore

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
GNB-DU Configuration Query	O		ENUMERATED (true, ...)	Used to request the gNB-DU to provide its configuration.	YES	reject
gNB-DU UE Aggregate Maximum Bit Rate Uplink	O		Bit Rate 9.3.1.22	The gNB-DU UE Aggregate Maximum Bit Rate Uplink is to be enforced by the gNB-DU.	YES	ignore
Execute Duplication	O		ENUMERATED (true, ...)	This IE may be sent only if duplication has been configured for the UE.	YES	ignore
RRC Delivery Status Request	O		ENUMERATED (true, ...)	Indicates whether RRC DELIVERY REPORT procedure is requested for the RRC message.	YES	ignore
Resource Coordination Transfer Information	O		9.3.1.73		YES	ignore
servingCellMO	O		INTEGER (1..64, ...)		YES	ignore
Need for Gap	O		ENUMERATED (true, ...)	Indicate gap for SeNB configured measurement is requested. It only applied to NE DC scenario.	Yes	ignore
Full Configuration	O		ENUMERATED (full, ...)		YES	reject
Additional RRM Policy Index	O		9.3.1.90		YES	ignore
Lower Layer Presence Status Change	O		9.3.1.94		Yes	ignore
BH RLC Channel to be Setup List		0..1			YES	reject
>BH RLC Channel to be Setup Item IEs		1 .. <maxnoofBHRLCChannels>			EACH	reject
>>BH RLC CH ID	M		9.3.1.113		-	
>>CHOICE BH QoS information	M					
>>>BH RLC CH QoS						
>>>>BH RLC CH QoS	M		QoS Flow Level QoS Parameters 9.3.1.45	Shall be used for SA case.		
>>>>E-UTRAN BH RLC CH QoS						
>>>>E-UTRAN BH RLC CH QoS	M		E-UTRAN QoS 9.3.1.19	Shall be used for EN-DC case.		
>>>>Control Plane Traffic Type						
>>>>Control Plane Traffic Type	M		9.3.1.115			
>>RLC Mode	M		9.3.1.27		-	
>>BAP Control PDU Channel	O		ENUMERATED (true, ...)		-	
>>Traffic Mapping Information	O		9.3.1.95		-	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
BH RLC Channel to be Modified List		0..1			YES	reject
>BH RLC Channel to be Modified Item IEs		1 .. <maxnoofB HRLCChannels>			EACH	reject
>>BH RLC CH ID	M		9.3.1.113		-	
>>CHOICE BH QoS information	O					
>>>BH RLC CH QoS						
>>>>BH RLC CH QoS	M		QoS Flow Level QoS Parameters 9.3.1.45	Shall be used for SA case.		
>>>E-UTRAN BH RLC CH QoS						
>>>>E-UTRAN BH RLC CH QoS	M		E-UTRAN QoS 9.3.1.19	Shall be used for EN-DC case.		
>>>Control Plane Traffic Type						
>>>>Control Plane Traffic Type	M		9.3.1.115			
>>RLC Mode	O		9.3.1.27		-	
>>BAP Control PDU Channel	O		ENUMERATED (true, ...)		-	
>>Traffic Mapping Information	O		9.3.1.95		-	
BH RLC Channel to be Released List		0..1			YES	reject
>BH RLC Channel to be Released Item IEs		1 .. <maxnoofB HRLCChannels >			EACH	reject
>>BH RLC CH ID	M		9.3.1.113		-	
NR V2X Services Authorized	O		9.3.1.116		YES	ignore
LTE V2X Services Authorized	O		9.3.1.117		YES	ignore
NR UE Sidelink Aggregate Maximum Bit Rate	O		9.3.1.119	This IE applies only if the UE is authorized for NR V2X services.	YES	ignore
LTE UE Sidelink Aggregate Maximum Bit Rate	O		9.3.1.118	This IE applies only if the UE is authorized for LTE V2X services.	YES	ignore
PC5 Link Aggregate Bit Rate	O		Bit Rate 9.3.1.22	Only applies for non-GBR and unicast QoS Flows.	YES	ignore
SL DRB to Be Setup List		0..1			YES	reject
>SL DRB to Be Setup Item IEs		1 .. <maxnoofSL DRBs>			EACH	reject
>>SL DRB ID	M		9.3.1.120		-	
>>>SL DRB Information		1			YES	ignore
>>>>SL DRB QoS	M		PC5 QoS Parameters 9.3.1.122		-	
>>>>Flows Mapped to SL DRB Item		1 .. <maxnoofP C5QoSFlows>			-	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>>>PC5 QoS Flow Identifier	M		9.3.1.121		-	
>>RLC mode	O		9.3.1.27		-	
SL DRB to Be Modified List		0..1			YES	reject
>SL DRB to Be Modified Item IEs		1 .. <maxnoofSL DRBs>			EACH	reject
>>SL DRB ID	M		9.3.1.120		-	
>>>SL DRB Information		1			YES	ignore
>>>SL DRB QoS	M		PC5 QoS Parameters 9.3.1.122		-	
>>>Flows Mapped to SL DRB Item		1 .. <maxnoofPC5QoSFlows>			-	
>>>>PC5 QoS Flow Identifier	M		9.3.1.121		-	
>>RLC mode	O		9.3.1.27		-	
SL DRB to Be Released List		0..1			YES	reject
>SL DRB to Be Released Item IEs		1 .. <maxnoofSL DRBs>			EACH	reject
>>SL DRB ID	M		9.3.1.120		-	
Conditional Intra-DU Mobility Information	O				YES	reject
>CHO Trigger	M		ENUMERATED (CHO-initiation, CHO-replace, CHO-cancel, ...)		-	-
>Candidate Cells To Be Cancelled List	C-ifCHOcancel	0 .. <maxnoofCellsInCHO>			-	-
>>Target Cell ID	M		NR CGI 9.3.1.12		-	-
>Estimated Arrival Probability	O		INTEGER (1..100)		YES	ignore
F1-C Transfer Path	O		9.3.1.207		YES	reject
SCG Indicator	O		ENUMERATED (released, ...)	This IE is used at the MN in NR-DC and NE-DC and it indicates the release of an SCG	YES	ignore
Uplink TxDirectCurrentTwoCarrier List Information	O		9.3.1.283		YES	ignore
IAB Conditional RRC Message Delivery Indication	O		ENUMERATED (true, ...)	Indicates whether the RRC message within should be withheld. This IE is only applicable if the UE is an IAB-MT, and the gNB-DU is an IAB-DU.	YES	reject
F1-C Transfer Path NRDC	O		9.3.1.228	This IE is only applicable if the UE is an IAB-MT.	YES	reject

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
MDT Polluted Measurement Indicator	O		ENUMERATED (IDC,no-IDC, ...)	Indication on whether MDT Measurement affect (e.g. IDC) is undertaken or not.	YES	ignore
SCG Activation Request	O		9.3.1.233		YES	ignore
CG-SDT Query Indication	O		ENUMERATED (true, ...)		YES	ignore
5G ProSe Authorized	O		9.3.1.268		YES	ignore
5G ProSe UE PC5 Aggregate Maximum Bit Rate	O		NR UE Sidelink Aggregate Maximum Bit Rate 9.3.1.119	This IE applies only if the UE is authorized for 5G ProSe services.	YES	ignore
5G ProSe PC5 Link Aggregate Bit Rate	O		Bit Rate 9.3.1.22	This IE applies only if the UE is authorized for 5G ProSe services, and only applies for non-GBR and unicast QoS Flows.	YES	ignore
Updated Remote UE Local ID	O		Remote UE Local ID 9.3.1.267	This IE indicates the updated Remote UE Local ID for the U2N Remote UE associated with the F1AP-IDs	YES	ignore
Uu RLC Channel to Be Setup List		0..1			YES	reject
>Uu RLC Channel to be Setup Item IEs		1 .. <maxnoofUuRLCChannels>			-	
>>Uu RLC Channel ID	M		9.3.1.266		-	
>>CHOICE Uu RLC Channel QoS Information	M				-	
>>>Uu RLC Channel QoS						
>>>>Uu RLC Channel QoS	M		QoS Flow Level QoS Parameters 9.3.1.45		-	
>>>Uu Control Plane Traffic Type						
>>>>Uu Control Plane Traffic Type	M		ENUMERATED (SRB0, SRB1, SRB2, ...)	This IE indicates the type of SRB conveyed via the Uu Relay RLC Channel.	-	
>>RLC Mode	M		9.3.1.27		-	
Uu RLC Channel to Be Modified List		0..1			YES	reject
>Uu RLC Channel to be Modified Item IEs		1 .. <maxnoofUuRLCChannels>			-	
>>Uu RLC Channel ID	M		9.3.1.266		-	
>>CHOICE Uu RLC Channel QoS Information	O				-	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>>Uu RLC Channel QoS						
>>>>Uu RLC Channel QoS	M		QoS Flow Level QoS Parameters 9.3.1.45		-	
>>>Uu Control Plane Traffic Type						
>>>>Uu Control Plane Traffic Type	M		ENUMERATED(SRB0, SRB1, SRB2, ...)	This IE indicates the type of SRB conveyed via the Uu Relay RLC Channel.	-	
>>RLC Mode	O		9.3.1.27		-	
Uu RLC Channel to Be Released List		0..1			YES	reject
>Uu RLC Channel to Be Released Item IEs		1 .. <maxnoofUu RLCChannels>			-	
>>Uu RLC channel ID	M		9.3.1.266		-	
PC5 RLC Channel to Be Setup List		0..1			YES	reject
>PC5 RLC Channel to be Setup Item IEs		1 .. <maxnoofPC5RLCChannels>			-	
>>PC5 RLC Channel ID	M		9.3.1.265		-	
>>Remote UE Local ID	O		9.3.1.267		-	
>>CHOICE PC5 RLC Channel QoS Information	M				-	
>>>PC5 RLC Channel QoS						
>>>>PC5 RLC Channel QoS	M		QoS Flow Level QoS Parameters 9.3.1.45		-	
>>>PC5 Control Plane Traffic Type						
>>>>PC5 Control Plane Traffic Type	M		ENUMERATED(SRB1, SRB2, ...)	This IE indicates the type of SRB conveyed via the PC5 Relay RLC Channel.	-	
>>RLC Mode	M		9.3.1.27		-	
PC5 RLC Channel to Be Modified List		0..1			YES	reject
>PC5 RLC Channel to be Modified Item IEs		1 .. <maxnoofPC5RLCChannels>			-	
>>PC5 RLC Channel ID	M		9.3.1.265		-	
>>Remote UE Local ID	O		9.3.1.267		-	
>>CHOICE PC5 RLC Channel QoS Information	O				-	
>>>PC5 RLC Channel QoS						
>>>>PC5 RLC Channel QoS	M		QoS Flow Level QoS Parameters 9.3.1.45		-	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>>PC5 Control Plane Traffic Type						
>>>>PC5 Control Plane Traffic Type	M		ENUMERATED(SRB1, SRB2, ...)	This IE indicate the type of SRB conveyed via the PC5 Relay RLC Channel.	-	
>>RLC Mode	O		9.3.1.27		-	
PC5 RLC Channel to Be Released List		0..1			YES	reject
>PC5 RLC Channel to be Released Item IEs		1 .. <maxnoofPC5RLCChannels>			-	
>>PC5 RLC Channel ID	M		9.3.1.265		-	
>>Remote UE Local ID	O		9.3.1.267		-	
Path Switch Configuration	O		9.3.1.263		YES	ignore
gNB-DU UE Slice Maximum Bit Rate List	O		9.3.1.271	The Slice Maximum Bit Rate List is the maximum aggregate UL bit rate per slice, to be enforced by the gNB-DU, if feasible.	YES	ignore
Multicast MBS Session Setup List	O		Multicast MBS Session List 9.3.1.272	The list of MBS Session ID that UE has joined.	YES	reject
Multicast MBS Session Remove List	O		Multicast MBS Session List 9.3.1.272	The list of MBS Session ID that UE has left.	YES	reject
UE Multicast MRB to Be Setup at Modify List		0..1			YES	reject
>UE Multicast MRB to Be Setup at Modify Item IEs		1 .. <maxnoofMRBsforUE>			EACH	reject
>>MRB ID	M		9.3.1.224	MRB ID for the UE.	-	
>>MBS PTP Retransmission Tunnel Required	O		9.3.2.10		-	
>>MBS PTP Forwarding Tunnel Required Information	O		MRB Progress Information 9.3.2.12		-	
UE Multicast MRB to Be Released List		0..1			YES	reject
>UE Multicast MRB to Be Released Item IEs		1 .. <maxnoofMRBsforUE>			EACH	reject
>>MRB ID	M		9.3.1.224	MRB ID for the UE.	-	
SL DRX Cycle List		0..1			YES	ignore
>SL DRX Cycle Item IEs		1 .. <maxnoofSLdestinations>			EACH	ignore
>>RX UE ID	M		BIT STRING (SIZE(24))	Indicates the destination L2 ID of RX UE associated to this UE.	-	
>>CHOICE SL DRX Information	M				-	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>>SL DRX Cycle						
>>>>SL DRX Cycle Length	M		ENUMERATED (ms10, ms20, ms32, ms40, ms60, ms64, ms70, ms80, ms128, ms160, ms256, ms320, ms512, ms640, ms1024, ms1280, ms2048, ms2560, ms5120, ms10240, ...)	Indicates the desired SL DRX cycle for RX UE associated to this UE.	-	
>>>No SL DRX					-	
>>>>SL DRX configuration indicator	M		ENUMERATED(release, ..)		-	
Management Based MDT PLMN Modification List	O		MDT PLMN Modification List 9.3.1.274		YES	ignore
SDT Bearer Configuration Query Indication	O		ENUMERATED (true, ...)		YES	ignore
DAPS HO status	O		ENUMERATED(initiation, ...)	This IE is used if DAPS HO is initiated.	YES	ignore
ServingCellMO List		0..1		For NCD-SSBs	YES	ignore
>ServingCellMO Item IEs		1 .. <maxnoofServingCellMOs>			EACH	ignore
>>ServingCellMO	M		INTEGER (1..64)		-	
>>SSB frequency	M		INTEGER (0..3279165)	ARFCN	-	
Uplink TxDirectCurrentMoreCarrierList Information	O		9.3.1.284		YES	ignore
CPAC MCG Information		0..1		This IE is used at the MN for MCG configuration as specified in TS 37.340 [7] for CPAC.	YES	ignore
>CPAC Trigger	M		ENUMERATED (CPAC-preparation, CPAC-executed, ...)		-	-
>PSCell ID	M		NR CGI 9.3.1.12	The PSCell corresponding to the included CG-Config IE at CPAC-preparation or the selected PSCell by the UE at CPAC-executed.	-	-

Range bound	Explanation
maxnoofSCells	Maximum no. of SCells allowed towards one UE, the maximum value is 32.
maxnoofServingCellMOs	Maximum number of ServingCellMOs for NCD-SSB per cell. Maximum value is 16
maxnoofSRBs	Maximum no. of SRB allowed towards one UE, the maximum value is 8.
maxnoofDRBs	Maximum no. of DRB allowed towards one UE, the maximum value is 64.
maxnoofULUPTNLInformation	Maximum no. of UL UP TNL Information allowed towards one DRB, the maximum value is 2.
maxnoofQoSFlows	Maximum no. of flows allowed to be mapped to one DRB, the maximum value is 64.
maxnoofBHRLCChannels	Maximum no. of BH RLC channels allowed towards one IAB-node, the maximum value is 65536.
maxnoofSLDRBs	Maximum no. of SL DRB allowed for NR sidelink communication per UE, the maximum value is 512.
maxnoofPC5QoSFlows	Maximum no. of PC5 QoS flow allowed towards one UE for NR sidelink communication, the maximum value is 2048.
maxnoofAdditionalPDCPDuplicationTNL	Maximum no. of additional UP TNL Information allowed towards one DRB, the maximum value is 2.
maxnoofCellsInCHO	Maximum no. cells that can be prepared for a conditional mobility. Value is 8.
maxnoofUuRLCChannels	Maximum no. of Uu Relay RLC channels for L2 U2N relaying per Relay UE, the maximum value is 32.
maxnoofPC5RLCChannels	Maximum no. of PC5 Relay RLC channel allowed for L2 U2N relaying per Remote UE or Relay UE, the maximum value is 512.
maxnoofMRBsforUE	Maximum no. of multicast MRB allowed towards one UE, the maximum value is 64.
maxnoofSLdestinations	Maximum number of destination for NR sidelink communication, the maximum value is 32

Condition	Explanation
ifCHOcancel	This IE may be present if the CHO Trigger IE is present and set to "CHO-cancel".

9.2.2.8 UE CONTEXT MODIFICATION RESPONSE

This message is sent by the gNB-DU to confirm the modification of a UE context.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
Resource Coordination Transfer Container	O		OCTET STRING	Includes the <i>SgNB Resource Coordination Information</i> IE as defined in subclause 9.2.117 of TS 36.423 [9] for EN-DC case or <i>MR-DC Resource Coordination Information</i> IE as defined in TS 38.423 [28] for NGEN-DC and NE-DC cases.	YES	ignore
DU To CU RRC Information	O		9.3.1.26		YES	reject
DRB Setup List		0..1		The List of DRBs which are successfully established.	YES	ignore
>DRB Setup Item IEs		1 .. <maxnoofDRBs>			EACH	ignore
>>DRB ID	M		9.3.1.8		-	
>>LCID	O		9.3.1.35	LCID for the primary path or for the split secondary path for fallback to split bearer if PDCP duplication is applied.	-	
>>>DL UP TNL Information to be setup List		1			-	
>>>>DL UP TNL Information to Be Setup Item IEs		1 .. <maxnoofDLUP TNLInformation>			-	
>>>>>DL UP TNL Information	M		UP Transport Layer Information 9.3.2.1	gNB-DU endpoint of the F1 transport bearer. For delivery of DL PDUs.	-	
>>>>>Additional PDCP Duplication TNL List		0..1			YES	ignore
>>>>>>Additional PDCP Duplication TNL Items		1 .. <maxnoofAdditionalPDCPDuplicationTNL>			EACH	ignore

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>>>Additional PDCP Duplication UP TNL Information	M		UP Transport Layer Information 9.3.2.1	gNB-DU endpoint of the F1 transport bearer. For delivery of DL PDUs.	-	
>>Current QoS Parameters Set Index	O		Alternative QoS Parameters Set Index 9.3.1.123	Index to the currently fulfilled alternative QoS parameters set.	YES	ignore
DRB Modified List		0..1		The List of DRBs which are successfully modified.	YES	ignore
>DRB Modified Item IEs		1 .. <maxnoofDRBs>			EACH	ignore
>>DRB ID	M		9.3.1.8		-	
>>LCID	O		9.3.1.35	LCID for the primary path or for the split secondary path for fallback to split bearer if PDCP duplication is applied.	-	
>>DL UP TNL Information to be setup List		1			-	
>>>DL UP TNL Information to Be Setup Item IEs		1 .. <maxnoofDLUP TNLInformation>			-	
>>>>DL UP TNL Information	M		UP Transport Layer Information 9.3.2.1	gNB-DU endpoint of the F1 transport bearer. For delivery of DL PDUs.	-	
>>RLC Status	O		9.3.1.69	Indicates the RLC has been re-established at the gNB-DU.	YES	ignore
>>Additional PDCP Duplication TNL List		0..1			YES	ignore
>>>Additional PDCP Duplication TNL Items		1 .. <maxnoofAdditionalPDCPDuplicationTNL>			EACH	ignore
>>>>Additional PDCP Duplication UP TNL Information	M		UP Transport Layer Information 9.3.2.1	gNB-DU endpoint of the F1 transport bearer. For delivery of DL PDUs.	-	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>Current QoS Parameters Set Index	O		Alternative QoS Parameters Set Index 9.3.1.123	Index to the currently fulfilled alternative QoS parameters set.	YES	ignore
SRB Failed to be Setup List		0..1		The List of SRBs which are failed to be established.	YES	ignore
>SRB Failed to be Setup Item IEs		1 .. <maxnoofSRBs>			EACH	ignore
>>SRB ID	M		9.3.1.7		-	
>>Cause	O		9.3.1.2		-	
DRB Failed to be Setup List		0..1		The List of DRBs which are failed to be setup.	YES	ignore
>DRB Failed to be Setup Item IEs		1 .. <maxnoofDRBs>			EACH	ignore
>>DRB ID	M		9.3.1.8		-	
>>Cause	O		9.3.1.2		-	
SCell Failed To Setup List		0..1			YES	ignore
>SCell Failed to Setup Item		1 .. <maxnoofSCells>			EACH	ignore
>>SCell ID	M		NR CGI 9.3.1.12	SCell Identifier in gNB	-	
>>Cause	O		9.3.1.2		-	
DRB Failed to be Modified List		0..1		The List of DRBs which are failed to be modified.	YES	ignore
>DRB Failed to be Modified Item IEs		1 .. <maxnoofDRBs>			EACH	ignore
>>DRB ID	M		9.3.1.8		-	
>>Cause	O		9.3.1.2		-	
Inactivity Monitoring Response	O		ENUMERATED (Not-supported, ...)		YES	reject
Criticality Diagnostics	O		9.3.1.3		YES	ignore
C-RNTI	O		9.3.1.32	C-RNTI allocated at the gNB-DU	YES	ignore
Associated SCell List	O		9.3.1.77		YES	ignore
SRB Setup List		0..1			YES	ignore
>SRB Setup Item		1 .. <maxnoofSRBs>			EACH	ignore
>>SRB ID	M		9.3.1.7		-	
>>LCID	M		9.3.1.35	LCID for the primary path if PDCP duplication is applied	-	
SRB Modified List		0..1			YES	ignore
>SRB Modified Item		1 .. <maxnoofSRBs>			EACH	ignore
>>SRB ID	M		9.3.1.7		-	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>LCID	M		9.3.1.35	LCID for the primary path if PDCP duplication is applied	-	
Full Configuration	O		ENUMERATED (full, ...)		YES	reject
BH RLC Channel Setup List		0..1		The list of BH RLC channels which are successfully established.	YES	ignore
>BH RLC Channel Setup Item		1 .. <maxnoofBHR LCChannels>			EACH	ignore
>>BH RLC CH ID	M		9.3.1.113		-	
BH RLC Channel Failed to be Setup List		0..1		The list of BH RLC channels whose setup has failed.	YES	ignore
>BH RLC Channel Failed to be Setup Item		1 .. <maxnoofBHR LCChannels>			EACH	ignore
>>BH RLC CH ID	M		9.3.1.113		-	
>>Cause	O		9.3.1.2		-	
BH RLC Channel Modified List		0..1		The list of BH RLC channels which are successfully modified.	YES	ignore
>BH RLC Channel Modified Item		1 .. <maxnoofBHR LCChannels>			EACH	ignore
>>BH RLC CH ID	M		9.3.1.113		-	
BH RLC Channel Failed to be Modified List		0..1		The list of BH RLC channels whose modification has failed.	YES	ignore
>BH RLC Channel Failed to be Modified Item		1 .. <maxnoofBHR LCChannels>			EACH	ignore
>>BH RLC CH ID	M		9.3.1.113		-	
>>Cause	O		9.3.1.2		-	
SL DRB Setup List		0..1		The List of SL DRBs which are successfully established.	YES	ignore
>SL DRB Setup Item IEs		1 .. <maxnoofSLD RBs>			EACH	ignore
>>SL DRB ID	M		9.3.1.120		-	
SL DRB Modified List		0..1		The List of SL DRBs which are successfully modified.	YES	ignore
>SL DRB Modified Item IEs		1 .. <maxnoofSLD RBs>			EACH	ignore
>>SL DRB ID	M		9.3.1.120		-	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
SL DRB Failed To Setup List		0..1		The List of SL DRBs which are failed to be setup.	YES	ignore
>SL DRB Failed To Setup Item		1 .. <maxnoofSLD RBs>			EACH	ignore
>>SL DRB ID	M		9.3.1.120		-	
>>cause	O		9.3.1.2		-	
SL DRB Failed To be Modified List		0..1		The List of SL DRBs which are failed to be modified.	YES	ignore
>SL DRB Failed To be Modified Item		1 .. <maxnoofSLD RBs>			EACH	ignore
>>SL DRB ID	M		9.3.1.120		-	
>>cause	O		9.3.1.2		-	
Requested Target Cell ID	O		NR CGI 9.3.1.12	Special Cell or PSCell ID in the CPAC MCG Information IE indicated in the UE CONTEXT MODIFICATION REQUEST message.	YES	reject
SCG Activation Status	O		9.3.1.234		YES	ignore
Uu RLC Channel Setup List		0..1			YES	ignore
>Uu RLC Channel Setup Item IEs		1 .. <maxnoofUuR LCChannels>			-	
>>Uu RLC Channel ID	M		9.3.1.266			
Uu RLC Channel Failed to be Setup List		0..1			YES	ignore
>Uu RLC Channel Failed to be Setup Item IEs		1 .. <maxnoofUuR LCChannels>			-	
>>Uu RLC Channel ID	M		9.3.1.266		-	
>>Cause	O		9.3.1.2		-	
Uu RLC Channel Modified List		0..1			YES	ignore
>Uu RLC Channel Modified Item IEs		1 .. <maxnoofUuR LCChannels>			-	
>>Uu RLC Channel ID	M		9.3.1.266		-	
Uu RLC Channel Failed to be Modified List		0..1			YES	ignore
>Uu RLC Channel Failed to be Modified Item IEs		1 .. <maxnoofUuR LCChannels>			-	
>>Uu RLC Channel ID	M		9.3.1.266		-	
>>Cause	O		9.3.1.2		-	
PC5 RLC Channel Setup List		0..1			YES	ignore
>PC5 RLC Channel Setup Item IEs		1 .. <maxnoofPC5 RLCChannels >			-	
>>PC5 RLC Channel ID	M		9.3.1.265		-	
>>Remote UE Local ID	O		9.3.1.267		-	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
PC5 RLC Channel Failed to be Setup List		0..1			YES	ignore
>PC5 RLC Channel Failed to be Setup Item IEs		1.. <maxnoofPC5 RLCChannels >			-	
>>PC5 RLC Channel ID	M		9.3.1.265		-	
>>Remote UE Local ID	O		9.3.1.267		-	
>>Cause	O		9.3.1.2		-	
PC5 RLC Channel Modified List		0..1			YES	ignore
>PC5 RLC Channel Modified Item IEs		1.. <maxnoofPC5 RLCChannels >			-	
>>PC5 RLC Channel ID	M		9.3.1.265		-	
>>Remote UE Local ID	O		9.3.1.267		-	
PC5 RLC Channel Failed to be Modified List		0..1			YES	ignore
>PC5 RLC Channel Failed to be Modified Item IEs		1.. <maxnoofPC5 RLCChannels >			-	
>>PC5 RLC Channel ID	M		9.3.1.265		-	
>>Remote UE Local ID	O		9.3.1.267		-	
>>Cause	O		9.3.1.2		-	
SDT Bearer Configuration Info	O		9.3.1.277		YES	ignore
UE Multicast MRB Setup List		0..1			YES	reject
>UE Multicast MRB Setup Item IEs		1.. <maxnoofMRB sforUE>			EACH	reject
>>MRB ID	M		9.3.1.224	MRB ID for the UE.	-	
>>Multicast F1-U Context Reference CU	O		9.3.2.13		-	
ServingCellMO-encoded-in-CGC List		0..1			YES	ignore
>ServingCellMO-encoded-in-CGC Item IEs		1.. <maxNrofBWP s>		The servingCellMO which has been encoded in CellGroupConfig IE.	-	
>>servingCellMO	M		INTEGER (1..64)		-	

Range bound	Explanation
maxnoofSRBs	Maximum no. of SRB allowed towards one UE, the maximum value is 8.
maxnoofDRBs	Maximum no. of DRB allowed towards one UE, the maximum value is 64.
maxnoofDLUPTNLInformation	Maximum no. of DL UP TNL Information allowed towards one DRB, the maximum value is 2.
maxnoofSCells	Maximum no. of SCells allowed towards one UE, the maximum value is 32.
maxnoofBHRLCChannels	Maximum no. of BH RLC channels allowed towards one IAB-node, the maximum value is 65536.
maxnoofSLDRBs	Maximum no. of SL DRB allowed for NR sidelink communication per UE, the maximum value is 512.
maxnoofAdditionalPDCPDuplicationTNL	Maximum no. of additional UP TNL Information allowed towards one DRB, the maximum value is 2.
maxnoofUuRLCChannels	Maximum no. of Uu Relay RLC channels for L2 U2N relaying per Relay UE, the maximum value is 32.
maxnoofPC5RLCChannels	Maximum no. of PC5 Relay RLC channels allowed for L2 U2N relaying per Remote UE or Relay UE, the maximum value is 512.
maxNrofBWPs	Maximum number of BWPs per serving cell, the maximum value is 8.
maxnoofMRBsforUE	Maximum no. of multicast MRB allowed towards one UE, the maximum value is 32.

9.2.2.9 UE CONTEXT MODIFICATION FAILURE

This message is sent by the gNB-DU to indicate a context modification failure.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore
Requested Target Cell ID	O		NR CGI 9.3.1.12	Special Cell indicated in the UE CONTEXT MODIFICATION REQUEST message.	YES	reject

9.2.2.10 UE CONTEXT MODIFICATION REQUIRED

This message is sent by the gNB-DU to request the modification of a UE context.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
Resource Coordination Transfer Container	O		OCTET STRING	Includes the <i>SgNB Resource Coordination Information</i> IE as defined in subclause 9.2.117 of TS 36.423 [9] for EN-DC case or <i>MR-DC Resource Coordination Information</i> IE as defined in TS 38.423 [28] for NGEN-DC and NE-DC cases.	YES	ignore
DU To CU RRC Information	O		9.3.1.26		YES	reject
DRB Required to Be Modified List		0..1			YES	reject
>DRB Required to Be Modified Item IEs		1 .. <maxnoofDRBs>			EACH	reject
>>DRB ID	M		9.3.1.8		-	
>>>DL UP TNL Information to be setup List		0..1			-	
>>>>DL UP TNL Information to Be Setup Item IEs		1 .. <maxnoofDL UPTNLInformation>			-	
>>>>>DL UP TNL Information	M		UP Transport Layer Information 9.3.2.1	gNB-DU endpoint of the F1 transport bearer. For delivery of DL PDUs.	-	
>>>>>>RLC Status	O		9.3.1.69	Indicates the RLC has been re-established at the gNB-DU.	YES	ignore
>>>>>>>Additional PDCP Duplication TNL List		0..1			YES	ignore
>>>>>>>>Additional PDCP Duplication TNL Items		1 .. <maxnoofAdditionalPDCPDuplication TNL>			EACH	ignore
>>>>>>>>>Additional PDCP Duplication UP TNL Information	M		UP Transport Layer Information 9.3.2.1	gNB-CU endpoint of the F1 transport bearer. For delivery of DL PDUs.	-	
SRB Required to be Released List		0..1			YES	reject
>SRB Required to be Released List Item IEs		1 .. <maxnoofSRBs>			EACH	reject
>>SRB ID	M		9.3.1.7		-	
DRB Required to be Released List		0..1			YES	reject

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>DRB Required to be Released List Item IEs		1 .. <maxnoofDRBs>			EACH	reject
>>DRB ID	M		9.3.1.8		-	
Cause	M		9.3.1.2		YES	ignore
BH RLC Channel Required to be Released List		0..1			YES	reject
>BH RLC Channel Required to be Released Item IEs		1 .. <maxnoofBHRLCChannels>			EACH	reject
>>BH RLC CH ID	M		9.3.1.113		-	
SL DRB Required to Be Modified List		0..1			YES	reject
>SL DRB Required to Be Modified Item IEs		1 .. <maxnoofSLDRBs>			EACH	reject
>>SL DRB ID	M		9.3.1.120		-	
SL DRB Required to be Released List		0..1			YES	reject
>SL DRB Required to be Release Item IEs		1 .. <maxnoofSLDRBs>			EACH	reject
>>SL DRB ID	M		9.3.1.120		-	
Candidate Cells To Be Cancelled List		0 .. <maxnoofCellsInCHO>			YES	reject
>Target Cell ID	M		NR CGI 9.3.1.12		-	-
Uu RLC Channel Required to be Modified List		0..1			YES	reject
>Uu RLC Channel Required to be Modified Item IEs		1 .. <maxnoofUuRLCChannels>			-	
>>Uu RLC Channel ID	M		9.3.1.266		-	
Uu RLC Channel Required to be Released List		0..1			YES	reject
>Uu RLC Channel Required to be Released Item IEs		1 .. <maxnoofUuRLCChannels>			-	
>>Uu RLC Channel ID	M		9.3.1.266		-	
PC5 RLC Channel Required to be Modified List		0..1			YES	reject
>PC5 RLC Channel Required to be Modified Item IEs		1 .. <maxnoofPC5RLCChannels>			-	
>>PC5 RLC Channel ID	M		9.3.1.265		-	
>>Remote UE Local ID	O		9.3.1.267		-	
PC5 RLC Channel Required to be Released List		0..1			YES	reject
>PC5 RLC Channel Required to be Released Item IEs		1 .. <maxnoofPC5RLCChannels>			-	
>>PC5 RLC Channel ID	M		9.3.1.265		-	
>>Remote UE Local ID	O		9.3.1.267		-	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
UE Multicast MRB Required to Be Modified List		0..1			YES	reject
>UE Multicast MRB Required to Be Modified Item IEs		1 .. <maxnoofMRBsforUE>			EACH	reject
>>MRB ID	M		9.3.1.224	MRB ID for the UE.	-	
>>MRB type reconfiguration	O		ENUMERATED (true, ...)		-	
>>MRB Reconfigured RLC mode	C- ifMRBTypeReconf		MRB RLC Configuration 9.3.1.275		-	
>>Multicast F1-U Context Reference CU	O		9.3.2.13		YES	reject
UE Multicast MRB Required to Be Released List		0..1			YES	reject
>UE Multicast MRB Required to Be Released Item IEs		1 .. <maxnoofMRBsforUE>			EACH	reject
>>MRB ID	M		9.3.1.224	MRB ID for the UE.	-	

Range bound	Explanation
maxnoofSRBs	Maximum no. of SRB allowed towards one UE, the maximum value is 8.
maxnoofDRBs	Maximum no. of DRB allowed towards one UE, the maximum value is 64.
maxnoofDLUPTNLInformation	Maximum no. of DL UP TNL Information allowed towards one DRB, the maximum value is 2.
maxnoofBHRLCChannels	Maximum no. of BH RLC channels allowed towards one IAB-node, the maximum value is 65536.
maxnoofSLDRBs	Maximum no. of SL DRB allowed for NR sidelink communication per UE, the maximum value is 512.
maxnoofAdditionalPDCPDuplicationTNL	Maximum no. of additional UP TNL Information allowed towards one DRB, the maximum value is 2.
maxnoofCellsInCHO	Maximum no. cells that can be prepared for a conditional mobility. Value is 8.
maxnoofUuRLCChannels	Maximum no. of Uu Relay RLC channels for L2 U2N relaying per Relay UE, the maximum value is 32.
maxnoofPC5RLCChannels	Maximum no. of PC5 Relay RLC channels allowed for L2 U2N relaying per Remote UE or Relay UE, the maximum value is 512.
maxnoofMRBsforUE	Maximum no. of multicast MRB allowed towards one UE, the maximum value is 32.

Condition	Explanation
ifMRBTypeReconf	This IE shall be present if the <i>MRB Type Reconfiguration</i> IE is present.

9.2.2.11 UE CONTEXT MODIFICATION CONFIRM

This message is sent by the gNB-CU to inform the gNB-DU the successful modification.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
Resource Coordination Transfer Container	O		OCTET STRING	Includes the <i>MeNB Resource Coordination Information</i> IE as defined in subclause 9.2.116 of TS 36.423 [9] for EN-DC case or <i>MR-DC Resource Coordination Information</i> IE as defined in TS 38.423 [28] for NGEN-DC and NE-DC cases.	YES	ignore
DRB Modified List		0..1		The List of DRBs which are successfully modified.	YES	ignore
>DRB Modified Item IEs		1 .. <maxnoofDRBs>			EACH	ignore
>>DRB ID	M		9.3.1.8		-	
>>>UL UP TNL Information to be setup List		1			-	
>>>>UL UP TNL Information to Be Setup Item IEs		1 .. <maxnoofUL UPTNLInformation>			-	
>>>>UL UP TNL Information	M		UP Transport Layer Information 9.3.2.1	gNB-CU endpoint of the F1 transport bearer. For delivery of UL PDUs.	-	
>>>>BH Information	O		9.3.1.114		YES	ignore
>>>>DRB Mapping Info	O		Uu RLC Channel ID 9.3.1.266	This IE is not used in this version of the specification.	YES	ignore
>>>>Additional PDCP Duplication TNL List		0..1			YES	ignore
>>>>>Additional PDCP Duplication TNL Items		1 .. <maxnoofAdditionalPDCPDuplication TNL>			EACH	ignore
>>>>>Additional PDCP Duplication UP TNL Information	M		UP Transport Layer Information 9.3.2.1	gNB-DU endpoint of the F1 transport bearer. For delivery of UL PDUs.	-	
>>>>>BH Information	O		9.3.1.114		YES	ignore
RRC-Container	O		9.3.1.6	Includes the <i>DL-DCCH-Message</i> message as defined in subclause 6.2 of TS 38.331 [8], encapsulated in a PDCP PDU.	YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Execute Duplication	O		ENUMERATED (true, ...)	This IE may be sent only if duplication has been configured for the UE.	YES	ignore
Resource Coordination Transfer Information	O		9.3.1.73		YES	ignore
SL DRB Modified List		0..1			YES	reject
>SL DRB Modified Item IEs		1 .. <maxnoofSL DRBs>			EACH	reject
>>SL DRB ID	M		9.3.1.120		-	
Uu RLC Channel Modified List		0..1			YES	reject
>Uu RLC Channel Modified Item IEs		1 .. <maxnoofUu RLCChannels>			-	
>>Uu RLC Channel ID	M		9.3.1.266		-	
PC5 RLC Channel Modified List		0..1			YES	reject
>PC5 RLC Channel Modified Item IEs		1 .. <maxnoofPC5RLCChannels>				-
>>PC5 RLC Channel ID	M		9.3.1.265		-	
>>Remote UE Local ID	O		9.3.1.267		-	
UE Multicast MRB Confirmed to Be Modified List		0..1			YES	reject
>UE Multicast MRB Confirmed to Be Modified Item IEs		1 .. <maxnoofMRBsforUE>			EACH	reject
>>MRB ID	M		9.3.1.224	MRB ID for the UE.	-	
>>MBS PTP Retransmission Tunnel Required	O		9.3.2.10		-	

Range bound	Explanation
maxnoofDRBs	Maximum no. of DRB allowed towards one UE, the maximum value is 64.
maxnoofULUPTNLInformation	Maximum no. of UL UP TNL Information allowed towards one DRB, the maximum value is 2.
maxnoofSLDRBs	Maximum no. of SL DRB allowed for NR sidelink communication per UE, the maximum value is 512.
maxnoofAdditionalPDCPDuplicationTNL	Maximum no. of additional UP TNL Information allowed towards one DRB, the maximum value is 2.
maxnoofUuRLCChannels	Maximum no. of Uu Relay RLC channels for L2 U2N relaying per Relay UE, the maximum value is 32.
maxnoofPC5RLCChannels	Maximum no. of PC5 Relay RLC channels allowed for L2 U2N relaying per Remote UE or Relay UE, the maximum value is 512.

9.2.2.11A UE CONTEXT MODIFICATION REFUSE

This message is sent by the gNB-CU to indicate the UE context modification was unsuccessful.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.2.12 UE INACTIVITY NOTIFICATION

This message is sent by the gNB-DU to provide information about the UE activity to the gNB-CU.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
DRB Activity List		1			YES	reject
>DRB Activity Item		1 .. <maxnoof DRBs>			EACH	reject
>>DRB ID	M		9.3.1.8		-	
>>DRB Activity	O		ENUMERATED (Active, Not active)		-	
SDT Termination Request	O		ENUMERATED (radio link problem, normal, ...)	Indicate the reason of request for termination of the ongoing SDT.	YES	ignore

Range bound	Explanation
maxnoofDRBs	Maximum no. of DRB allowed towards one UE, the maximum value is 64.

9.2.2.13 NOTIFY

This message is sent by the gNB-DU to notify the gNB-CU that the QoS for already established DRBs associated with notification control is not fulfilled any longer or it is fulfilled again.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
DRB Notify List		1			YES	reject
>DRB Notify Item IEs		<1 .. maxnoofD RBs>			EACH	reject
>>DRB ID	M		9.3.1.8		-	
>>Notification Cause	M		ENUMERATED (Fulfilled, Not-Fulfilled, ...)		-	
>>Current QoS Parameters Set Index	O		Alternative QoS Parameters set Notify Index 9.3.1.124	Index to the currently fulfilled alternative QoS parameters set. Value 0 indicates that NG-RAN cannot even fulfil the lowest alternative parameter set.	YES	ignore

Range bound	Explanation
maxnoofDRBs	Maximum no. of DRB allowed towards one UE, the maximum value is 64.

9.2.2.14 ACCESS SUCCESS

This message is sent by the gNB-DU to inform the gNB-CU of which cell the UE has successfully accessed during conditional handover or conditional PSCell addition or conditional PSCell change.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
NR CGI	M		9.3.1.12		YES	reject

9.2.3 RRC Message Transfer messages

9.2.3.1 INITIAL UL RRC MESSAGE TRANSFER

This message is sent by the gNB-DU to transfer the initial layer 3 message to the gNB-CU over the F1 interface.

Direction: gNB-DU →gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
NR CGI	M		9.3.1.12	NG-RAN Cell Global Identifier (NR CGI)	YES	reject
C-RNTI	M		9.3.1.32	C-RNTI allocated at the gNB-DU	YES	reject
RRC-Container	M		9.3.1.6	Includes the <i>UL-CCCH-Message</i> message or <i>UL-CCCH1-Message</i> message as defined in subclause 6.2 of TS 38.331 [8].	YES	reject
DU to CU RRC Container	O		OCTET STRING	Includes the <i>CellGroupConfig</i> IE as defined in subclause 6.3.2 in TS 38.331 [8]. Required at least to carry SRB1 configuration. The <i>ReconfigurationWithSync</i> field is not included in the <i>CellGroupConfig</i> IE.	YES	reject
SUL Access Indication	O		ENUMERATE D (true, ...)		YES	ignore
Transaction ID	M		9.3.1.23		YES	ignore
RAN UE ID	O		OCTET STRING (SIZE (8))		YES	ignore
RRC-Container-RRCSetupComplete	O		9.3.1.6	Includes the <i>UL-DCCH-Message</i> message including the <i>RRCSetupComplete</i> message, as defined in subclause 6.2 of TS 38.331 [8].	YES	ignore
NR RedCap UE Indication	O		ENUMERATE D(true, ...)		YES	ignore
SDT Information	O		9.3.1.262		YES	ignore
Sidelink Relay Configuration	O		9.3.1.264		YES	ignore

9.2.3.2 DL RRC MESSAGE TRANSFER

This message is sent by the gNB-CU to transfer the layer 3 message to the gNB-DU over the F1 interface.

Direction: gNB-CU →gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
old gNB-DU UE F1AP ID	O		9.3.1.5		YES	reject
SRB ID	M		9.3.1.7		YES	reject
Execute Duplication	O		ENUMERATE D (true, ...)		YES	ignore
RRC-Container	M		9.3.1.6	Includes the <i>DL-DCCH-Message</i> message as defined in subclause 6.2 of TS 38.331 [8] encapsulated in a PDCP PDU, or the <i>DL-CCCH-Message</i> message as defined in subclause 6.2 of TS 38.331 [8].	YES	reject
RAT-Frequency Priority Information	O		9.3.1.34		YES	reject
RRC Delivery Status Request	O		ENUMERATE D (true, ...)	Indicates whether RRC DELIVERY REPORT procedure is requested for the RRC message.	YES	ignore
UE Context not retrievable	O		ENUMERATE D (true, ...)		YES	reject
Redirected RRC message	O		RRC Container 9.3.1.6	Includes the <i>UL-CCCH-Message</i> message as defined in subclause 6.2 of TS 38.331 [8].	YES	reject
PLMN Assistance Info for Network Sharing	O		PLMN Identity 9.3.1.14		YES	ignore
New gNB-CU UE F1AP ID	O		gNB-CU UE F1AP ID 9.3.1.4		YES	reject
Additional RRM Policy Index	O		9.3.1.90		YES	ignore
SRB Mapping Info	O		Uu RLC Channel ID 9.3.1.266	This IE contains the mapped Uu Relay RLC CH ID for the Remote UE's SRB0.	YES	ignore

9.2.3.3 UL RRC MESSAGE TRANSFER

This message is sent by the gNB-DU to transfer the layer 3 message to the gNB-CU over the F1 interface.

Direction: gNB-DU →gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
SRB ID	M		9.3.1.7		YES	reject
RRC-Container	M		9.3.1.6	Includes the <i>UL-DCCH-Message</i> message as defined in subclause 6.2 of TS 38.331 [8], encapsulated in a PDCP PDU. In case of CG-SDT, may include the <i>UL-CCCH-Message</i> message or <i>UL-CCCH1-Message</i> message as defined in subclause 6.2 of TS 38.331 [8].	YES	reject
Selected PLMN ID	O		PLMN Identity 9.3.1.14		YES	reject
New gNB-DU UE F1AP ID	O		gNB-DU UE F1AP ID 9.3.1.5		YES	reject

9.2.3.4 RRC DELIVERY REPORT

This message is sent by the gNB-DU to inform the gNB-CU about the delivery status of DL RRC messages.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
RRC Delivery Status	M		9.3.1.71		YES	ignore
SRB ID	M		9.3.1.7		YES	ignore

9.2.4 Warning Message Transmission Messages

9.2.4.1 WRITE-REPLACE WARNING REQUEST

This message is sent by the gNB-CU to request the start or overwrite of the broadcast of a warning message.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
PWS System Information	M		9.3.1.58	This IE includes the system information for public warning, as defined in TS 38.331 [8].	YES	reject
Repetition Period	M		9.3.1.59		YES	reject
Number of Broadcasts Requested	M		9.3.1.60		YES	reject
Cell To Be Broadcast List		0..1			YES	reject
>Cell to Be Broadcast Item IEs		1.. <maxCellingNB DU>			EACH	reject
>>NR CGI	M		9.3.1.12		-	

Range bound	Explanation
maxCellingNB DU	Maximum no. cells that can be served by a gNB-DU. Value is 512.

9.2.4.2 WRITE-REPLACE WARNING RESPONSE

This message is sent by the gNB-DU to acknowledge the gNB-CU on the start or overwrite request of a warning message.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Cell Broadcast Completed List		0..1			YES	reject
>Cell Broadcast Completed Item IEs		1.. <maxCellingNBD U>			EACH	reject
>>NR CGI	M		9.3.1.12		-	
Criticality Diagnostics	O		9.3.1.3		YES	ignore
Dedicated SI Delivery Needed UE List		0..1		List of UEs unable to receive system information from broadcast	YES	ignore
>Dedicated SI Delivery Needed UE Item		1.. <maxnoofUEIDs >			EACH	ignore
>>gNB-CU UE F1AP ID	M		9.3.1.4		-	
>>NR CGI	M		9.3.1.12		-	

Range bound	Explanation
maxCellingNBDU	Maximum no. cells that can be served by a gNB-DU. Value is 512.
maxnoofUEIDs	Maximum no. of UEs that can be served by a gNB-DU. Value is 65536.

9.2.4.3 PWS CANCEL REQUEST

This message is forwarded by the gNB-CU to gNB-DU to cancel an already ongoing broadcast of a warning message

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Number of Broadcasts Requested	M		9.3.1.60	This IE is not used in this version of the specification	YES	reject
Cell Broadcast To Be Cancelled List		0..1			YES	reject
>Cell Broadcast to Be Cancelled Item IEs		1.. <maxCellingNBDU>			EACH	reject
>>NR CGI	M		9.3.1.12		-	
Cancel-all Warning Messages Indicator	O			ENUMERATED (true, ...)	YES	reject
Notification Information	O			This IE is ignored if the <i>Cancel-all Warning Messages Indicator</i> IE is included.	YES	reject
>Message Identifier	M		9.3.1.81			
>Serial Number	M		9.3.1.82			

Range bound	Explanation
maxCellingNBDU	Maximum no. cells that can be served by a gNB-DU. Value is 512.

9.2.4.4 PWS CANCEL RESPONSE

This message is sent by the gNB-DU to indicate the list of warning areas where cancellation of the broadcast of the identified message was successful and unsuccessful.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Cell Broadcast Cancelled List		0..1			YES	reject
>Cell Broadcast Cancelled Item IEs		1.. <maxCellingNB DU>			EACH	reject
>>NR CGI	M		9.3.1.12		-	
>>Number of Broadcasts	M		INTEGER (0..65535)	This IE is set to '0' if valid results are not known or not available. It is set to 65535 if the counter results have overflowed.	-	
Criticality Diagnostics	O		9.3.1.3		YES	ignore

Range bound	Explanation
maxCellingNB DU	Maximum no. of cells that can be served by a gNB-DU. Value is 512.

9.2.4.5 PWS RESTART INDICATION

This message is sent by the gNB-DU to inform the gNB-CU that PWS information for some or all cells of the gNB-DU are available if needed.

Direction: gNB-DU →gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	reject
NR CGI List for Restart List		1			YES	reject
>NR CGI List for Restart Item IEs		1.. <maxCellingNB DU>			EACH	reject
>>NR CGI	M		9.3.1.12		-	

Range bound	Explanation
maxCellingNB DU	Maximum no. of cells that can be served by a gNB-DU. Value is 512.

9.2.4.6 PWS FAILURE INDICATION

This message is sent by the gNB-DU to inform the gNB-CU that ongoing PWS operation for one or more cells of the gNB-DU has failed.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	reject
PWS failed NR CGI List		0..1			YES	reject
>PWS failed NR CGI Item IEs		1..<maxCellingNB BDU>			EACH	reject
>>NR CGI	M		9.3.1.12		-	
>>Number of Broadcasts	M		INTEGER (0..65535)	This IE is not used in the specification and is ignored.	-	

Range bound	Explanation
maxCellingNB BDU	Maximum no. of cells that can be served by a gNB-DU. Value is 512.

9.2.5 System Information messages

9.2.5.1 SYSTEM INFORMATION DELIVERY COMMAND

This message is sent by the gNB-CU and is used to enable the gNB-DU to broadcast the requested other SI.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	reject
NR CGI	M		9.3.1.12	NR cell identifier	YES	reject
SIType List	M		9.3.1.62		YES	reject
Confirmed UE ID	M		gNB-DU UE F1AP ID 9.3.1.5		YES	reject

9.2.6 Paging messages

9.2.6.1 PAGING

This message is sent by the gNB-CU and is used to request the gNB-DU to page UEs.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
UE Identity Index value	M		9.3.1.39		YES	reject
CHOICE <i>Paging Identity</i>	M				YES	reject
> <i>RAN UE Paging identity</i>						
>>RAN UE Paging identity	M		9.3.1.43		-	
> <i>CN UE paging identity</i>						
>>CN UE paging identity	M		9.3.1.44		-	
Paging DRX	O		9.3.1.40	It is defined as the minimum between the RAN UE Paging DRX and CN UE Paging DRX	YES	ignore
Paging Priority	O		9.3.1.41		YES	ignore
Paging Cell List		1			YES	ignore
> Paging Cell Item IEs		1 .. <maxnoofPagingCells >			EACH	ignore
>>NR CGI	M		9.3.1.12		-	
>>Last Used Cell Indication	O		ENUMERATED(true, ...)		YES	ignore
>>PEI Subgrouping Support Indication	O		ENUMERATED(true, ...)		YES	ignore
Paging Origin	O		9.3.1.79		YES	ignore
RAN UE Paging DRX	O		Paging DRX 9.3.1.40	This IE indicates the RAN paging cycle as defined in TS 38.304 [24].	YES	ignore
CN UE Paging DRX	O		Paging DRX 9.3.1.40	This IE indicates the UE specific paging cycle as defined in TS 38.304 [24].	YES	ignore
NR Paging eDRX Information	O		9.3.1.258		YES	ignore
NR Paging eDRX Information for RRC INACTIVE	O		9.3.1.259		YES	ignore
Paging Cause	O		ENUMERATED(voice, ...)	This IE indicates the paging cause is IMS voice, refer to TS 23.501[21].	YES	ignore
PEIPS Assistance Information	O		9.3.1.269		YES	ignore
UE Paging Capability	O		9.3.1.270		YES	ignore
Extended UE Identity Index Value	O		9.3.1.285		YES	ignore

Range bound	Explanation
maxnoofPagingCells	Maximum no. of paging cells, the maximum value is 512.

9.2.7 Trace Messages

9.2.7.1 TRACE START

This message is sent by the gNB-CU to initiate a trace session for a UE.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
Trace Activation	M		9.3.1.88		YES	ignore

9.2.7.2 DEACTIVATE TRACE

This message is sent by the gNB-CU to deactivate a trace session.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
Trace ID	M		OCTET STRING (SIZE(8))	As per Trace ID in <i>Trace Activation</i> IE	YES	ignore

9.2.7.3 CELL TRAFFIC TRACE

This message is sent by the gNB-DU to to transfer trace specific information.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
Trace ID	M		OCTET STRING (SIZE(8))	This IE is composed of the following: Trace Reference defined in TS 32.422 [29] (leftmost 6 octets, with PLMN information encoded as in 9.3.1.14), and Trace Recording Session Reference defined in TS 32.422 [29] (last 2 octets).	YES	ignore
Trace Collection Entity IP Address	M		Transport Layer Address 9.3.2.3	For File based Reporting. Defined in TS 32.422 [29]. Should be ignored if URI is present	YES	ignore
Privacy Indicator	O		ENUMERATED (Immediate MDT, Logged MDT, ...)		YES	ignore
Trace Collection Entity URI	O		URI 9.3.2.6	For Streaming based Reporting. Defined in TS 32.422 [29]. Replaces Trace Collection Entity IP Address if present	YES	ignore

9.2.8 Radio Information Transfer messages

9.2.8.1 DU-CU RADIO INFORMATION TRANSFER

This message is sent by a gNB-DU to a gNB-CU, to convey radio-related information.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	reject
CHOICE <i>DU-CU Radio Information Type</i>	M				YES	ignore
> <i>RIM</i>						
>> <i>DU-CU RIM Information</i>	M		9.3.1.91		-	-

9.2.8.2 CU-DU RADIO INFORMATION TRANSFER

This message is sent by a gNB-CU to a gNB-DU, to convey radio-related information.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	reject
CHOICE <i>CU-DU Radio Information Type</i>	M				YES	ignore
> <i>RIM</i>						
>>CU-DU RIM Information	M		9.3.1.92		-	-

9.2.9 IAB messages

9.2.9.1 BAP MAPPING CONFIGURATION

This message is sent by the gNB-CU to provide the backhaul routing information and/or traffic mapping information to the gNB-DU.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
BH Routing Information Added List		0..1			YES	ignore
>BH Routing Information Added List Item		1.. <maxnoof RoutingEn tries>			EACH	ignore
>>BAP Routing ID	M		9.3.1.110		-	
>>Next-Hop BAP Address	M		9.3.1.111	Indicates the BAP address of the next hop IAB-node or IAB-donor-DU.	-	
>>Non-F1-Terminating IAB-donor Topology Indicator	O		ENUMERATED (true, ...)	If present, indicates that the routing entry applies to the non-F1-terminating IAB-donor topology of the boundary IAB-node.	YES	ignore
BH Routing Information Removed List		0..1			YES	ignore
>BH Routing Information Removed List Item		1.. <maxnoof RoutingEn tries>			EACH	ignore
>>BAP Routing ID	M		9.3.1.110		-	
Traffic Mapping Information	O		9.3.1.95		YES	ignore
Buffer Size Threshold	O		INTEGER (0..2 ²⁴ -1)	The buffer size threshold (in kilobytes) for DL local rerouting, triggered by hop-by-hop flow control feedback.	YES	ignore
BAP Header Rewriting Added List		0..1			YES	ignore
>BAP Header Rewriting Added List Item		1.. <maxnoof RoutingEn tries>			EACH	ignore
>>Ingress BAP Routing ID	M		9.3.1.110		-	
>>Egress BAP Routing ID	M		9.3.1.110		-	
>>Non-F1-terminating IAB-donor Topology Indicator	O		ENUMERATED (true, ...)	If present, indicates that the egress BAP Routing ID in the present BAP header rewriting entry pertains to the non-F1-terminating IAB-donor topology of the boundary IAB-node.	-	
Re-routing Enable Indicator	O		ENUMERATED (true, false, ...)		YES	ignore
BAP Header Rewriting Removed List		0..1			YES	ignore

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>BAP Header Rewriting Removed List Item		1.. <maxnoof RoutingEntries>			EACH	ignore
>>Ingress BAP Routing ID	M		9.3.1.110			

Range bound	Explanation
maxnoofRoutingEntries	Maximum no. of routing entries, the maximum value is 1024.

9.2.9.2 BAP MAPPING CONFIGURATION ACKNOWLEDGE

This message is sent by the gNB-DU as a response to a BAP MAPPING CONFIGURATION message.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.9.2A BAP MAPPING CONFIGURATION FAILURE

This message is sent by the gNB-DU to indicate a BAP Mapping Configuration Update failure.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Cause	M		9.3.1.2		YES	ignore
Time to wait	O		9.3.1.13		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.9.3 GNB-DU RESOURCE CONFIGURATION

This message is sent by the gNB-CU to provide the resource configuration for an gNB-DU.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Activated Cells to Be Updated List		0..1		List of activated cells served by the IAB-DU or the IAB-donor-DU whose resource configuration is updated	YES	reject

>Activated Cells To Be Updated List Item		1 .. <maxnoofServed CellsIAB>			EACH	reject
>> NR CGI	M		9.3.1.12		-	
>>IAB-DU Cell Resource Configuration-Mode-Info	M		9.3.1.279	In the current version of this specification, for FDD, this IE only contains the <i>gNB-DU Cell Resource Configuration -FDD-UL</i> IE and the <i>gNB-DU Cell Resource Configuration -FDD-DL</i> IE, for TDD, this IE only contains the <i>gNB-DU Cell Resource Configuration -TDD</i> IE	-	
Child-Nodes List		0..1		List of child IAB-nodes served by the IAB-DU or IAB-donor-DU.	YES	reject
>Child-Nodes List Item		1 .. <maxnoofChildIA BNodes>			EACH	reject
>>gNB-CU UE F1AP ID	M		9.3.1.4	Identifier of a descendant node IAB-MT at the IAB-donor-CU.	YES	reject
>>gNB-DU UE F1AP ID	M		9.3.1.5	Identifier of a child-node IAB-MT at an IAB-DU or IAB-donor-DU.	YES	reject
>>>Child-Node Cells List		0..1		List of cells served by the child-node IAB-DU whose resource configuration is updated.	YES	reject
>>>>Child-Node Cells List Item		1 .. <maxnoofServed CellsIAB >			EACH	reject
>>>>NR CGI	M		9.3.1.12		-	
>>>>IAB-DU Cell Resource Configuration-Mode-Info	O		9.3.1.279		-	

>>>>IAB STC Info	O		9.3.1.109	STC configuration of child-node IAB-DU's cell.		
>>>>RACH Config Common	O		OCTET STRING	Includes the <i>rach-ConfigCommon</i> contained in the <i>BWP-UplinkCommon</i> IE as defined in subclause 6.3.2 of TS 38.331 [8].		
>>>>RACH Config Common IAB	O		OCTET STRING	Includes the IAB-specific <i>rach-ConfigCommonIAB</i> contained in the <i>BWP-UplinkCommon</i> IE as defined in subclause 6.3.2 of TS 38.331 [8].		
>>>>CSI-RS Configuration	O		OCTET STRING	Includes the <i>NZP-CSI-RS-Resource</i> IE as defined in subclause 6.3.2 of TS 38.331 [8].		
>>>>SR Configuration	O		OCTET STRING	Includes the <i>SchedulingRequestResourceConfig</i> IE as defined in subclause 6.3.2 of TS 38.331 [8].		
>>>>PDCCH Configuration SIB1	O		OCTET STRING	Includes the <i>PDCCH-ConfigSIB1</i> IE as defined in subclause 6.3.2 of TS 38.331 [8].		
>>>>SCS Common	O		OCTET STRING	Includes the <i>subCarrierSpacingCommon</i> contained in the <i>MIB</i> message as defined in subclause 6.2.2 of TS 38.331 [8].		

>>>>Multiplexing Info	O		9.3.1.108	Contains information on multiplexing with cells configured for co-located IAB-MT.		
Neighbour-Node Cells List		0..1		List of neighbor node cells.	YES	reject
>Neighbour-Node Cells List Item		1 .. < <i>maxnoofNeighbourNodeCellsIAB</i> >			EACH	reject
>>NR CGI	M		9.3.1.12		-	
>>gNB-CU UE F1AP ID	O		9.3.1.4	Identifier of a child-node IAB-MT at an IAB-donor-CU.	-	
>>gNB-DU UE F1AP ID	O		9.3.1.5	Identifier of a child-node IAB-MT at an IAB-DU or IAB-donor-DU.	-	
>>Peer Parent-Node Indicator	O		ENUMERATED (true, ...)	Indicates if the cell belongs to the peer parent IAB-node of the dual connected IAB-node.	-	
>>IAB-DU Cell Resource Configuration-Mode-Info	O		9.3.1.279		-	
>>IAB STC Info	O		9.3.1.109	STC configuration of peer parent-node IAB-DU's cell.	-	
>>RACH Config Common	O		OCTET STRING	Common RACH Configuration of peer parent node IAB-DU's cell. Includes the <i>rach-ConfigCommon</i> contained in the <i>BWP-UplinkCommon</i> IE as defined in subclause 6.3.2 of TS 38.331 [8].	-	

>>RACH Config Common IAB	O		OCTET STRING	IAB specific common RACH Configuration of peer parent node IAB-DU's cell. Includes the IAB- specific <i>rach- ConfigCommonIAB</i> contained in the <i>BWP- UplinkCommon</i> IE as defined in subclause 6.3.2 of TS 38.331 [8].	-	
>>CSI-RS Configuration	O		OCTET STRING	CSI-RS configuration of peer parent node IAB-DU's cell. Includes the <i>NZP-CSI- RS- Resource</i> as defined in subclause 6.3.2 of TS 38.331 [8].	-	
>>SR Configuration	O		OCTET STRING	SR configuration of peer parent node IAB-DU's cell. Includes the <i>SchedulingR equestResou rceConfig</i> IE as defined in subclause 6.3.2 of TS 38.331 [8].	-	
>>PDCCH Configuration SIB1	O		OCTET STRING	PDCCH configuration SIB1 of peer parent node IAB-DU's cell. Includes the <i>PDCCH- ConfigSIB1</i> IE as defined in subclause 6.3.2 of TS 38.331 [8].	-	

>>SCS Common	O		OCTET STRING	SCS Common of peer parent node IAB-DU's cell. Includes the <i>subCarrierSpacingCommon</i> contained in the <i>MIB</i> message as defined in subclause 6.2.2 of TS 38.331 [8].	-	
Serving Cells List		0..1		List of serving cells of the co-located IAB-MT.	YES	reject
>Serving Cells List Item		1 .. <maxnoofServingCells >			EACH	reject
>>NR CGI	M		9.3.1.12		-	
>>CHOICE <i>IAB-MT Cell NA Resource Configuration-Mode-Info</i>	O				-	
>>>FDD						
>>>>FDD Info		1			-	
>>>>>gNB-DU Cell NA Resource Configuration-FDD-UL	M		gNB-DU Cell Resource Configuration 9.3.1.107	Contains FDD UL NA resource configuration of parent IAB-node's cell for the co-located IAB-MT.	-	
>>>>>gNB-DU Cell NA Resource Configuration-FDD-DL	M		gNB-DU Cell Resource Configuration 9.3.1.107	Contains FDD DL NA resource configuration of parent IAB-node's cell for the co-located IAB-MT.	-	
>>>>>UL Frequency Info	O		NR Frequency Info 9.3.1.17		-	
>>>>>UL Transmission Bandwidth	O		Transmission Bandwidth 9.3.1.15		-	
>>>>>UL Carrier List	O		NR Carrier List 9.3.1.137	If included, the <i>UL Transmission Bandwidth</i> IE shall be ignored.	-	
>>>>>DL Frequency Info	O		NR Frequency Info 9.3.1.17		-	
>>>>>DL Transmission Bandwidth	O		Transmission Bandwidth 9.3.1.15		-	

>>>>DL Carrier List	O		NR Carrier List 9.3.1.137	If included, the <i>UL Transmission Bandwidth</i> IE shall be ignored.	-	
>>>TDD					-	
>>>>TDD Info		1			-	
>>>>gNB-DU Cell NA Resource Configuration-TDD	M		gNB-DU Cell Resource Configuration 9.3.1.107	Contains TDD NA resource configuration of parent IAB-node's cell for the co-located IAB-MT.	-	
>>>>NR Frequency Info	O		NR Frequency Info 9.3.1.17		-	
>>>>Transmission Bandwidth	O		Transmission Bandwidth 9.3.1.15		-	
>>>>Carrier List	O		NR Carrier List 9.3.1.137	If included, the <i>Transmission Bandwidth</i> IE shall be ignored.	-	

Range bound	Explanation
maxnoofChildIABNodes	Maximum number of child nodes served by an IAB-DU or IAB-donor-DU. Value is 1024.
maxnoofServedCellsIAB	Maximum number of cells served by an IAB-DU or IAB-donor-DU. Value is 512.
maxnoofNeighbourNodeCellsIAB	Maximum no. of neighbour cells. Value is 1024.
MaxnoofServingCells	Maximum no. of serving cells for IAB-MT. Value is 32

9.2.9.4 GNB-DU RESOURCE CONFIGURATION ACKNOWLEDGE

This message is sent by the gNB-DU to acknowledge the reception of an GNB-DU RESOURCE CONFIGURATION message.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.9.4A GNB-DU RESOURCE CONFIGURATION FAILURE

This message is sent by the gNB-DU to indicate a gNB-DU Resource Configuration Update failure.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Cause	M		9.3.1.2		YES	ignore
Time to wait	O		9.3.1.13		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.9.5 IAB TNL ADDRESS REQUEST

This message is sent by the gNB-CU to request the allocation of IP addresses for IAB-node(s).

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
IAB IPv4 Addresses Requested	O		IAB TNL Addresses Requested 9.3.1.101		YES	reject
CHOICE <i>IAB IPv6 Request Type</i>	O				YES	reject
>IPv6 Address					-	
>>IAB IPv6 Addresses Requested	M		IAB TNL Addresses Requested 9.3.1.101		-	
>IPv6 Prefix					-	
>>IAB IPv6 Address Prefixes Requested	M		IAB TNL Addresses Requested 9.3.1.101		-	
IAB TNL Addresses To Remove List		0..1			YES	reject
>IAB TNL Addresses To Remove Item		1..<maxno ofTLAsIAB >			EACH	reject
>>IAB TNL Address	M		9.3.1.102		-	
IAB TNL Address Exception	O		9.3.1.229		YES	reject

Range bound	Explanation
maxnoofTLAsIAB	Maximum no. of individual IPv4/IPv6 addresses or IPv6 address prefixes that can be allocated in one procedure execution. The value is 1024.

9.2.9.6 IAB TNL ADDRESS RESPONSE

This message is sent by the gNB-DU to indicate the TNL addresses allocated to IAB-node(s).

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
IAB Allocated TNL Address List		1			YES	reject
>IAB Allocated TNL Address Item		1..<maxno ofTLAsIAB >			EACH	reject
>>IAB TNL Address	M		9.3.1.102		-	
>>IAB TNL Address Usage	O		ENUMERATED (F1-C, F1-U, Non-F1, ...)	The usage of the allocated IPv4 or IPv6 address or IPv6 address prefix.	-	

Range bound	Explanation
maxnoofTLAsIAB	Maximum no. of IPv6 addresses or IPv6 address prefixes and/or individual IPv4 addresses that can be allocated in one procedure execution. The value is 1024.

9.2.9.6A IAB TNL ADDRESS FAILURE

This message is sent by the gNB-DU to indicate an IAB TNL Address Allocation failure.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Cause	M		9.3.1.2		YES	ignore
Time to wait	O		9.3.1.13		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.9.7 IAB UP CONFIGURATION UPDATE REQUEST

This message is sent by the gNB-CU to provide the updated UL BH Information or the updated UL UP TNL Information/Address to the gNB-DU.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
UL UP TNL Information to Update List		0..1			YES	ignore

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>UL UP TNL Information to Update List Item IEs		1.. <maxnoofULUPTNLInformationforIAB>			EACH	ignore
>>UL UP TNL Information	M		UP Transport Layer Information 9.3.2.1	This field indicates the UL UP TNL Information used before configuration update.	-	
>>New UL UP TNL Information	O		UP Transport Layer Information 9.3.2.1	If present, this field indicates the new UL UP TNL Information used after configuration update.	-	
>>BH Information	M		9.3.1.114		-	
UL UP TNL Address to Update List		0..1			YES	ignore
>UL UP TNL Address to Update List Item IEs		1.. <maxnoofUPTNLAddresses>			EACH	ignore
>>Old TNL Address	M		Transport Layer Address 9.3.2.3	The old UL UP Transport Layer Address of gNB-CU used for UL F1-U GTP Tunnel before the configuration update.	-	
>>New TNL Address	M		Transport Layer Address 9.3.2.3	The corresponding new UL UP Transport Layer Address that replaces the old one.	-	

Range bound	Explanation
maxnoofULUPTNLInformationforIAB	Maximum no. of UL UP TNL Information allowed towards one IAB node, the maximum value is 32768.
maxnoofUPTNLAddresses	Maximum no. of TNL addresses for F1-U. Value is 8.

9.2.9.8 IAB UP CONFIGURATION UPDATE RESPONSE

This message is sent by the gNB-DU to provide the updated TNL address(es) of the DL F1-U GTP tunnels to the gNB-CU.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Criticality Diagnostics	O		9.3.1.3		YES	ignore
DL UP TNL Address to Update List		0..1			YES	ignore
>DL UP TNL Address to Update List Item IEs		1.. <maxnoofUPTNLAddresses>			EACH	ignore
>>Old TNL Address	M		Transport Layer Address 9.3.2.3	The old DL UP Transport Layer Address of gNB-DU used for DL F1-U GTP tunnel before the configuration update.	-	
>>New TNL Address	M		Transport Layer Address 9.3.2.3	The corresponding new Transport Layer Address used to replace the old one.	-	

Range bound	Explanation
maxnoofUPTNLAddresses	Maximum no. of TNL addresses for F1-U. Value is 8.

9.2.9.9 IAB UP CONFIGURATION UPDATE FAILURE

This message is sent by the gNB-DU to indicate an IAB UP Configuration Update failure.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Cause	M		9.3.1.2		YES	ignore
Time to wait	O		9.3.1.13		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.10 Self Optimisation Support Messages

9.2.10.1 ACCESS AND MOBILITY INDICATION

This message is sent by gNB-CU to gNB-DU to provide access and mobility information to the gNB-DU.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	reject
RACH Report Information List		0..1			YES	ignore
>RACH Report Information Item		1 .. <maxnoof RACHRepor ts>			-	
>>RACH Report Container	M		OCTET STRING	Includes the <i>RA-ReportList-r16</i> IE as defined in subclause 6.2.2 in TS 38.331 [8].	-	
>>UE Assistant Identifier	O		gNB-DU UE F1AP ID 9.3.1.5		-	
RLF Report Information List		0..1			YES	ignore
>RLF Report Information Item		1 .. <maxnoof RLFRepor ts>			-	
>>NR UE RLF Report Container	M		OCTET STRING	Includes the <i>nr-RLF-Report-r16</i> IE contained in the <i>UEInformationResponse</i> message defined in TS 38.331 [8].	-	
>>UE Assistant Identifier	O		gNB-DU UE F1AP ID 9.3.1.5		-	
Successful HO Report Information List		0..1			YES	ignore
>Successful HO Report Information Item		1 .. <maxnoof Successfu lHOReport s>			-	
>>Successful HO Report Container	M		OCTET STRING	Includes the <i>SuccessHO-Report</i> IE as defined in subclause 6.2.2 in TS 38.331 [8].	-	

Range bound	Explanation
maxnoofRACHReports	Maximum no. of RACH Reports, the maximum value is 64.
maxnoofRLFReports	Maximum no. of RLF Reports, the maximum value is 64.
maxnoofSuccessfulHOReports	Maximum no. of Successful HO Reports, the maximum value is 64.

9.2.11 Reference Time Information Reporting messages

9.2.11.1 REFERENCE TIME INFORMATION REPORTING CONTROL

This message is sent by the gNB-CU and is used to request the gNB-DU to deliver the accurate reference time information.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	reject
Reporting Request Type	M		9.3.1.147		YES	reject

9.2.11.2 REFERENCE TIME INFORMATION REPORT

This message is sent by the gNB-DU and is used to report the accurate reference time information to the gNB-CU.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	ignore
Time Reference Information	M		9.3.1.148		YES	ignore

9.2.12 Messages for Positioning Procedures

9.2.12.1 POSITIONING ASSISTANCE INFORMATION CONTROL

This message is sent by the gNB-CU to transfer positioning assistance information.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	reject
Positioning Assistance Information	O		OCTET STRING	Contains the <i>Assistance Information</i> IE as defined in TS 38.455 [37].	YES	reject
Broadcast	O		ENUMERATED (start, stop, ...)		YES	reject
Positioning Broadcast Cells	O		9.3.1.191	The cell(s) that are requested to broadcast posSIB(s) according to the <i>Positioning Assistance Information</i> IE.	YES	reject
Routing ID	O		OCTET STRING		YES	reject

9.2.12.2 POSITIONING ASSISTANCE INFORMATION FEEDBACK

This message is sent by the gNB-DU to give feedback on positioning assistance information broadcasting.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	reject
Positioning Assistance Information Failure List	O		OCTET STRING	Contains the <i>Assistance Information</i> IE as defined in TS 38.455 [37].	YES	reject
Positioning Broadcast Cells	O		9.3.1.191	The cells associated to the feedback provided in the <i>Positioning Assistance Information Failure List</i> IE.	YES	reject
Routing ID	O		OCTET STRING		YES	reject
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.12.3 POSITIONING MEASUREMENT REQUEST

This message is sent by the gNB-CU to request the gNB-DU to configure a positioning measurement.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
LMF Measurement ID	M		INTEGER (1..65536, ...)		YES	reject
RAN Measurement ID	M		INTEGER (1..65536, ...)		YES	reject
TRP Measurement Request List		1			YES	reject
>TRP Measurement Request Item		1..<maxnoof MeasTRPs>				
>>TRP ID	M		9.3.1.197			
>>Search Window Information	O		9.3.1.204			
>>NR CGI	O		9.3.1.12	The Cell ID of the TRP identified by the <i>TRP ID</i> IE.	YES	ignore
>>AoA Search Window Information	O		UL-AoA Assistance Information 9.3.1.238		YES	ignore
>>Number of TRP Rx TEGs	O		ENUMERATED (2, 3, 4, 6, 8, ...)		YES	ignore
>>Number of TRP RxFx TEGs	O		ENUMERATED (2, 3, 4, 6, 8, ...)		YES	ignore
Positioning Report Characteristics	M		ENUMERATED (OnDemand, Periodic, ...)		YES	reject
Positioning Measurement Periodicity	C- ifReportCharacteristicsPeriodic		ENUMERATED (120ms, 240ms, 480ms, 640ms, 1024ms, 2048ms, 5120ms, 10240ms, 1min, 6min, 12min, 30min, ..., 20480ms, 40960ms, extended)	The codepoint 120ms, 240ms, 480ms, 1024ms, 2048ms, 1min, 6min, 12min, and 30min are not applicable.	YES	reject
Positioning Measurement Quantities		1			YES	reject
>Positioning Measurement Quantities Item		1..<maxnoof PosMeas>			EACH	
>>Positioning Measurement Type	M		ENUMERATED (gNB RX-TX, UL-SRS-RSRP, UL AoA, UL RTOA, ..., Multiple UL AoA, UL SRS-RSRPP)			-
>>Timing Reporting Granularity Factor	O		INTEGER (0..5)	TS 38.133 [38]		
SFN Initialisation Time	O		Relative Time 1900 9.3.1.183	If this IE is not present, the TRP may assume that the value is same as its own SFN initialisation time.	YES	ignore
SRS Configuration	O		9.3.1.192		YES	ignore

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Measurement Beam Information Request	O		ENUMERATED (true, ...)	This IE is ignored when the Measurements Request Indicator IE is included.	YES	ignore
System Frame Number	O		INTEGER(0..1023)		YES	ignore
Slot Number	O		INTEGER(0..79)		YES	ignore
Measurement Periodicity Extended	C-ifMeasPerExt		ENUMERATED (160ms, 320ms, 1280ms, 2560ms, 61440ms, 81920ms, 368640ms, 737280ms, 1843200ms, ...)		YES	reject
Response Time	O		9.3.1.242	This IE is ignored when the <i>Positioning Report Characteristics</i> IE is set to "Periodic".	YES	ignore
Measurement Characteristics Request Indicator	O		9.3.1.254		YES	ignore
Measurement Time Occasion	O		ENUMERATED (o1, o4,...)		YES	ignore
Positioning Measurement Amount	O		ENUMERATED (0, 1, 2, 4, 8, 16, 32, 64)	This IE is ignored if the <i>Positioning Report Characteristics</i> IE is set to 'OnDemand'. Value 0 represents an infinite number of periodic reporting.	YES	ignore

Range bound	Explanation
maxnoofPosMeas	Maximum no. of measured quantities that can be configured and reported with one message. Value is 16384.
maxnoofMeasTRPs	Maximum no. of TRPs that can be included within one measurement message. Value is 64.

Condition	Explanation
ifReportCharacteristicsPeriodic	This IE shall be present if the <i>Positioning Report Characteristics</i> IE is set to the value "Periodic".
ifMeasPerExt	This IE shall be present if the <i>Positioning Measurement Periodicity</i> IE is set to the value "extended".

9.2.12.4 POSITIONING MEASUREMENT RESPONSE

This message is sent by the gNB-DU to report positioning measurements for the target UE.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
LMF Measurement ID	M		INTEGER (1..65536, ...)		YES	reject
RAN Measurement ID	M		INTEGER (1..65536, ...)		YES	reject
Positioning Measurement Result List		0..1			YES	reject
>Positioning Measurement Result List Item		1..< maxnoofMeas TRPs>				
>>Positioning Measurement Result	M		9.3.1.166		-	-
>>TRP ID	M		9.3.1.197			
>>NR CGI	O		9.3.1.12	The Cell ID of the TRP identified by the <i>TRP ID</i> IE.	YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

Range bound	Explanation
maxnoofMeasTRPs	Maximum no. of TRP measurements that can be included within one message. Value is 64.

9.2.12.5 POSITIONING MEASUREMENT FAILURE

This message is sent by the gNB-DU to report measurement failure.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
LMF Measurement ID	M		INTEGER (1..65536, ...)		YES	reject
RAN Measurement ID	M		INTEGER (1..65536, ...)		YES	reject
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.12.6 POSITIONING MEASUREMENT REPORT

This message is sent by the gNB-DU to report positioning measurements for the target UE.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	reject
LMF Measurement ID	M		INTEGER (1..65536, ...)		YES	reject
RAN Measurement ID	M		INTEGER (1..65536, ...)		YES	reject
Positioning Measurement Result List		1			YES	reject
>Positioning Measurement Result List Item		1..<maxnoof MeasTRPs>			EACH	
>>Positioning Measurement Result	M		9.3.1.166		-	-
>>TRP ID	M		9.3.1.197		-	-
>>NR CGI	O		9.3.1.12	The Cell ID of the TRP identified by the TRP ID IE.	YES	ignore

Range bound	Explanation
maxnoofMeasTRPs	Maximum no. of TRP measurements that can be included within one message. Value is 64.

9.2.12.7 POSITIONING MEASUREMENT ABORT

This message is sent by the gNB-CU to request the gNB-DU to abort a positioning measurement.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	reject
LMF Measurement ID	M		INTEGER (1..65536,...)		YES	reject
RAN Measurement ID	M		INTEGER (1..65536,...)		YES	reject

9.2.12.8 POSITIONING MEASUREMENT FAILURE INDICATION

This message is sent by the gNB-DU to indicate that the previously requested positioning measurements can no longer be reported.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	reject
LMF Measurement ID	M		INTEGER (1..65536,...)		YES	reject
RAN Measurement ID	M		INTEGER (1..65536,...)		YES	reject
Cause	M		9.3.1.2		YES	ignore

9.2.12.9 POSITIONING MEASUREMENT UPDATE

This message is sent by the gNB-CU to update a previously configured measurement.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	reject
LMF Measurement ID	M		INTEGER (1..65536,...)		YES	reject
RAN Measurement ID	M		INTEGER (1..65536,...)		YES	reject
SRS Configuration	O		9.3.1.192		YES	ignore
TRP Measurement Update List		0..1			YES	reject
>TRP Measurement Update Item		1..<maxnoof MeasTRPs>			EACH	reject
>>TRP ID	M		9.3.1.197		-	
>>AoA Search Window Information	O		UL-AoA Assistance Information 9.3.1.238		-	
>>Number of TRP Rx TEGs	O		ENUMERATED (2, 3, 4, 6, 8, ...)		YES	ignore
>>Number of TRP RxTx TEGs	O		ENUMERATED (2, 3, 4, 6, 8, ...)		YES	ignore
Measurement Characteristics Request Indicator	O		9.3.1.254		YES	ignore
Measurement Time Occasion	O		ENUMERATED (o1, o4, ...)		YES	ignore

Range bound	Explanation
maxnoofMeasTRPs	Maximum no. of TRPs that can be included within one message. Value is 64.

9.2.12.10 TRP INFORMATION REQUEST

This message is sent by a gNB-CU to request information for TRPs hosted by a gNB-DU.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
TRP list		<i>0..1</i>			YES	ignore
>TRP list Item		1..<maxnoofTRPs>			EACH	ignore
>>TRP ID	M		9.3.1.197		-	
TRP Information Type List		<i>1</i>			YES	reject
>TRP Information Type Item		1.. <maxnoofTRPInfoTypes>			EACH	reject
>>TRP Information Type Item	M		ENUMERATED (nr pci, ng-ran cgi, nr arfcn, prs config, ssb config, sfn init time, spatial direction info, geo-coordinates, ..., trp type, on-demand prs, trp Tx teg, beam antenna info)		-	

Range bound	Explanation
maxnoofTRPInfoTypes	Maximum no of TRP information types that can be requested and reported with one message. Value is 64.
maxnoofTRPs	Maximum no. of TRPs in a gNB. Value is 65535.

9.2.12.11 TRP INFORMATION RESPONSE

This message is sent by a gNB-DU to convey TRP information to a gNB-CU.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
TRP Information List		<i>1</i>			YES	ignore
>TRP Information Item		1.. <maxnoofTRPs>			EACH	ignore
>>TRP Information	M		9.3.1.176			
Criticality Diagnostics	O		9.3.1.3		YES	ignore

Range bound	Explanation
maxnoofTRPs	Maximum no. of TRPs in a gNB-DU. Value is 65535.

9.2.12.12 TRP INFORMATION FAILURE

This message is sent by a gNB-DU node to indicate that the requested TRP information cannot be provided to a gNB-CU.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.12.13 POSITIONING INFORMATION REQUEST

This message is sent by the gNB-CU to indicate to the gNB-DU the need to configure the UE to transmit SRS signals for uplink positioning measurement and also to retrieve the SRS configuration from the gNB-DU.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
Requested SRS Transmission Characteristics	O		9.3.1.175		YES	ignore
UE Reporting Information	O		9.3.1.255		YES	ignore
SRS Positioning INACTIVE Query Indication	O		ENUMERATED (true, ...)	Applicable only if the <i>Requested SRS Transmission Characteristics</i> IE is present	YES	ignore

9.2.12.14 POSITIONING INFORMATION RESPONSE

This message is sent by the gNB-DU to provide the configured SRS information to the gNB-CU.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
SRS Configuration	O		9.3.1.192		YES	ignore
SFN Initialisation Time	O		Relative Time 1900 9.3.1.183		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore
SRS-PosRRC-InactiveConfig	O		OCTET STRING	Includes the <i>SRS-PosRRC-InactiveConfig</i> IE as defined in TS 38.331 [8]	YES	ignore

9.2.12.15 POSITIONING INFORMATION FAILURE

This message is sent by the gNB-DU to indicate that no SRS transmissions could be configured for the UE for uplink positioning measurement.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.12.16 POSITIONING ACTIVATION REQUEST

This message is sent by the gNB-CU to cause the gNB-DU to activate/trigger UL SRS transmission by the UE.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
CHOICE <i>SRS type</i>	M				YES	reject
> <i>Semi-persistent</i>						
>>SRS Resource Set ID	M		9.3.1.180		-	-
>>SRS Spatial Relation	O		Spatial Relation Information 9.3.1.181	This IE is ignored if the <i>Spatial Relation Information per SRS Resource</i> IE is present.	-	-
>>Spatial Relation Information per SRS Resource	O		9.3.1.210		YES	ignore
> <i>Aperiodic</i>						
>>Aperiodic	M		ENUMERATED (true, ...)		-	-
>>SRS Resource Trigger	O		9.3.1.182		-	-
Activation Time	O		Relative Time 1900 9.3.1.183	Indicates the start time when the SRS activation is requested	YES	ignore

9.2.12.17 POSITIONING ACTIVATION RESPONSE

This message is sent by the gNB-DU to confirm successful UL SRS activation in the UE.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
System Frame Number	O		INTEGER(0..1023)		YES	ignore
Slot Number	O		INTEGER(0..79)		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.12.18 POSITIONING ACTIVATION FAILURE

This message is sent by the gNB-DU to indicate that activation of UL SRS transmission in the UE was unsuccessful.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.12.19 POSITIONING DEACTIVATION

This message is sent by the gNB-CU to cause the NG RAN node to deactivate UL SRS transmission or release all the transmission by the UE.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
CHOICE <i>Abort Transmission</i>	M				YES	ignore
> <i>SRS Resource Set ID deactivation</i>						
>> <i>SRS Resource Set ID</i>	M		9.3.1.180		-	
> <i>Release ALL</i>			NULL			

9.2.12.20 E-CID MEASUREMENT INITIATION REQUEST

This message is sent by gNB-CU to initiate E-CID measurements.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
LMF UE Measurement ID	M		INTEGER (1.. 256, ...)		YES	reject
RAN UE Measurement ID	M		INTEGER (1.. 256, ...)		YES	reject
E-CID Report Characteristics	M		ENUMERATED (OnDemand, Periodic, ...)		YES	reject
E-CID Measurement Periodicity	C-ifReportCharacteristicPeriodic		ENUMERATED (120ms, 240ms, 480ms, 640ms, 1024ms, 2048ms, 5120ms, 10240ms, 1min, 6min, 12min, 30min, ..., 20480ms, 40960ms, extended)	The codepoint "extended" is not applicable. This IE is not applicable to NR Angle of Arrival.	YES	reject
E-CID Measurement Quantities		1 .. <maxnoofMeasE-CID>			EACH	reject
>E-CID Measurement Quantities Item	M		ENUMERATED (Default, NR Angle of Arrival, ..., NR Timing Advance)	If "Default" is the only requested measurement quantity, it indicates that the <i>Measured Results List</i> IE need not be included in response or reporting messages.	-	
Measurement Periodicity NR-AoA	C-ifReportCharacteristicPeriodicAndMeasurementQuantityItemAoA		ENUMERATED (160ms, 320ms, 640ms, 1280ms, 2560ms, 5120ms, 10240ms, 20480ms, 40960ms, 61440ms, 81920ms, 368640ms, 737280ms, 1843200ms, ...)		YES	reject

Range bound	Explanation
maxnoofMeasE-CID	Maximum no. of E-CID measured quantities that can be configured and reported with one message. Value is 64.

Condition	Explanation
ifReportCharacteristicsPeriodic	This IE shall be present if the <i>E-CID Report Characteristics</i> IE is set to the value "Periodic".
ifReportCharacteristicsPeriodicAndMeasurementQuantityItemAoA	This IE shall be present if the <i>E-CID Report Characteristics</i> IE is set to the value "Periodic" and the <i>E-CID Measurement Quantities Item</i> IE is set to the value "NR Angle of Arrival".

9.2.12.21 E-CID MEASUREMENT INITIATION RESPONSE

This message is sent by gNB-DU to indicate that the requested E-CID measurement is successfully initiated.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
LMF UE Measurement ID	M		INTEGER (1.. 256, ...)		YES	reject
RAN UE Measurement ID	M		INTEGER (1.. 256, ...)		YES	reject
E-CID Measurement Result	O		9.3.1.199		YES	ignore
Cell Portion ID	O		9.3.1.200		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.12.22 E-CID MEASUREMENT INITIATION FAILURE

This message is sent by gNB-DU to indicate that the requested E-CID measurement cannot be initiated.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
LMF UE Measurement ID	M		INTEGER (1.. 256, ...)		YES	reject
RAN UE Measurement ID	M		INTEGER (1.. 256, ...)		YES	reject
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.12.23 E-CID MEASUREMENT FAILURE INDICATION

This message is sent by gNB-DU to indicate that the previously requested E-CID measurement can no longer be reported.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
LMF UE Measurement ID	M		INTEGER (1.. 256, ...)		YES	reject
RAN UE Measurement ID	M		INTEGER (1.. 256, ...)		YES	reject
Cause	M		9.3.1.2		YES	ignore

9.2.12.24 E-CID MEASUREMENT REPORT

This message is sent by gNB-DU to report the results of the requested E-CID measurement.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
LMF UE Measurement ID	M		INTEGER (1.. 256, ...)		YES	reject
RAN UE Measurement ID	M		INTEGER (1.. 256, ...)		YES	reject
E-CID Measurement Result	M		9.3.1.199		YES	ignore
Cell Portion ID	O		9.3.1.200		YES	ignore

9.2.12.25 E-CID MEASUREMENT TERMINATION COMMAND

This message is sent by the gNB-CU to terminate the requested E-CID measurement.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
LMF UE Measurement ID	M		INTEGER (1.. 256, ...)		YES	reject
RAN UE Measurement ID	M		INTEGER (1.. 256, ...)		YES	reject

9.2.12.26 POSITIONING INFORMATION UPDATE

This message is sent by the gNB-DU to indicate that a change in the SRS configuration has occurred.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
SRS configuration	O		9.3.1.192		YES	ignore
SFN Initialisation Time	O		Relative Time 1900 9.3.1.183		YES	ignore

9.2.12.27 PRS CONFIGURATION REQUEST

This message is sent by a gNB-CU to request a gNB-DU to configure or update PRS transmissions.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
PRS Configuration Request Type	M		ENUMERATED (configure, off, ...)		YES	reject
PRS TRP List		1			YES	ignore
>PRS TRP Item		1 .. <maxnoof TRPs>			EACH	ignore
>>TRP ID	M		9.3.1.197		-	
>>Requested DL PRS Transmission Characteristics	C-ifConf		9.3.1.235		-	
>>PRS Transmission Off Information	C-ifOff		9.3.1.237		-	

Range bound	Explanation
maxnoofTRPs	Maximum no. of TRPs in a gNB-DU Value is 65535

Condition	Explanation
ifConf	This IE shall be present if the <i>PRS Configuration Request Type</i> IE is set to the value "configure".
ifOff	This IE shall be present if the <i>PRS Configuration Request Type</i> IE is set to the value "off".

9.2.12.28 PRS CONFIGURATION RESPONSE

This message is sent by a gNB-DU to acknowledge configuring or updating the PRS transmissions.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
PRS Transmission TRP List		0..1			YES	ignore
>PRS Transmission TRP Item		1 .. <maxnoof TRPs>			EACH	ignore
>>TRP ID	M		9.3.1.197		-	
>>PRS Configuration	M		9.3.1.117		-	
Criticality Diagnostics	O		9.3.1.3		YES	ignore

Range bound	Explanation
maxnoofTRPs	Maximum no. of TRPs in a gNB-DU Value is 65535.

9.2.12.29 PRS CONFIGURATION FAILURE

This message is sent by the gNB-DU to indicate that it cannot configure any PRS transmission.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
Transaction ID	M		9.3.1.23		YES	reject
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.12.30 MEASUREMENT PRECONFIGURATION REQUIRED

This message is sent by a gNB-CU to provide the PRS configuration information of multiple TRPs to a gNB-DU and request to configure measurement gap or PRS processing window of the UE.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
TRP PRS Information List		1			YES	ignore
>TRP PRS Information Item		1 .. <maxnoT RPs>			EACH	ignore
>>TRP ID	M		9.3.1.197		-	
>>NR PCI	M		INTEGER (0..1007)			
>>NR CGI	O		9.3.1.12			
>>PRS Configuration	M		9.3.1.177			

Range bound	Explanation
maxnoofTRPs	Maximum no. of TRPs for on-demand PRS in a gNB-DU Value is 256

9.2.12.31 MEASUREMENT PRECONFIGURATION CONFIRM

This message is sent by an gNB-DU to gNB-CU to confirm successful configuration of measurement gap or PRS processing window of the UE.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
PosMeasGapPreConfigList		0..1			YES	ignore
>PosMeasGapPreConfigToAddModList	O		OCTET STRING	Includes the <i>PosMeasGapPreConfigToAddModList</i> IE as defined in TS 38.331 [8]	YES	Ignore
>PosMeasGapPreConfigToReleaseList	O		OCTET STRING	Includes the <i>PosMeasGapPreConfigToReleaseList</i> IE as defined in TS 38.331 [8]	YES	Ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.12.32 MEASUREMENT PRECONFIGURATION REFUSE

This message is sent by gNB-DU to indicate configuration of measurement gap or PRS processing window of the UE was unsuccessful.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.12.33 MEASUREMENT ACTIVATION

This message is sent by the gNB-CU to request the gNB-DU to activate or deactivate the preconfigured measurement gap or PRS processing window for the UE.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
Request Type	M		ENUMERATED (activate, deactivate, ...)		YES	reject
PRS Measurement Info List		0..1			YES	ignore
>PRS Measurement Info Item		1 .. < <i>maxFreqLayers</i> >				
>>Point A	M		INTEGER (0..3279165)			
>>MeasPRS Periodicity	M		ENUMERATED (ms20, ms40, ms80, ms160, ...)	Measurement gap periodicity in units of ms		
>>MeasPRS Offset	M		INTEGER (0..159, ...)	Measurement gap offset in units of subframes		
>>Measurement PRS Length	M		ENUMERATED {ms1dot5, ms3, ms3dot5, ms4, ms5dot5, ms6, ms10, ms20}			

Range bound	Explanation
maxFreqLayers	Maximum no. of frequency layers. Value is 4

9.2.12.34 POSITIONING SYSTEM INFORMATION DELIVERY COMMAND

This message is sent by the gNB-CU and is used to enable the gNB-DU to broadcast the requested positioning SI.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
Transaction ID	M		9.3.1.23		YES	reject
NR CGI	M		9.3.1.12	NR cell identifier	YES	reject
PosSIType List	M		9.3.1.278		YES	reject
Confirmed UE ID	M		gNB-DU UE F1AP ID 9.3.1.5		YES	reject

9.2.13 Broadcast Context Management messages

9.2.13.1 BROADCAST CONTEXT SETUP REQUEST

This message is sent by the gNB-CU to request the setup of an MBS session context for a broadcast session, and establish an MBS-associated logical F1-connection.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
MBS Session ID	M		9.3.1.218		YES	reject
MBS Service Area	O		9.3.1.222		YES	reject
MBS CU to DU RRC Information	M		9.3.1.225		YES	reject
S-NSSAI	M		9.3.1.38		YES	reject
Broadcast MRB To Be Setup List		1			YES	reject
>Broadcast MRB to Be Setup Item IEs		1 .. <maxnoofM RBs>			EACH	reject
>>MRB ID	M		MRB ID 9.3.1.224		-	
>>MRB QoS Information	M		QoS Flow Level QoS Parameters 9.3.1.45		-	
>>MBS QoS Flows Mapped to MRB Item		1 .. <maxnoofM BSQoSFlows>			-	
>>>MBS QoS Flow Identifier	M		QoS Flow Identifier 9.3.1.63		-	
>>>MBS QoS Flow Level QoS Parameters	M		QoS Flow Level QoS Parameters 9.3.1.45		-	
>>BC Bearer Context F1-U TNL Info at CU	M		BC Bearer Context F1-U TNL Info 9.3.2.7	gNB-CU endpoint(s) of the F1 transport bearer(s). For delivery of F1-U PDU Type 1.	-	

Range bound	Explanation
<i>maxnoofMRBs</i>	Maximum no. of MRB allowed to be setup for one MBS Session, the maximum value is 32.
<i>maxnoofMBSQoSFlows</i>	Maximum no. of flows allowed to be mapped to one MRB, the maximum value is 64.

9.2.13.2 BROADCAST CONTEXT SETUP RESPONSE

This message is sent by the gNB-DU to confirm the setup of a broadcast context.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		9.3.1.220		YES	reject
Broadcast MRB Setup List		1			YES	reject
> Broadcast MRB Setup Item IEs		1 .. < <i>maxnoofMRBs</i> >			EACH	reject
>>MRB ID	M		MRB ID 9.3.1.224		-	
>>BC Bearer Context F1-U TNL Info at DU	M		BC Bearer Context F1-U TNL Info 9.3.2.7	gNB-DU endpoint(s) of the F1-U transport bearer(s). For delivery of DL PDUs.	-	
CHOICE <i>BroadcastAreaScope</i>	M				YES	ignore
> <i>CompleteSuccess</i>			NULL			
> <i>PartialSuccess</i>						
>> Broadcast Cell List		1				
>>> Broadcast Cell Item		1 .. < <i>maxcellingNBDU</i> >				
>>>>Cell ID	M		NR CGI 9.3.1.12	Identifier of the cells that establish the broadcast service successfully		
Broadcast MRB Failed To Be Setup List		0..1			YES	ignore
> Broadcast MRB Failed To Be Setup Item IEs		1 .. < <i>maxnoofMRBs</i> >			EACH	ignore
>>MRB ID	M		MRB ID 9.3.1.224		-	
>>Cause	O		9.3.1.2		-	
Criticality Diagnostics	O		9.3.1.3		YES	ignore

Range bound	Explanation
<i>maxnoofMRBs</i>	Maximum no. of MRB allowed to be setup for one MBS Session, the maximum value is 32.
<i>maxcellingNBDU</i>	Maximum no. of cells which establish the MRBs successfully in one DU, the maximum value is 512

9.2.13.3 BROADCAST CONTEXT SETUP FAILURE

This message is sent by the gNB-DU to indicate that the setup of the broadcast context was unsuccessful.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	O		9.3.1.220		YES	ignore
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.13.4 BROADCAST CONTEXT RELEASE COMMAND

This message is sent by the gNB-CU to request the gNB-DU to release the broadcast context for a given broadcast service.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		gNB-CU MBS F1AP ID 9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		gNB-DU MBS F1AP ID 9.3.1.220		YES	reject
Cause	M		9.3.1.2		YES	ignore

9.2.13.5 BROADCAST CONTEXT RELEASE COMPLETE

This message is sent by the gNB-DU to confirm the release of the broadcast context for a given broadcast service.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		9.3.1.220		YES	reject
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.13.5a BROADCAST CONTEXT RELEASE REQUEST

This message is sent by the gNB-DU to request the gNB-CU to trigger the Broadcast Context Release procedure.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		9.3.1.220		YES	reject
Cause	M		9.3.1.2		YES	ignore

9.2.13.6 BROADCAST CONTEXT MODIFICATION REQUEST

This message is sent by the gNB-CU to request the gNB-DU to modify broadcast context information.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		9.3.1.220		YES	reject
MBS Service Area	O		9.3.1.222	Overwrites any previously received MBS Service Area information	YES	reject
MBS CU to DU RRC Information	M		9.3.1.225		YES	reject
Broadcast MRB To Be Setup List		0..1			YES	reject
>Broadcast MRB to Be Setup Item IEs		1 .. <maxnoofM RBs>			EACH	reject
>>MRB ID	M		MRB ID 9.3.1.224		-	
>>MRB QoS Information	M		QoS Flow Level QoS Parameters 9.3.1.45		-	
>>MBS QoS Flows Mapped to MRB Item		1 .. <maxnoofM BSQoSFlows>			-	
>>>MBS QoS Flow Identifier	M		QoS Flow Identifier 9.3.1.63		-	
>>>MBS QoS Flow Level QoS Parameters	M		QoS Flow Level QoS Parameters 9.3.1.45		-	
>>BC Bearer Context F1-U TNL Info at CU	M		BC Bearer Context F1-U TNL Info 9.3.2.7	gNB-CU endpoint(s) of the F1 transport bearer(s). For delivery of F1-U PDU Type 1.	-	
Broadcast MRB To Be Modified List		0..1			YES	reject
>Broadcast MRB to Be Modified Item IEs		1 .. <maxnoofM RBs>			EACH	reject
>>MRB ID	M		MRB ID 9.3.1.224		-	
>>MRB QoS Information	O		QoS Flow Level QoS Parameters 9.3.1.45		-	
>>MBS QoS Flows Mapped to MRB Item		0 .. <maxnoofM BSQoSFlows>			-	
>>>MBS QoS Flow Identifier	M		QoS Flow Identifier 9.3.1.63		-	
>>>MBS QoS Flow Level QoS Parameters	M		QoS Flow Level QoS Parameters 9.3.1.45		-	
>>BC Bearer Context F1-U TNL Info at CU	O		BC Bearer Context F1-U TNL Info 9.3.2.7	Updated gNB-CU endpoint(s) of the F1 transport bearer(s). For delivery of F1-U PDU Type 1.	-	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Broadcast MRB To Be Released List		0..1			YES	reject
>Broadcast MRB to Be Released Item IEs		1 .. <maxnoofMRBs>			YES	reject
>>MRB ID	M		MRB ID 9.3.1.224		-	

Range bound	Explanation
<i>maxnoofMRBs</i>	Maximum no. of MRB allowed to be setup for one MBS Session, the maximum value is 32.
<i>maxnoofMBSQoSFlows</i>	Maximum no. of flows allowed to be mapped to one MRB, the maximum value is 64.

9.2.13.7 BROADCAST CONTEXT MODIFICATION RESPONSE

This message is sent by the gNB-DU to confirm the modification of a broadcast context.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		9.3.1.220		YES	reject
Broadcast MRB Setup List		0..1			YES	reject
>Broadcast MRB Setup Item IEs		1 .. <maxnoofM RBs>			EACH	reject
>>MRB ID	M		MRB ID 9.3.1.224		-	
>>BC Bearer Context F1-U TNL Info at DU	M		BC Bearer Context F1-U TNL Info 9.3.2.7	gNB-DU endpoint(s) of the F1-U transport bearer(s). For delivery of DL PDUs.	-	
Broadcast MRB Failed To Be Setup List		0..1			YES	ignore
>Broadcast MRB Failed To Be Setup Item IEs		1 .. <maxnoofM RBs>			EACH	ignore
>>MRB ID	M		MRB ID 9.3.1.224		-	
>>Cause	O		9.3.1.2		-	
Broadcast MRB Modified List		0..1			YES	reject
>Broadcast MRB Modified Item IEs		1 .. <maxnoofM RBs>			EACH	reject
>>MRB ID	M		MRB ID 9.3.1.224		-	
>>BC Bearer Context F1-U TNL Info at DU	O		BC Bearer Context F1-U TNL Info 9.3.2.7	Updated gNB-DU endpoint(s) of the F1-U transport bearer(s). For delivery of DL PDUs.	-	
Broadcast MRB Failed To Be Modified List		0..1			YES	ignore
>Broadcast MRB Failed To Be Modified Item IEs		1 .. <maxnoofM RBs>			EACH	ignore
>>MRB ID	M		MRB ID 9.3.1.224		-	
>>Cause	O		9.3.1.2		-	
Criticality Diagnostics	O		9.3.1.3		YES	ignore

Range bound	Explanation
<i>maxnoofMRBs</i>	Maximum no. of MRB allowed to be setup for one MBS Session, the maximum value is 32.

9.2.13.8 BROADCAST CONTEXT MODIFICATION FAILURE

This message is sent by the gNB-DU to indicate a broadcast context modification failure.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		9.3.1.220		YES	reject
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.14 Multicast Context Management messages

9.2.14.1 MULTICAST GROUP PAGING

This message is sent by the gNB-CU and is used to request the gNB-DU to multicast group page UEs.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
MBS Session ID	M		9.3.1.218		YES	reject
UE Identity List for Paging		0..1			YES	ignore
>UE Identity for Paging Item		1..<maxno of UEID for Paging>			-	
>>UE Identity Index value	M		9.3.1.39		-	
>>Paging DRX	O		9.3.1.40		-	
MC Paging Cell List		0..1			YES	ignore
>MC Paging Cell Item IEs		1..<maxno of Paging Cells>			EACH	ignore
>>NR CGI	M		9.3.1.12		-	

Range bound	Explanation
maxno of UEID for Paging	Maximum no. of UE ID for multicast group paging. Value is 4096.
maxno of Paging Cells	Maximum no. of paging cells, the maximum value is 512.

9.2.14.2 MULTICAST CONTEXT SETUP REQUEST

This message is sent by the gNB-CU to request the setup of an MBS session context for a multicast session, and establish an MBS-associated logical F1-connection.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
MBS Session ID	M		9.3.1.218		YES	reject
MBS Service Area	O		9.3.1.222		YES	reject
S-NSSAI	M		9.3.1.38		YES	reject
Multicast MRBs To Be Setup List		1			YES	reject
>Multicast MRBs to Be Setup Item IEs		1 .. <maxnoofM RBs>			EACH	reject
>>MRB ID	M		MRB ID 9.3.1.224		-	
>>MRB QoS Information	M		QoS Flow Level QoS Parameters 9.3.1.45		-	
>>MBS QoS Flows Mapped to MRB Item		1 .. <maxnoofM BSQoSFlow s>			-	
>>>MBS QoS Flow Identifier	M		QoS Flow Identifier 9.3.1.63		-	
>>>MBS QoS Flow Level QoS Parameters	M		QoS Flow Level QoS Parameters 9.3.1.45		-	
>>DL PDCP SN Length	M		ENUMERAT ED (12bits, 18bits, ...)		-	

Range bound	Explanation
<i>maxnoofMRBs</i>	Maximum no. of MRB allowed to be setup for one MBS Session, the maximum value is 32.
<i>maxnoofMBSQoSFlows</i>	Maximum no. of flows allowed to be mapped to one MRB, the maximum value is 64.

9.2.14.3 MULTICAST CONTEXT SETUP RESPONSE

This message is sent by the gNB-DU to confirm the setup of a multicast context.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		9.3.1.220		YES	reject
Multicast MRB Setup List		1			YES	reject
>Multicast MRB Setup Item IEs		1 .. <maxnoofMRBs>			EACH	Reject
>>MRB ID	M		MRB ID 9.3.1.224		-	
Multicast MRB Failed To Be Setup List		0..1			YES	ignore
>Multicast MRB Failed To Be Setup Item IEs		1 .. <maxnoofMRBs>			EACH	ignore
>>MRB ID	M		MRB ID 9.3.1.224		-	
>>Cause	O		9.3.1.2		-	
Criticality Diagnostics	O		9.3.1.3		YES	ignore

Range bound	Explanation
<i>maxnoofMRBs</i>	Maximum no. of MRB allowed to be setup for one MBS Session, the maximum value is 32.

9.2.14.4 MULTICAST CONTEXT SETUP FAILURE

This message is sent by the gNB-DU to indicate that the setup of the multicast context was unsuccessful.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	O		9.3.1.220		YES	ignore
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.14.5 MULTICAST CONTEXT RELEASE COMMAND

This message is sent by the gNB-CU to request the gNB-DU to release the multicast context for a given multicast service.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		9.3.1.220		YES	reject
Cause	M		9.3.1.2		YES	ignore

9.2.14.6 MULTICAST CONTEXT RELEASE COMPLETE

This message is sent by the gNB-DU to confirm the release of the multicast context for a given multicast service.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		9.3.1.220		YES	reject
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.14.6a MULTICAST CONTEXT RELEASE REQUEST

This message is sent by the gNB-DU to request the gNB-CU to trigger the Multicast Context Release procedure.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		9.3.1.220		YES	reject
Cause	M		9.3.1.2		YES	ignore

9.2.14.7 MULTICAST CONTEXT MODIFICATION REQUEST

This message is sent by the gNB-CU to request the gNB-DU to modify multicast context information.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		9.3.1.220		YES	reject
MBS Service Area	O		9.3.1.222		YES	reject
Multicast MRB To Be Setup List		0..1			YES	reject
>Multicast MRB to Be Setup Item IEs		1 .. <maxnoofM RBs>			EACH	reject
>>MRB ID	M		9.3.1.224		-	
>>MRB QoS Information	M		QoS Flow Level QoS Parameters 9.3.1.45		-	
>>>MBS QoS Flows Mapped to MRB Item		1 .. <maxnoofM BSQoSFlows>			-	
>>>MBS QoS Flow Identifier	M		QoS Flow Identifier 9.3.1.63		-	
>>>MBS QoS Flow Level QoS Parameters	M		QoS Flow Level QoS Parameters 9.3.1.45		-	
>>DL PDCP SN Length	M		ENUMERATED (12bits, 18bits, ...)		-	
Multicast MRB To Be Modified List		0..1			YES	reject
>Multicast MRB to Be Modified Item IEs		1 .. <maxnoofM RBs>			EACH	reject
>>MRB ID	M		9.3.1.224		-	
>>MRB QoS Information	O		QoS Flow Level QoS Parameters 9.3.1.45		-	
>>>MBS QoS Flows Mapped to MRB Item		0 .. <maxnoofM BSQoSFlows>			-	
>>>MBS QoS Flow Identifier	M		QoS Flow Identifier 9.3.1.63		-	
>>>MBS QoS Flow Level QoS Parameters	M		QoS Flow Level QoS Parameters 9.3.1.45		-	
>>DL PDCP SN Length	O		ENUMERATED (12bits, 18bits, ...)		-	
Multicast MRB To Be Released List		0..1			YES	reject
>Multicast MRB to Be Released Item IEs		1 .. <maxnoofM RBs>			YES	reject
>>MRB ID	M		9.3.1.224		-	

Range bound	Explanation
<i>maxnoofMRBs</i>	Maximum no. of MRB allowed to be setup for one MBS Session, the maximum value is 32.
<i>maxnoofMBSQoSFlows</i>	Maximum no. of flows allowed to be mapped to one MRB, the maximum value is 64.

9.2.14.8 MULTICAST CONTEXT MODIFICATION RESPONSE

This message is sent by the gNB-DU to confirm the modification of a multicast context.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		9.3.1.220		YES	reject
Multicast MRB Setup List		0..1			YES	reject
>Multicast MRB Setup Item IEs		1 .. < <i>maxnoofMRBs</i> >			EACH	reject
>>MRB ID	M		9.3.1.224		-	
Multicast MRB Failed To Be Setup List		0..1			YES	ignore
>Multicast MRB Failed To Be Setup Item IEs		1 .. < <i>maxnoofMRBs</i> >			EACH	ignore
>>MRB ID	M		9.3.1.224		-	
>>Cause	O		9.3.1.2		-	
Multicast MRB Modified List		0..1			YES	reject
>Multicast MRB Modified Item IEs		1 .. < <i>maxnoofMRBs</i> >			EACH	reject
>>MRB ID	M		9.3.1.224		-	
Multicast MRB Failed To Be Modified List		0..1			YES	ignore
>Multicast MRB Failed To Be Modified Item IEs		1 .. < <i>maxnoofMRBs</i> >			EACH	ignore
>>MRB ID	M		9.3.1.224		-	
>>Cause	O		9.3.1.2		-	
Criticality Diagnostics	O		9.3.1.3		YES	ignore

Range bound	Explanation
<i>maxnoofMRBs</i>	Maximum no. of MRB allowed to be setup for one MBS Session, the maximum value is 32.

9.2.14.9 MULTICAST CONTEXT MODIFICATION FAILURE

This message is sent by the gNB-DU to indicate a multicast context modification failure.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		9.3.1.220		YES	reject
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.14.10 MULTICAST DISTRIBUTION SETUP REQUEST

This message is sent by the gNB-DU to request the setup of a Multicast F1-U Context.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		9.3.1.220		YES	reject
MBS Multicast F1-U Context Descriptor	M		9.3.2.8		YES	reject
Multicast F1-U Context To Be Setup List		1			YES	reject
>Multicast F1-U Context To Be Setup Item		1 .. <maxnoofMRBs>			EACH	reject
>>MRB ID	M		9.3.1.224		-	
>>MRB F1-U TNL Info at DU	M		UP Transport Layer Information 9.3.2.1	gNB-DU endpoint of the F1-U transport bearer.	-	
>>MRB Progress Information	C- ifPTPForwarding		9.3.2.12		-	

Range bound	Explanation
<i>maxnoofMRBs</i>	Maximum no. of MRB allowed to be setup for one MBS Session, the maximum value is 32.
<i>maxnoofMBSQoSFlows</i>	Maximum no. of flows allowed to be mapped to one MRB, the maximum value is 64.

Condition	Explanation
ifPTPForwarding	This IE shall be present if the <i>MC F1-U Context usage</i> IE in the <i>MBS Multicast F1-U Context Descriptor</i> IE is set to "ptp forwarding".

9.2.14.11 MULTICAST DISTRIBUTION SETUP RESPONSE

This message is sent by the gNB-CU to confirm the setup of a Multicast F1-U Context.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		9.3.1.220		YES	reject
MBS Multicast F1-U Context Descriptor	M		9.3.2.8		YES	reject
Multicast F1-U Context Setup List		1			YES	reject
>Multicast F1-U Context Setup Item IEs		1 .. <maxnoofM RBs>			EACH	reject
>>MRB ID	M		9.3.1.224		-	
>>MRB F1-U TNL Info at CU	M		UP Transport Layer Information 9.3.2.1	gNB-CU endpoint of the F1-U transport bearer.	-	
Multicast F1-U Context Failed To Be Setup List		0..1			YES	ignore
>Multicast F1-U Context Failed To Be Setup Item IEs		1 .. <maxnoofM RBs>			EACH	ignore
>>MRB ID	M		9.3.1.224		-	
>>Cause	O		9.3.1.2		-	
Criticality Diagnostics	O		9.3.1.3		YES	ignore
Multicast F1-U Context Reference CU	M		9.3.2.13		YES	reject

Range bound	Explanation
<i>maxnoofMRBs</i>	Maximum no. of MRB allowed to be setup for one MBS Session, the maximum value is 32.

9.2.14.12 MULTICAST DISTRIBUTION SETUP FAILURE

This message is sent by the gNB-DU to indicate that the setup of the Multicast F1-U Context was unsuccessful.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	O		9.3.1.220		YES	ignore
MBS Multicast F1-U Context Descriptor	M		9.3.2.8		YES	reject
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.14.13 MULTICAST DISTRIBUTION RELEASE COMMAND

This message is sent by the gNB-DU to request the gNB-CU to release the Multicast F1-U Context for a given multicast MBS Session.

Direction: gNB-DU → gNB-CU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		9.3.1.220		YES	reject
MBS Multicast F1-U Context Descriptor	M		9.3.2.8		YES	reject
Cause	M		9.3.1.2		YES	ignore

9.2.14.14 MULTICAST DISTRIBUTION RELEASE COMPLETE

This message is sent by the gNB-CU to confirm the release of the Multicast F1-U Context.

Direction: gNB-CU → gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU MBS F1AP ID	M		9.3.1.219		YES	reject
gNB-DU MBS F1AP ID	M		9.3.1.220		YES	reject
MBS Multicast F1-U Context Descriptor	M		9.3.2.8		YES	reject
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.15 PDC Measurement Reporting messages

9.2.15.1 PDC MEASUREMENT INITIATION REQUEST

This message is sent by gNB-CU to initiate PDC measurements.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
RAN UE PDC Measurement ID	M		INTEGER (1..16, ...)		YES	reject
PDC Report Type	M		ENUMERATED (OnDemand, Periodic, ...)		YES	reject
PDC Measurement Periodicity	C-ifReportTypePeriodic		ENUMERATED (80ms, 120ms, 160ms, 240ms, 320ms, 480ms, 640ms, 1024ms, 1280ms, 2048ms, 2560ms, 5120ms, ...)		YES	reject
PDC Measurement Quantities		1 .. <maxnoMeasPDC>			EACH	reject
>PDC Measurement Quantities Item	M		ENUMERATED (NR PDC TADV, gNB RX-TX, ...)		-	

Range bound	Explanation
maxnoMeasPDC	Maximum no. of PDC measured quantities that can be configured and reported with one message. Value is 16. Maximum is 1 in this release.

Condition	Explanation
ifReportTypePeriodic	This IE shall be present if the <i>PDC Report Type</i> IE is set to the value "Periodic".

9.2.15.2 PDC MEASUREMENT INITIATION RESPONSE

This message is sent by gNB-DU to indicate that the requested PDC measurement is successfully initiated.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
RAN UE PDC Measurement ID	M		INTEGER (1..16, ...)		YES	reject
PDC Measurement Result	O		9.3.1.232		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.15.3 PDC MEASUREMENT INITIATION FAILURE

This message is sent by gNB-DU to indicate that the requested PDC measurement cannot be initiated.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	reject
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
RAN UE PDC Measurement ID	M		INTEGER (1..16, ...)		YES	ignore
Cause	M		9.3.1.2		YES	ignore
Criticality Diagnostics	O		9.3.1.3		YES	ignore

9.2.15.4 PDC MEASUREMENT REPORT

This message is sent by gNB-DU to report the results of the requested PDC measurement.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
RAN UE PDC Measurement ID	M		INTEGER (1..16, ...)		YES	reject
PDC Measurement Result	M		9.3.1.232		YES	ignore

9.2.15.5 PDC MEASUREMENT TERMINATION COMMAND

This message is sent by the gNB-CU to request the gNB-DU to terminate an ongoing periodical PDC measurement.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
RAN UE PDC Measurement ID	M		INTEGER (1..16, ...)		YES	ignore

9.2.15.6 PDC MEASUREMENT FAILURE INDICATION

This message is sent by the gNB-DU to indicate that the previously requested PDC measurements can no longer be reported.

Direction: gNB-DU → gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
RAN UE PDC Measurement ID	M		INTEGER (1..16, ...)		YES	ignore
Cause	M		9.3.1.2		YES	ignore

9.2.16 QMC messages

9.2.16.1 QOE INFORMATION TRANSFER

This message is sent by a gNB-CU to a gNB-DU, to indicate information related to RAN visible QoE.

Direction: gNB-CU → gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.3.1.1		YES	ignore
gNB-CU UE F1AP ID	M		9.3.1.4		YES	reject
gNB-DU UE F1AP ID	M		9.3.1.5		YES	reject
QoE Information List			0..1		YES	ignore
>QoE Information Item			1..<maxno ofQoEInformation>		Each	ignore
>>QoE Metrics	O		9.3.1.260		-	-

Range bound	Explanation
maxnoofQoEInformation	Maximum no. of QoE information for one UE, the maximum value is 16.

9.3 Information Element Definitions

9.3.1 Radio Network Layer Related IEs

9.3.1.1 Message Type

The *Message Type* IE uniquely identifies the message being sent. It is mandatory for all messages.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Message Type				
>Procedure Code	M		INTEGER (0..255)	
>Type of Message	M		CHOICE (Initiating Message, Successful Outcome, Unsuccessful Outcome, ...)	

9.3.1.2 Cause

The purpose of the *Cause* IE is to indicate the reason for a particular event for the F1AP protocol.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE Cause Group	M			
>Radio Network Layer				
>>Radio Network Layer Cause	M		ENUMERATED (Unspecified, RL failure-RLC, Unknown or already allocated gNB-CU UE F1AP ID, Unknown or already allocated gNB-DU UE F1AP ID, Unknown or inconsistent pair of UE F1AP ID, Interaction with other procedure, Not supported QCI Value, Action Desirable for Radio Reasons, No Radio Resources Available, Procedure cancelled, Normal Release, ..., Cell not available, RL failure-others, UE rejection, Resources not available for the slice(s), AMF initiated abnormal release, Release due to Pre-Emption, PLMN not served by the gNB-CU, Multiple DRB ID Instances, Unknown DRB ID, Multiple BH RLC CH ID Instances, Unknown BH RLC CH ID, CHO-CPC resources to be changed, NPN not supported, NPN access denied, gNB-CU Cell Capacity Exceeded, Report Characteristics Empty, Existing Measurement ID, Measurement Temporarily not Available, Measurement not Supported For The Object, Unknown BAP address, Unknown BAP routing ID, Insufficient UE Capabilities, SCG activation deactivation failure, SCG deactivation failure due to data transmission, Requested Item not Supported on Time, Unknown or already allocated gNB-CU MBS F1AP ID, Unknown or already allocated gNB-DU MBS F1AP ID, Unknown or inconsistent pair of MBS F1AP ID, Unknown or inconsistent MRB ID, TAT-SDT expiry)	
>Transport Layer				
>>Transport Layer Cause	M		ENUMERATED (Unspecified, Transport Resource Unavailable, ... , Unknown TNL address for IAB, Unknown UP TNL information for IAB)	
>Protocol				
>>Protocol Cause	M		ENUMERATED (Transfer Syntax Error, Abstract Syntax Error (Reject), Abstract Syntax Error (Ignore and Notify), Message not Compatible with Receiver State, Semantic Error, Abstract Syntax Error (Falsely Constructed Message), Unspecified, ...)	
>Misc				
>>Miscellaneous Cause	M		ENUMERATED (Control Processing Overload, Not enough User Plane Processing Resources, Hardware Failure, O&M Intervention, Unspecified, ...)	

The meaning of the different cause values is described in the following table. In general, "not supported" cause values indicate that the related capability is missing. On the other hand, "not available" cause values indicate that the related capability is present, but insufficient resources were available to perform the requested action.

Radio Network Layer cause	Meaning
Unspecified	Sent for radio network layer cause when none of the specified cause values applies.
RL Failure-RLC	The action is due to an RL failure caused by exceeding the maximum number of ARQ retransmissions.
Unknown or already allocated gNB-CU UE F1AP ID	The action failed because the gNB-CU UE F1AP ID is either unknown, or (for a first message received at the gNB-CU) is known and already allocated to an existing context.
Unknown or already allocated gNB-DU UE F1AP ID	The action failed because the gNB-DU UE F1AP ID is either unknown, or (for a first message received at the gNB-DU) is known and already allocated to an existing context.
Unknown or inconsistent pair of UE F1AP ID	The action failed because both UE F1AP IDs are unknown, or are known but do not define a single UE context.
Interaction with other procedure	The action is due to an ongoing interaction with another procedure.
Not supported QCI Value	The action failed because the requested QCI is not supported.
Action Desirable for Radio Reasons	The reason for requesting the action is radio related.
No Radio Resources Available	The cell(s) in the requested node don't have sufficient radio resources available.
Procedure cancelled	The sending node cancelled the procedure due to other urgent actions to be performed.
Normal Release	The action is due to a normal release of the UE (e.g. because of mobility) and does not indicate an error.
Cell Not Available	The action failed due to no cell available in the requested node.
RL Failure-others	The action is due to an RL failure caused by other radio link failures than exceeding the maximum number of ARQ retransmissions.
UE rejection	The action is due to gNB-CU's rejection of a UE access request.
Resources not available for the slice(s)	The requested resources are not available for the slice(s).
AMF initiated abnormal release	The release is triggered by an error in the AMF or in the NAS layer.
Release due to Pre-Emption	Release is initiated due to pre-emption.
PLMN not served by the gNB-CU	The PLMN indicated by the UE is not served by the gNB-CU.
Multiple DRB ID Instances	The action failed because multiple instances of the same DRB had been provided.
Unknown DRB ID	The action failed because the DRB ID is unknown.
Multiple BH RLC CH ID Instances	The action failed because multiple instances of the same BH RLC CH ID had been provided. This cause value is only applicable to IAB.
Unknown BH RLC CH ID	The action failed because the BH RLC CH ID is unknown. This cause value is only applicable to IAB.
CHO-CPC resources to be changed	The gNB-DU requires gNB-CU to replace, i.e. overwrite the configuration of indicated candidate target cell.
NPN not supported	The action fails because the indicated SNPN is not supported in the node.
NPN access denied	The action is due to rejection of a UE access request for NPN.
gNB-CU Cell Capacity Exceeded	The number of cells requested to be added was exceeding maximum cell capacity in the gNB-CU.
Report Characteristics Empty	The action failed because there is no measurement object in the report characteristics.
Existing Measurement ID	The action failed because the measurement ID is already used.
Measurement Temporarily not Available	The gNB-DU can temporarily not provide the requested measurement object.
Measurement not Supported For The Object	At least one of the concerned object(s) does not support the requested measurement.
Unknown BAP address	The action failed because the BAP address is unknown. This cause value is only applicable to IAB.
Unknown BAP routing ID	The action failed because the BAP routing ID is unknown. This cause value is only applicable to IAB.
Insufficient UE Capabilities	The setup can't proceed due to insufficient UE capabilities.
SCG activation deactivation failure	The action failed due to rejection of the SCG activation deactivation request.

SCG deactivation failure due to data transmission	The SCG deactivation failure due to ongoing or arriving data transmission.
Requested Item not Supported on Time	The gNB-DU is unable to provide the measurement results on time.
Unknown or already allocated gNB-CU MBS F1AP ID	The action failed because the gNB-CU MBS F1AP ID is either unknown, or (for a first message received at the gNB-CU) is known and already allocated to an existing context.
Unknown or already allocated gNB-DU MBS F1AP ID	The action failed because the gNB-DU MBS F1AP ID is either unknown, or (for a first message received at the gNB-DU) is known and already allocated to an existing context.
Unknown or inconsistent pair of MBS F1AP ID	The action failed because both MBS F1AP IDs are unknown, or are known but do not define a single MBS context.
Unknown or inconsistent MRB ID	The action failed because the MRB ID is unknown or inconsistent.
TAT-SDT expiry	The UE context release is requested from the gNB-DU due to the expiry of the Timing Alignment timer for CG-SDT.

Transport Layer cause	Meaning
Unspecified	Sent when none of the above cause values applies but still the cause is Transport Network Layer related.
Transport Resource Unavailable	The required transport resources are not available.
Unknown TNL address for IAB	The action failed because the TNL address is unknown. This cause value is only applicable to IAB.
Unknown UP TNL information for IAB	The action failed because the UP TNL information is unknown. This cause value is only applicable to IAB.

Protocol cause	Meaning
Transfer Syntax Error	The received message included a transfer syntax error.
Abstract Syntax Error (Reject)	The received message included an abstract syntax error and the concerning criticality indicated "reject".
Abstract Syntax Error (Ignore And Notify)	The received message included an abstract syntax error and the concerning criticality indicated "ignore and notify".
Message Not Compatible With Receiver State	The received message was not compatible with the receiver state.
Semantic Error	The received message included a semantic error.
Abstract Syntax Error (Falsely Constructed Message)	The received message contained IEs or IE groups in wrong order or with too many occurrences.
Unspecified	Sent when none of the above cause values applies but still the cause is Protocol related.

Miscellaneous cause	Meaning
Control Processing Overload	Control processing overload.
Not Enough User Plane Processing Resources Available	No enough resources are available related to user plane processing.
Hardware Failure	Action related to hardware failure.
O&M Intervention	The action is due to O&M intervention.
Unspecified Failure	Sent when none of the above cause values applies and the cause is not related to any of the categories Radio Network Layer, Transport Network Layer or Protocol.

9.3.1.3 Criticality Diagnostics

The *Criticality Diagnostics* IE is sent by the gNB-DU or the gNB-CU when parts of a received message have not been comprehended or were missing, or if the message contained logical errors. When applicable, it contains information about which IEs were not comprehended or were missing.

For further details on how to use the *Criticality Diagnostics* IE, (see clause 10). The conditions for inclusion of the *Transaction ID* IE are described in clause 10.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Procedure Code	O		INTEGER (0..255)	Procedure Code is to be used if Criticality Diagnostics is part of Error Indication procedure, and not within the response message of the same procedure that caused the error.
Triggering Message	O		ENUMERATED(initializing message, successful outcome, unsuccessful outcome)	The Triggering Message is used only if the Criticality Diagnostics is part of Error Indication procedure.
Procedure Criticality	O		ENUMERATED(reject, ignore, notify)	This Procedure Criticality is used for reporting the Criticality of the Triggering message (Procedure).
Transaction ID	O		9.3.1.23	
Information Element Criticality Diagnostics		<i>0 .. <maxnoof Errors></i>		
>IE Criticality	M		ENUMERATED(reject, ignore, notify)	The IE Criticality is used for reporting the criticality of the triggering IE. The value 'ignore' is not applicable.
>IE ID	M		INTEGER (0..65535)	The IE ID of the not understood or missing IE.
>Type of Error	M		ENUMERATED(not understood, missing, ...)	

Range bound	Explanation
maxnoofErrors	Maximum no. of IE errors allowed to be reported with a single message. The value for maxnoofErrors is 256.

9.3.1.4 gNB-CU UE F1AP ID

The gNB-CU UE F1AP ID uniquely identifies the UE association over the F1 interface within the gNB-CU.

NOTE: If F1-C signalling transport is shared among multiple interface instances, the value of the gNB-CU UE F1AP ID is allocated so that it can be associated with the corresponding F1-C interface instance.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
gNB-CU UE F1AP ID	M		INTEGER (0 .. 2 ³² -1)	

9.3.1.5 gNB-DU UE F1AP ID

The gNB-DU UE F1AP ID uniquely identifies the UE association over the F1 interface within the gNB-DU.

NOTE: If F1-C signalling transport is shared among multiple interface instances, the value of the gNB-DU UE F1AP ID is allocated so that it can be associated with the corresponding F1-C interface instance.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
gNB-DU UE F1AP ID	M		INTEGER (0 .. 2 ³² -1)	

9.3.1.6 RRC-Container

This information element contains a gNB-CU→UE or a UE → gNB-CU message that is transferred without interpretation in the gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
RRC-Container	M		OCTET STRING	

9.3.1.7 SRB ID

This IE uniquely identifies a SRB for a UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
SRB ID	M		INTEGER (0..3, ...)	Corresponds to the identities of SRB as defined in TS 38.331 [8]. Value 0 indicates SRB0, value 1 indicates SRB1, etc.

9.3.1.8 DRB ID

This IE uniquely identifies a DRB for a UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
DRB ID	M		INTEGER (1..32, ...)	Corresponds to the <i>DRB-Identity</i> defined in TS 38.331 [8].

9.3.1.9 gNB-DU ID

The gNB-DU ID uniquely identifies the gNB-DU at least within a gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
gNB-DU ID	M		INTEGER (0 .. $2^{36}-1$)	The gNB-DU ID is independently configured from cell identifiers, i.e. no connection between gNB-DU ID and cell identifiers.

9.3.1.10 Served Cell Information

This IE contains cell configuration information of a cell in the gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
NR CGI	M		9.3.1.12		-	
NR PCI	M		INTEGER (0..1007)	Physical Cell ID	-	
5GS TAC	O		9.3.1.29	5GS Tracking Area Code	-	
Configured EPS TAC	O		9.3.1.29a		-	
Served PLMNs		<i>1..<maxnoofB PLMNs></i>		Broadcast PLMNs in SIB 1 associated to the NR Cell Identity in the NR CGI IE	-	
>PLMN Identity	M		9.3.1.14		-	
>TAI Slice Support List	O		Slice Support List 9.3.1.37	Supported S-NSSAIs per PLMN or per SNPN.	YES	ignore
>NPN Support Information	O		9.3.1.156	Supported NPNs per PLMN.	YES	reject
>Extended TAI Slice Support List	O		Extended Slice Support List 9.3.1.165	Additional Supported S-NSSAIs per PLMN or per SNPN.	YES	reject
>TAI NSAG Support List	O		9.3.1.273	NSAG information associated with the slices per TAC, per PLMN or per SNPN.	YES	ignore
CHOICE <i>NR-Mode-Info</i>	M				-	
> <i>FDD</i>					-	
>> FDD Info		1			-	
>>>UL FreqInfo	M		NR Frequency Info 9.3.1.17	This IE is ignored if the <i>Cell Direction</i> IE is included and set to "dl-only".	-	
>>>DL FreqInfo	M		NR Frequency Info 9.3.1.17	This IE is ignored if the <i>Cell Direction</i> IE is included and set to "ul-only".	-	
>>>UL Transmission Bandwidth	M		Transmission Bandwidth 9.3.1.15	This IE is ignored if the <i>Cell Direction</i> IE is included and set to "dl-only".	-	
>>>DL Transmission Bandwidth	M		Transmission Bandwidth 9.3.1.15	This IE is ignored if the <i>Cell Direction</i> IE is included and set to "ul-only".	-	
>>>UL Carrier List	O		NR Carrier List 9.3.1.137	If included, the <i>UL Transmission Bandwidth</i> IE shall be ignored.	YES	ignore
>>>DL Carrier List	O		NR Carrier List 9.3.1.137	If included, the <i>DL Transmission Bandwidth</i> IE shall be ignored.	YES	ignore
> <i>TDD</i>					-	
>> TDD Info		1			-	
>>>NR FreqInfo	M		NR Frequency Info 9.3.1.17		-	
>>>Transmission Bandwidth	M		Transmission Bandwidth 9.3.1.15		-	
>>>Intended TDD DL-UL Configuration	O		9.3.1.89		YES	ignore

>>>TDD UL-DL Configuration Common NR	O		OCTET STRING	Includes the <i>tdd-UL-DL-ConfigurationCommon</i> contained in the <i>ServingCellConfigCommon</i> IE as defined in TS 38.331 [8]	YES	ignore
>>>Carrier List	O		NR Carrier List 9.3.1.137	If included, the Transmission Bandwidth IE shall be ignored.	YES	ignore
>NR-U					YES	ignore
>>NR-U Channel Info List		1..<maxnoofNR-UChannelIDs>			-	
>>>NR-U Channel Info Item					-	
>>>>NR-U Channel ID	M		INTEGER (1..maxnoofNR-UChannelIDs, ...)	Index to uniquely identify the part of the NR-U Channel Bandwidth consisting of a contiguous set of resource blocks (RBs) on which a channel access procedure is performed in shared spectrum. Value 1 represents the first part of the NR-U Channel Bandwidth on which a channel access procedure is performed. Value 2 represents the second part of the NR-U Channel Bandwidth on which a channel access procedure is performed, and so on.	-	
>>>>NR-U ARFCN	M		INTEGER (0..maxNRARFCN)	It represents the centre frequency of the NR-U Channel Bandwidth for NR bands restricted to operation with shared spectrum channel access, as defined in TS 37.213 [46]. Allowed values are specified in TS 38.101-1 [26] in Table 5.4.2.3-2, Table 5.4.2.3-3 and Table 5.4.2.3-4.	-	

>>>>NR-U Channel Bandwidth	M		ENUMERATE D (10MHz, 20MHz, 40MHz, 60 MHz, 80 MHz, ...)		-	
Measurement Timing Configuration	M		OCTET STRING	Includes the <i>MeasurementTimingConfiguration</i> inter-node message defined in TS 38.331 [8].	-	
RANAC	O		RAN Area Code 9.3.1.57		YES	ignore
Extended Served PLMNs List		0..1		This is included if more than 6 Served PLMNs is to be signalled.	YES	ignore
>Extended Served PLMNs Item		1 ..<maxnoofExtendedBPLMNs>			-	
>>PLMN Identity	M		9.3.1.14		-	
>>TAI Slice Support List	O		Slice Support List 9.3.1.37	Supported S-NSSAIs per PLMN or per SNPN.	-	
>>NPN Support Information	O		9.3.1.156	Supported NPNs per PLMN.	YES	reject
>>Extended TAI Slice Support List	O		Extended Slice Support List 9.3.1.165	Additional Supported S-NSSAIs per PLMN or per SNPN.	YES	reject
>TAI NSAG Support List	O		9.3.1.273	NSAG information associated with the slices per TAC, per PLMN or per SNPN.	YES	ignore
Cell Direction	O		9.3.1.78		YES	ignore

Broadcast PLMN Identity Info List		<i>0..<maxnoofB PLMNsNR></i>		This IE corresponds to the <i>PLMN-IdentityInfoList</i> IE and the <i>NPN-IdentityInfoList</i> IE (if available) in <i>SIB1</i> as specified in TS 38.331 [8]. All PLMN Identities and associated information contained in the <i>PLMN-IdentityInfoList</i> IE and NPN identities and associated information contained in the <i>NPN-IdentityInfoList</i> IE (if available) are included and provided in the same order as broadcast in <i>SIB1</i> . NOTE: In case of NPN-only cell, the PLMN Identities and associated information contained in the <i>PLMN-IdentityInfoList</i> IE are not included.	YES	ignore
Cell Type	O		9.3.1.87		YES	ignore
>PLMN Identity List	M		Available PLMN List 9.3.1.65	Broadcast PLMN IDs in <i>SIB1</i> associated to the <i>NR Cell Identity</i> IE	-	
>Extended PLMN Identity List	O		Extended Available PLMN List 9.3.1.76		-	
>5GS-TAC	O		OCTET STRING (3)		-	
>NR Cell Identity	M		BIT STRING (36)		-	
>RANAC	O		RAN Area Code 9.3.1.57		-	
>Configured TAC Indication	O		9.3.1.87a	NOTE: This IE is associated with the 5GS TAC in the <i>Broadcast PLMN Identity Info List</i> IE	YES	ignore
>NPN Broadcast Information	O		9.3.1.157	If this IE is included the content of the <i>PLMN Identity List</i> IE and <i>Extended PLMN Identity List</i> IE if present in the <i>Broadcast PLMN Identity Info List</i> IE is ignored.	YES	reject
Configured TAC Indication	O		9.3.1.87a	NOTE: This IE is associated with the 5GS TAC on top-level of the <i>Served Cell Information</i> IE	YES	ignore

Aggressor gNB Set ID	O		9.3.1.93	This IE indicates the associated aggressor gNB Set ID of the cell	YES	ignore
Victim gNB Set ID	O		9.3.1.93	This IE indicates the associated Victim gNB Set ID of the cell	YES	ignore
IAB Info IAB-DU	O		9.3.1.106		YES	ignore
SSB Positions In Burst	O		9.3.1.138		YES	ignore
NR PRACH Configuration	O		9.3.1.139		YES	ignore
SFN Offset	O		9.3.1.208		YES	ignore
NPN Broadcast Information	O		9.3.1.157		YES	reject
Supported MBS FSA ID List		<i>0..<maxnoofMBSFSAs></i>		Shall contain all MBS Frequency Selection Area Identities associated with the NR CGI.	YES	ignore
>MBS Frequency Selection Area Identity	M		OCTET STRING(3)		–	
RedCap Broadcast Information	O		BIT STRING (SIZE(8))	The presence of this IE indicates that the intraFreqReselectionRedCap IE is broadcast in SIB1 of the corresponding cell, see TS 38.331 [8]. Each position in the bitmap indicates which RedCap UEs are allowed access, according to the setting of RedCap barring indicators in SIB1, see TS 38.331 [8]. First bit = 1Rx, second bit = 2Rx, third bit = halfDuplex, other bits reserved for future use. Value '1' indicates 'access allowed'. Value '0' indicates 'access not allowed'.	YES	ignore

Range bound	Explanation
maxnoofBPLMNs	Maximum no. of Broadcast PLMN Ids. Value is 6.
maxnoofExtendedBPLMNs	Maximum no. of Extended Broadcast PLMN Ids. Value is 6.
maxnoofBPLMNsNR	Maximum no. of PLMN Ids.broadcast in an NR cell. Value is 12.
maxnoofNR-UChannelIDs	Maximum no. NR-U Channel IDs in a cell. Value is 16.
maxnoofMBSFSAs	Maximum no. of MBS FSAs by a cell. Value is 256.

9.3.1.11 Transmission Action Indicator

This IE indicates actions for the gNB-DU for the data transmission to the UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Transmission Action Indicator	M		ENUMERATED (stop, ..., restart)	

9.3.1.12 NR CGI

The NR Cell Global Identifier (NR CGI) is used to globally identify a cell.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
PLMN Identity	M		9.3.1.14	
NR Cell Identity	M		BIT STRING (SIZE(36))	

9.3.1.13 Time To wait

This IE defines the minimum allowed waiting times.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Time to wait	M		ENUMERATED(1s, 2s, 5s, 10s, 20s, 60s)	

9.3.1.14 PLMN Identity

This information element indicates the PLMN Identity.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
PLMN Identity	M		OCTET STRING (SIZE(3))	<ul style="list-style-type: none"> - digits 0 to 9, encoded 0000 to 1001, - 1111 used as filler digit, two digits per octet, - bits 4 to 1 of octet n encoding digit 2n-1 - bits 8 to 5 of octet n encoding digit 2n <p>-The PLMN identity consists of 3 digits from MCC followed by either</p> <ul style="list-style-type: none"> -a filler digit plus 2 digits from MNC (in case of 2 digit MNC) or -3 digits from MNC (in case of a 3 digit MNC).

9.3.1.15 Transmission Bandwidth

The *Transmission Bandwidth* IE is used to indicate the UL or DL transmission bandwidth.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
NR SCS	M		ENUMERATED (scs15, scs30, scs60, scs120, ... , scs480, scs960)	The values scs15, scs30, scs60, scs120, scs480 and scs960 corresponds to the sub carrier spacing in TS 38.104 [17].
NRB	M		ENUMERATED (nrb11, nrb18, nrb24, nrb25, nrb31, nrb32, nrb38, nrb51, nrb52, nrb65, nrb66, nrb78, nrb79, nrb93, nrb106, nrb107, nrb121, nrb132, nrb133, nrb135, nrb160, nrb162, nrb189, nrb216, nrb217, nrb245, nrb264, nrb270, nrb273, ..., nrb33, nrb62, nrb124, nrb148, nrb248, nrb44, nrb58, nrb92, nrb119, nrb188, nrb242)	This IE is used to indicate the UL or DL transmission bandwidth expressed in units of resource blocks "N _{RB} " (TS 38.104 [17]). The values nrb11, nrb18, etc. correspond to the number of resource blocks "N _{RB} " 11, 18, etc.

9.3.1.16 Void

Reserved for future use.

9.3.1.17 NR Frequency Info

The NR Frequency Info defines the carrier frequency used in a cell for a given direction (UL or DL) in FDD or for both UL and DL directions in TDD or for an SUL carrier.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
NR ARFCN	M		INTEGER (0..maxNRARFCN)	RF Reference Frequency as defined in TS 38.104 [17] section 5.4.2.1. The frequency provided in this IE identifies the absolute frequency position of the reference resource block (Common RB 0) of the carrier. Its lowest subcarrier is also known as Point A.	–	
SUL Information	O		9.3.1.28		–	
Frequency Band List		1			–	
>Frequency Band Item		1..<maxno ofNrCellBands>			–	
>>NR Frequency Band	M		INTEGER (1..1024, ...)	Operating Band as defined in TS 38.104 [17] section 5.4.2.3. The value 1 corresponds to NR operating band n1, value 2 corresponds to NR operating band n2, etc.	–	
>>>Supported SUL band List		0..<maxno ofNrCellBands>			–	
>>>>Supported SUL band Item	M		INTEGER (1..1024, ...)	Supplementary NR Operating Band as defined in TS 38.104 [17] section 5.4.2.3 that can be used for SUL duplex mode as per TS 38.101-1 [26] table 5.2.-1. The value 80 corresponds to NR operating band n80, value 81 corresponds to NR operating band n81, etc.	–	
Frequency Shift 7p5khz	O		ENUMERATED (false, true, ...)	Indicate whether the value of Δ_{shift} is 0kHz or 7.5kHz when calculating $F_{\text{REF,shift}}$ as defined in Section 5.4.2.1 of TS 38.104 [17].	YES	ignore

Range bound	Explanation
maxNRARFCN	Maximum value of NR ARFCNs. Value is 3279165.
maxnoofNrCellBands	Maximum no. of frequency bands supported for a NR cell. Value is 32.

9.3.1.18 gNB-DU System Information

This IE contains the system information generated by the gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
MIB message	M		OCTET STRING	Includes the <i>MIB</i> message, as defined in subclause 6.2.2 in TS 38.331 [8].	-	
SIB1 message	M		OCTET STRING	Includes the <i>SIB1</i> message, as defined in subclause 6.2.2 in TS 38.331 [8].	-	
SIB12 message	O		OCTET STRING	Includes the <i>SIB12</i> IE, as defined in subclause 6.3.1 in TS 38.331 [8].	YES	ignore
SIB13 message	O		OCTET STRING	Includes the <i>SIB13</i> IE, as defined in subclause 6.3.1 in TS 38.331 [8].	YES	ignore
SIB14 message	O		OCTET STRING	Includes the <i>SIB14</i> IE, as defined in subclause 6.3.1 in TS 38.331 [8].	YES	ignore
SIB10 message	O		OCTET STRING	Includes the <i>SIB10</i> IE, as defined in subclause 6.3.1 in TS 38.331 [8].	YES	ignore
SIB17 message	O		OCTET STRING	Includes the <i>SIB17</i> IE, as defined in subclause 6.3.1 in TS 38.331 [8].	YES	ignore
SIB20 message	O		OCTET STRING	Includes the <i>SIB20</i> IE, as defined in subclause 6.3.1 in TS 38.331 [8].	YES	ignore
SIB15 message	O		OCTET STRING	Includes the <i>SIB15</i> IE, as defined in subclause 6.3.1 in TS 38.331 [8].	YES	ignore

9.3.1.19 E-UTRAN QoS

This IE defines the QoS to be applied to a DRB or to a BH RLC channel for EN-DC case.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
QCI	M		INTEGER (0..255)	QoS Class Identifier defined in TS 23.401 [10]. Logical range and coding specified in TS 23.203 [11]. For a BH RLC channel, the Packet Delay Budget included in QCI defines the upper bound for the time that a packet may be delayed between the gNB-DU and its child IAB-MT.		
Allocation and Retention Priority	M		9.3.1.20			
GBR QoS Information	O		9.3.1.21	This IE shall be present for GBR bearers only and is ignored otherwise.		
ENB DL Transport Layer Address	O		Transport Layer Address 9.3.2.3	DL Transport Layer Address of node terminating PDCP. Included for MN-terminated SCG bearers.	YES	ignore

9.3.1.20 Allocation and Retention Priority

This IE specifies the relative importance compared to other E-RABs for allocation and retention of the E-UTRAN Radio Access Bearer.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Priority Level	M		INTEGER (0..15)	Desc.: This IE should be understood as "priority of allocation and retention" (see TS 23.401 [10]). Usage: Value 15 means "no priority". Values between 1 and 14 are ordered in decreasing order of priority, i.e. 1 is the highest and 14 the lowest. Value 0 shall be treated as a logical error if received.
Pre-emption Capability	M		ENUMERATED(sh all not trigger pre-emption, may trigger pre-emption)	Desc.: This IE indicates the pre-emption capability of the request on other E-RABs (see TS 23.401 [10]). Usage: The E-RAB shall not pre-empt other E-RABs or, the E-RAB may pre-empt other E-RABs The Pre-emption Capability indicator applies to the allocation of resources for an E-RAB and as such it provides the trigger to the pre-emption procedures/processes of the eNB.
Pre-emption Vulnerability	M		ENUMERATED(not pre-emptable, pre-emptable)	Desc.: This IE indicates the vulnerability of the E-RAB to pre-emption of other E-RABs (see TS 23.401 [10]). Usage: The E-RAB shall not be pre-empted by other E-RABs or the E-RAB may be pre-empted by other RABs. Pre-emption Vulnerability indicator applies for the entire duration of the E-RAB, unless modified, and as such indicates whether the E-RAB is a target of the pre-emption procedures/processes of the eNB.

9.3.1.21 GBR QoS Information

This IE indicates the maximum and guaranteed bit rates of a GBR E-RAB for downlink and uplink.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
E-RAB Maximum Bit Rate Downlink	M		Bit Rate 9.3.1.22	Maximum Bit Rate in DL (i.e. from EPC to E-UTRAN) for the bearer. Details in TS 23.401 [10].
E-RAB Maximum Bit Rate Uplink	M		Bit Rate 9.3.1.22	Maximum Bit Rate in UL (i.e. from E-UTRAN to EPC) for the bearer. Details in TS 23.401 [10].
E-RAB Guaranteed Bit Rate Downlink	M		Bit Rate 9.3.1.22	Guaranteed Bit Rate (provided that there is data to deliver) in DL (i.e. from EPC to E-UTRAN) for the bearer. Details in TS 23.401 [10].
E-RAB Guaranteed Bit Rate Uplink	M		Bit Rate 9.3.1.22	Guaranteed Bit Rate (provided that there is data to deliver) in UL (i.e. from E-UTRAN to EPC) for the bearer. Details in TS 23.401 [10].

9.3.1.22 Bit Rate

This IE indicates the number of bits delivered by NG-RAN in UL or to NG-RAN in DL within a period of time, divided by the duration of the period. It is used, for example, to indicate the maximum or guaranteed bit rate for a GBR QoS flow, or an aggregated maximum bit rate.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Bit Rate	M		INTEGER (0..4,000,000,000,000,...)	The unit is: bit/s

9.3.1.23 Transaction ID

The *Transaction ID* IE uniquely identifies a procedure among all ongoing parallel procedures of the same type initiated by the same protocol peer. Messages belonging to the same procedure use the same Transaction ID. The Transaction ID is determined by the initiating peer of a procedure.

NOTE: If F1-C signalling transport is shared among multiple interface instances, the Transaction ID is allocated so that it can be associated with an F1-C interface instance. The Transaction ID may identify more than one interface instance.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Transaction ID	M		INTEGER (0..255, ...)	

9.3.1.24 DRX Cycle

The *DRX Cycle* IE is to indicate the desired DRX cycle.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Long DRX Cycle Length	M		ENUMERATED (ms10, ms20, ms32, ms40, ms60, ms64, ms70, ms80, ms128, ms160, ms256, ms320, ms512, ms640, ms1024, ms1280, ms2048, ms2560, ms5120, ms10240, ...)	Corresponds to the <i>preferredDRX-LongCycle</i> contained in the <i>UEAssistanceInformation</i> message defined in TS 38.331 [8]
Short DRX Cycle Length	O		ENUMERATED (ms2, ms3, ms4, ms5, ms6, ms7, ms8, ms10, ms14, ms16, ms20, ms30, ms32, ms35, ms40, ms64, ms80, ms128, ms160, ms256, ms320, ms512, ms640, ...)	Corresponds to the <i>preferredDRX-ShortCycle</i> contained in the <i>UEAssistanceInformation</i> message defined in TS 38.331 [8]
Short DRX Cycle Timer	O		INTEGER (1..16)	Corresponds to the <i>preferredDRX-ShortCycleTimer</i> contained in the <i>UEAssistanceInformation</i> message defined in TS 38.331 [8]

9.3.1.25 CU to DU RRC Information

This IE contains the RRC Information that are sent from gNB-CU to gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
CG-ConfigInfo	O		OCTET STRING	Includes the <i>CG-ConfigInfo</i> message, as defined in TS 38.331 [8].	-	
UE-CapabilityRAT-ContainerList	O		OCTET STRING	This IE is used in the NG-RAN and it includes the <i>UE-CapabilityRAT-ContainerList</i> IE, as defined in TS 38.331 [8].	-	
MeasConfig	O		OCTET STRING	Includes the <i>MeasConfig</i> IE, as defined in TS 38.331 [8] (without the <i>MeasGapConfig</i> IE). For EN-DC/NGEN-DC operation, includes the list of FR2 frequencies for which the gNB-CU requests the gNB-DU to generate gaps. For NG-RAN, NE-DC and MN for NR-NR DC, includes the list of FR1 and/or FR2 frequencies, for which the gNB-CU requests the gNB-DU to generate gaps and the gap type (per-UE or per-FR).	-	
Handover Preparation Information	O		OCTET STRING	Includes the <i>HandoverPreparationInformation</i> message, as defined in TS 38.331 [8].	YES	ignore
CellGroupConfig	O		OCTET STRING	Includes the <i>CellGroupConfig</i> IE, as defined in TS 38.331 [8].	YES	ignore
Measurement Timing Configuration	O		OCTET STRING	Contains the <i>MeasurementTimingConfiguration</i> inter-node message defined in TS 38.331 [8]. In EN-DC/NGEN-DC, it is included when the gaps for FR2 are requested to be configured by the MeNB. For MN in NR-NR DC, it is included when the gaps for FR2 and/or FR1 are requested by the SgNB	YES	ignore
UEAssistanceInformation	O		OCTET STRING	Includes the <i>UEAssistanceInformation</i> message, as defined in TS 38.331 [8].	YES	ignore
CG-Config	O		OCTET STRING	Includes the <i>CG-Config</i> message, as defined in TS 38.331 [8].	YES	ignore
UEAssistanceInformationEUTRA	O		OCTET STRING	Includes the <i>UEAssistanceInformation</i> message, as defined in TS 36.331 [41].	YES	ignore
Location Measurement Information	O		OCTET STRING	Includes the <i>LocationMeasurementInfo</i> IE, as defined in TS 38.331[8]	YES	ignore
MUSIM-GapConfig	O		OCTET STRING	Includes the <i>MUSIM-GapConfig</i> IE as defined in TS 38.331 [8].	YES	reject
SDT-MAC-PHY-CG-Config	O		OCTET STRING	Includes the <i>SDT-MAC-PHY-CG-Config</i> IE, as defined in TS 38.331 [8].	YES	ignore

MBSInterestIndication	O		OCTET STRING	Includes the <i>MBSInterestIndication</i> message as defined in TS 38.331 [8].	YES	ignore
NeedForGapsInfoNR	O		OCTET STRING	Includes the <i>NeedForGapsInfoNR</i> IE, as defined in TS 38.331 [8].	YES	ignore
NeedForGapNCSG-InfoNR	O		OCTET STRING	Includes the <i>NeedForGapNCSG-InfoNR</i> IE, as defined in TS 38.331 [8].	YES	ignore
NeedForGapNCSG-InfoEUTRA	O		OCTET STRING	Includes the <i>NeedForGapNCSG-InfoEUTRA</i> IE, as defined in TS 38.331 [8].	YES	ignore
ConfigRestrictInfoDAPS	O		OCTET STRING	Includes the <i>ConfigRestrictInfoDAPS-r16</i> IE as defined in TS 38.331 [8]. This IE is used at the source node if DAPS HO is configured.	YES	ignore

9.3.1.26 DU to CU RRC Information

This IE contains the RRC Information that are sent from the gNB-DU to the gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
CellGroupConfig	M		OCTET STRING	Includes the <i>CellGroupConfig</i> IE, as defined in TS 38.331 [8].		
MeasGapConfig	O		OCTET STRING	Includes the <i>MeasGapConfig</i> IE as defined in TS 38.331 [8]. For EN-DC/NGEN-DC operation, includes the gap for FR2, as requested by the gNB-CU via MeasConfig IE. For NG-RAN, NE-DC and MN for NR-NR DC, includes the gap(s) for FR1 and/or FR2, as requested by the gNB-CU via MeasConfig IE.		
Requested P-MaxFR1	O		OCTET STRING	Includes the <i>requestedP-MaxFR1</i> contained in the <i>CG-Config</i> message, as defined in TS 38.331 [8]. For EN-DC, NGEN-DC and NR-DC operation, this IE should be included.		
DRX Long Cycle Start Offset	O		INTEGER (0..10239)	Corresponds to the <i>drx-LongCycleStartOffset</i> IE contained in the <i>DRX-Config</i> IE as defined in TS 38.331 [8]. This field is not used in NR-DC.		
Selected BandCombinationIndex	O		OCTET STRING	Includes the <i>BandCombinationIndex</i> IE, as defined in TS 38.331 [8]. For (NG)EN-DC and NR DC operation, this IE should be included so that gNB-CU is informed of the selected Band Combination; if this IE is included, the gNB-CU uses this information to deduce the selected band.	YES	ignore
Selected FeatureSetEntryIndex	O		OCTET STRING	Includes the <i>FeatureSetEntryIndex</i> IE, as defined in TS 38.331 [8]. For (NG)EN-DC and NR DC operation, this IE should be included so that gNB-CU is informed of the selected FeatureSet.	YES	ignore
Ph-InfoSCG	O		OCTET STRING	Includes the <i>PH-TypeListSCG</i> IE, as defined in TS 38.331 [8]. For MR-DC, this IE should be included so that gNB-CU is informed of the Power Headroom type for each serving cell in SN.	Yes	ignore
Requested BandCombinationIndex	O		OCTET STRING	Includes the <i>BandCombinationIndex</i> IE, as defined in TS 38.331 [8]. This IE is used for the gNB-DU to request a new Band Combination.	YES	ignore
Requested FeatureSetEntryIndex	O		OCTET STRING	Includes the <i>FeatureSetEntryIndex</i> IE, as defined in TS 38.331 [8]. This IE is used for the gNB-DU to request a new Feature Set.	YES	ignore

DRX Config	O		OCTET STRING	Includes the <i>DRX-Config</i> IE, as defined in TS 38.331 [8]. This field is only used in NR-DC.	YES	ignore
PDCCH BlindDetectionSCG	O		OCTET STRING	Includes the <i>pdcc-BlindDetectionSCG</i> contained in the <i>CG-ConfigInfo</i> message, as defined in TS 38.331 [8]. This IE is used between the MgNB-DU and the MgNB-CU.	YES	ignore
Requested PDCCH BlindDetectionSCG	O		OCTET STRING	Includes the <i>requestedPDCCH-BlindDetectionSCG</i> contained in the <i>CG-Config</i> message, as defined in TS 38.331 [8]. This IE is used between the SgNB-DU and the SgNB-CU.	YES	ignore
Ph-InfoMCG	O		OCTET STRING	Includes the <i>PH-TypeListMCG</i> IE, as defined in TS 38.331 [8]. For MR-DC, this IE should be included so that gNB-CU is informed of the Power Headroom type for each serving cell in MCG.	YES	ignore
MeasGapSharingConfig	O		OCTET STRING	Includes the <i>MeasGapSharingConfig</i> IE as defined in TS 38.331 [8].	YES	ignore
SL-PHY-MAC-RLC-Config	O		OCTET STRING	Includes the <i>SL-PHY-MAC-RLC-Config-r16</i> IE as defined in TS 38.331 [8].	YES	ignore
SL-ConfigDedicatedEUTRA-Info	O		OCTET STRING	Includes the <i>SL-ConfigDedicatedEUTRA-Info</i> IE as defined in TS 38.331 [8].	YES	ignore
Requested P-MaxFR2	O		OCTET STRING	Includes the <i>requestedP-MaxFR2</i> contained in the <i>CG-Config</i> message, as defined in TS 38.331 [8]. For NR-DC operation, this IE should be included.	YES	ignore
SDT-MAC-PHY-CG-Config	O		OCTET STRING	Includes the <i>SDT-MAC-PHY-CG-Config</i> IE, as defined in TS 38.331 [8].	YES	ignore
MUSIM-GapConfig	O		OCTET STRING	Includes the <i>MUSIM-GapConfig</i> IE as defined in TS 38.331 [8].	YES	ignore
SL-RLC-ChannelToAddModList	O		OCTET STRING	Includes the <i>sl-RLC-ChannelToAddModList-r17</i> contained in the <i>SL-ConfigDedicatedNR</i> IE, as defined in TS 38.331 [8].	YES	ignore
InterFrequencyConfig-NoGap	O		ENUMERATED (true, ...)	Corresponds to the <i>interFrequencyConfig-NoGap-r16</i> contained in the <i>MeasConfig</i> IE, as defined in TS 38.331 [8].	YES	ignore
ul-GapFR2-Config	O		OCTET STRING	Includes the <i>ul-GapFR2-Config</i> contained in the <i>RRCReconfiguration</i> message, as specified in TS 38.331 [8].	YES	ignore
TwoPHRModeMCG	O		ENUMERATED (enabled, ...)	Corresponds to the <i>twoPHRModeMCG</i> contained in the <i>CG-ConfigInfo</i> message, as defined in TS 38.331 [8]. For NR-DC, this IE should be included so that gNB-CU is informed of the two PHR mode in the MN.	YES	ignore

TwoPHRModeSCG	O		ENUMERATED (enabled, ...)	Corresponds to the <i>twoPHRModeSCG</i> contained in the <i>CG-Config</i> message, as defined in TS 38.331 [8]. For NR-DC, this IE should be included so that gNB-CU is informed of the two PHR mode in the SN.	YES	ignore
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9.3.1.27 RLC Mode

The *RLC Mode* IE indicates the RLC Mode used for a DRB or a BH RLC channel, or a Uu Relay RLC channel, or a PC5 Relay RLC channel.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
RLC Mode			ENUMERATED (RLC-AM, RLC-UM-Bidirectional, RLC-UM-Unidirectional-UL, RLC-UM-Unidirectional-DL, ...)	

9.3.1.28 SUL Information

This IE provides information about the SUL carrier.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
SUL ARFCN	M		INTEGER (0..maxNRARFCN)	RF Reference Frequency as defined in TS 38.104 [17] section 5.4.2.1. The frequency provided in this IE identifies the absolute frequency position of the reference resource block (Common RB 0) of the SUL carrier. Its lowest subcarrier is also known as Point A.	–	
SUL Transmission Bandwidth	M		Transmission Bandwidth 9.3.1.15		–	
Carrier List	O		NR Carrier List 9.3.1.137	If included, the SUL Transmission Bandwidth IE shall be ignored.	YES	ignore
Frequency Shift 7p5khz	O		ENUMERATED (false, true, ...)	Indicate whether the value of Δ_{shift} is 0kHz or 7.5kHz when calculating $F_{\text{REF,shift}}$ as defined in Section 5.4.2.1 of TS 38.104 [17].	YES	ignore

Range bound	Explanation
maxNRARFCN	Maximum value of NR ARFCNs. Value is 3279165.

9.3.1.29 5GS TAC

This information element is used to identify Tracking Area Code.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
5GS TAC	M		OCTET STRING (SIZE (3))	

9.3.1.29a Configured EPS TAC

This information element is used to identify a configured EPS Tracking Area Code in order to enable application of Roaming and Access Restrictions for EN-DC as specified in TS 37.340 [7]. This IE is configured for the cell, but not broadcast.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Configured EPS TAC	M		OCTET STRING (SIZE (2))	

9.3.1.30 RRC Reconfiguration Complete Indicator

This IE indicates the result of the reconfiguration performed towards the UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
RRC Reconfiguration Complete Indicator	M		ENUMERATED (true, ... , failure)	

9.3.1.31 UL Configuration

This IE indicates how the UL scheduling is configured at gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
UL UE Configuration	M		ENUMERATED (no-data, shared, only, ...)	Indicates how the UE uses the UL at gNB-DU, for which "no-data" indicates that the UL scheduling is not performed at gNB-DU, "shared" indicates that the UL scheduling is performed at both gNB-DU and another node, and "only" indicates that the UL scheduling is only performed at the gNB-DU.

9.3.1.32 C-RNTI

This IE contains the C-RNTI information.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
C-RNTI	M		INTEGER (0..65535, ...)	C-RNTI as defined in TS 38.331 [8].

9.3.1.33 Cell UL Configured

This IE indicates whether the gNB-CU requests the gNB-DU to configure the uplink as no UL, UL, SUL or UL+SUL for the indicated cell for the UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Cell UL Configured	M		ENUMERATED (none, UL, SUL, UL and SUL, ...)	Further details are defined in TS 38.331 [8]

9.3.1.34 RAT-Frequency Priority Information

The RAT-Frequency Priority Information contains either the *Subscriber Profile ID for RAT/Frequency priority* IE or the *Index to RAT/Frequency Selection Priority* IE. These parameters are used to define local configuration for RRM strategies.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CHOICE <i>RAT-Frequency Priority Information</i>	M			
>EN-DC				
>>Subscriber Profile ID for RAT/Frequency priority	M		INTEGER (1.. 256, ...)	
>NG-RAN				
>>Index to RAT/Frequency Selection Priority	M		INTEGER (1.. 256, ...)	

9.3.1.35 LCID

This IE uniquely identifies a LCID for the associated SRB or DRB.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
LCID	M		INTEGER (1..32, ...)	Corresponds to the <i>LogicalChannelIdentity</i> defined in TS 38.331 [8].

9.3.1.36 Duplication activation

The *Duplication Activation* IE indicates whether UL PDCP Duplication is activated or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Duplication Activation	M		ENUMERATED (Active, Inactive, ...)	

9.3.1.37 Slice Support List

This IE indicates the list of supported slices.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Slice Support Item IEs		1..<maxno ofSliceltems>		
>S-NSSAI	M		9.3.1.38	

Range bound	Explanation
maxnoofSliceltems	Maximum no. of signalled slice support items. Value is 1024.

9.3.1.38 S-NSSAI

This IE indicates the S-NSSAI as defined in TS 23.003 [23].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
SST	M		OCTET STRING (SIZE(1))	
SD	O		OCTET STRING (SIZE(3))	

9.3.1.39 UE Identity Index value

This IE is used by the gNB-DU to calculate the Paging Frame.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CHOICE UE Identity Index Value	M			
>Length-10				
>>Index Length 10	M		BIT STRING (SIZE(10))	Coded as specified in TS 38.304 [24].

9.3.1.40 Paging DRX

This IE indicates the Paging DRX as defined in TS 38.304 [24].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Paging DRX	M		ENUMERATED(32, 64, 128, 256, ...)	Unit in radio frame.

9.3.1.41 Paging Priority

This IE indicates the paging priority for paging a UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Paging Priority	M		ENUMERATED (PrioLevel1, PrioLevel2, PrioLevel3, PrioLevel4, PrioLevel5, PrioLevel6, PrioLevel7, PrioLevel8, ...)	Lower value codepoint indicates higher priority.

9.3.1.42 gNB-CU System Information

This IE contains the system information encoded by the gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
SIB type to Be Updated List		1				
>SIB type to Be Updated Item IEs		1... <maxnoofSIBTypes>				
>>SIB type	M		INTEGER (2..32, ...)	Indicates a certain SIB block, e.g. 2 means sibType2, 3 for sibType3, etc. Values for SIBs generated by the gNB-DU as defined subclause 5.2.2 in TS 38.470 [2], values 6, 7, 8 and values corresponding to not defined SIBs in TS 38.331 [8] are not applicable in this version of the specifications.		
>>SIB message	M		OCTET STRING	SIB as defined in subclause 6.3.1 in TS 38.331 [8].		
>>Value Tag	M		INTEGER (0..31, ...)			
>>areaScope	O		ENUMERATED (true, ...)	Indicates that a SIB is area specific. If the field is not present, the SIB is cell specific.	YES	ignore
SystemInformationAreaID	O		BIT STRING (SIZE (24))	Indicates the system information area that the cell belongs to, if any.	YES	ignore

Range bound	Explanation
maxnoofSIBTypes	Maximum no. of SIB types, the maximum value is 32.

9.3.1.43 RAN UE Paging identity

This IE indicates the RAN UE Paging identity.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
I-RNTI	M		BIT STRING (SIZE(40))	

9.3.1.44 CN UE Paging Identity

The 5G-S-TMSI is used as UE identifier for CN paging.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CHOICE CN UE paging identity	M			
>5G-S-TMSI				
>>5G-S-TMSI	M		BIT STRING (SIZE(48))	Details defined in TS 38.413 [3]

9.3.1.45 QoS Flow Level QoS Parameters

This IE defines the QoS to be applied to a QoS flow, or to a DRB, or to a BH RLC channel, or to a Uu Relay RLC channel, or to a PC5 Relay RLC channel.

NOTE: For a BH RLC channel, the listed mandatory IEs and the *GBR QoS Flow Information* IE are applicable, where *GBR QoS Flow Information* IE may be present if BH RLC channel conveys the traffic belonging to a GBR QoS Flow.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
CHOICE QoS Characteristics	M				-	
>Non-dynamic 5QI					-	
>>Non Dynamic 5QI Descriptor	M		9.3.1.49		-	
>Dynamic 5QI					-	
>>Dynamic 5QI Descriptor	M		9.3.1.47		-	
NG-RAN Allocation and Retention Priority	M		9.3.1.48		-	
GBR QoS Flow Information	O		9.3.1.46	This IE shall be present for GBR QoS Flows only and is ignored otherwise.	-	
Reflective QoS Attribute	O		ENUMERATED (subject to, ...)	Details in TS 23.501 [21]. This IE applies to non-GBR flows only and is ignored otherwise.	-	
PDU Session ID	O		INTEGER (0 ..255)	As specified in TS 23.501 [21].	YES	ignore
UL PDU Session Aggregate Maximum Bit Rate	O		Bit Rate 9.3.1.22	The PDU session Aggregate Maximum Bit Rate Uplink which is associated with the involved PDU session.	YES	ignore
QoS Monitoring Request	O		ENUMERATED (UL, DL, Both, ..., stop)	Indicates to measure UL, or DL, or both UL/DL delays for the associated QoS flow or stop the corresponding QoS monitoring.	YES	ignore
PDCP Terminating Node DL Transport Layer Address	O		Transport Layer Address 9.3.2.3	DL Transport Layer Address of node terminating PDCP. Included for MN-terminated SCG bearers and SN-terminated MCG bearers.	YES	ignore

9.3.1.46 GBR QoS Flow Information

This IE indicates QoS parameters for a GBR QoS flow or GBR bearer for downlink and uplink.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Maximum Flow Bit Rate Downlink	M		Bit Rate 9.3.1.22	Maximum Bit Rate in DL. Details in TS 23.501 [21].	-	
Maximum Flow Bit Rate Uplink	M		Bit Rate 9.3.1.22	Maximum Bit Rate in UL. Details in TS 23.501 [21].	-	
Guaranteed Flow Bit Rate Downlink	M		Bit Rate 9.3.1.22	Guaranteed Bit Rate (provided there is data to deliver) in DL. Details in TS 23.501 [21].	-	
Guaranteed Flow Bit Rate Uplink	M		Bit Rate 9.3.1.22	Guaranteed Bit Rate (provided there is data to deliver). Details in TS 23.501 [21].	-	
Maximum Packet Loss Rate Downlink	O		Maximum Packet Loss Rate 9.3.1.50	Indicates the maximum rate for lost packets that can be tolerated in the downlink direction. Details in TS 23.501 [21].	-	
Maximum Packet Loss Rate Uplink	O		Maximum Packet Loss Rate 9.3.1.50	Indicates the maximum rate for lost packets that can be tolerated in the uplink direction. Details in TS 23.501 [21].	-	
Alternative QoS Parameters Set List	O		9.3.1.125	Indicates alternative sets of QoS Parameters for the QoS flow.	YES	ignore

9.3.1.47 Dynamic 5QI Descriptor

This IE indicates the QoS Characteristics for a Non-standardised or not pre-configured 5QI for downlink and uplink.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
QoS Priority Level	M		INTEGER (1..127)	For details see TS 23.501 [21].	-	
Packet Delay Budget	M		9.3.1.51	For details see TS 23.501 [21]. For IAB, the Packet Delay Budget defines the upper bound for the time that a packet may be delayed between the IAB-DU/IAB-donor-DU and its child IAB-MT, or between the IAB-DU and its served UE. For a PC5 Relay RLC channel, the Packet Delay Budget defines the upper bound for the time that a packet may be delayed between the L2 U2N relay UE and L2 U2N remote UE. For a Uu Relay RLC channel, the Packet Delay Budget defines the upper bound for the time that a packet may be delayed between the gNB-DU and L2 U2N relay UE. This IE is ignored if the <i>Extended Packet Delay Budget</i> IE is present.	-	
Packet Error Rate	M		9.3.1.52	For details see TS 23.501 [21].	-	
5QI	O		INTEGER (0..255,...)	This IE contains the dynamically assigned 5QI as specified in TS 23.501 [21].	-	
Delay Critical	C-ifGBRflow		ENUMERATED (delay critical, non-delay critical)	For details see TS 23.501 [21].	-	
Averaging Window	C-ifGBRflow		9.3.1.53	For details see TS 23.501 [21].	-	
Maximum Data Burst Volume	O		9.3.1.54	For details see TS 23.501 [21]. This IE shall be included if the <i>Delay Critical</i> IE is set to "delay critical" and is ignored otherwise.	-	
Extended Packet Delay Budget	O		9.3.1.145	Packet Delay Budget is specified in TS 23.501 [21].	YES	ignore

CN Packet Delay Budget Downlink	O		Extended Packet Delay Budget 9.3.1.145	Core Network Packet Delay Budget is specified in TS 23.501 [21]. This IE may be present in case of GBR QoS flows and is ignored otherwise.	YES	ignore
CN Packet Delay Budget Uplink	O		Extended Packet Delay Budget 9.3.1.145	Core Network Packet Delay Budget is specified in TS 23.501 [21]. This IE may be present in case of GBR QoS flows and is ignored otherwise.	YES	ignore

Condition	Explanation
ifGBRflow	This IE shall be present if the <i>GBR QoS Flow Information</i> IE is present in the <i>QoS Flow Level QoS Parameters</i> IE.

9.3.1.48 NG-RAN Allocation and Retention Priority

This IE specifies the relative importance of a QoS flow or a DRB compared to other QoS flows or DRBs for allocation and retention of NG-RAN resources.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Priority Level	M		INTEGER (0..15)	Desc.: This IE defines the relative importance of a resource request (see TS 23.501 [21]). Usage: Values are ordered in decreasing order of priority, i.e., with 1 as the highest priority and 15 as the lowest priority. Further usage is defined in TS 23.501 [21].
Pre-emption Capability	M		ENUMERATED (shall not trigger pre-emption, may trigger pre-emption)	Desc.: This IE indicates the pre-emption capability of the request on other QoS flows (see TS 23.501 [21]). Usage: The QoS flow shall not pre-empt other QoS flows or, the QoS flow may pre-empt other QoS flows. Note: The Pre-emption Capability indicator applies to the allocation of resources for a QoS flow and as such it provides the trigger to the pre-emption procedures/processes of the gNB.
Pre-emption Vulnerability	M		ENUMERATED (not pre-emptable, pre-emptable)	Desc.: This IE indicates the vulnerability of the QoS flow to pre-emption of other QoS flows (see TS 23.501 [21]). Usage: The QoS flow shall not be pre-empted by other QoS flows or the QoS flow may be pre-empted by other QoS flows. Note: The Pre-emption Vulnerability indicator applies for the entire duration of the QoS flow, unless modified and as such indicates whether the QoS flow is a target of the pre-emption procedures/processes of the gNB.

9.3.1.49 Non Dynamic 5QI Descriptor

This IE indicates the QoS Characteristics for a standardized or pre-configured 5QI for downlink and uplink.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
5QI	M		INTEGER (0..255,...)	This IE contains the standardized or pre-configured 5QI as specified in TS 23.501 [21]. For a BH RLC channel, the Packet Delay Budget included in 5QI defines the upper bound for the time that a packet may be delayed between the gNB-DU and its child IAB-MT.	-	
Priority Level	O		INTEGER (1..127)	For details see TS 23.501 [21]. When included overrides standardized or pre-configured value.	-	
Averaging Window	O		9.3.1.53	For details see TS 23.501 [21]. When included overrides standardized or pre-configured value.	-	
Maximum Data Burst Volume	O		9.3.1.54	For details see TS 23.501 [21]. When included overrides standardized or pre-configured value.	-	
CN Packet Delay Budget Downlink	O		Extended Packet Delay Budget 9.3.1.145	Core Network Packet Delay Budget is specified in TS 23.501 [21]. This IE may be present in case of GBR QoS flows and is ignored otherwise.	YES	ignore
CN Packet Delay Budget Uplink	O		Extended Packet Delay Budget 9.3.1.145	Core Network Packet Delay Budget is specified in TS 23.501 [21]. This IE may be present in case of GBR QoS flows and is ignored otherwise.	YES	ignore

9.3.1.50 Maximum Packet Loss Rate

This IE indicates the Maximum Packet Loss Rate.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Maximum Packet Loss Rate	M		INTEGER(0..1000)	Ratio of lost packets per number of packets sent, expressed in tenth of percent.

9.3.1.51 Packet Delay Budget

This IE indicates the Packet Delay Budget for a QoS flow.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Packet Delay Budget	M		INTEGER (0..1023, ...)	Upper bound value for the delay that a packet may experience expressed in unit of 0.5ms.

9.3.1.52 Packet Error Rate

This IE indicates the Packet Error Rate for a QoS flow.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Scalar	M		INTEGER (0..9, ...)	The packet error rate is expressed as Scalar x 10-k where k is the Exponent.
Exponent	M		INTEGER (0..9, ...)	

9.3.1.53 Averaging Window

This IE indicates the Averaging Window for a QoS flow, and applies to GBR QoS Flows only.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Averaging Window	M		INTEGER (0..4095, ...)	Unit: ms. The default value is 2000ms.

9.3.1.54 Maximum Data Burst Volume

This IE indicates the Maximum Data Burst Volume for a QoS flow, and applies to delay critical GBR QoS flows only.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Maximum Data Burst Volume	M		INTEGER (0..4095, ..., 4096..2000000)	Unit: byte.

9.3.1.55 Masked IMEISV

This information element contains the IMEISV value with a mask, to identify a terminal model without identifying an individual Mobile Equipment.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Masked IMEISV	M		BIT STRING (SIZE (64))	Coded as the International Mobile station Equipment Identity and Software Version Number (IMEISV) defined in TS 23.003 [23] with the last 4 digits of the SNR masked by setting the corresponding bits to 1. The first to fourth bits correspond to the first digit of the IMEISV, the fifth to eighth bits correspond to the second digit of the IMEISV, and so on.

9.3.1.56 Notification Control

The *Notification Control* IE indicates whether the notification control for a given DRB is active or not-active.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Notification Control	M		ENUMERATED(Active, Not-Active, ...)	

9.3.1.57 RAN Area Code

This information element is used to uniquely identify a RAN Area Code.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
RANAC	M		INTEGER (0..255)	RAN Area Code

9.3.1.58 PWS System Information

This IE contains the system information used for public warning.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
SIB type	M		INTEGER (6..8, ...)	Indicates a certain SIB block for public warning message, e.g. 6 means sibType6, 7 for sibType7, etc.	-	
SIB message	M		OCTET STRING	SIB message for public warning, as defined in TS 38.331 [8].	-	
Notification Information	O				YES	ignore
>Message Identifier	M		9.3.1.81		-	
>Serial Number	M		9.3.1.82		-	
Additional SIB Message List	O		9.3.1.86	Additional SIB messages containing different segments of a public warning message if segmentation is applied, as defined in TS 38.331 [8].	Yes	reject

9.3.1.59 Repetition Period

This IE indicates the periodicity of the warning message to be broadcast.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Repetition Period	M		INTEGER (0..2 ¹⁷ -1)	The unit of value 1 to 2 ¹⁷ -1 is [second].

9.3.1.60 Number of Broadcasts Requested

This IE indicates the number of times a message is to be broadcast.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Number of Broadcasts Requested	M		INTEGER (0..65535)	

9.3.1.61 Void

9.3.1.62 SType List

This IE is used by gNB-CU to provide SI list of other SI for gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
SI type item IEs		1.. <maxnoofSI Types>		
>SI Type	M		INTEGER (1..32, ...)	Indicates a certain SI type required to be broadcasted by the gNB-DU. The SI Type value of other SI starts from 2

Range bound	Explanation
maxnoofSITypes	Maximum no. of SI types, the maximum value is 32.

9.3.1.63 QoS Flow Identifier

This IE identifies a QoS Flow within a PDU Session. The definition and use of the QoS Flow Identifier is specified in TS 23.501 [21].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
QoS Flow Identifier	M		INTEGER (0 ..63)	

9.3.1.64 Served E-UTRA Cell Information

This IE contains served cell information of an E-UTRA cell for spectrum sharing between E-UTRA and NR.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CHOICE <i>EUTRA-Mode-Info</i>	M			
> <i>FDD</i>				
>> FDD Info		1		
>>>UL Offset to Point A	M		INTEGER (0..2199,...)	Indicates the offset to the center of the NR carrier for UL.
>>>DL Offset to Point A	M		INTEGER (0..2199,...)	Indicates the offset to the center of the NR carrier for DL.
> <i>TDD</i>				
>> TDD Info		1		
>>>Offset to Point A	M		INTEGER (0..2199,...)	Indicates the offset to the center of the NR carrier.
Protected E-UTRA Resource Indication	O		OCTET STRING	Indicates the Protected E-UTRA Resource Indication as defined in subclause 9.2.125 of TS 36.423 [9].

9.3.1.65 Available PLMN List

This IE indicates the list of available PLMN.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Available PLMN Item IEs		1..<maxnoofBPLMNs >		
>PLMN Identity	M		9.3.1.14	

Range bound	Explanation
maxnoofBPLMNs	Maximum no. of Broadcast PLMN Ids. Value is 6.

9.3.1.66 RLC Failure Indication

This IE indicates the LCID associated with the RLC entity needing re-establishment.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Associated LCID	M		LCID 9.3.1.35	

9.3.1.67 Uplink TxDirectCurrentList Information

This IE contains the Uplink TxDirectCurrentList information that is configured by the UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Uplink TxDirectCurrentList Information	M		OCTET STRING	Includes the <i>UplinkTxDirectCurrentList</i> IE as defined in TS 38.331 [8].

9.3.1.68 Service Status

This IE is used to indicate the service status of a cell by the gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Service State	M		ENUMERATED (In-Service, Out-Of-Service, ...)	Indicates the Service State of the cell. In-Service and Out-of-Service Service States are defined in TS 38.401 [4].
Switching Off Ongoing	O		ENUMERATED (True, ...)	This IE indicates that the gNB-DU will delete the cell after some time using a new gNB-DU Configuration Update procedure.

9.3.1.69 RLC Status

This IE indicates about the RLC configuration change included in the container towards the UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Reestablishment Indication	O		ENUMERATED (reestablished, ...)	Indicates that following a change in the radio status, the RLC has been re-established.

9.3.1.70 RRC Version

This information element is used to identify RRC version corresponding to TS 38.331 [8].

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Latest RRC Version	M		BIT STRING (SIZE (3))	This IE is not used in this release.	-	
Latest RRC Version Enhanced	O		OCTET STRING (SIZE (3))	Latest supported RRC version in the release corresponding to TS 38.331 [8]. For a 3GPP specification version x.y.z, x is encoded by the leftmost byte, y by the middle byte, and z by the rightmost byte. If the RRC protocol is not supported in the gNB-DU, this IE is set to all '0's.	YES	ignore

9.3.1.71 RRC Delivery Status

This IE provides information about the delivery status of RRC messages to the UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Delivery Status	M		INTEGER (0..2 ¹² -1)	Highest NR PDCP SN successfully delivered in sequence to the UE.
Triggering Message	M		INTEGER (0..2 ¹² -1)	NR PDCP SN for the RRC message that triggered the report.

9.3.1.72 QoS Flow Mapping Indication

This IE is used to indicate only the uplink or downlink QoS flow is mapped to the DRB.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
QoS Flow Mapping Indication	M		ENUMERATED(ul, dl,...)	Indicates that only the uplink or downlink QoS flow is mapped to the DRB

9.3.1.73 Resource Coordination Transfer Information

This IE contains information for UE-associated E-UTRA – NR resource coordination.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MeNB Cell ID	M		BIT STRING (SIZE(28))	E-UTRAN Cell Identifier IE contained in the ECGI as defined in TS 36.423 [9] clause 9.2.14
Resource Coordination E-UTRA Cell Information	O		9.3.1.75	

9.3.1.74 E-UTRA PRACH Configuration

This IE indicates the PRACH resources used in E-UTRA cell.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
RootSequenceIndex	M		INTEGER (0..837)	See section 5.7.2. in TS 36.211 [27]
ZeroCorrelationZoneConfiguration	M		INTEGER (0..15)	See section 5.7.2. in TS 36.211 [27]
HighSpeedFlag	M		BOOLEAN	TRUE corresponds to Restricted set and FALSE to Unrestricted set. See section 5.7.2 in TS 36.211 [27]
PRACH-FrequencyOffset	M		INTEGER (0..94)	See section 5.7.1 of TS 36.211 [27]
PRACH-ConfigurationIndex	C-ifTDD		INTEGER (0..63)	See section 5.7.1. in TS 36.211 [27]

Condition	Explanation
ifTDD	This IE shall be present if the <i>EUTRA-Mode-Info</i> IE in the <i>Resource Coordination E-UTRA Cell Information</i> IE is set to the value "TDD".

9.3.1.75 Resource Coordination E-UTRA Cell Information

This IE contains E-UTRA cell information for UE-associated E-UTRA – NR resource coordination.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
CHOICE <i>EUTRA-Mode-Info</i>	M				-	
> <i>FDD</i>					-	
>> FDD Info		1			-	
>>>UL EARFCN	O		INTEGER (0 .. maxExtendedEARFCN, ...)	The relation between EARFCN and carrier frequency (in MHz) is defined in TS 36.104 [25].	-	
>>>DL EARFCN	M		INTEGER (0 .. maxExtendedEARFCN, ...)	The relation between EARFCN and carrier frequency (in MHz) is defined in TS 36.104 [25].	-	
>>>UL Transmission Bandwidth	O		E-UTRA Transmission Bandwidth 9.3.1.80	Present if <i>UL EARFCN</i> IE is present.	-	
>>>DL Transmission Bandwidth	M		E-UTRA Transmission Bandwidth 9.3.1.80		-	
> <i>TDD</i>					-	
>> TDD Info		1			-	
>>>EARFCN	M		INTEGER (0 .. maxExtendedEARFCN, ...)	The relation between EARFCN and carrier frequency (in MHz) is defined in TS 36.104 [25].	-	
>>>Transmission Bandwidth	M		E-UTRA Transmission Bandwidth 9.3.1.80		-	
>>>Subframe Assignment	M		ENUMERATED(sa0, sa1, sa2, sa3, sa4, sa5, sa6,...)	Uplink-downlink subframe configuration information defined in TS 36.211 [27]. In NB-IOT, sa0 and sa6 are not applicable.	-	
>>> Special Subframe Info		1		Special subframe configuration information defined in TS 36.211 [27]	-	
>>>>Special Subframe Patterns	M		ENUMERATED(ssp0, ssp1, ssp2, ssp3, ssp4, ssp5, ssp6, ssp7, ssp8, ssp9, ssp10, ...)		-	
>>>>Cyclic Prefix DL	M		ENUMERATED(Normal, Extended,...)		-	
>>>>Cyclic Prefix UL	M		ENUMERATED(Normal, Extended,...)		-	
E-UTRA PRACH Configuration	M		9.3.1.74		-	
Ignore PRACH Configuration	O		ENUMERATED(true,...)		YES	reject

Range bound	Explanation
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maxExtendedEARFCN	Maximum value of extended EARFCN. Value is 262143.
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9.3.1.76 Extended Available PLMN List

This IE indicates the list of available PLMN.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Extended Available PLMN Item IEs		1..<maxnoofExtendedBPLMNs >		
>PLMN Identity	M		9.3.1.14	

Range bound	Explanation
maxnoofExtendedBPLMNs	Maximum no. of Extended Broadcast PLMN Ids. Value is 6.

9.3.1.77 Associated SCell List

This IE indicates the list of SCells associated with the RLC entity indicated by the *RLC Failure Indication* IE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Associated SCell Item IEs		1..<maxnoofSCells >			-	-
>SCell ID	M		NR CGI 9.3.1.12		-	

Range bound	Explanation
maxnoofSCells	Maximum no. of SCells allowed towards one UE, the maximum value is 32.

9.3.1.78 Cell Direction

This IE indicates if the cell is either bidirectional or only DL or only UL.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Cell Direction	M		ENUMERATED (dl-only, ul-only)	

9.3.1.79 Paging Origin

This IE indicates whether Paging is originated due to the PDU sessions from the non-3GPP access.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Paging Origin	M		ENUMERATED (non-3GPP, ...)	

9.3.1.80 E-UTRA Transmission Bandwidth

This IE is used to indicate the E-UTRA UL or DL transmission bandwidth expressed in units of resource blocks "N_{RB}" (TS 36.104 [25]). The values bw1, bw6, bw15, bw25, bw50, bw75, bw100 correspond to the number of resource blocks "N_{RB}" 6, 15, 25, 50, 75, 100.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
E-UTRA Transmission Bandwidth	M		ENUMERATED (bw6, bw15, bw25, bw50, bw75, bw100,...)	

9.3.1.81 Message Identifier

This IE identifies the warning message.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Message Identifier	M		BIT STRING (SIZE(16))	This IE is set by the 5GC, transferred to the UE by the gNB node.

9.3.1.82 Serial Number

This IE identifies a particular message from the source and type indicated by the Message Identifier and is altered every time the message with a given Message Identifier is changed.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Serial Number	M		BIT STRING (SIZE(16))	

9.3.1.83 UAC Assistance Information

This information element contains assistance information helping the gNB-DU to set parameters for Unified Access Class barring.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
UAC PLMN List		1			-	
>UAC PLMN Item		1..<maxno ofUACPL MNs>			-	
>>PLMN Identity	M		9.3.1.14		-	
>>UAC Type List		1			-	
>>>UAC Type Item		1..<maxno ofUACper PLMN>			-	
>>>>UAC Reduction Indication	M		9.3.1.85		-	
>>>>CHOICE UAC Category Type	M				-	
>>>>>UAC Standardized					-	
>>>>>>UAC Action	M		9.3.1.84		-	
>>>>>>UAC Operator Defined					-	
>>>>>>>Access Category	M		INTEGER (32..63, ...)	Indicates the operator defined Access Category as defined in subclause 6.3.2 in TS 38.331 [8].	-	
>>>>>>>>Access Identity	M		BIT STRING (SIZE(7))	Indicates whether access attempt is allowed for each Access Identity as defined in subclause 6.3.2 in TS 38.331 [8].	-	
>>NID	O		9.3.1.155		YES	ignore

Range bound	Explanation
maxnoofUACPLMNs	Maximum no. of UAC PLMN Ids. Value is 12.
maxnoofUACperPLMN	Maximum no. of signalled categories per PLMN. Value is 64.

9.3.1.84 UAC Action

This IE indicates which signalling traffic is expected to be reduced by the gNB-CU, as defined in clause 8.7.7 of TS 38.413 [3]

IE/Group Name	Presence	Range	IE type and reference	Semantics description
UAC Action	M		ENUMERATED (Reject RRC connection establishments for non-emergency MO DT, Reject RRC connection establishments for Signalling, Permit Emergency Sessions and mobile terminated services only, Permit High Priority Sessions and mobile terminated services only,...)	

9.3.1.85 UAC reduction Indication

This IE indicates the percentage of signalling traffic expected to be reduced by the gNB-CU, relative to the instantaneous incoming rate from the gNB-DU

IE/Group Name	Presence	Range	IE type and reference	Semantics description
UAC reduction Indication	M		INTEGER (0..100)	Value 0 indicates that no access rate reduction is desired. In this version of specification, value 99 indicates the highest desired rate reduction.

9.3.1.86 Additional SIB Message List

This IE indicates the list of additional SIB messages containing all the remaining segments of a public warning message if segmentation is applied to such message.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Additional SIB Message List Item IEs		1.. <maxnoofAdditionalSIBs >		
>Additional SIB	M		OCTET STRING	SIB message containing one segment of a public warning message, as defined in TS 38.331 [8].

Range bound	Explanation
maxnoofAdditionalSIBs	Maximum no. of additional segments of a public warning message. Value is 63.

9.3.1.87 Cell Type

This IE provides the cell coverage area.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Cell Size	M		ENUMERATED (verysmall, small, medium, large, ...)	

9.3.1.87a Configured TAC Indication

This IE indicates that the TAC with which this IE is associated, is only configured for the cell, but not broadcast.

NOTE: This IE is defined in accordance to the possibility foreseen in TS 38.331 [8] to not broadcast the TAC if the NR cell only supports PSCell/SCell functionality.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Configured TAC Indication	M		ENUMERATED (true, ...)	

9.3.1.88 Trace Activation

This IE defines parameters related to a trace session activation.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Trace ID	M		OCTET STRING (SIZE(8))	This IE is composed of the following: Trace Reference defined in TS 32.422 [29] (leftmost 6 octets, with PLMN information encoded as in 9.3.1.14), and Trace Recording Session Reference defined in TS 32.422 [29] (last 2 octets).	-	-
Interfaces To Trace	M		BIT STRING (SIZE(8))	Each position in the bitmap represents an NG-RAN node interface: first bit = NG-C, second bit = Xn-C, third bit = Uu, fourth bit = F1-C, fifth bit = E1: other bits reserved for future use. Value '1' indicates 'should be traced'. Value '0' indicates 'should not be traced'.	-	-
Trace Depth	M		ENUMERATED (minimum, medium, maximum, minimumWithoutVendorSpecificExtension, mediumWithoutVendorSpecificExtension, maximumWithoutVendorSpecificExtension, ...)	Defined in TS 32.422 [29].	-	-
Trace Collection Entity IP Address	M		Transport Layer Address 9.3.2.3	For File based Reporting. Defined in TS 32.422 [29]. Should be ignored if URI is present.	-	-
MDT Configuration	O		9.3.1.150		YES	ignore
Trace Collection Entity URI	O		URI 9.3.2.6	For Streaming based Reporting. Defined in TS 32.422 [29] Replaces Trace Collection Entity IP Address if present	YES	ignore

9.3.1.89 Intended TDD DL-UL Configuration

This IE contains the subcarrier spacing, cyclic prefix and TDD DL-UL slot configuration of an NR cell that the receiving gNB needs to take into account for cross-link interference mitigation, and/or for NR-DC power coordination, when operating its own cells.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
NR SCS	M		ENUMERATED (scs15, scs30, scs60, scs120, ..., scs 480, scs960)	The values scs15, scs30, scs60, scs120, scs480 and scs960 corresponds to the sub carrier spacing in TS 38.104 [17].	-	
NR Cyclic Prefix	M		ENUMERATED (Normal, Extended, ...)	The type of cyclic prefix, which determines the number of symbols in a slot.	-	
NR DL-UL Transmission Periodicity	M		ENUMERATED (ms0p5, ms0p625, ms1, ms1p25, ms2, ms2p5, ms3, ms4, ms5, ms10, ms20, ms40, ms60, ms80, ms100, ms120, ms140, ms160, ...)	The periodicity is expressed in the format msXpYZ, and equals X.YZ milliseconds.	-	
Slot Configuration List		1			-	
>Slot Configuration List Item		1..<maxno ofslots>			-	
>>Slot Index	M		INTEGER (0..5119)		-	
>>CHOICE <i>Symbol Allocation in Slot</i>	M				-	
>>>All DL			NULL	This choice implies that all symbols in the slot are DL symbols.	-	
>>>All UL			NULL	This choice implies that all symbols in the slot are UL symbols.	-	
>>>Both DL and UL					-	
>>>>Number of DL Symbols	M		INTEGER (0..13)	Number of consecutive DL symbols in the slot identified by Slot Index IE. If extended cyclic prefix is used, the maximum value is 11. The <i>Permutation</i> IE indicates the location of DL symbols in the slot.	-	

>>>>Number of UL Symbols	M		INTEGER (0..13)	Number of consecutive UL symbols in the slot identified by Slot Index IE. If extended cyclic prefix is used, the maximum value is 11. The <i>Permutation</i> IE indicates the location of UL symbols in the slot.	-	
>>>>Permutation	O		ENUMERATED (DFU, UFD, ...)	If not present, the default value is DFU.	YES	ignore

Range bound	Explanation
<i>maxnoofslots</i>	Maximum length of number of slots in a 10-ms period. Value is 5120.

9.3.1.90 Additional RRM Policy Index

The *Additional RRM Policy Index* IE is used to provide additional information independent from the Subscriber Profile ID for RAT/Frequency priority as specified in TS 36.300 [20].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Additional RRM Policy Index	M		BIT STRING (32)	

9.3.1.91 DU-CU RIM Information

This IE conveys the Remote Interference Management message from the gNB-DU to the gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Victim gNB Set ID	M		9.3.1.93	
RIM-RS Detection Status	M		ENUMERATED (RS detected, RS disappeared)	This IE indicates detection status of RIM-RS in gNB-DU
Aggressor Cell List		1		
>Aggressor Cell List Item		1..< <i>maxCellingNBDU</i> >		
>>Aggressor Cell ID	M		NR CGI 9.3.1.12	

Range bound	Explanation
<i>maxCellingNBDU</i>	Maximum no. cells that can be served by a gNB-DU. Value is 512.

9.3.1.92 CU-DU RIM Information

This IE conveys the Remote Interference Management message from the gNB-CU to the gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Victim gNB Set ID	M		9.3.1.93	
RIM-RS Detection Status	M		ENUMERATED(RS detected, RS disappeared)	This IE indicates detection status of RIM-RS in remote gNB(s).

9.3.1.93 gNB Set ID

The gNB Set ID IE is used to identify a group of gNBs which transmit the same RIM-RS.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
gNB Set ID	M		BIT STRING (SIZE(22))	

9.3.1.94 Lower Layer Presence Status Change

This IE indicates lower layer resources' presence status shall be changed.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Lower Layer Presence Status Change	M		ENUMERATED (suspend lower layers, resume lower layers ...)	"suspend lower layers" will store CellGroupConfig. From the parameters received within the ReconfigurationWithSync, only the sPCellConfigCommon is stored. "resume lower layers" shall restore SCG and it is set only after "suspend lower layers" has been indicated.

9.3.1.95 Traffic Mapping Information

This IE includes the information used by the gNB-DU to perform traffic mapping.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<i>CHOICE Traffic Mapping Information Type</i>	M			
<i>>IP to layer2 Traffic Mapping Info</i>				
<i>>>IP to layer2 Traffic Mapping Info To Add</i>	O		IP-to-layer-2 traffic mapping Information List 9.3.1.96	This IE indicates the mapping information for forwarding of IP traffic to layer-2 to be added.
<i>>>IP to layer2 Traffic Mapping Info To Remove</i>	O		Mapping Information to Remove 9.3.1.99	This IE indicates the mapping information for forwarding of IP traffic to layer 2 to be removed.
<i>>BAP layer BH RLC channel Mapping Info</i>				
<i>>>BAP layer BH RLC channel Mapping Info To Add</i>	O		BAP layer BH RLC channel mapping Information List 9.3.1.98	This IE indicates the mapping information for forwarding of traffic on BAP layer to be added.
<i>>>BAP layer BH RLC channel Mapping Info To Remove</i>	O		Mapping Information to Remove 9.3.1.99	This IE indicates the mapping information for forwarding of traffic on BAP layer to be removed.

9.3.1.96 IP-to-layer-2 traffic mapping Information List

This IE includes the information used by the IAB-donor-DU to perform the mapping from IP layer to layer-2. If this IE appears in the UE-associated F1AP signalling, the *BH Information* IE should only contain the *BAP Routing ID* IE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
IP-to-layer-2 mapping information Item		1.. <maxnoofMappingEntries>		
>Mapping Information Index	M		9.3.1.100	
>IP header information	M		9.3.1.97	
>BH Information	M		9.3.1.114	

Range bound	Explanation
maxnoofMappingEntries	Maximum no. of mapping entries, the maximum value is 67108864 (i.e. 2 ²⁶).

9.3.1.97 IP Header Information

This IE indicates the IP header information included in the *Traffic Mapping Information* IE for DL traffic.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Destination IAB TNL Address	M		9.3.1.102	This IE indicates the destination IPv4 address, or IPv6 address or IPv6 prefix of a DL packet.
DS Information List		0.. <maxnoofDSInfo>		
>DSCP	M		BIT STRING (SIZE(6))	This IE indicates the DS information of DL traffic.
IPv6 Flow Label	O		BIT STRING (SIZE(20))	This IE indicates the IPv6 Flow Label of DL traffic.

Range bound	Explanation
maxnoofDSInfo	Maximum no. of DSCP values related to a destination IP address that can be mapped to one BH RLC channel, the maximum value is 64.

9.3.1.98 BAP layer BH RLC channel mapping Information List

This IE includes the information used by the IAB-DU to perform the BH RLC channel mapping when forwarding traffic on BAP sublayer.

When this IE is included in the UE-associated F1AP signalling for setting up or modifying a BH RLC channel, it contains either the *Prior-Hop BAP Address* IE and the *Ingress BH RLC CH ID* IE to configure a mapping in downlink direction, or the *Next-Hop BAP address* IE and the *Egress BH RLC CH ID* IE to configure a mapping in uplink direction. This IE indicates the BH RLC channel served by the collocated IAB-MT.

When this IE is included in the non-UE-associated F1AP signalling, it shall contain the *Prior-Hop BAP Address* IE, the *Ingress BH RLC CH ID* IE, the *Next-Hop BAP address* IE and the *Egress BH RLC CH ID* IE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
BAP layer BH RLC channel mapping info Item		1.. <maxnoof MappingE ntries>			-	
>Mapping Information Index	M		9.3.1.100		-	
>Prior-Hop BAP Address	O		9.3.1.111		-	
>Ingress BH RLC CH ID	O		BH RLC Channel ID 9.3.1.113		-	
>Next-Hop BAP Address	O		9.3.1.111		-	
>Egress BH RLC CH ID	O		BH RLC Channel ID 9.3.1.113		-	
>Ingress Non-F1-terminating IAB-donor Topology Indicator	O		ENUMERATED (true, ...)	If present, indicates that the ingress topology for this entry is the non-F1-terminating IAB-donor topology of the boundary IAB-node.	YES	ignore
>Egress Non-F1-terminating IAB-donor Topology Indicator	O		ENUMERATED (true, ...)	If present, indicates that the egress topology for this entry is the non-F1-terminating IAB-donor topology of the boundary IAB-node.	YES	ignore

Range bound	Explanation
maxnoofMappingEntries	Maximum no. of mapping entries, the maximum value is 67108864 (i.e. 2 ²⁶).

9.3.1.99 Mapping Information to Remove

This IE includes a list of mapping information indexes corresponding to the mapping configuration which is to be removed.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Mapping Information to Remove List Item		1.. <maxnoofMap pingEntries>		
>Mapping Information Index	M		9.3.1.100	

Range bound	Explanation
maxnoofMappingEntries	Maximum no. of mapping entries, the maximum value is 67108864 (i.e. 2 ²⁶).

9.3.1.100 Mapping Information Index

This IE includes an index of one mapping information entry at the IAB-donor-DU or an IAB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Mapping Information Index	M		BIT STRING (SIZE(26))	

9.3.1.101 IAB TNL Addresses Requested

The *IAB TNL Addresses Requested* IE indicates the number of IPv4 or IPv6 addresses or IPv6 address prefixes requested for the indicated usage.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
TNL Addresses or Prefixes Requested - All Traffic	O		INTEGER (1..256)	The number of TNL addresses/IPv6 prefixes requested for all traffic.
TNL Addresses or Prefixes Requested - F1-C traffic	O		INTEGER (1..256)	The number of TNL addresses/IPv6 prefixes requested for F1-C traffic.
TNL Addresses or Prefixes Requested - F1-U traffic	O		INTEGER (1..256)	The number of TNL addresses/IPv6 prefixes requested for F1-U traffic.
TNL Addresses or Prefixes Requested - Non-F1 traffic	O		INTEGER (1..256)	The number of TNL addresses/IPv6 prefixes requested for non-F1 traffic.

9.3.1.102 IAB TNL Address

The *IAB TNL Address* IE indicates an IPv4 or IPv6 address or an IPv6 address prefix assigned to an IAB-node.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CHOICE <i>IAB TNL Address</i>	M			
> <i>IPv4 Address</i>				
>>IPv4 Address			BIT STRING (SIZE(32))	The IPv4 address allocated to an IAB-node.
> <i>IPv6 Address</i>				
>>IPv6 Address			BIT STRING (SIZE(128))	The IPv6 address allocated to an IAB-node.
> <i>IPv6 Prefix</i>				
>>IPv6 Prefix			BIT STRING (SIZE(64))	The IPv6 address prefix allocated to an IAB-node.

9.3.1.103 Uplink BH Non-UP Traffic Mapping

This IE indicates the mapping of uplink non-UP traffic to a BH RLC channel and BAP Routing ID.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Uplink Non-UP Traffic Mapping List		1		
> Uplink Non-UP Traffic Mapping List Item IEs		1 .. <maxnoofNonUPTrafficMappings>		
>>Non-UP Traffic Type	M		9.3.1.104	
>>BH Information	M		9.3.1.114	

Range bound	Explanation
maxnoofNonUPTrafficMappings	Maximum no. of non-UP traffic mappings. Value is 32.

9.3.1.104 Non-UP Traffic Type

This IE indicates the type of non-UP traffic.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Non-UP Traffic Type	M		ENUMERATED(UE-associated F1AP, non-UE-associated F1AP, non-F1, BAP control PDU, ...)	

9.3.1.105 IAB Info IAB-donor-CU

This IE contains cell-specific IAB-related information sent by an IAB-donor-CU to an IAB-DU or IAB-donor-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
IAB STC Info	O		9.3.1.109	Contains STC configuration of IAB-DU or IAB-donor-DU.

9.3.1.106 IAB Info IAB-DU

This IE contains cell-specific IAB-related information sent by an IAB-DU or IAB-donor-DU to an IAB-donor-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Multiplexing Info	O		9.3.1.108	Contains the information about multiplexing with cells configured for a collocated IAB-MT. Applicable for an IAB-DU.
IAB STC Info	O		9.3.1.109	Contains the information about STC configuration of IAB-DU or IAB-donor-DU.

9.3.1.107 gNB-DU Cell Resource Configuration

This IE contains the resource configuration of the cells served by a gNB-DU, i.e. the TDD/FDD resource parameters for each activated cell (TS 38.213 [31], clause 11.1.1).

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Subcarrier Spacing	M		ENUMERATED (kHz15, kHz30, kHz60, kHz120, kHz240, spare3, spare2, spare1, ...)	Subcarrier spacing used as reference for the TDD/FDD slot configuration.	YES	reject
DUF Transmission Periodicity	O		ENUMERATED (ms0p5, ms0p625, ms1, ms1p25, ms2, ms2p5, ms5, ms10, ...)		YES	reject
DUF Slot Configuration List		0..1				
>DUF Slot Configuration Item		1..<maxno ofDUFSlots>		The <i>maxNrofSlots</i> in TS 38.331 [8].	-	
>>CHOICE <i>DUF Slot Configuration</i>	M				-	
>>>Explicit Format					-	
>>>>Permutation	M		ENUMERATED (DFU, UFD, ...)		-	
>>>>Number of Downlink Symbols	O		INTEGER (0..14)		-	
>>>>Number of Uplink Symbols	O		INTEGER (0..14)		-	
>>>Implicit Format						
>>>>DUF Slot Format Index	M		INTEGER (0..254)	Index into Table 11.1.1-1 and Table 14-2 in TS 38.213 [31], excluding the last row in Table 14-2.	-	
HSNA Transmission Periodicity	M		ENUMERATED (ms0p5, ms0p625, ms1, ms1p25, ms2, ms2p5, ms5, ms10, ms20, ms40, ms80, ms160, ...)		YES	reject
HSNA Slot Configuration List		0..1				
>HSNA Slot Configuration Item		1..<maxno ofHSNASlots>				
>>HSNA Downlink	O		ENUMERATED (HARD, SOFT, NOTAVAILABLE)	HSNA value for downlink symbols in a slot.	-	
>>HSNA Uplink	O		ENUMERATED (HARD, SOFT, NOTAVAILABLE)	HSNA value for uplink symbols in a slot.	-	
>>HSNA Flexible	O		ENUMERATED (HARD, SOFT, NOTAVAILABLE)	HSNA value for flexible symbols in a slot.	-	
RB Set Configuration	O		9.3.1.230		YES	reject
Frequency-Domain HSNA Configuration List		0..1			YES	reject
>Frequency-Domain HSNA Configuration Item		1..<maxno ofRBsetsPerCell>			EACH	reject

>>RB Set Index	M		INTEGER (0.. maxnoofRBsets PerCell-1, ...)	Refers to an RB set defined by RB Set Configuration. The RB set indices are consecutive (and increasing) starting at 0.	-	
>>Frequency-Domain HSNA Slot Configuration List		1			-	
>>>Frequency-Domain HSNA Slot Configuration Item		1..<maxno ofHSNASI ots>			-	
>>>>Slot Index	O		INTEGER (0..5119)	Indicates an index to a slot within the HSNA Transmission Periodicity.	-	
>>>>HSNA Downlink	O		ENUMERATED (HARD, SOFT, NOTAVAILABLE)	HSNA value for downlink symbols in a slot, for an RB set.	-	
>>>>HSNA Uplink	O		ENUMERATED (HARD, SOFT, NOTAVAILABLE)	HSNA value for uplink symbols in a slot, for an RB set.	-	
>>>>HSNA Flexible	O		ENUMERATED (HARD, SOFT, NOTAVAILABLE)	HSNA value for flexible symbols in a slot, for an RB set.	-	
Child IAB-Nodes NA Resource List		0..1		List of child IAB-nodes served by the IAB-DU or IAB-donor-DU.	YES	reject
>Child IAB-Nodes NA Resource List Item		1 .. <maxnoof ChildIABN odes>			EACH	reject
>>gNB-CU UE F1AP ID	M		9.3.1.4	Identifier of a child-node IAB-MT at the IAB-donor-CU.	-	
>>gNB-DU UE F1AP ID	M		9.3.1.5	Identifier of a child-node IAB-MT at an IAB-DU or IAB-donor-DU.	-	
>>NA Resource Configuration List		0..1		List of not-available resources of this cell for this child IAB-node	-	
>>>NA Resource Configuration Item		1..<maxno ofHSNASI ots>			-	
>>>>NA Downlink	O		ENUMERATED (true, false, ...)	Indicates whether downlink symbols, in a slot, are available to serve the child IAB-node.	-	

>>>>NA Uplink	O		ENUMERATED (true, false, ...)	Indicates whether uplink symbols, in a slot, are available to serve the child IAB-node.	-	
>>>>NA Flexible	O		ENUMERATED (true, false, ...)	Indicates whether flexible symbols, in a slot, are available to serve the child IAB-node.	-	
Parent IAB Nodes NA Resource Configuration List		0..1		List of unavailable resources of this cell for this IAB-node.	YES	reject
>Parent IAB Nodes NA Resource Configuration Item		1..<maxno ofHSNASlots>			EACH	reject
>>NA Downlink	O		ENUMERATED (true, false, ...)	Indicates whether downlink symbols, in a slot, are unavailable to serve the IAB-node.	-	
>>NA Uplink	O		ENUMERATED (true, false, ...)	Indicates whether uplink symbols, in a slot, are unavailable to serve the IAB-node.	-	
>>NA Flexible	O		ENUMERATED (true, false, ...)	Indicates whether flexible symbols, in a slot, are unavailable to serve the IAB-node.	-	

Range bound	Explanation
maxnoofDUFSlots	Maximum no. of slots in 10ms. Value is 320.
maxnoofSymbols	Maximum no. of symbols in a slot. Value is 14.
maxnoofHSNASlots	Maximum no of "Hard", "Soft" or "Not available" slots in 160ms. Value is 5120.
maxnoofRBsetsPerCell	Maximum no. of RB sets per IAB-DU cell. Value is 8
maxnoofRBsetsPerCell-1	Maximum no. of RB sets per IAB-DU cell minus 1. Value is 7
maxnoofChildIABNodes	Maximum number of child nodes served by an IAB-DU or an IAB-donor-DU. Value is 1024.

9.3.1.108 Multiplexing Info

This IE contains information about the multiplexing capabilities between the gNB-DU's cell and the cells configured on the co-located IAB-MT.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
IAB-MT Cell List		1				
>IAB-MT Cell Item		1 .. <maxnoof ServingCells>				
>>NR Cell Identity	M		BIT STRING (SIZE(36))	Cell identity of a serving cell configured for a co-located IAB-MT.		
>>DU_RX/MT_RX	M		ENUMERATED (supported, not supported)	An indication of whether the IAB-node supports simultaneous reception at its DU and MT side.		
>>DU_TX/MT_TX	M		ENUMERATED (supported, not supported)	An indication of whether the IAB-node supports simultaneous transmission at its DU and MT side.		
>>DU_RX/MT_TX	M		ENUMERATED (supported, not supported)	An indication of whether the IAB-node supports simultaneous reception at its DU and transmission at its MT side.		
>>DU_TX/MT_RX	M		ENUMERATED (supported, not supported)	An indication of whether the IAB-node supports simultaneous transmission at its DU and reception at its MT side.		
>>DU_RX/MT_RX_extend	MO		ENUMERATED (supported, not supported, supported and FDM required)	An indication of whether the IAB-node supports simultaneous reception at its DU and MT side. If present, the DU_RX/MT_RX IE shall be ignored.	YES	ignore
>>DU_TX/MT_TX_extend	O		ENUMERATED (supported, not supported, supported and FDM required)	An indication of whether the IAB-node supports simultaneous transmission at its DU and MT side. If present, the DU_TX/MT_TX IE shall be ignored.	YES	ignore
>>DU_RX/MT_TX_extend	O		ENUMERATED (supported, not supported, supported and FDM required)	An indication of whether the IAB-node supports simultaneous reception at its DU and transmission at its MT side. If present, the DU_RX/MT_TX IE shall be ignored.	YES	ignore

>>DU_TX/MT_RX_extend	O		ENUMERATED (supported, not supported, supported and FDM required)	An indication of whether the IAB-node supports simultaneous transmission at its DU and reception at its MT side. If present, the DU_TX/MT_RX IE shall be ignored.	YES	ignore
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Range bound	Explanation
maxnoofServingCells	Maximum no. of serving cells for IAB-MT. Value is 32, as defined by the <i>maxNrofServingCells</i> in TS 38.331 [8].

9.3.1.109 IAB STC Info

This IE contains cell SSB Transmission Configuration (STC) information of an IAB-DU or IAB-donor-DU. The information is used by neighbour IAB-MTs for discovery and measurements of this IAB-DU or IAB-donor-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
IAB STC-Info List		1		
>IAB STC-Info Item		1 ..<maxnoofIA BSTCInfo>		
>>SSB Frequency Info	M		INTEGER (0.. maxNRARFCN)	The SSB central frequency.
>>SSB Subcarrier Spacing	M		ENUMERATED (kHz15, kHz30, kHz120, kHz240, spare3, spare2, spare1, ...)	The SSB subcarrier spacing.
>>SSB Transmission Periodicity	M		ENUMERATED (sf5, sf10, sf20, sf40, sf80, sf160, sf320, sf640, ...)	
>>SSB Transmission Timing Offset	M		INTEGER (0.. 127, ...)	SSB transmission timing offset in number of half-frames.
>>CHOICE SSB Transmission Bitmap	M			The <i>SSB-ToMeasure</i> IE defined in TS 38.331 [8].
>>>Short Bitmap				
>>>>Short Bitmap	M		BIT STRING (SIZE (4))	
>>>>Medium Bitmap				
>>>>Medium Bitmap	M		BIT STRING (SIZE (8))	
>>>>Long Bitmap				
>>>>Long Bitmap	M		BIT STRING (SIZE (64))	

Range bound	Explanation
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maxnoofIABSTCInfo	Maximum no. of STC configurations. Value is 5. This includes 1 STC configuration for access and 4 STC configurations for backhaul.
maxNRARFCN	Maximum value of NR ARFCNs. Value is 3279165.

9.3.1.110 BAP Routing ID

This IE indicates the BAP Routing ID.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
BAP Address	M		9.3.1.111	
Path ID	M		BAP Path ID 9.3.1.112	

9.3.1.111 BAP Address

This IE indicates the BAP address of an IAB-node or of an IAB-donor-DU, and it is part of the BAP Routing ID.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
BAP Address	M		BIT STRING (SIZE(10))	Corresponds to the <i>bap-Address</i> contained in the <i>RRCReconfiguration</i> message or contained in the <i>BAP-RoutingID</i> IE, or the <i>iab-donor-DU-BAP-Address</i> contained in the <i>RRCReconfiguration</i> message defined TS 38.331[8].

9.3.1.112 BAP Path ID

This IE indicates the BAP path ID, which is part of the BAP Routing ID.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
BAP Path ID	M		BIT STRING (SIZE(10))	Corresponds to the <i>bap-Pathid</i> contained in the <i>BAP-RoutingID</i> IE defined in subclause 6.3.2 of TS 38.331 [8].

9.3.1.113 BH RLC Channel ID

This IE uniquely identifies a BH RLC channel in the link between IAB-MT of the IAB-node and IAB-DU of the parent IAB-node or IAB-donor-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
BH RLC CH ID	M		BIT STRING (SIZE(16))	

9.3.1.114 BH Information

This IE includes the backhaul information for UL or DL.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
BAP Routing ID	O		9.3.1.110	This IE is not needed for the BAP control PDU. For UL F1-U traffic, the BAP address included in this IE also indicates the IAB-donor-DU via which the DL traffic is transmitted.	-	
Egress BH RLC CH List		<i>0..1</i>			-	
>Egress BH RLC CH List Item		<i>1.. <maxnoof EgressLinks></i>			-	
>>Next-Hop BAP Address	M		9.3.1.111	This IE identifies the next-hop node on the backhaul path to receive the packet. The value of this IE should be unique in the whole list.	-	
>>Egress BH RLC CH ID	M		BH RLC Channel ID 9.3.1.113	This IE identifies the BH RLC channel in the link between the IAB node/IAB-donor-DU and the node identified by the <i>Next-Hop BAP Address</i> IE.	-	
Non-F1-Terminating IAB-donor Topology Indicator	O		ENUMERATED (true, ...)	If present, indicates that the Next-Hop BAP Address and Egress BH RLC CH ID contained in this IE pertain to the non-F1-terminating IAB-donor topology of the boundary IAB-node.	YES	ignore

Range bound	Explanation
maxnoofEgressLinks	Maximum no. of egress links. Value is 2.

9.3.1.115 Control Plane Traffic Type

This IE indicates the control plane traffic type carried over a BH RLC channel.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Control Plane Traffic Type	M		INTEGER (1..3, ...)	Control plane traffic types with different priorities are identified by the different codepoints in this IE, where 1 has the highest priority.

9.3.1.116 NR V2X Services Authorized

This IE provides information on the authorization status of the UE to use the NR sidelink for V2X services.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Vehicle UE	O		ENUMERATED (authorized, not authorized, ...)	Indicates whether the UE is authorized as Vehicle UE.
Pedestrian UE	O		ENUMERATED (authorized, not authorized, ...)	Indicates whether the UE is authorized as Pedestrian UE.

9.3.1.117 LTE V2X Services Authorized

This IE provides information on the authorization status of the UE to use the LTE sidelink for V2X services.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Vehicle UE	O		ENUMERATED (authorized, not authorized, ...)	Indicates whether the UE is authorized as Vehicle UE.
Pedestrian UE	O		ENUMERATED (authorized, not authorized, ...)	Indicates whether the UE is authorized as Pedestrian UE.

9.3.1.118 LTE UE Sidelink Aggregate Maximum Bit Rate

This IE provides information on the Aggregate Maximum Bitrate of the UE's communication over LTE sidelink.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
LTE UE Sidelink Aggregate Maximum Bit Rate	M		Bit Rate 9.3.1.4	Value 0 shall be considered as a logical error by the receiving gNB-DU.

9.3.1.119 NR UE Sidelink Aggregate Maximum Bit Rate

This IE provides information on the Aggregate Maximum Bitrate of the UE's communication over NR sidelink.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
NR UE Sidelink Aggregate Maximum Bit Rate	M		Bit Rate 9.3.1.4	Value 0 shall be considered as a logical error by the receiving gNB-DU.

9.3.1.120 SL DRB ID

This IE uniquely identifies a SL DRB for a UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
SL DRB ID	M		INTEGER (1.. 512, ...)	Corresponds to the <i>SLRB-Uu-ConfigIndex</i> IE defined in TS 38.331 [8].

9.3.1.121 PC5 QoS Flow Identifier

This IE uniquely identifies one sidelink QoS flow between the UE and the network in the scope of UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
PC5 QoS Flow Identifier	M		INTEGER (1.. 2048)	Corresponds to the <i>SL-QoS-FlowIdentity</i> IE defined in TS 38.331 [8].

9.3.1.122 PC5 QoS Parameters

This IE defines the QoS to be applied to a SL DRB.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
CHOICE <i>PC5 QoS Characteristics</i>	M				-	
> <i>Non-dynamic PQI</i>					-	
>>Non Dynamic PQI Descriptor	M		9.3.1.126		-	
> <i>Dynamic PQI</i>					-	
>>Dynamic PQI Descriptor	M		9.3.1.127		-	
PC5 QoS Flow Bit Rates	O			Only applies for GBR QoS Flows.	-	
>Guaranteed Flow Bit Rate	M		Bit Rate 9.3.1.22	Guaranteed Bit Rate for the PC5 QoS flow. Details in TS 23.287 [40].	-	
>Maximum Flow Bit Rate	M		Bit Rate 9.3.1.22	Maximum Bit Rate for the PC5 QoS flow. Details in TS 23.287 [40].	-	

Range bound	Explanation
maxnoofPC5QoSFlows	Maximum no. of PC5 QoS flows allowed towards one UE for NR sidelink communication, the maximum value is 2048.

9.3.1.123 Alternative QoS Parameters Set Index

This IE indicates the QoS parameters set which can currently be fulfilled.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Alternative QoS Parameters Set Index	M		INTEGER (1..8, ...)	Indicates the index of the item within the <i>Alternative QoS Parameters Set List</i> IE corresponding to the currently fulfilled alternative QoS parameters set.

9.3.1.124 Alternative QoS Parameters Set Notify Index

This IE indicates the QoS parameters set which can currently be fulfilled.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Alternative QoS Parameters Set Notify Index	M		INTEGER (0..8, ...)	Indicates the index of the item within the the <i>Alternative QoS Parameters Set List</i> IE corresponding to the currently fulfilled alternative QoS parameters set. Value 0 indicates that NG-RAN cannot even fulfil the lowest alternative parameter set.

9.3.1.125 Alternative QoS Parameters Set List

This IE contains alternative sets of QoS parameters which the gNB can indicate to be fulfilled when notification control is enabled and it cannot fulfil the requested list of QoS parameters.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Alternative QoS Parameters Set Item		<i>1..<maxnoofQoSParaSets></i>		
>Alternative QoS Parameters Set Index	M		9.3.1.123	
>Guaranteed Flow Bit Rate Downlink	O		Bit Rate 9.3.1.22	
>Guaranteed Flow Bit Rate Uplink	O		Bit Rate 9.3.1.22	
>Packet Delay Budget	O		9.3.1.51	
>Packet Error Rate	O		9.3.1.52	

Range bound	Explanation
maxnoofQoSParaSets	Maximum no. of alternative sets of QoS Parameters allowed for the QoS profile. Value is 8.

9.3.1.126 Non Dynamic PQI Descriptor

This IE indicates the QoS Characteristics for a standardized or pre-configured PQI for sidelink.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
5QI	M		INTEGER (0..255,...)	This IE contains the standardized or pre-configured PQI as specified in TS 23.287 [40]
QoS Priority Level	O		INTEGER (1..8,...)	For details see TS 23.501 [21]. When included overrides standardized or pre-configured value.
Averaging Window	O		9.3.1.53	For details see TS 23.501 [21]. When included overrides standardized or pre-configured value.
Maximum Data Burst Volume	O		9.3.1.54	For details see TS 23.501 [21]. When included overrides standardized or pre-configured value.

9.3.1.127 Dynamic PQI Descriptor

This IE indicates the QoS Characteristics for a Non-standardised or not pre-configured PQI for sidelink.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Resource Type	O		ENUMERATED (GBR, non-GBR, delay critical GBR, ...)	
QoS Priority Level	M		INTEGER (1..8, ...)	For details see TS 23.501 [21].
Packet Delay Budget	M		9.3.1.51	For details see TS 23.501 [21].
Packet Error Rate	M		9.3.1.52	For details see TS 23.501 [21].
Averaging Window	C-ifGBRflow		9.3.1.53	For details see TS 23.501 [21].
Maximum Data Burst Volume	O		9.3.1.54	For details see TS 23.501 [21]. This IE shall be included if the <i>Delay Critical</i> IE is set to "delay critical" and is ignored otherwise.

Condition	Explanation
ifGBRflow	This IE shall be present if the <i>PC5 QoS Flow Bit Rates</i> IE is present in the <i>PC5 QoS parameters</i> IE.

9.3.1.128 TNL Capacity Indicator

The *TNL Capacity Indicator* IE indicates the offered and available capacity of the Transport Network experienced by the gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
DL TNL Offered Capacity	M		INTEGER (1..16777216,...)	Maximum capacity offered by the transport portion of the gNB-DU – gNB-CU in kbps
DL TNL Available Capacity	M		INTEGER (0..100,...)	Available capacity over the transport portion serving the node in percentage. Value 100 corresponds to the offered capacity
UL TNL Offered Capacity	M		INTEGER (1..16777216,...)	Maximum capacity offered by the transport portion of the gNB-DU – gNB-CU in kbps
UL TNL Available Capacity	M		INTEGER (0..100,...)	Available capacity over the transport portion serving the node in percentage. Value 100 corresponds to the offered capacity

9.3.1.129 Radio Resource Status

The *Radio Resource Status* IE indicates the usage of the PRBs per cell for MIMO, per SSB area and per slice for all traffic in Downlink and Uplink and the usage of PDCCH CCEs for Downlink and Uplink scheduling.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
SSB Area Radio Resource Status List		1			-	
>SSB Area Radio Resource Status Item		1..<maxno ofSSBAreas>			-	
>>SSB Index	M		INTEGER (0..63)		-	
>>SSB Area DL GBR PRB usage	M		INTEGER (0..100)	Per SSB area DL GBR PRB usage in percentage of the cell total PRB number.	-	
>>SSB Area UL GBR PRB usage	M		INTEGER (0..100)	Per SSB area UL GBR PRB usage in percentage of the cell total PRB number.	-	
>>SSB Area DL non-GBR PRB usage	M		INTEGER (0..100)	Per SSB area DL non-GBR PRB usage in percentage of the cell total PRB number.	-	
>>SSB Area UL non-GBR PRB usage	M		INTEGER (0..100)	Per SSB area UL non-GBR PRB usage in percentage of the cell total PRB number.	-	
>>SSB Area DL Total PRB usage	M		INTEGER (0..100)	Per SSB area DL Total PRB usage in percentage of the cell total PRB number.	-	
>>SSB Area UL Total PRB usage	M		INTEGER (0..100)	Per SSB area UL Total PRB usage in percentage of the cell total PRB number.	-	
>>DL scheduling PDCCH CCE usage	O		INTEGER (0..100)		-	
>>UL scheduling PDCCH CCE usage	O		INTEGER (0..100)		-	
Slice Radio Resource List		0..1			YES	ignore
>Slice Radio Resource Item		1..<maxno ofB PLMNsNR >			-	
>>PLMN Identity	M		9.3.1.14	Broadcast PLMN	-	
>>S-NSSAI Radio Resource Status List		1			-	
>>>S-NSSAI Radio Resource Status Item		1..<maxno ofSliceltems>			-	
>>>>S-NSSAI	M		9.3.1.38		-	
>>>>S-NSSAI DL GBR PRB usage	M		INTEGER (0..100)	Per slice DL GBR PRB usage in percentage of the cell total PRB number.	-	

>>>>S-NSSAI UL GBR PRB usage	M		INTEGER (0..100)	Per slice UL GBR PRB usage for this slice in percentage of the cell total PRB number.	-	
>>>>S-NSSAI DL non-GBR PRB usage	M		INTEGER (0..100)	Per slice DL non-GBR PRB usage for this slice in percentage of the cell total PRB number.	-	
>>>>S-NSSAI UL non-GBR PRB usage	M		INTEGER (0..100)	Per slice UL non-GBR PRB usage for this slice in percentage of the cell total PRB number.	-	
>>>>Slice DL Total PRB allocation	M		INTEGER (0..100)	Total amount of DL PRBs available per cell for this slice if all the resources the slice could access were usable.	-	
>>>>Slice UL Total PRB allocation	M		INTEGER (0..100)	Total amount of UL PRBs available per cell for this slice if all the resources the slice could access were usable.	-	
MIMO PRB usage Information	O				YES	ignore
>DL GBR PRB usage for MIMO	M		INTEGER (0..100)	Per cell DL GBR PRB usage for MIMO in percentage of the cell total PRB number as defined in TS 38.314 [32].	-	
>UL GBR PRB usage for MIMO	M		INTEGER (0..100)	Per cell UL GBR PRB usage for MIMO in percentage of the cell total PRB number as defined in TS 38.314 [32].	-	
>DL non-GBR PRB usage for MIMO	M		INTEGER (0..100)	Per cell DL non-GBR PRB usage for MIMO in percentage of the cell total PRB number as defined in TS 38.314 [32].	-	
>UL non-GBR PRB usage for MIMO	M		INTEGER (0..100)	Per cell UL non-GBR PRB usage for MIMO in percentage of the cell total PRB number as defined in TS 38.314 [32].	-	
>DL Total PRB usage for MIMO	M		INTEGER (0..100)	Per cell DL Total PRB usage for MIMO in percentage of the cell total PRB number as defined in TS 38.314 [32].	-	

>UL Total PRB usage for MIMO	M		INTEGER (0..100)	Per cell UL Total PRB usage for MIMO in percentage of the cell total PRB number as defined in TS 38.314 [32].	-	
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Range bound	Explanation
<i>maxnoofSSBAreas</i>	Maximum no. SSB Areas that can be served by a cell. Value is 64.
<i>maxnoofSliceltems</i>	Maximum no. of signalled slice support items. Value is 1024.
<i>maxnoofBPLMNsNR</i>	Maximum no. of PLMN Ids.broadcast in a cell. Value is 12.

9.3.1.130 Composite Available Capacity Group

The *Composite Available Capacity Group* IE indicates the overall available resource level per cell and per SSB area in the cell in Downlink and Uplink.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Composite Available Capacity Downlink	M		Composite Available Capacity 9.3.1.131	For the Downlink	-	
Composite Available Capacity Uplink	M		Composite Available Capacity 9.3.1.131	For the Uplink, including both NUL and SUL (if available)	-	
Composite Available Capacity Supplementary Uplink	O		Composite Available Capacity 9.3.1.131	For the SUL	YES	ignore

9.3.1.131 Composite Available Capacity

The *Composite Available Capacity* IE indicates the overall available resource level in the cell in either Downlink or Uplink.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Cell Capacity Class Value	O		9.3.1.132	
Capacity Value	M		9.3.1.133	'0' indicates no resource is available, Measured on a linear scale.

9.3.1.132 Cell Capacity Class Value

The *Cell Capacity Class Value* IE indicates the value that classifies the cell capacity with regards to the other cells. The *Cell Capacity Class Value* IE only indicates resources that are configured for traffic purposes.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Capacity Class Value	M		INTEGER (1..100,...)	Value 1 shall indicate the minimum cell capacity, and 100 shall indicate the maximum cell capacity. There should be a linear relation between cell capacity and Cell Capacity Class Value.

9.3.1.133 Capacity Value

The *Capacity Value* IE indicates the amount of resources per cell and per SSB area that are available relative to the total gNB-DU resources. The capacity value should be measured and reported so that the minimum gNB-DU resource usage of existing services is reserved according to implementation. The *Capacity Value* IE can be weighted according to the ratio of cell capacity class values, if available.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Capacity Value	M		INTEGER (0..100)	Value 0 shall indicate no available capacity, and 100 shall indicate maximum available capacity with respect to the whole cell. Capacity Value should be measured on a linear scale.
SSB Area Capacity Value List		0..1		
>SSB Area Capacity Value Item		1..<maxnoofSSBAreas>		
>>SSB Index	M		INTEGER (0..63)	
>>SSB Area Capacity Value	M		INTEGER (0..100)	Value 0 shall indicate no available capacity, and 100 shall indicate maximum available capacity . SSB Area Capacity Value should be measured on a linear scale.

Range bound	Explanation
maxnoofSSBAreas	Maximum no. SSB Areas that can be served by a cell. Value is 64.

9.3.1.134 Slice Available Capacity

The *Slice Available Capacity* IE indicates the amount of resources per network slice that are available per cell relative to the total gNB-DU resources per cell. The *Slice Available Capacity Value Downlink* IE and the *Slice Available Capacity Value Uplink* IE can be weighted according to the ratio of the corresponding cell capacity class values contained in the *Composite Available Capacity Group* IE, if available.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Slice Available Capacity List		1		
>Slice Available Capacity Item		1..< maxnoofBPLM NsNR >		
>>PLMN Identity	M		9.3.1.14	Broadcast PLMN
>>S-NSSAI Available Capacity List		1		
>>>S-NSSAI Available Capacity Item	M	1 .. < maxnoofSlicelt ems>		
>>>>S-NSSAI			9.3.1.38	
>>>>Slice Available Capacity Value Downlink	O		INTEGER (0..100)	Value 0 shall indicate no available capacity, and 100 shall indicate maximum available capacity . Slice Available Capacity Value Downlink should be measured on a linear scale.
>>>>Slice Available Capacity Value Uplink	O		INTEGER (0..100)	Value 0 shall indicate no available capacity, and 100 shall indicate maximum available capacity . Slice Available Capacity Value Uplink should be measured on a linear scale.

Range bound	Explanation
maxnoofSliceltms	Maximum no. of signalled slice support items. Value is 1024.
maxnoofBPLMNsNR	Maximum no. of PLMN Ids.broadcast in a cell. Value is 12.

9.3.1.135 Number of Active UEs

The *Number of Active UEs* IE indicates the mean number of active UEs as defined in TS 38.314 [32].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Mean number of Active UEs	M		INTEGER (0..16777215, ...)	As defined in TS 38.314 [32] and where value "1" is equivalent to 0.1 Active UEs, value "2" is equivalent to 0.2 Active UEs, value n is equivalent to $n/10$ Active UEs.

9.3.1.136 Hardware Load Indicator

The *Hardware Load Indicator* IE indicates the status of the Hardware Load.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
DL Hardware Load Indicator	M		INTEGER (0..100)	This indicates the load in percent
UL Hardware Load Indicator	M		INTEGER (0..100)	This indicates the load in percent

9.3.1.137 NR Carrier List

This IE indicates the SCS-specific carriers per TDD, per DL, per UL or per SUL of an NR cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
NR Carrier Item		<i>1..<maxnoofNRSCSs></i>		
>NR SCS	M		ENUMERATED (scs15, scs30, scs60, scs120, ..., scs480, scs960)	SCS for the corresponding carrier.
>Offset to Carrier	M		INTEGER (0..2199, ...)	Offset in frequency domain between Point A (lowest subcarrier of common RB 0) and the lowest usable subcarrier on this carrier in number of PRBs (using the NR SCS IE defined for this carrier). The maximum value corresponds to 275×8–1. See TS 38.211 [33], clause 4.4.2.
>Carrier Bandwidth	M		INTEGER (1..maxnoofPhysicalResourceBlocks, ...)	Width of this carrier in number of PRBs (using the NR SCS IE defined for this carrier). See TS 38.211 [33], clause 4.4.2.

Range bound	Explanation
maxnoofNRSCSs	Maximum no. of SCS-specific carriers per TDD, per DL, per UL or per SUL of an NR cell. Value is 5.
maxnoofPhysicalResourceBlocks	Maximum no. of Physical Resource Blocks. Value is 275.

9.3.1.138 SSB Positions In Burst

Indicates the time domain positions of the transmitted SS-blocks in a half frame with SS/PBCH blocks as defined in TS 38.213 [31], clause 4.1.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>ssb-PositionsInBurst</i>	M			The first/ leftmost bit corresponds to SS/PBCH block index 0, the second bit corresponds to SS/PBCH block index 1, and so on. Value 0 in the bitmap indicates that the corresponding SS/PBCH block is not transmitted while value 1 indicates that the corresponding SS/PBCH block is transmitted.
> <i>ShortBitmap</i>				
>>ShortBitmap	M		BIT STRING (SIZE(4))	
> <i>MediumBitmap</i>				
>>MediumBitmap	M		BIT STRING (SIZE(8))	
> <i>LongBitmap</i>				
>>LongBitmap	M		BIT STRING (SIZE(64))	

9.3.1.139 NR PRACH Configuration

This IE indicates the PRACH resources by a NR cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UL PRACH Configuration	M		NR PRACH Configuration List 9.3.1.140	
SUL PRACH Configuration	O		NR PRACH Configuration List 9.3.1.140	

9.3.1.140 NR PRACH Configuration List

This IE indicates the PRACH resources used or reserved in the UL carrier(s) or SUL carrier(s) of the current NR cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
NR PRACH Configuration Item		$0..<maxnoofPrachConfiguration>$		Length=0 means releasing of all NR PRACH Configuration Items for this UL or SUL.	-	
>NR SCS	M		ENUMERATED (scs15, scs30, scs60, scs120, ..., scs480, scs960)	The SCS of the carrier to which this <i>PRACH Configuration Item</i> relates, i.e. Δf in Section 5.3.2 in TS 38.211 [33]. The values scs15, scs30, scs60, scs120, scs480, and scs960 corresponds to the sub carrier spacing in TS 38.104 [17]. NOTE: Its value may not be identical to the SCS of PRACH.	-	
> PRACH Frequency Start from Carrier	M		INTEGER (0..maxNrofPhysicalResourceBlocks-1, ...)	Lowest number of resource blocks which can be used to deliver MSG1 or the preamble part of MSGA, counting from the start number of the corresponding carrier. Identical to RB_{start} in Section 5.1.2.2.2 in TS 38.214 [34] plus <i>msg1-FrequencyStart</i> or <i>msgA-RO-FrequencyStart</i> in TS 38.331 [8].	-	
>PRACH-FDM	M		ENUMERATED (one, two, four, eight, ...)	<i>M</i> in Section 6.3.3.2 in TS 38.211 [33].	-	
>PRACH Configuration Index	M		INTEGER (0..255, ..., 256..262)	See Section 6.3.3.2 in TS 38.211 [33].	-	
>SSB per RACH Occasion	M		ENUMERATED (oneEighth, oneFourth, oneHalf, one, two, four, eight, sixteen, ...)	Number of SSBs per RACH occasion. Value <i>oneEight</i> corresponds to one SSB associated with 8 RACH occasions, value <i>oneFourth</i> corresponds to one SSB associated with 4 RACH occasions, and so on.	-	

>CHOICE <i>FreqDomainLength</i>	M			For the case of PRACH resources reserved for BFR or MSG1-based SI Request, <i>L139</i> is always used.	-	
>> <i>L839</i>					-	
>>> L839 Info		1			-	
>>>>Root Sequence Index	M		INTEGER (0..837)	See Section 6.3.3.1 in TS 38.211 [33].	-	
>>>>Restricted Set Config	M		ENUMERATED (unrestrictedSet, restrictedSetTy peA, restrictedSetTy peB, ...)	See Section 6.3.3.1 in TS 38.211 [33].	-	
>> <i>L139</i>					-	
>>> L139 Info		1			-	
>>>>PRACH SCS	M		ENUMERATED (scs15, scs30, scs60, scs120, ..., scs480, scs960)	Subcarrier Spacing of PRACH, i.e. Δf_{RA} in Section 5.3.2 in TS 38.211 [33].	-	
>>>>Root Sequence Index	M		INTEGER (0..137)	See Section 6.3.3.1 in TS 38.211 [33].	-	
>> <i>L571</i>					-	
>>> L571 Info		1			YES	reject
>>>>PRACH SCS for L571	M		ENUMERATED (scs30, scs120, ... , scs480)	Subcarrier Spacing of PRACH, i.e. Δf_{RA} in Section 5.3.2 in TS 38.211 [33].	-	
>>>>Root Sequence Index	M		INTEGER (0..569)	See Section 6.3.3.1 in TS 38.211 [33].	-	
>> <i>L1151</i>					-	
>>> L1151 Info		1			YES	reject
>>>>PRACH SCS for L1151	M		ENUMERATED (scs15, scs120, ...)	Subcarrier Spacing of PRACH, i.e. Δf_{RA} in Section 5.3.2 in TS 38.211 [33].	-	
>>>>Root Sequence Index	M		INTEGER (0..1149)	See Section 6.3.3.1 in TS 38.211 [33].	-	
>Zero Correlation Zone Config	M		INTEGER (0..15)	See Section 6.3.3.1 in TS 38.211 [33].	-	

Range bound	Explanation
maxnoofPhysicalResourceBlocks-1	Maximum no. of Physical Resource Blocks minus 1. Value is 274.
maxnoofPrachConfiguration	Maximum no. of PRACH Configuration. Value is 16.

9.3.1.141 TSC Traffic Characteristics

This IE provides the traffic characteristics of TSC QoS flows.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
TSC Assistance Information Downlink	O		TSC Assistance Information 9.3.1.142	
TSC Assistance Information Uplink	O		TSC Assistance Information 9.3.1.142	

9.3.1.142 TSC Assistance Information

This IE provides the TSC assistance information for a TSC QoS flow in the uplink or downlink (see TS 23.501 [21]).

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Periodicity	M		9.3.1.143	Periodicity as specified in TS 23.501 [21].	-	
Burst Arrival Time	O		9.3.1.144	Burst Arrival Time as specified in TS 23.501 [21].	-	
Survival Time	O		9.3.1.231		YES	ignore

9.3.1.143 Periodicity

This IE indicates the Periodicity as defined in TS 23.501 [21].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Periodicity	M		INTEGER (0..640000, ...)	Periodicity expressed in units of 1 us.

9.3.1.144 Burst Arrival Time

This IE indicates the Burst Arrival Time as defined in TS 23.501 [21].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Burst Arrival Time	M		OCTET STRING	Encoded in the same format as the <i>ReferenceTime</i> IE as defined in TS 38.331 [8]. The value is truncated to 1 us granularity.

9.3.1.145 Extended Packet Delay Budget

This IE indicates the Packet Delay Budget for a QoS flow.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Extended Packet Delay Budget	M		INTEGER (0..65535, ...)	Upper bound value for the delay that a packet may experience expressed in unit of 0.01ms.

9.3.1.146 RLC Duplication Information

The IE contains the RLC duplication information in case that the indicated DRB is configured with more than two RLC entities as specified in TS 38.331 [8].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
RLC Duplication State List		1		
>RLC Duplication State Items		1 .. <maxnoofRLC DuplicationState>		Each position in the list represents a secondary RLC entity in ascending order by the logical channel ID in the order of MCG and SCG.
>>Duplication State	M		ENUMERATED (Active, Inactive, ...)	
Primary Path Indication	O		ENUMERATED (True, False,...)	Indicates whether the primary path is located at the gNB-DU for DC based PDCP duplication.

Range bound	Explanation
maxnoofRLCDuplicationState	Maximum no of Secondary RLC entities. Value is 3.

9.3.1.147 Reporting Request Type

This IE indicates the type of accurate reference time information reporting to be handled by the gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Event Type	M		ENUMERATED (on demand, periodic, stop, ...)	
Report Periodicity Value	C- ifEventTypesPeriodic		INTEGER (0..512, ...)	Indicates the periodicity of accurate reference time information report, Unit in radio frame.

C-ifEventTypesPeriodic	Explanation
ifEventTypesPeriodic	This IE shall be present if the <i>Event Type</i> IE is set to "periodic".

9.3.1.148 Time Reference Information

This IE contains the time reference information.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Reference Time	M		9.3.1.149	
Reference SFN	M		INTEGER (0..1023)	
Uncertainty	O		INTEGER (0..32767, ...)	This field indicates the uncertainty of the reference time information provided in ReferenceTimeInfo IE, refer to 6.3.2 of TS 38.331 [8].
Time Information Type	O		ENUMERATED (localClock)	

9.3.1.149 Reference Time

This IE provides the accurate Reference Time information.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Reference Time	M		OCTET STRING	Includes the <i>ReferenceTime</i> IE as defined in 6.3.2 of TS 38.331 [8].

9.3.1.150 MDT Configuration

The IE defines the MDT configuration parameters.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MDT Activation	M		ENUMERATED(Immediate MDT only, Immediate MDT and Trace, ...)	
Measurements to Activate	M		BITSTRING (SIZE(8))	Each position in the bitmap indicates a MDT measurement, as defined in TS 37.320 [35]. Second Bit = M2, Fifth Bit = M5, Seventh Bit = M6, Eighth Bit = M7. Value "1" indicates "activate" and value "0" indicates "do not activate". This version of the specification does not use bits 1, bit 3, bit 4 and bit 6.
M2 Configuration	C-ifM2		ENUMERATED (true, ...)	
M5 Configuration	C-ifM5		9.3.1.152	
M6 Configuration	C-ifM6		9.3.1.153	
M7 Configuration	C-ifM7		9.3.1.154	

Condition	Explanation
ifM2	This IE shall be present if the <i>Measurements to Activate</i> IE has the second bit set to "1".
ifM5	This IE shall be present if the <i>Measurements to Activate</i> IE has the fifth bit set to "1".
ifM6	This IE shall be present if the <i>Measurements to Activate</i> IE has the seventh bit set to "1".
ifM7	This IE shall be present if the <i>Measurements to Activate</i> IE has the eighth bit set to "1".

9.3.1.151 MDT PLMN List

The purpose of the *MDT PLMN List* IE is to provide the list of PLMN allowed for MDT.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MDT PLMN List		1..<maxnoofMDTPLMNs>		
>PLMN Identity	M		PLMN ID 9.3.1.14	

Range bound	Explanation
maxnoofMDTPLMNs	Maximum no. of PLMNs in the MDT PLMN list. Value is 16.

9.3.1.152 M5 Configuration

This IE defines the parameters for M5 measurement collection.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
M5 Collection Period	M		ENUMERATED (ms1024, ms2048, ms5120, ms10240, min1, ...)		-	
M5 Links to log	M		ENUMERATED (uplink, downlink, both- uplink-and- downlink, ...)		-	
M5 Report Amount	O		ENUMERATED (1, 2, 4, 8, 16, 32, 64, infinity...)	Number of reports.	YES	ignore

9.3.1.153 M6 Configuration

This IE defines the parameters for M6 measurement collection.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
M6 Report Interval	M		ENUMERATED (ms120, ms240, ms640, ms1024, ms2048, ms5120, ms10240, ms20480, ms40960, min1,min6, min12, min30,..., ms480)		-	
M6 Links to log	M		ENUMERATED (uplink, downlink, both- uplink-and- downlink, ...)		-	
M6 Report Amount	O		ENUMERATED (1, 2, 4, 8, 16, 32, 64, infinity...)	Number of reports.	YES	ignore

9.3.1.154 M7 Configuration

This IE defines the parameters for M7 measurement collection.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
M7 Collection Period	M		INTEGER (1..60, ...)	Unit: minutes	-	
M7 Links to log	M		ENUMERATED (downlink, ...)		-	
M7 Report Amount	O		ENUMERATED (1, 2, 4, 8, 16, 32, 64, infinity...)	Number of reports.	YES	ignore

9.3.1.155 NID

This IE is used to identify (together with a PLMN identifier) a Stand-alone Non-Public Network. The NID is specified in TS 23.003 [23].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
NID	M		BIT STRING (SIZE(44))	

9.3.1.156 NPN Support Information

This IE contains NPN related information associated with Network Slicing information.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CHOICE <i>NPN Support Information</i>	M			
>SNPN Information				
>>NID	M		9.3.1.155	

9.3.1.157 NPN Broadcast Information

This IE contains NPN related broadcast information.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CHOICE <i>NPN Broadcast Information per PLMN</i>	M			
>SNPN Information				
>>Broadcast SNPN ID List	M		9.3.1.158	
>PNI-NPN Information				
>>Broadcast PNI-NPN ID List	M		9.3.1.162	

9.3.1.158 Broadcast SNPN ID List

This IE contains SNPN related broadcast information associated with a set of PLMNs.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Broadcast SNPN ID List		<i>1..<maxnoofNIDs></i>		
>PLMN Identity	M		9.3.1.14	
>Broadcast NID List	M		9.3.1.159	

Range bound	Explanation
<i>maxnoofNIDs</i>	Maximum no. of NIDs broadcast in a cell. Value is 12.

9.3.1.159 Broadcast NID List

This IE contains a list of NIDs.

IE/Group Name	Presence	RangeNIDsup ported	IE type and reference	Semantics description
Broadcast NID		<i>1..<maxnoofNI Dsupported</i>		
>NID	M		9.3.1.155	

Range bound	Explanation
<i>maxnoofNIDsupported</i>	Maximum no. of NIDs broadcast in a cell. Value is 12.

9.3.1.160 Broadcast CAG-Identifier List

This IE contains a list of CAG-Identifiers.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Broadcast CAG-Identifier List		<i>1..<maxnoofC AGsupported></i>		
>CAG ID	M		9.3.1.161	

Range bound	Explanation
<i>maxnoofCAGsupported</i>	Maximum no. of CAG-Identifiers broadcast in a cell. Value is 12.

9.3.1.161 CAG ID

This IE is used to identify (together with a PLMN identifier) a Public Network Integrated NPN, as defined in TS 23.003 [23].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CAG ID	M		BIT STRING (SIZE (32))	Closed Access Group ID used in NR.

9.3.1.162 Broadcast PNI-NPN ID Information

This IE contains a list of PNI-NPN IDs.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Broadcast PNI-NPN ID Information		<i>1..<maxnoofB PLMNs></i>		Broadcast PLMNs
>PLMN Identity	M		9.3.1.14	
>Broadcast CAG-Identifier List	M		9.3.1.160	

Range bound	Explanation
<i>maxnoofBPLMNs</i>	Maximum no. of broadcast PLMNs by a cell. Value is 12.

9.3.1.163 Available SNPN ID List

This IE indicates the list of available SNPN ID.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Available SNPN ID List		<i>1..<maxnoofNIDs></i>		
>PLMN Identity	M		9.3.1.14	
>Available NID List	M		Broadcast NID List 9.3.1.159	

Range bound	Explanation
<i>maxnoofNIDs</i>	Maximum no. of NIDs broadcast in a cell. Value is 12.

9.3.1.164 Void

9.3.1.165 Extended Slice Support List

This IE indicates a list of supported slices.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Slice Support Item IEs		<i>1..<maxnoofExtSliceItems></i>		
>S-NSSAI	M		9.3.1.38	

Range bound	Explanation
<i>maxnoofExtSliceItems</i>	Maximum no. of signalled slice support items. Value is 65535.

9.3.1.166 Positioning Measurement Result

The purpose of this information element is to provide the measurement result(s).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Positioning Measured Result Item		1 .. <maxnoof PosMeas>			-	
>CHOICE Measured Results Value	M				-	
>>UL Angle of Arrival						
>>>UL Angle of Arrival	M		9.3.1.167		-	
>>UL SRS-RSRP						
>>>UL SRS-RSRP	M		INTEGER (0..126)		-	
>>UL RTOA						
>>>UL RTOA	M		UL RTOA Measurement 9.3.1.168		-	
>>gNB Rx-Tx Time Difference						
>>>gNB Rx-Tx Time Difference	M		9.3.1.170		-	
>>Zenith Angle of Arrival Information						
>>>Zenith Angle of Arrival Information	M		9.3.1.239		YES	reject
>>Multiple UL AoA						
>>>Multiple UL AoA	M		9.3.1.245		YES	reject
>>UL SRS-RSRPP						
>>>UL SRS-RSRPP	M		9.3.1.246		YES	reject
>Time Stamp	M		9.3.1.171		-	
>Measurement Quality	O		TRP Measurement Quality 9.3.1.172		-	
>Measurement Beam Information	O		9.3.1.173		-	
>ARP ID	O		9.3.1.244		YES	ignore
>SRS Resource type	O		9.3.1.247		YES	ignore
>LoS/NLoS Information	O		9.3.1.249		Yes	ignore

Range bound	Explanation
maxnoofPosMeas	Maximum no. of measured quantities that can be configured and reported with one message. Value is 16384.

9.3.1.167 UL Angle of Arrival

This information element contains the uplink Angle of Arrival measurement.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Azimuth Angle of Arrival	M		INTEGER(0..3599)	TS 38.133 [38]
Zenith Angle of Arrival	O		INTEGER(0..1799)	TS 38.133 [38]
LCS to GCS Translation AoA	O		9.3.1.241	If absent, the azimuth and zenith are provided in GCS.

9.3.1.168 UL RTOA Measurement

This information element contains the uplink RTOA measurement.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE <i>UL RTOA Measurement</i>	M				-	
> <i>k0</i>						
>> <i>k0</i>	M		INTEGER (0..1970049)	TS 38.133 [38]	-	
> <i>k1</i>						
>> <i>k1</i>	M		INTEGER (0..985025)	TS 38.133 [38]	-	
> <i>k2</i>						
>> <i>k2</i>	M		INTEGER (0..492513)	TS 38.133 [38]	-	
> <i>k3</i>						
>> <i>k3</i>	M		INTEGER (0..246257)	TS 38.133 [38]	-	
> <i>k4</i>						
>> <i>k4</i>	M		INTEGER (0..123129)	TS 38.133 [38]	-	
> <i>k5</i>						
>> <i>k5</i>	M		INTEGER (0..61565)	TS 38.133 [38]	-	
Additional Path List	O		9.3.1.169	This IE is ignored if the <i>Extended Additional Path List</i> IE is included	-	
Extended Additional Path List	O		9.3.1.248		YES	ignore
TRP Rx TEG Information	O		9.3.1.280		YES	ignore

9.3.1.169 Additional Path List

This information element contains the additional path results of time measurement.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Additional Path Item		1..<maxno ofPath>			-	
>CHOICE <i>Relative Path Delay</i>	M				-	
>>k0						
>>>k0	M		INTEGER(0..16351)		-	
>>k1						
>>>k1	M		INTEGER(0..8176)		-	
>>k2						
>>>k2	M		INTEGER(0..4088)		-	
>>k3						
>>>k3	M		INTEGER(0..2044)		-	
>>k4						
>>>k4	M		INTEGER(0..1022)		-	
>>k5						
>>>k5	M		INTEGER(0..511)		-	
>Path Quality	O		TRP Measurement Quality 9.3.1.172		-	
>Multiple UL AoA	O		9.3.1.245		YES	ignore
>Path Power	O		UL SRS-RSRPP 9.3.1.246		YES	ignore

Range bound	Explanation
maxnoofPath	Maximum no. of additional path measurements. Value is 2.

9.3.1.170 gNB Rx-Tx Time Difference

This information element contains the gNB Rx-Tx Time Difference measurement.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE <i>gNB Rx-Tx Time Difference Measurement</i>	M				-	
> <i>k0</i>						
>> <i>k0</i>	M		INTEGER (0..1970049)	TS 38.133 [38]	-	
> <i>k1</i>						
>> <i>k1</i>	M		INTEGER (0..985025)	TS 38.133 [38]	-	
> <i>k2</i>						
>> <i>k2</i>	M		INTEGER (0..492513)	TS 38.133 [38]	-	
> <i>k3</i>						
>> <i>k3</i>	M		INTEGER (0..246257)	TS 38.133 [38]	-	
> <i>k4</i>						
>> <i>k4</i>	M		INTEGER (0..123129)	TS 38.133 [38]	-	
> <i>k5</i>						
>> <i>k5</i>	M		INTEGER (0..61565)	TS 38.133 [38]	-	
Additional Path List	O		9.3.1.169		-	
Extended Additional Path List	O		9.3.1.248		YES	ignore
TRP TEG Information	O		9.3.1.253		YES	ignore

9.3.1.171 Time Stamp

This information element contains the time stamp associated with the measurement.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
System Frame Number	M		INTEGER(0..1023)		-	
CHOICE <i>Slot Index</i>	M				-	
> <i>SCS-15</i>						
>> <i>SCS-15</i>	M		INTEGER(0..9)		-	
> <i>SCS-30</i>						
>> <i>SCS-30</i>	M		INTEGER(0..19)		-	
> <i>SCS-60</i>						
>> <i>SCS-60</i>	M		INTEGER(0..39)		-	
> <i>SCS-120</i>						
>> <i>SCS-120</i>	M		INTEGER(0..79)		-	
> <i>SCS-480</i>						
>> <i>SCS-480</i>	M		INTEGER(0..319)		YES	reject
> <i>SCS-960</i>						
>> <i>SCS-960</i>	M		INTEGER(0..639)		YES	reject
Measurement Time	O		Relative Time 1900 9.3.1.183		-	

9.3.1.172 TRP Measurement Quality

This information element contains the TRP's best estimate of the quality of the measurement.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>TRP Measurement Quality</i>	M			
> <i>Timing Measurement Quality</i>				
>> Measurement Quality	M		INTEGER(0..31)	TS 37.355 [39]
>> Resolution	M		ENUMERATED(0.1m, 1m, 10m, 30m, ...)	TS 37.355 [39]
> <i>Angle Measurement Quality</i>				
>> Azimuth Quality	M		INTEGER(0..255)	
>> Zenith Quality	O		INTEGER(0..255)	
>> Resolution	M		ENUMERATED(0.1deg, ...)	

9.3.1.173 Measurement Beam Information

This information element contains the receiving beam information when measuring UL signals.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PRS Resource ID	O		INTEGER(0..63)	
PRS Resource Set ID	O		INTEGER(0..7)	
SSB Index	O		INTEGER(0..63)	

9.3.1.174 NG-RAN Access Point Position

This IE is used to identify the geographical position of an NG-RAN Access Point / TRP / TRP Antenna Reference Points. It is expressed as ellipsoid point with altitude and uncertainty ellipsoid according to TS 23.032 [36].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Latitude Sign	M		ENUMERATED (North, South)	
Degrees Of Latitude	M		INTEGER (0..2 ²³ -1)	The IE value (N) is derived by this formula: $N \leq 2^{23} \times X / 90 < N+1$ X being the latitude in degrees (0°.. 90°).
Degrees Of Longitude	M		INTEGER (-2 ²³ ..2 ²³ -1)	The IE value (N) is derived by this formula: $N \leq 2^{24} \times X / 360 < N+1$ X being the longitude in degrees (-180°..+180°).
Direction of Altitude	M		ENUMERATED (Height, Depth)	
Altitude	M		INTEGER (0..2 ¹⁵ -1)	The relation between the value (N) and the altitude (a) in meters it describes is $N \leq a < N+1$, except for $N=2^{15}-1$ for which the range is extended to include all greater values of (a).
Uncertainty semi-major	M		INTEGER (0..127)	The uncertainty "r" is derived from the "uncertainty code" k by $r = 10 \times (1.1^k - 1)$.
Uncertainty semi-minor	M		INTEGER (0..127)	The uncertainty "r" is derived from the "uncertainty code" k by $r = 10 \times (1.1^k - 1)$.
Orientation of major axis	M		INTEGER (0..179)	
Uncertainty Altitude	M		INTEGER (0..127)	The uncertainty altitude "h" expressed in metres is derived from the "uncertainty code" k, by: $h = 45 \times (1.025^k - 1)$.
Confidence	M		INTEGER (0..100)	In percentage

9.3.1.175 Requested SRS Transmission Characteristics

This IE contains the requested SRS configuration for the UE for positioning purposes.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Number Of Periodic Transmissions	C-ifResourceTypePeriodic		INTEGER (0..500,...)	The number of periodic SRS transmissions requested. The value of '0' represents an infinite number of SRS transmissions.	-	
Resource Type	M		ENUMERATED (periodic, semi-persistent, aperiodic, ...)		-	
CHOICE <i>Bandwidth SRS</i>	M				-	
>FR1					-	
>>FR1 Bandwidth	M		ENUMERATED (5, 10, 20, 40, 50, 80, 100, ...)		-	
>FR2					-	
>>FR2 Bandwidth	M		ENUMERATED (50, 100, 200, 400, ..., 800, 1600, 2000)		-	
SRS Resource Set List		0.. 1			-	
>SRS Resource Set Item		1..<maxnoSRS-ResourceSets>			-	
>>Number of SRS Resources Per Set	O		INTEGER (1..16,...)	The number of SRS Resources per resource set for SRS transmission.	-	
>>Periodicity List		0.. 1			-	
>>>Periodicity List Item		1..<maxnoSRS-ResourcePerSet>			-	
>>>>PeriodicitySRS	M		ENUMERATED (0.125, 0.25, 0.5, 0.625, 1, 1.25, 2, 2.5, 4, 5, 8, 10, 16, 20, 32, 40, 64, 80, 160, 320, 640, 1280, 2560, 5120, 10240, ...)	Milli-seconds	-	
>>Spatial Relation Information	O		9.3.1.181	This IE is ignored if the <i>Spatial Relation Information per SRS Resource</i> IE is present.	-	
>>Pathloss Reference Information	O		9.3.1.201		-	
>>Spatial Relation Information per SRS Resource	O		9.3.1.210		YES	ignore
SSB Information	O		9.3.1.202		-	

SRS Frequency	O		INTEGER(0..3279165)	NR ARFCN The carrier frequency of SRS transmission bandwidth.	YES	ignore
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Condition	Explanation
ifResourceTypePeriodic	This IE shall be present if the <i>Resource Type</i> IE is set to the value "Periodic".

Range bound	Explanation
maxnoSRS-ResourceSets	Maximum no of requested SRS Resource Sets for SRS transmission. Value is 16.
maxnoSRS-ResourcePerSet	Maximum no of SRS Resources per set. Value is 16.

9.3.1.176 TRP Information

The *TRP Information* IE contains information for one TRP within a gNB-DU.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
TRP ID	M		9.3.1.197		-	
TRP Information Type Response List		1			-	
>TRP Information Type Response Item		1 .. <maxnoof TRPInfoTypes>			-	
>>CHOICE TRP Information Type Response Item	M				-	
>>>NR PCI	M		INTEGER (0..1007)	NR Physical Cell ID	-	
>>>NR CGI						
>>>>NR CGI			9.3.1.12		-	
>>>NR ARFCN						
>>>>NR ARFCN	M		INTEGER (0..3279165)		-	
>>>PRS Configuration						
>>>>PRS Configuration	M		9.3.1.177		-	
>>>SSB Information						
>>>>SSB Information	M		9.3.1.202		-	
>>>SFN Initialisation Time						
>>>>SFN Initialisation Time	M		Relative Time 1900 9.3.1.183		-	
>>>Spatial Direction Information						
>>>>Spatial Direction Information	M		9.3.1.179		-	
>>>Geographical Coordinates						
>>>>Geographical Coordinates	M		9.3.1.184		-	
>>>TRP Type						
>>>>TRP Type	M		ENUMERATED (prs-only-tp, srs-only-rp, tp, rp, trp...)	TS 38.305 [42]	YES	reject
>>>On-demand PRS TRP Information						
>>>>On-demand PRS TRP Information	M		9.3.1.240		YES	reject
>>>TRP Tx TEG Association						
>>>>TRP Tx TEG Association	M		9.3.1.252		YES	reject
>>>TRP Beam Antenna						
>>>>TRP Beam Antenna Information	M		9.3.1.256		YES	reject

Range bound	Explanation
maxnoofTRPInfoTypes	Maximum no of TRP information types that can be requested and reported with one message. Value is 64.

9.3.1.177 PRS Configuration

This information element contains the DL PRS configuration for the TRP.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PRS Resource Set List	M	1..<maxnoofPRS resourceSets>		
>PRS Resource Set ID	M		INTEGER(0..7)	
>Subcarrier Spacing	M		ENUMERATED(kHz15, kHz30, kHz60, kHz120, ...)	
>PRS bandwidth	M		INTEGER(1..63)	24,28,...,272 PRBs
>Start PRB	M		INTEGER(0..2176)	Starting PRB to Point A
>Point A	M		INTEGER(0..3279165)	NR ARFCN
>Comb Size	M		ENUMERATED(2, 4, 6, 12, ...)	
>CP Type	M		ENUMERATED(normal, extended, ...)	
>Resource Set Periodicity	M		ENUMERATED(4,5, 8,10,16,20,32,40,64, 80,160,320,640,1280,2560,5120,10240,20480,40960,81920, ...)	
>Resource Set Slot Offset	M		INTEGER(0..81919, ...)	
>Resource Repetition Factor	M		ENUMERATED(rf1, rf2,rf4,rf6,rf8,rf16,rf32,...)	
>Resource Time Gap	M		ENUMERATED(tg1, tg2,tg4,tg8,tg16,tg32,...)	
>Resource Number of Symbols	M		ENUMERATED(n2, n4,n6,n12,...)	
>PRS Muting	O			
>>Option1	O			
>>>Muting Pattern	M		DL-PRS Muting Pattern 9.3.1.178	Muting pattern option 1 is used to mute the whole PRS resource set (within a period)
>>>Muting Bit Repetition Factor	M		ENUMERATED(rf1, rf2,rf4,rf8,...)	
>>Option2	O			
>>>Muting Pattern	M		DL-PRS Muting Pattern 9.3.1.178	Muting pattern option 2 is used to mute the selected repetition of the resource set (within the period)
>PRS Resource Transmit Power	M		INTEGER(-60..50)	
>PRS Resource List	M	1..<maxnoofPRS resources>		<i>NR-DL-PRS-Resource-r16</i> as defined in TS 37.355 [39]
>>PRS Resource ID	M		INTEGER(0..63)	
>>Sequence ID	M		INTEGER(0..4095)	
>>RE Offset	M		INTEGER(0..11, ...)	
>>Resource Slot Offset	M		INTEGER(0..511)	
>>Resource Symbol Offset	M		INTEGER(0..12)	
>>CHOICE QCL Info	O			
>>>SSB				
>>>>PCI	M		INTEGER(0..1007)	
>>>>SSB Index	O		INTEGER(0..63)	
>>>>DL-PRS	O			
>>>>QCL Source PRS Resource Set ID	M		INTEGER(0..7)	
>>>>QCL Source PRS Resource ID	O		INTEGER(0..63)	If absent, the QCL source PRS resource ID is the same as the PRS resource ID

Range bound	Explanation
maxnoofPRSresourceSets	Maximum no of PRS resource sets. Value is 8.
maxnoofPRSresources	Maximum no of PRS resources per PRS resource set. Value is 64.

9.3.1.178 DL-PRS Muting Pattern

This information element contains the DL-PRS muting pattern.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE DL-PRS Muting Pattern	M			
>Two				
>>Two	M		BIT STRING (SIZE(2))	
>Four				
>>Four	M		BIT STRING (SIZE(4))	
>Six				
>>Six	M		BIT STRING (SIZE(6))	
>Eight				
>>Eight	M		BIT STRING (SIZE(8))	
>Sixteen				
>>Sixteen	M		BIT STRING (SIZE(16))	
>Thirty-two				
>>Thirty-two	M		BIT STRING (SIZE(32))	

9.3.1.179 Spatial Direction Information

This information element contains the spatial direction information of the DL PRS resources for the TRP.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
NR-PRS Beam Information	M		9.3.1.198	The spatial directions of DL-PRS Resources for TRP

9.3.1.180 SRS Resource Set ID

This information element indicates a resource set in the UE for UL SRS transmission.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SRS Resource Set ID	M		INTEGER (0..15)	According to TS 38.331 [8]

9.3.1.181 Spatial Relation Information

This information element indicates a spatial relation for transmission of UL SRS by a UE.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Spatial Relation for Resource ID		1		According to TS 38.321 [16] and and TS 38.331 [8]
>Spatial Relation for Resource ID Item		1..<maxno SpatialRelations>		
>>CHOICE Reference Signal	M			
>>>NZIP CSI-RS				
>>>>NZIP CSI-RS Resource ID	M		INTEGER (0..191)	
>>>SSB				
>>>>PCI	M		INTEGER (0..1007)	
>>>>SSB Index	O		INTEGER (0..63)	
>>>SRS				
>>>>SRS Resource ID	M		INTEGER (0..63)	
>>>Positioning SRS				
>>>> Positioning SRS Resource ID	M		INTEGER (0..63)	
>>>DL-PRS				
>>>>DL-PRS ID	M		INTEGER (0..255)	
>>>>DL-PRS Resource Set ID	M		INTEGER (0..7)	
>>>>DL PRS Resource ID	O		INTEGER (0..63)	

Range bound	Explanation
maxnoSpatialRelations	Maximum no. of Spatial Relations that can be configured. Value is 64.

9.3.1.182 SRS Resource Trigger

This information element indicates a DCI code point according to a SRS resource set configuration.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Aperiodic SRS Resource Trigger List		1..<maxnoSRS-TriggerStates>		According to TS 38.331 [8]
>Aperiodic SRS Resource Trigger			INTEGER (1..3)	

Range bound	Explanation
maxnoSRS-TriggerStates	Maximum no. of SRS trigger states. Value is 3.

9.3.1.183 Relative Time 1900

This information element indicates the initialisation time (e.g. SFN Initialisation Time for a cell, requested time for an action, etc).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Relative Time 1900	M		BIT STRING (SIZE(64))	Time in seconds relative to 00:00:00 on 1 January 1900 (calculated as continuous time without leap seconds and traceable to a common time reference) where binary encoding of the integer part is in the first 32 bits and binary encoding of the fraction part in the last 32 bits. The fraction part is expressed with a granularity of $1/2^{32}$ second

9.3.1.184 Geographical Coordinates

This information element contains the geographical coordinates for the TRP and any associated ARP(s).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE TRP Position Definition Type	M				-	
>Direct					-	
>>CHOICE Accuracy	M				-	
>>>normal accuracy					-	
>>>>TRP Position	M		NG-RAN Access Point Position 9.3.1.174	The configured estimated geographical position of the antenna of the cell/TRP.	-	
>>>high accuracy					-	
>>>>TRP High Accuracy Access Point Position	M		NG-RAN High Accuracy Access Point Position 9.3.1.190	The configured estimated geographical high accuracy position of the antenna of the cell/TRP.	-	
>Referenced					-	
>>Reference Point	M		9.3.1.188	The reference point is used to derive the TRP position	-	
>>CHOICE Type	M				-	
>>>Geodetic					-	
>>>>TRP Position Relative Geodetic	M		Relative Geodetic Location 9.3.1.186	The configured estimated relative geodetic coordinate of the antenna of the cell/TRP	-	
>>>Cartesian					-	
>>>>TRP Position Relative Cartesian	M		Relative Cartesian Location 9.3.1.187	The configured estimated relative Cartesian coordinate of the antenna of the cell/TRP	-	
DL-PRS Resource Coordinates	O		9.3.1.185	DL-PRS Resource Coordinates relative to the TRP coordinate	-	
ARP Location Information	O		9.3.1.243		YES	ignore

9.3.1.185 DL-PRS Resource Coordinates

This information element contains the geographical coordinates of the antenna reference points (ARP) for the DL-PRS Resources of a TRP.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL-PRS Resource Set ARP List	M	1..<maxnoofPRS-ResourceSets>		
>DL-PRS Resource Set ID	M		INTEGER (0..7)	
>CHOICE <i>DL-PRS Resource Set ARP Location</i>	M			Relative to the geographical coordinates for the TRP. If this IE is absent, the Relative Location is zero for the indicated DL-PRS Resource Set ID.
>> <i>Geodetic</i>				
>>>Relative Geodetic Location	M		Relative Geodetic Location 9.3.1.186	
>> <i>Cartesian</i>				
>>>Relative Cartesian Location	M		Relative Cartesian Location 9.3.1.187	
>DL-PRS Resource ARP List	M	1..<maxnoofPRS-ResourcesPerSet>		
>>DL-PRS Resource ID	M		INTEGER (0..63)	
>>CHOICE <i>DL-PRS Resource ARP Location</i>	M			Relative to the DL-PRS Resource Set ARP Location. If this IE is absent, the Relative Location is zero for the indicated DL-PRS Resource ID.
>> <i>Geodetic</i>				
>>>Relative Geodetic Location	O		Relative Geodetic Location 9.3.1.186	
>> <i>Cartesian</i>				
>>>Relative Cartesian Location	O		Relative Cartesian Location 9.3.1.187	

Range bound	Explanation
maxnoofPRS-ResourceSets	Maximum no of DL-PRS resource sets per TRP. Value is 2.
maxnoofPRS-ResourcesPerSet	Maximum no of DL-PRS resources of the DL-PRS resource set of the TRP. Value is 64.

9.3.1.186 Relative Geodetic Location

This information element provides a location relative to some known reference location in a relative geodetic coordinate system.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Milli-Arc-Second Units	M		ENUMERATED (0.03, 0.3, 3, ...)	Units and scale factor for the delta-latitude and delta-longitude fields, TS 37.355 [39].
Height Units	M		ENUMERATED (mm, cm, m, ...)	Units and scale factor for the delta-height field, TS 37.355 [39].
Delta Latitude	M		INTEGER (-1024..1023)	Delta value in latitude in the unit provided in Milli-Arc-Second Units, TS 37.355 [39].
Delta Longitude	M		INTEGER (-1024..1023)	Delta value in longitude in the unit provided in Milli-Arc-Second Units, TS 37.355 [39].
Delta Height	M		INTEGER (-1024..1023)	Delta value in ellipsoidal height in the unit provided in Height Units, TS 37.355 [39].
Location uncertainty	M		9.3.1.189	

9.3.1.187 Relative Cartesian Location

This information element provides a location relative to some known reference location in a relative Cartesian coordinate.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
XYZ unit	M		ENUMERATED (mm, cm, dm,...)	
X value	M		INTEGER ($-2^{16}..2^{16}-1$)	Positive value represents easting from reference point, in units of <i>XYZ Unit</i> IE.
Y value	M		INTEGER ($-2^{16}..2^{16}-1$)	Positive value represents northing from reference point in units of <i>XYZ Unit</i> IE.
Z value	M		INTEGER ($-2^{15}..2^{15}-1$)	Height with respect to reference point in units of <i>XYZ Unit</i> IE, where the XY-plane is horizontal and the Z-axis points up.
Location uncertainty	M		9.3.1.189	

9.3.1.188 Reference Point

This information element provides a reference point location information.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>ReferencePoint</i>	M			Reference point to which relative location information is related to
> <i>Coordinate ID</i>				
>>Coordinate ID	M		INTEGER(0.. 2 ⁹ -1,..)	Referential ID mapped via OAM
> <i>Reference Point Coordinates</i>				
>>Reference Point Position	M		NG-RAN Access Point Position 9.3.1.174	
> <i>Reference Point Coordinates High Accuracy</i>				
>>Reference Point High Accuracy Access Position	M		NG-RAN High Accuracy Access Point Position 9.3.1.190	

9.3.1.189 Location Uncertainty

This information element provides the location uncertainty information.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Horizontal Uncertainty	M		INTEGER (0..255)	Horizontal uncertainty of the ARP latitude/longitude. Corresponds to the encoded high accuracy uncertainty as defined in TS 23.032 [36]
Horizontal Confidence	M		INTEGER (0..100)	Corresponds to confidence as defined in TS 23.032 [36].
Vertical Uncertainty	M		INTEGER (0..255)	Vertical uncertainty of the ARP altitude. Corresponds to the encoded high accuracy uncertainty as defined in TS 23.032 [36]
Vertical Confidence	M		INTEGER (0..100)	Corresponds to confidence as defined in TS 23.032 [36].

9.3.1.190 NG-RAN High Accuracy Access Point Position

The *NG-RAN High Accuracy Access Point Position* IE is used to identify the geographical position of an NG-RAN Access Point. It is expressed as High Accuracy Ellipsoid point with altitude and uncertainty ellipsoid according to TS 23.032 [36].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Degrees of Latitude	M		INTEGER(-2147483648..2147483647)	
Degrees of Longitude	M		INTEGER(-2147483648..2147483647)	
Altitude	M		INTEGER(-64000..1280000)	
Uncertainty Semi Major	M		INTEGER (0..255)	
Uncertainty Semi Minor	M		INTEGER (0..255)	
Orientation Major Axis	M		INTEGER (0..179)	
Horizontal Confidence	M		INTEGER (0..100)	
Uncertainty Altitude	M		INTEGER (0..255)	
Vertical Confidence	M		INTEGER (0..100)	

9.3.1.191 Positioning Broadcast Cells

This IE is used to indicate the cells that are requested to broadcast, or failed to broadcast, the associated posSIB(s).

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Positioning Broadcast Cells		1 .. < <i>maxnoBcastCell</i> >		
>NR CGI	M		9.3.1.12	

Range bound	Explanation
maxnoBcastCells	Maximum no. of cells broadcasting a posSIB in a NB-DU. Value is 16384.

9.3.1.192 SRS Configuration

This information element contains the SRS configuration configured by the gNB-CU for the UE.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SRS Carrier List		<i>1..<maxnoSRS-Carriers></i>		
>Point A	M		INTEGER (0..3279165)	NR ARFCN
>Uplink Channel BW-PerSCS-List		<i>1..<maxnoSCSs></i>		SCS-SpecificCarrier TS 38.331 [8]
>>Offset To Carrier	M		INTEGER(0..2199, ...)	First usable RB to Point A in the number of PRBs
>>Subcarrier Spacing	M		ENUMERATED(kHz15, kHz30, kHz60, kHz120, ..., kHz480, kHz960)	
>>Carrier Bandwidth	M		INTEGER(1..275, ...)	
>Active UL BWP	M			Only the configuration in the active UL BWP is needed.
>>Location And Bandwidth	M		INTEGER(0..37949, ...)	BWP TS 38.331 [8]
>>Subcarrier Spacing	M		ENUMERATED(kHz15, kHz30, kHz60, kHz120, ..., kHz480, kHz960)	
>>Cyclic Prefix	M		ENUMERATED(Normal, Extended)	
>>Tx Direct Current Location	M		INTEGER(0..3301, ...)	
>>Shift7dot5kHz	O		ENUMERATED(true, ...)	
>>>SRS Config	M			<i>SRS-Config</i> as defined in TS 38.331 [8]
>>>>SRS Resource List		<i>0..<maxnoSRS-Resources></i>		
>>>>>SRS Resource	M		9.3.1.193	<i>SRS-Resource</i> as defined in TS 38.331 [8]
>>>>Positioning SRS Resource List		<i>0..<maxnoSRS-PosResources></i>		
>>>>>Positioning SRS Resource	M		9.3.1.194	<i>SRS-PosResource-r16</i> as defined in TS 38.331 [8]
>>>>SRS Resource Set List		<i>0..<maxnoSRS-ResourceSets></i>		
>>>>>SRS Resource Set	M		9.3.1.195	<i>SRS-ResourceSet</i> as defined in TS 38.331 [8]
>>>>Positioning SRS Resource Set List		<i>0..<maxnoSRS-PosResourceSets></i>		
>>>>>Positioning SRS Resource Set	M		9.3.1.196	<i>SRS-PosResourceSet-r16</i> as defined in TS 38.331 [8]
>PCI	O		INTEGER (0..1007)	Physical Cell ID of the cell that contains the SRS carrier

Range bound	Explanation
maxnoSRS-Carriers	Maximum no of carriers for SRS. Value is 32.
maxnoSCSs	Maximum no of SCS spacings for a carrier. Value is 5.
maxnoSRS-Resources	Maximum no of SRS resources per UL BWP. Value is 64.
maxnoSRS-PosResources	Maximum no of positioning SRS resources per UL BWP. Value is 64.
maxnoSRS-ResourceSets	Maximum no of SRS resource sets. Value is 16.
maxnoSRS-PosResourceSets	Maximum no of positioning SRS resource sets per UL BWP. Value is 16.

9.3.1.193 SRS Resource

This information element contains the SRS resource.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SRS Resource ID	M		INTEGER (0..63, ...)	
Number of Ports	M		ENUMERATED(ports1, ports2, ports4)	
CHOICE <i>Transmission Comb</i>	M			
> <i>Comb Two</i>				
>>Comb Offset	M		INTEGER(0..1)	
>>Cyclic Shift	M		INTEGER(0..7)	
> <i>Comb Four</i>				
>>Comb Offset	M		INTEGER(0..3)	
>>Cyclic Shift	M		INTEGER(0..11)	
Start Position	M		INTEGER(0..13)	
Number of Symbols	M		ENUMERATED(1,2,4)	
Repetition Factor	M		ENUMERATED(1,2,4)	
Frequency Domain Position	M		INTEGER(0..67)	
Frequency Domain Shift	M		INTEGER(0..268)	
C-SRS	M		INTEGER(0..63)	
B-SRS	M		INTEGER(0..3)	
B-Hop	M		INTEGER(0..3)	
Group or Sequence Hopping	M		ENUMERATED(Neither, groupHopping, sequenceHopping)	
CHOICE <i>Resource Type</i>	M			
> <i>Periodic</i>				
>>Periodicity	M		ENUMERATED(slot1, slot2, slot4, slot5, slot8, slot10, slot16, slot20, slot32, slot40, slot64, slot80, slot160, slot320, slot640, slot1280, slot2560, ...)	
>>Offset	M		INTEGER(0..2559, ...)	
> <i>Semi-persistent</i>				
>>Periodicity	M		ENUMERATED(slot1, slot2, slot4, slot5, slot8, slot10, slot16, slot20, slot32, slot40, slot64, slot80, slot160, slot320, slot640, slot1280, slot2560, ...)	
>>Offset	M		INTEGER(0..2559, ...)	
> <i>Aperiodic</i>				
>>Aperiodic Resource Type	M		ENUMERATED(true, ...)	
Sequence ID	M		INTEGER(0..1023)	

9.3.1.194 Positioning SRS Resource

This information element contains the SRS resource for positioning.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Positioning SRS Resource ID	M		INTEGER (0..63)	
CHOICE <i>Transmission Comb Positioning</i>	M			
> <i>Comb Two</i>				
>>Comb Offset	M		INTEGER(0..1)	
>>Cyclic Shift	M		INTEGER(0..7)	
> <i>Comb Four</i>				
>>Comb Offset	M		INTEGER(0..3)	
>>Cyclic Shift	M		INTEGER(0..11)	
> <i>Comb Eight</i>				
>>Comb Offset	M		INTEGER(0..7)	
>>Cyclic Shift	M		INTEGER(0..5)	
Start Position	M		INTEGER(0..13)	
Number of Symbols	M		ENUMERATED(1,2,4,8,12)	
Frequency Domain Shift	M		INTEGER(0..268)	
C-SRS	M		INTEGER(0..63)	
Group or Sequence Hopping	M		ENUMERATED(Neither, groupHopping, sequenceHopping)	
CHOICE <i>Resource Type Positioning</i>	M			
> <i>Periodic</i>				
>>Periodicity	M		ENUMERATED(slot1, slot2, slot4, slot5, slot8, slot10, slot16, slot20, slot32, slot40, slot64, slot80, slot160, slot320, slot640, slot1280, slot2560, slot5120, slot10240, slot40960, slot81920, ..., slot128, slot256, slot512, slot20480)	
>>Offset	M		INTEGER(0..81919, ...)	
> <i>Semi-persistent</i>				
>>Periodicity	M		ENUMERATED(slot1, slot2, slot4, slot5, slot8, slot10, slot16, slot20, slot32, slot40, slot64, slot80, slot160, slot320, slot640, slot1280, slot2560, slot5120, slot10240, slot20480, slot40960, slot81920, ..., slot128, slot256, slot512, slot20480)	
>>Offset	M		INTEGER(0..81919, ...)	
> <i>Aperiodic</i>				
>>Slot offset	M		INTEGER(0..32)	
Sequence ID	M		INTEGER(0..65535)	
CHOICE <i>Spatial Relation Positioning</i>	O			
> <i>SSB</i>				
>>PCI	M		INTEGER (0..1007)	
>>SSB index	O		INTEGER(0..63)	
> <i>PRS</i>				
>>PRS ID	M		INTEGER(0..255)	

>>PRS Resource Set ID	M		INTEGER(0..7)	
>>PRS Resource ID	O		INTEGER(0..63)	

9.3.1.195 SRS Resource Set

This information element indicates a SRS resource set in the UE for UL SRS transmission.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SRS Resource Set ID	M		INTEGER(0..15)	
SRS Resource ID List		1..<maxnoSRS-ResourcePerSet>		
>SRS Resource ID	M		INTEGER (0..63, ...)	
CHOICE <i>Resource Set Type</i>	M			
> <i>Periodic</i>				
>>PeriodicSet	M		ENUMERATED(true, ...)	
> <i>Semi-persistent</i>				
>>Semi-persistentSet	M		ENUMERATED(true, ...)	
> <i>Aperiodic</i>				
>>SRS Resource Trigger List	M		INTEGER(1..3)	
>>Slot offset	M		INTEGER(0..32)	

Range bound	Explanation
maxnoSRS-ResourcePerSet	Maximum no of SRS resources per SRS resource set. Value is 16.

9.3.1.196 Positioning SRS Resource Set

This information element indicates a positioning SRS resource set in the UE for UL SRS transmission.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Positioning SRS Resource Set ID	M		INTEGER(0..15)	
Positioning SRS Resource ID List		1..<maxnoSRS-PosResourcePerSet>		
>Positioning SRS Resource ID	M		INTEGER (0..63, ...)	
CHOICE <i>Resource Type</i>	M			
> <i>Periodic</i>				
>>PosperiodicSet	M		ENUMERATED(true, ...)	
> <i>Semi-persistent</i>				
>>Possemi-persistentSet	M		ENUMERATED(true, ...)	
> <i>Aperiodic</i>				
>>SRS Resource Trigger List	M		INTEGER(1..3)	

Range bound	Explanation
maxnoSRS-PosResourcePerSet	Maximum no of positioning SRS resources per positioning SRS resource set. Value is 16.

9.3.1.197 TRP ID

The *TRP ID* IE is used to identify a TRP uniquely within a gNB-CU.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
TRP Identifier	M		INTEGER (1..65535,...)	Identifies a TRP within an gNB-CU

9.3.1.198 NR-PRS Beam Information

This IE contains spatial direction information of the DL-PRS Resources.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
NR-PRS Beam Information List		1				
>NR-PRS Beam Information Item		1 .. <maxnoofPRS-Resource Sets >				
>>PRS Resource Set ID	M		INTEGER (0..7)	The resource set in which the resources are associated with the angle.		
>>PRS Angle List		1				
>>>PRS Angle Item		1..<maxnoofPRS-Resources PerSet >				
>>>>NR PRS Azimuth	M		INTEGER (0..359)		-	
>>>>NR PRS Azimuth fine	O		INTEGER (0..9)	Fine angles	-	
>>>>NR PRS Elevation	O		INTEGER (0..180)		-	
>>>>NR PRS Elevation fine	O		INTEGER (0..9)	Fine angles	-	
>>>>PRS Resource ID	O		INTEGER(0..63)		YES	ignore
LCS to GCS Translation List		0..1		If absent, the azimuth and elevation are provided in GCS.		
>LCS to GCS Translation		1 .. <maxnooflcs-gcs-translation >				
>>Alpha	M		INTEGER (0..359)			
>>Alpha-fine	O		INTEGER (0..9)	Fine angles		
>>Beta	M		INTEGER (0..359)			
>>Beta-fine	O		INTEGER (0..9)	Fine angles		
>>Gamma	M		INTEGER (0..359)			
>>Gamma-fine	O		INTEGER (0..9)	Fine angles		

Range bound	Explanation
maxnoofPRS-ResourceSets	Maximum no of DL-PRS resource sets per TRP. Value is 2.

maxnoofPRS-ResourcesPerSet	Maximum no of DL-PRS resources of the DL-PRS resource set of the TRP. Value is 64.
maxnooflcs-gcs-translation	Maximum no. of LCS-GS-Translation-Parameters that can reported with one message. Value is 3. The current version of the specification supports 1.

9.3.1.199 E-CID Measurement Result

The purpose of this IE is to provide the E-CID measurement result.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Geographical Coordinates	O		9.3.1.184	The configured estimated geographical position of the antenna of the cell.	-	
Measured Results List		<i>0..1</i>				
>E-CID Measured Results Item		<i>1 .. <maxnoMeasE-CID></i>				
>>CHOICE Measured Results Value	M					
>>>Value Angle of Arrival NR						
>>>>Value Angle of Arrival NR	M		UL Angle of Arrival 9.3.1.167		-	
>>>>Value Timing Advance NR						
>>>>>Value Timing Advance NR	M		INTEGER (0..7690)	As defined in TS 38.215 [43]	YES	ignore

Range bound	Explanation
maxnoMeasE-CID	Maximum no. of measured quantities that can be configured and reported with one message. Value is 64.

9.3.1.200 Cell Portion ID

This IE gives the current Cell Portion associated with the target UE. The Cell Portion ID is the unique identifier for a cell portion within a cell.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Cell Portion ID	M		INTEGER (0..4095, ...)	

9.3.1.201 Pathloss Reference Information

This information element indicates a pathloss reference for transmission of UL SRS by a UE.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Pathloss Reference Signal</i>	M			
>SSB				
>>PCI	M		INTEGER (0..1007)	
>>SSB Index	O		INTEGER (0..63)	
>DL-PRS				
>>DL-PRS ID	M		INTEGER (0..255)	
>>DL-PRS Resource Set ID	M		INTEGER (0..7)	
>>DL PRS Resource ID	O		INTEGER (0..63)	

9.3.1.202 SSB Information

This information element contains the SSB time/frequency information for the TRPs.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SSB Information List		1		
>SSB Information Item		1...<maxNoSSBs>		
>SSB Configuration	M		SSB Time/Frequency Configuration 9.3.1.203	
>PCI	M		INTEGER (0..1007)	

Range bound	Explanation
maxNoSSBs	Maximum no of SSBs for which the configuration can be provided. Value is 255.

9.3.1.203 SSB Time/Frequency Configuration

This information element contains the time and frequency configuration of an SSB.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SSB frequency	M		INTEGER (0..3279165)	ARFCN
SSB subcarrier spacing	M		ENUMERATED(kHz15, kHz30, kHz60, kHz120, kHz240,...)	
SSB Transmit power	M		INTEGER (-60..50)	EPRE of SSS
SSB periodicity	M		ENUMERATED(ms5, ms10, ms20, ms40, ms80, ms160, ...)	
SSB half frame index	M		INTEGER(0..1)	
SSB SFN offset	M		INTEGER(0..15)	
CHOICE SSB Position in Burst	O			
>Short				
>>Short Bitmap			BIT STRING (SIZE(4))	
>Medium				
>>Medium Bitmap			BIT STRING (SIZE(8))	
>Long				
>>Long Bitmap			BIT STRING (SIZE(64))	
SFN Initialisation Time	O		Relative Time 1900 9.3.1.183	

9.3.1.204 Search Window Information

This information element contains search window information for the TRP.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Expected Propagation Delay	M		INTEGER (-3841..3841,...)	Indicates when the SRS is expected to arrive in time at the TRP relative to the UL RTOA Reference Time. The UL RTOA Reference Time for a target SRS is defined as $T_0 + t_{SRS}$, where - T_0 is the SFN Initialisation Time - $t_{SRS} = (10n_f + n_{sf}) \times 10^{-3}$, where n_f and n_{sf} are the system frame number and the subframe number of the SRS, respectively. Granularity 4Ts, where $T_s = 1/(15 \cdot 10^3 \cdot 2048)$ seconds. Centre of the search window.
Delay Uncertainty	M		INTEGER (1..246,...)	Indicates the uncertainty of the expected SRS arrival time at the TRP Granularity 4Ts, where $T_s = 1/(15 \cdot 10^3 \cdot 2048)$ seconds. Single-sided search window.

9.3.1.205 Extended gNB-DU Name

This IE provides extended human readable name of the gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
gNB-DU Name Visible	O		VisibleString (SIZE(1..150, ...))	
gNB-DU Name UTF8	O		UTF8String (SIZE(1..150, ...))	

9.3.1.206 Extended gNB-CU Name

This IE provides extended human readable name of the gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
gNB-CU Name Visible	O		VisibleString (SIZE(1..150, ...))	
gNB-CU Name UTF8	O		UTF8String (SIZE(1..150, ...))	

9.3.1.207 F1-C Transfer Path

This IE indicates the transmission path of the F1-C traffic.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
F1-C Path NSA	M		ENUMERATED (lte, nr, both)	This IE indicates the transmission path of the F1-C traffic in EN-DC.

9.3.1.208 SFN Offset

This IE contains the time offset between an absolute time reference and the SFN0 start. The IE is calculated assuming that the SFN transmission started at the absolute time reference. The absolute time reference chosen is the 1980-01-06 T00:00:19 International Atomic Time (TAI).

IE/Group Name	Presence	Range	IE type and reference	Semantics description
SFN Time Offset	M		BIT STRING (SIZE(24))	Time offset in microseconds between the absolute time reference "1980-01-06 T00:00:19 International Atomic Time (TAI)" and the SFN0 start. The maximum usable value is $(1024 \cdot 10^4 - 1)$. Values higher than the maximum are discarded.

9.3.1.209 Transmission Stop Indicator

This IE indicates to stop the data transmission at gNB-DU side for an DRB not subject to DAPS Handover.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Transmission Stop Indicator	M		ENUMERATED (true, ...)	

9.3.1.210 Spatial Relation Information per SRS Resource

This information element indicates a spatial relation for transmission of each UL SRS resource recommended by LMF.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Spatial Relation per SRS Resource List		1		
> Spatial Relation per SRS Resource Item		1..<maxno SRS-Resource PerSet>		
>CHOICE Reference Signal	M			
>NZIP CSI-RS				
>>NZIP CSI-RS Resource ID	M		INTEGER (0..191)	
>SSB				
>> NR PCI	M		INTEGER (0..1007)	
>>SSB Index	O		INTEGER (0..63)	
>SRS				
>>SRS Resource ID	M		INTEGER (0..63)	
>Positioning SRS				
>> Positioning SRS Resource ID	M		INTEGER (0..63)	
>DL-PRS				
>>DL-PRS ID	M		INTEGER (0..255)	
>>DL-PRS Resource Set ID	M		INTEGER (0..7)	
>>DL-PRS Resource ID	O		INTEGER (0..63)	

Range bound	Explanation
maxnoSRS-ResourcePerSet	Maximum no of SRS resources per SRS resource set. Value is 16.

9.3.1.211 CCO Assistance Information

This IE indicates the Capacity and Coverage (CCO) actions for specific CCO issues detected.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CCO issue detection	O		ENUMERATED (coverage, cell edge capacity ...)	Indicates the type of CCO issue detected
Affected Cells and Beams	O		9.3.1.212	

9.3.1.212 Affected Cells and Beams

This IE includes a list of cells and/or SS/PBCH block indexes affected by the detected CCO issue.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Affected Cell List		1 .. <maxAffectedCells>		
>NR CGI	M		9.3.1.12	
>Affected SSB List		0..<maxnoofSBAreas>		
>>SSB Index	M		INTEGER (0..63)	

Range bound	Explanation
maxAffectedCells	Maximum numbers of cells affected by a CCO issue. Value is 32.
maxnoofSSBAreas	Maximum no. SSB Areas that can be served by a NG-RAN node cell. Value is 64.

9.3.1.213 Coverage Modification Notification

This IE includes a list of cells and/or SS/PBCH block indexes with the corresponding coverage configuration selected by the gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Coverage Modification List		1		
>Coverage Modification Item		1 .. <maxCellingNBDU>		
>>NR CGI	M		9.3.1.12	
>>Cell Coverage State			INTEGER (0..63, ...)	Value '0' indicates that the cell is inactive. Other values Indicates that the cell is active and also indicates the coverage configuration of the concerned cell.
>>SSB Coverage Modification List		0..1		
>>>SSB Coverage Modification Item		1..<maxnoofSSBAreas>		
>>>>SSB Index	M		INTEGER (0..63)	
>>>>SSB Coverage State	M		INTEGER (0..15, ...)	Value '0' indicates that the SS/PBCH block is inactive. Other values Indicates that the SS/PBCH block is active and also indicates the coverage configuration of the concerned SS/PBCH block.

Range bound	Explanation
maxCellingNBDU	Maximum numbers of cells that can be served by a gNB-DU. Value is 512.
maxnoofSSBAreas	Maximum no. SSB Areas that can be served by a NG-RAN node cell. Value is 64.

9.3.1.214 Cells for SON List

This IE contains a list of served cells in potential PRACH conflict and it may contain neighbour cell PRACH configuration.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Cells for SON Item		1 .. <maxServedCellforSON>		
>NR CGI	M		9.3.1.12	
>Neighbour NR Cells for SON List	O		9.3.1.215	

Range bound	Explanation
maxServedCellforSON	Maximum numbers of served cells where PRACH conflict is possible. Value is 256.

9.3.1.215 Neighbour NR Cells for SON List

This IE contains the configuration of NR neighbour cells which the gNB-DU may take into consideration for SON purposes.

NOTE: If multiple served cells share a common neighbour cell and thus multiple copies of *Neighbour NR Cells for SON Item* IE for the neighbour cell are needed to be contained in an F1AP message, IEs other than the *NR CGI* IE may be omitted in the copies other than the first one present in the message.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Neighbour NR Cells for SON Item		1 .. <maxNeighbourCellforSON>		
>NR CGI	M		9.3.1.12	
>NR Mode Info Rel16	O		9.3.1.216	
>SSB Positions In Burst	O		9.3.1.138	
>NR Cell PRACH Configuration	O		9.3.1.139	

Range bound	Explanation
maxNeighbourCellforSON	Maximum numbers of neighbour cells which the gNB-DU may take into consideration for SON purposes on a given served cell. Value is 32.

9.3.1.216 NR Mode Info Rel16

This IE contains the information of a NR cell which needs to be encoded differently for FDD and TDD.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CHOICE NR-Mode-Info-Rel16	M			
>FDD				
>>FDD Info Rel16		1		
>>>UL Frequency Info	O		Frequency Info Rel16 9.3.1.217	
>>>SUL Frequency Info	O		Frequency Info Rel16 9.3.1.217	
>TDD				
>>TDD Info Rel16		1		
>>>TDD Frequency Info	O		Frequency Info Rel16 9.3.1.217	
>>>SUL Frequency Info	O		Frequency Info Rel16 9.3.1.217	
>>>TDD DL-UL Configuration Common NR	O		OCTET STRING	Includes the <i>tdd-UL-DL-ConfigurationCommon</i> contained in the <i>ServingCellConfigCommon</i> IE as defined in TS 38.331 [8]

9.3.1.217 Frequency Info Rel16

This IE contains the information of a NR cell which should be encoded separately among FDD NDL, FDD NUL, TDD NDL+NUL and SUL.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
NR ARFCN	O		INTEGER (0..maxNRARFCN)	RF Reference Frequency as defined in TS 38.104 [17] section 5.4.2.1. The frequency provided in this IE identifies the absolute frequency position of the reference resource block (Common RB 0) of the carrier. Its lowest subcarrier is also known as Point A.
Frequency Shift 7p5khz	O		ENUMERATED (false, true, ...)	Indicate whether the value of Δ_{shift} is 0kHz or 7.5kHz when calculating $F_{\text{REF,shift}}$ as defined in Section 5.4.2.1 of TS 38.104 [17].
Carrier List	O		NR Carrier List 9.3.1.137	

Range bound	Explanation
maxNRARFCN	Maximum value of NR ARFCNs. Value is 3279165.

9.3.1.218 MBS Session ID

This IE indicates the MBS Session ID uniquely identifies an MBS session.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
TMGI	M		OCTET STRING (SIZE(6))	Coded as Temporary Mobile Group Identity (TMGI) defined in TS 23.003 [23].
NID	O		9.3.1.155	

9.3.1.219 gNB-CU MBS F1AP ID

The gNB-CU MBS F1AP ID uniquely identifies the MBS association over the F1 interface within the gNB-CU.

NOTE: If F1-C signalling transport is shared among multiple interface instances, the value of the gNB-CU MBS F1AP ID is allocated so that it can be associated with the corresponding F1-C interface instance.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
gNB-CU MBS F1AP ID	M		INTEGER (0 .. $2^{32}-1$)	

9.3.1.220 gNB-DU MBS F1AP ID

The gNB-DU MBS F1AP ID uniquely identifies the MBS association over the F1 interface within the gNB-DU.

NOTE: If F1-C signalling transport is shared among multiple interface instances, the value of the gNB-DU MBS F1AP ID is allocated so that it can be associated with the corresponding F1-C interface instance.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
gNB-DU MBS F1AP ID	M		INTEGER (0 .. $2^{32}-1$)	

9.3.1.221 MBS Area Session ID

This IE indicates the Area Session ID for MBS Session with location dependent context.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MBS Area Session ID	M		INTEGER (0 .. 65535, ...)	

9.3.1.222 MBS Service Area

This IE contains the MBS service area.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<i>CHOICE Session Type</i>	M			
<i>>location independent</i>				
<i>>>MBS Service Area Information</i>	M		9.3.1.223	
<i>>location dependent</i>				
>>MBS Service Area Information Location Dependent List		<i>1..maxnoofMBSServiceAreaInformation</i>		
<i>>>>MBS Area Session ID</i>	M		9.3.1.221	
<i>>>>MBS Service Area Information</i>	M		9.3.1.223	

Range bound	Explanation
maxnoofMBSServiceAreaInformation	Maximum no. of MBS Service Area Information elements in the MBS Service Area Information Location Dependent List IE. Value is 256

9.3.1.223 MBS Service Area information

This IE contains MBS service area information.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MBS Service Area Cell List		<i>0..<maxnoofCellsforMBS></i>		
<i>>NR CGI</i>	M		9.3.1.12	
MBS Service Area TAI List		<i>0..<maxnoofTAIforMBS></i>		
<i>>PLMN-Identity</i>	M		9.3.1.14	
<i>>5GS TAC</i>	M		9.3.1.29	

Range bound	Explanation
maxnoofCellsforMBS	Maximum no. of cells allowed within one MBS Service Area. Value is 512.
maxnoofTAIforMBS	Maximum no. of TAIs allowed within one MBS Service Area. Value is 512.

9.3.1.224 MRB ID

This IE indicates the MRB ID as specified in TS 38.401 [4].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MRB ID	M		INTEGER (1.. 512, ...)	

9.3.1.225 MBS CU to DU RRC Information

This IE indicates the MBS CU to DU RRC Information.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MBS Broadcast Cell List	M			
>MBS Broadcast Cell Item		1 .. <maxCellingN BDU>		
>>NR CGI	M		NR CGI 9.3.1.12	
>>mtch-neighbourCell	O		OCTET STRING	Includes the <i>mtch-neighbourCell</i> contained in the <i>MBS-SessionInfoList</i> IE, as defined in TS 38.331[8]
MBS Broadcast MRB List		1		
>MBS Broadcast MRB Item		1 .. <maxnoofMRB s>		
>>MRB ID	M		9.3.1.224	
>>MRB PDCP Config Broadcast	M		OCTET STRING	Includes the <i>MRB-PDCP-ConfigBroadcast</i> IE, as defined in TS 38.331[8].

Range bound	Explanation
maxCellingNBDU	Maximum no. cells that can be served by a gNB-DU. Value is 512.
maxnoofMRBs	Maximum no. MRBs allowed to be setup for one MBS session, the maximum value is 32.

9.3.1.226 MBS Broadcast Neighbour Cell List

This IE indicates a list of neighbour cells where ongoing MBS sessions provided via broadcast MRB in the current cells are also provided.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MBS Broadcast Neighbour Cell List	M		OCTET STRING	Includes the <i>MBS-NeighbourCellList</i> IE, as defined in TS 38.331[8]

9.3.1.227 IAB Congestion Indication

This IE contains the IAB downlink congestion indication. This IE is only applicable if the gNB-DU is an IAB-DU or IAB-donor-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
IAB Congestion Indication List		1		
>IAB Congestion Indication Item		1.. <maxnoofIABCongInd>		
>>Child Node Identifier	M		BAP Address 9.3.1.111	This IE identifies the child node, the link to which is congested.
>>BH RLC CH List		0..1		
>>>BH RLC CH Item		1.. <maxnoofBHR LCCchannels>		
>>>>BH RLC CH ID	M		BH RLC Channel ID 9.3.1.113	This IE identifies the congested BH RLC channel over the link towards the node identified by the <i>Child Node Identifier</i> IE.

Range bound	Explanation
maxnoofIABCongInd	Maximum no. of congestion indications, the maximum value is 1024.
maxnoofBHR LCCchannels	Maximum no. of BH RLC channels allowed towards one IAB-node, the maximum value is 65536.

9.3.1.228 F1-C Transfer Path NRDC

This IE indicates the transmission path of the F1-C traffic in NR-DC. This IE is only applicable if the UE is an IAB-MT.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
F1-C Path NRDC	M		ENUMERATED (mcg, scg, both)	This IE indicates the transmission path of the F1-C traffic in NR-DC.

9.3.1.229 IAB TNL Address Exception

This IE indicates the list of TNL addresses, pertaining to the packets to be forwarded via the inter-IAB-donor-DU tunnel by the IAB-donor-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
IAB TNL Address List		1		
>IAB IAB TNL Address Item		1.. <maxnoofTLAs IAB>		
>>IAB TNL Address	M		9.3.1.102	

Range bound	Explanation
maxnoofTLAsIAB	Maximum no. of individual IPv4/IPv6 addresses or IPv6 address prefixes in one procedure execution. The value is 1024.

9.3.1.230 RB Set Configuration

This IE contains the RB Set Configuration. The IE is only applicable if the gNB-DU is an IAB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Subcarrier Spacing	M		ENUMERATED (kHz15, kHz30, kHz60, kHz120, kHz240, spare3, spare2, spare1, ...)	Subcarrier spacing used as reference for the RB set configuration.
RB Set Size	M		ENUMERATED (rb2, rb4, rb8, rb16, rb32, rb64)	Number of PRBs in each RB set. If the RB sets of IAB-DU H/S/NA resource configuration do not cover the entire carrier bandwidth, the remaining RBs not part of an RB set configuration are considered as included in the last RB set.
Number of RB Sets	M		INTEGER(1.. <i>maxnoofRBsetsPerCell</i>)	Number of configured RB sets. The RB sets are contiguous and non-overlapping. The start RB index of the first RB set is the lowest index of RB of the IAB-DU cell.

Range bound	Explanation
maxnoofRBsetsPerCell	Maximum no. of RB sets per IAB-DU cell. Value is 8.

9.3.1.231 Survival Time

This IE indicates the Survival Time of the TSC QoS flow as defined in TS 23.501 [21].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Survival Time	M		INTEGER (0.. 1920000, ...)	Expressed in units of 1 us.

9.3.1.232 PDC Measurement Result

The purpose of this IE is to provide the PDC measurement result.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PDC Measured Results List		1		
>PDC Measured Results Item		1 .. <i><maxnoMeasPDC></i>		
>>CHOICE <i>Measured Results Value</i>	M			
>>>NR <i>PDC Timing Advance</i>				
>>>>NR <i>PDC Timing Advance</i>	M		INTEGER (0..62500, ...)	Value is expressed in unit of [64* T_c] ns
>>>PDC <i>gNB Rx-Tx Time Difference</i>				
>>>>PDC <i>gNB Rx-Tx Time Difference</i>	M		INTEGER (0.. 61565, ...)	Report mapping as defined in TS 38.133 [38]

Range bound	Explanation
maxnoMeasPDC	Maximum no. of measured quantities that can be configured and reported with one message. Value is 16. Maximum is 1 in this release.

9.3.1.233 SCG Activation Request

This IE indicates whether the SCG resources are required to be activated or deactivated.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
SCG Activation Request	M		ENUMERATED (activate SCG, deactivate SCG, ...)	

9.3.1.234 SCG Activation Status

This IE indicates the status of SCG resources.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
SCG Activation Status	M		ENUMERATED (SCG activated, SCG deactivated, ...)	

9.3.1.235 Requested DL PRS Transmission Characteristics

This IE contains the requested PRS configuration for transmission by the gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Requested DL-PRS Resource Set List		1		
>Requested DL-PRS Resource Set Item		1..<maxnoofPRSresourceSets>		
>>PRS bandwidth	O		INTEGER(1..63)	24,28,...,272 PRBs
>>Comb Size	O		ENUMERATED(2, 4, 6, 12, ...)	
>>Resource Set Periodicity	O		ENUMERATED(4,5, 8,10,16,20,32,40,64 ,80,160,320,640,12 80,2560,5120,1024 0,20480,40960,819 20,...)	
>>Resource Repetition Factor	O		ENUMERATED(rf1, rf2,rf4,rf6,rf8,rf16,rf3 2,...)	
>>Resource Number of Symbols	O		ENUMERATED(n2, n4,n6,n12,...)	
>>Requested DL-PRS Resource List	O		9.3.1.250	
>>Resource Set Start Time and Duration	O		Start Time and Duration 9.3.1.236	This IE is ignored if the <i>Start Time and Duration</i> IE is present
Number of Frequency Layers	O		INTEGER(1..4)	
Start Time and Duration	O		9.3.1.236	

Range bound	Explanation
maxnoofPRSresourceSets	Maximum no of PRS resources set. Value is 8.

9.3.1.236 Start Time and Duration

This IE contains the start time and/or duration for the on-demand DL-PRS.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Start Time	O		Relative Time 1900 9.3.1.183	
Duration	O		INTEGER (0..90060, ...)	Unit: seconds

9.3.1.237 PRS Transmission Off Information

This IE contains the information to turn off particular PRS transmissions.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>level</i>	M			
>TRP <i>level</i>			NULL	
>PRS resource set <i>level</i>				
>>PRS Resource Set List		1		
>>>PRS Resource Set Item		1..<maxno of PRSresourceSet>		
>>>>PRS Resource Set ID	M		INTEGER(0..7)	
>PRS resource <i>level</i>				
>>PRS Resource Set List		1		
>>>PRS Resource Set Item		1..<maxno of PRSresourceSet>		
>>>>PRS Resource Set ID	M		INTEGER(0..7)	
>>>>PRS Resource List		1		
>>>>>PRS Resource Item		1..<maxno of PRSresourceSet>		
>>>>>>PRS Resource ID	M		INTEGER(0..63)	

Range bound	Explanation
maxnoofPRSresourceSet	Maximum no of PRS resources set. Value is 8.
maxnoofPRSresource	Maximum no of PRS resources per PRS resource set. Value is 64.

9.3.1.238 UL-AoA Assistance Information

This information element contains the expected uplink Angle of Arrival and uncertainty range.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>AngleMeasurement</i>	M			
>Expected UL Angle of Arrival				
>>Expected Azimuth AoA		1		Defined as $(\varphi_{AOA} - \Delta\varphi_{AOA}/2, \varphi_{AOA} + \Delta\varphi_{AOA}/2)$
>>Expected Azimuth AoA Value	M		INTEGER(0..3599)	φ_{AOA} component of Expected Azimuth AoA
>>Expected Azimuth AoA Uncertainty Range	M		INTEGER(0..3599)	$\Delta\varphi_{AOA}$ component of Expected Azimuth AoA
>>Expected Zenith AoA		0..1		Defined as $(\theta_{ZOA} - \Delta\theta_{ZOA}/2, \theta_{ZOA} + \Delta\theta_{ZOA}/2)$
>>Expected Zenith AoA Value	M		INTEGER(0..1799)	θ_{ZOA} component of Expected Zenith AoA
>>Expected Zenith AoA Uncertainty Range	M		INTEGER(0..1799)	$\Delta\theta_{ZOA}$ component of Expected Zenith AoA
>Expected UL Angle of Arrival Zenith Only				Defined as $(\theta_{ZOA} - \Delta\theta_{ZOA}/2, \theta_{ZOA} + \Delta\theta_{ZOA}/2)$
>>Expected Zenith AoA Value	M		INTEGER(0..1799)	θ_{ZOA} component of Expected Zenith AoA
>>Expected Zenith AoA Uncertainty Range	M		INTEGER(0..1799)	$\Delta\theta_{ZOA}$ component of Expected Zenith AoA
LCS to GCS Translation	O		9.3.1.241	If absent, the azimuth and zenith are provided in GCS. In case of zenith only, the z-axis of LCS is defined along the linear array axis.

9.3.1.239 Zenith Angle of Arrival Information

This information element contains the Zenith Angle of Arrival, which can correspond to linear array measurement.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Zenith Angle of Arrival	M		INTEGER(0..1799)	TS 38.133 [38]
LCS to GCS Translation	O		9.3.1.241	If absent, the zenith is provided in GCS. the z-axis of LCS is defined along the linear array axis

9.3.1.240 On-demand PRS TRP Information

This IE contains on-demand PRS information for the TRP.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
On-demand PRS Request Allowed	M		BIT STRING (SIZE(16))	Each position in the bitmap represents an on-demand PRS transmission parameter: first bit: Resource Set Periodicity second bit: PRS Bandwidth third bit: Resource Repetition Factor fourth bit: Resource Number of Symbols fifth bit: Comb Size sixth bit: Number of Frequency Layers seventh bit: Start Time and Duration eighth bit: Off Indication ninth bit: QCL Information Other bits reserved for future use. Value '1' indicates 'request allowed', Value '0' indicates 'request not allowed'.
Allowed Resource Set Periodicity Values	O		BIT STRING (SIZE(24))	This IE applies only if the first bit of the <i>On-demand PRS Request Allowed</i> IE is set to '1'. Each position in the bitmap represents a value of the <i>Resource Set Periodicity</i> IE defined in subclause 9.2.x1, first bit = 4 and so on. Bits 21-24 are reserved for future use. Value '1' indicates 'request allowed', Value '0' indicates 'request not allowed'. If this IE is absent, all Resource Set Periodicity values are allowed to be requested.
Allowed PRS Bandwidth Values	O		BIT STRING (SIZE(64))	This IE applies only if the second bit of the <i>On-demand PRS Request Allowed</i> IE is set to '1'. Each position in the bitmap represents a value of the <i>PRS Bandwidth</i> IE defined in subclause 9.2.x1, first bit = 1 and so on. Bit 64 is reserved for future use. Value '1' indicates 'request allowed', Value '0' indicates 'request not allowed'. If this IE is absent, all PRS Bandwidth values are allowed to be requested.
Allowed Resource Repetition Factor Values	O		BIT STRING (SIZE(8))	This IE applies only if the third bit of the <i>On-demand PRS Request Allowed</i> IE is set to '1'. Each position in the bitmap represents a value of the <i>Resource Repetition Factor</i> IE defined in subclause 9.2.x1, first bit = rf1 and so on. Bit 8 is reserved for future use. Value '1' indicates 'request allowed', Value '0' indicates 'request not allowed'. If this IE is absent, all Resource Repetition Factor values are allowed to be requested.

Allowed Resource Number of Symbols Values	O		BIT STRING (SIZE(8))	<p>This IE applies only if the fourth bit of the <i>On-demand PRS Request Allowed</i> IE is set to '1'.</p> <p>Each position in the bitmap represents a value of the <i>Resource Number of Symbols</i> IE defined in subclause 9.2.x1, first bit = n2 and so on. Bits 5-8 are reserved for future use. Value '1' indicates 'request allowed', Value '0' indicates 'request not allowed'. If this IE is absent, all Resource Number of Symbols values are allowed to be requested.</p>
Allowed Comb Size Values	O		BIT STRING (SIZE(8))	<p>This IE applies only if the fifth bit of the <i>On-demand PRS Request Allowed</i> IE is set to '1'.</p> <p>Each position in the bitmap represents a value of the <i>Comb Size</i> IE defined in subclause 9.2.x1, first bit = 2 and so on. Bits 5-8 are reserved for future use. Value '1' indicates 'request allowed', Value '0' indicates 'request not allowed'. If this IE is absent, all Comb Size values are allowed to be requested.</p>

9.3.1.241 LCS to GCS Translation

This IE contains the LCS to GCS Translation information.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Alpha	M		INTEGER (0..3599)	
Beta	M		INTEGER (0..3599)	
Gamma	M		INTEGER (0..3599)	

9.3.1.242 Response Time

This information element contains the response time of the measurement results reporting.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Time	M		INTEGER(1..128, ...)	
Time Unit	M		ENUMERATED(second, ten-seconds, ten-milliseconds, ...)	

9.3.1.243 ARP Location Information

This IE contains the relative position of ARP(s) to the TRP.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
ARP Location Information		1		
>ARP Location Information Item		1..<maxnoARPs >		
>>ARP ID	M		9.3.1.244	
>>>CHOICE ARP Location Type	M			
>>>>geodetic				
>>>>>ARP Position Relative Geodetic	M		Relative Geodetic Location 9.3.1.186	
>>>>>cartesian				
>>>>>ARP Position Relative Cartesian	M		Relative Cartesian Location 9.3.1.187	

Range bound	Explanation
maxnoARPs	Maximum no. of ARPs associated with a TRP. Value is 16.

9.3.1.244 ARP ID

This IE is used to uniquely identify an ARP associated with a TRP.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
ARP Identifier	M		INTEGER (1..16, ...)	

9.3.1.245 Multiple UL AoA

This information element contains the list of the multiple UL AOAs values.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UL AoA List		1		
>UL AoA item		1..<maxnoofULAoAs >		
>>CHOICE AngleMeasurement	M			
>>>UL Angle of Arrival				
>>>>UL Angle of Arrival	M		9.3.1.167	
>>>>UL Zenith Angle of Arrival				
>>>>>Zenith Angle of Arrival Information	M		9.3.1.239	

Range bound	Explanation
maxnoofULAoAs	Maximum no of UL-AoAs values (pair of AOA & ZOA values) that can be reported. Value is 8

9.3.1.246 UL SRS-RSRPP

This information element contains the UL SRS RSRPP measurement.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
First Path RSRP Power	M		INTEGER (0..126)	

9.3.1.247 SRS Resource type

This IE contains the SRS resource type.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE <i>Reference Signal</i> > <i>SRS</i>	M					
>>SRS Resource ID	M		INTEGER(0..63)			
> <i>Positioning SRS</i>						
>>Positioning SRS Resource ID	M		INTEGER(0..63)			
SRS Port Index	O		ENUMERATED (id1000, id1001, id1002, id1003, ...)	This IE may be present if the <i>SRS Resource ID</i> IE is present, and is ignored otherwise.	YES	ignore

9.3.1.248 Extended Additional Path List

This IE contains the extended additional path results of time measurement.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Additional Path Item		1..< <i>maxNoPat</i> <i>hExtended</i> >		
>CHOICE <i>Relative Path Delay</i>	M			
>> <i>k0</i>				
>>> <i>k0</i>	M		INTEGER(0..16351)	
>> <i>k1</i>				
>>> <i>k1</i>	M		INTEGER(0..8176)	
>> <i>k2</i>				
>>> <i>k2</i>	M		INTEGER(0..4088)	
>> <i>k3</i>				
>>> <i>k3</i>	M		INTEGER(0..2044)	
>> <i>k4</i>				
>>> <i>k4</i>	M		INTEGER(0..1022)	
>> <i>k5</i>				
>>> <i>k5</i>	M		INTEGER(0..511)	
>Path Quality	O		TRP Measurement Quality 9.3.1.172	
>Path Power	O		UL SRS-RSRPP 9.3.1.246	
>Multiple UL AoA	O		9.3.1.245	

Range bound	Explanation
maxNoPathExtended	Maximum no. of additional path measurement. Value is 8.

9.3.1.249 LoS/NLoS Information

This IE contains the LoS/NLoS information for UL measurement.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>LoS/NLoS Indicator</i>	M			
> <i>Soft Indicator</i>				
>>LoS/NLoS Indicator Soft	M		INTEGER (0..10)	Values provide the likelihood of a LOS propagation path in the range between 0 and 1 with 0.1 steps resolution. Value '0' indicates NLOS and value '1' indicates LOS.
> <i>Hard Indicator</i>				
>>LoS/NLoS Indicator Hard	M		ENUMERATED (NLoS, LoS)	

9.3.1.250 Requested DL-PRS Resource List

This IE contains the requested DL-PRS resource list.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Requested DL-PRS Resource List		1		<i>NR-DL-PRS-Resource-r16</i> as defined in TS 37.355 [39]
> Requested DL-PRS Resource Item		1..<maxno of PRS resource>		
>>CHOICE QCL Info	O			
>>>SSB				
>>>>NR PCI	M		INTEGER(0..1007)	
>>>>SSB Index	O		INTEGER(0..63)	
>>>DL-PRS				
>>>>QCL Source PRS Resource Set ID	M		INTEGER(0..7)	
>>>>QCL Source PRS Resource ID	O		INTEGER(0..63)	

Range bound	Explanation
maxnoofPRSresource	Maximum no of PRS resources per PRS resource set. Value is 64.

9.3.1.251 Void

9.3.1.252 TRP Tx TEG Association

This information element contains the TRP Tx TEG information.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
TRP TEG item		1 .. <maxnoT RPTEGs>		
>TRP Tx TEG Information	M		9.3.1.281	
>DL-PRS Resource Set ID	M		INTEGER (0..7)	
>DL-PRS Resource ID List		0..1		
>>DL-PRS Resource ID Item		1..< maxnoofP RS- Resources PerSet >		
>>>DL-PRS Resource ID	M		INTEGER (0..63)	

Range bound	Explanation
maxnoTRPTEGs	Maximum no of reported TRP Tx TEG association. Value is 8.
maxnoofPRS-ResourcesPerSet	Maximum no of DL-PRS resources of the DL-PRS resource set of the TRP. Value is 64.

9.3.1.253 TRP TEG Information

This information element contains the TRP TEG information.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CHOICE TRP TEG				
>RxTx TEG				
>>TRP RxTx TEG Information	M		9.3.1.282	
>>TRP Tx TEG Information	O		9.3.1.281	
>Rx TEG				
>>TRP Rx TEG Information	M		9.3.1.280	
>>TRP Tx TEG Information	M		9.3.1.281	

9.3.1.254 Measurement Characteristics Request Indicator

This IE contains the measurement characteristic information requested by the gNB-CU.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Measurement characteristic request indicator	M		BIT STRING (SIZE(16))	Each position in the bitmap represents a requested measurement characteristic: first bit: Measurement Beam Information Second bit: Extended Additional Path List Third bit: Additional Path Power Fourth Bit: Multiple UL AoA of Additional Path Fifth bit: LoS/NLoS Information Sixth bit: TRP Rx TEG association for UL-TDOA Seventh bit: TRP RxTxTEG-ID information for DL+UL positioning. Eighth bit: SRS Resource Type Ninth bit: Multiple Measurement Instances Other bits reserved for future use. Value '1' indicates 'requested measurement characteristic', Value '0' indicates 'not requested'.

9.3.1.255 UE Reporting Information

This IE contains the UE Reporting Information.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Reporting Amount	M		ENUMERATED (0, 1, 2, 4, 8, 16, 32, 64)	Value 0 represents an infinite number of periodic reporting
Reporting Interval	M		ENUMERATED (none, 1, 2, 4, 8, 10, 16, 20, 32, 64)	Unit: seconds

9.3.1.256 TRP Beam Antenna Information

The IE provides the beam antenna information of the TRP. It includes either the explicit beam antenna information, or a reference to another TRP's signalled configuration, or the indication that no change has occurred with respect to previously signalled configuration.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CHOICE <i>TRP Beam Antenna Info Item</i>	M			
>Reference				
>>Associated TRP ID	M		TRP ID 9.3.1.197	This IE specifies the <i>TRP ID</i> of the associated TRP from which the beam information parameters are adopted in Local Coordinate System (LCS).
>Explicit				
>>TRP Beam Antenna Angles	M		9.3.1.257	
>>LCS to GCS Translation	O		9.3.1.241	Included if the azimuth and elevation are not provided in GCS.
>No Change			NULL	No change compared to previously signalled configuration for this TRP.

9.3.1.257 TRP Beam Antenna Angles

The IE provides the beam antenna information of the TRP.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
TRP Beam Antenna Angles Item		1..<maxnoAzimuthAngles>		
>TRP Azimuth Angle	M		INTEGER (0..3599)	For GCS, the azimuth angle is measured counter-clockwise from geographical North. For LCS, the azimuth angle is measured counter-clockwise from the x-axis of the LCS.
>TRP Azimuth Angle fine	O		INTEGER (0..9)	Fine angle
>TRP Elevation Angle List		1		
>>TRP Elevation Angle Item		1..<maxnoElevationAngles>		
>>>TRP Elevation Angle	M		INTEGER (0..1800)	For GCS, the elevation angle is measured relative to zenith and positive to the horizontal direction (elevation 0 deg. points to zenith, 90 deg to the horizon). For LCS, the elevation angle is measured relative to the z-axis of the LCS (elevation 0 deg. points to the z-axis, 90 deg to the x-y plane).
>>>TRP Elevation Angle fine	O		INTEGER (0..9)	Fine angle
>>>TRP Beam Power List		1		Relative power between DL-PRS Resources for the given Azimuth and Elevation Angle. The first Relative Power element in this list provides the peak power for this Azimuth/Elevation angle and is defined as 0dB power. All the remaining Relative Power Element's in this list provide the relative DL-PRS Resource power relative to this first element in the list.
>>>>TRP Beam Power Item		2..<maxNumResourcesPerAngle>		
>>>>>PRS Resource Set ID	O		INTEGER (0..7)	DL-PRS Resource Set ID of the DL-PRS Resource for which the Relative Power is provided. If this field is absent, the DL-PRS Resource Set ID for this instance of the Beam Power List is the same as the DL-PRS Resource Set ID of the previous instance in the Beam Power List. This field shall be included at least in the first instance of the Beam Power List.
>>>>>PRS Resource ID	M		INTEGER (0..63)	DL-PRS Resource for which the Relative Power is provided.
>>>>>TRP Beam Relative Power	M		INTEGER (0..30)	The power values span from -30 to 0dB
>>>>>TRP Beam Relative Power "fine"	O		INTEGER (0..9)	Relative Power with 0.1dB resolution. The power spans from -0.9 to 0dB

Range bound	Explanation
maxNumResourcesPerAngle	Maximum number of DL-PRS Resources per angle per TRP. Value is 24.
maxnoAzimuthAngles	Maximum number of azimuth angles per TRP. Value is 3600.
maxnoElevationAngles	Maximum number of elevation angles per azimuth angle/TRP. Value is 1801.

9.3.1.258 NR Paging eDRX Information

This IE indicates the NR Paging eDRX parameters for RRC_IDLE as defined in TS 38.304 [24].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
NR Paging eDRX Cycle Idle	M		ENUMERATED(hfquarter, hfhalf, hf1, hf2, hf4, hf8, hf16, hf32, hf64, hf128, hf256, hf512, hf1024, ...)	$T_{eDRX,CN}$ defined in TS 38.304 [24]. Unit: [number of hyperframes].
NR Paging Time Window	O		ENUMERATED(s1, s2, s3, s4, s5, s6, s7, s8, s9, s10, s11, s12, s13, s14, s15, s16, ..., s17, s18, s19, s20, s21, s22, s23, s24, s25, s26, s27, s28, s29, s30, s31, s32)	Unit: [1.28 second].

9.3.1.259 NR Paging eDRX Information for RRC INACTIVE

This IE indicates the NR Paging eDRX parameters for RRC_INACTIVE as defined in TS 38.304 [24].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
NR Paging eDRX Cycle Inactive	M		ENUMERATED (hfquarter, hfhalf, hf1, ...)	$T_{eDRX,RAN}$ defined in TS 38.304 [24]. Unit: [number of hyperframes].

9.3.1.260 QoE Metrics

This IE provides the RAN visible QoE measurement report to gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Application Layer Buffer Level List	O		OCTET STRING	As defined in TS 38.331 [8].
Playout Delay for Media Startup	O		OCTET STRING	As defined in TS 38.331 [8].

9.3.1.261 CG-SDT Session Info

This IE identifies an CG-SDT session for a UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
gNB-CU UE F1AP ID	M		9.3.1.4	
gNB-DU UE F1AP ID	M		9.3.1.5	

9.3.1.262 SDT Information

This IE is used to indicate an SDT transaction and to provide the assistant information from the UE.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SDT Indicator	M		ENUMERATED (true,...)	
SDT Assistant Information	O		ENUMERATED (single packet, multiple packets, ...)	“single packet” indicates no subsequent SDT transmission is expected. “multiple packets” indicates subsequent SDT transmission is expected.

9.3.1.263 Path Switch Configuration

This IE provides information for switching to an indirect path from a direct path.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Target Relay UE ID	M		BIT STRING (SIZE(24))	Corresponds to the <i>targetRelayUE-Identity</i> contained in the <i>CellGroupConfig</i> IE, defined in TS 38.331 [8]
Remote UE Local ID	M		9.3.1.267	
T420	M		ENUMERATED (ms50, ms100, ms150, ms200, ms500, ms1000, ms2000, ms10000)	Corresponds to the <i>t420</i> contained in the <i>CellGroupConfig</i> IE, defined in TS 38.331 [8]

9.3.1.264 Sidelink Relay Configuration

This IE provides information of a U2N Remote UE when accessing the network via a U2N Relay UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
gNB-DU UE F1AP ID of Relay UE	M		gNB-DU UE F1AP ID 9.3.1.5	
Remote UE Local ID	M		9.3.1.267	
Sidelink Configuration Container	O		OCTET STRING	Includes the <i>SL-ConfigDedicatedNR</i> IE as defined in subclause 6.3.5 in TS 38.331 [8] to carry PC5 Relay RLC channel configuration for Remote UE's SRB1.

9.3.1.265 PC5 RLC Channel ID

This IE uniquely identifies a PC5 Relay RLC channel for a L2 U2N Remote UE or a L2 U2N Relay UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
PC5 RLC Channel ID	M		INTEGER (1.. 512, ...)	

9.3.1.266 Uu RLC Channel ID

This IE uniquely identifies a Uu Relay RLC channel for a L2 U2N Relay UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Uu RLC Channel ID	M		BIT STRING (SIZE (16))	

9.3.1.267 Remote UE Local ID

This IE uniquely identifies a L2 U2N Remote UE within the connected Relay UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Remote UE Local ID	M		INTEGER (0..255, ...)	Corresponds to the <i>sI-LocalIdentity</i> contained in the <i>SL-SRAP-Config</i> IE defined in TS 38.331 [8].

9.3.1.268 5G ProSe Authorized

This IE provides information on the authorization status of the UE for NR ProSe services.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
5G ProSe Direct Discovery	O		ENUMERATED (authorized, not authorized, ...)	Indicates whether the UE is authorized for 5G ProSe Direct Discovery
5G ProSe Direct Communication	O		ENUMERATED (authorized, not authorized, ...)	Indicates whether the UE is authorized for 5G ProSe Direct Communication
5G ProSe Layer-2 UE-to-Network Relay	O		ENUMERATED (authorized, not authorized, ...)	Indicates whether the UE is authorized for 5G ProSe Layer-2 UE-to-Network Relay
5G ProSe Layer-3 UE-to-Network Relay	O		ENUMERATED (authorized, not authorized, ...)	Indicates whether the UE is authorized for 5G ProSe Layer-3 UE-to-Network Relay
5G ProSe Layer-2 Remote UE	O		ENUMERATED (authorized, not authorized, ...)	Indicates whether the UE is authorized for 5G ProSe Layer-2 Remote UE

9.3.1.269 PEIPS Assistance Information

This IE provides the information related to CN paging subgrouping for a particular UE, as specified in TS 38.304 [24].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CN Subgroup ID	M		INTEGER (0..7, ...)	

9.3.1.270 UE Paging Capability

This IE provides the UE Paging Capability information needed for paging.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
INACTIVE State PO-Determination	O		ENUMERATED(supported,...)	Corresponds to the <i>inactiveStatePO-Determination</i> contained in the <i>UERadioPagingInformation</i> IE defined in TS 38.331 [8].
RedCap Indication	O		ENUMERATED(true,...)	

9.3.1.271 gNB-DU UE Slice Maximum Bit Rate List

This IE contains the UE Slice Maximum Bit Rate List as specified in TS 23.501 [21].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
UE Slice Maximum Bit Rate Item		<i>1..<maxnoofSMBRValues></i>		
>S-NSSAI	M		9.3.1.38	
>UE Slice Maximum Bit Rate Uplink	M		Bit Rate 9.3.1.22	This IE indicates the UE-Slice-MBR as specified in TS 23.501 [21] in the uplink direction.

Range bound	Explanation
<i>maxnoofSMBRValues</i>	Maximum no. of SLICE MAXIMUM BIT RATE values for a UE. Value is 8.

9.3.1.272 Multicast MBS Session List

This IE indicates the Multicast MBS Sessions the UE has joined.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Multicast MBS Session Item		<i>1..<maxnoofMBSSessionsofUE></i>		
>MBS Session ID	M		9.3.1.218	

Range bound	Explanation
<i>maxnoofMBSSessionsofUE</i>	Maximum no. of MBS sessions allowed towards one UE. Value is 256.

9.3.1.273 TAI NSAG Support List

This IE indicates the list of NSAGs configured at the gNB-DU and their associated S-NSSAIs as defined in TS 23.501 [21].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
NSAG Support Item		<i>1..<maxnoofNSAGs></i>		
>NSAG ID	M		INTEGER (0.. 255, ...)	
>NSAG Slice Support List	M		Extended Slice Support List 9.3.1.165	Indicates the list of slices which belong to the NSAG.

Range bound	Explanation
maxnoofNSAGs	Maximum no. of signalled NSAGs. Value is 256.

9.3.1.274 MDT PLMN Modification List

The purpose of the *MDT PLMN List Modification* IE is to provide the modified list of PLMN allowed for MDT.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MDT PLMN Modification List		<i>0..<maxnoofMDTPLMNs></i>		An empty list indicates there is no PLMN allowed for MDT.
>PLMN Identity	M		9.3.1.14	

Range bound	Explanation
maxnoofMDTPLMNs	Maximum no. of PLMNs in the MDT PLMN list. Value is 16.

9.3.1.275 MRB RLC Configuration

This ID provides MRB RLC Configuration Information and is provided by the gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MRB RLC Configuration	M		ENUMERATED (rlc-um-ptp, rlc-am-ptp, rlc-um-dl-ptm, two-rlc-um-dl-ptp-and-dl-ptm, three-rlc-um-dl-ptp-ul-ptp-dl-ptm, two-rlc-am-ptp-um-dl-ptm, ...)	The various codepoints correspond to MRB configurations specified in TS 38.300 [6] as follows: "rlc-um-ptp ": Multicast MRB with DL only RLC-UM or bidirectional RLC-UM configuration for PTP transmission; "rlc-am-ptp " Multicast MRB with RLC-AM entity configuration for PTP transmission; " rlc-um-dl-ptm " Multicast MRB with DL only RLC-UM entity for PTM transmission; "two-rlc-um-dl-ptp-and-dl-ptm ": Multicast MRB with two RLC-UM entities, one DL only RLC-UM entity for PTP transmission and the other DL only RLC-UM entity for PTM transmission; "three-rlc-um-dl-ptp-ul-ptp-dl-ptm ": Multicast MRB with three RLC-UM entities, one DL RLC-UM entity and one UL RLC-UM entity for PTP transmission and the other DL only RLC-UM entity for PTM transmission; "two-rlc-am-ptp-um-dl-ptm "; Multicast MRB with two RLC entities, one RLC-AM entity for PTP transmission and the other DL only RLC-UM entity for PTM transmission;

9.3.1.276 Timing Error Margin

This information element contains the Timing error margin for the TRP Rx TEG, or TRP Tx TEG.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Timing Error Margin	M		ENUMERATED(Tc0, Tc2, Tc4, Tc6, Tc8, Tc12, Tc16, Tc20, Tc24, Tc32, Tc40, Tc48, Tc56, Tc64, Tc72, Tc80,...)	

9.3.1.277 SDT Bearer Configuration Info

This IE contains RLC bearer configuration of each SDT bearer.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
SDT Bearer Config List		1		
>SDT Bearer Config Item IEs		1 .. <maxnoofSDTBearers>		
>>CHOICE SDT Bearer Type	M			
>>>SRB				
>>>>SRB ID	M		9.3.1.7	
>>>DRB				
>>>>DRB ID	M		9.3.1.8	
>>SDT RLC Bearer Configuration	M		OCTET STRING	Includes the <i>RLC-BearerConfig</i> IE defined in subclause 6.3.2 of TS 38.331 [8]

Range bound	Explanation
maxnoofSDTBearers	Maximum no. of SDT bearers. Value is the summation of maximum numbers of DRBs and SRBs, i.e., 72.

9.3.1.278 PosSIType List

This IE is used by the gNB-CU to provide SI list of positioning SI for the gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
PosSI type item IEs		1.. <maxnoofPosSITypes>		
>PosSI Type	M		INTEGER (1..32, ...)	Indicates a certain positioning SI type required to be broadcasted by the gNB-DU. The SI Type value of positioning SI starts from 1.

Range bound	Explanation
maxnoofPosSITypes	Maximum no. of positioning SI types, the maximum value is 32.

9.3.1.279 IAB-DU Cell Resource Configuration-Mode-Info

This IE contains the IAB-DU Cell Resource Configuration-Mode-Info.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
CHOICE <i>IAB-DU Cell Resource Configuration-Mode-Info</i>	M					
> <i>FDD</i>						
>> FDD Info		1			-	
>>>gNB-DU Cell Resource Configuration-FDD-UL	M		gNB-DU Cell Resource Configuration 9.3.1.107	Contains FDD UL resource configuration of neighbor gNB-DU's cell or peer parent-node's cell.	-	
>>>gNB-DU Cell Resource Configuration-FDD-DL	M		gNB-DU Cell Resource Configuration 9.3.1.107	Contains FDD DL resource configuration of neighbor gNB-DU's cell or peer parent-node's cell.	-	
>>>UL Frequency Info	O		NR Frequency Info 9.3.1.17		YES	reject
>>>UL Transmission Bandwidth	O		Transmission Bandwidth 9.3.1.15		YES	reject
>>>UL Carrier List	O		NR Carrier List 9.3.1.137	If included, the <i>UL Transmission Bandwidth</i> IE shall be ignored.	YES	reject
>>>DL Frequency Info	O		NR Frequency Info 9.3.1.17		YES	reject
>>>DL Transmission Bandwidth	O		Transmission Bandwidth 9.3.1.15		YES	reject
>>>DL Carrier List	O		NR Carrier List 9.3.1.137	If included, the <i>UL Transmission Bandwidth</i> IE shall be ignored.	YES	reject
> <i>TDD</i>					-	
>> TDD Info		1			-	
>>>gNB-DU Cell Resource Configuration-TDD	M		gNB-DU Cell Resource Configuration 9.3.1.107	Contains TDD resource configuration of neighbor gNB-DU's cell or peer parent IAB-node's cell.	-	
>>>NR Frequency Info	O		NR Frequency Info 9.3.1.17		YES	reject
>>>Transmission Bandwidth	O		Transmission Bandwidth 9.3.1.15		YES	reject
>>>Carrier List	O		NR Carrier List 9.3.1.137	If included, the <i>Transmission Bandwidth</i> IE shall be ignored.	YES	reject

9.3.1.280 TRP Rx TEG Information

This information element contains the TRP Rx TEG information.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
TRP Rx TEG ID	M		INTEGER (0..31)	
TRP Rx Timing Error Margin	M		Timing Error Margin 9.3.1.276	Timing error margin associated to the TRP Rx TEG ID.

9.3.1.281 TRP Tx TEG Information

This information element contains the TRP Tx TEG information.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
TRP Tx TEG ID	M		INTEGER (0..7)	
TRP Tx Timing Error Margin	M		Timing Error Margin 9.3.1.276	Timing error margin associated to the TRP Tx TEG ID.

9.3.1.282 TRP RxTx TEG Information

This information element contains the TRP RxTx TEG information.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
TRP RxTx TEG ID	M		INTEGER (0..255)	
TRP RxTx Timing Error Margin	M		ENUMERATED(Tc0dot5, Tc1, Tc2, Tc4, Tc8, Tc12, Tc16, Tc20, Tc24, Tc32, Tc40, Tc48, Tc64, Tc80, Tc96, Tc128, ...)	Timing error margin associated to the TRP RxTx TEG ID.

9.3.1.283 Uplink TxDirectCurrentTwoCarrierList Information

This IE contains the Uplink TxDirectCurrentTwoCarrierList information that is configured by the UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Uplink TxDirectCurrentTwoCarrierList Information	M		OCTET STRING	Includes the <i>UplinkTxDirectCurrentTwoCarrierList</i> IE as defined in TS 38.331 [8].

9.3.1.284 Uplink TxDirectCurrentMoreCarrierList Information

This IE contains the Uplink TxDirectCurrentMoreCarrierList information that is configured by the UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Uplink TxDirectCurrentMoreCarrierList Information	M		OCTET STRING	Includes the <i>UplinkTxDirectCurrentMoreCarrierList</i> IE as defined in TS 38.331 [8].

9.3.1.285 Extended UE Identity Index Value

This IE is used by the gNB-DU to calculate the Paging Frame and Paging Occasion for eDRX, and the UE_ID based subgroup ID as specified in TS 38.304 [24].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Extended UE Identity Index Value	M		BIT STRING (SIZE(16))	

9.3.2 Transport Network Layer Related IEs

9.3.2.1 UP Transport Layer Information

The *UP Transport Layer Information* IE identifies an F1 transport bearer associated to a DRB. It contains a Transport Layer Address and a GTP Tunnel Endpoint Identifier. The Transport Layer Address is an IP address to be used for the F1 user plane transport. The GTP Tunnel Endpoint Identifier is to be used for the user plane transport between gNB-CU and gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CHOICE <i>Transport Layer Information</i>	M			
> <i>GTP Tunnel</i>				
>>Transport Layer Address	M		9.3.2.3	
>>GTP-TEID	M		9.3.2.2	

9.3.2.2 GTP-TEID

The *GTP-TEID* IE is the GTP Tunnel Endpoint Identifier to be used for the user plane transport between the gNB-CU and gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
GTP-TEID	M		OCTET STRING (SIZE(4))	For details and range, see TS 29.281 [18].

9.3.2.3 Transport Layer Address

This *Transport Layer Address* IE is an IP address.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Transport Layer Address	M		BIT STRING (SIZE(1..160, ...))	The Radio Network Layer is not supposed to interpret the address information. It should pass it to the Transport Layer for interpretation. For details, see TS 38.414 [19].

9.3.2.4 CP Transport Layer Information

This IE is used to provide the F1 control plane transport layer information associated with a gNB-CU – gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
CHOICE CP Transport Layer Information					-	
>Endpoint-IP-address					-	
>> Endpoint IP address	M		Transport Layer Address 9.3.2.3		-	
>Endpoint-IP-address-and-port					-	
>> Endpoint IP address	M		Transport Layer Address 9.3.2.3		-	
>> Port Number	M		BIT STRING (SIZE(16))		Yes	reject

9.3.2.5 Transport Layer Address Info

This IE is used for signalling TNL Configuration information for IPsec tunnel over which GTP traffic is transmitted.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Transport UP Layer Address Info to Add List		0..1		
>Transport UP Layer Address Info to Add Item		1..<maxnoofTLAs>		
>>IP-Sec Transport Layer Address	M		Transport Layer Address 9.3.2.3	Transport Layer Address for IP-Sec endpoint.
>>GTP Transport Layer Address To Add List		0..1		
>>>GTP Transport Layer Address To Add Item		1..<maxnoofGTPTLAs>		
>>>>GTP Transport Layer Address Info	M		Transport Layer Address 9.3.2.3	GTP Transport Layer Address for GTP endpoints.
Transport UP Layer Address Info to Remove List		0..1		
>Transport UP Layer Address Info to Remove Item		1..<maxnoofTLAs>		
>>IP-Sec Transport Layer Address	M		Transport Layer Address 9.3.2.3	Transport Layer Address for IP-Sec endpoint.
>>GTP Transport Layer Address To Remove List		0..1		
>>>GTP Transport Layer Address To Remove Item		1..<maxnoofGTPTLAs>		
>>>>GTP Transport Layer Address Info	M		Transport Layer Address 9.3.2.3	GTP Transport Layer Address for GTP endpoints.

maxnoofTLAs	Maximum no. of F1 Transport Layer Address in the message. Value is 16.
maxnoofGTPTLAs	Maximum no. of F1 GTP Transport Layer Address for a GTP endpoint in the message. Value is 16.

9.3.2.6 URI

This IE is an URI.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
URI	M		VisibleString	String representing URI (Uniform Resource Identifier)

9.3.2.7 BC Bearer Context F1-U TNL Info

This IE contains F1-U TNL information for an MBS Session. In case of location dependent MBS sessions, it also contains per Area Session ID F1-U TNL information.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CHOICE <i>MBS Session Type</i>	M			
<i>>location independent</i>				
<i>>>MBS F1-U Information</i>	M		UP Transport Layer Information 9.3.2.1	
<i>>location dependent</i>				
>>Location dependent MBS F1-U Information		<i>1..<maxnoof MBSAreaSessionIDs></i>		
<i>>>>MBS Area Session ID</i>	M		9.3.1.221	
<i>>>>MBS F1-U Information</i>	M		UP Transport Layer Information 9.3.2.1	

Range bound	Explanation
maxnoofMBSAreaSessionIDs	Maximum no. of MBS Area Session IDs. Value is 256.

9.3.2.8 MBS Multicast F1-U Context Descriptor

This IE contains a reference to a Multicast F1-U Context, information about the usage of the MBS Multicast F1-U Context and may contain an MBS Area Session ID.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Multicast F1-U Context Reference F1	M		9.3.2.11	
MC F1-U Context usage	M		ENUMERATED (ptm, ptp, ptp retransmission, ptp forwarding, ...)	"ptm" indicates that the Multicast F1-U Context is setup for ptm transmissions; decided by the DU. "ptp" indicates that the Multicast F1-U Context is setup for ptp transmissions; decided by the DU. "ptp retransmission" indicates that the Multicast F1-U Context is setup for ptp retransmissions (based on PDCP Status Report); requested by the CU "ptp forwarding" indicates that the Multicast F1-U Context is setup for transmitting from a defined MBS Progress Information status onwards; requested by the CU.
MBS Area Session ID	O		9.3.1.221	

9.3.2.9 Void

Void

9.3.2.10 MBS PTP Retransmission Tunnel Required

This IE indicates the request to establishment of a PTP Retransmission F1-U Tunnel for retransmitting user data for a multicast MBS Session.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MBS PTP Retransmission Tunnel Required	M		ENUMERATED (true, ...)	

9.3.2.11 Multicast F1-U Context Reference F1

This IE contains a reference to a Multicast F1-U Context associated with an MBS Session context in a gNB-DU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Multicast F1-U Bearer Context Reference	M		OCTET STRING (SIZE(4))	This value is allocated to uniquely denote an Multicast F1-U Context within an MBS-associated logical F1-connection.

9.3.2.12 MRB Progress Information

This IE contains the MRB progress Information.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CHOICE <i>MRB Progress Information</i>	M			
>12bits				
>>PDCP SN Length 12	M		INTEGER (0..4095)	
>18bits				
>>PDCP SN Length 18	M		INTEGER (0..262143)	

9.3.2.13 Multicast F1-U Context Reference CU

This IE contains a reference to a Multicast F1-U Context associated with MBS session resources allocated in the gNB-CU.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Multicast F1-U Bearer Context Reference CU	M		OCTET STRING (SIZE(4))	This value is allocated to uniquely denote a Multicast F1-U Context associated with multicast MBS session resources allocated in the gNB-CU. NOTE: If E1 is deployed, the <i>Multicast F1-U Bearer Context Reference CU</i> IE refers to the <i>Multicast F1-U Context ReferenceE1</i> IE as specified in TS 37.483 [47].

9.4 Message and Information Element Abstract Syntax (with ASN.1)

9.4.1 General

F1AP ASN.1 definition conforms to ITU-T Recommendation X.691 [5], ITU-T Recommendation X.680 [12] and ITU-T Recommendation X.681 [13].

The ASN.1 definition specifies the structure and content of F1AP messages. F1AP messages can contain any IEs specified in the object set definitions for that message without the order or number of occurrence being restricted by ASN.1. However, for this version of the standard, a sending entity shall construct an F1AP message according to the PDU definitions module and with the following additional rules:

- IEs shall be ordered (in an IE container) in the order they appear in object set definitions.
- Object set definitions specify how many times IEs may appear. An IE shall appear exactly once if the presence field in an object has value "mandatory". An IE may appear at most once if the presence field in an object has value "optional" or "conditional". If in a tabular format there is multiplicity specified for an IE (i.e., an IE list) then in the corresponding ASN.1 definition the list definition is separated into two parts. The first part defines an IE container list where the list elements reside. The second part defines list elements. The IE container list appears as an IE of its own. For this version of the standard an IE container list may contain only one kind of list elements.

NOTE: In the above "IE" means an IE in the object set with an explicit ID. If one IE needs to appear more than once in one object set, then the different occurrences will have different IE IDs.

If an F1AP message that is not constructed as defined above is received, this shall be considered as Abstract Syntax Error, and the message shall be handled as defined for Abstract Syntax Error in clause 10.

9.4.2 Usage of private message mechanism for non-standard use

The private message mechanism for non-standard use may be used:

- for special operator- (and/or vendor) specific features considered not to be part of the basic functionality, i.e., the functionality required for a complete and high-quality specification in order to guarantee multivendor interoperability;
- by vendors for research purposes, e.g., to implement and evaluate new algorithms/features before such features are proposed for standardisation.

The private message mechanism shall not be used for basic functionality. Such functionality shall be standardised.

9.4.3 Elementary Procedure Definitions

```

-- ASN1START
-- *****
--
-- Elementary Procedure definitions
--
-- *****

FlAP-PDU-Descriptions {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
ngran-access (22) modules (3) flap (3) version1 (1) flap-PDU-Descriptions (0)}

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- *****
--
-- IE parameter types from other modules.
--
-- *****

IMPORTS
    Criticality,
    ProcedureCode

FROM FlAP-CommonDataTypes
    Reset,
    ResetAcknowledge,
    FlSetupRequest,
    FlSetupResponse,
    FlSetupFailure,
    GNBDUConfigurationUpdate,
    GNBDUConfigurationUpdateAcknowledge,
    GNBDUConfigurationUpdateFailure,
    GNBCUConfigurationUpdate,
    GNBCUConfigurationUpdateAcknowledge,
    GNBCUConfigurationUpdateFailure,
    UEContextSetupRequest,
    UEContextSetupResponse,
    UEContextSetupFailure,
    UEContextReleaseCommand,
    UEContextReleaseComplete,
    UEContextModificationRequest,
    UEContextModificationResponse,
    UEContextModificationFailure,
    UEContextModificationRequired,
    UEContextModificationConfirm,
    ErrorIndication,
    UEContextReleaseRequest,
    DLRRCCMessageTransfer,
    ULRRCCMessageTransfer,

```

GNBDUResourceCoordinationRequest,
GNBDUResourceCoordinationResponse,
PrivateMessage,
UEInactivityNotification,
InitialULRRCMessageTransfer,
SystemInformationDeliveryCommand,
Paging,
Notify,
WriteReplaceWarningRequest,
WriteReplaceWarningResponse,
PWSCancelRequest,
PWSCancelResponse,
PWSRestartIndication,
PWSFailureIndication,
GNBDUStatusIndication,
RRCDeliveryReport,
UEContextModificationRefuse,
FlRemovalRequest,
FlRemovalResponse,
FlRemovalFailure,
NetworkAccessRateReduction,
TraceStart,
DeactivateTrace,
DUCURadioInformationTransfer,
CUDURadioInformationTransfer,
BAPMappingConfiguration,
BAPMappingConfigurationAcknowledge,
BAPMappingConfigurationFailure,
GNBDUResourceConfiguration,
GNBDUResourceConfigurationAcknowledge,
GNBDUResourceConfigurationFailure,
IABTNLAddressRequest,
IABTNLAddressResponse,
IABTNLAddressFailure,
IABUPConfigurationUpdateRequest,
IABUPConfigurationUpdateResponse,
IABUPConfigurationUpdateFailure,
ResourceStatusRequest,
ResourceStatusResponse,
ResourceStatusFailure,
ResourceStatusUpdate,
AccessAndMobilityIndication,
ReferenceTimeInformationReportingControl,
ReferenceTimeInformationReport,
AccessSuccess,
CellTrafficTrace,
PositioningMeasurementRequest,
PositioningMeasurementResponse,
PositioningMeasurementFailure,
PositioningAssistanceInformationControl,
PositioningAssistanceInformationFeedback,
PositioningMeasurementReport,
PositioningMeasurementAbort,
PositioningMeasurementFailureIndication,

PositioningMeasurementUpdate,
TRPInformationRequest,
TRPInformationResponse,
TRPInformationFailure,
PositioningInformationRequest,
PositioningInformationResponse,
PositioningInformationFailure,
PositioningActivationRequest,
PositioningActivationResponse,
PositioningActivationFailure,
PositioningDeactivation,
PositioningInformationUpdate,
E-CIDMeasurementInitiationRequest,
E-CIDMeasurementInitiationResponse,
E-CIDMeasurementInitiationFailure,
E-CIDMeasurementFailureIndication,
E-CIDMeasurementReport,
E-CIDMeasurementTerminationCommand,
BroadcastContextSetupRequest,
BroadcastContextSetupResponse,
BroadcastContextSetupFailure,
BroadcastContextReleaseCommand,
BroadcastContextReleaseComplete,
BroadcastContextReleaseRequest,
BroadcastContextModificationRequest,
BroadcastContextModificationResponse,
BroadcastContextModificationFailure,
MulticastGroupPaging,
MulticastContextSetupRequest,
MulticastContextSetupResponse,
MulticastContextSetupFailure,
MulticastContextReleaseCommand,
MulticastContextReleaseComplete,
MulticastContextReleaseRequest,
MulticastContextModificationRequest,
MulticastContextModificationResponse,
MulticastContextModificationFailure,
MulticastDistributionSetupRequest,
MulticastDistributionSetupResponse,
MulticastDistributionSetupFailure,
MulticastDistributionReleaseCommand,
MulticastDistributionReleaseComplete,
PDCMeasurementInitiationRequest,
PDCMeasurementInitiationResponse,
PDCMeasurementInitiationFailure,
PDCMeasurementReport,
PDCMeasurementTerminationCommand,
PDCMeasurementFailureIndication,
PRSConfigurationRequest,
PRSConfigurationResponse,
PRSConfigurationFailure,
MeasurementPreconfigurationRequired,
MeasurementPreconfigurationConfirm,
MeasurementPreconfigurationRefuse,

MeasurementActivation,
QoEInformationTransfer,
PosSystemInformationDeliveryCommand

FROM FlAP-PDU-Contents

id-Reset,
id-FlSetup,
id-gNBDCUConfigurationUpdate,
id-gNBCUCUConfigurationUpdate,
id-UEContextSetup,
id-UEContextRelease,
id-UEContextModification,
id-UEContextModificationRequired,
id-ErrorIndication,
id-UEContextReleaseRequest,
id-DLRRCCMessageTransfer,
id-ULRRCCMessageTransfer,
id-GNBDUResourceCoordination,
id-privateMessage,
id-UEInactivityNotification,
id-InitialULRRCCMessageTransfer,
id-SystemInformationDeliveryCommand,
id-Paging,
id-Notify,
id-WriteReplaceWarning,
id-PWSCancel,
id-PWSRestartIndication,
id-PWSFailureIndication,
id-GNBDUStatusIndication,
id-RRCDeliveryReport,
id-FlRemoval,
id-NetworkAccessRateReduction,
id-TraceStart,
id-DeactivateTrace,
id-DUCURadioInformationTransfer,
id-CUDURadioInformationTransfer,
id-BAPMappingConfiguration,
id-GNBDUResourceConfiguration,
id-IABTNLAddressAllocation,
id-IABUPConfigurationUpdate,
id-resourceStatusReportingInitiation,
id-resourceStatusReporting,
id-accessAndMobilityIndication,
id-ReferenceTimeInformationReportingControl,
id-ReferenceTimeInformationReport,
id-accessSuccess,
id-cellTrafficTrace,
id-PositioningMeasurementExchange,
id-PositioningAssistanceInformationControl,
id-PositioningAssistanceInformationFeedback,
id-PositioningMeasurementReport,

```

id-PositioningMeasurementAbort,
id-PositioningMeasurementFailureIndication,
id-PositioningMeasurementUpdate,
id-TRPInformationExchange,
id-PositioningInformationExchange,
id-PositioningActivation,
id-PositioningDeactivation,
id-PositioningInformationUpdate,
id-E-CIDMeasurementInitiation,
id-E-CIDMeasurementFailureIndication,
id-E-CIDMeasurementReport,
id-E-CIDMeasurementTermination,
id-BroadcastContextSetup,
id-BroadcastContextRelease,
id-BroadcastContextReleaseRequest,
id-BroadcastContextModification,
id-MulticastGroupPaging,
id-MulticastContextSetup,
id-MulticastContextRelease,
id-MulticastContextReleaseRequest,
id-MulticastContextModification,
id-MulticastDistributionSetup,
id-MulticastDistributionRelease,
id-PDCMeasurementInitiation,
id-PDCMeasurementInitiationRequest,
id-PDCMeasurementInitiationResponse,
id-PDCMeasurementInitiationFailure,
id-PDCMeasurementTerminationCommand,
id-PDCMeasurementFailureIndication,
id-PDCMeasurementReport,
id-pRSConfigurationExchange,
id-measurementPreconfiguration,
id-measurementActivation,
id-QoEInformationTransfer,
id-PosSystemInformationDeliveryCommand

```

FROM FlAP-Constants

```

ProtocolIE-SingleContainer{ },
FlAP-PROTOCOL-IES

```

FROM FlAP-Containers;

```

-- *****
--
-- Interface Elementary Procedure Class
--
-- *****

```

```

FlAP-ELEMENTARY-PROCEDURE ::= CLASS {
    &InitiatingMessage
    &SuccessfulOutcome
                                ,
                                OPTIONAL,

```

```

    &UnsuccessfulOutcome          OPTIONAL,
    &procedureCode                ProcedureCode UNIQUE,
    &criticality                  Criticality   DEFAULT ignore
}
WITH SYNTAX {
  INITIATING MESSAGE           &InitiatingMessage
  [SUCCESSFUL OUTCOME         &SuccessfulOutcome]
  [UNSUCCESSFUL OUTCOME       &UnsuccessfulOutcome]
  PROCEDURE CODE              &procedureCode
  [CRITICALITY                &criticality]
}

-- *****
--
-- Interface PDU Definition
--
-- *****

FLAP-PDU ::= CHOICE {
  initiatingMessage    InitiatingMessage,
  successfulOutcome    SuccessfulOutcome,
  unsuccessfulOutcome  UnsuccessfulOutcome,
  choice-extension     ProtocolIE-SingleContainer { { FLAP-PDU-ExtIEs } }
}

FLAP-PDU-ExtIEs FLAP-PROTOCOL-IES ::= { -- this extension is not used
  ...
}

InitiatingMessage ::= SEQUENCE {
  procedureCode    FLAP-ELEMENTARY-PROCEDURE.&procedureCode    ( { FLAP-ELEMENTARY-PROCEDURES } ),
  criticality      FLAP-ELEMENTARY-PROCEDURE.&criticality        ( { FLAP-ELEMENTARY-PROCEDURES } { @procedureCode } ),
  value           FLAP-ELEMENTARY-PROCEDURE.&InitiatingMessage  ( { FLAP-ELEMENTARY-PROCEDURES } { @procedureCode } )
}

SuccessfulOutcome ::= SEQUENCE {
  procedureCode    FLAP-ELEMENTARY-PROCEDURE.&procedureCode    ( { FLAP-ELEMENTARY-PROCEDURES } ),
  criticality      FLAP-ELEMENTARY-PROCEDURE.&criticality        ( { FLAP-ELEMENTARY-PROCEDURES } { @procedureCode } ),
  value           FLAP-ELEMENTARY-PROCEDURE.&SuccessfulOutcome  ( { FLAP-ELEMENTARY-PROCEDURES } { @procedureCode } )
}

UnsuccessfulOutcome ::= SEQUENCE {
  procedureCode    FLAP-ELEMENTARY-PROCEDURE.&procedureCode    ( { FLAP-ELEMENTARY-PROCEDURES } ),
  criticality      FLAP-ELEMENTARY-PROCEDURE.&criticality        ( { FLAP-ELEMENTARY-PROCEDURES } { @procedureCode } ),
  value           FLAP-ELEMENTARY-PROCEDURE.&UnsuccessfulOutcome ( { FLAP-ELEMENTARY-PROCEDURES } { @procedureCode } )
}

-- *****
--
-- Interface Elementary Procedure List
--
-- *****

FLAP-ELEMENTARY-PROCEDURES FLAP-ELEMENTARY-PROCEDURE ::= {

```

```

    FLAP-ELEMENTARY-PROCEDURES-CLASS-1 |
    FLAP-ELEMENTARY-PROCEDURES-CLASS-2,
    ...
}

FLAP-ELEMENTARY-PROCEDURES-CLASS-1 FLAP-ELEMENTARY-PROCEDURE ::= {
    reset
    flSetup
    gNBDUConfigurationUpdate
    gNBCUConfigurationUpdate
    uEContextSetup
    uEContextRelease
    uEContextModification
    uEContextModificationRequired
    writeReplaceWarning
    pWSCancel
    gNBDUResourceCoordination
    flRemoval
    bAPMappingConfiguration
    gNBDUResourceConfiguration
    iABTNLAddressAllocation
    iABUPConfigurationUpdate
    resourceStatusReportingInitiation
    positioningMeasurementExchange
    tRPInformationExchange
    positioningInformationExchange
    positioningActivation
    e-CIDMeasurementInitiation
    broadcastContextSetup
    broadcastContextRelease
    broadcastContextModification
    multicastContextSetup
    multicastContextRelease
    multicastContextModification
    multicastDistributionSetup
    multicastDistributionRelease
    pDCMeasurementInitiation
    pRSConfigurationExchange
    measurementPreconfiguration ,
    ...
}

FLAP-ELEMENTARY-PROCEDURES-CLASS-2 FLAP-ELEMENTARY-PROCEDURE ::= {
    errorIndication
    uEContextReleaseRequest
    dLRRCMessagesTransfer
    uLRRCMessagesTransfer
    uEInactivityNotification
    privateMessage
    initialULRRCMessagesTransfer
    systemInformationDelivery
    paging
    notify
}

```

```

    pWSRestartIndication
    pWSFailureIndication
    gNBDUStatusIndication
    rRCDeliveryReport
    networkAccessRateReduction
    traceStart
    deactivateTrace
    dUCURadioInformationTransfer
    cUDURadioInformationTransfer
    resourceStatusReporting
    accessAndMobilityIndication
    referenceTimeInformationReportingControl
    referenceTimeInformationReport
    accessSuccess
    cellTrafficTrace
    positioningAssistanceInformationControl
    positioningAssistanceInformationFeedback
    positioningMeasurementReport
    positioningMeasurementAbort
    positioningMeasurementFailureIndication
    positioningMeasurementUpdate
    positioningDeactivation
    e-CIDMeasurementFailureIndication
    e-CIDMeasurementReport
    e-CIDMeasurementTermination
    positioningInformationUpdate
    multicastGroupPaging
    broadcastContextReleaseRequest
    multicastContextReleaseRequest
    pDCMeasurementReport
    pDCMeasurementTerminationCommand
    pDCMeasurementFailureIndication
    measurementActivation
    qoEInformationTransfer
    posSystemInformationDelivery,
    ...
}
-- *****
--
-- Interface Elementary Procedures
--
-- *****

reset FLAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      Reset
    SUCCESSFUL OUTCOME      ResetAcknowledge
    PROCEDURE CODE          id-Reset
    CRITICALITY              reject
}

flSetup FLAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      FlSetupRequest
    SUCCESSFUL OUTCOME      FlSetupResponse
    UNSUCCESSFUL OUTCOME    FlSetupFailure
}

```

```
    PROCEDURE CODE      id-F1Setup
    CRITICALITY         reject
}

gNBDUConfigurationUpdate FLAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE   GNBUDUConfigurationUpdate
    SUCCESSFUL OUTCOME   GNBUDUConfigurationUpdateAcknowledge
    UNSUCCESSFUL OUTCOME GNBUDUConfigurationUpdateFailure
    PROCEDURE CODE      id-gNBDUConfigurationUpdate
    CRITICALITY         reject
}

gNBCUConfigurationUpdate FLAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE   GNBCUConfigurationUpdate
    SUCCESSFUL OUTCOME   GNBCUConfigurationUpdateAcknowledge
    UNSUCCESSFUL OUTCOME GNBCUConfigurationUpdateFailure
    PROCEDURE CODE      id-gNBCUConfigurationUpdate
    CRITICALITY         reject
}

UEContextSetup FLAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE   UEContextSetupRequest
    SUCCESSFUL OUTCOME   UEContextSetupResponse
    UNSUCCESSFUL OUTCOME UEContextSetupFailure
    PROCEDURE CODE      id-UEContextSetup
    CRITICALITY         reject
}

UEContextRelease FLAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE   UEContextReleaseCommand
    SUCCESSFUL OUTCOME   UEContextReleaseComplete
    PROCEDURE CODE      id-UEContextRelease
    CRITICALITY         reject
}

UEContextModification FLAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE   UEContextModificationRequest
    SUCCESSFUL OUTCOME   UEContextModificationResponse
    UNSUCCESSFUL OUTCOME UEContextModificationFailure
    PROCEDURE CODE      id-UEContextModification
    CRITICALITY         reject
}

UEContextModificationRequired FLAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE   UEContextModificationRequired
    SUCCESSFUL OUTCOME   UEContextModificationConfirm
    UNSUCCESSFUL OUTCOME UEContextModificationRefuse
    PROCEDURE CODE      id-UEContextModificationRequired
    CRITICALITY         reject
}

writeReplaceWarning FLAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE   WriteReplaceWarningRequest
    SUCCESSFUL OUTCOME   WriteReplaceWarningResponse
}
```

```
    PROCEDURE CODE          id-WriteReplaceWarning
    CRITICALITY             reject
}

pWSCancel FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      PWSCancelRequest
    SUCCESSFUL OUTCOME      PWSCancelResponse
    PROCEDURE CODE          id-PWSCancel
    CRITICALITY             reject
}

errorIndication FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      ErrorIndication
    PROCEDURE CODE          id-ErrorIndication
    CRITICALITY             ignore
}

ueContextReleaseRequest FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      UEContextReleaseRequest
    PROCEDURE CODE          id-UEContextReleaseRequest
    CRITICALITY             ignore
}

initialULRRCTestMessageTransfer FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      InitialULRRCTestMessageTransfer
    PROCEDURE CODE          id-InitialULRRCTestMessageTransfer
    CRITICALITY             ignore
}

dLRRCTestMessageTransfer FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      DLRRCTestMessageTransfer
    PROCEDURE CODE          id-DLRRCTestMessageTransfer
    CRITICALITY             ignore
}

uLRRCTestMessageTransfer FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      ULRRCTestMessageTransfer
    PROCEDURE CODE          id-ULRRCTestMessageTransfer
    CRITICALITY             ignore
}

ueInactivityNotification FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      UEInactivityNotification
    PROCEDURE CODE          id-UEInactivityNotification
    CRITICALITY             ignore
}

gnBdUResourceCoordination FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      GNBdUResourceCoordinationRequest
    SUCCESSFUL OUTCOME      GNBdUResourceCoordinationResponse
    PROCEDURE CODE          id-GNBdUResourceCoordination
    CRITICALITY             reject
}
```

```
}  
  
privateMessage FlAP-ELEMENTARY-PROCEDURE ::= {  
    INITIATING MESSAGE    PrivateMessage  
    PROCEDURE CODE        id-privateMessage  
    CRITICALITY           ignore  
}  
  
systemInformationDelivery FlAP-ELEMENTARY-PROCEDURE ::= {  
    INITIATING MESSAGE    SystemInformationDeliveryCommand  
    PROCEDURE CODE        id-SystemInformationDeliveryCommand  
    CRITICALITY           ignore  
}  
  
paging FlAP-ELEMENTARY-PROCEDURE ::= {  
    INITIATING MESSAGE    Paging  
    PROCEDURE CODE        id-Paging  
    CRITICALITY           ignore  
}  
  
notify FlAP-ELEMENTARY-PROCEDURE ::= {  
    INITIATING MESSAGE    Notify  
    PROCEDURE CODE        id-Notify  
    CRITICALITY           ignore  
}  
  
networkAccessRateReduction FlAP-ELEMENTARY-PROCEDURE ::= {  
    INITIATING MESSAGE    NetworkAccessRateReduction  
    PROCEDURE CODE        id-NetworkAccessRateReduction  
    CRITICALITY           ignore  
}  
  
pWSRestartIndication FlAP-ELEMENTARY-PROCEDURE ::= {  
    INITIATING MESSAGE    PWSRestartIndication  
    PROCEDURE CODE        id-PWSRestartIndication  
    CRITICALITY           ignore  
}  
  
pWSFailureIndication FlAP-ELEMENTARY-PROCEDURE ::= {  
    INITIATING MESSAGE    PWSFailureIndication  
    PROCEDURE CODE        id-PWSFailureIndication  
    CRITICALITY           ignore  
}  
  
gNBDUStatusIndication FlAP-ELEMENTARY-PROCEDURE ::= {  
    INITIATING MESSAGE    GNBDUStatusIndication  
    PROCEDURE CODE        id-GNBDUStatusIndication  
    CRITICALITY           ignore  
}  
  
rRCDeliveryReport FlAP-ELEMENTARY-PROCEDURE ::= {
```



```
INITIATING MESSAGE      RRCDeliveryReport
PROCEDURE CODE          id-RRCDeliveryReport
CRITICALITY             ignore
}

flRemoval FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      FlRemovalRequest
  SUCCESSFUL OUTCOME      FlRemovalResponse
  UNSUCCESSFUL OUTCOME    FlRemovalFailure
  PROCEDURE CODE          id-FlRemoval
  CRITICALITY             reject
}

traceStart FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      TraceStart
  PROCEDURE CODE          id-TraceStart
  CRITICALITY             ignore
}

deactivateTrace FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      DeactivateTrace
  PROCEDURE CODE          id-DeactivateTrace
  CRITICALITY             ignore
}

dUCURadioInformationTransfer FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      DUCURadioInformationTransfer
  PROCEDURE CODE          id-DUCURadioInformationTransfer
  CRITICALITY             ignore
}

cUDURadioInformationTransfer FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      CUDURadioInformationTransfer
  PROCEDURE CODE          id-CUDURadioInformationTransfer
  CRITICALITY             ignore
}

bAPMappingConfiguration FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      BAPMappingConfiguration
  SUCCESSFUL OUTCOME      BAPMappingConfigurationAcknowledge
  UNSUCCESSFUL OUTCOME    BAPMappingConfigurationFailure
  PROCEDURE CODE          id-BAPMappingConfiguration
  CRITICALITY             reject
}

gNBDRResourceConfiguration FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      GNBDRResourceConfiguration
  SUCCESSFUL OUTCOME      GNBDRResourceConfigurationAcknowledge
  UNSUCCESSFUL OUTCOME    GNBDRResourceConfigurationFailure
  PROCEDURE CODE          id-GNBDRResourceConfiguration
  CRITICALITY             reject
}

iABTNLAddressAllocation FlAP-ELEMENTARY-PROCEDURE ::= {
```

```
INITIATING MESSAGE      IABTNLAddressRequest
SUCCESSFUL OUTCOME      IABTNLAddressResponse
UNSUCCESSFUL OUTCOME    IABTNLAddressFailure
PROCEDURE CODE          id-IABTNLAddressAllocation
CRITICALITY             reject
}

iABUPConfigurationUpdate FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      IABUPConfigurationUpdateRequest
  SUCCESSFUL OUTCOME      IABUPConfigurationUpdateResponse
  UNSUCCESSFUL OUTCOME    IABUPConfigurationUpdateFailure
  PROCEDURE CODE          id-IABUPConfigurationUpdate
  CRITICALITY             reject
}

resourceStatusReportingInitiation FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      ResourceStatusRequest
  SUCCESSFUL OUTCOME      ResourceStatusResponse
  UNSUCCESSFUL OUTCOME    ResourceStatusFailure
  PROCEDURE CODE          id-resourceStatusReportingInitiation
  CRITICALITY             reject
}

resourceStatusReporting FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      ResourceStatusUpdate
  PROCEDURE CODE          id-resourceStatusReporting
  CRITICALITY             ignore
}

accessAndMobilityIndication FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      AccessAndMobilityIndication
  PROCEDURE CODE          id-accessAndMobilityIndication
  CRITICALITY             ignore
}

referenceTimeInformationReportingControl FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      ReferenceTimeInformationReportingControl
  PROCEDURE CODE          id-ReferenceTimeInformationReportingControl
  CRITICALITY             ignore
}

referenceTimeInformationReport FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      ReferenceTimeInformationReport
  PROCEDURE CODE          id-ReferenceTimeInformationReport
  CRITICALITY             ignore
}

accessSuccess FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      AccessSuccess
  PROCEDURE CODE          id-accessSuccess
  CRITICALITY             ignore
}

cellTrafficTrace FlAP-ELEMENTARY-PROCEDURE ::= {
```

```
INITIATING MESSAGE      CellTrafficTrace
PROCEDURE CODE          id-cellTrafficTrace
CRITICALITY             ignore
}

positioningAssistanceInformationControl FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      PositioningAssistanceInformationControl
  PROCEDURE CODE          id-PositioningAssistanceInformationControl
  CRITICALITY             ignore
}

positioningAssistanceInformationFeedback FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      PositioningAssistanceInformationFeedback
  PROCEDURE CODE          id-PositioningAssistanceInformationFeedback
  CRITICALITY             ignore
}

positioningMeasurementExchange FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      PositioningMeasurementRequest
  SUCCESSFUL OUTCOME      PositioningMeasurementResponse
  UNSUCCESSFUL OUTCOME    PositioningMeasurementFailure
  PROCEDURE CODE          id-PositioningMeasurementExchange
  CRITICALITY             reject
}

positioningMeasurementReport FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      PositioningMeasurementReport
  PROCEDURE CODE          id-PositioningMeasurementReport
  CRITICALITY             ignore
}

positioningMeasurementAbort FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      PositioningMeasurementAbort
  PROCEDURE CODE          id-PositioningMeasurementAbort
  CRITICALITY             ignore
}

positioningMeasurementFailureIndication FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      PositioningMeasurementFailureIndication
  PROCEDURE CODE          id-PositioningMeasurementFailureIndication
  CRITICALITY             ignore
}

positioningMeasurementUpdate FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      PositioningMeasurementUpdate
  PROCEDURE CODE          id-PositioningMeasurementUpdate
  CRITICALITY             ignore
}

TRPInformationExchange FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      TRPInformationRequest
  SUCCESSFUL OUTCOME      TRPInformationResponse
  UNSUCCESSFUL OUTCOME    TRPInformationFailure
}
```

```
    PROCEDURE CODE      id-TRPInformationExchange
    CRITICALITY         reject
}

positioningInformationExchange FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  PositioningInformationRequest
    SUCCESSFUL OUTCOME  PositioningInformationResponse
    UNSUCCESSFUL OUTCOME PositioningInformationFailure
    PROCEDURE CODE      id-PositioningInformationExchange
    CRITICALITY         reject
}

positioningActivation FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  PositioningActivationRequest
    SUCCESSFUL OUTCOME  PositioningActivationResponse
    UNSUCCESSFUL OUTCOME PositioningActivationFailure
    PROCEDURE CODE      id-PositioningActivation
    CRITICALITY         reject
}

positioningDeactivation FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  PositioningDeactivation
    PROCEDURE CODE      id-PositioningDeactivation
    CRITICALITY         ignore
}

e-CIDMeasurementInitiation FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  E-CIDMeasurementInitiationRequest
    SUCCESSFUL OUTCOME  E-CIDMeasurementInitiationResponse
    UNSUCCESSFUL OUTCOME E-CIDMeasurementInitiationFailure
    PROCEDURE CODE      id-E-CIDMeasurementInitiation
    CRITICALITY         reject
}

e-CIDMeasurementFailureIndication FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  E-CIDMeasurementFailureIndication
    PROCEDURE CODE      id-E-CIDMeasurementFailureIndication
    CRITICALITY         ignore
}

e-CIDMeasurementReport FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  E-CIDMeasurementReport
    PROCEDURE CODE      id-E-CIDMeasurementReport
    CRITICALITY         ignore
}

e-CIDMeasurementTermination FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  E-CIDMeasurementTerminationCommand
    PROCEDURE CODE      id-E-CIDMeasurementTermination
    CRITICALITY         ignore
}

positioningInformationUpdate FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  PositioningInformationUpdate
}
```

```
    PROCEDURE CODE      id-PositioningInformationUpdate
    CRITICALITY         ignore
}

broadcastContextSetup FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  BroadcastContextSetupRequest
    SUCCESSFUL OUTCOME  BroadcastContextSetupResponse
    UNSUCCESSFUL OUTCOME BroadcastContextSetupFailure
    PROCEDURE CODE      id-BroadcastContextSetup
    CRITICALITY         reject
}

broadcastContextRelease FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  BroadcastContextReleaseCommand
    SUCCESSFUL OUTCOME  BroadcastContextReleaseComplete
    PROCEDURE CODE      id-BroadcastContextRelease
    CRITICALITY         reject
}

broadcastContextReleaseRequest FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  BroadcastContextReleaseRequest
    PROCEDURE CODE      id-BroadcastContextReleaseRequest
    CRITICALITY         reject
}

broadcastContextModification FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  BroadcastContextModificationRequest
    SUCCESSFUL OUTCOME  BroadcastContextModificationResponse
    UNSUCCESSFUL OUTCOME BroadcastContextModificationFailure
    PROCEDURE CODE      id-BroadcastContextModification
    CRITICALITY         reject
}

multicastGroupPaging FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  MulticastGroupPaging
    PROCEDURE CODE      id-MulticastGroupPaging
    CRITICALITY         ignore
}

multicastContextSetup FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  MulticastContextSetupRequest
    SUCCESSFUL OUTCOME  MulticastContextSetupResponse
    UNSUCCESSFUL OUTCOME MulticastContextSetupFailure
    PROCEDURE CODE      id-MulticastContextSetup
    CRITICALITY         reject
}

multicastContextRelease FlAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  MulticastContextReleaseCommand
    SUCCESSFUL OUTCOME  MulticastContextReleaseComplete
    PROCEDURE CODE      id-MulticastContextRelease
    CRITICALITY         reject
}
```

```
multicastContextReleaseRequest FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      MulticastContextReleaseRequest
  PROCEDURE CODE          id-MulticastContextReleaseRequest
  CRITICALITY              reject
}

multicastContextModification FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      MulticastContextModificationRequest
  SUCCESSFUL OUTCOME      MulticastContextModificationResponse
  UNSUCCESSFUL OUTCOME    MulticastContextModificationFailure
  PROCEDURE CODE          id-MulticastContextModification
  CRITICALITY              reject
}

multicastDistributionSetup FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      MulticastDistributionSetupRequest
  SUCCESSFUL OUTCOME      MulticastDistributionSetupResponse
  UNSUCCESSFUL OUTCOME    MulticastDistributionSetupFailure
  PROCEDURE CODE          id-MulticastDistributionSetup
  CRITICALITY              reject
}

multicastDistributionRelease FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      MulticastDistributionReleaseCommand
  SUCCESSFUL OUTCOME      MulticastDistributionReleaseComplete
  PROCEDURE CODE          id-MulticastDistributionRelease
  CRITICALITY              reject
}

pDCMeasurementInitiation FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      PDCMeasurementInitiationRequest
  SUCCESSFUL OUTCOME      PDCMeasurementInitiationResponse
  UNSUCCESSFUL OUTCOME    PDCMeasurementInitiationFailure
  PROCEDURE CODE          id-PDCMeasurementInitiation
  CRITICALITY              reject
}

pDCMeasurementReport FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      PDCMeasurementReport
  PROCEDURE CODE          id-PDCMeasurementReport
  CRITICALITY              ignore
}

pDCMeasurementTerminationCommand FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      PDCMeasurementTerminationCommand
  PROCEDURE CODE          id-PDCMeasurementTerminationCommand
  CRITICALITY              ignore
}

pDCMeasurementFailureIndication FlAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE      PDCMeasurementFailureIndication
  PROCEDURE CODE          id-PDCMeasurementFailureIndication
}
```

```

    CRITICALITY          ignore
  }

  PRSConfigurationExchange FLAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE   PRSConfigurationRequest
    SUCCESSFUL OUTCOME   PRSConfigurationResponse
    UNSUCCESSFUL OUTCOME PRSConfigurationFailure
    PROCEDURE CODE       id-PRSConfigurationExchange
    CRITICALITY          reject
  }

  measurementPreconfiguration FLAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE   MeasurementPreconfigurationRequired
    SUCCESSFUL OUTCOME   MeasurementPreconfigurationConfirm
    UNSUCCESSFUL OUTCOME MeasurementPreconfigurationRefuse
    PROCEDURE CODE       id-measurementPreconfiguration
    CRITICALITY          reject
  }

  measurementActivation     FLAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE   MeasurementActivation
    PROCEDURE CODE       id-measurementActivation
    CRITICALITY          ignore
  }

  qoeInformationTransfer FLAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE   QoeInformationTransfer
    PROCEDURE CODE       id-QoeInformationTransfer
    CRITICALITY          ignore
  }

  posSystemInformationDelivery FLAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE   PosSystemInformationDeliveryCommand
    PROCEDURE CODE       id-PosSystemInformationDeliveryCommand
    CRITICALITY          ignore
  }

END
-- ASN1STOP

```

9.4.4 PDU Definitions

```

-- ASN1START
-- *****
--
-- PDU definitions for FLAP.
--
-- *****

FlAP-PDU-Contents {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

```

```
ngran-access (22) modules (3) flap (3) version1 (1) flap-PDU-Contents (1) }
```

```
DEFINITIONS AUTOMATIC TAGS ::=
```

```
BEGIN
```

```
-- *****  
--  
-- IE parameter types from other modules.  
--  
-- *****
```

```
IMPORTS
```

```
BroadcastMRBs-FailedToBeModified-Item,  
BroadcastMRBs-FailedToBeSetup-Item,  
BroadcastMRBs-FailedToBeSetupMod-Item,  
BroadcastMRBs-Modified-Item,  
BroadcastMRBs-Setup-Item,  
BroadcastMRBs-SetupMod-Item,  
BroadcastMRBs-ToBeModified-Item,  
BroadcastMRBs-ToBeReleased-Item,  
BroadcastMRBs-ToBeSetup-Item,  
BroadcastMRBs-ToBeSetupMod-Item,  
Candidate-SpCell-Item,  
Cause,  
Cells-Failed-to-be-Activated-List-Item,  
Cells-Status-Item,  
Cells-to-be-Activated-List-Item,  
Cells-to-be-Deactivated-List-Item,  
CellULConfigured,  
CriticalityDiagnostics,  
C-RNTI,  
CUtoDURRCInformation,  
DRB-Activity-Item,  
DRBID,  
DRBs-FailedToBeModified-Item,  
DRBs-FailedToBeSetup-Item,  
DRBs-FailedToBeSetupMod-Item,  
DRB-Notify-Item,  
DRBs-ModifiedConf-Item,  
DRBs-Modified-Item,  
DRBs-Required-ToBeModified-Item,  
DRBs-Required-ToBeReleased-Item,  
DRBs-Setup-Item,  
DRBs-SetupMod-Item,  
DRBs-ToBeModified-Item,  
DRBs-ToBeReleased-Item,  
DRBs-ToBeSetup-Item,  
DRBs-ToBeSetupMod-Item,  
DRXCycle,  
DRXConfigurationIndicator,  
DUtoCURRCInformation,  
EUTRANQoS,  
ExecuteDuplication,
```


FullConfiguration,
GNB-CU-MBS-FlAP-ID,
GNB-CU-UE-FlAP-ID,
GNB-DU-MBS-FlAP-ID,
GNB-DU-UE-FlAP-ID,
GNB-DU-ID,
GNB-DU-Served-Cells-Item,
GNB-DU-System-Information,
GNB-CU-Name,
GNB-DU-Name,
InactivityMonitoringRequest,
InactivityMonitoringResponse,
LowerLayerPresenceStatusChange,
MBS-Area-Session-ID,
MBS-CUtoDURRCInformation,
MBSMulticastFlUContextDescriptor,
MBS-Session-ID,
MBS-ServiceArea,
MulticastFlUContextReferenceCU,
MulticastFlUContext-ToBeSetup-Item,
MulticastFlUContext-Setup-Item,
MulticastFlUContext-FailedToBeSetup-Item,
MulticastMBSSESSIONList,
MulticastMRBs-ToBeSetup-Item,
MulticastMRBs-Setup-Item,
MulticastMRBs-FailedToBeSetup-Item,
MulticastMRBs-ToBeSetupMod-Item,
MulticastMRBs-ToBeModified-Item,
MulticastMRBs-ToBeReleased-Item,
MulticastMRBs-SetupMod-Item,
MulticastMRBs-FailedToBeSetupMod-Item,
MulticastMRBs-Modified-Item,
MulticastMRBs-FailedToBeModified-Item,
BroadcastAreaScope,
NotificationControl,
NRCGI,
NRPCI,
UEContextNotRetrievable,
Potential-SpCell-Item,
RAT-FrequencyPriorityInformation,
RequestedSRSTransmissionCharacteristics,
ResourceCoordinationTransferContainer,
RRCContainer,
RRCContainer-RRCSetupComplete,
RRCReconfigurationCompleteIndicator,
SCellIndex,
SCell-ToBeRemoved-Item,
SCell-ToBeSetup-Item,
SCell-ToBeSetupMod-Item,
SCell-FailedtoSetup-Item,
SCell-FailedtoSetupMod-Item,
ServCellIndex,
Served-Cell-Information,
Served-Cells-To-Add-Item,

Served-Cells-To-Delete-Item,
Served-Cells-To-Modify-Item,
ServingCellMO,
SNSSAI,
SRBID,
SRBs-FailedToBeSetup-Item,
SRBs-FailedToBeSetupMod-Item,
SRBs-Required-ToBeReleased-Item,
SRBs-ToBeReleased-Item,
SRBs-ToBeSetup-Item,
SRBs-ToBeSetupMod-Item,
SRBs-Modified-Item,
SRBs-Setup-Item,
SRBs-SetupMod-Item,
TimeToWait,
TransactionID,
TransmissionActionIndicator,
UE-associatedLogicalFl-ConnectionItem,
UEIdentity-List-For-Paging-Item,
DUtoCURRCCContainer,
PagingCell-Item,
SItypes-List,
UEIdentityIndexValue,
GNB-CU-TNL-Association-Setup-Item,
GNB-CU-TNL-Association-Failed-To-Setup-Item,
GNB-CU-TNL-Association-To-Add-Item,
GNB-CU-TNL-Association-To-Remove-Item,
GNB-CU-TNL-Association-To-Update-Item,
MaskedIMEISV,
PagingDRX,
PagingPriority,
PagingIdentity,
Cells-to-be-Barred-Item,
PWSSystemInformation,
Broadcast-To-Be-Cancelled-Item,
Cells-Broadcast-Cancelled-Item,
NR-CGI-List-For-Restart-Item,
PWS-Failed-NR-CGI-Item,
RepetitionPeriod,
NumberOfBroadcastRequest,
Cells-To-Be-Broadcast-Item,
Cells-Broadcast-Completed-Item,
Cancel-all-Warning-Messages-Indicator,
EUTRA-NR-CellResourceCoordinationReq-Container,
EUTRA-NR-CellResourceCoordinationReqAck-Container,
RequestType,
PLMN-Identity,
RLCFailureIndication,
UplinkTxDirectCurrentListInformation,
SULAccessIndication,
Protected-EUTRA-Resources-Item,
GNB-DUConfigurationQuery,
BitRate,
RRC-Version,

GNBDUOverloadInformation,
RRCDeliveryStatusRequest,
NeedforGap,
RRCDeliveryStatus,
ResourceCoordinationTransferInformation,
Dedicated-SIDelivery-NeededUE-Item,
Associated-SCell-Item,
IgnoreResourceCoordinationContainer,
PagingOrigin,
UAC-Assistance-Info,
RANUEID,
GNB-DU-TNL-Association-To-Remove-Item,
NotificationInformation,
TraceActivation,
TraceID,
Neighbour-Cell-Information-Item,
SymbolAllocInSlot,
NumDLULSymbols,
AdditionalRRMPriorityIndex,
DUCURadioInformationType,
CUDURadioInformationType,
Transport-Layer-Address-Info,
BHChannels-ToBeSetup-Item,
BHChannels-Setup-Item,
BHChannels-FailedToBeSetup-Item,
BHChannels-ToBeModified-Item,
BHChannels-ToBeReleased-Item,
BHChannels-ToBeSetupMod-Item,
BHChannels-FailedToBeModified-Item,
BHChannels-FailedToBeSetupMod-Item,
BHChannels-Modified-Item,
BHChannels-SetupMod-Item,
BHChannels-Required-ToBeReleased-Item,
BAPAddress,
BAPPathID,
BAPRoutingID,
BH-Routing-Information-Added-List-Item,
BH-Routing-Information-Removed-List-Item,
Child-Nodes-List,
Child-Nodes-List-Item,
Child-Node-Cells-List,
Child-Node-Cells-List-Item,
Activated-Cells-to-be-Updated-List,
Activated-Cells-to-be-Updated-List-Item,
UL-BH-Non-UP-Traffic-Mapping,
IABTNLAddressesRequested,
IABIPv6RequestType,
IAB-TNL-Addresses-To-Remove-Item,
IABTNLAddress,
IAB-Allocated-TNL-Address-Item,
IABv4AddressesRequested,
TrafficMappingInfo,
UL-UP-TNL-Information-to-Update-List-Item,
UL-UP-TNL-Address-to-Update-List-Item,

DL-UP-TNL-Address-to-Update-List-Item,
NRV2XServicesAuthorized,
LTEV2XServicesAuthorized,
NRUESidelinkAggregateMaximumBitrate,
LTEUESidelinkAggregateMaximumBitrate,
SLDRBs-SetupMod-Item,
SLDRBs-ModifiedConf-Item,
SLDRBID,
SLDRBs-FailedToBeModified-Item,
SLDRBs-FailedToBeSetup-Item,
SLDRBs-FailedToBeSetupMod-Item,
SLDRBs-Modified-Item,
SLDRBs-Required-ToBeModified-Item,
SLDRBs-Required-ToBeReleased-Item,
SLDRBs-Setup-Item,
SLDRBs-ToBeModified-Item,
SLDRBs-ToBeReleased-Item,
SLDRBs-ToBeSetup-Item,
SLDRBs-ToBeSetupMod-Item,
GNBCUMeasurementID,
GNBDUMeasurementID,
RegistrationRequest,
ReportCharacteristics,
CellToReportList,
HardwareLoadIndicator,
CellMeasurementResultList,
ReportingPeriodicity,
TNLCapacityIndicator,
RACHReportInformationList,
RLFReportInformationList,
ReportingRequestType,
TimeReferenceInformation,
ConditionalInterDUMobilityInformation,
ConditionalIntraDUMobilityInformation,
TargetCellList,
MDTPLMNList,
PrivacyIndicator,
TransportLayerAddress,
URI-address,
NID,
PosAssistance-Information,
PosBroadcast,
PositioningBroadcastCells,
RoutingID,
PosAssistanceInformationFailureList,
PosMeasurementQuantities,
PosMeasurementResultList,
PosReportCharacteristics,
TRPInformationTypeItem,
TRPInformationItem,
LMF-MeasurementID,
RAN-MeasurementID,
SDT-Termination-Request,
SRSResourceSetID,

SpatialRelationInfo,
SRSResourceTrigger,
SRSConfiguration,
TRPList,
E-CID-MeasurementQuantities,
MeasurementPeriodicity,
E-CID-MeasurementResult,
Cell-Portion-ID,
LMF-UE-MeasurementID,
RAN-UE-MeasurementID,
RelativeTime1900,
SystemFrameNumber,
SlotNumber,
AbortTransmission,
TRP-MeasurementRequestList,
MeasurementBeamInfoRequest,
E-CID-ReportCharacteristics,
Extended-GNB-CU-Name,
Extended-GNB-DU-Name,
FlCTransferPath,
SCGIndicator,
SpatialRelationPerSRSResource,
MeasurementPeriodicityExtended,
SuccessfulHOReportInformationList,
Coverage-Modification-Notification,
CCO-Assistance-Information,
CellsForSON-List,
IABCongestionIndication,
IABConditionalRRCMessageDeliveryIndication,
FlCTransferPathNRDC,
BufferSizeThresh,
IAB-TNL-Addresses-Exception,
BAP-Header-Rewriting-Added-List-Item,
Re-routingEnableIndicator,
NonFlterminatingTopologyIndicator,
EgressNonFlterminatingTopologyIndicator,
IngressNonFlterminatingTopologyIndicator,
Neighbour-Node-Cells-List,
Neighbour-Node-Cells-List-Item,
NA-Resource-Configuration-List,
NA-Resource-Configuration-Item,
Serving-Cells-List,
Serving-Cells-List-Item,
RBSetConfiguration,
PDCMeasurementPeriodicity,
PDCMeasurementQuantities,
PDCMeasurementResult,
PDCReportType,
RAN-UE-PDC-MeasID,
SCGActivationRequest,
SCGActivationStatus,
TRP-MeasurementUpdateList,
PRSTRPList,
PRSTransmissionTRPList,

ResponseTime,
TRP-PRS-Info-List,
PRS-Measurement-Info-List,
PRSConfigRequestType,
MeasurementCharacteristicsRequestIndicator,
MeasurementTimeOccasion,
UEReportingInformation,
PosConextRevIndication,
NRRedCapUEIndication,
NRPagingeDRXInformation,
NRPagingeDRXInformationforRRCINACTIVE,
QoEInformation,
CG-SDTQueryIndication,
CG-SDTKeptIndicator,
CG-SDTSessionInfo,
SDTInformation,
FiveG-ProSeAuthorized,
UuRLCChannelToBeSetupList,
UuRLCChannelToBeModifiedList,
UuRLCChannelToBeReleasedList,
UuRLCChannelSetupList,
UuRLCChannelFailedToBeSetupList,
UuRLCChannelModifiedList,
UuRLCChannelFailedToBeModifiedList,
UuRLCChannelRequiredToBeModifiedList,
UuRLCChannelRequiredToBeReleasedList,
PC5RLCChannelToBeSetupList,
PC5RLCChannelToBeModifiedList,
PC5RLCChannelToBeReleasedList,
PC5RLCChannelSetupList,
PC5RLCChannelFailedToBeSetupList,
PC5RLCChannelFailedToBeModifiedList,
PC5RLCChannelRequiredToBeModifiedList,
PC5RLCChannelRequiredToBeReleasedList,
PC5RLCChannelModifiedList,
RemoteUELocalID,
PathSwitchConfiguration,
SidelinkRelayConfiguration,
PagingCause,
PEIPSAssistanceInfo,
UEPagingCapability,
GNBDUUESliceMaximumBitRateList,
MDTPollutedMeasurementIndicator,
UE-MulticastMRBs-ConfirmedToBeModified-Item,
UE-MulticastMRBs-RequiredToBeModified-Item,
UE-MulticastMRBs-RequiredToBeReleased-Item,
UE-MulticastMRBs-Setup-Item,
UE-MulticastMRBs-ToBeReleased-Item,
UE-MulticastMRBs-ToBeSetup-Item,
UE-MulticastMRBs-ToBeSetup-atModify-Item,
PosMeasurementAmount,
BAP-Header-Rewriting-Removed-List-Item,
SLDRXCycleList,
MDTPLMNModificationList,

ActivationRequestType,
PosMeasGapPreConfigList,
PosMeasurementPeriodicityNR-AoA,
SRSPoSRRcInactiveConfig,
SDTBearerConfigurationQueryIndication,
SDTBearerConfigurationInfo,
ServingCellMO-List-Item,
ServingCellMO-encoded-in-CGC-List,
PosSItypeList,
DAPS-HO-Status,
UuRLCChannelID,
UplinkTxDirectCurrentTwoCarrierListInfo,
SRSPoSRRcInactiveQueryIndication,
MC-PagingCell-Item,
UlTxDirectCurrentMoreCarrierInformation,
CPACMCGInformation,
ExtendedUEIdentityIndexValue

FROM FLAP-IEs

PrivateIE-Container{},
ProtocolExtensionContainer{},
ProtocolIE-Container{},
ProtocolIE-ContainerPair{},
ProtocolIE-SingleContainer{},
FLAP-PRIVATE-IES,
FLAP-PROTOCOL-EXTENSION,
FLAP-PROTOCOL-IES,
FLAP-PROTOCOL-IES-PAIR

FROM FLAP-Containers

id-BroadcastMRBs-FailedToBeModified-List,
id-BroadcastMRBs-FailedToBeModified-Item,
id-BroadcastMRBs-FailedToBeSetup-List,
id-BroadcastMRBs-FailedToBeSetup-Item,
id-BroadcastMRBs-FailedToBeSetupMod-List,
id-BroadcastMRBs-FailedToBeSetupMod-Item,
id-BroadcastMRBs-Modified-List,
id-BroadcastMRBs-Modified-Item,
id-BroadcastMRBs-Setup-List,
id-BroadcastMRBs-Setup-Item,
id-BroadcastMRBs-SetupMod-List,
id-BroadcastMRBs-SetupMod-Item,
id-BroadcastMRBs-ToBeModified-List,
id-BroadcastMRBs-ToBeModified-Item,
id-BroadcastMRBs-ToBeReleased-List,
id-BroadcastMRBs-ToBeReleased-Item,
id-BroadcastMRBs-ToBeSetup-List,
id-BroadcastMRBs-ToBeSetup-Item,
id-BroadcastMRBs-ToBeSetupMod-List,
id-BroadcastMRBs-ToBeSetupMod-Item,

id-Candidate-SpCell-Item,
id-Candidate-SpCell-List,
id-Cause,
id-Cancel-all-Warning-Messages-Indicator,
id-Cells-Failed-to-be-Activated-List,
id-Cells-Failed-to-be-Activated-List-Item,
id-Cells-Status-Item,
id-Cells-Status-List,
id-Cells-to-be-Activated-List,
id-Cells-to-be-Activated-List-Item,
id-Cells-to-be-Deactivated-List,
id-Cells-to-be-Deactivated-List-Item,
id-ConfirmedUEID,
id-CriticalityDiagnostics,
id-C-RNTI,
id-CUtoDURRCInformation,
id-DRB-Activity-Item,
id-DRB-Activity-List,
id-DRBs-FailedToBeModified-Item,
id-DRBs-FailedToBeModified-List,
id-DRBs-FailedToBeSetup-Item,
id-DRBs-FailedToBeSetup-List,
id-DRBs-FailedToBeSetupMod-Item,
id-DRBs-FailedToBeSetupMod-List,
id-DRBs-ModifiedConf-Item,
id-DRBs-ModifiedConf-List,
id-DRBs-Modified-Item,
id-DRBs-Modified-List,
id-DRB-Notify-Item,
id-DRB-Notify-List,
id-DRBs-Required-ToBeModified-Item,
id-DRBs-Required-ToBeModified-List,
id-DRBs-Required-ToBeReleased-Item,
id-DRBs-Required-ToBeReleased-List,
id-DRBs-Setup-Item,
id-DRBs-Setup-List,
id-DRBs-SetupMod-Item,
id-DRBs-SetupMod-List,
id-DRBs-ToBeModified-Item,
id-DRBs-ToBeModified-List,
id-DRBs-ToBeReleased-Item,
id-DRBs-ToBeReleased-List,
id-DRBs-ToBeSetup-Item,
id-DRBs-ToBeSetup-List,
id-DRBs-ToBeSetupMod-Item,
id-DRBs-ToBeSetupMod-List,
id-DRXCycle,
id-DUtoCURRCInformation,
id-ExecuteDuplication,
id-FullConfiguration,
id-gNB-CU-MBS-FlAP-ID,
id-gNB-CU-UE-FlAP-ID,
id-gNB-DU-MBS-FlAP-ID,
id-gNB-DU-UE-FlAP-ID,

id-gNB-DU-ID,
id-gNB-DU-Served-Cells-Item,
id-gNB-DU-Served-Cells-List,
id-gNB-CU-Name,
id-gNB-DU-Name,
id-Extended-gNB-CU-Name,
id-Extended-gNB-DU-Name,
id-InactivityMonitoringRequest,
id-InactivityMonitoringResponse,
id-MBS-Area-Session-ID,
id-MBS-CUtoDURRCInformation,
id-MBS-Session-ID,
id-MBS-ServiceArea,
id-MBSMulticastFLUContextDescriptor,
id-MC-PagingCell-Item,
id-MC-PagingCell-List,
id-MulticastFLUContextReferenceCU,
id-MulticastMBSSESSIONSetupList,
id-MulticastMBSSESSIONRemoveList,
id-MulticastMRBs-FailedToBeModified-List,
id-MulticastMRBs-FailedToBeModified-Item,
id-MulticastMRBs-FailedToBeSetup-List,
id-MulticastMRBs-FailedToBeSetup-Item,
id-MulticastMRBs-FailedToBeSetupMod-List,
id-MulticastMRBs-FailedToBeSetupMod-Item,
id-MulticastMRBs-Modified-List,
id-MulticastMRBs-Modified-Item,
id-MulticastMRBs-Setup-List,
id-MulticastMRBs-Setup-Item,
id-MulticastMRBs-SetupMod-List,
id-MulticastMRBs-SetupMod-Item,
id-MulticastMRBs-ToBeModified-List,
id-MulticastMRBs-ToBeModified-Item,
id-MulticastMRBs-ToBeReleased-List,
id-MulticastMRBs-ToBeReleased-Item,
id-MulticastMRBs-ToBeSetup-List,
id-MulticastMRBs-ToBeSetup-Item,
id-MulticastMRBs-ToBeSetupMod-List,
id-MulticastMRBs-ToBeSetupMod-Item,
id-MulticastFLUContext-ToBeSetup-List,
id-MulticastFLUContext-ToBeSetup-Item,
id-MulticastFLUContext-Setup-List,
id-MulticastFLUContext-Setup-Item,
id-MulticastFLUContext-FailedToBeSetup-List,
id-MulticastFLUContext-FailedToBeSetup-Item,
id-BroadcastAreaScope,
id-new-gNB-CU-UE-FlAP-ID,
id-new-gNB-DU-UE-FlAP-ID,
id-oldgNB-DU-UE-FlAP-ID,
id-PLMNAssistanceInfoForNetShar,
id-Potential-SpCell-Item,
id-Potential-SpCell-List,
id-RAT-FrequencyPriorityInformation,
id-RedirectedRRCCMessage,

id-ResetType,
id-RequestedSRSTransmissionCharacteristics,
id-ResourceCoordinationTransferContainer,
id-RRCContainer,
id-RRCContainer-RRCSetupComplete,
id-RRCreconfigurationCompleteIndicator,
id-SCell-FailedtoSetup-List,
id-SCell-FailedtoSetup-Item,
id-SCell-FailedtoSetupMod-List,
id-SCell-FailedtoSetupMod-Item,
id-SCell-ToBeRemoved-Item,
id-SCell-ToBeRemoved-List,
id-SCell-ToBeSetup-Item,
id-SCell-ToBeSetup-List,
id-SCell-ToBeSetupMod-Item,
id-SCell-ToBeSetupMod-List,
id-SDT-Termination-Request,
id-SelectedPLMNID,
id-Served-Cells-To-Add-Item,
id-Served-Cells-To-Add-List,
id-Served-Cells-To-Delete-Item,
id-Served-Cells-To-Delete-List,
id-Served-Cells-To-Modify-Item,
id-Served-Cells-To-Modify-List,
id-ServCellIndex,
id-ServingCellMO,
id-SNSSAI,
id-SpCell-ID,
id-SpCellULConfigured,
id-SRBID,
id-SRBs-FailedToBeSetup-Item,
id-SRBs-FailedToBeSetup-List,
id-SRBs-FailedToBeSetupMod-Item,
id-SRBs-FailedToBeSetupMod-List,
id-SRBs-Required-ToBeReleased-Item,
id-SRBs-Required-ToBeReleased-List,
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id-SRBs-ToBeReleased-List,
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id-SRBs-ToBeSetupMod-Item,
id-SRBs-ToBeSetupMod-List,
id-SRBs-Modified-Item,
id-SRBs-Modified-List,
id-SRBs-Setup-Item,
id-SRBs-Setup-List,
id-SRBs-SetupMod-Item,
id-SRBs-SetupMod-List,
id-TimeToWait,
id-TransactionID,
id-TransmissionActionIndicator,
id-UEContextNotRetrievable,
id-UE-associatedLogicalFl-ConnectionItem,
id-UE-associatedLogicalFl-ConnectionListResAck,

id-UEIdentity-List-For-Paging-List,
id-UEIdentity-List-For-Paging-Item,
id-UE-MulticastMRBs-ConfirmedToBeModified-List,
id-UE-MulticastMRBs-ConfirmedToBeModified-Item,
id-UE-MulticastMRBs-RequiredToBeModified-List,
id-UE-MulticastMRBs-RequiredToBeModified-Item,
id-UE-MulticastMRBs-RequiredToBeReleased-List,
id-UE-MulticastMRBs-RequiredToBeReleased-Item,
id-UE-MulticastMRBs-Setup-List,
id-UE-MulticastMRBs-Setup-Item,
id-UE-MulticastMRBs-ToBeReleased-List,
id-UE-MulticastMRBs-ToBeReleased-Item,
id-UE-MulticastMRBs-ToBeSetup-atModify-List,
id-UE-MulticastMRBs-ToBeSetup-atModify-Item,
id-UE-MulticastMRBs-ToBeSetup-List,
id-UE-MulticastMRBs-ToBeSetup-Item,
id-DUtoCURRCCContainer,
id-NRCCI,
id-PagingCell-Item,
id-PagingCell-List,
id-PagingDRX,
id-PagingPriority,
id-SItype-List,
id-UEIdentityIndexValue,
id-GNB-CU-TNL-Association-Setup-List,
id-GNB-CU-TNL-Association-Setup-Item,
id-GNB-CU-TNL-Association-Failed-To-Setup-List,
id-GNB-CU-TNL-Association-Failed-To-Setup-Item,
id-GNB-CU-TNL-Association-To-Add-Item,
id-GNB-CU-TNL-Association-To-Add-List,
id-GNB-CU-TNL-Association-To-Remove-Item,
id-GNB-CU-TNL-Association-To-Remove-List,
id-GNB-CU-TNL-Association-To-Update-Item,
id-GNB-CU-TNL-Association-To-Update-List,
id-MaskedIMEISV,
id-PagingIdentity,
id-Cells-to-be-Barred-List,
id-Cells-to-be-Barred-Item,
id-PWSSystemInformation,
id-RepetitionPeriod,
id-NumberOfBroadcastRequest,
id-Cells-To-Be-Broadcast-List,
id-Cells-To-Be-Broadcast-Item,
id-Cells-Broadcast-Completed-List,
id-Cells-Broadcast-Completed-Item,
id-Broadcast-To-Be-Cancelled-List,
id-Broadcast-To-Be-Cancelled-Item,
id-Cells-Broadcast-Cancelled-List,
id-Cells-Broadcast-Cancelled-Item,
id-NR-CGI-List-For-Restart-List,
id-NR-CGI-List-For-Restart-Item,
id-PWS-Failed-NR-CGI-List,
id-PWS-Failed-NR-CGI-Item,
id-EUTRA-NR-CellResourceCoordinationReq-Container,

id-EUTRA-NR-CellResourceCoordinationReqAck-Container,
id-Protected-EUTRA-Resources-List,
id-RequestType,
id-ServingPLMN,
id-DRXConfigurationIndicator,
id-RLCFailureIndication,
id-UplinkTxDirectCurrentListInformation,
id-SULAccessIndication,
id-Protected-EUTRA-Resources-Item,
id-GNB-DUConfigurationQuery,
id-GNB-DU-UE-AMBR-UL,
id-GNB-CU-RRC-Version,
id-GNB-DU-RRC-Version,
id-GNBDOOverloadInformation,
id-NeedforGap,
id-RRCDeliveryStatusRequest,
id-RRCDeliveryStatus,
id-Dedicated-SIDelivery-NeededUE-List,
id-Dedicated-SIDelivery-NeededUE-Item,
id-ResourceCoordinationTransferInformation,
id-Associated-SCell-List,
id-Associated-SCell-Item,
id-IgnoreResourceCoordinationContainer,
id-UAC-Assistance-Info,
id-RANUEID,
id-PagingOrigin,
id-GNB-DU-TNL-Association-To-Remove-Item,
id-GNB-DU-TNL-Association-To-Remove-List,
id-NotificationInformation,
id-TraceActivation,
id-TraceID,
id-Neighbour-Cell-Information-List,
id-Neighbour-Cell-Information-Item,
id-SymbolAllocInSlot,
id-NumDLULSymbols,
id-AdditionalRRMPriorityIndex,
id-DUCURadioInformationType,
id-CUDURadioInformationType,
id-LowerLayerPresenceStatusChange,
id-Transport-Layer-Address-Info,
id-BHChannels-ToBeSetup-List,
id-BHChannels-ToBeSetup-Item,
id-BHChannels-Setup-List,
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id-BHChannels-ToBeReleased-List,
id-BHChannels-ToBeSetupMod-Item,
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id-BHChannels-Modified-Item,
id-BHChannels-Modified-List,
id-BHChannels-SetupMod-Item,
id-BHChannels-SetupMod-List,
id-BHChannels-Required-ToBeReleased-Item,
id-BHChannels-Required-ToBeReleased-List,
id-BAPAddress,
id-ConfiguredBAPAddress,
id-BH-Routing-Information-Added-List,
id-BH-Routing-Information-Added-List-Item,
id-BH-Routing-Information-Removed-List,
id-BH-Routing-Information-Removed-List-Item,
id-UL-BH-Non-UP-Traffic-Mapping,
id-Child-Nodes-List,
id-Activated-Cells-to-be-Updated-List,
id-IABIPv6RequestType,
id-IAB-TNL-Addresses-To-Remove-List,
id-IAB-TNL-Addresses-To-Remove-Item,
id-IAB-Allocated-TNL-Address-List,
id-IAB-Allocated-TNL-Address-Item,
id-IABv4AddressesRequested,
id-TrafficMappingInformation,
id-UL-UP-TNL-Information-to-Update-List,
id-UL-UP-TNL-Information-to-Update-List-Item,
id-UL-UP-TNL-Address-to-Update-List,
id-UL-UP-TNL-Address-to-Update-List-Item,
id-DL-UP-TNL-Address-to-Update-List,
id-DL-UP-TNL-Address-to-Update-List-Item,
id-NRV2XServicesAuthorized,
id-LTEV2XServicesAuthorized,
id-NRUESidelinkAggregateMaximumBitrate,
id-LTEUESidelinkAggregateMaximumBitrate,
id-PC5LinkAMBR,
id-SLDRBs-FailedToBeModified-Item,
id-SLDRBs-FailedToBeModified-List,
id-SLDRBs-FailedToBeSetup-Item,
id-SLDRBs-FailedToBeSetup-List,
id-SLDRBs-Modified-Item,
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id-SLDRBs-Required-ToBeModified-Item,
id-SLDRBs-Required-ToBeModified-List,
id-SLDRBs-Required-ToBeReleased-Item,
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id-SLDRBs-Setup-List,
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id-SLDRBs-SetupMod-List,
id-SLDRBs-FailedToBeSetupMod-List,
id-SLDRBs-SetupMod-Item,
id-SLDRBs-FailedToBeSetupMod-Item,
id-SLDRBs-ModifiedConf-List,
id-SLDRBs-ModifiedConf-Item,
id-gNBCUMeasurementID,
id-gNBDUMeasurementID,
id-RegistrationRequest,
id-ReportCharacteristics,
id-CellToReportList,
id-CellMeasurementResultList,
id-HardwareLoadIndicator,
id-ReportingPeriodicity,
id-TNLCapacityIndicator,
id-RACHReportInformationList,
id-RLFReportInformationList,
id-ReportingRequestType,
id-TimeReferenceInformation,
id-ConditionalInterDUMobilityInformation,
id-ConditionalIntraDUMobilityInformation,
id-targetCellsToCancel,
id-requestedTargetCellGlobalID,
id-TraceCollectionEntityIPAddress,
id-ManagementBasedMDTPLMNList,
id-PrivacyIndicator,
id-TraceCollectionEntityURI,
id-ServingNID,
id-PosAssistance-Information,
id-PosBroadcast,
id-PositioningBroadcastCells,
id-RoutingID,
id-PosAssistanceInformationFailureList,
id-PosMeasurementQuantities,
id-PosMeasurementResultList,
id-PosMeasurementPeriodicity,
id-PosReportCharacteristics,
id-TRPInformationTypeListTRPReq,
id-TRPInformationTypeItem,
id-TRPInformationListTRPResp,
id-TRPInformationItem,
id-LMF-MeasurementID,
id-RAN-MeasurementID,
id-SRSType,
id-ActivationTime,
id-AbortTransmission,
id-SRSConfiguration,
id-TRPList,
id-E-CID-MeasurementQuantities,
id-E-CID-MeasurementPeriodicity,
id-E-CID-MeasurementResult,
id-Cell-Portion-ID,
id-LMF-UE-MeasurementID,

id-RAN-UE-MeasurementID,
id-SFNInitialisationTime,
id-SystemFrameNumber,
id-SlotNumber,
id-TRP-MeasurementRequestList,
id-MeasurementBeamInfoRequest,
id-E-CID-ReportCharacteristics,
id-FlCTransferPath,
id-SCGIndicator,
id-SRSSpatialRelationPerSRSResource,
id-PosMeasurementPeriodicityExtended,
id-SuccessfulHOREportInformationList,
id-Coverage-Modification-Notification,
id-CCO-Assistance-Information,
id-CellsForSON-List,
id-IABCongestionIndication,
id-IABConditionalRRCMessageDeliveryIndication,
id-FlCTransferPathNRDC,
id-BufferSizeThresh,
id-IAB-TNL-Addresses-Exception,
id-BAP-Header-Rewriting-Added-List,
id-BAP-Header-Rewriting-Added-List-Item,
id-Re-routingEnableIndicator,
id-NonFlterminatingTopologyIndicator,
id-EgressNonFlterminatingTopologyIndicator,
id-IngressNonFlterminatingTopologyIndicator,
id-Neighbour-Node-Cells-List,
id-Serving-Cells-List,
id-MDTPollutedMeasurementIndicator,
id-PDCMeasurementPeriodicity,
id-PDCMeasurementQuantities,
id-PDCMeasurementResult,
id-PDCReportType,
id-RAN-UE-PDC-MeasID,
id-SCGActivationRequest,
id-SCGActivationStatus,
id-TRP-MeasurementUpdateList,
id-PRSTRPLList,
id-PRSTRansmissionTRPLList,
id-ResponseTime,
id-TRP-PRS-Info-List,
id-PRS-Measurement-Info-List,
id-PRSConfigRequestType,
id-MeasurementCharacteristicsRequestIndicator,
id-MeasurementTimeOccasion,
id-UEReportingInformation,
id-PosConextRevIndication,
id-NRRedCapUEIndication,
id-RANUEPagingDRX,
id-CNUEPagingDRX,
id-NRPagingeDRXInformation,
id-NRPagingeDRXInformationforRRCINACTIVE,
id-QoEInformation,
id-CG-SDTQueryIndication,

id-CG-SDTKeptIndicator,
id-CG-SDTSessionInfoOld,
id-SDTInformation,
id-FiveG-ProSeAuthorized,
id-FiveG-ProSePC5LinkAMBR,
id-FiveG-ProSeUEPC5AggregateMaximumBitrate,
id-UuRLCChannelToBeSetupList,
id-UuRLCChannelToBeModifiedList,
id-UuRLCChannelToBeReleasedList,
id-UuRLCChannelSetupList,
id-UuRLCChannelFailedToBeSetupList,
id-UuRLCChannelModifiedList,
id-UuRLCChannelFailedToBeModifiedList,
id-UuRLCChannelRequiredToBeModifiedList,
id-UuRLCChannelRequiredToBeReleasedList,
id-PC5RLCChannelToBeSetupList,
id-PC5RLCChannelToBeModifiedList,
id-PC5RLCChannelToBeReleasedList,
id-PC5RLCChannelSetupList,
id-PC5RLCChannelFailedToBeSetupList,
id-PC5RLCChannelModifiedList,
id-PC5RLCChannelFailedToBeModifiedList,
id-PC5RLCChannelRequiredToBeModifiedList,
id-PC5RLCChannelRequiredToBeReleasedList,
id-SidelinkRelayConfiguration,
id-UpdatedRemoteUELocalID,
id-PathSwitchConfiguration,
id-PagingCause,
id-PEIPSAssistanceInfo,
id-UEPagingCapability,
id-GNBDUUESliceMaximumBitRateList,
id-PosMeasurementAmount,
id-BAP-Header-Rewriting-Removed-List,
id-BAP-Header-Rewriting-Removed-List-Item,
id-SLDRXCycleList,
id-ManagementBasedMDTPLMNModificationList,
id-ActivationRequestType,
id-PosMeasGapPreConfigList,
id-PosMeasurementPeriodicityNR-AoA,
id-SRSPosRRRCInactiveConfig,
id-SDTBearerConfigurationQueryIndication,
id-SDTBearerConfigurationInfo,
id-ServingCellMO-List,
id-ServingCellMO-List-Item,
id-ServingCellMO-encoded-in-CGC-List,
id-PosSITypeList,
id-DAPS-HO-Status,
id-SRBMappingInfo,
id-UplinkTxDirectCurrentTwoCarrierListInfo,
id-SRSPosRRRCInactiveQueryIndication,
id-UlTxDirectCurrentMoreCarrierInformation,
id-CPACMCGInformation,
id-ExtendedUEIdentityIndexValue,
maxCellingNBDU,


```

maxnoofCandidateSpCells,
maxnoofDRBs,
maxnoofErrors,
maxnoofIndividualFlConnectionsToReset,
maxnoofPotentialSpCells,
maxnoofSCells,
maxnoofSRBs,
maxnoofPagingCells,
maxnoofTNLAssociations,
maxCellineNB,
maxnoofUEIDs,
maxnoofBHRLCChannels,
maxnoofRoutingEntries,
maxnoofChildIABNodes,
maxnoofServedCellsIAB,
maxnoofTLAsIAB,
maxnoofULUPTNLInformationforIAB,
maxnoofUPTNLAddresses,
maxnoofSLDRBs,
maxnoofTRPInfoTypes,
maxnoofTRPs,
maxnoofMRBs,
maxnoofUEIDforPaging,
maxnoofNeighbourNodeCellsIAB,
maxnoofMRBsforUE,
maxnoofServingCellMOs

```

```
FROM FlAP-Constants;
```

```

-- *****
--
-- RESET ELEMENTARY PROCEDURE
--
-- *****
--
-- *****
--
-- Reset
--
-- *****

```

```

Reset ::= SEQUENCE {
    protocolIES          ProtocolIE-Container    { {ResetIEs} },
    ...
}

```

```

ResetIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-Cause                  CRITICALITY ignore TYPE Cause                PRESENCE mandatory }|
    { ID id-ResetType              CRITICALITY reject TYPE ResetType          PRESENCE mandatory },
}

```

```

}
...
ResetType ::= CHOICE {
    fl-Interface                ResetAll,
    partOfFl-Interface          UE-associatedLogicalFl-ConnectionListRes,
    choice-extension            ProtocolIE-SingleContainer { { ResetType-ExtIEs } }
}

ResetType-ExtIEs FlAP-PROTOCOL-IES ::= {
    ...
}

ResetAll ::= ENUMERATED {
    reset-all,
    ...
}

UE-associatedLogicalFl-ConnectionListRes ::= SEQUENCE (SIZE(1.. maxnoofIndividualFlConnectionsToReset)) OF ProtocolIE-SingleContainer { { UE-associatedLogicalFl-ConnectionItemRes } }

UE-associatedLogicalFl-ConnectionItemRes FlAP-PROTOCOL-IES ::= {
    { ID id-UE-associatedLogicalFl-ConnectionItem    CRITICALITY reject    TYPE UE-associatedLogicalFl-ConnectionItem    PRESENCE mandatory },
    ...
}

-- *****
--
-- Reset Acknowledge
--
-- *****

ResetAcknowledge ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { {ResetAcknowledgeIEs} },
    ...
}

ResetAcknowledgeIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID                CRITICALITY reject    TYPE TransactionID                PRESENCE mandatory }|
    { ID id-UE-associatedLogicalFl-ConnectionListResAck    CRITICALITY ignore    TYPE UE-associatedLogicalFl-ConnectionListResAck    PRESENCE optional }|
    { ID id-CriticalityDiagnostics        CRITICALITY ignore    TYPE CriticalityDiagnostics        PRESENCE optional },
    ...
}

UE-associatedLogicalFl-ConnectionListResAck ::= SEQUENCE (SIZE(1.. maxnoofIndividualFlConnectionsToReset)) OF ProtocolIE-SingleContainer { { UE-associatedLogicalFl-ConnectionItemResAck } }

UE-associatedLogicalFl-ConnectionItemResAck FlAP-PROTOCOL-IES ::= {
    { ID id-UE-associatedLogicalFl-ConnectionItem    CRITICALITY ignore    TYPE UE-associatedLogicalFl-ConnectionItem    PRESENCE mandatory },
    ...
}

```

```

}
-- *****
--
-- ERROR INDICATION ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Error Indication
--
-- *****

ErrorIndication ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    {{ErrorIndicationIEs}},
    ...
}

ErrorIndicationIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
    { ID id-gNB-CU-UE-FlAP-ID      CRITICALITY ignore  TYPE GNB-CU-UE-FlAP-ID      PRESENCE optional }|
    { ID id-gNB-DU-UE-FlAP-ID      CRITICALITY ignore  TYPE GNB-DU-UE-FlAP-ID      PRESENCE optional }|
    { ID id-Cause                  CRITICALITY ignore  TYPE Cause                  PRESENCE optional }|
    { ID id-CriticalityDiagnostics  CRITICALITY ignore  TYPE CriticalityDiagnostics PRESENCE optional },
    ...
}

-- *****
--
-- F1 SETUP ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- F1 Setup Request
--
-- *****

F1SetupRequest ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { {F1SetupRequestIEs} },
    ...
}

F1SetupRequestIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
    { ID id-gNB-DU-ID              CRITICALITY reject  TYPE GNB-DU-ID              PRESENCE mandatory }|
    { ID id-gNB-DU-Name            CRITICALITY ignore  TYPE GNB-DU-Name            PRESENCE optional }|
    { ID id-gNB-DU-Served-Cells-List CRITICALITY reject  TYPE GNB-DU-Served-Cells-List PRESENCE optional }|
    { ID id-gNB-DU-RRC-Version     CRITICALITY reject  TYPE RRC-Version            PRESENCE mandatory }|
    { ID id-Transport-Layer-Address-Info CRITICALITY ignore  TYPE Transport-Layer-Address-Info PRESENCE optional }|
    { ID id-BAPAddress             CRITICALITY ignore  TYPE BAPAddress             PRESENCE optional }|
    { ID id-Extended-GNB-DU-Name   CRITICALITY ignore  TYPE Extended-GNB-DU-Name   PRESENCE optional },
}

```

```

}
...

GNB-DU-Served-Cells-List ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF ProtocolIE-SingleContainer { { GNB-DU-Served-Cells-ItemIEs } }

GNB-DU-Served-Cells-ItemIEs FlAP-PROTOCOL-IES ::= {
  { ID id-GNB-DU-Served-Cells-Item          CRITICALITY reject  TYPE          GNB-DU-Served-Cells-Item PRESENCE mandatory  },
  ...
}

-- *****
--
-- Fl Setup Response
--
-- *****

FlSetupResponse ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          { {FlSetupResponseIEs} },
  ...
}

FlSetupResponseIEs FlAP-PROTOCOL-IES ::= {
  { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory  }|
  { ID id-gNB-CU-Name            CRITICALITY ignore  TYPE GNB-CU-Name            PRESENCE optional   }|
  { ID id-Cells-to-be-Activated-List CRITICALITY reject  TYPE Cells-to-be-Activated-List PRESENCE optional   }|
  { ID id-GNB-CU-RRC-Version      CRITICALITY reject  TYPE RRC-Version            PRESENCE mandatory  }|
  { ID id-Transport-Layer-Address-Info CRITICALITY ignore  TYPE Transport-Layer-Address-Info PRESENCE optional   }|
  { ID id-UL-BH-Non-UP-Traffic-Mapping CRITICALITY reject  TYPE UL-BH-Non-UP-Traffic-Mapping PRESENCE optional   }|
  { ID id-BAPAddress             CRITICALITY ignore  TYPE BAPAddress              PRESENCE optional   }|
  { ID id-Extended-GNB-CU-Name    CRITICALITY ignore  TYPE Extended-GNB-CU-Name    PRESENCE optional   },
  ...
}

Cells-to-be-Activated-List ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF ProtocolIE-SingleContainer { { Cells-to-be-Activated-List-ItemIEs } }

Cells-to-be-Activated-List-ItemIEs FlAP-PROTOCOL-IES ::= {
  { ID id-Cells-to-be-Activated-List-Item          CRITICALITY reject  TYPE Cells-to-be-Activated-List-Item          PRESENCE mandatory },
  ...
}

-- *****
--
-- Fl Setup Failure
--
-- *****

FlSetupFailure ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          { {FlSetupFailureIEs} },

```

```

}
...
}
FlSetupFailureIEs FlAP-PROTOCOL-IES ::= {
  { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
  { ID id-Cause                  CRITICALITY ignore TYPE Cause                  PRESENCE mandatory }|
  { ID id-TimeToWait             CRITICALITY ignore TYPE TimeToWait             PRESENCE optional }|
  { ID id-CriticalityDiagnostics  CRITICALITY ignore TYPE CriticalityDiagnostics  PRESENCE optional },
  ...
}

-- *****
--
-- GNB-DU CONFIGURATION UPDATE ELEMENTARY PROCEDURE
--
-- *****
--
-- *****
--
-- GNB-DU CONFIGURATION UPDATE
--
-- *****

GNBDUConfigurationUpdate ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container    { {GNBDUConfigurationUpdateIEs} },
  ...
}

GNBDUConfigurationUpdateIEs FlAP-PROTOCOL-IES ::= {
  { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
  { ID id-Served-Cells-To-Add-List CRITICALITY reject TYPE Served-Cells-To-Add-List  PRESENCE optional }|
  { ID id-Served-Cells-To-Modify-List CRITICALITY reject TYPE Served-Cells-To-Modify-List  PRESENCE optional }|
  { ID id-Served-Cells-To-Delete-List CRITICALITY reject TYPE Served-Cells-To-Delete-List  PRESENCE optional }|
  { ID id-Cells-Status-List       CRITICALITY reject TYPE Cells-Status-List       PRESENCE optional }|
  { ID id-Dedicated-SIDelivery-NeededUE-List CRITICALITY ignore TYPE Dedicated-SIDelivery-NeededUE-List  PRESENCE optional }|
  { ID id-gNB-DU-ID               CRITICALITY reject TYPE GNB-DU-ID               PRESENCE optional }|
  { ID id-gNB-DU-TNL-Association-To-Remove-List CRITICALITY reject TYPE GNB-DU-TNL-Association-To-Remove-List  PRESENCE optional }|
  { ID id-Transport-Layer-Address-Info CRITICALITY ignore TYPE Transport-Layer-Address-Info  PRESENCE optional }|
  { ID id-Coverage-Modification-Notification CRITICALITY ignore TYPE Coverage-Modification-Notification  PRESENCE optional }|
  { ID id-gNB-DU-Name             CRITICALITY ignore TYPE GNB-DU-Name             PRESENCE optional }|
  { ID id-Extended-gNB-DU-Name    CRITICALITY ignore TYPE Extended-gNB-DU-Name    PRESENCE optional },
  ...
}

Served-Cells-To-Add-List ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF ProtocolIE-SingleContainer { { Served-Cells-To-Add-ItemIEs } }
Served-Cells-To-Modify-List ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF ProtocolIE-SingleContainer { { Served-Cells-To-Modify-ItemIEs } }
Served-Cells-To-Delete-List ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF ProtocolIE-SingleContainer { { Served-Cells-To-Delete-ItemIEs } }
Cells-Status-List ::= SEQUENCE (SIZE(0.. maxCellingNBDU)) OF ProtocolIE-SingleContainer { { Cells-Status-ItemIEs } }

Dedicated-SIDelivery-NeededUE-List ::= SEQUENCE (SIZE(1.. maxnoofUEIDs)) OF ProtocolIE-SingleContainer { { Dedicated-SIDelivery-NeededUE-ItemIEs } }

GNB-DU-TNL-Association-To-Remove-List ::= SEQUENCE (SIZE(1.. maxnoofTNLAssociations)) OF ProtocolIE-SingleContainer { { GNB-DU-TNL-Association-To-Remove-ItemIEs } }

```

```

Served-Cells-To-Add-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-Served-Cells-To-Add-Item          CRITICALITY reject  TYPE      Served-Cells-To-Add-Item          PRESENCE mandatory  },
  ...
}

Served-Cells-To-Modify-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-Served-Cells-To-Modify-Item      CRITICALITY reject  TYPE      Served-Cells-To-Modify-Item          PRESENCE mandatory  },
  ...
}

Served-Cells-To-Delete-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-Served-Cells-To-Delete-Item     CRITICALITY reject  TYPE      Served-Cells-To-Delete-Item          PRESENCE mandatory  },
  ...
}

Cells-Status-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-Cells-Status-Item               CRITICALITY reject  TYPE      Cells-Status-Item                    PRESENCE mandatory  },
  ...
}

Dedicated-SIDelivery-NeededUE-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-Dedicated-SIDelivery-NeededUE-Item CRITICALITY ignore  TYPE      Dedicated-SIDelivery-NeededUE-Item    PRESENCE mandatory  },
  ...
}

GNB-DU-TNL-Association-To-Remove-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-GNB-DU-TNL-Association-To-Remove-Item CRITICALITY reject  TYPE      GNB-DU-TNL-Association-To-Remove-Item PRESENCE
mandatory  },
  ...
}

-- *****
--
-- GNB-DU CONFIGURATION UPDATE ACKNOWLEDGE
--
-- *****

GNBDUConfigurationUpdateAcknowledge ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container    { {GNBDUConfigurationUpdateAcknowledgeIEs} },
  ...
}

GNBDUConfigurationUpdateAcknowledgeIEs FLAP-PROTOCOL-IES ::= {
  { ID id-TransactionID          CRITICALITY reject  TYPE      TransactionID          PRESENCE mandatory  }|
  { ID id-Cells-to-be-Activated-List CRITICALITY reject  TYPE      Cells-to-be-Activated-List PRESENCE optional }|
  { ID id-CriticalityDiagnostics CRITICALITY ignore  TYPE      CriticalityDiagnostics PRESENCE optional }|
  { ID id-Cells-to-be-Deactivated-List CRITICALITY reject  TYPE      Cells-to-be-Deactivated-List PRESENCE optional }|
  { ID id-Transport-Layer-Address-Info CRITICALITY ignore  TYPE      Transport-Layer-Address-Info PRESENCE optional }|
  { ID id-UL-BH-Non-UP-Traffic-Mapping CRITICALITY reject  TYPE      UL-BH-Non-UP-Traffic-Mapping PRESENCE optional }|
}

```

```

    { ID id-BAPAddress          CRITICALITY ignore TYPE BAPAddress          PRESENCE optional }|
    { ID id-CellsForSON-List     CRITICALITY ignore TYPE CellsForSON-List     PRESENCE optional },
    ...
}

-- *****
--
-- GNB-DU CONFIGURATION UPDATE FAILURE
--
-- *****

GNBDUConfigurationUpdateFailure ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container      { {GNBDUConfigurationUpdateFailureIEs} },
    ...
}

GNBDUConfigurationUpdateFailureIEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID      CRITICALITY reject TYPE TransactionID      PRESENCE mandatory }|
    { ID id-Cause              CRITICALITY ignore TYPE Cause              PRESENCE mandatory }|
    { ID id-TimeToWait         CRITICALITY ignore TYPE TimeToWait         PRESENCE optional }|
    { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
    ...
}

-- *****
--
-- GNB-CU CONFIGURATION UPDATE ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- GNB-CU CONFIGURATION UPDATE
--
-- *****

GNBCUConfigurationUpdate ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container      { {GNBCUConfigurationUpdateIEs} },
    ...
}

GNBCUConfigurationUpdateIEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID      CRITICALITY reject TYPE TransactionID      PRESENCE mandatory }|
    { ID id-Cells-to-be-Activated-List CRITICALITY reject TYPE Cells-to-be-Activated-List PRESENCE optional }|
    { ID id-Cells-to-be-Deactivated-List CRITICALITY reject TYPE Cells-to-be-Deactivated-List PRESENCE optional }|
    { ID id-GNB-CU-TNL-Association-To-Add-List CRITICALITY ignore TYPE GNB-CU-TNL-Association-To-Add-List PRESENCE optional }|
    { ID id-GNB-CU-TNL-Association-To-Remove-List CRITICALITY ignore TYPE GNB-CU-TNL-Association-To-Remove-List PRESENCE optional }|
    { ID id-GNB-CU-TNL-Association-To-Update-List CRITICALITY ignore TYPE GNB-CU-TNL-Association-To-Update-List PRESENCE optional }|
    { ID id-Cells-to-be-Barred-List CRITICALITY ignore TYPE Cells-to-be-Barred-List PRESENCE optional }|
    { ID id-Protected-EUTRA-Resources-List CRITICALITY reject TYPE Protected-EUTRA-Resources-List PRESENCE optional }|
    { ID id-Neighbour-Cell-Information-List CRITICALITY ignore TYPE Neighbour-Cell-Information-List PRESENCE optional }|
    { ID id-Transport-Layer-Address-Info CRITICALITY ignore TYPE Transport-Layer-Address-Info PRESENCE optional }|
    { ID id-UL-BH-Non-UP-Traffic-Mapping CRITICALITY reject TYPE UL-BH-Non-UP-Traffic-Mapping PRESENCE optional }|
    { ID id-BAPAddress          CRITICALITY ignore TYPE BAPAddress          PRESENCE optional }|
}

```

```

    { ID id-CCO-Assistance-Information          CRITICALITY ignore TYPE CCO-Assistance-Information          PRESENCE optional } |
    { ID id-CellsForSON-List                    CRITICALITY ignore TYPE CellsForSON-List                    PRESENCE optional } |
    { ID id-gNB-CU-Name                         CRITICALITY ignore TYPE GNB-CU-Name                         PRESENCE optional } |
    { ID id-Extended-GNB-CU-Name                CRITICALITY ignore TYPE Extended-GNB-CU-Name                PRESENCE optional },
    ...
}

Cells-to-be-Deactivated-List ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF ProtocolIE-SingleContainer { { Cells-to-be-Deactivated-List-ItemIEs } }
GNB-CU-TNL-Association-To-Add-List ::= SEQUENCE (SIZE(1.. maxnoofTNLAssociations)) OF ProtocolIE-SingleContainer { { GNB-CU-TNL-Association-To-Add-ItemIEs } }
GNB-CU-TNL-Association-To-Remove-List ::= SEQUENCE (SIZE(1.. maxnoofTNLAssociations)) OF ProtocolIE-SingleContainer { { GNB-CU-TNL-Association-To-Remove-ItemIEs } }
GNB-CU-TNL-Association-To-Update-List ::= SEQUENCE (SIZE(1.. maxnoofTNLAssociations)) OF ProtocolIE-SingleContainer { { GNB-CU-TNL-Association-To-Update-ItemIEs } }
Cells-to-be-Barred-List ::= SEQUENCE(SIZE(1.. maxCellingNBDU)) OF ProtocolIE-SingleContainer { { Cells-to-be-Barred-ItemIEs } }

Cells-to-be-Deactivated-List-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-Cells-to-be-Deactivated-List-Item          CRITICALITY reject TYPE Cells-to-be-Deactivated-List-Item
      PRESENCE mandatory },
    ...
}

GNB-CU-TNL-Association-To-Add-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-GNB-CU-TNL-Association-To-Add-Item          CRITICALITY ignore TYPE GNB-CU-TNL-Association-To-Add-Item          PRESENCE mandatory },
    ...
}

GNB-CU-TNL-Association-To-Remove-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-GNB-CU-TNL-Association-To-Remove-Item          CRITICALITY ignore TYPE GNB-CU-TNL-Association-To-Remove-Item          PRESENCE
      mandatory },
    ...
}

GNB-CU-TNL-Association-To-Update-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-GNB-CU-TNL-Association-To-Update-Item          CRITICALITY ignore TYPE GNB-CU-TNL-Association-To-Update-Item          PRESENCE
      mandatory },
    ...
}

Cells-to-be-Barred-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-Cells-to-be-Barred-Item          CRITICALITY ignore TYPE Cells-to-be-Barred-Item          PRESENCE mandatory },
    ...
}

Protected-EUTRA-Resources-List ::= SEQUENCE (SIZE(1.. maxCellingNB)) OF ProtocolIE-SingleContainer { { Protected-EUTRA-Resources-ItemIEs } }
Protected-EUTRA-Resources-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-Protected-EUTRA-Resources-Item          CRITICALITY reject TYPE Protected-EUTRA-Resources-Item          PRESENCE
      mandatory },
    ...
}

Neighbour-Cell-Information-List ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF ProtocolIE-SingleContainer { { Neighbour-Cell-Information-ItemIEs } }

```



```

Neighbour-Cell-Information-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-Neighbour-Cell-Information-Item          CRITICALITY ignore  TYPE Neighbour-Cell-Information-Item          PRESENCE
mandatory},
  ...
}

-- *****
--
-- GNB-CU CONFIGURATION UPDATE ACKNOWLEDGE
--
-- *****

GNBCUConfigurationUpdateAcknowledge ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container      { { GNBCUConfigurationUpdateAcknowledgeIEs } },
  ...
}

GNBCUConfigurationUpdateAcknowledgeIEs FLAP-PROTOCOL-IES ::= {
  { ID id-TransactionID                CRITICALITY reject  TYPE TransactionID                PRESENCE mandatory }|
  { ID id-Cells-Failed-to-be-Activated-List  CRITICALITY reject  TYPE Cells-Failed-to-be-Activated-List  PRESENCE optional }|
  { ID id-CriticalityDiagnostics            CRITICALITY ignore  TYPE CriticalityDiagnostics            PRESENCE optional }|
  { ID id-GNB-CU-TNL-Association-Setup-List  CRITICALITY ignore  TYPE GNB-CU-TNL-Association-Setup-List  PRESENCE optional }|
  { ID id-GNB-CU-TNL-Association-Failed-To-Setup-List  CRITICALITY ignore  TYPE GNB-CU-TNL-Association-Failed-To-Setup-List  PRESENCE optional }|
  { ID id-Dedicated-SIDelivery-NeededUE-List  CRITICALITY ignore  TYPE Dedicated-SIDelivery-NeededUE-List  PRESENCE optional }|
  { ID id-Transport-Layer-Address-Info      CRITICALITY ignore  TYPE Transport-Layer-Address-Info      PRESENCE optional },
  ...
}

Cells-Failed-to-be-Activated-List ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF ProtocolIE-SingleContainer { { Cells-Failed-to-be-Activated-List-
ItemIEs } }
GNB-CU-TNL-Association-Setup-List ::= SEQUENCE (SIZE(1.. maxnoofTNLAssociations)) OF ProtocolIE-SingleContainer { { GNB-CU-TNL-Association-Setup-
ItemIEs } }
GNB-CU-TNL-Association-Failed-To-Setup-List ::= SEQUENCE (SIZE(1.. maxnoofTNLAssociations)) OF ProtocolIE-SingleContainer { { GNB-CU-TNL-
Association-Failed-To-Setup-ItemIEs } }

Cells-Failed-to-be-Activated-List-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-Cells-Failed-to-be-Activated-List-Item          CRITICALITY reject  TYPE Cells-Failed-to-be-Activated-List-Item          PRESENCE mandatory },
  ...
}

GNB-CU-TNL-Association-Setup-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-GNB-CU-TNL-Association-Setup-Item          CRITICALITY ignore  TYPE          GNB-CU-TNL-Association-Setup-Item          PRESENCE mandatory },
  ...
}

GNB-CU-TNL-Association-Failed-To-Setup-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-GNB-CU-TNL-Association-Failed-To-Setup-Item          CRITICALITY ignore  TYPE          GNB-CU-TNL-Association-Failed-To-Setup-Item          PRESENCE
mandatory },
  ...
}

```

```

-- *****
--
-- GNB-CU CONFIGURATION UPDATE FAILURE
--
-- *****

GNBCUConfigurationUpdateFailure ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container      { { GNBCUConfigurationUpdateFailureIEs } },
    ...
}

GNBCUConfigurationUpdateFailureIEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-Cause                  CRITICALITY ignore TYPE Cause                  PRESENCE mandatory }|
    { ID id-TimeToWait             CRITICALITY ignore TYPE TimeToWait             PRESENCE optional }|
    { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
    ...
}

-- *****
--
-- GNB-DU RESOURCE COORDINATION REQUEST
--
-- *****

GNBDUResourceCoordinationRequest ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container      {{GNBDUResourceCoordinationRequest-IEs}},
    ...
}

GNBDUResourceCoordinationRequest-IEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-RequestType            CRITICALITY reject TYPE RequestType            PRESENCE mandatory }|
    { ID id-EUTRA-NR-CellResourceCoordinationReq-Container CRITICALITY reject TYPE EUTRA-NR-CellResourceCoordinationReq-Container PRESENCE
mandatory }|
    { ID id-IgnoreResourceCoordinationContainer          CRITICALITY reject TYPE IgnoreResourceCoordinationContainer          PRESENCE optional },
    ...
}

-- *****
--
-- GNB-DU RESOURCE COORDINATION RESPONSE
--
-- *****

GNBDUResourceCoordinationResponse ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container      {{GNBDUResourceCoordinationResponse-IEs}},
    ...
}

GNBDUResourceCoordinationResponse-IEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|

```

```

    { ID id-EUTRA-NR-CellResourceCoordinationReqAck-Container CRITICALITY reject TYPE EUTRA-NR-CellResourceCoordinationReqAck-Container
      PRESENCE mandatory},
    ...
  }

```

```

-- *****
--
-- UE Context Setup ELEMENTARY PROCEDURE
--
-- *****
--
-- *****
--
-- UE CONTEXT SETUP REQUEST
--
-- *****

```

```

UEContextSetupRequest ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          { { UEContextSetupRequestIEs} },
  ...
}

```

```

UEContextSetupRequestIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory } |
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY ignore TYPE GNB-DU-UE-FlAP-ID          PRESENCE optional } |
  { ID id-SpCell-ID                  CRITICALITY reject TYPE NRCGI                  PRESENCE mandatory } |
  { ID id-ServCellIndex              CRITICALITY reject TYPE ServCellIndex              PRESENCE mandatory } |
  { ID id-SpCellULConfigured         CRITICALITY ignore TYPE CellULConfigured         PRESENCE optional } |
  { ID id-CUtoDURRCInformation        CRITICALITY reject TYPE CUtoDURRCInformation        PRESENCE mandatory } |
  { ID id-Candidate-SpCell-List      CRITICALITY ignore TYPE Candidate-SpCell-List      PRESENCE optional } |
  { ID id-DRXCycle                   CRITICALITY ignore TYPE DRXCycle                   PRESENCE optional } |
  { ID id-ResourceCoordinationTransferContainer CRITICALITY ignore TYPE ResourceCoordinationTransferContainer PRESENCE optional } |
  { ID id-SCell-ToBeSetup-List        CRITICALITY ignore TYPE SCell-ToBeSetup-List        PRESENCE optional } |
  { ID id-SRBs-ToBeSetup-List         CRITICALITY reject TYPE SRBs-ToBeSetup-List         PRESENCE optional } |
  { ID id-DRBs-ToBeSetup-List         CRITICALITY reject TYPE DRBs-ToBeSetup-List         PRESENCE optional } |
  { ID id-InactivityMonitoringRequest CRITICALITY reject TYPE InactivityMonitoringRequest PRESENCE optional } |
  { ID id-RAT-FrequencyPriorityInformation CRITICALITY reject TYPE RAT-FrequencyPriorityInformation PRESENCE optional } |
  { ID id-RRCContainer               CRITICALITY ignore TYPE RRCContainer               PRESENCE optional } |
  { ID id-MaskedIMEISV               CRITICALITY ignore TYPE MaskedIMEISV               PRESENCE optional } |
  { ID id-ServingPLMN                CRITICALITY ignore TYPE PLMN-Identity                PRESENCE optional } |
  { ID id-GNB-DU-UE-AMBR-UL          CRITICALITY ignore TYPE BitRate                      PRESENCE conditional } |
  { ID id-RRCDeliveryStatusRequest    CRITICALITY ignore TYPE RRCDeliveryStatusRequest    PRESENCE optional } |
  { ID id-ResourceCoordinationTransferInformation CRITICALITY ignore TYPE ResourceCoordinationTransferInformation PRESENCE optional } |
  { ID id-ServingCellMO               CRITICALITY ignore TYPE ServingCellMO               PRESENCE optional } |
  { ID id-new-gNB-CU-UE-FlAP-ID      CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE optional } |
  { ID id-RANUEID                    CRITICALITY ignore TYPE RANUEID                    PRESENCE optional } |
  { ID id-TraceActivation              CRITICALITY ignore TYPE TraceActivation              PRESENCE optional } |
  { ID id-AdditionalRRMPriorityIndex  CRITICALITY ignore TYPE AdditionalRRMPriorityIndex  PRESENCE optional } |
  { ID id-BHChannels-ToBeSetup-List   CRITICALITY reject TYPE BHChannels-ToBeSetup-List   PRESENCE optional } |
  { ID id-ConfiguredBAPAddress        CRITICALITY reject TYPE BAPAddress                  PRESENCE optional } |
  { ID id-NRV2XServicesAuthorized     CRITICALITY ignore TYPE NRV2XServicesAuthorized     PRESENCE optional } |
  { ID id-LTEV2XServicesAuthorized   CRITICALITY ignore TYPE LTEV2XServicesAuthorized   PRESENCE optional } |
  { ID id-NRUESidelinkAggregateMaximumBitrate CRITICALITY ignore TYPE NRUESidelinkAggregateMaximumBitrate PRESENCE optional } |
  { ID id-LTEUESidelinkAggregateMaximumBitrate CRITICALITY ignore TYPE LTEUESidelinkAggregateMaximumBitrate PRESENCE optional } |
}

```

```

{ ID id-PC5LinkAMBR CRITICALITY ignore TYPE BitRate PRESENCE optional } |
{ ID id-SLDRBs-ToBeSetup-List CRITICALITY reject TYPE SLDRBs-ToBeSetup-List PRESENCE optional } |
{ ID id-ConditionalInterDUMobilityInformation CRITICALITY reject TYPE ConditionalInterDUMobilityInformation PRESENCE optional } |
{ ID id-ManagementBasedMDTPLMNList CRITICALITY ignore TYPE MDTPLMNList PRESENCE optional } |
{ ID id-ServingNID CRITICALITY reject TYPE NID PRESENCE optional } |
{ ID id-FlCTransferPath CRITICALITY reject TYPE FlCTransferPath PRESENCE optional } |
{ ID id-FlCTransferPathNRDC CRITICALITY reject TYPE FlCTransferPathNRDC PRESENCE optional } |
{ ID id-MDTPollutedMeasurementIndicator CRITICALITY ignore TYPE MDTPollutedMeasurementIndicator PRESENCE optional } |
{ ID id-SCGActivationRequest CRITICALITY ignore TYPE SCGActivationRequest PRESENCE optional } |
{ ID id-CG-SDTSessionInfoOld CRITICALITY ignore TYPE CG-SDTSessionInfo PRESENCE optional } |
{ ID id-FiveG-ProSeAuthorized CRITICALITY ignore TYPE FiveG-ProSeAuthorized PRESENCE optional } |
{ ID id-FiveG-ProSeUEPC5AggregateMaximumBitrate CRITICALITY ignore TYPE NRUESidelinkAggregateMaximumBitrate PRESENCE optional } |
{ ID id-FiveG-ProSePC5LinkAMBR CRITICALITY ignore TYPE BitRate PRESENCE optional } |
{ ID id-UuRLCChannelToBeSetupList CRITICALITY reject TYPE UuRLCChannelToBeSetupList PRESENCE optional } |
{ ID id-PC5RLCChannelToBeSetupList CRITICALITY reject TYPE PC5RLCChannelToBeSetupList PRESENCE optional } |
{ ID id-PathSwitchConfiguration CRITICALITY ignore TYPE PathSwitchConfiguration PRESENCE optional } |
{ ID id-GNBDUUESliceMaximumBitRateList CRITICALITY ignore TYPE GNBDUUESliceMaximumBitRateList PRESENCE optional } |
{ ID id-MulticastMBSSESessionList CRITICALITY reject TYPE MulticastMBSSESessionList PRESENCE optional } |
{ ID id-UE-MulticastMRBs-ToBeSetup-List CRITICALITY reject TYPE UE-MulticastMRBs-ToBeSetup-List PRESENCE optional } |
{ ID id-ServingCellMO-List CRITICALITY ignore TYPE ServingCellMO-List PRESENCE optional } |
...
}

```

```

Candidate-SpCell-List ::= SEQUENCE (SIZE(1..maxnoofCandidateSpCells)) OF ProtocolIE-SingleContainer { { Candidate-SpCell-ItemIEs } }
SCell-ToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofSCells)) OF ProtocolIE-SingleContainer { { SCell-ToBeSetup-ItemIEs } }
SRBs-ToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofSRBs)) OF ProtocolIE-SingleContainer { { SRBs-ToBeSetup-ItemIEs } }
DRBs-ToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF ProtocolIE-SingleContainer { { DRBs-ToBeSetup-ItemIEs } }
BHChannels-ToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofBHRLCChannels)) OF ProtocolIE-SingleContainer { { BHChannels-ToBeSetup-ItemIEs } }
SLDRBs-ToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofSLDRBs)) OF ProtocolIE-SingleContainer { { SLDRBs-ToBeSetup-ItemIEs } }
UE-MulticastMRBs-ToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofMRBsforUE)) OF ProtocolIE-SingleContainer { { UE-MulticastMRBs-ToBeSetup-ItemIEs } }
ServingCellMO-List ::= SEQUENCE (SIZE(1..maxnoofServingCellMOs)) OF ProtocolIE-SingleContainer { { ServingCellMO-List-ItemIEs } }

```

```

Candidate-SpCell-ItemIEs FlAP-PROTOCOL-IES ::= {
  { ID id-Candidate-SpCell-Item CRITICALITY ignore TYPE Candidate-SpCell-Item PRESENCE mandatory },
  ...
}

```

```

SCell-ToBeSetup-ItemIEs FlAP-PROTOCOL-IES ::= {
  { ID id-SCell-ToBeSetup-Item CRITICALITY ignore TYPE SCell-ToBeSetup-Item PRESENCE mandatory },
  ...
}

```

```

SRBs-ToBeSetup-ItemIEs FlAP-PROTOCOL-IES ::= {
  { ID id-SRBs-ToBeSetup-Item CRITICALITY reject TYPE SRBs-ToBeSetup-Item PRESENCE mandatory },
  ...
}

```

```

DRBs-ToBeSetup-ItemIEs FlAP-PROTOCOL-IES ::= {
  { ID id-DRBs-ToBeSetup-Item CRITICALITY reject TYPE DRBs-ToBeSetup-Item PRESENCE mandatory },
  ...
}

```

```

BHChannels-ToBeSetup-ItemIEs FlAP-PROTOCOL-IES ::= {

```

```

    { ID id-BHChannels-ToBeSetup-Item          CRITICALITY reject  TYPE BHChannels-ToBeSetup-Item          PRESENCE mandatory},
    ...
}

SLDRBs-ToBeSetup-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-SLDRBs-ToBeSetup-Item          CRITICALITY reject  TYPE SLDRBs-ToBeSetup-Item          PRESENCE mandatory},
  ...
}

UE-MulticastMRBs-ToBeSetup-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-UE-MulticastMRBs-ToBeSetup-Item          CRITICALITY reject  TYPE UE-MulticastMRBs-ToBeSetup-Item          PRESENCE mandatory},
  ...
}

ServingCellMO-List-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-ServingCellMO-List-Item          CRITICALITY reject  TYPE ServingCellMO-List-Item          PRESENCE mandatory},
  ...
}
-- *****
--
-- UE CONTEXT SETUP RESPONSE
--
-- *****

UEContextSetupResponse ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          { { UEContextSetupResponseIEs } },
  ...
}

UEContextSetupResponseIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory } |
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory } |
  { ID id-DUtoCURRCInformation          CRITICALITY reject  TYPE DUtoCURRCInformation          PRESENCE mandatory } |
  { ID id-C-RNTI          CRITICALITY ignore  TYPE C-RNTI          PRESENCE optional } |
  { ID id-ResourceCoordinationTransferContainer          CRITICALITY ignore  TYPE ResourceCoordinationTransferContainer          PRESENCE optional } |
  { ID id-FullConfiguration          CRITICALITY reject  TYPE FullConfiguration          PRESENCE optional } |
  { ID id-DRBs-Setup-List          CRITICALITY ignore  TYPE DRBs-Setup-List          PRESENCE optional } |
  { ID id-SRBs-FailedToBeSetup-List          CRITICALITY ignore  TYPE SRBs-FailedToBeSetup-List          PRESENCE optional } |
  { ID id-DRBs-FailedToBeSetup-List          CRITICALITY ignore  TYPE DRBs-FailedToBeSetup-List          PRESENCE optional } |
  { ID id-SCell-FailedtoSetup-List          CRITICALITY ignore  TYPE SCell-FailedtoSetup-List          PRESENCE optional } |
  { ID id-InactivityMonitoringResponse          CRITICALITY reject  TYPE InactivityMonitoringResponse          PRESENCE optional } |
  { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics          PRESENCE optional } |
  { ID id-SRBs-Setup-List          CRITICALITY ignore  TYPE SRBs-Setup-List          PRESENCE optional } |
  { ID id-BHChannels-Setup-List          CRITICALITY ignore  TYPE BHChannels-Setup-List          PRESENCE optional } |
  { ID id-BHChannels-FailedToBeSetup-List          CRITICALITY ignore  TYPE BHChannels-FailedToBeSetup-List          PRESENCE optional } |
  { ID id-SLDRBs-Setup-List          CRITICALITY ignore  TYPE SLDRBs-Setup-List          PRESENCE optional } |
  { ID id-SLDRBs-FailedToBeSetup-List          CRITICALITY ignore  TYPE SLDRBs-FailedToBeSetup-List          PRESENCE optional } |
  { ID id-requestedTargetCellGlobalID          CRITICALITY reject  TYPE NRCGI          PRESENCE optional } |
  { ID id-SCGActivationStatus          CRITICALITY ignore  TYPE SCGActivationStatus          PRESENCE optional } |
  { ID id-UuRLCChannelSetupList          CRITICALITY ignore  TYPE UuRLCChannelSetupList          PRESENCE optional } |
  { ID id-UuRLCChannelFailedToBeSetupList          CRITICALITY ignore  TYPE UuRLCChannelFailedToBeSetupList          PRESENCE optional } |
  { ID id-PC5RLCChannelSetupList          CRITICALITY ignore  TYPE PC5RLCChannelSetupList          PRESENCE optional } |
  { ID id-PC5RLCChannelFailedToBeSetupList          CRITICALITY ignore  TYPE PC5RLCChannelFailedToBeSetupList          PRESENCE optional } |
}

```

```

    { ID id-ServingCellMO-encoded-in-CGC-List          CRITICALITY ignore  TYPE ServingCellMO-encoded-in-CGC-List          PRESENCE optional},
    ...
}

DRBs-Setup-List ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF ProtocolIE-SingleContainer { { DRBs-Setup-ItemIEs} }

SRBs-FailedToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofSRBs)) OF ProtocolIE-SingleContainer { { SRBs-FailedToBeSetup-ItemIEs} }
DRBs-FailedToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF ProtocolIE-SingleContainer { { DRBs-FailedToBeSetup-ItemIEs} }
SCell-FailedtoSetup-List ::= SEQUENCE (SIZE(1..maxnoofSCells)) OF ProtocolIE-SingleContainer { { SCell-FailedtoSetup-ItemIEs} }
SRBs-Setup-List ::= SEQUENCE (SIZE(1..maxnoofSRBs)) OF ProtocolIE-SingleContainer { { SRBs-Setup-ItemIEs} }
BHChannels-Setup-List ::= SEQUENCE (SIZE(1..maxnoofBHRLCChannels)) OF ProtocolIE-SingleContainer { { BHChannels-Setup-ItemIEs} }
BHChannels-FailedToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofBHRLCChannels)) OF ProtocolIE-SingleContainer { { BHChannels-FailedToBeSetup-ItemIEs} }
}

DRBs-Setup-ItemIEs FlAP-PROTOCOL-IES ::= {
    { ID id-DRBs-Setup-Item          CRITICALITY ignore  TYPE DRBs-Setup-Item          PRESENCE mandatory},
    ...
}

SRBs-Setup-ItemIEs FlAP-PROTOCOL-IES ::= {
    { ID id-SRBs-Setup-Item          CRITICALITY ignore  TYPE SRBs-Setup-Item          PRESENCE mandatory},
    ...
}

SRBs-FailedToBeSetup-ItemIEs FlAP-PROTOCOL-IES ::= {
    { ID id-SRBs-FailedToBeSetup-Item          CRITICALITY ignore  TYPE SRBs-FailedToBeSetup-Item          PRESENCE mandatory},
    ...
}

DRBs-FailedToBeSetup-ItemIEs FlAP-PROTOCOL-IES ::= {
    { ID id-DRBs-FailedToBeSetup-Item          CRITICALITY ignore  TYPE DRBs-FailedToBeSetup-Item          PRESENCE mandatory},
    ...
}

SCell-FailedtoSetup-ItemIEs FlAP-PROTOCOL-IES ::= {
    { ID id-SCell-FailedtoSetup-Item          CRITICALITY ignore  TYPE SCell-FailedtoSetup-Item          PRESENCE mandatory},
    ...
}

BHChannels-Setup-ItemIEs FlAP-PROTOCOL-IES ::= {
    { ID id-BHChannels-Setup-Item          CRITICALITY ignore  TYPE BHChannels-Setup-Item          PRESENCE mandatory},
    ...
}

BHChannels-FailedToBeSetup-ItemIEs FlAP-PROTOCOL-IES ::= {
    { ID id-BHChannels-FailedToBeSetup-Item          CRITICALITY ignore  TYPE BHChannels-FailedToBeSetup-Item          PRESENCE mandatory},
    ...
}

SLDRBs-Setup-List ::= SEQUENCE (SIZE(1..maxnoofSLDRBs)) OF ProtocolIE-SingleContainer { { SLDRBs-Setup-ItemIEs} }
SLDRBs-FailedToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofSLDRBs)) OF ProtocolIE-SingleContainer { { SLDRBs-FailedToBeSetup-ItemIEs} }

```

```

SLDRBs-Setup-ItemIEs FlAP-PROTOCOL-IES ::= {
  { ID id-SLDRBs-Setup-Item          CRITICALITY ignore  TYPE SLDRBs-Setup-Item          PRESENCE mandatory},
  ...
}

SLDRBs-FailedToBeSetup-ItemIEs FlAP-PROTOCOL-IES ::= {
  { ID id-SLDRBs-FailedToBeSetup-Item  CRITICALITY ignore  TYPE SLDRBs-FailedToBeSetup-Item  PRESENCE mandatory},
  ...
}

-- *****
--
-- UE CONTEXT SETUP FAILURE
--
-- *****

UEContextSetupFailure ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container      { { UEContextSetupFailureIEs } },
  ...
}

UEContextSetupFailureIEs FlAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY ignore  TYPE GNB-DU-UE-FlAP-ID          PRESENCE optional }|
  { ID id-Cause                      CRITICALITY ignore  TYPE Cause                      PRESENCE mandatory }|
  { ID id-CriticalityDiagnostics      CRITICALITY ignore  TYPE CriticalityDiagnostics     PRESENCE optional }|
  { ID id-Potential-SpCell-List      CRITICALITY ignore  TYPE Potential-SpCell-List     PRESENCE optional }|
  { ID id-requestedTargetCellGlobalID CRITICALITY reject  TYPE NRCGI                      PRESENCE optional },
  ...
}

Potential-SpCell-List ::= SEQUENCE (SIZE(0..maxnoofPotentialSpCells)) OF ProtocolIE-SingleContainer { { Potential-SpCell-ItemIEs } }

Potential-SpCell-ItemIEs FlAP-PROTOCOL-IES ::= {
  { ID id-Potential-SpCell-Item      CRITICALITY ignore  TYPE Potential-SpCell-Item      PRESENCE mandatory  },
  ...
}

-- *****
--
-- UE Context Release Request ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- UE Context Release Request
--
-- *****

UEContextReleaseRequest ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container      {{ UEContextReleaseRequestIEs}},
  ...
}

```

```

}

UEContextReleaseRequestIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-Cause                       CRITICALITY ignore TYPE Cause                       PRESENCE mandatory }|
  { ID id-targetCellsToCancel         CRITICALITY reject TYPE TargetCellList         PRESENCE optional   }|
  ...
}

-- *****
--
-- UE Context Release (gNB-CU initiated) ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- UE CONTEXT RELEASE COMMAND
--
-- *****

UEContextReleaseCommand ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container      { { UEContextReleaseCommandIEs } },
  ...
}

UEContextReleaseCommandIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-Cause                       CRITICALITY ignore TYPE Cause                       PRESENCE mandatory }|
  { ID id-RRCContainer                CRITICALITY ignore TYPE RRCContainer                PRESENCE optional }|
  { ID id-SRBID                       CRITICALITY ignore TYPE SRBID                       PRESENCE conditional }|
  { ID id-oldgNB-DU-UE-FlAP-ID        CRITICALITY ignore TYPE GNB-DU-UE-FlAP-ID          PRESENCE optional }|
  { ID id-ExecuteDuplication          CRITICALITY ignore TYPE ExecuteDuplication          PRESENCE optional }|
  { ID id-RRCDeliveryStatusRequest    CRITICALITY ignore TYPE RRCDeliveryStatusRequest    PRESENCE optional }|
  { ID id-targetCellsToCancel         CRITICALITY reject TYPE TargetCellList         PRESENCE optional }|
  { ID id-PosConextRevIndication      CRITICALITY reject TYPE PosConextRevIndication      PRESENCE optional }|
  { ID id-CG-SDTKeptIndicator         CRITICALITY ignore TYPE CG-SDTKeptIndicator         PRESENCE optional },
  ...
}

-- *****
--
-- UE CONTEXT RELEASE COMPLETE
--
-- *****

UEContextReleaseComplete ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container      { { UEContextReleaseCompleteIEs } },
  ...
}

```



```

UEContextReleaseCompleteIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-CriticalityDiagnostics      CRITICALITY ignore TYPE CriticalityDiagnostics    PRESENCE optional },
  ...
}

-- *****
--
-- UE Context Modification ELEMENTARY PROCEDURE
--
-- *****
--
-- *****
--
-- UE CONTEXT MODIFICATION REQUEST
--
-- *****

UEContextModificationRequest ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container    { { UEContextModificationRequestIEs } },
  ...
}

UEContextModificationRequestIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-SpCell-ID                  CRITICALITY ignore  TYPE NRCGI                      PRESENCE optional }|
  { ID id-ServCellIndex              CRITICALITY reject  TYPE ServCellIndex              PRESENCE optional }|
  { ID id-SpCellULConfigured         CRITICALITY ignore  TYPE CellULConfigured           PRESENCE optional }|
  { ID id-DRXCycle                   CRITICALITY ignore  TYPE DRXCycle                   PRESENCE optional }|
  { ID id-CUtoDURRCInformation       CRITICALITY reject  TYPE CUtoDURRCInformation       PRESENCE optional }|
  { ID id-TransmissionActionIndicator CRITICALITY ignore  TYPE TransmissionActionIndicator PRESENCE optional }|
  { ID id-ResourceCoordinationTransferContainer CRITICALITY ignore  TYPE ResourceCoordinationTransferContainer PRESENCE optional }|
  { ID id-RRCReconfigurationCompleteIndicator CRITICALITY ignore  TYPE RRCReconfigurationCompleteIndicator PRESENCE optional }|
  { ID id-RRCContainer               CRITICALITY reject  TYPE RRCContainer               PRESENCE optional }|
  { ID id-SCell-ToBeSetupMod-List     CRITICALITY ignore  TYPE SCell-ToBeSetupMod-List     PRESENCE optional }|
  { ID id-SCell-ToBeRemoved-List     CRITICALITY ignore  TYPE SCell-ToBeRemoved-List     PRESENCE optional }|
  { ID id-SRBs-ToBeSetupMod-List     CRITICALITY reject  TYPE SRBs-ToBeSetupMod-List     PRESENCE optional }|
  { ID id-DRBs-ToBeSetupMod-List     CRITICALITY reject  TYPE DRBs-ToBeSetupMod-List     PRESENCE optional }|
  { ID id-DRBs-ToBeModified-List     CRITICALITY reject  TYPE DRBs-ToBeModified-List     PRESENCE optional }|
  { ID id-SRBs-ToBeReleased-List     CRITICALITY reject  TYPE SRBs-ToBeReleased-List     PRESENCE optional }|
  { ID id-DRBs-ToBeReleased-List     CRITICALITY reject  TYPE DRBs-ToBeReleased-List     PRESENCE optional }|
  { ID id-InactivityMonitoringRequest CRITICALITY reject  TYPE InactivityMonitoringRequest PRESENCE optional }|
  { ID id-RAT-FrequencyPriorityInformation CRITICALITY reject  TYPE RAT-FrequencyPriorityInformation PRESENCE optional }|
  { ID id-DRXConfigurationIndicator  CRITICALITY ignore  TYPE DRXConfigurationIndicator  PRESENCE optional }|
  { ID id-RLCFailureIndication       CRITICALITY ignore  TYPE RLCFailureIndication       PRESENCE optional }|
  { ID id-UplinkTxDirectCurrentListInformation CRITICALITY ignore  TYPE UplinkTxDirectCurrentListInformation PRESENCE optional }|
  { ID id-GNB-DUConfigurationQuery    CRITICALITY reject  TYPE GNB-DUConfigurationQuery    PRESENCE optional }|
  { ID id-GNB-DU-UE-AMBR-UL          CRITICALITY ignore  TYPE BitRate                     PRESENCE optional }|
  { ID id-ExecuteDuplication         CRITICALITY ignore  TYPE ExecuteDuplication         PRESENCE optional }|
  { ID id-RRCDeliveryStatusRequest   CRITICALITY ignore  TYPE RRCDeliveryStatusRequest   PRESENCE optional }|
  { ID id-ResourceCoordinationTransferInformation CRITICALITY ignore  TYPE ResourceCoordinationTransferInformation PRESENCE optional }|
}

```

```

{ ID id-ServingCellMO CRITICALITY ignore TYPE ServingCellMO PRESENCE optional }|
{ ID id-NeedforGap CRITICALITY ignore TYPE NeedforGap PRESENCE optional }|
{ ID id-FullConfiguration CRITICALITY reject TYPE FullConfiguration PRESENCE optional }|
{ ID id-AdditionalRRMPriorityIndex CRITICALITY ignore TYPE AdditionalRRMPriorityIndex PRESENCE optional }|
{ ID id-LowerLayerPresenceStatusChange CRITICALITY ignore TYPE LowerLayerPresenceStatusChange PRESENCE optional }|
{ ID id-BHChannels-ToBeSetupMod-List CRITICALITY reject TYPE BHChannels-ToBeSetupMod-List PRESENCE optional }|
{ ID id-BHChannels-ToBeModified-List CRITICALITY reject TYPE BHChannels-ToBeModified-List PRESENCE optional }|
{ ID id-BHChannels-ToBeReleased-List CRITICALITY reject TYPE BHChannels-ToBeReleased-List PRESENCE optional }|
{ ID id-NRV2XServicesAuthorized CRITICALITY ignore TYPE NRV2XServicesAuthorized PRESENCE optional }|
{ ID id-LTEV2XServicesAuthorized CRITICALITY ignore TYPE LTEV2XServicesAuthorized PRESENCE optional }|
{ ID id-NRUESidelinkAggregateMaximumBitrate CRITICALITY ignore TYPE NRUESidelinkAggregateMaximumBitrate PRESENCE optional }|
{ ID id-LTEUESidelinkAggregateMaximumBitrate CRITICALITY ignore TYPE LTEUESidelinkAggregateMaximumBitrate PRESENCE optional }|
{ ID id-PC5LinkAMBR CRITICALITY ignore TYPE BitRate PRESENCE optional }|
{ ID id-SLDRBs-ToBeSetupMod-List CRITICALITY reject TYPE SLDRBs-ToBeSetupMod-List PRESENCE optional }|
{ ID id-SLDRBs-ToBeModified-List CRITICALITY reject TYPE SLDRBs-ToBeModified-List PRESENCE optional }|
{ ID id-SLDRBs-ToBeReleased-List CRITICALITY reject TYPE SLDRBs-ToBeReleased-List PRESENCE optional }|
{ ID id-ConditionalIntraDUMobilityInformation CRITICALITY reject TYPE ConditionalIntraDUMobilityInformation PRESENCE optional }|
{ ID id-FlCTransferPath CRITICALITY reject TYPE FlCTransferPath PRESENCE optional }|
{ ID id-SCGIndicator CRITICALITY ignore TYPE SCGIndicator PRESENCE optional }|
{ ID id-UplinkTxDirectCurrentTwoCarrierListInfo CRITICALITY ignore TYPE UplinkTxDirectCurrentTwoCarrierListInfo PRESENCE optional }|
{ ID id-IABConditionalRRCMessageDeliveryIndication CRITICALITY reject TYPE IABConditionalRRCMessageDeliveryIndication
  PRESENCE optional }|
{ ID id-FlCTransferPathNRDC CRITICALITY reject TYPE FlCTransferPathNRDC PRESENCE optional }|
{ ID id-MDTPollutedMeasurementIndicator CRITICALITY ignore TYPE MDTPollutedMeasurementIndicator PRESENCE optional }|
{ ID id-SCGActivationRequest CRITICALITY ignore TYPE SCGActivationRequest PRESENCE optional }|
{ ID id-CG-SDTQueryIndication CRITICALITY ignore TYPE CG-SDTQueryIndication PRESENCE optional }|
{ ID id-FiveG-ProSeAuthorized CRITICALITY ignore TYPE FiveG-ProSeAuthorized PRESENCE optional }|
{ ID id-FiveG-ProSeUEPC5AggregateMaximumBitrate CRITICALITY ignore TYPE NRUESidelinkAggregateMaximumBitrate PRESENCE optional }|
{ ID id-FiveG-ProSePC5LinkAMBR CRITICALITY ignore TYPE BitRate PRESENCE optional }|
{ ID id-UpdatedRemoteUELocalID CRITICALITY ignore TYPE RemoteUELocalID PRESENCE optional }|
{ ID id-UuRLCChannelToBeSetupList CRITICALITY reject TYPE UuRLCChannelToBeSetupList PRESENCE optional }|
{ ID id-UuRLCChannelToBeModifiedList CRITICALITY reject TYPE UuRLCChannelToBeModifiedList PRESENCE optional }|
{ ID id-UuRLCChannelToBeReleasedList CRITICALITY reject TYPE UuRLCChannelToBeReleasedList PRESENCE optional }|
{ ID id-PC5RLCChannelToBeSetupList CRITICALITY reject TYPE PC5RLCChannelToBeSetupList PRESENCE optional }|
{ ID id-PC5RLCChannelToBeModifiedList CRITICALITY reject TYPE PC5RLCChannelToBeModifiedList PRESENCE optional }|
{ ID id-PC5RLCChannelToBeReleasedList CRITICALITY reject TYPE PC5RLCChannelToBeReleasedList PRESENCE optional }|
{ ID id-PathSwitchConfiguration CRITICALITY ignore TYPE PathSwitchConfiguration PRESENCE optional }|
{ ID id-GNBDUUESliceMaximumBitRateList CRITICALITY ignore TYPE GNBDUUESliceMaximumBitRateList PRESENCE optional }|
{ ID id-MulticastMBSSESessionSetupList CRITICALITY reject TYPE MulticastMBSSESessionList PRESENCE optional }|
{ ID id-MulticastMBSSESessionRemoveList CRITICALITY reject TYPE MulticastMBSSESessionList PRESENCE optional }|
{ ID id-UE-MulticastMRBs-ToBeSetup-atModify-List CRITICALITY reject TYPE UE-MulticastMRBs-ToBeSetup-atModify-List PRESENCE optional }|
{ ID id-UE-MulticastMRBs-ToBeReleased-List CRITICALITY reject TYPE UE-MulticastMRBs-ToBeReleased-List PRESENCE optional }|
{ ID id-SLDRXCycleList CRITICALITY ignore TYPE SLDRXCycleList PRESENCE optional }|
{ ID id-ManagementBasedMDTPLMNModificationList CRITICALITY ignore TYPE MDTPLMNModificationList PRESENCE optional }|
{ ID id-SDTBearerConfigurationQueryIndication CRITICALITY ignore TYPE SDTBearerConfigurationQueryIndication PRESENCE optional }|
{ ID id-DAPS-HO-Status CRITICALITY ignore TYPE DAPS-HO-Status PRESENCE optional }|
{ ID id-ServingCellMO-List CRITICALITY ignore TYPE ServingCellMO-List PRESENCE optional }|
{ ID id-UlTxDirectCurrentMoreCarrierInformation CRITICALITY ignore TYPE UlTxDirectCurrentMoreCarrierInformation PRESENCE optional }|
{ ID id-CPACMCGInformation CRITICALITY ignore TYPE CPACMCGInformation PRESENCE optional },
...
}

```

```

SCell-ToBeSetupMod-List ::= SEQUENCE (SIZE(1..maxnoofSCells)) OF ProtocolIE-SingleContainer { { SCell-ToBeSetupMod-ItemIEs } }
SCell-ToBeRemoved-List ::= SEQUENCE (SIZE(1..maxnoofSCells)) OF ProtocolIE-SingleContainer { { SCell-ToBeRemoved-ItemIEs } }

```

```

SRBs-ToBeSetupMod-List ::= SEQUENCE (SIZE(1..maxnoofSRBs)) OF ProtocolIE-SingleContainer { { SRBs-ToBeSetupMod-ItemIEs } }
DRBs-ToBeSetupMod-List ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF ProtocolIE-SingleContainer { { DRBs-ToBeSetupMod-ItemIEs } }
BHChannels-ToBeSetupMod-List ::= SEQUENCE (SIZE(1..maxnoofBHRLCChannels)) OF ProtocolIE-SingleContainer { { BHChannels-ToBeSetupMod-ItemIEs } }

DRBs-ToBeModified-List ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF ProtocolIE-SingleContainer { { DRBs-ToBeModified-ItemIEs } }
BHChannels-ToBeModified-List ::= SEQUENCE (SIZE(1..maxnoofBHRLCChannels)) OF ProtocolIE-SingleContainer { { BHChannels-ToBeModified-ItemIEs } }
SRBs-ToBeReleased-List ::= SEQUENCE (SIZE(1..maxnoofSRBs)) OF ProtocolIE-SingleContainer { { SRBs-ToBeReleased-ItemIEs } }
DRBs-ToBeReleased-List ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF ProtocolIE-SingleContainer { { DRBs-ToBeReleased-ItemIEs } }
BHChannels-ToBeReleased-List ::= SEQUENCE (SIZE(1..maxnoofBHRLCChannels)) OF ProtocolIE-SingleContainer { { BHChannels-ToBeReleased-ItemIEs } }
UE-MulticastMRBs-ToBeSetup-atModify-List ::= SEQUENCE (SIZE(1..maxnoofMRBsforUE)) OF
    ProtocolIE-SingleContainer { { UE-MulticastMRBs-ToBeSetup-atModify-ItemIEs } }

UE-MulticastMRBs-ToBeReleased-List ::= SEQUENCE (SIZE(1..maxnoofMRBsforUE)) OF ProtocolIE-SingleContainer { { UE-MulticastMRBs-ToBeReleased-
ItemIEs } }

SCell-ToBeSetupMod-ItemIEs FlAP-PROTOCOL-IES ::= {
    { ID id-SCell-ToBeSetupMod-Item          CRITICALITY ignore  TYPE SCell-ToBeSetupMod-Item          PRESENCE mandatory  },
    ...
}

SCell-ToBeRemoved-ItemIEs FlAP-PROTOCOL-IES ::= {
    { ID id-SCell-ToBeRemoved-Item          CRITICALITY ignore  TYPE SCell-ToBeRemoved-Item          PRESENCE mandatory  },
    ...
}

SRBs-ToBeSetupMod-ItemIEs FlAP-PROTOCOL-IES ::= {
    { ID id-SRBs-ToBeSetupMod-Item          CRITICALITY reject   TYPE SRBs-ToBeSetupMod-Item          PRESENCE mandatory},
    ...
}

DRBs-ToBeSetupMod-ItemIEs FlAP-PROTOCOL-IES ::= {
    { ID id-DRBs-ToBeSetupMod-Item          CRITICALITY reject   TYPE DRBs-ToBeSetupMod-Item          PRESENCE mandatory},
    ...
}

DRBs-ToBeModified-ItemIEs FlAP-PROTOCOL-IES ::= {
    { ID id-DRBs-ToBeModified-Item          CRITICALITY reject   TYPE DRBs-ToBeModified-Item          PRESENCE mandatory},
    ...
}

SRBs-ToBeReleased-ItemIEs FlAP-PROTOCOL-IES ::= {
    { ID id-SRBs-ToBeReleased-Item          CRITICALITY reject   TYPE SRBs-ToBeReleased-Item          PRESENCE mandatory},
    ...
}

DRBs-ToBeReleased-ItemIEs FlAP-PROTOCOL-IES ::= {
    { ID id-DRBs-ToBeReleased-Item          CRITICALITY reject   TYPE DRBs-ToBeReleased-Item          PRESENCE mandatory},
    ...
}

BHChannels-ToBeSetupMod-ItemIEs FlAP-PROTOCOL-IES ::= {

```

```

    { ID id-BHChannels-ToBeSetupMod-Item          CRITICALITY reject  TYPE BHChannels-ToBeSetupMod-Item          PRESENCE mandatory},
    ...
}

BHChannels-ToBeModified-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-BHChannels-ToBeModified-Item          CRITICALITY reject  TYPE BHChannels-ToBeModified-Item          PRESENCE mandatory},
    ...
}

BHChannels-ToBeReleased-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-BHChannels-ToBeReleased-Item          CRITICALITY reject  TYPE BHChannels-ToBeReleased-Item          PRESENCE mandatory},
    ...
}

SLDRBs-ToBeSetupMod-List ::= SEQUENCE (SIZE(1..maxnoofSLDRBs)) OF ProtocolIE-SingleContainer { { SLDRBs-ToBeSetupMod-ItemIEs } }
SLDRBs-ToBeModified-List ::= SEQUENCE (SIZE(1..maxnoofSLDRBs)) OF ProtocolIE-SingleContainer { { SLDRBs-ToBeModified-ItemIEs } }
SLDRBs-ToBeReleased-List ::= SEQUENCE (SIZE(1..maxnoofSLDRBs)) OF ProtocolIE-SingleContainer { { SLDRBs-ToBeReleased-ItemIEs } }

SLDRBs-ToBeSetupMod-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-SLDRBs-ToBeSetupMod-Item          CRITICALITY reject  TYPE SLDRBs-ToBeSetupMod-Item          PRESENCE mandatory},
    ...
}

SLDRBs-ToBeModified-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-SLDRBs-ToBeModified-Item          CRITICALITY reject  TYPE SLDRBs-ToBeModified-Item          PRESENCE mandatory},
    ...
}

SLDRBs-ToBeReleased-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-SLDRBs-ToBeReleased-Item          CRITICALITY reject  TYPE SLDRBs-ToBeReleased-Item          PRESENCE mandatory},
    ...
}

UE-MulticastMRBs-ToBeSetup-atModify-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-UE-MulticastMRBs-ToBeSetup-atModify-Item          CRITICALITY reject  TYPE UE-MulticastMRBs-ToBeSetup-atModify-Item          PRESENCE mandatory},
    ...
}

UE-MulticastMRBs-ToBeReleased-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-UE-MulticastMRBs-ToBeReleased-Item          CRITICALITY reject  TYPE UE-MulticastMRBs-ToBeReleased-Item          PRESENCE mandatory},
    ...
}

-- *****
--
-- UE CONTEXT MODIFICATION RESPONSE
--
-- *****

UEContextModificationResponse ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { { UEContextModificationResponseIEs } },
    ...
}

```

```

UEContextModificationResponseIEs FlAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory } |
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory } |
  { ID id-ResourceCoordinationTransferContainer CRITICALITY ignore TYPE ResourceCoordinationTransferContainer PRESENCE optional } |
  { ID id-DUtoCURRCInformation        CRITICALITY reject TYPE DUtoCURRCInformation        PRESENCE optional } |
  { ID id-DRBs-SetupMod-List          CRITICALITY ignore TYPE DRBs-SetupMod-List          PRESENCE optional } |
  { ID id-DRBs-Modified-List          CRITICALITY ignore TYPE DRBs-Modified-List          PRESENCE optional } |
  { ID id-SRBs-FailedToBeSetupMod-List CRITICALITY ignore TYPE SRBs-FailedToBeSetupMod-List PRESENCE optional } |
  { ID id-DRBs-FailedToBeSetupMod-List CRITICALITY ignore TYPE DRBs-FailedToBeSetupMod-List PRESENCE optional } |
  { ID id-SCell-FailedtoSetupMod-List CRITICALITY ignore TYPE SCell-FailedtoSetupMod-List PRESENCE optional } |
  { ID id-DRBs-FailedToBeModified-List CRITICALITY ignore TYPE DRBs-FailedToBeModified-List PRESENCE optional } |
  { ID id-InactivityMonitoringResponse CRITICALITY reject TYPE InactivityMonitoringResponse PRESENCE optional } |
  { ID id-CriticalityDiagnostics       CRITICALITY ignore TYPE CriticalityDiagnostics       PRESENCE optional } |
  { ID id-C-RNTI                       CRITICALITY ignore TYPE C-RNTI                       PRESENCE optional } |
  { ID id-Associated-SCell-List         CRITICALITY ignore TYPE Associated-SCell-List         PRESENCE optional } |
  { ID id-SRBs-SetupMod-List           CRITICALITY ignore TYPE SRBs-SetupMod-List           PRESENCE optional } |
  { ID id-SRBs-Modified-List           CRITICALITY ignore TYPE SRBs-Modified-List           PRESENCE optional } |
  { ID id-FullConfiguration             CRITICALITY reject TYPE FullConfiguration             PRESENCE optional } |
  { ID id-BHChannels-SetupMod-List      CRITICALITY ignore TYPE BHChannels-SetupMod-List      PRESENCE optional } |
  { ID id-BHChannels-Modified-List      CRITICALITY ignore TYPE BHChannels-Modified-List      PRESENCE optional } |
  { ID id-BHChannels-FailedToBeSetupMod-List CRITICALITY ignore TYPE BHChannels-FailedToBeSetupMod-List PRESENCE optional } |
  { ID id-BHChannels-FailedToBeModified-List CRITICALITY ignore TYPE BHChannels-FailedToBeModified-List PRESENCE optional } |
  { ID id-SLDRBs-SetupMod-List          CRITICALITY ignore TYPE SLDRBs-SetupMod-List          PRESENCE optional } |
  { ID id-SLDRBs-Modified-List          CRITICALITY ignore TYPE SLDRBs-Modified-List          PRESENCE optional } |
  { ID id-SLDRBs-FailedToBeSetupMod-List CRITICALITY ignore TYPE SLDRBs-FailedToBeSetupMod-List PRESENCE optional } |
  { ID id-SLDRBs-FailedToBeModified-List CRITICALITY ignore TYPE SLDRBs-FailedToBeModified-List PRESENCE optional } |
  { ID id-requestedTargetCellGlobalID   CRITICALITY reject TYPE NRCGI                         PRESENCE optional } |
  { ID id-SCGActivationStatus           CRITICALITY ignore TYPE SCGActivationStatus           PRESENCE optional } |
  { ID id-UuRLCChannelSetupList         CRITICALITY ignore TYPE UuRLCChannelSetupList         PRESENCE optional } |
  { ID id-UuRLCChannelFailedToBeSetupList CRITICALITY ignore TYPE UuRLCChannelFailedToBeSetupList PRESENCE optional } |
  { ID id-UuRLCChannelModifiedList      CRITICALITY ignore TYPE UuRLCChannelModifiedList      PRESENCE optional } |
  { ID id-UuRLCChannelFailedToBeModifiedList CRITICALITY ignore TYPE UuRLCChannelFailedToBeModifiedList PRESENCE optional } |
  { ID id-PC5RLCChannelSetupList        CRITICALITY ignore TYPE PC5RLCChannelSetupList        PRESENCE optional } |
  { ID id-PC5RLCChannelFailedToBeSetupList CRITICALITY ignore TYPE PC5RLCChannelFailedToBeSetupList PRESENCE optional } |
  { ID id-PC5RLCChannelModifiedList     CRITICALITY ignore TYPE PC5RLCChannelModifiedList     PRESENCE optional } |
  { ID id-PC5RLCChannelFailedToBeModifiedList CRITICALITY ignore TYPE PC5RLCChannelFailedToBeModifiedList PRESENCE optional } |
  { ID id-SDTBearerConfigurationInfo    CRITICALITY ignore TYPE SDTBearerConfigurationInfo    PRESENCE optional } |
  { ID id-UE-MulticastMRBs-Setup-List  CRITICALITY reject TYPE UE-MulticastMRBs-Setup-List  PRESENCE optional } |
  { ID id-ServingCellMO-encoded-in-CGC-List CRITICALITY ignore TYPE ServingCellMO-encoded-in-CGC-List PRESENCE optional } |
  ...
}

```

```

DRBs-SetupMod-List ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF ProtocolIE-SingleContainer { { DRBs-SetupMod-ItemIEs } }
DRBs-Modified-List ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF ProtocolIE-SingleContainer { { DRBs-Modified-ItemIEs } }
SRBs-SetupMod-List ::= SEQUENCE (SIZE(1..maxnoofSRBs)) OF ProtocolIE-SingleContainer { { SRBs-SetupMod-ItemIEs } }
SRBs-Modified-List ::= SEQUENCE (SIZE(1..maxnoofSRBs)) OF ProtocolIE-SingleContainer { { SRBs-Modified-ItemIEs } }
DRBs-FailedToBeModified-List ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF ProtocolIE-SingleContainer { { DRBs-FailedToBeModified-ItemIEs } }
SRBs-FailedToBeSetupMod-List ::= SEQUENCE (SIZE(1..maxnoofSRBs)) OF ProtocolIE-SingleContainer { { SRBs-FailedToBeSetupMod-ItemIEs } }
DRBs-FailedToBeSetupMod-List ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF ProtocolIE-SingleContainer { { DRBs-FailedToBeSetupMod-ItemIEs } }
SCell-FailedtoSetupMod-List ::= SEQUENCE (SIZE(1..maxnoofSCells)) OF ProtocolIE-SingleContainer { { SCell-FailedtoSetupMod-ItemIEs } }
BHChannels-SetupMod-List ::= SEQUENCE (SIZE(1..maxnoofBHRLCChannels)) OF ProtocolIE-SingleContainer { { BHChannels-SetupMod-ItemIEs } }

```

```

BHChannels-Modified-List ::= SEQUENCE (SIZE(1..maxnoofBHRLCChannels)) OF ProtocolIE-SingleContainer { { BHChannels-Modified-ItemIEs } }
BHChannels-FailedToBeModified-List ::= SEQUENCE (SIZE(1..maxnoofBHRLCChannels)) OF ProtocolIE-SingleContainer { { BHChannels-FailedToBeModified-ItemIEs } }
BHChannels-FailedToBeSetupMod-List ::= SEQUENCE (SIZE(1..maxnoofBHRLCChannels)) OF ProtocolIE-SingleContainer { { BHChannels-FailedToBeSetupMod-ItemIEs } }

Associated-SCell-List ::= SEQUENCE (SIZE(1.. maxnoofSCells)) OF ProtocolIE-SingleContainer { { Associated-SCell-ItemIEs } }

DRBs-SetupMod-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-DRBs-SetupMod-Item      CRITICALITY ignore      TYPE DRBs-SetupMod-Item      PRESENCE mandatory},
  ...
}

DRBs-Modified-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-DRBs-Modified-Item      CRITICALITY ignore      TYPE DRBs-Modified-Item      PRESENCE mandatory},
  ...
}

SRBs-SetupMod-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-SRBs-SetupMod-Item      CRITICALITY ignore      TYPE SRBs-SetupMod-Item      PRESENCE mandatory},
  ...
}

SRBs-Modified-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-SRBs-Modified-Item      CRITICALITY ignore      TYPE SRBs-Modified-Item      PRESENCE mandatory},
  ...
}

SRBs-FailedToBeSetupMod-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-SRBs-FailedToBeSetupMod-Item      CRITICALITY ignore      TYPE SRBs-FailedToBeSetupMod-Item      PRESENCE mandatory},
  ...
}

DRBs-FailedToBeSetupMod-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-DRBs-FailedToBeSetupMod-Item      CRITICALITY ignore      TYPE DRBs-FailedToBeSetupMod-Item      PRESENCE mandatory},
  ...
}

DRBs-FailedToBeModified-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-DRBs-FailedToBeModified-Item      CRITICALITY ignore      TYPE DRBs-FailedToBeModified-Item      PRESENCE mandatory},
  ...
}

SCell-FailedtoSetupMod-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-SCell-FailedtoSetupMod-Item      CRITICALITY ignore      TYPE SCell-FailedtoSetupMod-Item      PRESENCE mandatory},
  ...
}

Associated-SCell-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-Associated-SCell-Item      CRITICALITY ignore      TYPE Associated-SCell-Item      PRESENCE mandatory},

```

```

}
...
}
BHChannels-SetupMod-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-BHChannels-SetupMod-Item          CRITICALITY ignore      TYPE BHChannels-SetupMod-Item    PRESENCE mandatory},
  ...
}

BHChannels-Modified-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-BHChannels-Modified-Item         CRITICALITY ignore      TYPE BHChannels-Modified-Item    PRESENCE mandatory},
  ...
}

BHChannels-FailedToBeSetupMod-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-BHChannels-FailedToBeSetupMod-Item CRITICALITY ignore      TYPE BHChannels-FailedToBeSetupMod-Item PRESENCE mandatory},
  ...
}

BHChannels-FailedToBeModified-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-BHChannels-FailedToBeModified-Item CRITICALITY ignore      TYPE BHChannels-FailedToBeModified-Item PRESENCE mandatory},
  ...
}

SLDRBs-SetupMod-List          ::= SEQUENCE (SIZE(1..maxnoofSLDRBs)) OF ProtocolIE-SingleContainer { { SLDRBs-SetupMod-ItemIEs } }
SLDRBs-Modified-List          ::= SEQUENCE (SIZE(1..maxnoofSLDRBs)) OF ProtocolIE-SingleContainer { { SLDRBs-Modified-ItemIEs } }
SLDRBs-FailedToBeModified-List ::= SEQUENCE (SIZE(1..maxnoofSLDRBs)) OF ProtocolIE-SingleContainer { { SLDRBs-FailedToBeModified-ItemIEs } }
SLDRBs-FailedToBeSetupMod-List ::= SEQUENCE (SIZE(1..maxnoofSLDRBs)) OF ProtocolIE-SingleContainer { { SLDRBs-FailedToBeSetupMod-ItemIEs } }

SLDRBs-SetupMod-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-SLDRBs-SetupMod-Item          CRITICALITY ignore      TYPE SLDRBs-SetupMod-Item        PRESENCE mandatory},
  ...
}

SLDRBs-Modified-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-SLDRBs-Modified-Item         CRITICALITY ignore      TYPE SLDRBs-Modified-Item        PRESENCE mandatory},
  ...
}

SLDRBs-FailedToBeSetupMod-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-SLDRBs-FailedToBeSetupMod-Item CRITICALITY ignore      TYPE SLDRBs-FailedToBeSetupMod-Item PRESENCE mandatory},
  ...
}

SLDRBs-FailedToBeModified-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-SLDRBs-FailedToBeModified-Item CRITICALITY ignore      TYPE SLDRBs-FailedToBeModified-Item PRESENCE mandatory},
  ...
}

UE-MulticastMRBs-Setup-List ::= SEQUENCE (SIZE(1..maxnoofMRBsforUE)) OF ProtocolIE-SingleContainer { { UE-MulticastMRBs-Setup-ItemIEs } }

UE-MulticastMRBs-Setup-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-UE-MulticastMRBs-Setup-Item    CRITICALITY reject      TYPE UE-MulticastMRBs-Setup-Item  PRESENCE mandatory},
  ...
}

```

```

}

-- *****
--
-- UE CONTEXT MODIFICATION FAILURE
--
-- *****

UEContextModificationFailure ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { UEContextModificationFailureIEs } },
    ...
}

UEContextModificationFailureIEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-Cause                       CRITICALITY ignore TYPE Cause                       PRESENCE mandatory }|
    { ID id-CriticalityDiagnostics       CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional }|
    { ID id-requestedTargetCellGlobalID CRITICALITY reject TYPE NRCGI                       PRESENCE optional},
    ...
}

-- *****
--
-- UE Context Modification Required (gNB-DU initiated) ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- UE CONTEXT MODIFICATION REQUIRED
--
-- *****

UEContextModificationRequired ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { UEContextModificationRequiredIEs } },
    ...
}

UEContextModificationRequiredIEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-ResourceCoordinationTransferContainer CRITICALITY ignore TYPE ResourceCoordinationTransferContainer PRESENCE optional }|
    { ID id-DUtoCURRCInformation        CRITICALITY reject TYPE DUtoCURRCInformation        PRESENCE optional }|
    { ID id-DRBs-Required-ToBeModified-List CRITICALITY reject TYPE DRBs-Required-ToBeModified-List PRESENCE optional }|
    { ID id-SRBs-Required-ToBeReleased-List CRITICALITY reject TYPE SRBs-Required-ToBeReleased-List PRESENCE optional }|
    { ID id-DRBs-Required-ToBeReleased-List CRITICALITY reject TYPE DRBs-Required-ToBeReleased-List PRESENCE optional }|
    { ID id-Cause                       CRITICALITY ignore TYPE Cause                       PRESENCE mandatory }|
    { ID id-BHChannels-Required-ToBeReleased-List CRITICALITY reject TYPE BHChannels-Required-ToBeReleased-List PRESENCE optional }|
    { ID id-SLDRBs-Required-ToBeModified-List CRITICALITY reject TYPE SLDRBs-Required-ToBeModified-List PRESENCE optional }|
    { ID id-SLDRBs-Required-ToBeReleased-List CRITICALITY reject TYPE SLDRBs-Required-ToBeReleased-List PRESENCE optional }|
    { ID id-targetCellsToCancel         CRITICALITY reject TYPE TargetCellList         PRESENCE optional}
}

```



```

    { ID id-UuRLCChannelRequiredToBeModifiedList          CRITICALITY reject TYPE UuRLCChannelRequiredToBeModifiedList          PRESENCE optional } |
    { ID id-UuRLCChannelRequiredToBeReleasedList          CRITICALITY reject TYPE UuRLCChannelRequiredToBeReleasedList          PRESENCE optional } |
    { ID id-PC5RLCChannelRequiredToBeModifiedList        CRITICALITY reject TYPE PC5RLCChannelRequiredToBeModifiedList        PRESENCE optional } |
    { ID id-PC5RLCChannelRequiredToBeReleasedList        CRITICALITY reject TYPE PC5RLCChannelRequiredToBeReleasedList        PRESENCE optional } |
    { ID id-UE-MulticastMRBs-RequiredToBeModified-List   CRITICALITY reject TYPE UE-MulticastMRBs-RequiredToBeModified-List   PRESENCE optional } |
    { ID id-UE-MulticastMRBs-RequiredToBeReleased-List   CRITICALITY reject TYPE UE-MulticastMRBs-RequiredToBeReleased-List   PRESENCE optional } |
    ...
}

DRBs-Required-ToBeModified-List ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF ProtocolIE-SingleContainer { { DRBs-Required-ToBeModified-ItemIEs } }
DRBs-Required-ToBeReleased-List ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF ProtocolIE-SingleContainer { { DRBs-Required-ToBeReleased-ItemIEs } }

SRBs-Required-ToBeReleased-List ::= SEQUENCE (SIZE(1..maxnoofSRBs)) OF ProtocolIE-SingleContainer { { SRBs-Required-ToBeReleased-ItemIEs } }

BHChannels-Required-ToBeReleased-List ::= SEQUENCE (SIZE(1..maxnoofBHRLCChannels)) OF ProtocolIE-SingleContainer { { BHChannels-Required-ToBeReleased-ItemIEs } }

DRBs-Required-ToBeModified-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-DRBs-Required-ToBeModified-Item          CRITICALITY reject TYPE DRBs-Required-ToBeModified-Item          PRESENCE mandatory },
    ...
}

DRBs-Required-ToBeReleased-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-DRBs-Required-ToBeReleased-Item          CRITICALITY reject TYPE DRBs-Required-ToBeReleased-Item          PRESENCE mandatory },
    ...
}

SRBs-Required-ToBeReleased-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-SRBs-Required-ToBeReleased-Item          CRITICALITY reject TYPE SRBs-Required-ToBeReleased-Item          PRESENCE mandatory },
    ...
}

BHChannels-Required-ToBeReleased-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-BHChannels-Required-ToBeReleased-Item          CRITICALITY reject TYPE BHChannels-Required-ToBeReleased-Item          PRESENCE mandatory },
    ...
}

SLDRBs-Required-ToBeModified-List ::= SEQUENCE (SIZE(1..maxnoofSLDRBs)) OF ProtocolIE-SingleContainer { { SLDRBs-Required-ToBeModified-ItemIEs } }
SLDRBs-Required-ToBeReleased-List ::= SEQUENCE (SIZE(1..maxnoofSLDRBs)) OF ProtocolIE-SingleContainer { { SLDRBs-Required-ToBeReleased-ItemIEs } }

SLDRBs-Required-ToBeModified-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-SLDRBs-Required-ToBeModified-Item          CRITICALITY reject TYPE SLDRBs-Required-ToBeModified-Item          PRESENCE mandatory },
    ...
}

SLDRBs-Required-ToBeReleased-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-SLDRBs-Required-ToBeReleased-Item          CRITICALITY reject TYPE SLDRBs-Required-ToBeReleased-Item          PRESENCE mandatory },
    ...
}

UE-MulticastMRBs-RequiredToBeModified-List ::= SEQUENCE (SIZE(1..maxnoofMRBsforUE)) OF
    ProtocolIE-SingleContainer { { UE-MulticastMRBs-RequiredToBeModified-ItemIEs } }

UE-MulticastMRBs-RequiredToBeModified-ItemIEs FLAP-PROTOCOL-IES ::= {

```

```

    { ID id-UE-MulticastMRBs-RequiredToBeModified-Item CRITICALITY reject TYPE UE-MulticastMRBs-RequiredToBeModified-Item PRESENCE mandatory},
    ...
}

UE-MulticastMRBs-RequiredToBeReleased-List ::= SEQUENCE (SIZE(1..maxnoofMRBsforUE)) OF
    ProtocolIE-SingleContainer { { UE-MulticastMRBs-RequiredToBeReleased-ItemIEs } }

UE-MulticastMRBs-RequiredToBeReleased-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-UE-MulticastMRBs-RequiredToBeReleased-Item CRITICALITY reject TYPE UE-MulticastMRBs-RequiredToBeReleased-Item PRESENCE
    mandatory},
    ...
}

-- *****
--
-- UE CONTEXT MODIFICATION CONFIRM
--
-- *****

UEContextModificationConfirm ::= SEQUENCE {
    protocolIEs ProtocolIE-Container { { UEContextModificationConfirmIEs } },
    ...
}

UEContextModificationConfirmIEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID PRESENCE mandatory }|
    { ID id-ResourceCoordinationTransferContainer CRITICALITY ignore TYPE ResourceCoordinationTransferContainer PRESENCE optional }|
    { ID id-DRBs-ModifiedConf-List CRITICALITY ignore TYPE DRBs-ModifiedConf-List PRESENCE optional }|
    { ID id-RRCContainer CRITICALITY ignore TYPE RRCContainer PRESENCE optional }|
    { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional }|
    { ID id-ExecuteDuplication CRITICALITY ignore TYPE ExecuteDuplication PRESENCE optional }|
    { ID id-ResourceCoordinationTransferInformation CRITICALITY ignore TYPE ResourceCoordinationTransferInformation PRESENCE optional }|
    { ID id-SLDRBs-ModifiedConf-List CRITICALITY ignore TYPE SLDRBs-ModifiedConf-List PRESENCE optional }|
    { ID id-UuRLCChannelModifiedList CRITICALITY reject TYPE UuRLCChannelModifiedList PRESENCE optional }|
    { ID id-PC5RLCChannelModifiedList CRITICALITY reject TYPE PC5RLCChannelModifiedList PRESENCE optional }|
    { ID id-UE-MulticastMRBs-ConfirmedToBeModified-List CRITICALITY reject TYPE UE-MulticastMRBs-ConfirmedToBeModified-List PRESENCE optional }|
    ...
}

DRBs-ModifiedConf-List ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF ProtocolIE-SingleContainer { { DRBs-ModifiedConf-ItemIEs } }

DRBs-ModifiedConf-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-DRBs-ModifiedConf-Item CRITICALITY ignore TYPE DRBs-ModifiedConf-Item PRESENCE mandatory},
    ...
}

SLDRBs-ModifiedConf-List ::= SEQUENCE (SIZE(1..maxnoofSLDRBs)) OF ProtocolIE-SingleContainer { { SLDRBs-ModifiedConf-ItemIEs } }

SLDRBs-ModifiedConf-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-SLDRBs-ModifiedConf-Item CRITICALITY ignore TYPE SLDRBs-ModifiedConf-Item PRESENCE mandatory},
    ...
}

```

```

}
UE-MulticastMRBs-ConfirmedToBeModified-List ::= SEQUENCE (SIZE(1..maxnoofMRBsforUE)) OF
    ProtocolIE-SingleContainer { { UE-MulticastMRBs-ConfirmedToBeModified-ItemIEs } }

UE-MulticastMRBs-ConfirmedToBeModified-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-UE-MulticastMRBs-ConfirmedToBeModified-Item CRITICALITY reject TYPE UE-MulticastMRBs-ConfirmedToBeModified-Item PRESENCE mandatory },
    ...
}

-- *****
--
-- UE CONTEXT MODIFICATION REFUSE
--
-- *****

UEContextModificationRefuse ::= SEQUENCE {
    protocolIEs ProtocolIE-Container { { UEContextModificationRefuseIEs } },
    ...
}

UEContextModificationRefuseIEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID PRESENCE mandatory } |
    { ID id-gNB-DU-UE-FlAP-ID CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID PRESENCE mandatory } |
    { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory } |
    { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
    ...
}

-- *****
--
-- WRITE-REPLACE WARNING ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Write-Replace Warning Request
--
-- *****

WriteReplaceWarningRequest ::= SEQUENCE {
    protocolIEs ProtocolIE-Container { { WriteReplaceWarningRequestIEs } },
    ...
}

WriteReplaceWarningRequestIEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID CRITICALITY reject TYPE TransactionID PRESENCE mandatory } |
    { ID id-PWSSystemInformation CRITICALITY reject TYPE PWSSystemInformation PRESENCE mandatory } |
    { ID id-RepetitionPeriod CRITICALITY reject TYPE RepetitionPeriod PRESENCE mandatory } |
    { ID id-NumberOfBroadcastRequest CRITICALITY reject TYPE NumberOfBroadcastRequest PRESENCE mandatory } |

```

```

    { ID id-Cells-To-Be-Broadcast-List          CRITICALITY reject  TYPE Cells-To-Be-Broadcast-List          PRESENCE optional },
    ...
}

Cells-To-Be-Broadcast-List ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF ProtocolIE-SingleContainer { { Cells-To-Be-Broadcast-List-ItemIEs } }

Cells-To-Be-Broadcast-List-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-Cells-To-Be-Broadcast-Item          CRITICALITY reject  TYPE Cells-To-Be-Broadcast-Item          PRESENCE mandatory },
    ...
}

-- *****
--
-- Write-Replace Warning Response
--
-- *****

WriteReplaceWarningResponse ::= SEQUENCE {
    protocolIEs ProtocolIE-Container { {WriteReplaceWarningResponseIEs} },
    ...
}

WriteReplaceWarningResponseIEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID                      CRITICALITY reject  TYPE TransactionID                      PRESENCE mandatory }|
    { ID id-Cells-Broadcast-Completed-List     CRITICALITY reject  TYPE Cells-Broadcast-Completed-List     PRESENCE optional }|
    { ID id-CriticalityDiagnostics             CRITICALITY ignore  TYPE CriticalityDiagnostics             PRESENCE optional }|
    { ID id-Dedicated-SIDelivery-NeededUE-List CRITICALITY ignore  TYPE Dedicated-SIDelivery-NeededUE-List PRESENCE optional },
    ...
}

Cells-Broadcast-Completed-List ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF ProtocolIE-SingleContainer { { Cells-Broadcast-Completed-List-ItemIEs } }

Cells-Broadcast-Completed-List-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-Cells-Broadcast-Completed-Item     CRITICALITY reject  TYPE Cells-Broadcast-Completed-Item     PRESENCE mandatory },
    ...
}

-- *****
--
-- PWS CANCEL ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- PWS Cancel Request
--
-- *****

PWSCancelRequest ::= SEQUENCE {
    protocolIEs ProtocolIE-Container { {PWSCancelRequestIEs} },
    ...
}

```

```

}

PWSCancelRequestIEs FLAP-PROTOCOL-IES ::= {
  { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
  { ID id-NumberOfBroadcastRequest CRITICALITY reject TYPE NumberOfBroadcastRequest PRESENCE mandatory }|
  { ID id-Broadcast-To-Be-Cancelled-List CRITICALITY reject TYPE Broadcast-To-Be-Cancelled-List PRESENCE optional }|
  { ID id-Cancel-all-Warning-Messages-Indicator CRITICALITY reject TYPE Cancel-all-Warning-Messages-Indicator PRESENCE optional }|
  { ID id-NotificationInformation CRITICALITY reject TYPE NotificationInformation PRESENCE optional},
  ...
}

Broadcast-To-Be-Cancelled-List ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF ProtocolIE-SingleContainer { { Broadcast-To-Be-Cancelled-List-ItemIEs } }

Broadcast-To-Be-Cancelled-List-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-Broadcast-To-Be-Cancelled-Item CRITICALITY reject TYPE Broadcast-To-Be-Cancelled-Item PRESENCE mandatory },
  ...
}

-- *****
--
-- PWS Cancel Response
--
-- *****

PWSCancelResponse ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {PWSCancelResponseIEs} },
  ...
}

PWSCancelResponseIEs FLAP-PROTOCOL-IES ::= {
  { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
  { ID id-Cells-Broadcast-Cancelled-List CRITICALITY reject TYPE Cells-Broadcast-Cancelled-List PRESENCE optional }|
  { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
  ...
}

Cells-Broadcast-Cancelled-List ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF ProtocolIE-SingleContainer { { Cells-Broadcast-Cancelled-List-ItemIEs } }

Cells-Broadcast-Cancelled-List-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-Cells-Broadcast-Cancelled-Item CRITICALITY reject TYPE Cells-Broadcast-Cancelled-Item PRESENCE mandatory },
  ...
}

-- *****
--
-- UE Inactivity Notification ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- UE Inactivity Notification

```

```

--
-- *****
UEInactivityNotification ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container      {{ UEInactivityNotificationIEs}},
  ...
}

UEInactivityNotificationIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-DRB-Activity-List          CRITICALITY reject  TYPE DRB-Activity-List          PRESENCE mandatory }|
  { ID id-SDT-Termination-Request    CRITICALITY ignore  TYPE SDT-Termination-Request    PRESENCE optional   },
  ...
}

DRB-Activity-List ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF ProtocolIE-SingleContainer { { DRB-Activity-ItemIEs } }

DRB-Activity-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-DRB-Activity-Item          CRITICALITY reject  TYPE DRB-Activity-Item          PRESENCE mandatory},
  ...
}
-- *****
--
-- Initial UL RRC Message Transfer ELEMENTARY PROCEDURE
--
-- *****
--
-- *****
--
-- INITIAL UL RRC Message Transfer
--
-- *****

InitialULRRCTestMessageTransfer ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container      {{ InitialULRRCTestMessageTransferIEs}},
  ...
}

InitialULRRCTestMessageTransferIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-NRCGI                      CRITICALITY reject  TYPE NRCGI                      PRESENCE mandatory }|
  { ID id-C-RNTI                     CRITICALITY reject  TYPE C-RNTI                     PRESENCE mandatory }|
  { ID id-RRCCContainer              CRITICALITY reject  TYPE RRCCContainer              PRESENCE mandatory }|
  { ID id-DUtoCURRCCContainer        CRITICALITY reject  TYPE DUtoCURRCCContainer        PRESENCE optional }|
  { ID id-SULAccessIndication        CRITICALITY ignore  TYPE SULAccessIndication        PRESENCE optional }|
  { ID id-TransactionID              CRITICALITY ignore  TYPE TransactionID              PRESENCE mandatory }|
  { ID id-RANUEID                    CRITICALITY ignore  TYPE RANUEID                    PRESENCE optional }|
  { ID id-RRCCContainer-RRCSetupComplete CRITICALITY ignore  TYPE RRCCContainer-RRCSetupComplete PRESENCE optional }|
  { ID id-NRRedCapUEIndication       CRITICALITY ignore  TYPE NRRedCapUEIndication       PRESENCE optional }|
  { ID id-SDTInformation              CRITICALITY ignore  TYPE SDTInformation              PRESENCE optional }|
  { ID id-SidelinkRelayConfiguration CRITICALITY ignore  TYPE SidelinkRelayConfiguration PRESENCE optional },
  ...
}

```

```

-- *****
--
-- DL RRC Message Transfer ELEMENTARY PROCEDURE
--
-- *****
--
-- DL RRC Message Transfer
--
-- *****

DLRRCTransfer ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    {{ DLRRCTransferIEs}},
    ...
}

DLRRCTransferIEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-oldgNB-DU-UE-FlAP-ID       CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE optional }|
    { ID id-SRBID                      CRITICALITY reject TYPE SRBID                      PRESENCE mandatory }|
    { ID id-ExecuteDuplication         CRITICALITY ignore TYPE ExecuteDuplication        PRESENCE optional }|
    { ID id-RRCContainer               CRITICALITY reject TYPE RRCContainer                PRESENCE mandatory }|
    { ID id-RAT-FrequencyPriorityInformation CRITICALITY reject TYPE RAT-FrequencyPriorityInformation PRESENCE optional }|
    { ID id-RRCDeliveryStatusRequest   CRITICALITY ignore TYPE RRCDeliveryStatusRequest      PRESENCE optional }|
    { ID id-UEContextNotRetrievable    CRITICALITY reject TYPE UEContextNotRetrievable      PRESENCE optional }|
    { ID id-RedirectedRRCMessage        CRITICALITY reject TYPE OCTET STRING                  PRESENCE optional }|
    { ID id-PLMNAssistanceInfoForNetShar CRITICALITY ignore TYPE PLMN-Identity                 PRESENCE optional }|
    { ID id-new-gNB-CU-UE-FlAP-ID      CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE optional }|
    { ID id-AdditionalRRMPriorityIndex  CRITICALITY ignore TYPE AdditionalRRMPriorityIndex    PRESENCE optional }|
    { ID id-SRBMappingInfo             CRITICALITY ignore TYPE UuRLCChannelID              PRESENCE optional },
    ...
}
-- *****
--
-- UL RRC Message Transfer ELEMENTARY PROCEDURE
--
-- *****
--
-- UL RRC Message Transfer
--
-- *****

ULRRCTransfer ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    {{ ULRRCTransferIEs}},
    ...
}

ULRRCTransferIEs FLAP-PROTOCOL-IES ::= {

```

```

    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-SRBID                       CRITICALITY reject TYPE SRBID                       PRESENCE mandatory }|
    { ID id-RRCContainer                 CRITICALITY reject TYPE RRCContainer                 PRESENCE mandatory }|
    { ID id-SelectedPLMNID              CRITICALITY reject TYPE PLMN-Identity              PRESENCE optional  }|
    { ID id-new-gNB-DU-UE-FlAP-ID      CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE optional  },
    ...
}

-- *****
--
-- PRIVATE MESSAGE
--
-- *****

PrivateMessage ::= SEQUENCE {
    privateIES      PrivateIE-Container {{PrivateMessage-IEs}},
    ...
}

PrivateMessage-IEs FlAP-PRIVATE-IES ::= {
    ...
}

-- *****
--
-- System Information ELEMENTARY PROCEDURE
--
-- *****
--
-- System information Delivery Command
--
-- *****

SystemInformationDeliveryCommand ::= SEQUENCE {
    protocolIES      ProtocolIE-Container      {{ SystemInformationDeliveryCommandIEs}},
    ...
}

SystemInformationDeliveryCommandIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-NRCGI                  CRITICALITY reject TYPE NRCGI                  PRESENCE mandatory }|
    { ID id-SItype-List            CRITICALITY reject TYPE SItype-List            PRESENCE mandatory }|
    { ID id-ConfirmedUEID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory },
    ...
}

-- *****
--
-- Paging PROCEDURE

```



```

--
-- *****
-- *****
--
-- Paging
--
-- *****

Paging ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    {{ PagingIEs}},
    ...
}

PagingIEs FLAP-PROTOCOL-IES ::= {
    { ID id-UEIdentityIndexValue      CRITICALITY reject  TYPE UEIdentityIndexValue      PRESENCE mandatory }|
    { ID id-PagingIdentity             CRITICALITY reject  TYPE PagingIdentity             PRESENCE mandatory }|
    { ID id-PagingDRX                  CRITICALITY ignore  TYPE PagingDRX                  PRESENCE optional }|
    { ID id-PagingPriority              CRITICALITY ignore  TYPE PagingPriority              PRESENCE optional }|
    { ID id-PagingCell-List            CRITICALITY ignore  TYPE PagingCell-list            PRESENCE mandatory }|
    { ID id-PagingOrigin               CRITICALITY ignore  TYPE PagingOrigin               PRESENCE optional }|
    { ID id-RANUEPagingDRX             CRITICALITY ignore  TYPE PagingDRX                  PRESENCE optional }|
    { ID id-CNUEPagingDRX              CRITICALITY ignore  TYPE PagingDRX                  PRESENCE optional }|
    { ID id-NRPagingeDRXInformation     CRITICALITY ignore  TYPE NRPagingeDRXInformation    PRESENCE optional }|
    { ID id-NRPagingeDRXInformationforRRCINACTIVE CRITICALITY ignore  TYPE NRPagingeDRXInformationforRRCINACTIVE PRESENCE optional }|
    { ID id-PagingCause                 CRITICALITY ignore  TYPE PagingCause                 PRESENCE optional }|
    { ID id-PEIPSAssistanceInfo         CRITICALITY ignore  TYPE PEIPSAssistanceInfo        PRESENCE optional }|
    { ID id-UEPagingCapability          CRITICALITY ignore  TYPE UEPagingCapability          PRESENCE optional }|
    { ID id-ExtendedUEIdentityIndexValue CRITICALITY ignore  TYPE ExtendedUEIdentityIndexValue PRESENCE optional},
    ...
}

PagingCell-list ::= SEQUENCE (SIZE(1.. maxnoofPagingCells)) OF ProtocolIE-SingleContainer { { PagingCell-ItemIEs } }

PagingCell-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-PagingCell-Item            CRITICALITY ignore  TYPE PagingCell-Item            PRESENCE mandatory} ,
    ...
}

-- *****
--
-- Notify
--
-- *****

Notify ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    {{ NotifyIEs}},
    ...
}

NotifyIEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|

```

```

    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-DRB-Notify-List           CRITICALITY reject  TYPE DRB-Notify-List          PRESENCE mandatory },
    ...
}

DRB-Notify-List ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF ProtocolIE-SingleContainer { { DRB-Notify-ItemIEs } }

DRB-Notify-ItemIEs FlAP-PROTOCOL-IES ::= {
    { ID id-DRB-Notify-Item           CRITICALITY reject  TYPE DRB-Notify-Item          PRESENCE mandatory},
    ...
}

-- *****
--
-- NETWORK ACCESS RATE REDUCTION ELEMENTARY PROCEDURE
--
-- *****
--
-- Network Access Rate Reduction
--
-- *****

NetworkAccessRateReduction ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    {{ NetworkAccessRateReductionIEs }},
    ...
}

NetworkAccessRateReductionIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID           CRITICALITY reject  TYPE TransactionID           PRESENCE mandatory }|
    { ID id-UAC-Assistance-Info     CRITICALITY reject  TYPE UAC-Assistance-Info     PRESENCE mandatory },
    ...
}

-- *****
--
-- PWS RESTART INDICATION ELEMENTARY PROCEDURE
--
-- *****
--
-- PWS Restart Indication
--
-- *****

PWSRestartIndication ::= SEQUENCE {
    protocolIEs ProtocolIE-Container { { PWSRestartIndicationIEs } },
    ...
}

PWSRestartIndicationIEs FlAP-PROTOCOL-IES ::= {

```

```

    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
    { ID id-NR-CGI-List-For-Restart-List  CRITICALITY reject  TYPE NR-CGI-List-For-Restart-List PRESENCE mandatory },
    ...
}

NR-CGI-List-For-Restart-List ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF ProtocolIE-SingleContainer { { NR-CGI-List-For-Restart-List-ItemIEs
} }

NR-CGI-List-For-Restart-List-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-NR-CGI-List-For-Restart-Item          CRITICALITY reject  TYPE          NR-CGI-List-For-Restart-Item          PRESENCE mandatory },
    ...
}

-- *****
--
-- PWS FAILURE INDICATION ELEMENTARY PROCEDURE
--
-- *****
--
-- *****
--
-- PWS Failure Indication
--
-- *****

PWSFailureIndication ::= SEQUENCE {
    protocolIEs ProtocolIE-Container { { PWSFailureIndicationIEs } },
    ...
}

PWSFailureIndicationIEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
    { ID id-PWS-Failed-NR-CGI-List  CRITICALITY reject  TYPE PWS-Failed-NR-CGI-List  PRESENCE optional },
    ...
}

PWS-Failed-NR-CGI-List ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF ProtocolIE-SingleContainer { { PWS-Failed-NR-CGI-List-ItemIEs } }

PWS-Failed-NR-CGI-List-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-PWS-Failed-NR-CGI-Item          CRITICALITY reject  TYPE          PWS-Failed-NR-CGI-Item          PRESENCE mandatory },
    ...
}

-- *****
--
-- gNB-DU STATUS INDICATION ELEMENTARY PROCEDURE
--
-- *****
--
-- *****
--
-- gNB-DU Status Indication
--
-- *****

```

```

-- *****
GNBDUStatusIndication ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { {GNBDUStatusIndicationIEs} },
    ...
}

GNBDUStatusIndicationIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-GNBDOverloadInformation CRITICALITY reject TYPE GNBDOverloadInformation PRESENCE mandatory }|
    { ID id-IABCongestionIndication CRITICALITY ignore TYPE IABCongestionIndication PRESENCE optional  },
    ...
}

-- *****
--
-- RRC Delivery Report ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- RRC Delivery Report
--
-- *****

RRCDeliveryReport ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    {{ RRCDeliveryReportIEs}},
    ...
}

RRCDeliveryReportIEs FlAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID      CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID      CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID PRESENCE mandatory }|
    { ID id-RRCDeliveryStatus      CRITICALITY ignore TYPE RRCDeliveryStatus PRESENCE mandatory }|
    { ID id-SRBID                  CRITICALITY ignore TYPE SRBID          PRESENCE mandatory },
    ...
}

-- *****
--
-- Fl Removal ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Fl Removal Request
--
-- *****

FlRemovalRequest ::= SEQUENCE {

```

```

    protocolIEs      ProtocolIE-Container      {{ FlRemovalRequestIEs }},
    ...
}

FlRemovalRequestIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID      CRITICALITY reject  TYPE TransactionID      PRESENCE mandatory },
    ...
}

-- *****
--
-- Fl Removal Response
--
-- *****

FlRemovalResponse ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      {{ FlRemovalResponseIEs }},
    ...
}

FlRemovalResponseIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID      CRITICALITY reject  TYPE TransactionID      PRESENCE mandatory }|
    { ID id-CriticalityDiagnostics  CRITICALITY ignore  TYPE CriticalityDiagnostics  PRESENCE optional },
    ...
}

-- *****
--
-- Fl Removal Failure
--
-- *****

FlRemovalFailure ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      {{ FlRemovalFailureIEs }},
    ...
}

FlRemovalFailureIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID      CRITICALITY reject  TYPE TransactionID      PRESENCE mandatory }|
    { ID id-Cause              CRITICALITY ignore  TYPE Cause              PRESENCE mandatory }|
    { ID id-CriticalityDiagnostics  CRITICALITY ignore  TYPE CriticalityDiagnostics  PRESENCE optional },
    ...
}

-- *****
--
-- TRACE ELEMENTARY PROCEDURES
--
-- *****

```

```

--
-- TRACE START
--
-- *****

TraceStart ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      { {TraceStartIEs} },
    ...
}

TraceStartIEs FlAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-TraceActivation            CRITICALITY ignore  TYPE TraceActivation           PRESENCE mandatory },
    ...
}

-- *****
--
-- DEACTIVATE TRACE
--
-- *****

DeactivateTrace ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      { {DeactivateTraceIEs} },
    ...
}

DeactivateTraceIEs FlAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-TraceID                    CRITICALITY ignore  TYPE TraceID                    PRESENCE mandatory },
    ...
}

-- *****
--
-- CELL TRAFFIC TRACE
--
-- *****

CellTrafficTrace ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      { {CellTrafficTraceIEs} },
    ...
}

CellTrafficTraceIEs FlAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-TraceID                    CRITICALITY ignore  TYPE TraceID                    PRESENCE mandatory }|
    { ID id-TraceCollectionEntityIPAddress CRITICALITY ignore  TYPE TransportLayerAddress      PRESENCE mandatory }|
    { ID id-PrivacyIndicator           CRITICALITY ignore  TYPE PrivacyIndicator           PRESENCE optional }|
    { ID id-TraceCollectionEntityURI    CRITICALITY ignore  TYPE URI-address                PRESENCE optional },
}

```

```

...
}
-- *****
--
-- DU-CU Radio Information Transfer ELEMENTARY PROCEDURE
--
-- *****
--
-- *****
--
-- DU-CU Radio Information Transfer
--
-- *****

DUCURadioInformationTransfer ::= SEQUENCE {
    protocolIES          ProtocolIE-Container    {{ DUCURadioInformationTransferIEs}},
    ...
}

DUCURadioInformationTransferIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
    { ID id-DUCURadioInformationType CRITICALITY ignore TYPE DUCURadioInformationType PRESENCE mandatory },
    ...
}

-- *****
--
-- CU-DU Radio Information Transfer ELEMENTARY PROCEDURE
--
-- *****
--
-- *****
--
-- CU-DU Radio Information Transfer
--
-- *****

CUDURadioInformationTransfer ::= SEQUENCE {
    protocolIES          ProtocolIE-Container    {{ CUDURadioInformationTransferIEs}},
    ...
}

CUDURadioInformationTransferIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
    { ID id-CUDURadioInformationType CRITICALITY ignore TYPE CUDURadioInformationType PRESENCE mandatory },
    ...
}

-- *****
--

```

```

-- IAB PROCEDURES
--
-- *****
-- *****
--
-- BAP Mapping Configuration ELEMENTARY PROCEDURE
--
-- *****
--
-- *****
--
-- BAP MAPPING CONFIGURATION
-- *****

BAPMappingConfiguration ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { {BAPMappingConfiguration-IEs} },
    ...
}

BAPMappingConfiguration-IEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID PRESENCE mandatory} |
    { ID id-BH-Routing-Information-Added-List CRITICALITY ignore TYPE BH-Routing-Information-Added-List PRESENCE optional} |
    { ID id-BH-Routing-Information-Removed-List CRITICALITY ignore TYPE BH-Routing-Information-Removed-List PRESENCE optional} |
    { ID id-TrafficMappingInformation CRITICALITY ignore TYPE TrafficMappingInfo PRESENCE optional} |
    { ID id-BufferSizeThresh CRITICALITY ignore TYPE BufferSizeThresh PRESENCE optional} |
    { ID id-BAP-Header-Rewriting-Added-List CRITICALITY ignore TYPE BAP-Header-Rewriting-Added-List PRESENCE optional} |
    { ID id-Re-routingEnableIndicator CRITICALITY ignore TYPE Re-routingEnableIndicator PRESENCE optional} |
    { ID id-BAP-Header-Rewriting-Removed-List CRITICALITY ignore TYPE BAP-Header-Rewriting-Removed-List PRESENCE optional},
    ...
}

BH-Routing-Information-Added-List ::= SEQUENCE (SIZE(1.. maxnoofRoutingEntries)) OF ProtocolIE-SingleContainer { { BH-Routing-Information-Added-List-ItemIEs } }
BH-Routing-Information-Removed-List ::= SEQUENCE (SIZE(1.. maxnoofRoutingEntries)) OF ProtocolIE-SingleContainer { { BH-Routing-Information-Removed-List-ItemIEs } }

BH-Routing-Information-Added-List-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-BH-Routing-Information-Added-List-Item CRITICALITY ignore TYPE BH-Routing-Information-Added-List-Item PRESENCE optional},
    ...
}

BH-Routing-Information-Removed-List-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-BH-Routing-Information-Removed-List-Item CRITICALITY ignore TYPE BH-Routing-Information-Removed-List-Item PRESENCE optional},
    ...
}

BAP-Header-Rewriting-Added-List ::= SEQUENCE (SIZE(1.. maxnoofRoutingEntries)) OF ProtocolIE-SingleContainer { { BAP-Header-Rewriting-Added-List-ItemIEs } }

BAP-Header-Rewriting-Added-List-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-BAP-Header-Rewriting-Added-List-Item CRITICALITY ignore TYPE BAP-Header-Rewriting-Added-List-Item PRESENCE optional},

```



```

}
...
}
BAP-Header-Rewriting-Removed-List ::= SEQUENCE (SIZE(1.. maxnoofRoutingEntries)) OF ProtocolIE-SingleContainer { { BAP-Header-Rewriting-Removed-List-ItemIEs } }

BAP-Header-Rewriting-Removed-List-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-BAP-Header-Rewriting-Removed-List-Item CRITICALITY ignore TYPE BAP-Header-Rewriting-Removed-List-Item PRESENCE optional},
  ...
}

-- *****
--
-- BAP MAPPING CONFIGURATION ACKNOWLEDGE
-- *****

BAPMappingConfigurationAcknowledge ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {BAPMappingConfigurationAcknowledge-IEs} },
  ...
}

BAPMappingConfigurationAcknowledge-IEs FLAP-PROTOCOL-IES ::= {
  { ID id-TransactionID CRITICALITY reject TYPE TransactionID PRESENCE mandatory}|
  { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},
  ...
}

-- *****
--
-- BAP MAPPING CONFIGURATION FAILURE
-- *****

BAPMappingConfigurationFailure ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { { BAPMappingConfigurationFailureIEs} },
  ...
}

BAPMappingConfigurationFailureIEs FLAP-PROTOCOL-IES ::= {
  { ID id-TransactionID CRITICALITY reject TYPE TransactionID PRESENCE mandatory }|
  { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory }|
  { ID id-TimeToWait CRITICALITY ignore TYPE TimeToWait PRESENCE optional }|
  { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
  ...
}

-- *****
--
-- GNB-DU Configuration ELEMENTARY PROCEDURE
-- *****

```

```

--
-- GNB-DU RESOURCE CONFIGURATION
-- *****

GNBDUResourceConfiguration ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          {{ GNBDUResourceConfigurationIEs}},
    ...
}

GNBDUResourceConfigurationIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
    { ID id-Activated-Cells-to-be-Updated-List  CRITICALITY reject  TYPE Activated-Cells-to-be-Updated-List  PRESENCE optional}|
    { ID id-Child-Nodes-List          CRITICALITY reject  TYPE Child-Nodes-List          PRESENCE optional}|
    { ID id-Neighbour-Node-Cells-List  CRITICALITY reject  TYPE Neighbour-Node-Cells-List  PRESENCE optional}|
    { ID id-Serving-Cells-List        CRITICALITY reject  TYPE Serving-Cells-List        PRESENCE optional},
    ...
}

-- *****
--
-- GNB-DU RESOURCE CONFIGURATION ACKNOWLEDGE
-- *****

GNBDUResourceConfigurationAcknowledge ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { { GNBDUResourceConfigurationAcknowledgeIEs } },
    ...
}

GNBDUResourceConfigurationAcknowledgeIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
    { ID id-CriticalityDiagnostics  CRITICALITY ignore  TYPE CriticalityDiagnostics  PRESENCE optional },
    ...
}

-- *****
--
-- GNB-DU RESOURCE CONFIGURATION FAILURE
-- *****

GNBDUResourceConfigurationFailure ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { { GNBDUResourceConfigurationFailureIEs } },
    ...
}

GNBDUResourceConfigurationFailureIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|

```

```

    { ID id-Cause                CRITICALITY ignore  TYPE Cause                PRESENCE mandatory }|
    { ID id-TimeToWait           CRITICALITY ignore  TYPE TimeToWait           PRESENCE optional }|
    { ID id-CriticalityDiagnostics CRITICALITY ignore  TYPE CriticalityDiagnostics PRESENCE optional },
    ...
}

-- *****
--
-- IAB TNL Address Allocation ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- IAB TNL ADDRESS REQUEST
-- *****

IABTNLAddressRequest ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { {IABTNLAddressRequestIEs} },
    ...
}

IABTNLAddressRequestIEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID                CRITICALITY reject  TYPE TransactionID                PRESENCE mandatory }|
    { ID id-IABv4AddressesRequested      CRITICALITY reject  TYPE IABv4AddressesRequested      PRESENCE optional }|
    { ID id-IABIPv6RequestType           CRITICALITY reject  TYPE IABIPv6RequestType           PRESENCE optional }|
    { ID id-IAB-TNL-Addresses-To-Remove-List CRITICALITY reject  TYPE IAB-TNL-Addresses-To-Remove-List PRESENCE optional }|
    { ID id-IAB-TNL-Addresses-Exception  CRITICALITY reject  TYPE IAB-TNL-Addresses-Exception  PRESENCE optional },
    ...
}

IAB-TNL-Addresses-To-Remove-List ::= SEQUENCE (SIZE(1..maxnoofTLAsIAB)) OF ProtocolIE-SingleContainer { { IAB-TNL-Addresses-To-Remove-ItemIEs } }

IAB-TNL-Addresses-To-Remove-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-IAB-TNL-Addresses-To-Remove-Item CRITICALITY reject  TYPE IAB-TNL-Addresses-To-Remove-Item PRESENCE mandatory },
    ...
}

-- *****
--
-- IAB TNL ADDRESS RESPONSE
-- *****

IABTNLAddressResponse ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { {IABTNLAddressResponseIEs} },
    ...
}

```

```

IABTNLAddressResponseIEs FLAP-PROTOCOL-IES ::= {
  { ID id-TransactionID                CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
  { ID id-IAB-Allocated-TNL-Address-List CRITICALITY reject  TYPE IAB-Allocated-TNL-Address-List    PRESENCE mandatory },
  ...
}

IAB-Allocated-TNL-Address-List ::= SEQUENCE (SIZE(1.. maxnoofTLAsIAB)) OF ProtocolIE-SingleContainer { { IAB-Allocated-TNL-Address-List-ItemIEs }
}

IAB-Allocated-TNL-Address-List-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-IAB-Allocated-TNL-Address-Item          CRITICALITY reject  TYPE IAB-Allocated-TNL-Address-Item          PRESENCE mandatory },
  ...
}

-- *****
--
-- IAB TNL ADDRESS FAILURE
--
-- *****

IABTNLAddressFailure ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          { { IABTNLAddressFailureIEs } },
  ...
}

IABTNLAddressFailureIEs FLAP-PROTOCOL-IES ::= {
  { ID id-TransactionID                CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
  { ID id-Cause                         CRITICALITY ignore  TYPE Cause                   PRESENCE mandatory }|
  { ID id-TimeToWait                    CRITICALITY ignore  TYPE TimeToWait              PRESENCE optional }|
  { ID id-CriticalityDiagnostics         CRITICALITY ignore  TYPE CriticalityDiagnostics  PRESENCE optional },
  ...
}

-- *****
--
-- IAB UP Configuration Update ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- IAB UP Configuration Update Request
--
-- *****

IABUPConfigurationUpdateRequest ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          { { IABUPConfigurationUpdateRequestIEs } },
  ...
}

```

```

IABUPConfigurationUpdateRequestIEs FLAP-PROTOCOL-IES ::= {
  { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
  { ID id-UL-UP-TNL-Information-to-Update-List  CRITICALITY ignore  TYPE UL-UP-TNL-Information-to-Update-List  PRESENCE optional }|
  { ID id-UL-UP-TNL-Address-to-Update-List      CRITICALITY ignore  TYPE UL-UP-TNL-Address-to-Update-List      PRESENCE optional },
  ...
}

UL-UP-TNL-Information-to-Update-List ::= SEQUENCE (SIZE(1.. maxnoofULUPTNLInformationforIAB)) OF ProtocolIE-SingleContainer { { UL-UP-TNL-Information-to-Update-List-ItemIEs } }

UL-UP-TNL-Information-to-Update-List-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-UL-UP-TNL-Information-to-Update-List-Item  CRITICALITY ignore  TYPE UL-UP-TNL-Information-to-Update-List-Item  PRESENCE mandatory },
  ...
}

UL-UP-TNL-Address-to-Update-List ::= SEQUENCE (SIZE(1.. maxnoofUPTNLAddresses)) OF ProtocolIE-SingleContainer { { UL-UP-TNL-Address-to-Update-List-ItemIEs } }

UL-UP-TNL-Address-to-Update-List-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-UL-UP-TNL-Address-to-Update-List-Item  CRITICALITY ignore  TYPE UL-UP-TNL-Address-to-Update-List-Item  PRESENCE mandatory },
  ...
}

-- *****
--
-- IAB UP Configuration Update Response
--
-- *****

IABUPConfigurationUpdateResponse ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          { { IABUPConfigurationUpdateResponseIEs } },
  ...
}

IABUPConfigurationUpdateResponseIEs FLAP-PROTOCOL-IES ::= {
  { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
  { ID id-CriticalityDiagnostics  CRITICALITY ignore  TYPE CriticalityDiagnostics  PRESENCE optional }|
  { ID id-DL-UP-TNL-Address-to-Update-List  CRITICALITY reject  TYPE DL-UP-TNL-Address-to-Update-List  PRESENCE optional },
  ...
}

DL-UP-TNL-Address-to-Update-List ::= SEQUENCE (SIZE(1.. maxnoofUPTNLAddresses)) OF ProtocolIE-SingleContainer { { DL-UP-TNL-Address-to-Update-List-ItemIEs } }

DL-UP-TNL-Address-to-Update-List-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-DL-UP-TNL-Address-to-Update-List-Item  CRITICALITY ignore  TYPE DL-UP-TNL-Address-to-Update-List-Item  PRESENCE mandatory },
  ...
}

-- *****
--
-- IAB UP Configuration Update Failure
--

```

```

-- *****
IABUPConfigurationUpdateFailure ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container      { { IABUPConfigurationUpdateFailureIEs } },
    ...
}

IABUPConfigurationUpdateFailureIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-Cause                  CRITICALITY ignore TYPE Cause                  PRESENCE mandatory }|
    { ID id-TimeToWait             CRITICALITY ignore TYPE TimeToWait             PRESENCE optional }|
    { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
    ...
}

-- *****
--
-- Resource Status Reporting Initiation ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Resource Status Request
--
-- *****

ResourceStatusRequest ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container      { { ResourceStatusRequestIEs } },
    ...
}

ResourceStatusRequestIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-gNBCUMeasurementID     CRITICALITY reject TYPE GNBCUMeasurementID     PRESENCE mandatory }|
    { ID id-gNBDUMeasurementID     CRITICALITY ignore TYPE GNBDUMeasurementID     PRESENCE conditional }|
    { ID id-RegistrationRequest    CRITICALITY ignore TYPE RegistrationRequest    PRESENCE mandatory }|
    { ID id-ReportCharacteristics  CRITICALITY ignore TYPE ReportCharacteristics  PRESENCE conditional }|
    { ID id-CellToReportList       CRITICALITY ignore TYPE CellToReportList       PRESENCE optional }|
    { ID id-ReportingPeriodicity   CRITICALITY ignore TYPE ReportingPeriodicity   PRESENCE optional },
    ...
}

-- *****
--
-- Resource Status Response
--
-- *****

ResourceStatusResponse ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container      { { ResourceStatusResponseIEs } },
    ...
}

```

```

ResourceStatusResponseIEs FLAP-PROTOCOL-IES ::= {
  { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
  { ID id-gNBCUMeasurementID     CRITICALITY reject  TYPE GNBCUMeasurementID     PRESENCE mandatory }|
  { ID id-gNBDUMeasurementID     CRITICALITY ignore  TYPE GNBDUMeasurementID     PRESENCE mandatory }|
  { ID id-CriticalityDiagnostics CRITICALITY ignore  TYPE CriticalityDiagnostics PRESENCE optional  },
  ...
}

-- *****
--
-- Resource Status Failure
--
-- *****

ResourceStatusFailure ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container    { { ResourceStatusFailureIEs } },
  ...
}

ResourceStatusFailureIEs FLAP-PROTOCOL-IES ::= {
  { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
  { ID id-gNBCUMeasurementID     CRITICALITY reject  TYPE GNBCUMeasurementID     PRESENCE mandatory }|
  { ID id-gNBDUMeasurementID     CRITICALITY ignore  TYPE GNBDUMeasurementID     PRESENCE mandatory }|
  { ID id-Cause                  CRITICALITY ignore  TYPE Cause                  PRESENCE mandatory }|
  { ID id-CriticalityDiagnostics CRITICALITY ignore  TYPE CriticalityDiagnostics PRESENCE optional  },
  ...
}

-- *****
--
-- Resource Status Reporting ELEMENTARY PROCEDURE
--
-- *****
--
-- Resource Status Update
--
-- *****

ResourceStatusUpdate ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container    {{ ResourceStatusUpdateIEs }},
  ...
}

ResourceStatusUpdateIEs FLAP-PROTOCOL-IES ::= {
  { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
  { ID id-gNBCUMeasurementID     CRITICALITY reject  TYPE GNBCUMeasurementID     PRESENCE mandatory }|
  { ID id-gNBDUMeasurementID     CRITICALITY ignore  TYPE GNBDUMeasurementID     PRESENCE mandatory }|
  { ID id-HardwareLoadIndicator   CRITICALITY ignore  TYPE HardwareLoadIndicator   PRESENCE optional  }|
  { ID id-TNLCapacityIndicator   CRITICALITY ignore  TYPE TNLCapacityIndicator   PRESENCE optional  }|
}

```

```

    { ID id-CellMeasurementResultList    CRITICALITY ignore  TYPE CellMeasurementResultList    PRESENCE optional  },
    ...
  }

-- *****
--
-- Access And Mobility Indication ELEMENTARY PROCEDURE
--
-- *****
--
-- *****
--
-- Access And Mobility Indication
--
-- *****

AccessAndMobilityIndication ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          { { AccessAndMobilityIndicationIEs } },
  ...
}

AccessAndMobilityIndicationIEs FLAP-PROTOCOL-IES ::= {
  { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
  { ID id-RACHReportInformationList  CRITICALITY ignore  TYPE RACHReportInformationList  PRESENCE optional }|
  { ID id-RLFReportInformationList  CRITICALITY ignore  TYPE RLFReportInformationList  PRESENCE optional }|
  { ID id-SuccessfulHOReportInformationList  CRITICALITY ignore  TYPE SuccessfulHOReportInformationList  PRESENCE optional },
  ...
}

-- *****
--
-- REFERENCE TIME INFORMATION REPORTING CONTROL
--
-- *****

ReferenceTimeInformationReportingControl ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          { { ReferenceTimeInformationReportingControlIEs } },
  ...
}

ReferenceTimeInformationReportingControlIEs FLAP-PROTOCOL-IES ::= {
  { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
  { ID id-ReportingRequestType    CRITICALITY reject  TYPE ReportingRequestType    PRESENCE mandatory },
  ...
}

-- *****
--
-- REFERENCE TIME INFORMATION REPORT
--
-- *****

```



```

ReferenceTimeInformationReport ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      { { ReferenceTimeInformationReportIEs } },
    ...
}

ReferenceTimeInformationReportIEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY ignore TYPE TransactionID          PRESENCE mandatory }|
    { ID id-TimeReferenceInformation CRITICALITY ignore TYPE TimeReferenceInformation PRESENCE mandatory },
    ...
}

-- *****
--
-- Access Success
--
-- *****

AccessSuccess ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      {{ AccessSuccessIEs}},
    ...
}

AccessSuccessIEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-NRCGI                      CRITICALITY reject TYPE NRCGI                      PRESENCE mandatory },
    ...
}

-- *****
--
-- POSITIONING ASSISTANCE INFORMATION CONTROL ELEMENTARY PROCEDURE
--
-- *****
--
-- Positioning Assistance Information Control
--
-- *****

PositioningAssistanceInformationControl ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      {{ PositioningAssistanceInformationControlIEs}},
    ...
}

PositioningAssistanceInformationControlIEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-PosAssistance-Information CRITICALITY reject TYPE PosAssistance-Information PRESENCE optional}|
    { ID id-PosBroadcast           CRITICALITY reject TYPE PosBroadcast           PRESENCE optional}|
    { ID id-PositioningBroadcastCells CRITICALITY reject TYPE PositioningBroadcastCells PRESENCE optional}|
    { ID id-RoutingID              CRITICALITY reject TYPE RoutingID              PRESENCE optional},
}

```

```

}
...
}
-- *****
--
-- POSITIONING ASSISTANCE INFORMATION FEEDBACK ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Positioning Assistance Information Feedback
--
-- *****

PositioningAssistanceInformationFeedback ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container      {{ PositioningAssistanceInformationFeedbackIEs}},
    ...
}

PositioningAssistanceInformationFeedbackIEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-PosAssistanceInformationFailureList CRITICALITY reject TYPE PosAssistanceInformationFailureList PRESENCE optional}|
    { ID id-PositioningBroadcastCells CRITICALITY reject TYPE PositioningBroadcastCells PRESENCE optional}|
    { ID id-RoutingID              CRITICALITY reject TYPE RoutingID              PRESENCE optional}|
    { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},
    ...
}

-- *****
--
-- POSITONING MEASUREMENT EXCHANGE ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Positioning Measurement Request
--
-- *****

PositioningMeasurementRequest ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container      { { PositioningMeasurementRequestIEs} },
    ...
}

PositioningMeasurementRequestIEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-LMF-MeasurementID      CRITICALITY reject TYPE LMF-MeasurementID      PRESENCE mandatory }|
    { ID id-RAN-MeasurementID      CRITICALITY reject TYPE RAN-MeasurementID      PRESENCE mandatory }|
    { ID id-TRP-MeasurementRequestList CRITICALITY reject TYPE TRP-MeasurementRequestList PRESENCE mandatory }|
    { ID id-PosReportCharacteristics CRITICALITY reject TYPE PosReportCharacteristics PRESENCE mandatory }|
    { ID id-PosMeasurementPeriodicity CRITICALITY reject TYPE MeasurementPeriodicity PRESENCE conditional }|
    -- The above IE shall be present if the PosReportCharacteristics IE is set to "periodic" --
}

```

```

    { ID id-PosMeasurementQuantities          CRITICALITY reject TYPE PosMeasurementQuantities PRESENCE mandatory }|
    { ID id-SFNInitialisationTime             CRITICALITY ignore TYPE RelativeTime1900 PRESENCE optional }|
    { ID id-SRSConfiguration                  CRITICALITY ignore TYPE SRSConfiguration PRESENCE optional }|
    { ID id-MeasurementBeamInfoRequest        CRITICALITY ignore TYPE MeasurementBeamInfoRequest PRESENCE optional }|
    { ID id-SystemFrameNumber                 CRITICALITY ignore TYPE SystemFrameNumber PRESENCE optional }|
    { ID id-SlotNumber                        CRITICALITY ignore TYPE SlotNumber PRESENCE optional }|
    { ID id-PosMeasurementPeriodicityExtended CRITICALITY reject TYPE MeasurementPeriodicityExtended PRESENCE conditional }|
    -- The IE shall be present the MeasurementPeriodicity IE is set to the value "extended"

    { ID id-ResponseTime                      CRITICALITY ignore TYPE ResponseTime PRESENCE optional }|
    { ID id-MeasurementCharacteristicsRequestIndicator CRITICALITY ignore TYPE MeasurementCharacteristicsRequestIndicator PRESENCE optional }|
    { ID id-MeasurementTimeOccasion           CRITICALITY ignore TYPE MeasurementTimeOccasion PRESENCE optional }|
    { ID id-PosMeasurementAmount             CRITICALITY ignore TYPE PosMeasurementAmount PRESENCE optional },
    ...
}

-- *****
--
-- Positioning Measurement Response
--
-- *****

PositioningMeasurementResponse ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { PositioningMeasurementResponseIEs } },
    ...
}

PositioningMeasurementResponseIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID PRESENCE mandatory }|
    { ID id-LMF-MeasurementID      CRITICALITY reject TYPE LMF-MeasurementID PRESENCE mandatory }|
    { ID id-RAN-MeasurementID      CRITICALITY reject TYPE RAN-MeasurementID PRESENCE mandatory }|
    { ID id-PosMeasurementResultList CRITICALITY reject TYPE PosMeasurementResultList PRESENCE optional }|
    { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
    ...
}

-- *****
--
-- Positioning Measurement Failure
--
-- *****

PositioningMeasurementFailure ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { PositioningMeasurementFailureIEs } },
    ...
}

PositioningMeasurementFailureIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID PRESENCE mandatory }|
    { ID id-LMF-MeasurementID      CRITICALITY reject TYPE LMF-MeasurementID PRESENCE mandatory }|

```

```

    { ID id-RAN-MeasurementID          CRITICALITY reject TYPE RAN-MeasurementID          PRESENCE mandatory }|
    { ID id-Cause                      CRITICALITY ignore TYPE Cause                      PRESENCE mandatory }|
    { ID id-CriticalityDiagnostics      CRITICALITY ignore TYPE CriticalityDiagnostics      PRESENCE optional },
    ...
}

-- *****
--
-- POSITIONING MEASUREMENT REPORT ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Positioning Measurement Report
--
-- *****

PositioningMeasurementReport ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      { { PositioningMeasurementReportIEs } },
    ...
}

PositioningMeasurementReportIEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-LMF-MeasurementID      CRITICALITY reject TYPE LMF-MeasurementID      PRESENCE mandatory }|
    { ID id-RAN-MeasurementID      CRITICALITY reject TYPE RAN-MeasurementID      PRESENCE mandatory }|
    { ID id-PosMeasurementResultList CRITICALITY reject TYPE PosMeasurementResultList PRESENCE mandatory },
    ...
}

-- *****
--
-- POSITIONING MEASUREMENT ABORT ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Positioning Measurement Abort
--
-- *****

PositioningMeasurementAbort ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      { { PositioningMeasurementAbortIEs } },
    ...
}

PositioningMeasurementAbortIEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-LMF-MeasurementID      CRITICALITY reject TYPE LMF-MeasurementID      PRESENCE mandatory }|
    { ID id-RAN-MeasurementID      CRITICALITY reject TYPE RAN-MeasurementID      PRESENCE mandatory },
    ...
}

```

```

}
-- *****
--
-- POSITIONING MEASUREMENT FAILURE INDICATION ELEMENTARY PROCEDURE
--
-- *****
--
-- *****
--
-- Positioning Measurement Failure Indication
--
-- *****

PositioningMeasurementFailureIndication ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      { { PositioningMeasurementFailureIndicationIEs } },
    ...
}

PositioningMeasurementFailureIndicationIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
    { ID id-LMF-MeasurementID      CRITICALITY reject  TYPE LMF-MeasurementID          PRESENCE mandatory }|
    { ID id-RAN-MeasurementID      CRITICALITY reject  TYPE RAN-MeasurementID        PRESENCE mandatory }|
    { ID id-Cause                  CRITICALITY ignore  TYPE Cause                    PRESENCE mandatory },
    ...
}

-- *****
--
-- POSITIONING MEASUREMENT UPDATE ELEMENTARY PROCEDURE
--
-- *****
--
-- *****
--
-- Positioning Measurement Update
--
-- *****

PositioningMeasurementUpdate ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      { { PositioningMeasurementUpdateIEs } },
    ...
}

PositioningMeasurementUpdateIEs FlAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
    { ID id-LMF-MeasurementID      CRITICALITY reject  TYPE LMF-MeasurementID          PRESENCE mandatory }|
    { ID id-RAN-MeasurementID      CRITICALITY reject  TYPE RAN-MeasurementID        PRESENCE mandatory }|
    { ID id-SRSConfiguration       CRITICALITY ignore  TYPE SRSConfiguration        PRESENCE optional }|
    { ID id-TRP-MeasurementUpdateList CRITICALITY reject  TYPE TRP-MeasurementUpdateList PRESENCE optional }|
    { ID id-MeasurementCharacteristicsRequestIndicator CRITICALITY ignore  TYPE MeasurementCharacteristicsRequestIndicator PRESENCE optional }|
    { ID id-MeasurementTimeOccasion CRITICALITY ignore  TYPE MeasurementTimeOccasion  PRESENCE optional },
    ...
}

```

```

-- *****
--
-- TRP INFORMATION EXCHANGE ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- TRP Information Request
--
-- *****

TRPInformationRequest ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container          { { TRPInformationRequestIEs } },
    ...
}

TRPInformationRequestIEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory } |
    { ID id-TRPList                CRITICALITY ignore  TYPE TRPList                PRESENCE optional } |
    { ID id-TRPInformationTypeListTRPReq  CRITICALITY reject  TYPE TRPInformationTypeListTRPReq  PRESENCE mandatory },
    ...
}

TRPInformationTypeListTRPReq ::= SEQUENCE (SIZE(1.. maxnoofTRPInfoTypes)) OF ProtocolIE-SingleContainer { { TRPInformationTypeItemTRPReq } }

TRPInformationTypeItemTRPReq FLAP-PROTOCOL-IES ::= {
    { ID id-TRPInformationTypeItem  CRITICALITY reject      TYPE TRPInformationTypeItem      PRESENCE mandatory },
    ...
}

-- *****
--
-- TRP Information Response
--
-- *****

TRPInformationResponse ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container          { { TRPInformationResponseIEs } },
    ...
}

TRPInformationResponseIEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory } |
    { ID id-TRPInformationListTRPResp  CRITICALITY ignore  TYPE TRPInformationListTRPResp  PRESENCE mandatory } |
    { ID id-CriticalityDiagnostics     CRITICALITY ignore  TYPE CriticalityDiagnostics     PRESENCE optional },
    ...
}

TRPInformationListTRPResp ::= SEQUENCE (SIZE(1.. maxnoofTRPs)) OF ProtocolIE-SingleContainer { { TRPInformationItemTRPResp } }

```

```

TRPInformationItemTRPResp FlAP-PROTOCOL-IES ::= {
  { ID id-TRPInformationItem CRITICALITY ignore TYPE TRPInformationItem PRESENCE mandatory },
  ...
}

-- *****
--
-- TRP Information Failure
--
-- *****

TRPInformationFailure ::= SEQUENCE {
  protocolIES ProtocolIE-Container { { TRPInformationFailureIEs } },
  ...
}

TRPInformationFailureIEs FlAP-PROTOCOL-IES ::= {
  { ID id-TransactionID CRITICALITY reject TYPE TransactionID PRESENCE mandatory }|
  { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory }|
  { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
  ...
}

-- *****
--
-- POSITIONING INFORMATION EXCHANGE ELEMENTARY PROCEDURE
--
-- *****
--
-- Positioning Information Request
--
-- *****

PositioningInformationRequest ::= SEQUENCE {
  protocolIES ProtocolIE-Container { { PositioningInformationRequestIEs } },
  ...
}

PositioningInformationRequestIEs FlAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID PRESENCE mandatory }|
  { ID id-RequestedSRSTransmissionCharacteristics CRITICALITY ignore TYPE RequestedSRSTransmissionCharacteristics PRESENCE optional}|
  { ID id-UEReportingInformation CRITICALITY ignore TYPE UEReportingInformation PRESENCE optional}|
  { ID id-SRSPosRRCTInactiveQueryIndication CRITICALITY ignore TYPE SRSPosRRCTInactiveQueryIndication PRESENCE optional},
  ...
}

-- *****
--

```

```

-- Positioning Information Response
--
-- *****
PositioningInformationResponse ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { PositioningInformationResponseIEs } },
    ...
}

PositioningInformationResponseIEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-SRSConfiguration           CRITICALITY ignore TYPE SRSConfiguration           PRESENCE optional }|
    { ID id-SFNInitialisationTime      CRITICALITY ignore TYPE RelativeTime1900      PRESENCE optional }|
    { ID id-CriticalityDiagnostics      CRITICALITY ignore TYPE CriticalityDiagnostics  PRESENCE optional }|
    { ID id-SRSPosRRCTInactiveConfig   CRITICALITY ignore TYPE SRSPosRRCTInactiveConfig PRESENCE optional },
    ...
}

-- *****
--
-- Positioning Information Failure
--
-- *****

PositioningInformationFailure ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { PositioningInformationFailureIEs } },
    ...
}

PositioningInformationFailureIEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-Cause                      CRITICALITY ignore TYPE Cause                      PRESENCE mandatory }|
    { ID id-CriticalityDiagnostics      CRITICALITY ignore TYPE CriticalityDiagnostics      PRESENCE optional },
    ...
}

-- *****
--
-- POSITIONING ACTIVATION PROCEDURE
--
-- *****
--
-- Positioning Activation Request
--
-- *****

```



```

PositioningActivationRequest ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { PositioningActivationRequestIEs } },
    ...
}

PositioningActivationRequestIEs FlAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory } |
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory } |
    { ID id-SRSType                     CRITICALITY reject  TYPE SRSType                     PRESENCE mandatory } |
    { ID id-ActivationTime              CRITICALITY ignore  TYPE RelativeTime1900          PRESENCE optional   },
    ...
}

SRSType ::= CHOICE {
    semipersistentSRS                SemipersistentSRS,
    aperiodicSRS                     AperiodicSRS,
    choice-extension                 ProtocolIE-SingleContainer { { SRSType-ExtIEs } }
}

SRSType-ExtIEs FlAP-PROTOCOL-IES ::= {
    ...
}

SemipersistentSRS ::= SEQUENCE {
    sRSResourceSetID                SRSResourceSetID,
    sRSSpatialRelation              SpatialRelationInfo OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {SemipersistentSRS-ExtIEs} } OPTIONAL,
    ...
}

SemipersistentSRS-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
    { ID id-SRSSpatialRelationPerSRSResource  CRITICALITY ignore  EXTENSION SpatialRelationPerSRSResource PRESENCE optional},
    ...
}

AperiodicSRS ::= SEQUENCE {
    aperiodic                        ENUMERATED {true, ...},
    sRSResourceTrigger              SRSResourceTrigger    OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {AperiodicSRS-ExtIEs} } OPTIONAL,
    ...
}

AperiodicSRS-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- Positioning Activation Response
--
-- *****

PositioningActivationResponse ::= SEQUENCE {

```

```

    protocolIEs          ProtocolIE-Container      { { PositioningActivationResponseIEs } },
    ...
}

PositioningActivationResponseIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-SystemFrameNumber          CRITICALITY ignore TYPE SystemFrameNumber        PRESENCE optional }|
  { ID id-SlotNumber                  CRITICALITY ignore TYPE SlotNumber                PRESENCE optional }|
  { ID id-CriticalityDiagnostics      CRITICALITY ignore TYPE CriticalityDiagnostics    PRESENCE optional },
  ...
}

-- *****
--
-- Positioning Activation Failure
--
-- *****

PositioningActivationFailure ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container      { { PositioningActivationFailureIEs } },
  ...
}

PositioningActivationFailureIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-Cause                      CRITICALITY ignore  TYPE Cause                      PRESENCE mandatory }|
  { ID id-CriticalityDiagnostics      CRITICALITY ignore  TYPE CriticalityDiagnostics     PRESENCE optional },
  ...
}

-- *****
--
-- POSITIONING DEACTIVATION PROCEDURE
--
-- *****
--
-- *****
--
-- Positioning Deactivation
--
-- *****

PositioningDeactivation ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container      { { PositioningDeactivationIEs } },
  ...
}

```

```

PositioningDeactivationIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-AbortTransmission          CRITICALITY ignore  TYPE AbortTransmission          PRESENCE mandatory },
  ...
}

-- *****
--
-- POSITIONING INFORMATION UPDATE PROCEDURE
--
-- *****

-- *****
--
-- Positioning Information Update
--
-- *****

PositioningInformationUpdate ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          { { PositioningInformationUpdateIEs } },
  ...
}

PositioningInformationUpdateIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-SRSConfiguration          CRITICALITY ignore  TYPE SRSConfiguration          PRESENCE optional }|
  { ID id-SFNInitialisationTime     CRITICALITY ignore  TYPE RelativeTime1900          PRESENCE optional },
  ...
}

-- *****
--
-- E-CID MEASUREMENT PROCEDURE
--
-- *****

-- *****
--
-- E-CID Measurement Initiation Request
--
-- *****

E-CIDMeasurementInitiationRequest ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          {{E-CIDMeasurementInitiationRequest-IEs}},
  ...
}

E-CIDMeasurementInitiationRequest-IEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-LMF-UE-MeasurementID       CRITICALITY reject  TYPE LMF-UE-MeasurementID       PRESENCE mandatory }|
}

```

```

    { ID id-RAN-UE-MeasurementID          CRITICALITY reject TYPE RAN-UE-MeasurementID          PRESENCE mandatory }|
    { ID id-E-CID-ReportCharacteristics    CRITICALITY reject TYPE E-CID-ReportCharacteristics    PRESENCE mandatory }|
    { ID id-E-CID-MeasurementPeriodicity   CRITICALITY reject TYPE MeasurementPeriodicity     PRESENCE conditional }|
-- The above IE shall be present if the E-CID-ReportCharacteristics IE is set to "periodic" --
    { ID id-E-CID-MeasurementQuantities    CRITICALITY reject TYPE E-CID-MeasurementQuantities    PRESENCE mandatory}|
    { ID id-PosMeasurementPeriodicityNR-AoA CRITICALITY reject TYPE PosMeasurementPeriodicityNR-AoA PRESENCE conditional},
-- The IE shall be present if the E-CID-ReportCharacteristics IE is set to "periodic" and the E-CID-MeasurementQuantities-Item IE in the E-CID-
MeasurementQuantities IE is set to the value "angleOfArrivalNR"--
    ...
}

-- *****
--
-- E-CID Measurement Initiation Response
--
-- *****

E-CIDMeasurementInitiationResponse ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container    {{E-CIDMeasurementInitiationResponse-IEs}},
    ...
}

E-CIDMeasurementInitiationResponse-IEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-LMF-UE-MeasurementID       CRITICALITY reject TYPE LMF-UE-MeasurementID       PRESENCE mandatory }|
    { ID id-RAN-UE-MeasurementID       CRITICALITY reject TYPE RAN-UE-MeasurementID       PRESENCE mandatory }|
    { ID id-E-CID-MeasurementResult    CRITICALITY ignore TYPE E-CID-MeasurementResult    PRESENCE optional}|
    { ID id-Cell-Portion-ID            CRITICALITY ignore TYPE Cell-Portion-ID            PRESENCE optional}|
    { ID id-CriticalityDiagnostics     CRITICALITY ignore TYPE CriticalityDiagnostics     PRESENCE optional},
    ...
}

-- *****
--
-- E-CID Measurement Initiation Failure
--
-- *****

E-CIDMeasurementInitiationFailure ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container    {{E-CIDMeasurementInitiationFailure-IEs}},
    ...
}

E-CIDMeasurementInitiationFailure-IEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-LMF-UE-MeasurementID       CRITICALITY reject TYPE LMF-UE-MeasurementID       PRESENCE mandatory }|
    { ID id-RAN-UE-MeasurementID       CRITICALITY reject TYPE RAN-UE-MeasurementID       PRESENCE mandatory }|
    { ID id-Cause                      CRITICALITY ignore TYPE Cause                      PRESENCE mandatory }|
    { ID id-CriticalityDiagnostics     CRITICALITY ignore TYPE CriticalityDiagnostics     PRESENCE optional},
    ...
}

```

```

-- *****
--
-- E-CID MEASUREMENT FAILURE INDICATION PROCEDURE
--
-- *****

-- *****
--
-- E-CID Measurement Failure Indication
--
-- *****

E-CIDMeasurementFailureIndication ::= SEQUENCE {
    protocolIEs                ProtocolIE-Container    {{E-CIDMeasurementFailureIndication-IEs}},
    ...
}

E-CIDMeasurementFailureIndication-IEs FlAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-LMF-UE-MeasurementID       CRITICALITY reject TYPE LMF-UE-MeasurementID       PRESENCE mandatory }|
    { ID id-RAN-UE-MeasurementID       CRITICALITY reject TYPE RAN-UE-MeasurementID       PRESENCE mandatory }|
    { ID id-Cause                      CRITICALITY ignore TYPE Cause                      PRESENCE mandatory},
    ...
}

-- *****
--
-- E-CID MEASUREMENT REPORT PROCEDURE
--
-- *****

-- *****
--
-- E-CID Measurement Report
--
-- *****

E-CIDMeasurementReport ::= SEQUENCE {
    protocolIEs                ProtocolIE-Container    {{E-CIDMeasurementReport-IEs}},
    ...
}

E-CIDMeasurementReport-IEs FlAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-LMF-UE-MeasurementID       CRITICALITY reject TYPE LMF-UE-MeasurementID       PRESENCE mandatory }|
    { ID id-RAN-UE-MeasurementID       CRITICALITY reject TYPE RAN-UE-MeasurementID       PRESENCE mandatory }|
    { ID id-E-CID-MeasurementResult    CRITICALITY ignore TYPE E-CID-MeasurementResult    PRESENCE mandatory }|
    { ID id-Cell-Portion-ID           CRITICALITY ignore TYPE Cell-Portion-ID           PRESENCE optional},
}

```

```

}
...
}
-- *****
--
-- E-CID MEASUREMENT TERMINATION PROCEDURE
--
-- *****
--
-- *****
--
-- E-CID Measurement Termination Command
--
-- *****

E-CIDMeasurementTerminationCommand ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          {{E-CIDMeasurementTerminationCommand-IEs}},
    ...
}

E-CIDMeasurementTerminationCommand-IEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-LMF-UE-MeasurementID      CRITICALITY reject TYPE LMF-UE-MeasurementID      PRESENCE mandatory }|
    { ID id-RAN-UE-MeasurementID      CRITICALITY reject TYPE RAN-UE-MeasurementID      PRESENCE mandatory }|
    ...
}

-- *****
--
-- BROADCAST CONTEXT SETUP ELEMENTARY PROCEDURE
--
-- *****
--
-- *****
--
-- BROADCAST CONTEXT SETUP REQUEST
--
-- *****

BroadcastContextSetupRequest ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { { BroadcastContextSetupRequestIEs } },
    ...
}

BroadcastContextSetupRequestIEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject TYPE GNB-CU-MBS-FlAP-ID          PRESENCE mandatory }|
    { ID id-MBS-Session-ID             CRITICALITY reject TYPE MBS-Session-ID             PRESENCE mandatory }|
    { ID id-MBS-ServiceArea             CRITICALITY reject TYPE MBS-ServiceArea             PRESENCE optional }|
    { ID id-MBS-CUtoDURRCInformation    CRITICALITY reject TYPE MBS-CUtoDURRCInformation    PRESENCE mandatory }|
    { ID id-SNSSAI                      CRITICALITY reject TYPE SNSSAI                      PRESENCE mandatory }|
    { ID id-BroadcastMRBs-ToBeSetup-List CRITICALITY reject TYPE BroadcastMRBs-ToBeSetup-List PRESENCE mandatory }|
}

```

```

}
...
BroadcastMRBs-ToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { BroadcastMRBs-ToBeSetup-ItemIEs} }

BroadcastMRBs-ToBeSetup-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-BroadcastMRBs-ToBeSetup-Item    CRITICALITY reject  TYPE    BroadcastMRBs-ToBeSetup-Item PRESENCE mandatory  },
  ...
}

-- *****
--
-- BROADCAST CONTEXT SETUP RESPONSE
--
-- *****

BroadcastContextSetupResponse ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container      { { BroadcastContextSetupResponseIEs} },
  ...
}

BroadcastContextSetupResponseIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-MBS-FlAP-ID                CRITICALITY reject  TYPE GNB-CU-MBS-FlAP-ID                PRESENCE mandatory  }|
  { ID id-gNB-DU-MBS-FlAP-ID                CRITICALITY reject  TYPE GNB-DU-MBS-FlAP-ID                PRESENCE mandatory  }|
  { ID id-BroadcastMRBs-Setup-List          CRITICALITY reject  TYPE BroadcastMRBs-Setup-List          PRESENCE mandatory  }|
  { ID id-BroadcastMRBs-FailedToBeSetup-List CRITICALITY ignore  TYPE BroadcastMRBs-FailedToBeSetup-List PRESENCE optional   }|
  { ID id-BroadcastAreaScope                CRITICALITY ignore  TYPE BroadcastAreaScope                PRESENCE optional   }|
  { ID id-CriticalityDiagnostics            CRITICALITY ignore  TYPE CriticalityDiagnostics            PRESENCE optional   },
  ...
}

BroadcastMRBs-Setup-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { BroadcastMRBs-Setup-ItemIEs} }

BroadcastMRBs-FailedToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { BroadcastMRBs-FailedToBeSetup-ItemIEs} }

BroadcastMRBs-Setup-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-BroadcastMRBs-Setup-Item          CRITICALITY reject  TYPE BroadcastMRBs-Setup-Item          PRESENCE mandatory },
  ...
}

BroadcastMRBs-FailedToBeSetup-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-BroadcastMRBs-FailedToBeSetup-Item CRITICALITY ignore  TYPE BroadcastMRBs-FailedToBeSetup-Item PRESENCE mandatory }, ...
}

-- *****
--
-- BROADCAST CONTEXT SETUP FAILURE
--
-- *****

BroadcastContextSetupFailure ::= SEQUENCE {

```

```

    protocolIEs          ProtocolIE-Container      { { BroadcastContextSetupFailureIEs } },
    ...
}

BroadcastContextSetupFailureIEs FlAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-MBS-FlAP-ID          CRITICALITY ignore TYPE GNB-DU-UE-FlAP-ID          PRESENCE optional }|
  { ID id-Cause                        CRITICALITY ignore TYPE Cause                        PRESENCE mandatory }|
  { ID id-CriticalityDiagnostics       CRITICALITY ignore TYPE CriticalityDiagnostics   PRESENCE optional },
  ...
}

-- *****
--
-- BROADCAST CONTEXT RELEASE ELEMENTARY PROCEDURE
--
-- *****
--
-- *****
--
-- BROADCAST CONTEXT RELEASE COMMAND
--
-- *****

BroadcastContextReleaseCommand ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container      { { BroadcastContextReleaseCommandIEs } },
  ...
}

BroadcastContextReleaseCommandIEs FlAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-MBS-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-MBS-FlAP-ID          PRESENCE mandatory }|
  { ID id-Cause                        CRITICALITY ignore  TYPE Cause                        PRESENCE mandatory }|
  ...
}

-- *****
--
-- BROADCAST CONTEXT RELEASE COMPLETE
--
-- *****

BroadcastContextReleaseComplete ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container      { { BroadcastContextReleaseCompleteIEs } },
  ...
}

BroadcastContextReleaseCompleteIEs FlAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-MBS-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-MBS-FlAP-ID          PRESENCE mandatory }|
  { ID id-CriticalityDiagnostics       CRITICALITY ignore  TYPE CriticalityDiagnostics       PRESENCE optional },
  ...
}

```



```

-- *****
--
-- BROADCAST CONTEXT RELEASE REQUEST ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- BROADCAST CONTEXT RELEASE REQUEST
--
-- *****

BroadcastContextReleaseRequest ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    {{ BroadcastContextReleaseRequestIEs}},
    ...
}

BroadcastContextReleaseRequestIEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject TYPE GNB-CU-MBS-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-MBS-FlAP-ID          CRITICALITY reject TYPE GNB-DU-MBS-FlAP-ID          PRESENCE mandatory }|
    { ID id-Cause                        CRITICALITY ignore TYPE Cause                        PRESENCE mandatory },
    ...
}

-- *****
--
-- BROADCAST CONTEXT MODIFICATION ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- BROADCAST CONTEXT MODIFICATION REQUEST
--
-- *****

BroadcastContextModificationRequest ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { BroadcastContextModificationRequestIEs} },
    ...
}

BroadcastContextModificationRequestIEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject TYPE GNB-CU-MBS-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-MBS-FlAP-ID          CRITICALITY reject TYPE GNB-DU-MBS-FlAP-ID          PRESENCE mandatory }|
    { ID id-MBS-ServiceArea             CRITICALITY reject TYPE MBS-ServiceArea             PRESENCE optional }|
    { ID id-MBS-CUtoDURRCInformation     CRITICALITY reject TYPE MBS-CUtoDURRCInformation     PRESENCE mandatory }|
    { ID id-BroadcastMRBs-ToBeSetupMod-List CRITICALITY reject TYPE BroadcastMRBs-ToBeSetupMod-List PRESENCE optional }|
    { ID id-BroadcastMRBs-ToBeModified-List CRITICALITY reject TYPE BroadcastMRBs-ToBeModified-List PRESENCE optional }|
    { ID id-BroadcastMRBs-ToBeReleased-List CRITICALITY reject TYPE BroadcastMRBs-ToBeReleased-List PRESENCE optional },
    ...
}

```

```
BroadcastMRBs-ToBeSetupMod-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { BroadcastMRBs-ToBeSetupMod-ItemIEs } }
BroadcastMRBs-ToBeModified-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { BroadcastMRBs-ToBeModified-ItemIEs } }
BroadcastMRBs-ToBeReleased-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { BroadcastMRBs-ToBeReleased-ItemIEs } }
```

```
BroadcastMRBs-ToBeSetupMod-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-BroadcastMRBs-ToBeSetupMod-Item      CRITICALITY reject  TYPE BroadcastMRBs-ToBeSetupMod-Item      PRESENCE mandatory},
  ...
}
```

```
BroadcastMRBs-ToBeModified-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-BroadcastMRBs-ToBeModified-Item      CRITICALITY reject  TYPE BroadcastMRBs-ToBeModified-Item      PRESENCE mandatory},
  ...
}
```

```
BroadcastMRBs-ToBeReleased-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-BroadcastMRBs-ToBeReleased-Item      CRITICALITY reject  TYPE BroadcastMRBs-ToBeReleased-Item      PRESENCE mandatory},
  ...
}
```

```
-- *****
--
-- BROADCAST CONTEXT MODIFICATION RESPONSE
--
-- *****
```

```
BroadcastContextModificationResponse ::= SEQUENCE {
  protocolIEs      ProtocolIE-Container      { { BroadcastContextModificationResponseIEs } },
  ...
}
```

```
BroadcastContextModificationResponseIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-MBS-FlAP-ID                    CRITICALITY reject  TYPE GNB-CU-MBS-FlAP-ID                    PRESENCE mandatory}|
  { ID id-gNB-DU-MBS-FlAP-ID                    CRITICALITY reject  TYPE GNB-DU-MBS-FlAP-ID                    PRESENCE mandatory}|

  { ID id-BroadcastMRBs-SetupMod-List           CRITICALITY reject  TYPE BroadcastMRBs-SetupMod-List           PRESENCE optional}|
  { ID id-BroadcastMRBs-FailedToBeSetupMod-List CRITICALITY ignore  TYPE BroadcastMRBs-FailedToBeSetupMod-List PRESENCE optional}|
  { ID id-BroadcastMRBs-Modified-List           CRITICALITY reject  TYPE BroadcastMRBs-Modified-List           PRESENCE optional}|
  { ID id-BroadcastMRBs-FailedToBeModified-List CRITICALITY ignore  TYPE BroadcastMRBs-FailedToBeModified-List PRESENCE optional}|
  { ID id-CriticalityDiagnostics                CRITICALITY ignore  TYPE CriticalityDiagnostics                PRESENCE optional},
  ...
}
```

```
BroadcastMRBs-SetupMod-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { BroadcastMRBs-SetupMod-ItemIEs } }
```

```
BroadcastMRBs-FailedToBeSetupMod-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { BroadcastMRBs-FailedToBeSetupMod-ItemIEs } }
```

```
BroadcastMRBs-Modified-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { BroadcastMRBs-Modified-ItemIEs } }
```

```
BroadcastMRBs-FailedToBeModified-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { BroadcastMRBs-FailedToBeModified-ItemIEs } }
```

```

BroadcastMRBs-SetupMod-ItemIEs FlAP-PROTOCOL-IES ::= {
  { ID id-BroadcastMRBs-SetupMod-Item          CRITICALITY reject TYPE BroadcastMRBs-SetupMod-Item          PRESENCE mandatory},
  ...
}

BroadcastMRBs-FailedToBeSetupMod-ItemIEs FlAP-PROTOCOL-IES ::= {
  { ID id-BroadcastMRBs-FailedToBeSetupMod-Item CRITICALITY ignore TYPE BroadcastMRBs-FailedToBeSetupMod-Item PRESENCE mandatory},
  ...
}

BroadcastMRBs-Modified-ItemIEs FlAP-PROTOCOL-IES ::= {
  { ID id-BroadcastMRBs-Modified-Item          CRITICALITY reject TYPE BroadcastMRBs-Modified-Item          PRESENCE mandatory},
  ...
}

BroadcastMRBs-FailedToBeModified-ItemIEs FlAP-PROTOCOL-IES ::= {
  { ID id-BroadcastMRBs-FailedToBeModified-Item CRITICALITY ignore TYPE BroadcastMRBs-FailedToBeModified-Item PRESENCE mandatory},
  ...
}

-- *****
--
-- BROADCAST CONTEXT MODIFICATION FAILURE
--
-- *****

BroadcastContextModificationFailure ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container  { { BroadcastContextModificationFailureIEs } },
  ...
}

BroadcastContextModificationFailureIEs FlAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject TYPE GNB-CU-MBS-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-MBS-FlAP-ID          CRITICALITY reject TYPE GNB-DU-MBS-FlAP-ID          PRESENCE mandatory }|
  { ID id-Cause                        CRITICALITY ignore TYPE Cause                        PRESENCE mandatory }|
  { ID id-CriticalityDiagnostics       CRITICALITY ignore TYPE CriticalityDiagnostics       PRESENCE optional },
  ...
}

-- *****
--
-- Multicast Group Paging PROCEDURE
--
-- *****

-- *****
--
-- Multicast Group Paging
--
-- *****

```

```

MulticastGroupPaging ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    {{ MulticastGroupPagingIEs}},
    ...
}

MulticastGroupPagingIEs FlAP-PROTOCOL-IES ::= {
    { ID id-MBS-Session-ID          CRITICALITY reject  TYPE MBS-Session-ID          PRESENCE mandatory } |
    { ID id-UEIdentity-List-For-Paging-List CRITICALITY ignore  TYPE UEIdentity-List-For-Paging-List PRESENCE optional } |
    { ID id-MC-PagingCell-List      CRITICALITY ignore  TYPE MC-PagingCell-list     PRESENCE optional } ,
    ...
}

UEIdentity-List-For-Paging-List ::= SEQUENCE (SIZE(1.. maxnoofUEIDforPaging)) OF ProtocolIE-SingleContainer { { UEIdentity-List-For-Paging-ItemIEs } }

UEIdentity-List-For-Paging-ItemIEs FlAP-PROTOCOL-IES ::= {
    { ID id-UEIdentity-List-For-Paging-Item CRITICALITY ignore  TYPE UEIdentity-List-For-Paging-Item          PRESENCE optional } ,
    ...
}

MC-PagingCell-list ::= SEQUENCE (SIZE(1.. maxnoofPagingCells)) OF ProtocolIE-SingleContainer { { MC-PagingCell-ItemIEs } }

MC-PagingCell-ItemIEs FlAP-PROTOCOL-IES ::= {
    { ID id-MC-PagingCell-Item          CRITICALITY ignore  TYPE MC-PagingCell-Item          PRESENCE mandatory} ,
    ...
}

-- *****
--
-- MULTICAST CONTEXT SETUP ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- MULTICAST CONTEXT SETUP REQUEST
--
-- *****

MulticastContextSetupRequest ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    {{ MulticastContextSetupRequestIEs}},
    ...
}

MulticastContextSetupRequestIEs FlAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-MBS-FlAP-ID          PRESENCE mandatory } |
    { ID id-MBS-Session-ID              CRITICALITY reject  TYPE MBS-Session-ID              PRESENCE mandatory } |
    { ID id-MBS-ServiceArea              CRITICALITY reject  TYPE MBS-ServiceArea              PRESENCE optional } |
    { ID id-SNSSAI                       CRITICALITY reject  TYPE SNSSAI                       PRESENCE mandatory } |
    { ID id-MulticastMRBs-ToBeSetup-List CRITICALITY reject  TYPE MulticastMRBs-ToBeSetup-List PRESENCE mandatory } ,
}

```

```

}
...
}
MulticastMRBs-ToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { MulticastMRBs-ToBeSetup-ItemIEs } }

MulticastMRBs-ToBeSetup-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-MulticastMRBs-ToBeSetup-Item    CRITICALITY reject  TYPE    MulticastMRBs-ToBeSetup-Item PRESENCE mandatory  },
  ...
}

-- *****
--
-- MULTICAST CONTEXT SETUP RESPONSE
--
-- *****

MulticastContextSetupResponse ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          {{ MulticastContextSetupResponseIEs}},
  ...
}

MulticastContextSetupResponseIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-MBS-Flap-ID              CRITICALITY reject  TYPE GNB-CU-MBS-Flap-ID              PRESENCE mandatory  }|
  { ID id-gNB-DU-MBS-Flap-ID              CRITICALITY reject  TYPE GNB-DU-MBS-Flap-ID              PRESENCE mandatory  }|
  { ID id-MulticastMRBs-Setup-List        CRITICALITY reject  TYPE MulticastMRBs-Setup-List        PRESENCE mandatory  }|
  { ID id-MulticastMRBs-FailedToBeSetup-List CRITICALITY ignore  TYPE MulticastMRBs-FailedToBeSetup-List PRESENCE optional  }|
  { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics          PRESENCE optional  },
  ...
}

MulticastMRBs-Setup-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { MulticastMRBs-Setup-ItemIEs } }

MulticastMRBs-FailedToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { MulticastMRBs-FailedToBeSetup-ItemIEs } }

MulticastMRBs-Setup-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-MulticastMRBs-Setup-Item        CRITICALITY reject  TYPE MulticastMRBs-Setup-Item        PRESENCE mandatory},
  ...
}

MulticastMRBs-FailedToBeSetup-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-MulticastMRBs-FailedToBeSetup-Item CRITICALITY ignore  TYPE MulticastMRBs-FailedToBeSetup-Item PRESENCE mandatory},
  ...
}

-- *****
--
-- MULTICAST CONTEXT SETUP FAILURE
--
-- *****

MulticastContextSetupFailure ::= SEQUENCE {

```

```

    protocolIEs          ProtocolIE-Container    {{ MulticastContextSetupFailureIEs}},
    ...
}

MulticastContextSetupFailureIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-MBS-FlAP-ID          PRESENCE mandatory  }|
  { ID id-gNB-DU-MBS-FlAP-ID          CRITICALITY ignore  TYPE GNB-DU-MBS-FlAP-ID          PRESENCE optional   }|
  { ID id-Cause                        CRITICALITY ignore  TYPE Cause                        PRESENCE mandatory  }|
  { ID id-CriticalityDiagnostics       CRITICALITY ignore  TYPE CriticalityDiagnostics       PRESENCE optional   },
  ...
}

-- *****
--
-- MULTICAST CONTEXT RELEASE ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- MULTICAST CONTEXT RELEASE COMMAND
--
-- *****

MulticastContextReleaseCommand ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container    {{ MulticastContextReleaseCommandIEs}},
  ...
}

MulticastContextReleaseCommandIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-MBS-FlAP-ID          PRESENCE mandatory  }|
  { ID id-gNB-DU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-MBS-FlAP-ID          PRESENCE mandatory  }|
  { ID id-Cause                        CRITICALITY ignore  TYPE Cause                        PRESENCE mandatory  },
  ...
}

-- *****
--
-- MULTICAST CONTEXT RELEASE COMPLETE
--
-- *****

MulticastContextReleaseComplete ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container    {{ MulticastContextReleaseCompleteIEs}},
  ...
}

MulticastContextReleaseCompleteIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-MBS-FlAP-ID          PRESENCE mandatory  }|
  { ID id-gNB-DU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-MBS-FlAP-ID          PRESENCE mandatory  }|
  { ID id-CriticalityDiagnostics       CRITICALITY ignore  TYPE CriticalityDiagnostics       PRESENCE optional   },

```

```

}
...
}

-- *****
--
-- MULTICAST CONTEXT RELEASE REQUEST ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- MULTICAST CONTEXT RELEASE REQUEST
--
-- *****

MulticastContextReleaseRequest ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    {{ MulticastContextReleaseRequestIEs}},
    ...
}

MulticastContextReleaseRequestIEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject TYPE GNB-CU-MBS-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-MBS-FlAP-ID          CRITICALITY reject TYPE GNB-DU-MBS-FlAP-ID          PRESENCE mandatory }|
    { ID id-Cause                        CRITICALITY ignore TYPE Cause                        PRESENCE mandatory },
    ...
}

-- *****
--
-- MULTICAST CONTEXT MODIFICATION ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- MULTICAST CONTEXT MODIFICATION REQUEST
--
-- *****

MulticastContextModificationRequest ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    {{ MulticastContextModificationRequestIEs}},
    ...
}

MulticastContextModificationRequestIEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject TYPE GNB-CU-MBS-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-MBS-FlAP-ID          CRITICALITY reject TYPE GNB-DU-MBS-FlAP-ID          PRESENCE mandatory }|
    { ID id-MBS-ServiceArea              CRITICALITY reject TYPE MBS-ServiceArea              PRESENCE optional }|
    { ID id-MulticastMRBs-ToBeSetupMod-List CRITICALITY reject TYPE MulticastMRBs-ToBeSetupMod-List PRESENCE optional }|
    { ID id-MulticastMRBs-ToBeModified-List CRITICALITY reject TYPE MulticastMRBs-ToBeModified-List PRESENCE optional }|
}

```

```

    { ID id-MulticastMRBs-ToBeReleased-List      CRITICALITY reject  TYPE MulticastMRBs-ToBeReleased-List  PRESENCE optional  },
    ...
}

MulticastMRBs-ToBeSetupMod-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { MulticastMRBs-ToBeSetupMod-ItemIEs } }
MulticastMRBs-ToBeSetupMod-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-MulticastMRBs-ToBeSetupMod-Item      CRITICALITY reject  TYPE MulticastMRBs-ToBeSetupMod-Item      PRESENCE mandatory},
    ...
}

MulticastMRBs-ToBeModified-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { MulticastMRBs-ToBeModified-ItemIEs } }
MulticastMRBs-ToBeModified-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-MulticastMRBs-ToBeModified-Item     CRITICALITY reject  TYPE MulticastMRBs-ToBeModified-Item     PRESENCE mandatory},
    ...
}

MulticastMRBs-ToBeReleased-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { MulticastMRBs-ToBeReleased-ItemIEs } }
MulticastMRBs-ToBeReleased-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-MulticastMRBs-ToBeReleased-Item    CRITICALITY reject  TYPE MulticastMRBs-ToBeReleased-Item    PRESENCE mandatory},
    ...
}

-- *****
--
-- MULTICAST CONTEXT MODIFICATION RESPONSE
--
-- *****

MulticastContextModificationResponse ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    {{ MulticastContextModificationResponseIEs}},
    ...
}

MulticastContextModificationResponseIEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-MBS-FlAP-ID                CRITICALITY reject  TYPE GNB-CU-MBS-FlAP-ID                PRESENCE mandatory }|
    { ID id-gNB-DU-MBS-FlAP-ID                CRITICALITY reject  TYPE GNB-DU-MBS-FlAP-ID                PRESENCE mandatory }|
    { ID id-MulticastMRBs-SetupMod-List       CRITICALITY reject  TYPE MulticastMRBs-SetupMod-List       PRESENCE optional   }|
    { ID id-MulticastMRBs-FailedToBeSetupMod-List CRITICALITY ignore  TYPE MulticastMRBs-FailedToBeSetupMod-List PRESENCE optional   }|
    { ID id-MulticastMRBs-Modified-List       CRITICALITY reject  TYPE MulticastMRBs-Modified-List       PRESENCE optional   }|
    { ID id-MulticastMRBs-FailedToBeModified-List CRITICALITY ignore  TYPE MulticastMRBs-FailedToBeModified-List PRESENCE optional   }|
    { ID id-CriticalityDiagnostics            CRITICALITY ignore  TYPE CriticalityDiagnostics            PRESENCE optional   },
    ...
}

MulticastMRBs-SetupMod-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { MulticastMRBs-SetupMod-ItemIEs } }
MulticastMRBs-SetupMod-ItemIEs FLAP-PROTOCOL-IES ::= {
    { ID id-MulticastMRBs-SetupMod-Item      CRITICALITY reject  TYPE MulticastMRBs-SetupMod-Item      PRESENCE mandatory},
    ...
}

MulticastMRBs-FailedToBeSetupMod-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { MulticastMRBs-FailedToBeSetupMod-ItemIEs } }

```



```

MulticastMRBs-FailedToBeSetupMod-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-MulticastMRBs-FailedToBeSetupMod-Item   CRITICALITY   ignore   TYPE MulticastMRBs-FailedToBeSetupMod-Item   PRESENCE mandatory},
  ...
}

MulticastMRBs-Modified-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { MulticastMRBs-Modified-ItemIEs } }
MulticastMRBs-Modified-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-MulticastMRBs-Modified-Item             CRITICALITY   reject   TYPE MulticastMRBs-Modified-Item             PRESENCE mandatory},
  ...
}

MulticastMRBs-FailedToBeModified-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { MulticastMRBs-FailedToBeModified-ItemIEs} }
MulticastMRBs-FailedToBeModified-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-MulticastMRBs-FailedToBeModified-Item   CRITICALITY   ignore   TYPE MulticastMRBs-FailedToBeModified-Item   PRESENCE mandatory},
  ...
}

-- *****
--
-- MULTICAST CONTEXT MODIFICATION FAILURE
--
-- *****

MulticastContextModificationFailure ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container   {{ MulticastContextModificationFailureIEs}},
  ...
}

MulticastContextModificationFailureIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-MBS-FlAP-ID           CRITICALITY reject   TYPE GNB-CU-MBS-FlAP-ID           PRESENCE mandatory }|
  { ID id-gNB-DU-MBS-FlAP-ID           CRITICALITY reject   TYPE GNB-DU-MBS-FlAP-ID           PRESENCE mandatory }|
  { ID id-Cause                         CRITICALITY ignore   TYPE Cause                         PRESENCE mandatory }|
  { ID id-CriticalityDiagnostics        CRITICALITY ignore   TYPE CriticalityDiagnostics        PRESENCE optional },
  ...
}

-- *****
--
-- MULTICAST DISTRIBUTION SETUP ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- MULTICAST DISTRIBUTION SETUP REQUEST
--
-- *****

MulticastDistributionSetupRequest ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container   {{ MulticastDistributionSetupRequestIEs}},

```

```

}
...
}
MulticastDistributionSetupRequestIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-MBS-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-MBS-FlAP-ID          PRESENCE mandatory }|
  { ID id-MBSMulticastFlUContextDescriptor CRITICALITY reject  TYPE MBSMulticastFlUContextDescriptor PRESENCE mandatory }|
  { ID id-MulticastFlUContext-ToBeSetup-List CRITICALITY reject  TYPE MulticastFlUContext-ToBeSetup-List PRESENCE mandatory },
  ...
}
MulticastFlUContext-ToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF
  ProtocolIE-SingleContainer { { MulticastFlUContext-ToBeSetup-ItemIEs } }
MulticastFlUContext-ToBeSetup-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-MulticastFlUContext-ToBeSetup-Item          CRITICALITY reject  TYPE MulticastFlUContext-ToBeSetup-Item          PRESENCE
mandatory},
  ...
}

-- *****
--
-- MULTICAST DISTRIBUTION SETUP RESPONSE
--
-- *****

MulticastDistributionSetupResponse ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          {{ MulticastDistributionSetupResponseIEs}},
  ...
}

MulticastDistributionSetupResponseIEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-MBS-FlAP-ID          PRESENCE mandatory}|
  { ID id-gNB-DU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-MBS-FlAP-ID          PRESENCE mandatory}|
  { ID id-MBSMulticastFlUContextDescriptor CRITICALITY reject  TYPE MBSMulticastFlUContextDescriptor PRESENCE mandatory}|
  { ID id-MulticastFlUContext-Setup-List CRITICALITY reject  TYPE MulticastFlUContext-Setup-List PRESENCE mandatory}|
  { ID id-MulticastFlUContext-FailedToBeSetup-List CRITICALITY ignore  TYPE MulticastFlUContext-FailedToBeSetup-List PRESENCE optional}|
  { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics          PRESENCE optional }|
  { ID id-MulticastFlUContextReferenceCU CRITICALITY reject  TYPE MulticastFlUContextReferenceCU PRESENCE mandatory},
  ...
}

MulticastFlUContext-Setup-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF ProtocolIE-SingleContainer { { MulticastFlUContext-Setup-ItemIEs } }
MulticastFlUContext-Setup-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-MulticastFlUContext-Setup-Item          CRITICALITY reject  TYPE MulticastFlUContext-Setup-Item          PRESENCE mandatory},
  ...
}

MulticastFlUContext-FailedToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF
  ProtocolIE-SingleContainer { { MulticastFlUContext-FailedToBeSetup-ItemIEs } }
MulticastFlUContext-FailedToBeSetup-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-MulticastFlUContext-FailedToBeSetup-Item CRITICALITY ignore  TYPE MulticastFlUContext-FailedToBeSetup-Item PRESENCE mandatory},
  ...
}

```

```

-- *****
--
-- MULTICAST DISTRIBUTION SETUP FAILURE
--
-- *****

MulticastDistributionSetupFailure ::= SEQUENCE {
    protocolIES          ProtocolIE-Container    {{ MulticastDistributionSetupFailureIEs}},
    ...
}

MulticastDistributionSetupFailureIEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-MBS-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-MBS-FlAP-ID          CRITICALITY ignore TYPE GNB-DU-MBS-FlAP-ID          PRESENCE optional }|
    { ID id-MBSMulticastFlUContextDescriptor CRITICALITY reject  TYPE MBSMulticastFlUContextDescriptor PRESENCE mandatory }|
    { ID id-Cause                        CRITICALITY ignore  TYPE Cause                        PRESENCE mandatory }|
    { ID id-CriticalityDiagnostics       CRITICALITY ignore  TYPE CriticalityDiagnostics       PRESENCE optional },
    ...
}

-- *****
--
-- MULTICAST DISTRIBUTION RELEASE ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- MULTICAST DISTRIBUTION RELEASE COMMAND
--
-- *****

MulticastDistributionReleaseCommand ::= SEQUENCE {
    protocolIES          ProtocolIE-Container    {{ MulticastDistributionReleaseCommandIEs}},
    ...
}

MulticastDistributionReleaseCommandIEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-MBS-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-MBS-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-MBS-FlAP-ID          PRESENCE mandatory }|
    { ID id-MBSMulticastFlUContextDescriptor CRITICALITY reject  TYPE MBSMulticastFlUContextDescriptor PRESENCE mandatory }|
    { ID id-Cause                        CRITICALITY ignore  TYPE Cause                        PRESENCE mandatory },
    ...
}

-- *****
--
-- MULTICAST DISTRIBUTION RELEASE COMPLETE
--

```

```

-- *****
MulticastDistributionReleaseComplete ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    {{ MulticastDistributionReleaseCompleteIEs}},
    ...
}

MulticastDistributionReleaseCompleteIEs FlAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-MBS-FlAP-ID          CRITICALITY reject TYPE GNB-CU-MBS-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-MBS-FlAP-ID          CRITICALITY reject TYPE GNB-DU-MBS-FlAP-ID          PRESENCE mandatory }|
    { ID id-MBSMulticastFlUContextDescriptor CRITICALITY reject TYPE MBSMulticastFlUContextDescriptor PRESENCE mandatory }|
    { ID id-CriticalityDiagnostics      CRITICALITY ignore TYPE CriticalityDiagnostics      PRESENCE optional },
    ...
}

-- *****
--
-- PDC MEASUREMENT PROCEDURE
--
-- *****
--
-- *****
-- PDC Measurement Initiation Request
--
-- *****

PDCMeasurementInitiationRequest ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    {{PDCMeasurementInitiationRequest-IEs}},
    ...
}

PDCMeasurementInitiationRequest-IEs FlAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-RAN-UE-PDC-MeasID          CRITICALITY reject TYPE RAN-UE-PDC-MeasID          PRESENCE mandatory }|
    { ID id-PDCReportType              CRITICALITY reject TYPE PDCReportType              PRESENCE mandatory }|
    { ID id-PDCMeasurementPeriodicity  CRITICALITY reject TYPE PDCMeasurementPeriodicity  PRESENCE conditional }|
-- The above IE shall be present if the PDCReportType IE is set to "periodic" --
    { ID id-PDCMeasurementQuantities   CRITICALITY reject TYPE PDCMeasurementQuantities   PRESENCE mandatory },
    ...
}

-- *****
--
-- PDC Measurement Initiation Response
--
-- *****

PDCMeasurementInitiationResponse ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    {{PDCMeasurementInitiationResponse-IEs}},
    ...
}

```

```

PDCMeasurementInitiationResponse-IEs FlAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-RAN-UE-PDC-MeasID          CRITICALITY reject TYPE RAN-UE-PDC-MeasID          PRESENCE mandatory }|
  { ID id-PDCMeasurementResult       CRITICALITY ignore TYPE PDCMeasurementResult       PRESENCE optional  }|
  { ID id-CriticalityDiagnostics     CRITICALITY ignore TYPE CriticalityDiagnostics     PRESENCE optional  },
  ...
}

-- *****
--
-- PDC Measurement Initiation Failure
--
-- *****

PDCMeasurementInitiationFailure ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          {{PDCMeasurementInitiationFailure-IEs}},
  ...
}

PDCMeasurementInitiationFailure-IEs FlAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-RAN-UE-PDC-MeasID          CRITICALITY ignore TYPE RAN-UE-PDC-MeasID          PRESENCE mandatory }|
  { ID id-Cause                      CRITICALITY ignore TYPE Cause                      PRESENCE mandatory }|
  { ID id-CriticalityDiagnostics     CRITICALITY ignore TYPE CriticalityDiagnostics     PRESENCE optional  },
  ...
}

-- *****
--
-- PDC MEASUREMENT REPORT PROCEDURE
--
-- *****
--
-- PDC Measurement Report
--
-- *****

PDCMeasurementReport ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          {{PDCMeasurementReport-IEs}},
  ...
}

PDCMeasurementReport-IEs FlAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-RAN-UE-PDC-MeasID          CRITICALITY reject TYPE RAN-UE-PDC-MeasID          PRESENCE mandatory }|
  { ID id-PDCMeasurementResult       CRITICALITY ignore TYPE PDCMeasurementResult       PRESENCE mandatory },
  ...
}

```

```

-- *****
--
-- PDC MEASUREMENT TERMINATION PROCEDURE
--
-- *****
--
-- *****
--
-- PDC Measurement Termination
--
-- *****

PDCMeasurementTerminationCommand ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      { { PDCMeasurementTerminationCommand-IEs } },
    ...
}

PDCMeasurementTerminationCommand-IEs FlAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-RAN-UE-PDC-MeasID          CRITICALITY ignore TYPE RAN-UE-PDC-MeasID          PRESENCE mandatory },
    ...
}

-- *****
--
-- PDC MEASUREMENT FAILURE INDICATION PROCEDURE
--
-- *****
--
-- *****
--
-- PDC Measurement Failure Indication
--
-- *****

PDCMeasurementFailureIndication ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      { { PDCMeasurementFailureIndication-IEs } },
    ...
}

PDCMeasurementFailureIndication-IEs FlAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
    { ID id-RAN-UE-PDC-MeasID          CRITICALITY ignore TYPE RAN-UE-PDC-MeasID          PRESENCE mandatory }|
    { ID id-Cause                      CRITICALITY ignore TYPE Cause                      PRESENCE mandatory },
    ...
}

-- *****

```

```

--
-- PRS CONFIGURATION REQUEST
--
-- *****

PRSConfigurationRequest ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container    {{PRSConfigurationRequest-IEs}},
    ...
}

PRSConfigurationRequest-IEs FLAP-PROTOCOL-IES ::= {
    { ID id-PRSConfigRequestType    CRITICALITY reject    TYPE PRSConfigRequestType        PRESENCE mandatory }|
    { ID id-PRSTRPLList              CRITICALITY ignore   TYPE PRSTRPLList                  PRESENCE mandatory },
    ...
}

-- *****
--
-- PRS CONFIGURATION RESPONSE
--
-- *****

PRSConfigurationResponse ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container    {{ PRSConfigurationResponse-IEs}},
    ...
}

PRSConfigurationResponse-IEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID            CRITICALITY reject    TYPE TransactionID                PRESENCE mandatory}|
    { ID id-PRSTransmissionTRPList   CRITICALITY ignore   TYPE PRSTransmissionTRPList       PRESENCE optional}|
    { ID id-CriticalityDiagnostics    CRITICALITY ignore   TYPE CriticalityDiagnostics       PRESENCE optional},
    ...
}

-- *****
--
-- PRS CONFIGURATION FAILURE
--
-- *****

PRSConfigurationFailure ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container    {{ PRSConfigurationFailure-IEs}},
    ...
}

PRSConfigurationFailure-IEs FLAP-PROTOCOL-IES ::= {
    { ID id-TransactionID            CRITICALITY reject    TYPE TransactionID                PRESENCE mandatory}|
    { ID id-Cause                    CRITICALITY ignore   TYPE Cause                        PRESENCE mandatory}|
    { ID id-CriticalityDiagnostics    CRITICALITY ignore   TYPE CriticalityDiagnostics       PRESENCE optional},
    ...
}

-- *****

```

```

--
-- MEASUREMENT PRECONFIGURATION PROCEDURE
--
-- *****
--
-- *****
--
-- Positioning Preconfiguration Required
--
-- *****

MeasurementPreconfigurationRequired ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container    {{ MeasurementPreconfigurationRequired-IEs}},
    ...
}

MeasurementPreconfigurationRequired-IEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID      CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID  PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID      CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID  PRESENCE mandatory }|
    { ID id-TRP-PRS-Info-List      CRITICALITY ignore  TYPE TRP-PRS-Info-List  PRESENCE mandatory },
    ...
}

-- *****
--
-- Positioning Preconfiguration Confirm
--
-- *****

MeasurementPreconfigurationConfirm ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container    { { MeasurementPreconfigurationConfirm-IEs} },
    ...
}

MeasurementPreconfigurationConfirm-IEs FLAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-UE-FlAP-ID      CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID      PRESENCE mandatory }|
    { ID id-gNB-DU-UE-FlAP-ID      CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID      PRESENCE mandatory }|
    { ID id-PosMeasGapPreConfigList CRITICALITY ignore  TYPE PosMeasGapPreConfigList PRESENCE optional }|
    { ID id-CriticalityDiagnostics CRITICALITY ignore  TYPE CriticalityDiagnostics PRESENCE optional },
    ...
}

-- *****
--
-- Positioning Preconfiguration Refuse
--
-- *****

MeasurementPreconfigurationRefuse ::= SEQUENCE {

```



```

    protocolIEs          ProtocolIE-Container      { { MeasurementPreconfigurationRefuse-IEs } },
    ...
}

MeasurementPreconfigurationRefuse-IEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-Cause                       CRITICALITY ignore TYPE Cause                       PRESENCE mandatory }|
  { ID id-CriticalityDiagnostics       CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
  ...
}

-- *****
--
-- MEASUREMENT ACTIVATION PROCEDURE
--
-- *****
--
-- *****
--
-- Measurement Activation
--
-- *****

MeasurementActivation ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container      { { MeasurementActivation-IEs } },
  ...
}

MeasurementActivation-IEs FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-ActivationRequestType      CRITICALITY reject TYPE ActivationRequestType      PRESENCE mandatory }|
  { ID id-PRS-Measurement-Info-List   CRITICALITY ignore TYPE PRS-Measurement-Info-List   PRESENCE optional},
  ...
}

-- *****
--
-- QOE INFORMATION TRANSFER
--
-- *****
--
-- *****
--
-- QoE Information Transfer
--
-- *****

QoEInformationTransfer ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container      {{QoEInformationTransfer-IEs}},
  ...
}

```

```

}

QoEInformationTransfer-IES FLAP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-CU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-gNB-DU-UE-FlAP-ID          CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID          PRESENCE mandatory }|
  { ID id-QoEInformation              CRITICALITY ignore  TYPE QoEInformation            PRESENCE optional },
  ...
}

-- *****
--
-- Positioning System information Delivery Command
--
-- *****

PosSystemInformationDeliveryCommand ::= SEQUENCE {
  protocolIES          ProtocolIE-Container      {{ PosSystemInformationDeliveryCommandIES}},
  ...
}

PosSystemInformationDeliveryCommandIES FLAP-PROTOCOL-IES ::= {
  { ID id-TransactionID              CRITICALITY reject  TYPE TransactionID            PRESENCE mandatory }|
  { ID id-NRCGI                      CRITICALITY reject  TYPE NRCGI                    PRESENCE mandatory }|
  { ID id-PosSitypeList              CRITICALITY reject  TYPE PosSitypeList            PRESENCE mandatory }|
  { ID id-ConfirmedUEID              CRITICALITY reject  TYPE GNB-DU-UE-FlAP-ID        PRESENCE mandatory },
  ...
}

END
-- ASN1STOP

```

9.4.5 Information Element Definitions

```

-- ASN1START
-- *****
--
-- Information Element Definitions
--
-- *****

FlAP-IEs {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
ngran-access (22) modules (3) flap (3) version1 (1) flap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS
  id-gNB-CUSystemInformation,
  id-HandoverPreparationInformation,

```

id-TAISliceSupportList,
id-RANAC,
id-BearerTypeChange,
id-Cell-Direction,
id-Cell-Type,
id-CellGroupConfig,
id-AvailablePLMNList,
id-PDUSessionID,
id-ULPDUSessionAggregateMaximumBitRate,
id-DC-Based-Duplication-Configured,
id-DC-Based-Duplication-Activation,
id-Duplication-Activation,
id-DLPCPSNLength,
id-ULPCPSNLength,
id-RLC-Status,
id-MeasurementTimingConfiguration,
id-DRB-Information,
id-QoSFlowMappingIndication,
id-ServingCellMO,
id-RLCMode,
id-ExtendedServedPLMNs-List,
id-ExtendedAvailablePLMN-List,
id-DRX-LongCycleStartOffset,
id-SelectedBandCombinationIndex,
id-SelectedFeatureSetEntryIndex,
id-Ph-InfoSCG,
id-latest-RRC-Version-Enhanced,
id-RequestedBandCombinationIndex,
id-RequestedFeatureSetEntryIndex,
id-DRX-Config,
id-UEAssistanceInformation,
id-PDCCH-BlindDetectionSCG,
id-Requested-PDCCH-BlindDetectionSCG,
id-BPLMN-ID-Info-List,
id-NotificationInformation,
id-TNLAssociationTransportLayerAddressgNBBDU,
id-portNumber,
id-AdditionalSIBMessageList,
id-IgnorePRACHConfiguration,
id-CG-Config,
id-Ph-InfoMCG,
id-AggressorNBSetID,
id-VictimNBSetID,
id-MeasGapSharingConfig,
id-systemInformationAreaID,
id-areaScope,
id-IntendedTDD-DL-ULConfig,
id-QoSMonitoringRequest,
id-BHInfo,
id-IAB-Info-IAB-DU,
id-IAB-Info-IAB-donor-CU,
id-IAB-Barred,
id-SIB12-message,
id-SIB13-message,

id-SIB14-message,
id-UEAssistanceInformationEUTRA,
id-SL-PHY-MAC-RLC-Config,
id-SL-ConfigDedicatedEUTRA-Info,
id-AlternativeQoSParaSetList,
id-CurrentQoSParaSetIndex,
id-CarrierList,
id-ULCarrierList,
id-FrequencyShift7p5khz,
id-SSB-PositionsInBurst,
id-NRPRACHConfig,
id-TDD-UL-DLConfigCommonNR,
id-CNPacketDelayBudgetDownlink,
id-CNPacketDelayBudgetUplink,
id-ExtendedPacketDelayBudget,
id-TSCTrafficCharacteristics,
id-AdditionalPDCPDuplicationTNL-List,
id-RLCDuplicationInformation,
id-AdditionalDuplicationIndication,
id-mdtConfiguration,
id-TraceCollectionEntityURI,
id-NID,
id-NPNSupportInfo,
id-NPNBroadcastInformation,
id-AvailableSNPN-ID-List,
id-SIB10-message,
id-RequestedP-MaxFR2,
id-DLCarrierList,
id-ExtendedTAISliceSupportList,
id-E-CID-MeasurementQuantities-Item,
id-ConfiguredTACIndication,
id-NR CGI,
id-SFN-Offset,
id-TransmissionStopIndicator,
id-SrsFrequency,
id-EstimatedArrivalProbability,
id-Supported-MBS-FSA-ID-List,
id-TRPType,
id-SRSSpatialRelationPerSRSResource,
id-MBS-Broadcast-NeighbourCellList,
id-PDCPTerminatingNodeDLTNLAddrInfo,
id-ENBDLTNLAddress,
id-PRS-Resource-ID,
id-LocationMeasurementInformation,
id-SliceRadioResourceStatus,
id-CompositeAvailableCapacity-SUL,
id-NR-U,
id-NR-U-Channel-List,
id-MIMOPRUsageInformation,
id-IngressNonFlterminatingTopologyIndicator,
id-NonFlterminatingTopologyIndicator,
id-EgressNonFlterminatingTopologyIndicator,
id-rBSetConfiguration,
id-frequency-Domain-HSNA-Configuration-List,

id-child-IAB-Nodes-NA-Resource-List,
id-Parent-IAB-Nodes-NA-Resource-Configuration-List,
id-uL-FreqInfo,
id-uL-Transmission-Bandwidth,
id-dL-FreqInfo,
id-dL-Transmission-Bandwidth,
id-uL-NR-Carrier-List,
id-dL-NR-Carrier-List,
id-nRFreqInfo,
id-transmission-Bandwidth,
id-nR-Carrier-List,
id-permutation,
id-M5ReportAmount,
id-M6ReportAmount,
id-M7ReportAmount,
id-SurvivalTime,
id-PDCMeasurementQuantities-Item,
id-OnDemandPRS,
id-AoA-SearchWindow,
id-ZoAInformation,
id-ARPLocationInfo,
id-ARP-ID,
id-MultipleULAoA,
id-UL-SRS-RSRPP,
id-SRSResourcetype,
id-ExtendedAdditionalPathList,
id-LoS-NLoSInformation,
id-NumberOfTRPRxTEG,
id-NumberOfTRPRxTxTEG,
id-TRPTxTEGAssociation,
id-TRPTEGInformation,
id-TRPRx-TEGInformation,
id-TRPBeamAntennaInformation,
id-Redcap-Bcast-Information,
id-NR-TADV,
id-SDT-MAC-PHY-CG-Config,
id-CG-SDTindicatorSetup,
id-CG-SDTindicatorMod,
id-SDTRLCBearerConfiguration,
id-SRBMappingInfo,
id-DRBMappingInfo,
id-LastUsedCellIndication,
id-SIB17-message,
id-MUSIM-GapConfig,
id-SIB20-message,
id-pathPower,
id-DU-RX-MT-RX-Extend,
id-DU-TX-MT-TX-Extend,
id-DU-RX-MT-TX-Extend,
id-DU-TX-MT-RX-Extend,
id-TAINSAGSupportList,
id-SL-RLC-ChannelToAddModList,
id-SIB15-message,
id-InterFrequencyConfig-NoGap,

id-MBSInterestIndication,
id-L571Info,
id-L1151Info,
id-SCS-480,
id-SCS-960,
id-SRSPortIndex,
id-PEISubgroupingSupportIndication,
id-NeedForGapsInfoNR,
id-NeedForGapNCSGInfoNR,
id-NeedForGapNCSGInfoEUTRA,
id-Source-MRB-ID,
id-RedCapIndication,
id-UL-GapFR2-Config,
id-ConfigRestrictInfoDAPS,
id-MulticastFLUContextReferenceCU,
id-TwoPHRModeMCG,
id-TwoPHRModeSCG,
maxNRARFCN,
maxnoofErrors,
maxnoofBPLMNs,
maxnoofBPLMNsNR,
maxnoofDLUPTNLInformation,
maxnoofNrCellBands,
maxnoofULUPTNLInformation,
maxnoofQoSFlows,
maxnoofSliceItems,
maxnoofSIBTypes,
maxnoofSITypes,
maxCelllineNB,
maxnoofExtendedBPLMNs,
maxnoofAdditionalSIBs,
maxnoofUACPLMNs,
maxnoofUACperPLMN,
maxCellingNBDU,
maxnoofTLAs,
maxnoofGPTLAs,
maxnoofslots,
maxnoofNonUPTrafficMappings,
maxnoofServingCells,
maxnoofServedCellsIAB,
maxnoofChildIABNodes,
maxnoofIABSTCInfo,
maxnoofSymbols,
maxnoofDUFSlots,
maxnoofHSNASlots,
maxnoofEgressLinks,
maxnoofMappingEntries,
maxnoofDSInfo,
maxnoofQoSParaSets,
maxnoofPC5QoSFlows,
maxnoofSSBAreas,
maxnoofNRSCSs,
maxnoofPhysicalResourceBlocks,
maxnoofPhysicalResourceBlocks-1,

maxnoofPRACHconfigs,
maxnoofRACHReports,
maxnoofRLFReports,
maxnoofAdditionalPDCPDuplicationTNL,
maxnoofRLCDuplicationState,
maxnoofCHOcells,
maxnoofMDTPLMNs,
maxnoofCAGsupported,
maxnoofNIDSsupported,
maxnoofExtSliceItems,
maxnoofPosMeas,
maxnoofTRPInfoTypes,
maxnoofSRSTriggerStates,
maxnoofSpatialRelations,
maxnoBcastCell,
maxnoofTRPs,
maxnoofAngleInfo,
maxnooflcs-gcs-translation,
maxnoofPath,
maxnoofMeasE-CID,
maxnoofSSBs,
maxnoSRS-ResourceSets,
maxnoSRS-ResourcePerSet,
maxnoSRS-Carriers,
maxnoSCSs,
maxnoSRS-Resources,
maxnoSRS-PosResources,
maxnoSRS-PosResourceSets,
maxnoSRS-PosResourcePerSet,
maxnoofPRS-ResourceSets,
maxnoofPRS-ResourcesPerSet,
maxNoOfMeasTRPs,
maxnoofPRSresourceSets,
maxnoofPRSresources,
maxnoofSuccessfulHOREports,
maxnoofNR-UChannelIDs,
maxServedCellforSON,
maxNeighbourCellforSON,
maxAffectedCells,
maxnoofMBSQoSFlows,
maxnoofMBSFSAs,
maxnoofMBSAreaSessionIDs,
maxnoofMBSServiceAreaInformation,
maxnoofTAIforMBS,
maxnoofCellsforMBS,
maxnoofIABCongInd,
maxnoofBHRLCChannels,
maxnoofTLAsIAB,
maxnoofRBsetsPerCell,
maxnoofRBsetsPerCell-1,
maxnoofNeighbourNodeCellsIAB,
maxnoofMeasPDC,
maxnoARPs,
maxnoofULAoAs,

```
maxNoPathExtended,  
maxNoTRPTEGs,  
maxFreqLayers,  
maxNumResourcesPerAngle,  
maxnoAzimuthAngles,  
maxnoElevationAngles,  
maxnoofPRSTRPs,  
maxnoofQoEInformation,  
maxnoofUuRLCChannels,  
maxnoofPC5RLCChannels,  
maxnoofSMBRValues,  
maxnoofMBSSessionsofUE,  
maxnoofSLdestinations,  
maxnoofNSAGs,  
maxnoofSDTBearers,  
maxnoofPosSITypes,  
maxnoofMRBs,  
maxNrofBWPs
```

FROM FlAP-Constants

```
Criticality,  
ProcedureCode,  
ProtocolIE-ID,  
TriggeringMessage
```

FROM FlAP-CommonDataTypes

```
ProtocolExtensionContainer{},  
FlAP-PROTOCOL-EXTENSION,  
ProtocolIE-SingleContainer{},  
FlAP-PROTOCOL-IES
```

FROM FlAP-Containers;

-- A

```
AbortTransmission ::= CHOICE {  
  sRSResourceSetID      SRSResourceSetID,  
  releaseALL            NULL,  
  choice-extension      ProtocolIE-SingleContainer { { AbortTransmission-ExtIEs } }  
}
```

```
AbortTransmission-ExtIEs FlAP-PROTOCOL-IES ::= {  
  ...  
}
```

```
AccessPointPosition ::= SEQUENCE {  
  latitudeSign          ENUMERATED {north, south},  
  latitude              INTEGER (0..8388607),  
  longitude             INTEGER (-8388608..8388607),  
  directionOfAltitude  ENUMERATED {height, depth},  
  altitude              INTEGER (0..32767),
```



```

    uncertaintySemi-major      INTEGER (0..127),
    uncertaintySemi-minor      INTEGER (0..127),
    orientationOfMajorAxis     INTEGER (0..179),
    uncertaintyAltitude        INTEGER (0..127),
    confidence                  INTEGER (0..100),
    iE-Extensions              ProtocolExtensionContainer { { AccessPointPosition-ExtIEs } } OPTIONAL
}

AccessPointPosition-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Activated-Cells-to-be-Updated-List ::= SEQUENCE (SIZE(1..maxnoofServedCellsIAB)) OF Activated-Cells-to-be-Updated-List-Item

Activated-Cells-to-be-Updated-List-Item ::= SEQUENCE{
    nRCGI                      NRCGI,
    iAB-DU-Cell-Resource-Configuration-Mode-Info  IAB-DU-Cell-Resource-Configuration-Mode-Info,
    iE-Extensions              ProtocolExtensionContainer { { Activated-Cells-to-be-Updated-List-Item-ExtIEs } } OPTIONAL
}

Activated-Cells-to-be-Updated-List-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

ActivationRequestType ::= ENUMERATED {activate, deactivate, ...}

ActiveULBWP ::= SEQUENCE {
    locationAndBandwidth      INTEGER (0..37949,...),
    subcarrierSpacing         ENUMERATED {kHz15, kHz30, kHz60, kHz120,...},
    cyclicPrefix              ENUMERATED {normal, extended},
    txDirectCurrentLocation   INTEGER (0..3301,...),
    shift7dot5kHz            ENUMERATED {true, ...} OPTIONAL,
    sRSConfig                 SRSSConfig,
    iE-Extensions            ProtocolExtensionContainer { { ActiveULBWP-ExtIEs } } OPTIONAL
}

ActiveULBWP-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

AdditionalDuplicationIndication ::= ENUMERATED {
    three,
    four,
    ...
}

AdditionalPath-List ::= SEQUENCE (SIZE(1..maxnoofPath)) OF AdditionalPath-Item

AdditionalPath-Item ::= SEQUENCE {
    relativePathDelay         RelativePathDelay,
    pathQuality               TRPMeasurementQuality OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { AdditionalPath-Item-ExtIEs } } OPTIONAL
}

```

```

AdditionalPath-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  { ID id-MultipleULAoA  CRITICALITY ignore EXTENSION MultipleULAoA      PRESENCE optional} |
  { ID id-pathPower      CRITICALITY ignore EXTENSION UL-SRS-RSRPP      PRESENCE optional},
  ...
}

ExtendedAdditionalPathList ::= SEQUENCE (SIZE (1.. maxNoPathExtended)) OF ExtendedAdditionalPathList-Item

ExtendedAdditionalPathList-Item ::= SEQUENCE {
  relativeTimeOfPath  RelativePathDelay,
  pathQuality          TRPMeasurementQuality  OPTIONAL,
  multipleULAoA       MultipleULAoA          OPTIONAL,
  pathPower           UL-SRS-RSRPP           OPTIONAL,
  iE-Extensions       ProtocolExtensionContainer { { ExtendedAdditionalPathList-Item-ExtIEs } } OPTIONAL,
  ...
}

ExtendedAdditionalPathList-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

AdditionalPDCPDuplicationTNL-List ::= SEQUENCE (SIZE(1..maxnoofAdditionalPDCPDuplicationTNL)) OF AdditionalPDCPDuplicationTNL-Item

AdditionalPDCPDuplicationTNL-Item ::=SEQUENCE {
  additionalPDCPDuplicationUPTNLInformation  UPTransportLayerInformation,
  iE-Extensions  ProtocolExtensionContainer { { AdditionalPDCPDuplicationTNL-ItemExtIEs } } OPTIONAL,
  ...
}

AdditionalPDCPDuplicationTNL-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  { ID id-BHInfo  CRITICALITY ignore EXTENSION BHInfo      PRESENCE optional  },
  ...
}

AdditionalSIBMessageList ::= SEQUENCE (SIZE(1..maxnoofAdditionalSIBs)) OF AdditionalSIBMessageList-Item

AdditionalSIBMessageList-Item ::= SEQUENCE {
  additionalSIB  OCTET STRING,
  iE-Extensions  ProtocolExtensionContainer { { AdditionalSIBMessageList-Item-ExtIEs } } OPTIONAL
}

AdditionalSIBMessageList-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

AdditionalRRMPriorityIndex ::= BIT STRING (SIZE(32))

AffectedCellsAndBeams-List ::= SEQUENCE (SIZE (1.. maxAffectedCells)) OF AffectedCellsAndBeams-Item

AffectedCellsAndBeams-Item ::= SEQUENCE {
  nRCGI  NRCGI,
  affectedSSB-List  AffectedSSB-List OPTIONAL,
}

```

```

    iE-Extensions      ProtocolExtensionContainer { { AffectedCellsAndBeams-Item-ExtIEs } } OPTIONAL,
    ...
}
AffectedCellsAndBeams-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

AffectedSSB-List ::= SEQUENCE (SIZE (1..maxnoofSSBAreas)) OF AffectedSSB-Item

AffectedSSB-Item ::= SEQUENCE {
    sSB-Index      INTEGER(0..63),
    iE-Extensions  ProtocolExtensionContainer { { AffectedSSB-Item-ExtIEs } } OPTIONAL,
    ...
}
AffectedSSB-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

AggressorCellList ::= SEQUENCE (SIZE(1..maxCellingNBDU)) OF AggressorCellList-Item

AggressorCellList-Item ::= SEQUENCE {
    aggressorCell-ID      NRCGI,
    iE-Extensions        ProtocolExtensionContainer { { AggressorCellList-Item-ExtIEs } }          OPTIONAL
}

AggressorCellList-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

AggressorGNBSetID ::= SEQUENCE {
    aggressorGNBSetID      GNBSetID,
    iE-Extensions          ProtocolExtensionContainer { { AggressorGNBSetID-ExtIEs } } OPTIONAL
}

AggressorGNBSetID-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

AllocationAndRetentionPriority ::= SEQUENCE {
    priorityLevel          PriorityLevel,
    pre-emptionCapability  Pre-emptionCapability,
    pre-emptionVulnerability Pre-emptionVulnerability,
    iE-Extensions          ProtocolExtensionContainer { {AllocationAndRetentionPriority-ExtIEs} } OPTIONAL,
    ...
}

AllocationAndRetentionPriority-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

AlternativeQoSParaSetList ::= SEQUENCE (SIZE(1..maxnoofQoSParaSets)) OF AlternativeQoSParaSetItem

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```

AlternativeQoSParaSetItem ::= SEQUENCE {
    alternativeQoSParaSetIndex      QoSParaSetIndex,
    guaranteedFlowBitRateDL         BitRate                OPTIONAL,
    guaranteedFlowBitRateUL         BitRate                OPTIONAL,
    packetDelayBudget               PacketDelayBudget    OPTIONAL,
    packetErrorRate                 PacketErrorRate      OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {AlternativeQoSParaSetItem-ExtIEs} } OPTIONAL,
    ...
}

AlternativeQoSParaSetItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

AngleMeasurementQuality ::= SEQUENCE {
    azimuthQuality    INTEGER(0..255),
    zenithQuality     INTEGER(0..255) OPTIONAL,
    resolution        ENUMERATED{deg0dot1,...},
    iE-Extensions     ProtocolExtensionContainer { { AngleMeasurementQuality-ExtIEs } } OPTIONAL
}

AngleMeasurementQuality-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

AperiodicSRSResourceTriggerList ::= SEQUENCE (SIZE(1..maxnoofSRSTriggerStates)) OF AperiodicSRSResourceTrigger

AperiodicSRSResourceTrigger ::= INTEGER (1..3)

Associated-SCell-Item ::= SEQUENCE {
    sCell-ID          NRCGI,
    iE-Extensions     ProtocolExtensionContainer { { Associated-SCell-ItemExtIEs } } OPTIONAL
}

Associated-SCell-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

AvailablePLMNList ::= SEQUENCE (SIZE(1..maxnoofBPLMNs)) OF AvailablePLMNList-Item

AvailablePLMNList-Item ::= SEQUENCE {
    pLMNIdentity      PLMN-Identity,
    iE-Extensions     ProtocolExtensionContainer { { AvailablePLMNList-Item-ExtIEs } } OPTIONAL
}

AvailablePLMNList-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

AvailableSNPN-ID-List ::= SEQUENCE (SIZE(1..maxnoofNIDsupported)) OF AvailableSNPN-ID-List-Item

AvailableSNPN-ID-List-Item ::= SEQUENCE {

```

```

    pLMN-Identity          PLMN-Identity,
    availableNIDList       BroadcastNIDList,
    iE-Extensions          ProtocolExtensionContainer { { AvailableSNPN-ID-List-ItemExtIEs } } OPTIONAL,
    ...
}

AvailableSNPN-ID-List-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

AveragingWindow ::= INTEGER (0..4095, ...)

AreaScope ::= ENUMERATED {true, ...}

AoA-AssistanceInfo ::= SEQUENCE {
    angleMeasurement      AngleMeasurementType,
    LCS-to-GCS-Translation LCS-to-GCS-Translation OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { { AoA-AssistanceInfo-ExtIEs } } OPTIONAL,
    ...
}

AoA-AssistanceInfo-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

AngleMeasurementType ::= CHOICE {
    expected-ULAoA      Expected-UL-AoA,
    expected-ZoA        Expected-ZoA-only,
    choice-extension    ProtocolIE-SingleContainer { { AngleMeasurementType-ExtIEs } }
}

AngleMeasurementType-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

AppLayerBufferLevelList ::= OCTET STRING

ARP-ID ::= INTEGER (1..16, ...)

ARPLocationInformation ::= SEQUENCE (SIZE (1..maxnoARPs)) OF ARPLocationInformation-Item

ARPLocationInformation-Item ::= SEQUENCE {
    aRP-ID              ARP-ID,
    aRPLocationType     ARPLocationType,
    iE-Extensions       ProtocolExtensionContainer { { ARPLocationInformation-ExtIEs } } OPTIONAL,
    ...
}

ARPLocationInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

ARPLocationType ::= CHOICE {
    aRPPositionRelativeGeodetic      RelativeGeodeticLocation,

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    aRPPositionRelativeCartesian      RelativeCartesianLocation,
    choice-extension                    ProtocolIE-SingleContainer { { ARPLocationType-ExtIEs } }
}

ARPLocationType-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

-- B

BAP-Header-Rewriting-Added-List-Item ::= SEQUENCE {
    ingressBAPRoutingID      BAPRoutingID,
    egressBAPRoutingID      BAPRoutingID,
    nonFlterminatingTopologyIndicator NonFlterminatingTopologyIndicator OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { BAP-Header-Rewriting-Added-List-Item-ExtIEs } } OPTIONAL
}

BAP-Header-Rewriting-Added-List-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

BAP-Header-Rewriting-Removed-List-Item ::= SEQUENCE {
    ingressBAPRoutingID      BAPRoutingID,
    iE-Extensions            ProtocolExtensionContainer { { BAP-Header-Rewriting-Removed-List-Item-ExtIEs } } OPTIONAL
}

BAP-Header-Rewriting-Removed-List-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

BandwidthSRS ::= CHOICE {
    fR1                        FR1-Bandwidth,
    fR2                        FR2-Bandwidth,
    choice-extension           ProtocolIE-SingleContainer {{ BandwidthSRS-ExtIEs }}
}

BandwidthSRS-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

BAPAddress ::= BIT STRING (SIZE(10))

BAPCtrlPDUChannel ::= ENUMERATED {true, ...}

BAPPlayerBHRLCchannelMappingInfo ::= SEQUENCE {
    bAPPlayerBHRLCchannelMappingInfoToAdd      BAPPlayerBHRLCchannelMappingInfoList OPTIONAL,
    bAPPlayerBHRLCchannelMappingInfoToRemove   MappingInformationToRemove OPTIONAL,
    iE-Extensions                               ProtocolExtensionContainer { { BAPPlayerBHRLCchannelMappingInfo-ExtIEs } } OPTIONAL,
    ...
}

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```

BAPlayerBHRLCchannelMappingInfo-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

BAPlayerBHRLCchannelMappingInfoList ::= SEQUENCE (SIZE(1..maxnoofMappingEntries)) OF BAPlayerBHRLCchannelMappingInfo-Item

BAPlayerBHRLCchannelMappingInfo-Item ::= SEQUENCE {
  mappingInformationIndex      MappingInformationIndex,
  priorHopBAPAddress           BAPAddress      OPTIONAL,
  ingressbHRLCChannelID       BHRLCChannelID  OPTIONAL,
  nextHopBAPAddress           BAPAddress      OPTIONAL,
  egressbHRLCChannelID        BHRLCChannelID  OPTIONAL,
  iE-Extensions               ProtocolExtensionContainer { { BAPlayerBHRLCchannelMappingInfo-ItemExtIEs } } OPTIONAL,
  ...
}

BAPlayerBHRLCchannelMappingInfo-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  { ID id-IngressNonFlterminatingTopologyIndicator  CRITICALITY ignore  EXTENSION IngressNonFlterminatingTopologyIndicator  PRESENCE optional} |
  { ID id-EgressNonFlterminatingTopologyIndicator  CRITICALITY ignore  EXTENSION EgressNonFlterminatingTopologyIndicator  PRESENCE optional},
  ...
}

BAPPathID ::= BIT STRING (SIZE(10))

BAPRoutingID ::= SEQUENCE {
  bAPAddress      BAPAddress,
  bAPPathID       BAPPathID,
  iE-Extensions  ProtocolExtensionContainer { { BAPRoutingIDExtIEs } }  OPTIONAL
}

BAPRoutingIDExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

BCBearerContextFlU-TNLInfo ::= CHOICE {
  locationindependent      MBSFlUInformation,
  locationdependent        LocationDependentMBSFlUInformation,
  choice-extension         ProtocolIE-SingleContainer { {BCBearerContextFlU-TNLInfo-ExtIEs} }
}

BCBearerContextFlU-TNLInfo-ExtIEs FLAP-PROTOCOL-IES ::= {
  ...
}

BitRate ::= INTEGER (0..4000000000000, ...)

BearerTypeChange ::= ENUMERATED {true, ...}

BHRLCChannelID ::= BIT STRING (SIZE(16))

BHChannels-FailedToBeModified-Item ::= SEQUENCE {
  bHRLCChannelID      BHRLCChannelID,
  cause               Cause      OPTIONAL,
}

```

```

    iE-Extensions    ProtocolExtensionContainer { { BHChannels-FailedToBeModified-ItemExtIEs } } OPTIONAL
  }
BHChannels-FailedToBeModified-ItemExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
  ...
}
BHChannels-FailedToBeSetup-Item ::= SEQUENCE {
  bHRLCChannelID    BHRLCChannelID,
  cause    Cause    OPTIONAL,
  iE-Extensions    ProtocolExtensionContainer { { BHChannels-FailedToBeSetup-ItemExtIEs } }    OPTIONAL
}
BHChannels-FailedToBeSetup-ItemExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
  ...
}
BHChannels-FailedToBeSetupMod-Item ::= SEQUENCE {
  bHRLCChannelID    BHRLCChannelID,
  cause    Cause    OPTIONAL ,
  iE-Extensions    ProtocolExtensionContainer { { BHChannels-FailedToBeSetupMod-ItemExtIEs } } OPTIONAL
}
BHChannels-FailedToBeSetupMod-ItemExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
  ...
}
BHChannels-Modified-Item ::= SEQUENCE {
  bHRLCChannelID    BHRLCChannelID,
  iE-Extensions    ProtocolExtensionContainer { { BHChannels-Modified-ItemExtIEs } }    OPTIONAL
}
BHChannels-Modified-ItemExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
  ...
}
BHChannels-Required-ToBeReleased-Item ::= SEQUENCE {
  bHRLCChannelID    BHRLCChannelID,
  iE-Extensions    ProtocolExtensionContainer { { BHChannels-Required-ToBeReleased-ItemExtIEs } }    OPTIONAL
}
BHChannels-Required-ToBeReleased-ItemExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
  ...
}
BHChannels-Setup-Item ::= SEQUENCE {
  bHRLCChannelID    BHRLCChannelID,
  iE-Extensions    ProtocolExtensionContainer { { BHChannels-Setup-ItemExtIEs } }    OPTIONAL
}
BHChannels-Setup-ItemExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

```



```

BHChannels-SetupMod-Item ::= SEQUENCE {
    bHRLCChannelID          BHRLCChannelID,
    iE-Extensions          ProtocolExtensionContainer { { BHChannels-SetupMod-ItemExtIEs } } OPTIONAL
}

BHChannels-SetupMod-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

BHChannels-ToBeModified-Item ::= SEQUENCE {
    bHRLCChannelID          BHRLCChannelID,
    bHQoSInformation        BHQoSInformation,
    rLCmode                 RLCMode OPTIONAL,
    bAPCtrlPDUChannel       BAPCtrlPDUChannel OPTIONAL,
    trafficMappingInfo      TrafficMappingInfo OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { { BHChannels-ToBeModified-ItemExtIEs } } OPTIONAL
}

BHChannels-ToBeModified-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

BHChannels-ToBeReleased-Item ::= SEQUENCE {
    bHRLCChannelID          BHRLCChannelID,
    iE-Extensions          ProtocolExtensionContainer { { BHChannels-ToBeReleased-ItemExtIEs } } OPTIONAL
}

BHChannels-ToBeReleased-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

BHChannels-ToBeSetup-Item ::= SEQUENCE {
    bHRLCChannelID          BHRLCChannelID,
    bHQoSInformation        BHQoSInformation,
    rLCmode                 RLCMode,
    bAPCtrlPDUChannel       BAPCtrlPDUChannel OPTIONAL,
    trafficMappingInfo      TrafficMappingInfo OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { { BHChannels-ToBeSetup-ItemExtIEs } } OPTIONAL
}

BHChannels-ToBeSetup-ItemExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

BHChannels-ToBeSetupMod-Item ::= SEQUENCE {
    bHRLCChannelID          BHRLCChannelID,
    bHQoSInformation        BHQoSInformation,
    rLCmode                 RLCMode,
    bAPCtrlPDUChannel       BAPCtrlPDUChannel OPTIONAL,
    trafficMappingInfo      TrafficMappingInfo OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { { BHChannels-ToBeSetupMod-ItemExtIEs } } OPTIONAL
}

BHChannels-ToBeSetupMod-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {

```

```

}
...
}
BHInfo ::= SEQUENCE {
    bAProutingID          BAProutingID    OPTIONAL,
    egressBHRLCCHList    EgressBHRLCCHList OPTIONAL,
    iE-Extensions        ProtocolExtensionContainer { { BHInfo-ExtIEs } } OPTIONAL
}

BHInfo-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-NonFlterminatingTopologyIndicator    CRITICALITY ignore    EXTENSION NonFlterminatingTopologyIndicator    PRESENCE optional },
    ...
}

BHQoSInformation ::= CHOICE {
    bHRLCCHQoS          QoSFlowLevelQoSParameters,
    eUTRANBHRLCCHQoS    EUTRANQoS,
    cPTrafficType       CPtraffictype,
    choice-extension    ProtocolIE-SingleContainer { { BHQoSInformation-ExtIEs } }
}

BHQoSInformation-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

BHRLCCHList ::= SEQUENCE (SIZE(1..maxnoofBHRLCChannels)) OF BHRLCCHItem

BHRLCCHItem ::= SEQUENCE {
    bHRLCChannelID      BHRLCChannelID,
    iE-Extensions       ProtocolExtensionContainer {{BHRLCCHItemExtIEs }}    OPTIONAL
}

BHRLCCHItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

BH-Routing-Information-Added-List-Item ::= SEQUENCE {
    bAProutingID        BAProutingID,
    nextHopBAPAddress   BAPAddress,
    iE-Extensions       ProtocolExtensionContainer { { BH-Routing-Information-Added-List-ItemExtIEs } }    OPTIONAL
}

BH-Routing-Information-Added-List-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    {ID id-NonFlterminatingTopologyIndicator    CRITICALITY ignore    EXTENSION    NonFlterminatingTopologyIndicator    PRESENCE optional},
    ...
}

BH-Routing-Information-Removed-List-Item ::= SEQUENCE {
    bAProutingID        BAProutingID,
    iE-Extensions       ProtocolExtensionContainer { { BH-Routing-Information-Removed-List-ItemExtIEs } }    OPTIONAL
}

BH-Routing-Information-Removed-List-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

}

BPLMN-ID-Info-List ::= SEQUENCE (SIZE(1..maxnoofBPLMNsNR)) OF BPLMN-ID-Info-Item

BPLMN-ID-Info-Item ::= SEQUENCE {
    pLMN-Identity-List AvailablePLMNList,
    extended-PLMN-Identity-List ExtendedAvailablePLMN-List OPTIONAL,
    fiveGS-TAC FiveGS-TAC OPTIONAL,
    nr-cell-ID NRCellIdentity,
    ranac RANAC OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { BPLMN-ID-Info-ItemExtIEs } } OPTIONAL,
    ...
}

BPLMN-ID-Info-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-ConfiguredTACIndication CRITICALITY ignore EXTENSION ConfiguredTACIndication PRESENCE optional } |
    { ID id-NPNBroadcastInformation CRITICALITY reject EXTENSION NPNBroadcastInformation PRESENCE optional },
    ...
}

ServedPLMNs-List ::= SEQUENCE (SIZE(1..maxnoofBPLMNs)) OF ServedPLMNs-Item

ServedPLMNs-Item ::= SEQUENCE {
    pLMN-Identity PLMN-Identity,
    iE-Extensions ProtocolExtensionContainer { { ServedPLMNs-ItemExtIEs } } OPTIONAL,
    ...
}

ServedPLMNs-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-TAISliceSupportList CRITICALITY ignore EXTENSION SliceSupportList PRESENCE optional } |
    { ID id-NPNSupportInfo CRITICALITY reject EXTENSION NPNSupportInfo PRESENCE optional } |
    { ID id-ExtendedTAISliceSupportList CRITICALITY reject EXTENSION ExtendedSliceSupportList PRESENCE optional } |
    { ID id-TAINSAGSupportList CRITICALITY ignore EXTENSION NSAGSupportList PRESENCE optional },
    ...
}

BroadcastCAGList ::= SEQUENCE (SIZE(1..maxnoofCAGsupported)) OF CAGID

BroadcastMRBs-FailedToBeModified-Item ::= SEQUENCE {
    mRB-ID MRB-ID,
    cause Cause OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { BroadcastMRBs-FailedtoBeModified-Item-ExtIEs } } OPTIONAL,
    ...
}

BroadcastMRBs-FailedtoBeModified-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

BroadcastMRBs-FailedToBeSetup-Item ::= SEQUENCE {
    mRB-ID MRB-ID,
    cause Cause OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { BroadcastMRBs-FailedToBeSetup-Item-ExtIEs } } OPTIONAL,

```

```

}
...
BroadcastMRBs-FailedToBeSetup-Item-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
}
...
BroadcastMRBs-FailedToBeSetupMod-Item ::= SEQUENCE {
  mRB-ID MRB-ID,
  cause Cause OPTIONAL,
  iE-Extensions ProtocolExtensionContainer { { BroadcastMRBs-FailedToBeSetupMod-Item-ExtIEs } } OPTIONAL,
  ...
}

BroadcastMRBs-FailedToBeSetupMod-Item-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
}
...

BroadcastMRBs-Modified-Item ::= SEQUENCE {
  mRB-ID MRB-ID,
  bcBearerCtxtFlU-TNLInfoatDU BCBearerContextFlU-TNLInfo OPTIONAL,
  iE-Extensions ProtocolExtensionContainer { { BroadcastMRBs-Modified-Item-ExtIEs } } OPTIONAL,
  ...
}

BroadcastMRBs-Modified-Item-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
}
...

BroadcastMRBs-Setup-Item ::= SEQUENCE {
  mRB-ID MRB-ID,
  bcBearerCtxtFlU-TNLInfoatDU BCBearerContextFlU-TNLInfo,
  iE-Extensions ProtocolExtensionContainer { { BroadcastMRBs-Setup-Item-ExtIEs } } OPTIONAL,
  ...
}

BroadcastMRBs-Setup-Item-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
}
...

BroadcastMRBs-SetupMod-Item ::= SEQUENCE {
  mRB-ID MRB-ID,
  bcBearerCtxtFlU-TNLInfoatDU BCBearerContextFlU-TNLInfo,
  iE-Extensions ProtocolExtensionContainer { { BroadcastMRBs-SetupMod-Item-ExtIEs } } OPTIONAL,
  ...
}

BroadcastMRBs-SetupMod-Item-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
}
...

BroadcastMRBs-ToBeModified-Item ::= SEQUENCE {
  mRB-ID MRB-ID,
  mRB-QoSInformation QoSFlowLevelQoSParameters OPTIONAL,

```

```

    mBS-Flows-Mapped-To-MRB-List      MBS-Flows-Mapped-To-MRB-List      OPTIONAL,
    bcBearerCtxtFlU-TNLInfoatCU      BCBearerContextFlU-TNLInfo      OPTIONAL,
    iE-Extensions                      ProtocolExtensionContainer { { BroadcastMRBs-ToBeModified-Item-ExtIEs } } OPTIONAL,
    ...
}

BroadcastMRBs-ToBeModified-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

BroadcastMRBs-ToBeReleased-Item ::= SEQUENCE {
    mRB-ID                            MRB-ID,
    iE-Extensions                      ProtocolExtensionContainer { { BroadcastMRBs-ToBeReleased-ItemExtIEs } } OPTIONAL,
    ...
}

BroadcastMRBs-ToBeReleased-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

BroadcastMRBs-ToBeSetup-Item ::= SEQUENCE {
    mRB-ID                            MRB-ID,
    mRB-QoSInformation                 QoSFlowLevelQoSParameters,
    mBS-Flows-Mapped-To-MRB-List      MBS-Flows-Mapped-To-MRB-List,
    bcBearerCtxtFlU-TNLInfoatCU      BCBearerContextFlU-TNLInfo ,
    iE-Extensions                      ProtocolExtensionContainer { { BroadcastMRBs-ToBeSetup-Item-ExtIEs } },
    ...
}

BroadcastMRBs-ToBeSetup-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

BroadcastMRBs-ToBeSetupMod-Item ::= SEQUENCE {
    mRB-ID                            MRB-ID,
    mRB-QoSInformation                 QoSFlowLevelQoSParameters,
    mBS-Flows-Mapped-To-MRB-List      MBS-Flows-Mapped-To-MRB-List,
    bcBearerCtxtFlU-TNLInfoatCU      BCBearerContextFlU-TNLInfo,
    iE-Extensions                      ProtocolExtensionContainer { { BroadcastMRBs-ToBeSetupMod-Item-ExtIEs } },
    ...
}

BroadcastMRBs-ToBeSetupMod-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

BroadcastNIDList ::= SEQUENCE (SIZE(1..maxnoofNIDssupported)) OF NID

BroadcastSNPN-ID-List ::= SEQUENCE (SIZE(1..maxnoofNIDssupported)) OF BroadcastSNPN-ID-List-Item

BroadcastSNPN-ID-List-Item ::= SEQUENCE {
    pLMN-Identity                     PLMN-Identity,
    broadcastNIDList                   BroadcastNIDList,
}

```

```

    iE-Extensions          ProtocolExtensionContainer { { BroadcastSNPN-ID-List-ItemExtIEs } } OPTIONAL,
    ...
}

BroadcastSNPN-ID-List-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

BroadcastPNI-NPN-ID-List ::= SEQUENCE (SIZE(1..maxnoofCAGsupported)) OF BroadcastPNI-NPN-ID-List-Item

BroadcastPNI-NPN-ID-List-Item ::= SEQUENCE {
    pLMN-Identity          PLMN-Identity,
    broadcastCAGList       BroadcastCAGList,
    iE-Extensions          ProtocolExtensionContainer { { BroadcastPNI-NPN-ID-List-ItemExtIEs } } OPTIONAL,
    ...
}

BroadcastPNI-NPN-ID-List-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

BroadcastAreaScope ::= CHOICE {
    completeSuccess        NULL,
    partialSuccess         PartialSuccessCell,
    choice-extension       ProtocolIE-SingleContainer { { BroadcastAreaScope-ExtIEs } }
}

BroadcastAreaScope-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

BroadcastCellList ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF Broadcast-Cell-List-Item
Broadcast-Cell-List-Item ::= SEQUENCE {
    cellID                 NRCGI,
    iE-Extensions          ProtocolExtensionContainer { { Broadcast-Cell-List-ItemExtIEs } } OPTIONAL,
    ...
}

Broadcast-Cell-List-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

BufferSizeThresh ::= INTEGER(0..16777215)

BurstArrivalTime ::= OCTET STRING

-- C
CAGID ::= BIT STRING (SIZE(32))

Cancel-all-Warning-Messages-Indicator ::= ENUMERATED {true, ...}

Candidate-SpCell-Item ::= SEQUENCE {
    candidate-SpCell-ID     NRCGI ,
    iE-Extensions          ProtocolExtensionContainer { { Candidate-SpCell-ItemExtIEs } } OPTIONAL,

```

```

}
...
Candidate-SpCell-ItemExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
}
...
CapacityValue ::= SEQUENCE {
  capacityValue                INTEGER (0..100),
  sSBAreaCapacityValueList     SSBAreaCapacityValueList      OPTIONAL,
  iE-Extensions                ProtocolExtensionContainer { { CapacityValue-ExtIEs } } OPTIONAL
}

CapacityValue-ExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
}
...

Cause ::= CHOICE {
  radioNetwork              CauseRadioNetwork,
  transport                 CauseTransport,
  protocol                  CauseProtocol,
  misc                     CauseMisc,
  choice-extension         ProtocolIE-SingleContainer { { Cause-ExtIEs } }
}

Cause-ExtIEs FLAP-PROTOCOL-IES ::= {
}
...

CauseMisc ::= ENUMERATED {
  control-processing-overload,
  not-enough-user-plane-processing-resources,
  hardware-failure,
  om-intervention,
  unspecified,
  ...
}

CauseProtocol ::= ENUMERATED {
  transfer-syntax-error,
  abstract-syntax-error-reject,
  abstract-syntax-error-ignore-and-notify,
  message-not-compatible-with-receiver-state,
  semantic-error,
  abstract-syntax-error-falsely-constructed-message,
  unspecified,
  ...
}

CauseRadioNetwork ::= ENUMERATED {
  unspecified,
  r1-failure-rlc,
  unknown-or-already-allocated-gnb-cu-ue-flap-id,
  unknown-or-already-allocated-gnb-du-ue-flap-id,

```

```
unknown-or-inconsistent-pair-of-ue-flap-id,
interaction-with-other-procedure,
not-supported-qci-Value,
action-desirable-for-radio-reasons,
no-radio-resources-available,
procedure-cancelled,
normal-release,
...,
cell-not-available,
rl-failure-others,
ue-rejection,
resources-not-available-for-the-slice,
amf-initiated-abnormal-release,
release-due-to-pre-emption,
plmn-not-served-by-the-gNB-CU,
multiple-drb-id-instances,
unknown-drb-id,
multiple-bh-rlc-ch-id-instances,
unknown-bh-rlc-ch-id,
cho-cpc-resources-tobechanged,
nPN-not-supported,
nPN-access-denied,
gNB-CU-Cell-Capacity-Exceeded,
report-characteristics-empty,
existing-measurement-ID,
measurement-temporarily-not-available,
measurement-not-supported-for-the-object,
unknown-bh-address,
unknown-bap-routing-id,
insufficient-ue-capabilities,
scg-activation-deactivation-failure,
scg-deactivation-failure-due-to-data-transmission,
requested-item-not-supported-on-time,
unknown-or-already-allocated-gNB-CU-MBS-FlAP-ID,
unknown-or-already-allocated-gNB-DU-MBS-FlAP-ID,
unknown-or-inconsistent-pair-of-MBS-FlAP-ID,
unknown-or-inconsistent-MRB-ID,
tat-sdt-expiry
}

CauseTransport ::= ENUMERATED {
    unspecified,
    transport-resource-unavailable,
    ...,
    unknown-TNL-address-for-IAB,
    unknown-UP-TNL-information-for-IAB
}

CellGroupConfig ::= OCTET STRING

CellCapacityClassValue ::= INTEGER (1..100,...)

Cell-Direction ::= ENUMERATED {dl-only, ul-only}
```



```

CellMeasurementResultList ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF CellMeasurementResultItem

CellMeasurementResultItem ::= SEQUENCE {
    cellID                NRCGI,
    radioResourceStatus   RadioResourceStatus           OPTIONAL,
    compositeAvailableCapacityGroup CompositeAvailableCapacityGroup OPTIONAL,
    sliceAvailableCapacity SliceAvailableCapacity       OPTIONAL,
    numberOfActiveUEs     NumberOfActiveUEs             OPTIONAL,
    iE-Extensions         ProtocolExtensionContainer { { CellMeasurementResultItem-ExtIEs } } OPTIONAL
}

CellMeasurementResultItem-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-NR-U-Channel-List  CRITICALITY ignore  EXTENSION NR-U-Channel-List PRESENCE optional },
    ...
}

Cell-Portion-ID ::= INTEGER (0..4095,...)

CellsForSON-List ::= SEQUENCE (SIZE(1.. maxServedCellforSON)) OF CellsForSON-Item

CellsForSON-Item ::= SEQUENCE {
    nRCGI                NRCGI,
    neighbourNR-CellsForSON-List NeighbourNR-CellsForSON-List           OPTIONAL,
    iE-Extensions         ProtocolExtensionContainer { { CellsForSON-Item-ExtIEs } } OPTIONAL,
    ...
}

CellsForSON-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Cells-Failed-to-be-Activated-List-Item ::= SEQUENCE {
    nRCGI                NRCGI,
    cause                Cause,
    iE-Extensions         ProtocolExtensionContainer { { Cells-Failed-to-be-Activated-List-ItemExtIEs } } OPTIONAL,
    ...
}

Cells-Failed-to-be-Activated-List-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Cells-Status-Item ::= SEQUENCE {
    nRCGI                NRCGI,
    service-status       Service-Status,
    iE-Extensions         ProtocolExtensionContainer { { Cells-Status-ItemExtIEs } } OPTIONAL,
    ...
}

Cells-Status-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

Cells-To-Be-Broadcast-Item ::= SEQUENCE {
    nRCGI          NRCGI,
    iE-Extensions  ProtocolExtensionContainer { { Cells-To-Be-Broadcast-ItemExtIEs } } OPTIONAL,
    ...
}

Cells-To-Be-Broadcast-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Cells-Broadcast-Completed-Item ::= SEQUENCE {
    nRCGI          NRCGI,
    iE-Extensions  ProtocolExtensionContainer { { Cells-Broadcast-Completed-ItemExtIEs } } OPTIONAL,
    ...
}

Cells-Broadcast-Completed-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Broadcast-To-Be-Cancelled-Item ::= SEQUENCE {
    nRCGI          NRCGI,
    iE-Extensions  ProtocolExtensionContainer { { Broadcast-To-Be-Cancelled-ItemExtIEs } } OPTIONAL,
    ...
}

Broadcast-To-Be-Cancelled-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Cells-Broadcast-Cancelled-Item ::= SEQUENCE {
    nRCGI          NRCGI,
    numberOfBroadcasts  NumberOfBroadcasts,
    iE-Extensions  ProtocolExtensionContainer { { Cells-Broadcast-Cancelled-ItemExtIEs } } OPTIONAL,
    ...
}

Cells-Broadcast-Cancelled-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Cells-to-be-Activated-List-Item ::= SEQUENCE {
    nRCGI          NRCGI,
    nRPCI          NRPCI          OPTIONAL,
    iE-Extensions  ProtocolExtensionContainer { { Cells-to-be-Activated-List-ItemExtIEs } } OPTIONAL,
    ...
}

Cells-to-be-Activated-List-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-gNB-CUSystemInformation          CRITICALITY reject  EXTENSION GNB-CUSystemInformation          PRESENCE optional } |
    { ID id-AvailablePLMNList                CRITICALITY ignore    EXTENSION AvailablePLMNList                PRESENCE optional } |
    { ID id-ExtendedAvailablePLMN-List       CRITICALITY ignore    EXTENSION ExtendedAvailablePLMN-List       PRESENCE optional } |
    { ID id-IAB-Info-IAB-donor-CU           CRITICALITY ignore    EXTENSION IAB-Info-IAB-donor-CU           PRESENCE optional } |
}

```

```

    { ID id-AvailableSNPN-ID-List          CRITICALITY ignore EXTENSION AvailableSNPN-ID-List          PRESENCE optional } |
    { ID id-MBS-Broadcast-NeighbourCellList CRITICALITY ignore EXTENSION MBS-Broadcast-NeighbourCellList PRESENCE optional },
    ...
}

Cells-to-be-Deactivated-List-Item ::= SEQUENCE {
    nRCGI          NRCGI          ,
    iE-Extensions          ProtocolExtensionContainer { { Cells-to-be-Deactivated-List-ItemExtIEs } } OPTIONAL,
    ...
}

Cells-to-be-Deactivated-List-ItemExtIEs          FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Cells-to-be-Barred-Item ::= SEQUENCE {
    nRCGI          NRCGI          ,
    cellBarred          CellBarred,
    iE-Extensions          ProtocolExtensionContainer { { Cells-to-be-Barred-Item-ExtIEs } } OPTIONAL
}

Cells-to-be-Barred-Item-ExtIEs          FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-IAB-Barred          CRITICALITY ignore EXTENSION IAB-Barred          PRESENCE optional },
    ...
}

CellBarred ::= ENUMERATED {barred, not-barred, ...}

CellSize ::= ENUMERATED {verysmall, small, medium, large, ...}

CellToReportList ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF CellToReportItem

CellToReportItem ::= SEQUENCE {
    cellID          NRCGI,
    sSBToReportList          SSBToReportList          OPTIONAL,
    sliceToReportList          SliceToReportList          OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { { CellToReportItem-ExtIEs} } OPTIONAL
}

CellToReportItem-ExtIEs          FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

CellType ::= SEQUENCE {
    cellSize          CellSize,
    iE-Extensions          ProtocolExtensionContainer { {CellType-ExtIEs} }          OPTIONAL,
    ...
}

CellType-ExtIEs          FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

CellULConfigured ::= ENUMERATED {none, ul, sul, ul-and-sul, ...}

CG-SDTQueryIndication ::= ENUMERATED {true, ...}

CG-SDTKeptIndicator ::= ENUMERATED {true, ...}

CG-SDTindicatorSetup ::= ENUMERATED {true, ...}

CG-SDTindicatorMod ::= ENUMERATED {true, false, ...}

CG-SDTSessionInfo ::= SEQUENCE {
    gNB-CU-UE-FlAP-ID          GNB-CU-UE-FlAP-ID,
    gNB-DU-UE-FlAP-ID          GNB-DU-UE-FlAP-ID,
    iE-Extensions              ProtocolExtensionContainer {{CG-SDTSessionInfo-ExtIEs}} OPTIONAL,
    ...
}

CG-SDTSessionInfo-ExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

ChannelOccupancyTimePercentage ::= INTEGER (0..100,...)

Child-IAB-Nodes-NA-Resource-List ::= SEQUENCE (SIZE(1..maxnoofChildIABNodes)) OF Child-IAB-Nodes-NA-Resource-List-Item

Child-IAB-Nodes-NA-Resource-List-Item ::= SEQUENCE {
    gNB-CU-UE-FlAP-ID          GNB-CU-UE-FlAP-ID,
    gNB-DU-UE-FlAP-ID          GNB-DU-UE-FlAP-ID,
    nA-Resource-Configuration-List  NA-Resource-Configuration-List OPTIONAL,
    iE-Extensions              ProtocolExtensionContainer { { Child-IAB-Nodes-NA-Resource-List-Item-ExtIEs } } OPTIONAL
}

Child-IAB-Nodes-NA-Resource-List-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Child-Node-Cells-List ::= SEQUENCE (SIZE(1..maxnoofChildIABNodes)) OF Child-Node-Cells-List-Item

Child-Node-Cells-List-Item ::= SEQUENCE{
    nRCGI                      NRCGI,
    iAB-DU-Cell-Resource-Configuration-Mode-Info  IAB-DU-Cell-Resource-Configuration-Mode-Info OPTIONAL,
    iAB-STC-Info                IAB-STC-Info OPTIONAL,
    rACH-Config-Common          RACH-Config-Common OPTIONAL,
    rACH-Config-Common-IAB      RACH-Config-Common-IAB OPTIONAL,
    cSI-RS-Configuration        OCTET STRING OPTIONAL,
    sR-Configuration            OCTET STRING OPTIONAL,
    pDCCH-ConfigSIB1           OCTET STRING OPTIONAL,
    sCS-Common                  OCTET STRING OPTIONAL,
    multiplexingInfo            MultiplexingInfo OPTIONAL,
    iE-Extensions              ProtocolExtensionContainer {{Child-Node-Cells-List-Item-ExtIEs}} OPTIONAL
}

```

```

Child-Node-Cells-List-Item-ExtIEs  FlAP-PROTOCOL-EXTENSION ::= {
  ...
}

Child-Nodes-List ::= SEQUENCE (SIZE(1..maxnoofChildIABNodes)) OF Child-Nodes-List-Item

Child-Nodes-List-Item ::= SEQUENCE{
  gNB-CU-UE-FlAP-ID  GNB-CU-UE-FlAP-ID,
  gNB-DU-UE-FlAP-ID  GNB-DU-UE-FlAP-ID,
  child-Node-Cells-List  Child-Node-Cells-List  OPTIONAL,
  iE-Extensions          ProtocolExtensionContainer {{Child-Nodes-List-Item-ExtIEs}}  OPTIONAL
}

Child-Nodes-List-Item-ExtIEs  FlAP-PROTOCOL-EXTENSION ::= {
  ...
}

CHOTrigger-InterDU ::= ENUMERATED {
  cho-initiation,
  cho-replace,
  ...
}

CHOTrigger-IntraDU ::= ENUMERATED {
  cho-initiation,
  cho-replace,
  cho-cancel,
  ...
}

CNSubgroupID ::= INTEGER (0..7, ...)

CNUEPagingIdentity ::= CHOICE {
  fiveG-S-TMSI          BIT STRING (SIZE(48)),
  choice-extension      ProtocolIE-SingleContainer { { CNUEPagingIdentity-ExtIEs } }
}

CNUEPagingIdentity-ExtIEs FlAP-PROTOCOL-IES ::= {
  ...
}

CompositeAvailableCapacityGroup ::= SEQUENCE {
  compositeAvailableCapacityDownlink  CompositeAvailableCapacity,
  compositeAvailableCapacityUplink    CompositeAvailableCapacity,
  iE-Extensions  ProtocolExtensionContainer { { CompositeAvailableCapacityGroup-ExtIEs } } OPTIONAL
}

CompositeAvailableCapacityGroup-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
  { ID id-CompositeAvailableCapacity-SUL  CRITICALITY ignore  EXTENSION CompositeAvailableCapacity  PRESENCE optional },
  ...
}

CompositeAvailableCapacity ::= SEQUENCE {

```

```

    cellCapacityClassValue CellCapacityClassValue    OPTIONAL,
    capacityValue          CapacityValue,
    iE-Extensions          ProtocolExtensionContainer { { CompositeAvailableCapacity-ExtIEs } } OPTIONAL
}

CompositeAvailableCapacity-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

CHO-Probability ::= INTEGER (1..100)

ConditionalInterDUMobilityInformation ::= SEQUENCE {
    cho-trigger          CHOtrigger-InterDU,
    targetgNB-DUUEFLAPID GNB-DU-UE-FLAP-ID          OPTIONAL
    -- This IE shall be present if the cho-trigger IE is present and set to "cho-replace" --,
    iE-Extensions          ProtocolExtensionContainer { { ConditionalInterDUMobilityInformation-ExtIEs } } OPTIONAL,
    ...
}

ConditionalInterDUMobilityInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-EstimatedArrivalProbability    CRITICALITY ignore    EXTENSION CHO-Probability    PRESENCE optional },
    ...
}

ConditionalIntraDUMobilityInformation ::= SEQUENCE {
    cho-trigger          CHOtrigger-IntraDU,
    targetCellsTocancel TargetCellList          OPTIONAL,
    -- This IE may be present if the cho-trigger IE is present and set to "cho-cancel"
    iE-Extensions          ProtocolExtensionContainer { { ConditionalIntraDUMobilityInformation-ExtIEs } } OPTIONAL,
    ...
}

ConditionalIntraDUMobilityInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-EstimatedArrivalProbability    CRITICALITY ignore    EXTENSION CHO-Probability    PRESENCE optional },
    ...
}

ConfigRestrictInfoDAPS ::= OCTET STRING

ConfiguredTACIndication ::= ENUMERATED {
    true,
    ...
}

CoordinateID ::= INTEGER (0..511, ...)

Coverage-Modification-Notification ::= SEQUENCE {
    coverage-Modification-List Coverage-Modification-List,
    iE-Extensions          ProtocolExtensionContainer { { Coverage-Modification-Notification-ExtIEs } } OPTIONAL,
    ...
}

Coverage-Modification-Notification-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {

```

```

}
...
Coverage-Modification-List ::= SEQUENCE (SIZE (1..maxCellingNBDU)) OF Coverage-Modification-Item

Coverage-Modification-Item ::= SEQUENCE {
    nRCGI                NRCGI,
    cellCoverageState    CellCoverageState,
    sSBCoverageModificationList    SSBCoverageModification-List OPTIONAL,
    iE-Extension         ProtocolExtensionContainer { { Coverage-Modification-Item-ExtIEs} } OPTIONAL,
    ...
}

Coverage-Modification-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

CellCoverageState ::= INTEGER (0..63, ...)

CCO-Assistance-Information ::= SEQUENCE {
    cCO-issue-detection    CCO-issue-detection    OPTIONAL,
    affectedCellsAndBeams-List    AffectedCellsAndBeams-List    OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { { CCO-Assistance-Information-ExtIEs} } OPTIONAL,
    ...
}

CCO-Assistance-Information-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

CCO-issue-detection ::= ENUMERATED {
    coverage,
    cell-edge-capacity,
    ...}

CP-TransportLayerAddress ::= CHOICE {
    endpoint-IP-address    TransportLayerAddress,
    endpoint-IP-address-and-port    Endpoint-IP-address-and-port,
    choice-extension       ProtocolIE-SingleContainer { { CP-TransportLayerAddress-ExtIEs } }
}

CP-TransportLayerAddress-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

CPACMCGInformation ::= SEQUENCE {
    cpac-trigger           CPAC-trigger,
    pscellid              NRCGI,
    iE-Extensions         ProtocolExtensionContainer { { CPACMCGInformation-ExtIEs} } OPTIONAL,
    ...
}

```

```

CPACMCGInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

CPAC-trigger ::= ENUMERATED {
  cpac-preparation,
  cpac-executed,
  ...
}

CPTrafficType ::= INTEGER (1..3,...)

CriticalityDiagnostics ::= SEQUENCE {
  procedureCode          ProcedureCode          OPTIONAL,
  triggeringMessage      TriggeringMessage      OPTIONAL,
  procedureCriticality   Criticality             OPTIONAL,
  transactionID          TransactionID          OPTIONAL,
  iEsCriticalityDiagnostics CriticalityDiagnostics-IE-List OPTIONAL,
  iE-Extensions          ProtocolExtensionContainer {{CriticalityDiagnostics-ExtIEs}} OPTIONAL,
  ...
}

CriticalityDiagnostics-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

CriticalityDiagnostics-IE-List ::= SEQUENCE (SIZE (1.. maxnoofErrors)) OF CriticalityDiagnostics-IE-Item

CriticalityDiagnostics-IE-Item ::= SEQUENCE {
  iECriticality          Criticality,
  iE-ID                  ProtocolIE-ID,
  typeOfError            TypeOfError,
  iE-Extensions          ProtocolExtensionContainer {{CriticalityDiagnostics-IE-Item-ExtIEs}} OPTIONAL,
  ...
}

CriticalityDiagnostics-IE-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

C-RNTI ::= INTEGER (0..65535, ...)

CUDURadioInformationType ::= CHOICE {
  rIM                    CUDURIMInformation,
  choice-extension       ProtocolIE-SingleContainer { { CUDURadioInformationType-ExtIEs} }
}

CUDURadioInformationType-ExtIEs FLAP-PROTOCOL-IES ::= {
  ...
}

CUDURIMInformation ::= SEQUENCE {
  victimgNBSetID        GNBSSetID,

```



```

    rIMRSDetectionStatus    RIMRSDetectionStatus,
    iE-Extensions           ProtocolExtensionContainer { { CUDURIMInformation-ExtIEs} } OPTIONAL
}

CUDURIMInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

CUtoDURRCInformation ::= SEQUENCE {
    cG-ConfigInfo           CG-ConfigInfo                OPTIONAL,
    uE-CapabilityRAT-ContainerList UE-CapabilityRAT-ContainerList    OPTIONAL,
    measConfig              MeasConfig                    OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { { CUtoDURRCInformation-ExtIEs} } OPTIONAL,
    ...
}

CUtoDURRCInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-HandoverPreparationInformation CRITICALITY ignore EXTENSION HandoverPreparationInformation PRESENCE optional } |
    { ID id-CellGroupConfig                CRITICALITY ignore EXTENSION CellGroupConfig                PRESENCE optional } |
    { ID id-MeasurementTimingConfiguration CRITICALITY ignore EXTENSION MeasurementTimingConfiguration PRESENCE optional } |
    { ID id-UEAssistanceInformation         CRITICALITY ignore EXTENSION UEAssistanceInformation         PRESENCE optional } |
    { ID id-CG-Config                       CRITICALITY ignore EXTENSION CG-Config                       PRESENCE optional } |
    { ID id-UEAssistanceInformationEUTRA    CRITICALITY ignore EXTENSION UEAssistanceInformationEUTRA    PRESENCE optional } |
    { ID id-LocationMeasurementInformation  CRITICALITY ignore EXTENSION LocationMeasurementInformation  PRESENCE optional } |
    { ID id-MUSIM-GapConfig                 CRITICALITY reject EXTENSION MUSIM-GapConfig                 PRESENCE optional } |
    { ID id-SDT-MAC-PHY-CG-Config          CRITICALITY ignore EXTENSION SDT-MAC-PHY-CG-Config          PRESENCE optional } |
    { ID id-MBSInterestIndication          CRITICALITY ignore EXTENSION MBSInterestIndication          PRESENCE optional } |
    { ID id-NeedForGapsInfoNR              CRITICALITY ignore EXTENSION NeedForGapsInfoNR              PRESENCE optional } |
    { ID id-NeedForGapNCSGInfoNR           CRITICALITY ignore EXTENSION NeedForGapNCSGInfoNR           PRESENCE optional } |
    { ID id-NeedForGapNCSGInfoEUTRA        CRITICALITY ignore EXTENSION NeedForGapNCSGInfoEUTRA        PRESENCE optional } |
    { ID id-ConfigRestrictInfoDAPS         CRITICALITY ignore EXTENSION ConfigRestrictInfoDAPS         PRESENCE optional } |
    ...
}

-- D

DAPS-HO-Status ::= ENUMERATED{initiation,... }

DCBasedDuplicationConfigured ::= ENUMERATED{true,..., false}

Dedicated-SIDelivery-NeededUE-Item ::= SEQUENCE {
    gNB-CU-UE-FlAP-ID        GNB-CU-UE-FlAP-ID,
    nRCGI                    NRCGI,
    iE-Extensions           ProtocolExtensionContainer { { DedicatedSIDeliveryNeededUE-Item-ExtIEs} } OPTIONAL,
    ...
}

DedicatedSIDeliveryNeededUE-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-PRS ::= SEQUENCE {
    prsid                    INTEGER (0..255),

```

```

    dl-PRSResourceSetID      PRS-Resource-Set-ID,
    dl-PRSResourceID        PRS-Resource-ID OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {DL-PRS-ExtIEs} } OPTIONAL
}

DL-PRS-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-PRSMutingPattern ::= CHOICE {
    two          BIT STRING (SIZE(2)),
    four        BIT STRING (SIZE(4)),
    six         BIT STRING (SIZE(6)),
    eight       BIT STRING (SIZE(8)),
    sixteen     BIT STRING (SIZE(16)),
    thirty-two  BIT STRING (SIZE(32)),
    choice-extension          ProtocolIE-SingleContainer { { DL-PRSMutingPattern-ExtIEs } }
}

DL-PRSMutingPattern-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

DLPRSResourceCoordinates ::= SEQUENCE {
    listOfDL-PRSResourceSetARP      SEQUENCE (SIZE(1.. maxnoofPRS-ResourceSets)) OF DLPRSResourceSetARP,
    iE-Extensions                   ProtocolExtensionContainer { { DLPRSResourceCoordinates-ExtIEs } } OPTIONAL
}

DLPRSResourceCoordinates-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

DLPRSResourceSetARP ::= SEQUENCE {
    dl-PRSResourceSetID      PRS-Resource-Set-ID,
    dl-PRSResourceSetARPLocation DL-PRSResourceSetARPLocation,
    listOfDL-PRSResourceARP  SEQUENCE (SIZE(1.. maxnoofPRS-ResourcesPerSet)) OF DLPRSResourceARP,
    iE-Extensions           ProtocolExtensionContainer { { DLPRSResourceSetARP-ExtIEs } } OPTIONAL
}

DLPRSResourceSetARP-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-PRSResourceSetARPLocation ::= CHOICE {
    relativeGeodeticLocation      RelativeGeodeticLocation,
    relativeCartesianLocation     RelativeCartesianLocation,
    choice-Extension              ProtocolIE-SingleContainer { { DL-PRSResourceSetARPLocation-ExtIEs } }
}

DL-PRSResourceSetARPLocation-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

```

```

DLPRSResourceARP ::= SEQUENCE {
    dl-PRSResourceID          PRS-Resource-ID,
    dl-PRSResourceARPLocation DL-PRSResourceARPLocation,
    iE-Extensions             ProtocolExtensionContainer { { DLPRSResourceARP-ExtIEs } } OPTIONAL
}

DLPRSResourceARP-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-PRSResourceARPLocation ::= CHOICE {
    relativeGeodeticLocation      RelativeGeodeticLocation,
    relativeCartesianLocation     RelativeCartesianLocation,
    choice-Extension              ProtocolIE-SingleContainer { { DL-PRSResourceARPLocation-ExtIEs } }
}

DL-PRSResourceARPLocation-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

DL-UP-TNL-Address-to-Update-List-Item ::= SEQUENCE {
    oldIPAddress                TransportLayerAddress,
    newIPAddress                TransportLayerAddress,
    iE-Extensions              ProtocolExtensionContainer { { DL-UP-TNL-Address-to-Update-List-ItemExtIEs } } OPTIONAL,
    ...
}

DL-UP-TNL-Address-to-Update-List-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

DLUPTNLInformation-ToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofDLUPTNLInformation)) OF DLUPTNLInformation-ToBeSetup-Item

DLUPTNLInformation-ToBeSetup-Item ::= SEQUENCE {
    dLUPTNLInformation          UPTransportLayerInformation,
    iE-Extensions              ProtocolExtensionContainer { { DLUPTNLInformation-ToBeSetup-ItemExtIEs } } OPTIONAL,
    ...
}

DLUPTNLInformation-ToBeSetup-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Activity-Item ::= SEQUENCE {
    drbID                      DRBID,
    drb-Activity                DRB-Activity OPTIONAL,
    iE-Extensions              ProtocolExtensionContainer { { DRB-Activity-ItemExtIEs } } OPTIONAL,
    ...
}

DRB-Activity-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

DRB-Activity ::= ENUMERATED {active, not-active}

DRBID ::= INTEGER (1..32, ...)

DRBs-FailedToBeModified-Item ::= SEQUENCE {
    dRBID      DRBID
    ,
    cause      Cause      OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { DRBs-FailedToBeModified-ItemExtIEs } } OPTIONAL,
    ...
}

DRBs-FailedToBeModified-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

DRBs-FailedToBeSetup-Item ::= SEQUENCE {
    dRBID      DRBID,
    cause      Cause      OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { DRBs-FailedToBeSetup-ItemExtIEs } } OPTIONAL,
    ...
}

DRBs-FailedToBeSetup-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

DRBs-FailedToBeSetupMod-Item ::= SEQUENCE {
    dRBID      DRBID
    ,
    cause      Cause      OPTIONAL
    ,
    iE-Extensions ProtocolExtensionContainer { { DRBs-FailedToBeSetupMod-ItemExtIEs } } OPTIONAL,
    ...
}

DRBs-FailedToBeSetupMod-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Information ::= SEQUENCE {
    dRB-QoS      QoSFlowLevelQoSParameters,
    sNSSAI      SNSSAI,
    notificationControl NotificationControl      OPTIONAL,
    flows-Mapped-To-DRB-List Flows-Mapped-To-DRB-List,
    iE-Extensions ProtocolExtensionContainer { { DRB-Information-ItemExtIEs } } OPTIONAL
}

DRB-Information-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

DRBs-Modified-Item ::= SEQUENCE {
    dRBID      DRBID,
    lCID      LCID      OPTIONAL,

```

```

    dLUPTNLInformation-ToBeSetup-List      DLUPTNLInformation-ToBeSetup-List,
    iE-Extensions      ProtocolExtensionContainer { { DRBs-Modified-ItemExtIEs } } OPTIONAL,
    ...
}

DRBs-Modified-ItemExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-RLC-Status          CRITICALITY ignore      EXTENSION RLC-Status          PRESENCE optional }|
    { ID id-AdditionalPDCPDuplicationTNL-List      CRITICALITY ignore      EXTENSION AdditionalPDCPDuplicationTNL-List      PRESENCE optional }|
    { ID id-CurrentQoSParaSetIndex      CRITICALITY ignore      EXTENSION QoSParaSetIndex      PRESENCE optional },
    ...
}

DRBs-ModifiedConf-Item ::= SEQUENCE {
    dRBID          DRBID,
    uLUPTNLInformation-ToBeSetup-List      ULUPTNLInformation-ToBeSetup-List      ,
    iE-Extensions      ProtocolExtensionContainer { { DRBs-ModifiedConf-ItemExtIEs } } OPTIONAL,
    ...
}

DRBs-ModifiedConf-ItemExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-AdditionalPDCPDuplicationTNL-List      CRITICALITY ignore      EXTENSION AdditionalPDCPDuplicationTNL-List      PRESENCE optional },
    ...
}

DRB-Notify-Item ::= SEQUENCE {
    dRBID          DRBID,
    notification-Cause      Notification-Cause,
    iE-Extensions      ProtocolExtensionContainer { { DRB-Notify-ItemExtIEs } }      OPTIONAL,
    ...
}

DRB-Notify-ItemExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-CurrentQoSParaSetIndex      CRITICALITY ignore      EXTENSION QoSParaSetNotifyIndex      PRESENCE optional },
    ...
}

DRBs-Required-ToBeModified-Item ::= SEQUENCE {
    dRBID          DRBID,
    dLUPTNLInformation-ToBeSetup-List      DLUPTNLInformation-ToBeSetup-List      ,
    iE-Extensions      ProtocolExtensionContainer { { DRBs-Required-ToBeModified-ItemExtIEs } }      OPTIONAL,
    ...
}

DRBs-Required-ToBeModified-ItemExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-RLC-Status          CRITICALITY ignore      EXTENSION RLC-Status          PRESENCE optional }|
    { ID id-AdditionalPDCPDuplicationTNL-List      CRITICALITY ignore      EXTENSION AdditionalPDCPDuplicationTNL-List      PRESENCE optional },
    ...
}

DRBs-Required-ToBeReleased-Item ::= SEQUENCE {
    dRBID          DRBID,
    iE-Extensions      ProtocolExtensionContainer { { DRBs-Required-ToBeReleased-ItemExtIEs } }      OPTIONAL,
    ...
}

```

```

DRBs-Required-ToBeReleased-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

DRBs-Setup-Item ::= SEQUENCE {
  dRBID                DRBID,
  lCID                 LCID          OPTIONAL,
  dLUPTNLInformation-ToBeSetup-List  DLUPTNLInformation-ToBeSetup-List  ,
  iE-Extensions       ProtocolExtensionContainer { { DRBs-Setup-ItemExtIEs } }  OPTIONAL,
  ...
}

DRBs-Setup-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  { ID id-AdditionalPDCPDuplicationTNL-List  CRITICALITY ignore  EXTENSION AdditionalPDCPDuplicationTNL-List  PRESENCE optional }|
  { ID id-CurrentQoSParaSetIndex            CRITICALITY ignore  EXTENSION QoSParaSetIndex            PRESENCE optional },
  ...
}

DRBs-SetupMod-Item ::= SEQUENCE {
  dRBID                DRBID,
  lCID                 LCID          OPTIONAL,
  dLUPTNLInformation-ToBeSetup-List  DLUPTNLInformation-ToBeSetup-List  ,
  iE-Extensions       ProtocolExtensionContainer { { DRBs-SetupMod-ItemExtIEs } }  OPTIONAL,
  ...
}

DRBs-SetupMod-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  { ID id-AdditionalPDCPDuplicationTNL-List  CRITICALITY ignore  EXTENSION AdditionalPDCPDuplicationTNL-List  PRESENCE optional }|
  { ID id-CurrentQoSParaSetIndex            CRITICALITY ignore  EXTENSION QoSParaSetIndex            PRESENCE optional },
  ...
}

DRBs-ToBeModified-Item ::= SEQUENCE {
  dRBID                DRBID,
  qoSInformation       QoSInformation  OPTIONAL,
  uLUPTNLInformation-ToBeSetup-List  ULUPTNLInformation-ToBeSetup-List  ,
  uLConfiguration     ULConfiguration  OPTIONAL,
  iE-Extensions       ProtocolExtensionContainer { { DRBs-ToBeModified-ItemExtIEs } }  OPTIONAL,
  ...
}

DRBs-ToBeModified-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  { ID id-DLPCPSNLength                CRITICALITY ignore  EXTENSION PCPSNLength                PRESENCE optional }|
  { ID id-ULPCPSNLength                CRITICALITY ignore  EXTENSION PCPSNLength                PRESENCE optional }|
  { ID id-BearerTypeChange              CRITICALITY ignore  EXTENSION BearerTypeChange          PRESENCE optional }|
  { ID id-RLCMode                       CRITICALITY ignore  EXTENSION RLCMode                   PRESENCE optional }|
  { ID id-Duplication-Activation        CRITICALITY reject  EXTENSION DuplicationActivation     PRESENCE optional }|
  { ID id-DC-Based-Duplication-Configured  CRITICALITY reject  EXTENSION DCBasedDuplicationConfigured  PRESENCE optional }|
  { ID id-DC-Based-Duplication-Activation  CRITICALITY reject  EXTENSION DuplicationActivation     PRESENCE optional }|
  { ID id-AdditionalPDCPDuplicationTNL-List  CRITICALITY ignore  EXTENSION AdditionalPDCPDuplicationTNL-List  PRESENCE optional }|
  { ID id-RLCDuplicationInformation      CRITICALITY ignore  EXTENSION RLCDuplicationInformation  PRESENCE optional }|
  { ID id-TransmissionStopIndicator      CRITICALITY ignore  EXTENSION TransmissionStopIndicator  PRESENCE optional }|
}

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    { ID id-CG-SDTindicatorMod          CRITICALITY reject  EXTENSION CG-SDTindicatorMod          PRESENCE optional },
    ...
}

DRBs-ToBeReleased-Item ::= SEQUENCE {
    dRBID DRBID,
    iE-Extensions ProtocolExtensionContainer { { DRBs-ToBeReleased-ItemExtIEs } } OPTIONAL,
    ...
}

DRBs-ToBeReleased-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

DRBs-ToBeSetup-Item ::= SEQUENCE {
    dRBID DRBID,
    qoSInformation QoSInformation,
    uLUPTNLInformation-ToBeSetup-List ULUPTNLInformation-ToBeSetup-List ,
    rLCMode RLCMode,
    uLConfiguration ULConfiguration OPTIONAL,
    duplicationActivation DuplicationActivation OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { DRBs-ToBeSetup-ItemExtIEs } } OPTIONAL,
    ...
}

DRBs-ToBeSetup-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-DC-Based-Duplication-Configured CRITICALITY reject EXTENSION DCBasedDuplicationConfigured PRESENCE optional } |
    { ID id-DC-Based-Duplication-Activation CRITICALITY reject EXTENSION DuplicationActivation PRESENCE optional } |
    { ID id-DLPDCPSNLength CRITICALITY ignore EXTENSION PDCPSNLength PRESENCE mandatory } |
    { ID id-ULPDCPSNLength CRITICALITY ignore EXTENSION PDCPSNLength PRESENCE optional } |
    { ID id-AdditionalPDCPDuplicationTNL-List CRITICALITY ignore EXTENSION AdditionalPDCPDuplicationTNL-List PRESENCE optional } |
    { ID id-RLCDuplicationInformation CRITICALITY ignore EXTENSION RLCDuplicationInformation PRESENCE optional } |
    { ID id-SDTRLCBearerConfiguration CRITICALITY ignore EXTENSION SDTRLCBearerConfiguration PRESENCE optional } ,
    ...
}

DRBs-ToBeSetupMod-Item ::= SEQUENCE {
    dRBID DRBID,
    qoSInformation QoSInformation,
    uLUPTNLInformation-ToBeSetup-List ULUPTNLInformation-ToBeSetup-List,
    rLCMode RLCMode,
    uLConfiguration ULConfiguration OPTIONAL,
    duplicationActivation DuplicationActivation OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { DRBs-ToBeSetupMod-ItemExtIEs } } OPTIONAL,
    ...
}

DRBs-ToBeSetupMod-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-DC-Based-Duplication-Configured CRITICALITY reject EXTENSION DCBasedDuplicationConfigured PRESENCE optional } |
    { ID id-DC-Based-Duplication-Activation CRITICALITY reject EXTENSION DuplicationActivation PRESENCE optional } |
    { ID id-DLPDCPSNLength CRITICALITY ignore EXTENSION PDCPSNLength PRESENCE optional } |
    { ID id-ULPDCPSNLength CRITICALITY ignore EXTENSION PDCPSNLength PRESENCE optional } |
    { ID id-AdditionalPDCPDuplicationTNL-List CRITICALITY ignore EXTENSION AdditionalPDCPDuplicationTNL-List PRESENCE optional } |

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    { ID id-RLCDuplicationInformation          CRITICALITY ignore EXTENSION RLCDuplicationInformation PRESENCE optional}|
    { ID id-CG-SDTindicatorSetup              CRITICALITY reject  EXTENSION CG-SDTindicatorSetup  PRESENCE optional },
    ...
}

DRXCycle ::= SEQUENCE {
    longDRXCycleLength  LongDRXCycleLength,
    shortDRXCycleLength ShortDRXCycleLength OPTIONAL,
    shortDRXCycleTimer  ShortDRXCycleTimer OPTIONAL,
    iE-Extensions       ProtocolExtensionContainer { { DRXCycle-ExtIEs } } OPTIONAL,
    ...
}

DRXCycle-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

DRX-Config ::= OCTET STRING

DRXConfigurationIndicator ::= ENUMERATED{ release, ...}

DRX-LongCycleStartOffset ::= INTEGER (0..10239)

DSInformationList ::= SEQUENCE (SIZE(0..maxnoofDSInfo)) OF DSCP

DSCP ::= BIT STRING (SIZE (6))

DutoCURRCContainer ::= OCTET STRING

DUCURadioInformationType ::= CHOICE {
    rIM                DUCURIMInformation,
    choice-extension   ProtocolIE-SingleContainer { { DUCURadioInformationType-ExtIEs } }
}

DUCURadioInformationType-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

DUCURIMInformation ::= SEQUENCE {
    victimgNBSetID      GNBSSetID,
    rIMRSDetectionStatus RIMRSDetectionStatus,
    aggressorCellList   AggressorCellList,
    iE-Extensions       ProtocolExtensionContainer { { DUCURIMInformation-ExtIEs } } OPTIONAL
}

DUCURIMInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

DUF-Slot-Config-Item ::= CHOICE {
    explicitFormat      ExplicitFormat,
    implicitFormat      ImplicitFormat,
    choice-extension    ProtocolIE-SingleContainer { { DUF-Slot-Config-Item-ExtIEs } }
}

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DUF-Slot-Config-Item-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}
DUF-Slot-Config-List ::= SEQUENCE (SIZE(1..maxnoofDUFSlots)) OF DUF-Slot-Config-Item

DUFSlotformatIndex ::= INTEGER(0..254)

DUFTransmissionPeriodicity ::= ENUMERATED { ms0p5, ms0p625, ms1, ms1p25, ms2, ms2p5, ms5, ms10, ...}

DU-RX-MT-RX ::= ENUMERATED {supported, not-supported }
DU-TX-MT-TX ::= ENUMERATED {supported, not-supported }
DU-RX-MT-TX ::= ENUMERATED {supported, not-supported }
DU-TX-MT-RX ::= ENUMERATED {supported, not-supported }

DU-RX-MT-RX-Extend ::= ENUMERATED {supported, not-supported, supported-and-FDM-required, ...}
DU-TX-MT-TX-Extend ::= ENUMERATED {supported, not-supported, supported-and-FDM-required, ...}
DU-RX-MT-TX-Extend ::= ENUMERATED {supported, not-supported, supported-and-FDM-required, ...}
DU-TX-MT-RX-Extend ::= ENUMERATED {supported, not-supported, supported-and-FDM-required, ...}

DUtoCURRCInformation ::= SEQUENCE {
    cellGroupConfig      CellGroupConfig,
    measGapConfig        MeasGapConfig OPTIONAL,
    requestedP-MaxFR1    OCTET STRING OPTIONAL,
    iE-Extensions        ProtocolExtensionContainer { { DUtoCURRCInformation-ExtIEs} } OPTIONAL,
    ...
}

DUtoCURRCInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-DRX-LongCycleStartOffset          CRITICALITY ignore EXTENSION DRX-LongCycleStartOffset          PRESENCE optional }|
    { ID id-SelectedBandCombinationIndex      CRITICALITY ignore EXTENSION SelectedBandCombinationIndex      PRESENCE optional }|
    { ID id-SelectedFeatureSetEntryIndex      CRITICALITY ignore EXTENSION SelectedFeatureSetEntryIndex      PRESENCE optional }|
    { ID id-Ph-InfoSCG                         CRITICALITY ignore EXTENSION Ph-InfoSCG                         PRESENCE optional }|
    { ID id-RequestedBandCombinationIndex      CRITICALITY ignore EXTENSION RequestedBandCombinationIndex      PRESENCE optional }|
    { ID id-RequestedFeatureSetEntryIndex      CRITICALITY ignore EXTENSION RequestedFeatureSetEntryIndex      PRESENCE optional }|
    { ID id-DRX-Config                         CRITICALITY ignore EXTENSION DRX-Config                         PRESENCE optional }|
    { ID id-PDCCH-BlindDetectionSCG           CRITICALITY ignore EXTENSION PDCCH-BlindDetectionSCG           PRESENCE optional }|
    { ID id-Requested-PDCCH-BlindDetectionSCG CRITICALITY ignore EXTENSION Requested-PDCCH-BlindDetectionSCG PRESENCE optional }|
    { ID id-Ph-InfoMCG                         CRITICALITY ignore EXTENSION Ph-InfoMCG                         PRESENCE optional }|
    { ID id-MeasGapSharingConfig               CRITICALITY ignore EXTENSION MeasGapSharingConfig               PRESENCE optional }|
    { ID id-SL-PHY-MAC-RLC-Config              CRITICALITY ignore EXTENSION SL-PHY-MAC-RLC-Config              PRESENCE optional }|
    { ID id-SL-ConfigDedicatedEUTRA-Info      CRITICALITY ignore EXTENSION SL-ConfigDedicatedEUTRA-Info      PRESENCE optional }|
    { ID id-RequestedP-MaxFR2                  CRITICALITY ignore EXTENSION RequestedP-MaxFR2                  PRESENCE optional }|
    { ID id-SDT-MAC-PHY-CG-Config              CRITICALITY ignore EXTENSION SDT-MAC-PHY-CG-Config              PRESENCE optional }|
    { ID id-MUSIM-GapConfig                    CRITICALITY ignore EXTENSION MUSIM-GapConfig                    PRESENCE optional }|
    { ID id-SL-RLC-ChannelToAddModList        CRITICALITY ignore EXTENSION SL-RLC-ChannelToAddModList        PRESENCE optional }|
    { ID id-InterFrequencyConfig-NoGap        CRITICALITY ignore EXTENSION InterFrequencyConfig-NoGap        PRESENCE optional }|
    { ID id-UL-GapFR2-Config                  CRITICALITY ignore EXTENSION UL-GapFR2-Config                  PRESENCE optional }|

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    { ID id-TwoPHRModeMCG          CRITICALITY ignore EXTENSION TwoPHRModeMCG          PRESENCE optional }|
    { ID id-TwoPHRModeSCG         CRITICALITY ignore EXTENSION TwoPHRModeSCG         PRESENCE optional },
    ...
}

DuplicationActivation ::= ENUMERATED{active,inactive,... }

DuplicationIndication ::= ENUMERATED {true, ... , false }

DuplicationState ::= ENUMERATED {
    active,
    inactive,
    ...
}

Dynamic5QIDescriptor ::= SEQUENCE {
    qoSPriorityLevel          INTEGER (1..127),
    packetDelayBudget        PacketDelayBudget,
    packetErrorRate          PacketErrorRate,
    fiveQI                   INTEGER (0..255, ...)           OPTIONAL,
    delayCritical            ENUMERATED {delay-critical, non-delay-critical} OPTIONAL,
    -- C-ifGBRflow: This IE shall be present if the GBR QoS Flow Information IE is present in the QoS Flow Level QoS Parameters IE.
    averagingWindow          AveragingWindow                 OPTIONAL,
    -- C-ifGBRflow: This IE shall be present if the GBR QoS Flow Information IE is present in the QoS Flow Level QoS Parameters IE.
    maxDataBurstVolume       MaxDataBurstVolume             OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { Dynamic5QIDescriptor-ExtIEs } } OPTIONAL
}

Dynamic5QIDescriptor-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-ExtendedPacketDelayBudget CRITICALITY ignore EXTENSION ExtendedPacketDelayBudget PRESENCE optional }|
    { ID id-CNPacketDelayBudgetDownlink CRITICALITY ignore EXTENSION ExtendedPacketDelayBudget PRESENCE optional }|
    { ID id-CNPacketDelayBudgetUplink CRITICALITY ignore EXTENSION ExtendedPacketDelayBudget PRESENCE optional },
    ...
}

DynamicPQIDescriptor ::= SEQUENCE {
    resourceType             ENUMERATED {gbr, non-gbr, delay-critical-grb, ...} OPTIONAL,
    qoSPriorityLevel          INTEGER (1..8, ...),
    packetDelayBudget        PacketDelayBudget,
    packetErrorRate          PacketErrorRate,
    averagingWindow          AveragingWindow                 OPTIONAL,
    -- C-ifGBRflow: This IE shall be present if the GBR QoS Flow Information IE is present in the QoS Flow Level QoS Parameters IE.
    maxDataBurstVolume       MaxDataBurstVolume             OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { DynamicPQIDescriptor-ExtIEs } } OPTIONAL
}

DynamicPQIDescriptor-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- E

E-CID-MeasurementQuantities ::= SEQUENCE (SIZE (1.. maxnoofMeasE-CID)) OF ProtocolIE-SingleContainer { {E-CID-MeasurementQuantities-ItemIEs} }

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E-CID-MeasurementQuantities-ItemIES FlAP-PROTOCOL-IES ::= {
  { ID id-E-CID-MeasurementQuantities-Item    CRITICALITY reject  TYPE E-CID-MeasurementQuantities-Item    PRESENCE mandatory}
}

E-CID-MeasurementQuantities-Item ::= SEQUENCE {
  e-CIDMeasurementQuantitiesValue  E-CID-MeasurementQuantitiesValue,
  iE-Extensions                     ProtocolExtensionContainer { { E-CID-MeasurementQuantitiesValue-ExtIES } } OPTIONAL
}

E-CID-MeasurementQuantitiesValue-ExtIES FlAP-PROTOCOL-EXTENSION ::= {
  ...
}

E-CID-MeasurementQuantitiesValue ::= ENUMERATED {
  default,
  angleOfArrivalNR,
  ... ,
  timingAdvanceNR
}

E-CID-MeasurementResult ::= SEQUENCE {
  geographicalCoordinates  GeographicalCoordinates    OPTIONAL,
  measuredResults-List    E-CID-MeasuredResults-List  OPTIONAL,
  iE-Extensions           ProtocolExtensionContainer { { E-CID-MeasurementResult-ExtIES } } OPTIONAL
}

E-CID-MeasurementResult-ExtIES FlAP-PROTOCOL-EXTENSION ::= {
  ...
}

E-CID-MeasuredResults-List ::= SEQUENCE (SIZE(1..maxnoofMeasE-CID)) OF E-CID-MeasuredResults-Item

E-CID-MeasuredResults-Item ::= SEQUENCE {
  e-CID-MeasuredResults-Value  E-CID-MeasuredResults-Value,
  iE-Extensions               ProtocolExtensionContainer {{ E-CID-MeasuredResults-Item-ExtIES }}  OPTIONAL
}

E-CID-MeasuredResults-Item-ExtIES FlAP-PROTOCOL-EXTENSION ::= {
  ...
}

E-CID-MeasuredResults-Value ::= CHOICE {
  valueAngleofArrivalNR  UL-AoA,
  choice-extension       ProtocolIE-SingleContainer { { E-CID-MeasuredResults-Value-ExtIES } }
}

E-CID-MeasuredResults-Value-ExtIES FlAP-PROTOCOL-IES ::= {
  { ID id-NR-TADV          CRITICALITY ignore  TYPE NR-TADV    PRESENCE mandatory },
  ...
}

E-CID-ReportCharacteristics ::= ENUMERATED {
  onDemand,

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    periodic,
    ...
}

EgressBHRLCCHList ::= SEQUENCE (SIZE(1..maxnoofEgressLinks)) OF EgressBHRLCCHItem

EgressBHRLCCHItem ::= SEQUENCE {
    nextHopBAPAddress      BAPAddress,
    bHRLCChannelID        BHRLCChannelID,
    iE-Extensions         ProtocolExtensionContainer {{EgressBHRLCCHItemExtIEs }} OPTIONAL
}

EgressBHRLCCHItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

EgressNonFlterminatingTopologyIndicator ::= ENUMERATED {true, ...}

Endpoint-IP-address-and-port ::=SEQUENCE {
    endpointIPAddress TransportLayerAddress,
    iE-Extensions         ProtocolExtensionContainer { { Endpoint-IP-address-and-port-ExtIEs} } OPTIONAL
}

Endpoint-IP-address-and-port-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-portNumber CRITICALITY reject EXTENSION PortNumber          PRESENCE optional},
    ...
}

EnergyDetectionThreshold ::= INTEGER (-100..-50, ...)

ExtendedAvailablePLMN-List ::= SEQUENCE (SIZE(1..maxnoofExtendedBPLMNs)) OF ExtendedAvailablePLMN-Item

ExtendedAvailablePLMN-Item ::= SEQUENCE {
    pLMNIdentity          PLMN-Identity,
    iE-Extensions         ProtocolExtensionContainer { { ExtendedAvailablePLMN-Item-ExtIEs} } OPTIONAL
}

ExplicitFormat ::= SEQUENCE {
    permutation           Permutation,
    noofDownlinkSymbols  NoofDownlinkSymbols    OPTIONAL,
    noofUplinkSymbols    NoofUplinkSymbols      OPTIONAL,
    iE-Extensions         ProtocolExtensionContainer { { ExplicitFormat-ExtIEs} } OPTIONAL
}

ExplicitFormat-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

ExtendedAvailablePLMN-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

ExtendedServedPLMNs-List ::= SEQUENCE (SIZE(1.. maxnoofExtendedBPLMNs)) OF ExtendedServedPLMNs-Item

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ExtendedServedPLMNs-Item ::= SEQUENCE {
    pLMN-Identity          PLMN-Identity,
    tAISliceSupportList    SliceSupportList OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { { ExtendedServedPLMNs-ItemExtIEs } } OPTIONAL,
    ...
}

ExtendedServedPLMNs-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-NPNSupportInfo          CRITICALITY reject EXTENSION NPNSupportInfo          PRESENCE optional } |
    { ID id-ExtendedTAISliceSupportList CRITICALITY reject EXTENSION ExtendedSliceSupportList PRESENCE optional } |
    { ID id-TAINSAGSupportList       CRITICALITY ignore EXTENSION NSAGSupportList       PRESENCE optional },
    ...
}

ExtendedSliceSupportList ::= SEQUENCE (SIZE(1.. maxnoofExtSliceItems)) OF SliceSupportItem

ExtendedUEIdentityIndexValue ::= BIT STRING (SIZE(16))

EUTRACells-List ::= SEQUENCE (SIZE (1.. maxCellineNB)) OF EUTRACells-List-item

EUTRACells-List-item ::= SEQUENCE {
    eUTRA-Cell-ID          EUTRA-Cell-ID,
    served-EUTRA-Cells-Information Served-EUTRA-Cells-Information,
    iE-Extensions          ProtocolExtensionContainer { { EUTRACells-List-itemExtIEs } } OPTIONAL
}

EUTRACells-List-itemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

EUTRA-Cell-ID ::= BIT STRING (SIZE(28))

EUTRA-Coex-FDD-Info ::= SEQUENCE {
    uL-EARFCN              ExtendedEARFCN          OPTIONAL,
    dL-EARFCN              ExtendedEARFCN,
    uL-Transmission-Bandwidth EUTRA-Transmission-Bandwidth OPTIONAL,
    dL-Transmission-Bandwidth EUTRA-Transmission-Bandwidth,
    iE-Extensions          ProtocolExtensionContainer { {EUTRA-Coex-FDD-Info-ExtIEs} } OPTIONAL,
    ...
}

EUTRA-Coex-FDD-Info-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

EUTRA-Coex-Mode-Info ::= CHOICE {
    fDD      EUTRA-Coex-FDD-Info,
    tDD      EUTRA-Coex-TDD-Info,
    ...
}

EUTRA-Coex-TDD-Info ::= SEQUENCE {
    eARFCN          ExtendedEARFCN,

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    transmission-Bandwidth      EUTRA-Transmission-Bandwidth,
    subframeAssignment          EUTRA-SubframeAssignment,
    specialSubframe-Info        EUTRA-SpecialSubframe-Info,
    iE-Extensions                ProtocolExtensionContainer { {EUTRA-Coex-TDD-Info-ExtIEs} } OPTIONAL,
    ...
}
EUTRA-Coex-TDD-Info-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}
EUTRA-CyclicPrefixDL ::= ENUMERATED {
    normal,
    extended,
    ...
}
EUTRA-CyclicPrefixUL ::= ENUMERATED {
    normal,
    extended,
    ...
}
EUTRA-PRACH-Configuration ::= SEQUENCE {
    rootSequenceIndex          INTEGER (0..837),
    zeroCorrelationIndex       INTEGER (0..15),
    highSpeedFlag               BOOLEAN,
    prach-FreqOffset            INTEGER (0..94),
    prach-ConfigIndex          INTEGER (0..63) OPTIONAL,
    -- C-ifTDD: This IE shall be present if the EUTRA-Mode-Info IE in the Resource Coordination E-UTRA Cell Information IE is set to the value
    "TDD"
    iE-Extensions                ProtocolExtensionContainer { {EUTRA-PRACH-Configuration-ExtIEs} } OPTIONAL,
    ...
}
EUTRA-PRACH-Configuration-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}
EUTRA-SpecialSubframe-Info ::= SEQUENCE {
    specialSubframePatterns     EUTRA-SpecialSubframePatterns,
    cyclicPrefixDL              EUTRA-CyclicPrefixDL,
    cyclicPrefixUL              EUTRA-CyclicPrefixUL,
    iE-Extensions                ProtocolExtensionContainer { { EUTRA-SpecialSubframe-Info-ExtIEs} } OPTIONAL,
    ...
}
EUTRA-SpecialSubframe-Info-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}
EUTRA-SpecialSubframePatterns ::= ENUMERATED {
    ssp0,
    ssp1,
    ssp2,

```

```

    ssp3,
    ssp4,
    ssp5,
    ssp6,
    ssp7,
    ssp8,
    ssp9,
    ssp10,
    ...
}

EUTRA-SubframeAssignment ::= ENUMERATED {
    sa0,
    sa1,
    sa2,
    sa3,
    sa4,
    sa5,
    sa6,
    ...
}

EUTRA-Transmission-Bandwidth ::= ENUMERATED {
    bw6,
    bw15,
    bw25,
    bw50,
    bw75,
    bw100,
    ...
}

EUTRANQoS ::= SEQUENCE {
    qCI                               QCI,
    allocationAndRetentionPriority    AllocationAndRetentionPriority,
    gbrQoSInformation                GBR-QoSInformation OPTIONAL,
    iE-Extensions                    ProtocolExtensionContainer { { EUTRANQoS-ExtIEs } } OPTIONAL,
    ...
}

EUTRANQoS-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-ENBDLTNLAddress          CRITICALITY ignore EXTENSION TransportLayerAddress PRESENCE optional },
    ...
}

ExecutedDuplication ::= ENUMERATED{true,...}

ExtendedEARFCN ::= INTEGER (0..262143)

EUTRA-Mode-Info ::= CHOICE {
    eUTRAFDD          EUTRA-FDD-Info,
    eUTRATDD          EUTRA-TDD-Info,
    choice-extension  ProtocolIE-SingleContainer { { EUTRA-Mode-Info-ExtIEs } }
}

```

```
EUTRA-Mode-Info-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

EUTRA-NR-CellResourceCoordinationReq-Container ::= OCTET STRING

EUTRA-NR-CellResourceCoordinationReqAck-Container ::= OCTET STRING

EUTRA-FDD-Info ::= SEQUENCE {
    uL-offsetToPointA          OffsetToPointA,
    dL-offsetToPointA          OffsetToPointA,
    iE-Extensions              ProtocolExtensionContainer { {EUTRA-FDD-Info-ExtIEs} } OPTIONAL,
    ...
}

EUTRA-FDD-Info-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

EUTRA-TDD-Info ::= SEQUENCE {
    offsetToPointA              OffsetToPointA,
    iE-Extensions              ProtocolExtensionContainer { {EUTRA-TDD-Info-ExtIEs} } OPTIONAL,
    ...
}

EUTRA-TDD-Info-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

EventType ::= ENUMERATED {
    on-demand,
    periodic,
    stop,
    ...
}

ExtendedPacketDelayBudget ::= INTEGER (1..65535, ...)

Expected-UL-AoA ::= SEQUENCE {
    expected-Azimuth-AoA        Expected-Azimuth-AoA,
    expected-Zenith-AoA         Expected-Zenith-AoA    OPTIONAL,
    iE-extensions               ProtocolExtensionContainer { { Expected-UL-AoA-ExtIEs } }    OPTIONAL,
    ...
}

Expected-UL-AoA-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Expected-ZoA-only ::= SEQUENCE {
    expected-ZoA-only          Expected-Zenith-AoA,
    iE-extensions             ProtocolExtensionContainer { { Expected-ZoA-only-ExtIEs } } OPTIONAL,
    ...
}
```



```

Expected-ZoA-only-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Expected-Azimuth-AoA ::= SEQUENCE {
    expected-Azimuth-AoA-value           Expected-Value-AoA,
    expected-Azimuth-AoA-uncertainty     Uncertainty-range-AoA,
    iE-Extensions                        ProtocolExtensionContainer { { Expected-Azimuth-AoA-ExtIEs } } OPTIONAL,
    ...
}

Expected-Azimuth-AoA-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Expected-Zenith-AoA ::= SEQUENCE {
    expected-Zenith-AoA-value           Expected-Value-ZoA,
    expected-Zenith-AoA-uncertainty     Uncertainty-range-ZoA,
    iE-Extensions                        ProtocolExtensionContainer { { Expected-Zenith-AoA-ExtIEs } } OPTIONAL,
    ...
}

Expected-Zenith-AoA-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Expected-Value-AoA ::= INTEGER (0..3599)

Expected-Value-ZoA ::= INTEGER (0..1799)

-- F

FlCPathNSA ::= ENUMERATED {lte, nr, both}

FlCTransferPath ::= SEQUENCE {
    flCPathNSA                           FlCPathNSA,
    iE-Extensions                          ProtocolExtensionContainer { { FlCTransferPath-ExtIEs } } OPTIONAL,
    ...
}

FlCTransferPath-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

FlCPathNRDC ::= ENUMERATED {mcg, scg, both}

FlCTransferPathNRDC ::= SEQUENCE {
    flCPathNRDC                           FlCPathNRDC,
    iE-Extensions                          ProtocolExtensionContainer { { FlCTransferPathNRDC-ExtIEs } } OPTIONAL,
    ...
}

FlCTransferPathNRDC-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

}

FDD-Info ::= SEQUENCE {
    uL-NRFreqInfo          NRFreqInfo,
    dL-NRFreqInfo          NRFreqInfo,
    uL-Transmission-Bandwidth Transmission-Bandwidth,
    dL-Transmission-Bandwidth Transmission-Bandwidth,
    iE-Extensions          ProtocolExtensionContainer { {FDD-Info-ExtIEs} } OPTIONAL,
    ...
}

FDD-Info-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-ULCarrierList CRITICALITY ignore EXTENSION NRCarrierList PRESENCE optional }|
    { ID id-DLCarrierList CRITICALITY ignore EXTENSION NRCarrierList PRESENCE optional },
    ...
}

FDD-InfoRel16 ::= SEQUENCE {
    uL-FreqInfo          FreqInfoRel16          OPTIONAL,
    sUL-FreqInfo         FreqInfoRel16          OPTIONAL,
    iE-Extensions        ProtocolExtensionContainer { {FDD-InfoRel16-ExtIEs} } OPTIONAL,
    ...
}

FDD-InfoRel16-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

FiveG-ProSeAuthorized ::= SEQUENCE {
    fiveG-proSeDirectDiscovery          FiveG-ProSeDirectDiscovery          OPTIONAL,
    fiveG-proSeDirectCommunication      FiveG-ProSeDirectCommunication      OPTIONAL,
    fiveG-ProSeLayer2UEtoNetworkRelay   FiveG-ProSeLayer2UEtoNetworkRelay   OPTIONAL,
    fiveG-ProSeLayer3UEtoNetworkRelay   FiveG-ProSeLayer3UEtoNetworkRelay   OPTIONAL,
    fiveG-ProSeLayer2RemoteUE           FiveG-ProSeLayer2RemoteUE           OPTIONAL,
    iE-Extensions                        ProtocolExtensionContainer { {FiveG-ProSeAuthorized-ExtIEs} } OPTIONAL,
    ...
}

FiveG-ProSeAuthorized-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

FiveG-ProSeDirectDiscovery ::= ENUMERATED {
    authorized,
    not-authorized,
    ...
}

FiveG-ProSeDirectCommunication ::= ENUMERATED {
    authorized,
    not-authorized,
    ...
}

```

```

FiveG-ProSeLayer2UEtoNetworkRelay ::= ENUMERATED {
    authorized,
    not-authorized,
    ...
}

FiveG-ProSeLayer3UEtoNetworkRelay ::= ENUMERATED {
    authorized,
    not-authorized,
    ...
}

FiveG-ProSeLayer2RemoteUE ::= ENUMERATED {
    authorized,
    not-authorized,
    ...
}

Flows-Mapped-To-DRB-List ::= SEQUENCE (SIZE(1.. maxnoofQoSFlows)) OF Flows-Mapped-To-DRB-Item

Flows-Mapped-To-DRB-Item ::= SEQUENCE {
    qoSFlowIdentifier          QoSFlowIdentifier,
    qoSFlowLevelQoSParameters QoSFlowLevelQoSParameters,
    iE-Extensions              ProtocolExtensionContainer { { Flows-Mapped-To-DRB-ItemExtIEs } } OPTIONAL
}

Flows-Mapped-To-DRB-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    {ID id-QoSFlowMappingIndication    CRITICALITY ignore EXTENSION QoSFlowMappingIndication    PRESENCE optional}|
    {ID id-TSCTrafficCharacteristics   CRITICALITY ignore EXTENSION TSCTrafficCharacteristics   PRESENCE optional},
    ...
}

FR1-Bandwidth ::= ENUMERATED {bw5, bw10, bw20, bw40, bw50, bw80, bw100, ...}

FR2-Bandwidth ::= ENUMERATED {bw50, bw100, bw200, bw400, ..., bw800, bw1600, bw2000}

FreqBandNrItem ::= SEQUENCE {
    freqBandIndicatorNr      INTEGER (1..1024,...),
    supportedSULBandList     SEQUENCE (SIZE(0..maxnoofNrCellBands)) OF SupportedSULFreqBandItem,
    iE-Extensions            ProtocolExtensionContainer { {FreqBandNrItem-ExtIEs} } OPTIONAL,
    ...
}

FreqBandNrItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

FreqDomainLength ::= CHOICE {
    1839                      L839Info,
    1139                      L139Info,
    choice-extension          ProtocolIE-SingleContainer { {FreqDomainLength-ExtIEs} }
}

```

```

FreqDomainLength-ExtIEs FLAP-PROTOCOL-IES ::= {
  { ID id-L571Info    CRITICALITY reject  TYPE L571Info PRESENCE mandatory}|
  { ID id-L1151Info  CRITICALITY reject  TYPE L1151Info PRESENCE mandatory},
  ...
}

FreqInfoRel16 ::= SEQUENCE {
  nRARFCN                INTEGER (0..maxNRARFCN)                OPTIONAL,
  frequencyShift7p5khz  FrequencyShift7p5khz                OPTIONAL,
  carrierList            NRCarrierList                        OPTIONAL,
  iE-Extensions          ProtocolExtensionContainer { { FreqInfoRel16-ExtIEs } } OPTIONAL,
  ...
}

FreqInfoRel16-ExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

FrequencyShift7p5khz ::= ENUMERATED {false, true, ...}

Frequency-Domain-HSNA-Configuration-List ::= SEQUENCE (SIZE(1..maxnoofRBsetsPerCell)) OF Frequency-Domain-HSNA-Configuration-Item

Frequency-Domain-HSNA-Configuration-Item ::= SEQUENCE {
  rBSetIndex            INTEGER (0..maxnoofRBsetsPerCell-1, ...),
  frequency-Domain-HSNA-Slot-Configuration-List  Frequency-Domain-HSNA-Slot-Configuration-List,
  iE-Extensions          ProtocolExtensionContainer { { Frequency-Domain-HSNA-Configuration-Item-ExtIEs } } OPTIONAL
}

Frequency-Domain-HSNA-Configuration-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

Frequency-Domain-HSNA-Slot-Configuration-List ::= SEQUENCE (SIZE(1..maxnoofHSNASlots)) OF Frequency-Domain-HSNA-Slot-Configuration-Item

Frequency-Domain-HSNA-Slot-Configuration-Item ::= SEQUENCE {
  slotIndex            INTEGER (0..5119)                OPTIONAL,
  hSNADownlink         HSNADownlink                    OPTIONAL,
  hSNAUplink           HSNAUplink                      OPTIONAL,
  hSNAFlexible         HSNAFlexible                    OPTIONAL,
  iE-Extensions          ProtocolExtensionContainer { { Frequency-Domain-HSNA-Slot-Configuration-Item-ExtIEs } } OPTIONAL
}

Frequency-Domain-HSNA-Slot-Configuration-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

FullConfiguration ::= ENUMERATED {full, ...}

FlowsMappedToSLDRB-List ::= SEQUENCE (SIZE(1.. maxnoofPC5QoSFlows)) OF FlowsMappedToSLDRB-Item

FlowsMappedToSLDRB-Item ::= SEQUENCE {
  pc5QoSFlowIdentifier PC5QoSFlowIdentifier,
  iE-Extensions          ProtocolExtensionContainer { {FlowsMappedToSLDRB-Item-ExtIEs} } OPTIONAL,
}

```

```

}
...
}
FlowsMappedToSLDRB-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  ...
}
-- G

GBR-QosInformation ::= SEQUENCE {
  e-RAB-MaximumBitrateDL      BitRate,
  e-RAB-MaximumBitrateUL      BitRate,
  e-RAB-GuaranteedBitrateDL   BitRate,
  e-RAB-GuaranteedBitrateUL   BitRate,
  iE-Extensions               ProtocolExtensionContainer { { GBR-QosInformation-ExtIEs } } OPTIONAL,
  ...
}

GBR-QosInformation-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

GBR-QoSFlowInformation ::= SEQUENCE {
  maxFlowBitRateDownlink      BitRate,
  maxFlowBitRateUplink        BitRate,
  guaranteedFlowBitRateDownlink BitRate,
  guaranteedFlowBitRateUplink  BitRate,
  maxPacketLossRateDownlink    MaxPacketLossRate      OPTIONAL,
  maxPacketLossRateUplink      MaxPacketLossRate      OPTIONAL,
  iE-Extensions               ProtocolExtensionContainer { { GBR-QoSFlowInformation-ExtIEs } } OPTIONAL,
  ...
}

GBR-QoSFlowInformation-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  { ID id-AlternativeQoSParaSetList CRITICALITY ignore EXTENSION AlternativeQoSParaSetList PRESENCE optional },
  ...
}

CG-Config ::= OCTET STRING

GeographicalCoordinates ::= SEQUENCE {
  trpPositionDefinitionType  TRPPositionDefinitionType,
  dlPRSResourceCoordinates   DLPRSResourceCoordinates  OPTIONAL,
  iE-Extensions              ProtocolExtensionContainer { { GeographicalCoordinates-ExtIEs } } OPTIONAL
}

GeographicalCoordinates-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  { ID id-ARPLocationInfo     CRITICALITY ignore EXTENSION ARPLocationInformation PRESENCE optional},
  ...
}

GNB-CU-MBS-FLAP-ID           ::= INTEGER (0..4294967295)

```

```

GNBCUMeasurementID ::= INTEGER (0.. 4095, ...)

GNBDUMeasurementID ::= INTEGER (0.. 4095, ...)

GNB-CUSystemInformation ::= SEQUENCE {
  sibtypetobeupdatedlist SEQUENCE (SIZE(1.. maxnoofSIBTypes)) OF SibtypetobeupdatedListItem,
  iE-Extensions          ProtocolExtensionContainer { { GNB-CUSystemInformation-ExtIEs} } OPTIONAL,
  ...
}

GNB-CUSystemInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  {ID id-systemInformationAreaID CRITICALITY ignore EXTENSION SystemInformationAreaID PRESENCE optional},
  ...
}

GNB-CU-TNL-Association-Setup-Item ::= SEQUENCE {
  tNLAssociationTransportLayerAddress CP-TransportLayerAddress ,
  iE-Extensions                      ProtocolExtensionContainer { { GNB-CU-TNL-Association-Setup-Item-ExtIEs} } OPTIONAL
}

GNB-CU-TNL-Association-Setup-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

GNB-CU-TNL-Association-Failed-To-Setup-Item ::= SEQUENCE {
  tNLAssociationTransportLayerAddress CP-TransportLayerAddress ,
  cause                               Cause,
  iE-Extensions                      ProtocolExtensionContainer { { GNB-CU-TNL-Association-Failed-To-Setup-Item-ExtIEs} } OPTIONAL
}

GNB-CU-TNL-Association-Failed-To-Setup-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

GNB-CU-TNL-Association-To-Add-Item ::= SEQUENCE {
  tNLAssociationTransportLayerAddress CP-TransportLayerAddress ,
  tNLAssociationUsage                TNLAssociationUsage,
  iE-Extensions                      ProtocolExtensionContainer { { GNB-CU-TNL-Association-To-Add-Item-ExtIEs} } OPTIONAL
}

GNB-CU-TNL-Association-To-Add-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

GNB-CU-TNL-Association-To-Remove-Item ::= SEQUENCE {
  tNLAssociationTransportLayerAddress CP-TransportLayerAddress ,
  iE-Extensions                      ProtocolExtensionContainer { { GNB-CU-TNL-Association-To-Remove-Item-ExtIEs} } OPTIONAL
}

GNB-CU-TNL-Association-To-Remove-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  {ID id-TNLAssociationTransportLayerAddresssgNBDU CRITICALITY reject EXTENSION CP-TransportLayerAddress PRESENCE optional},
  ...
}

```

```

GNB-CU-TNL-Association-To-Update-Item ::= SEQUENCE {
    tNLAssociationTransportLayerAddress    CP-TransportLayerAddress    ,
    tNLAssociationUsage                    TNLAssociationUsage OPTIONAL,
    iE-Extensions                          ProtocolExtensionContainer { { GNB-CU-TNL-Association-To-Update-Item-ExtIEs } } OPTIONAL
}

GNB-CU-TNL-Association-To-Update-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

GNB-CU-UE-FlAP-ID ::= INTEGER (0..4294967295)

GNB-DU-Cell-Resource-Configuration ::= SEQUENCE {
    subcarrierSpacing          SubcarrierSpacing,
    dUFTransmissionPeriodicity DUFTransmissionPeriodicity OPTIONAL,
    dUF-Slot-Config-List       DUF-Slot-Config-List    OPTIONAL,
    hSNATransmissionPeriodicity HSNATransmissionPeriodicity,
    hsNSASlotConfigList        HSNASlotConfigList    OPTIONAL,
    iE-Extensions              ProtocolExtensionContainer { { GNB-DU-Cell-Resource-Configuration-ExtIEs } } OPTIONAL
}

GNB-DU-Cell-Resource-Configuration-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    {ID id-rBSetConfiguration          CRITICALITY reject EXTENSION          RBSetConfiguration PRESENCE optional}|
    {ID id-frequency-Domain-HSNA-Configuration-List CRITICALITY reject EXTENSION Frequency-Domain-HSNA-Configuration-List PRESENCE optional}|
    {ID id-child-IAB-Nodes-NA-Resource-List CRITICALITY reject EXTENSION Child-IAB-Nodes-NA-Resource-List PRESENCE optional}|
    {ID id-Parent-IAB-Nodes-NA-Resource-Configuration-List CRITICALITY reject EXTENSION Parent-IAB-Nodes-NA-Resource-Configuration-List PRESENCE optional},
    ...
}

GNB-DU-MBS-FlAP-ID ::= INTEGER (0..4294967295)

GNB-DU-UE-FlAP-ID ::= INTEGER (0..4294967295)

GNB-DU-ID ::= INTEGER (0..68719476735)

GNB-CU-Name ::= PrintableString(SIZE(1..150,...))

GNB-DU-Name ::= PrintableString(SIZE(1..150,...))

Extended-GNB-CU-Name ::= SEQUENCE {
    gNB-CU-NameVisibleString          GNB-CU-NameVisibleString          OPTIONAL,
    gNB-CU-NameUTF8String              GNB-CU-NameUTF8String              OPTIONAL,
    iE-Extensions                      ProtocolExtensionContainer { { Extended-GNB-CU-Name-ExtIEs } } OPTIONAL,
    ...
}

Extended-GNB-CU-Name-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

GNB-CU-NameVisibleString ::= VisibleString(SIZE(1..150,...))

GNB-CU-NameUTF8String ::= UTF8String(SIZE(1..150,...))

Extended-GNB-DU-Name ::= SEQUENCE {
    gNB-DU-NameVisibleString      GNB-DU-NameVisibleString      OPTIONAL,
    gNB-DU-NameUTF8String         GNB-DU-NameUTF8String         OPTIONAL,
    iE-Extensions                 ProtocolExtensionContainer { { Extended-GNB-DU-Name-ExtIEs } } OPTIONAL,
    ...
}

Extended-GNB-DU-Name-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

GNB-DU-NameVisibleString ::= VisibleString(SIZE(1..150,...))

GNB-DU-NameUTF8String ::= UTF8String(SIZE(1..150,...))

GNB-DU-Served-Cells-Item ::= SEQUENCE {
    served-Cell-Information      Served-Cell-Information,
    gNB-DU-System-Information    GNB-DU-System-Information  OPTIONAL,
    iE-Extensions                ProtocolExtensionContainer { { GNB-DU-Served-Cells-ItemExtIEs } } OPTIONAL,
    ...
}

GNB-DU-Served-Cells-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

GNB-DU-System-Information ::= SEQUENCE {
    mIB-message                  MIB-message,
    sIB1-message                 SIB1-message,
    iE-Extensions                ProtocolExtensionContainer { { GNB-DU-System-Information-ExtIEs } } OPTIONAL,
    ...
}

GNB-DU-System-Information-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-SIB12-message        CRITICALITY ignore EXTENSION SIB12-message PRESENCE optional} |
    { ID id-SIB13-message        CRITICALITY ignore EXTENSION SIB13-message PRESENCE optional} |
    { ID id-SIB14-message        CRITICALITY ignore EXTENSION SIB14-message PRESENCE optional} |
    { ID id-SIB10-message        CRITICALITY ignore EXTENSION SIB10-message PRESENCE optional} |
    { ID id-SIB17-message        CRITICALITY ignore EXTENSION SIB17-message PRESENCE optional} |
    { ID id-SIB20-message        CRITICALITY ignore EXTENSION SIB20-message PRESENCE optional} |
    { ID id-SIB15-message        CRITICALITY ignore EXTENSION SIB15-message PRESENCE optional},
    ...
}

GNB-DUConfigurationQuery ::= ENUMERATED {true, ...}

GNBDUOverloadInformation ::= ENUMERATED {overloaded, not-overloaded}

GNB-DU-TNL-Association-To-Remove-Item ::= SEQUENCE {

```



```

    tNLAssociationTransportLayerAddress      CP-TransportLayerAddress      ,
    tNLAssociationTransportLayerAddresssgNBCU CP-TransportLayerAddress      OPTIONAL,
    iE-Extensions                            ProtocolExtensionContainer { { GNB-DU-TNL-Association-To-Remove-Item-ExtIEs} } OPTIONAL
}

GNB-DU-TNL-Association-To-Remove-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

GNBDUUESliceMaximumBitRateList ::= SEQUENCE (SIZE(1.. maxnoofSMBRValues)) OF GNBDUUESliceMaximumBitRateItem

GNBDUUESliceMaximumBitRateItem ::= SEQUENCE {
    sNSSAI                SNSSAI,
    uESliceMaximumBitRateUL BitRate,
    iE-Extensions        ProtocolExtensionContainer { { GNBDUUESliceMaximumBitRateItem-ExtIEs} } OPTIONAL,
    ...
}

GNBDUUESliceMaximumBitRateItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

GNB-RxTxTimeDiff ::= SEQUENCE {
    rxTxTimeDiff          GNB-RxTxTimeDiffMeas,
    additionalPath-List   AdditionalPath-List      OPTIONAL,
    iE-Extensions        ProtocolExtensionContainer { { GNB-RxTxTimeDiff-ExtIEs} } OPTIONAL
}

GNB-RxTxTimeDiff-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-ExtendedAdditionalPathList      CRITICALITY ignore EXTENSION ExtendedAdditionalPathList PRESENCE optional}|
    { ID id-TRPTEGInformation               CRITICALITY ignore EXTENSION TRPTEGInformation      PRESENCE optional },
    ...
}

GNBRxTxTimeDiffMeas ::= CHOICE {
    k0          INTEGER (0.. 1970049),
    k1          INTEGER (0.. 985025),
    k2          INTEGER (0.. 492513),
    k3          INTEGER (0.. 246257),
    k4          INTEGER (0.. 123129),
    k5          INTEGER (0.. 61565),
    choice-extension ProtocolIE-SingleContainer { { GNBRxTxTimeDiffMeas-ExtIEs } }
}

GNBRxTxTimeDiffMeas-ExtIEs      FLAP-PROTOCOL-IES ::= {
    ...
}

GNBSetID ::= BIT STRING (SIZE(22))

GTP-TEID          ::= OCTET STRING (SIZE (4))

GTPTLAs ::= SEQUENCE (SIZE(1.. maxnoofGTPTLAs)) OF GTPTLA-Item

```

```

GTPTLA-Item ::= SEQUENCE {
    gTPTransportLayerAddress      TransportLayerAddress,
    iE-Extensions      ProtocolExtensionContainer { { GTPTLA-Item-ExtIEs } }      OPTIONAL
}

GTPTLA-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

GPTTunnel ::= SEQUENCE {
    transportLayerAddress      TransportLayerAddress,
    gTP-TEID      GTP-TEID,
    iE-Extensions      ProtocolExtensionContainer { { GPTTunnel-ExtIEs } } OPTIONAL,
    ...
}

GPTTunnel-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- H

HandoverPreparationInformation ::= OCTET STRING

HardwareLoadIndicator ::= SEQUENCE {
    dLHardwareLoadIndicator      INTEGER (0..100, ...),
    uLHardwareLoadIndicator      INTEGER (0..100, ...),
    iE-Extensions      ProtocolExtensionContainer { { HardwareLoadIndicator-ExtIEs } } OPTIONAL,
    ...
}

HardwareLoadIndicator-ExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSNASlotConfigList ::= SEQUENCE (SIZE(1..maxnoofHSNASlots)) OF HSNASlotConfigItem

HSNASlotConfigItem ::= SEQUENCE {
    hSNADownlink      HSNADownlink      OPTIONAL,
    hSNAUplink      HSNAUplink      OPTIONAL,
    hSNAFlexible      HSNAFlexible      OPTIONAL,
    iE-Extensions      ProtocolExtensionContainer { { HSNASlotConfigItem-ExtIEs } } OPTIONAL
}

HSNASlotConfigItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSNADownlink ::= ENUMERATED { hard, soft, notavailable }

HSNAFlexible ::= ENUMERATED { hard, soft, notavailable }

HSNAUplink ::= ENUMERATED { hard, soft, notavailable }

```

```

HSNATransmissionPeriodicity ::= ENUMERATED { ms0p5, ms0p625, ms1, ms1p25, ms2, ms2p5, ms5, ms10, ms20, ms40, ms80, ms160, ...}

-- I

IAB-Barred ::= ENUMERATED {barred, not-barred, ...}

IABConditionalRRCMessageDeliveryIndication ::= ENUMERATED {true, ...}

IABCongestionIndication ::= SEQUENCE {
    iAB-Congestion-Indication-List          IAB-Congestion-Indication-List,
    iE-Extensions      ProtocolExtensionContainer { { IAB-Congestion-Indication-List-ExtIEs } } OPTIONAL
}

IAB-Congestion-Indication-List-ExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

IAB-Congestion-Indication-List ::= SEQUENCE (SIZE(1..maxnoofIABCongInd)) OF IAB-Congestion-Indication-Item

IAB-Congestion-Indication-Item ::= SEQUENCE {
    childNodeIdentifier          BAPAddress,
    bHRLCCHList                  BHRLCCHList      OPTIONAL,
    iE-Extensions                ProtocolExtensionContainer { { IAB-Congestion-Indication-ItemExtIEs } } OPTIONAL
}

IAB-Congestion-Indication-ItemExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

IAB-Info-IAB-donor-CU ::= SEQUENCE{
    iAB-STC-Info      IAB-STC-Info      OPTIONAL,
    iE-Extensions    ProtocolExtensionContainer { { IAB-Info-IAB-donor-CU-ExtIEs } } OPTIONAL
}

IAB-Info-IAB-donor-CU-ExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

IAB-Info-IAB-DU ::= SEQUENCE{
    multiplexingInfo      MultiplexingInfo      OPTIONAL,
    iAB-STC-Info          IAB-STC-Info          OPTIONAL,
    iE-Extensions        ProtocolExtensionContainer { { IAB-Info-IAB-DU-ExtIEs } } OPTIONAL
}

IAB-Info-IAB-DU-ExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

IAB-MT-Cell-List ::= SEQUENCE (SIZE(1..maxnoofServingCells)) OF IAB-MT-Cell-List-Item

IAB-MT-Cell-List-Item ::= SEQUENCE {
    nRCellIdentity        NRCellIdentity,
    dU-RX-MT-RX           DU-RX-MT-RX,

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    dU-TX-MT-TX          DU-TX-MT-TX,
    dU-RX-MT-TX          DU-RX-MT-TX,
    dU-TX-MT-RX          DU-TX-MT-RX,
    iE-Extensions        ProtocolExtensionContainer { { IAB-MT-Cell-List-Item-ExtIEs } } OPTIONAL
}

IAB-MT-Cell-List-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  { ID id-DU-RX-MT-RX-Extend          CRITICALITY ignore EXTENSION DU-RX-MT-RX-Extend PRESENCE optional } |
  { ID id-DU-TX-MT-TX-Extend          CRITICALITY ignore EXTENSION DU-TX-MT-TX-Extend PRESENCE optional } |
  { ID id-DU-RX-MT-TX-Extend          CRITICALITY ignore EXTENSION DU-RX-MT-TX-Extend PRESENCE optional } |
  { ID id-DU-TX-MT-RX-Extend          CRITICALITY ignore EXTENSION DU-TX-MT-RX-Extend PRESENCE optional },
  ...
}

IAB-MT-Cell-NA-Resource-Configuration-Mode-Info ::= CHOICE {
  fDD      IAB-MT-Cell-NA-Resource-Configuration-FDD-Info,
  tDD      IAB-MT-Cell-NA-Resource-Configuration-TDD-Info,
  choice-extension      ProtocolIE-SingleContainer { { IAB-MT-Cell-NA-Resource-Configuration-Mode-Info-ExtIEs } }
}

IAB-MT-Cell-NA-Resource-Configuration-Mode-Info-ExtIEs FLAP-PROTOCOL-IES ::= {
  ...
}

IAB-MT-Cell-NA-Resource-Configuration-FDD-Info ::= SEQUENCE {
  gNB-DU-Cell-NA-Resource-Configuration-FDD-UL          GNB-DU-Cell-Resource-Configuration,
  gNB-DU-Cell-NA-Resource-Configuration-FDD-DL          GNB-DU-Cell-Resource-Configuration,
  uL-FreqInfo          NRFreqInfo          OPTIONAL,
  uL-Transmission-Bandwidth          Transmission-Bandwidth          OPTIONAL,
  uL-NR-Carrier-List          NRCarrierList          OPTIONAL,
  dL-FreqInfo          NRFreqInfo          OPTIONAL,
  dL-Transmission-Bandwidth          Transmission-Bandwidth          OPTIONAL,
  dL-NR-Carrier-List          NRCarrierList          OPTIONAL,
  iE-Extensions        ProtocolExtensionContainer { { IAB-MT-Cell-NA-Resource-Configuration-FDD-Info-ExtIEs } } OPTIONAL,
  ...
}

IAB-MT-Cell-NA-Resource-Configuration-FDD-Info-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

IAB-MT-Cell-NA-Resource-Configuration-TDD-Info ::= SEQUENCE {
  gNB-DU-Cell-NA-Resourc-Configuration-TDD          GNB-DU-Cell-Resource-Configuration,
  nRFreqInfo          NRFreqInfo          OPTIONAL,
  transmission-Bandwidth          Transmission-Bandwidth          OPTIONAL,
  nR-Carrier-List          NRCarrierList          OPTIONAL,
  iE-Extensions        ProtocolExtensionContainer { { IAB-MT-Cell-NA-Resource-Configuration-TDD-Info-ExtIEs } } OPTIONAL,
  ...
}

IAB-MT-Cell-NA-Resource-Configuration-TDD-Info-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

```

```

}

IAB-STC-Info ::= SEQUENCE{
    iAB-STC-Info-List IAB-STC-Info-List,
    iE-Extensions ProtocolExtensionContainer { { IAB-STC-Info-ExtIEs } } OPTIONAL
}

IAB-STC-Info-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

IAB-STC-Info-List ::= SEQUENCE (SIZE(1..maxnoofIABSTCInfo)) OF IAB-STC-Info-Item

IAB-STC-Info-Item ::= SEQUENCE {
    sSB-freqInfo SSB-freqInfo,
    sSB-subcarrierSpacing SSB-subcarrierSpacing,
    sSB-transmissionPeriodicity SSB-transmissionPeriodicity,
    sSB-transmissionTimingOffset SSB-transmissionTimingOffset,
    sSB-transmissionBitmap SSB-transmissionBitmap,
    iE-Extensions ProtocolExtensionContainer { { IAB-STC-Info-Item-ExtIEs } } OPTIONAL
}

IAB-STC-Info-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

IAB-Allocated-TNL-Address-Item ::= SEQUENCE {
    iABTNLAddress IABTNLAddress,
    iABTNLAddressUsage IABTNLAddressUsage OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { IAB-Allocated-TNL-Address-Item-ExtIEs } } OPTIONAL
}

IAB-Allocated-TNL-Address-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

IAB-DU-Cell-Resource-Configuration-Mode-Info ::= CHOICE {
    fDD IAB-DU-Cell-Resource-Configuration-FDD-Info,
    tDD IAB-DU-Cell-Resource-Configuration-TDD-Info,
    choice-extension ProtocolIE-SingleContainer { { IAB-DU-Cell-Resource-Configuration-Mode-Info-ExtIEs } }
}

IAB-DU-Cell-Resource-Configuration-Mode-Info-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

IAB-DU-Cell-Resource-Configuration-FDD-Info ::= SEQUENCE {
    gNB-DU-Cell-Resource-Configuration-FDD-UL GNB-DU-Cell-Resource-Configuration,
    gNB-DU-Cell-Resource-Configuration-FDD-DL GNB-DU-Cell-Resource-Configuration,
    iE-Extensions ProtocolExtensionContainer { { IAB-DU-Cell-Resource-Configuration-FDD-Info-ExtIEs } } OPTIONAL,
    ...
}

IAB-DU-Cell-Resource-Configuration-FDD-Info-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {

```

```

    {ID id-uL-FreqInfo          CRITICALITY reject EXTENSION NRFreqInfo          PRESENCE optional}|
    {ID id-uL-Transmission-Bandwidth CRITICALITY reject EXTENSION Transmission-Bandwidth PRESENCE optional}|
    {ID id-uL-NR-Carrier-List      CRITICALITY reject EXTENSION NRCarrierList          PRESENCE optional}|
    {ID id-dL-FreqInfo          CRITICALITY reject EXTENSION NRFreqInfo          PRESENCE optional}|
    {ID id-dL-Transmission-Bandwidth CRITICALITY reject EXTENSION Transmission-Bandwidth PRESENCE optional}|
    {ID id-dL-NR-Carrier-List      CRITICALITY reject EXTENSION NRCarrierList          PRESENCE optional},
    ...
}

IAB-DU-Cell-Resource-Configuration-TDD-Info ::= SEQUENCE {
    gNB-DU-Cell-Resourc-Configuration-TDD          GNB-DU-Cell-Resource-Configuration,
    iE-Extensions          ProtocolExtensionContainer { { IAB-DU-Cell-Resource-Configuration-TDD-Info-ExtIEs } } OPTIONAL,
    ...
}

IAB-DU-Cell-Resource-Configuration-TDD-Info-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    {ID id-nRFreqInfo          CRITICALITY reject EXTENSION NRFreqInfo          PRESENCE optional}|
    {ID id-transmission-Bandwidth CRITICALITY reject EXTENSION Transmission-Bandwidth PRESENCE optional}|
    {ID id-nR-Carrier-List      CRITICALITY reject EXTENSION NRCarrierList          PRESENCE optional},
    ...
}

IABIPv6RequestType ::= CHOICE {
    iIPv6Address          IABTNLAddressesRequested,
    iIPv6Prefix          IABTNLAddressesRequested,
    choice-extension          ProtocolIE-SingleContainer { { IABIPv6RequestType-ExtIEs } }
}

IABIPv6RequestType-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

IABTNLAddress ::= CHOICE {
    iIPv4Address          BIT STRING (SIZE(32)),
    iIPv6Address          BIT STRING (SIZE(128)),
    iIPv6Prefix          BIT STRING (SIZE(64)),
    choice-extension          ProtocolIE-SingleContainer { { IABTNLAddress-ExtIEs } }
}

IABTNLAddress-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

IABTNLAddressesRequested ::= SEQUENCE {
    tNLAddressesOrPrefixesRequestedAllTraffic          INTEGER (1..256)          OPTIONAL,
    tNLAddressesOrPrefixesRequestedF1-C          INTEGER (1..256)          OPTIONAL,
    tNLAddressesOrPrefixesRequestedF1-U          INTEGER (1..256)          OPTIONAL,
    tNLAddressesOrPrefixesRequestedNonF1          INTEGER (1..256)          OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { { IABTNLAddressesRequested-ExtIEs } } OPTIONAL
}

IABTNLAddressesRequested-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

IAB-TNL-Addresses-To-Remove-Item ::= SEQUENCE {
    iABTNLAddress          IABTNLAddress,
    iE-Extensions          ProtocolExtensionContainer { { IAB-TNL-Addresses-To-Remove-Item-ExtIEs } } OPTIONAL
}

IAB-TNL-Addresses-To-Remove-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

IAB-TNL-Addresses-Exception ::= SEQUENCE {
    iABTNLAddressList      IABTNLAddressList,
    iE-Extensions          ProtocolExtensionContainer { { IAB-TNL-Addresses-Exception-ExtIEs } } OPTIONAL
}

IAB-TNL-Addresses-Exception-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

IABTNLAddressList ::= SEQUENCE (SIZE(1.. maxnoofTLAsIAB)) OF IABTNLAddress-Item

IABTNLAddress-Item ::= SEQUENCE {
    iABTNLAddress          IABTNLAddress ,
    iE-Extensions          ProtocolExtensionContainer { { IABTNLAddress-ItemExtIEs } } OPTIONAL
}

IABTNLAddress-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

IABTNLAddressUsage ::= ENUMERATED {
    fl-c,
    fl-u,
    non-fl,
    ...
}

IABv4AddressesRequested ::= SEQUENCE {
    iABv4AddressesRequested IABTNLAddressesRequested,
    iE-Extensions          ProtocolExtensionContainer { { IABv4AddressesRequested-ExtIEs } } OPTIONAL
}

IABv4AddressesRequested-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

ImplicitFormat ::= SEQUENCE {
    dUFSslotformatIndex    DUFslotformatIndex,
    iE-Extensions          ProtocolExtensionContainer { { ImplicitFormat-ExtIEs } } OPTIONAL
}

ImplicitFormat-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

}

IgnorePRACHConfiguration ::= ENUMERATED { true,...}

IgnoreResourceCoordinationContainer ::= ENUMERATED { yes,...}
InactivityMonitoringRequest ::= ENUMERATED { true,...}
InactivityMonitoringResponse ::= ENUMERATED { not-supported,...}
InterfacesToTrace ::= BIT STRING (SIZE(8))

IntendedTDD-DL-ULConfig ::= SEQUENCE {
  nRSCS          ENUMERATED { scs15, scs30, scs60, scs120,..., scs480, scs960},
  nRCP           ENUMERATED { normal, extended,...},
  nRDLULTxPeriodicity  ENUMERATED { ms0p5, ms0p625, ms1, ms1p25, ms2, ms2p5, ms3, ms4, ms5, ms10, ms20, ms40, ms60, ms80, ms100, ms120,
ms140, ms160, ...},
  slot-Configuration-List  Slot-Configuration-List,
  iE-Extensions          ProtocolExtensionContainer { {IntendedTDD-DL-ULConfig-ExtIEs} } OPTIONAL
}

InterFrequencyConfig-NoGap ::= ENUMERATED {
  true,
  ...
}

IngressNonFltterminatingTopologyIndicator ::= ENUMERATED {true, ...}

IntendedTDD-DL-ULConfig-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

IPHeaderInformation ::= SEQUENCE {
  destinationIABTNLAddress      IABTNLAddress,
  dsInformationList             DSInformationList  OPTIONAL,
  iPv6FlowLabel                BIT STRING (SIZE (20))  OPTIONAL,
  iE-Extensions                ProtocolExtensionContainer { { IPHeaderInformation-ItemExtIEs} } OPTIONAL,
  ...
}

IPHeaderInformation-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

IPTolayer2TrafficMappingInfo ::= SEQUENCE {
  iptolayer2TrafficMappingInfoToAdd      IPTolayer2TrafficMappingInfoList      OPTIONAL,
  iptolayer2TrafficMappingInfoToRemove   MappingInformationToRemove           OPTIONAL,
  iE-Extensions                          ProtocolExtensionContainer { { IPTolayer2TrafficMappingInfo-ItemExtIEs} } OPTIONAL,
  ...
}

IPTolayer2TrafficMappingInfoList ::= SEQUENCE (SIZE(1..maxnoofMappingEntries)) OF IPTolayer2TrafficMappingInfo-Item

IPTolayer2TrafficMappingInfo-Item ::= SEQUENCE {
  mappingInformationIndex      MappingInformationIndex,
  iPHeaderInformation          IPHeaderInformation,

```



```

    bHInfo                BHInfo, iE-Extensions                ProtocolExtensionContainer { { IPTolayer2TrafficMappingInfo-ItemExtIEs } }
OPTIONAL,
    ...
}

IPTolayer2TrafficMappingInfo-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

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-- L

L139Info ::= SEQUENCE {
    prachSCS                ENUMERATED {scs15, scs30, scs60, scs120, ..., scs480, scs960},
    rootSequenceIndex      INTEGER (0..137)                    OPTIONAL,
    iE-Extension           ProtocolExtensionContainer { {L139Info-ExtIEs} }    OPTIONAL,
    ...
}

L139Info-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

L839Info ::= SEQUENCE {
    rootSequenceIndex      INTEGER (0..837),
    restrictedSetConfig    ENUMERATED {unrestrictedSet, restrictedSetTypeA,
                                     restrictedSetTypeB, ...},
    iE-Extension           ProtocolExtensionContainer { {L839Info-ExtIEs} }    OPTIONAL,
    ...
}

L839Info-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

L571Info ::= SEQUENCE {
    prachSCSForL571       ENUMERATED { scs30, scs120, ... , scs480},
    rootSequenceIndex     INTEGER (0..569),
    iE-Extension          ProtocolExtensionContainer { {L571Info-ExtIEs} }    OPTIONAL,
    ...
}

L571Info-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

L1151Info ::= SEQUENCE {
    prachSCSForL1151     ENUMERATED { scs15, scs120,...},
    rootSequenceIndex     INTEGER (0..1149),
    iE-Extension          ProtocolExtensionContainer { {L1151Info-ExtIEs} }    OPTIONAL,
    ...
}

```

```

}

L1151Info-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
  ...
}

LastUsedCellIndication ::= ENUMERATED {true, ...}

LCID ::= INTEGER (1..32, ...)

LCS-to-GCS-Translation ::= SEQUENCE {
  alpha          INTEGER (0..3599),
  beta           INTEGER (0..3599),
  gamma         INTEGER (0..3599),
  iE-Extensions ProtocolExtensionContainer { { LCS-to-GCS-Translation-ExtIEs } } OPTIONAL,
  ...
}

LCS-to-GCS-Translation-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
  ...
}

LCStoGCSTranslationList ::= SEQUENCE (SIZE (1.. maxnooflcs-gcs-translation)) OF LCStoGCSTranslation

LCStoGCSTranslation ::= SEQUENCE {
  alpha          INTEGER (0..3599),
  alpha-fine     INTEGER (0..9)      OPTIONAL,
  beta           INTEGER (0..3599),
  beta-fine     INTEGER (0..9)      OPTIONAL,
  gamma         INTEGER (0..3599),
  gamma-fine    INTEGER (0..9)      OPTIONAL,
  iE-Extensions ProtocolExtensionContainer { { LCStoGCSTranslation-ExtIEs } } OPTIONAL
}

LCStoGCSTranslation-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
  ...
}

LMF-MeasurementID ::= INTEGER (1.. 65536, ...)

LMF-UE-MeasurementID ::= INTEGER (1.. 256, ...)

LocationDependentMBSFlUInformation ::= SEQUENCE (SIZE(1..maxnoofMBSAreaSessionIDs)) OF LocationDependentMBSFlUInformation-Item
LocationDependentMBSFlUInformation-Item ::= SEQUENCE {
  mbsAreaSession-ID      MBS-Area-Session-ID,
  mbs-flu-info-at-CU     UPTransportLayerInformation,
  iE-Extensions          ProtocolExtensionContainer { { LocationDependentMBSFlUInformation-Item-ExtIEs } } OPTIONAL,
  ...
}

LocationDependentMBSFlUInformation-Item-ExtIEs      FlAP-PROTOCOL-EXTENSION ::= {
  ...
}

```

```

}

LocationMeasurementInformation ::= OCTET STRING

LocationUncertainty ::= SEQUENCE {
    horizontalUncertainty    INTEGER (0..255),
    horizontalConfidence    INTEGER (0..100),
    verticalUncertainty      INTEGER (0..255),
    verticalConfidence       INTEGER (0..100),
    iE-Extensions            ProtocolExtensionContainer { { LocationUncertainty-ExtIEs } } OPTIONAL
}

LocationUncertainty-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

LongDRXCycleLength ::= ENUMERATED
{ms10, ms20, ms32, ms40, ms60, ms64, ms70, ms80, ms128, ms160, ms256, ms320, ms512, ms640, ms1024, ms1280, ms2048, ms2560, ms5120, ms10240, ...}

LowerLayerPresenceStatusChange ::= ENUMERATED {
    suspend-lower-layers,
    resume-lower-layers,
    ...
}

LoS-NLoSIndicatorHard ::= ENUMERATED {nLoS, loS}

LoS-NLoSIndicatorSoft ::= INTEGER (0..10)

LoS-NLoSInformation ::= CHOICE {
    loS-NLoSIndicatorSoft    LoS-NLoSIndicatorSoft,
    loS-NLoSIndicatorHard    LoS-NLoSIndicatorHard,
    choice-Extension         ProtocolIE-SingleContainer {{ LoS-NLoSInformation-ExtIEs}}
}

LoS-NLoSInformation-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

LTEUESidelinkAggregateMaximumBitrate ::= SEQUENCE {
    uELTESidelinkAggregateMaximumBitrate    BitRate,
    iE-Extensions                            ProtocolExtensionContainer { {LTEUESidelinkAggregateMaximumBitrate-ExtIEs} } OPTIONAL
}

LTEUESidelinkAggregateMaximumBitrate-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

LTEV2XServicesAuthorized ::= SEQUENCE {
    vehicleUE            VehicleUE                                OPTIONAL,
    pedestrianUE        PedestrianUE                            OPTIONAL,
    iE-Extensions        ProtocolExtensionContainer { {LTEV2XServicesAuthorized-ExtIEs} }    OPTIONAL
}

```

```

LTEV2XServicesAuthorized-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- M

MappingInformationIndex ::= BIT STRING (SIZE (26))

MappingInformationToRemove ::= SEQUENCE (SIZE(1..maxnoofMappingEntries)) OF MappingInformationIndex

MaskedIMEISV ::= BIT STRING (SIZE (64))

MaxDataBurstVolume ::= INTEGER (0..4095, ..., 4096.. 2000000)
MaxPacketLossRate ::= INTEGER (0..1000)

MBS-Broadcast-NeighbourCellList ::= OCTET STRING

MBS-Flows-Mapped-To-MRB-List ::= SEQUENCE (SIZE(1.. maxnoofMBSQoSFlows)) OF MBS-Flows-Mapped-To-MRB-Item

MBS-Flows-Mapped-To-MRB-Item ::= SEQUENCE {
    mBS-QoSFlowIdentifier QoSFlowIdentifier,
    mbs-QoSFlowLevelQoSParameters QoSFlowLevelQoSParameters,
    iE-Extensions ProtocolExtensionContainer { { MBS-Flows-Mapped-To-MRB-Item-ExtIEs } } OPTIONAL
}

MBS-Flows-Mapped-To-MRB-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MBSFlUInformation ::= SEQUENCE {
    mbs-flu-info UPTransportLayerInformation,
    iE-Extensions ProtocolExtensionContainer { { MBSFlUInformation-ExtIEs } } OPTIONAL,
    ...
}

MBSFlUInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MBSInterestIndication ::= OCTET STRING

MBS-Session-ID ::= SEQUENCE {
    tMGI TMGI,
    nID NID OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { MBS-Session-ID-ExtIEs } } OPTIONAL,
    ...
}

MBS-Session-ID-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

MBS-Area-Session-ID ::= INTEGER (0..65535, ...)

```
MBS-CUtoDURRCInformation ::= SEQUENCE {
  mBS-Broadcast-Cell-List MBS-Broadcast-Cell-List,
  mBS-Broadcast-MRB-List MBS-Broadcast-MRB-List,
  iE-Extensions ProtocolExtensionContainer { { MBS-CUtoDURRCInformation-ExtIEs } } OPTIONAL,
  ...
}
```

```
MBS-CUtoDURRCInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}
```

MBS-Broadcast-Cell-List ::= SEQUENCE (SIZE(1.. maxCellingNBDU)) OF MBS-Broadcast-Cell-Item

```
MBS-Broadcast-Cell-Item ::= SEQUENCE {
  nRCGI NRCGI,
  mtch-neighbourCell OCTET STRING OPTIONAL,
  iE-Extensions ProtocolExtensionContainer { { MBS-Broadcast-Cell-Item-ExtIEs } } OPTIONAL,
  ...
}
```

```
MBS-Broadcast-Cell-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}
```

MBS-Broadcast-MRB-List ::= SEQUENCE (SIZE(1.. maxnoofMRBs)) OF MBS-Broadcast-MRB-Item

```
MBS-Broadcast-MRB-Item ::= SEQUENCE {
  mRB-ID MRB-ID,
  mRB-PDCP-Config-Broadcast OCTET STRING,
  iE-Extensions ProtocolExtensionContainer { { MBS-Broadcast-MRB-Item-ExtIEs } } OPTIONAL,
  ...
}
```

```
MBS-Broadcast-MRB-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}
```

```
MBSMulticastFlUContextDescriptor ::= SEQUENCE {
  multicastFlUContextReferenceFl MulticastFlUContextReferenceFl,
  mc-FlUContextUsage ENUMERATED {ptm, ptp, ptp-retransmission, ptp-forwarding, ...},
  mbsAreaSession MBS-Area-Session-ID OPTIONAL,
  iE-Extensions ProtocolExtensionContainer {{MBSMulticastFlUContextDescriptor-ExtIEs}} OPTIONAL,
  ...
}
```

```
MBSMulticastFlUContextDescriptor-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}
```

```

MulticastFlUContext-ToBeSetup-Item ::= SEQUENCE {
    mRB-ID                MRB-ID,
    mbs-flu-info-at-DU    UPTransportLayerInformation,
    mbsProgressInformation MRB-ProgressInformation OPTIONAL,
    iE-Extensions        ProtocolExtensionContainer { {MulticastFlUContext-ToBeSetup-Item-ExtIEs} } OPTIONAL,
    ...
}

MulticastFlUContext-ToBeSetup-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MulticastFlUContext-Setup-Item ::= SEQUENCE {
    mRB-ID                MRB-ID,
    mbs-flu-info-at-CU    UPTransportLayerInformation,
    iE-Extensions        ProtocolExtensionContainer { {MulticastFlUContext-Setup-Item-ExtIEs} } OPTIONAL,
    ...
}

MulticastFlUContext-Setup-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MulticastFlUContext-FailedToBeSetup-Item ::= SEQUENCE {
    mRB-ID                MRB-ID,
    cause                 Cause OPTIONAL,
    iE-Extensions        ProtocolExtensionContainer { {MulticastFlUContext-FailedToBeSetup-Item-ExtIEs} } OPTIONAL,
    ...
}

MulticastFlUContext-FailedToBeSetup-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MBSPTPretransmissionTunnelRequired ::= ENUMERATED {true, ...}

MBS-ServiceArea ::= CHOICE {
    locationindependent MBS-ServiceAreaInformation,
    locationdependent  MBS-ServiceAreaInformationList,
    choice-Extensions  ProtocolIE-SingleContainer { {MBSServiceArea-ExtIEs} }
}

MBSServiceArea-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

MBS-ServiceAreaInformation ::= SEQUENCE {
    mBS-ServiceAreaCellList MBS-ServiceAreaCellList OPTIONAL,
    mBS-ServiceAreaTAIList MBS-ServiceAreaTAIList OPTIONAL,

```

```

    iE-Extensions          ProtocolExtensionContainer { {MBS-ServiceAreaInformation-ExtIEs} } OPTIONAL,
    ...
}

MBS-ServiceAreaInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MBS-ServiceAreaCellList ::= SEQUENCE (SIZE(1.. maxnoofCellsforMBS)) OF NRCGI

MBS-ServiceAreaTAILList ::= SEQUENCE (SIZE(1.. maxnoofTAIforMBS)) OF MBS-ServiceAreaTAILList-Item
MBS-ServiceAreaTAILList-Item ::= SEQUENCE {
    plmn-ID                PLMN-Identity,
    five5-TAC              FiveGS-TAC,
    iE-Extensions          ProtocolExtensionContainer { {MBS-ServiceAreaTAILList-Item-ExtIEs} } OPTIONAL,
    ...
}

MBS-ServiceAreaTAILList-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MBS-ServiceAreaInformationList ::= SEQUENCE (SIZE(1..maxnoofMBSServiceAreaInformation)) OF MBS-ServiceAreaInformationItem

MBS-ServiceAreaInformationItem ::= SEQUENCE {
    mBS-AreaSessionID      MBS-Area-Session-ID,
    mBS-ServiceAreaInformation MBS-ServiceAreaInformation,
    iE-Extensions          ProtocolExtensionContainer { { MBS-ServiceAreaInformationItem-ExtIEs} } OPTIONAL,
    ...
}

MBS-ServiceAreaInformationItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MC-PagingCell-Item ::= SEQUENCE {
    nRCGI                  NRCGI,
    iE-Extensions          ProtocolExtensionContainer { { MC-PagingCell-ItemExtIEs } } OPTIONAL
}

MC-PagingCell-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MIB-message ::= OCTET STRING

MeasConfig ::= OCTET STRING

MeasGapConfig ::= OCTET STRING

MeasGapSharingConfig ::= OCTET STRING

PosMeasurementAmount ::= ENUMERATED {ma0, ma1, ma2, ma4, ma8, ma16, ma32, ma64}

```

```

MeasurementBeamInfoRequest ::= ENUMERATED {true, ...}

MeasurementBeamInfo ::= SEQUENCE {
    pRS-Resource-ID          PRS-Resource-ID          OPTIONAL,
    pRS-Resource-Set-ID      PRS-Resource-Set-ID OPTIONAL,
    sSB-Index                SSB-Index              OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { MeasurementBeamInfo-ExtIEs } } OPTIONAL
}

MeasurementBeamInfo-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MeasurementTimingConfiguration ::= OCTET STRING

MessageIdentifier ::= BIT STRING (SIZE (16))

MeasurementTimeOccasion ::= ENUMERATED {o1, o4, ...}

MeasurementCharacteristicsRequestIndicator ::= BIT STRING (SIZE (16))

MRB-ProgressInformation ::= CHOICE {
    pdcp-SN12                INTEGER (0..4095),
    pdcp-SN18                INTEGER (0..262143),
    choice-extension         ProtocolIE-SingleContainer { { MRB-ProgressInformation-ExtIEs } }
}

MRB-ProgressInformation-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

MulticastFlUContextReferenceFl ::= OCTET STRING (SIZE(4))

MulticastFlUContextReferenceCU ::= OCTET STRING (SIZE(4))

MultipleULAoA ::= SEQUENCE {
    multipleULAoA            MultipleULAoA-List,
    iE-Extensions            ProtocolExtensionContainer { { MultipleULAoA-ExtIEs } } OPTIONAL,
    ...
}

MultipleULAoA-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MultipleULAoA-List ::= SEQUENCE (SIZE(1.. maxnoofULAoAs)) OF MultipleULAoA-Item

MultipleULAoA-Item ::= CHOICE {
    uL-AoA                    UL-AoA,
    uL-ZoA                    ZoAInformation,
    choice-extension          ProtocolIE-SingleContainer { { MultipleULAoA-Item-ExtIEs } }
}

```



```

}
MultipleULAoA-Item-ExtIEs FlAP-PROTOCOL-IES ::= {
  ...
}
MDTPollutedMeasurementIndicator ::= ENUMERATED {iDC,no-IDC, ...}
MRB-ID ::= INTEGER (1..512, ...)
MulticastMBSSESSIONList ::= SEQUENCE (SIZE(1..maxnoofMBSSESSIONsofUE)) OF MulticastMBSSESSIONList-Item
MulticastMBSSESSIONList-Item ::= SEQUENCE {
  mbsSessionId          MBS-Session-ID,
  iE-Extensions         ProtocolExtensionContainer { { MulticastMBSSESSIONList-Item-ExtIEs } } OPTIONAL,
  ...
}
MulticastMBSSESSIONList-Item-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
  ...
}
MulticastMRBs-FailedToBeModified-Item ::= SEQUENCE {
  mRB-ID                MRB-ID,
  cause                 Cause OPTIONAL,
  iE-Extensions         ProtocolExtensionContainer { { MulticastMRBs-FailedtoBeModified-Item-ExtIEs} } OPTIONAL,
  ...
}
MulticastMRBs-FailedtoBeModified-Item-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
  ...
}
MulticastMRBs-FailedToBeSetup-Item ::= SEQUENCE {
  mRB-ID                MRB-ID,
  cause                 Cause OPTIONAL,
  iE-Extensions         ProtocolExtensionContainer { { MulticastMRBs-FailedToBeSetup-Item-ExtIEs} } OPTIONAL,
  ...
}
MulticastMRBs-FailedToBeSetup-Item-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
  ...
}
MulticastMRBs-FailedToBeSetupMod-Item ::= SEQUENCE {
  mRB-ID                MRB-ID,
  cause                 Cause OPTIONAL,
  iE-Extensions         ProtocolExtensionContainer { { MulticastMRBs-FailedToBeSetupMod-Item-ExtIEs} } OPTIONAL,
  ...
}
MulticastMRBs-FailedToBeSetupMod-Item-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
  ...
}

```

```

MulticastMRBs-Modified-Item ::= SEQUENCE {
    mRB-ID                MRB-ID,
    iE-Extensions         ProtocolExtensionContainer { { MulticastMRBs-Modified-Item-ExtIEs} } OPTIONAL,
    ...
}

MulticastMRBs-Modified-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MulticastMRBs-Setup-Item ::= SEQUENCE {
    mRB-ID                MRB-ID,
    iE-Extensions         ProtocolExtensionContainer { { MulticastMRBs-Setup-Item-ExtIEs} } OPTIONAL,
    ...
}

MulticastMRBs-Setup-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MulticastMRBs-SetupMod-Item ::= SEQUENCE {
    mRB-ID                MRB-ID,
    iE-Extensions         ProtocolExtensionContainer { { MulticastMRBs-SetupMod-Item-ExtIEs} } OPTIONAL,
    ...
}

MulticastMRBs-SetupMod-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MulticastMRBs-ToBeModified-Item ::= SEQUENCE {
    mRB-ID                MRB-ID,
    mRB-QoSInformation    QoSFlowLevelQoSParameters    OPTIONAL,
    mBS-Flows-Mapped-To-MRB-List  MBS-Flows-Mapped-To-MRB-List    OPTIONAL,
    mBS-DL-PDCP-SN-Length  PDCPSNLength                OPTIONAL,
    iE-Extensions         ProtocolExtensionContainer { { MulticastMRBs-ToBeModified-Item-ExtIEs} } OPTIONAL,
    ...
}

MulticastMRBs-ToBeModified-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MulticastMRBs-ToBeReleased-Item ::= SEQUENCE {
    mRB-ID                MRB-ID,
    iE-Extensions         ProtocolExtensionContainer { { MulticastMRBs-ToBeReleased-ItemExtIEs } } OPTIONAL,
    ...
}

MulticastMRBs-ToBeReleased-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MulticastMRBs-ToBeSetup-Item ::= SEQUENCE {

```

```

    mRB-ID                MRB-ID,
    mRB-QoSInformation     QoSFlowLevelQoSParameters,
    mBS-Flows-Mapped-To-MRB-List MBS-Flows-Mapped-To-MRB-List,
    mBS-DL-PDCP-SN-Length  PDCPSNLength,
    iE-Extensions         ProtocolExtensionContainer { { MulticastMRBs-ToBeSetup-Item-ExtIEs } },
    ...
}

MulticastMRBs-ToBeSetup-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MulticastMRBs-ToBeSetupMod-Item ::= SEQUENCE {
    mRB-ID                MRB-ID,
    mRB-QoSInformation     QoSFlowLevelQoSParameters,
    mBS-Flows-Mapped-To-MRB-List MBS-Flows-Mapped-To-MRB-List,
    mBS-DL-PDCP-SN-Length  PDCPSNLength,
    iE-Extensions         ProtocolExtensionContainer { { MulticastMRBs-ToBeSetupMod-Item-ExtIEs } },
    ...
}

MulticastMRBs-ToBeSetupMod-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MultiplexingInfo ::= SEQUENCE{
    iAB-MT-Cell-List      IAB-MT-Cell-List,
    iE-Extensions         ProtocolExtensionContainer { {MultiplexingInfo-ExtIEs} } OPTIONAL
}

MultiplexingInfo-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

M2Configuration ::= ENUMERATED {true, ...}

M5Configuration ::= SEQUENCE {
    m5period              M5period,
    m5-links-to-log       M5-Links-to-log,
    iE-Extensions         ProtocolExtensionContainer { { M5Configuration-ExtIEs } } OPTIONAL,
    ...
}

M5Configuration-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    {ID id-M5ReportAmount CRITICALITY ignore EXTENSION M5ReportAmount PRESENCE optional },
    ...
}

M5period ::= ENUMERATED { ms1024, ms2048, ms5120, ms10240, min1, ... }

M5ReportAmount ::= ENUMERATED { r1, r2, r4, r8, r16, r32, r64, infinity, ... }

M5-Links-to-log ::= ENUMERATED {uplink, downlink, both-uplink-and-downlink, ...}

```

```

M6Configuration ::= SEQUENCE {
    m6report-Interval    M6report-Interval,
    m6-links-to-log     M6-Links-to-log,
    iE-Extensions       ProtocolExtensionContainer { { M6Configuration-ExtIEs } } OPTIONAL,
    ...
}

M6Configuration-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    {ID id-M6ReportAmount    CRITICALITY ignore    EXTENSION M6ReportAmount PRESENCE optional },
    ...
}

M6report-Interval ::= ENUMERATED { ms120, ms240, ms640, ms1024, ms2048, ms5120, ms10240, ms20480, ms40960, min1, min6, min12, min30, ..., ms480}

M6ReportAmount ::= ENUMERATED { r1, r2, r4, r8, r16, r32, r64, infinity, ... }

M6-Links-to-log ::= ENUMERATED {uplink, downlink, both-uplink-and-downlink, ...}

M7Configuration ::= SEQUENCE {
    m7period            M7period,
    m7-links-to-log     M7-Links-to-log,
    iE-Extensions       ProtocolExtensionContainer { { M7Configuration-ExtIEs } } OPTIONAL,
    ...
}

M7Configuration-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    {ID id-M7ReportAmount    CRITICALITY ignore    EXTENSION M7ReportAmount PRESENCE optional},
    ...
}

M7period ::= INTEGER(1..60, ...)

M7ReportAmount ::= ENUMERATED { r1, r2, r4, r8, r16, r32, r64, infinity, ... }

M7-Links-to-log ::= ENUMERATED {downlink, ...}

MDT-Activation ::= ENUMERATED {
    immediate-MDT-only,
    immediate-MDT-and-Trace,
    ...
}

MDTConfiguration ::= SEQUENCE {
    mdt-Activation      MDT-Activation,
    measurementsToActivate    MeasurementsToActivate,
    m2Configuration    M2Configuration    OPTIONAL,
    -- C-ifM2: This IE shall be present if the Measurements to Activate IE has the second bit set to "1".
    m5Configuration    M5Configuration    OPTIONAL,
    -- C-ifM5: This IE shall be present if the Measurements to Activate IE has the fifth bit set to "1".
    m6Configuration    M6Configuration    OPTIONAL,
}

```

```

-- C-ifM6: This IE shall be present if the Measurements to Activate IE has the seventh bit set to "1".
m7Configuration          M7Configuration          OPTIONAL,
-- C-ifM7: This IE shall be present if the Measurements to Activate IE has the eighth bit set to "1".
iE-Extensions           ProtocolExtensionContainer { { MDTConfiguration-ExtIEs } } OPTIONAL,
...
}
MDTConfiguration-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
...
}

MDTPLMNList ::= SEQUENCE (SIZE(1..maxnoofMDTPLMNs)) OF PLMN-Identity

MDTPLMNModificationList ::= SEQUENCE (SIZE(0..maxnoofMDTPLMNs)) OF PLMN-Identity

MeasuredResultsValue ::= CHOICE {
  uL-AngleOfArrival      UL-AoA,
  uL-SRS-RSRP            UL-SRS-RSRP,
  uL-RTOA                UL-RTOA-Measurement,
  gNB-RxTxTimeDiff      GNB-RxTxTimeDiff,
  choice-extension      ProtocolIE-SingleContainer { { MeasuredResultsValue-ExtIEs } }
}

MeasuredResultsValue-ExtIEs FlAP-PROTOCOL-IES ::= {
  { ID id-ZoAInformation  CRITICALITY reject TYPE ZoAInformation  PRESENCE mandatory } |
  { ID id-MultipleULAoA   CRITICALITY reject TYPE MultipleULAoA  PRESENCE mandatory } |
  { ID id-UL-SRS-RSRPP    CRITICALITY reject TYPE UL-SRS-RSRPP    PRESENCE mandatory },
  ...
}

MeasurementsToActivate ::= BIT STRING (SIZE (8))

MUSIM-GapConfig ::= OCTET STRING

-- N

NA-Resource-Configuration-List ::= SEQUENCE (SIZE(1.. maxnoofHSNASlots)) OF NA-Resource-Configuration-Item

NA-Resource-Configuration-Item ::= SEQUENCE {
  nADownlink      NADownlink      OPTIONAL,
  nAUplink        NAUplink        OPTIONAL,
  nAFlexible      NAFlexible      OPTIONAL,
  iE-Extensions  ProtocolExtensionContainer { { NA-Resource-Configuration-Item-ExtIEs } } OPTIONAL
}

NA-Resource-Configuration-Item-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
...
}

NADownlink ::= ENUMERATED { true, false, ... }
NAFlexible ::= ENUMERATED { true, false, ... }
NAUplink ::= ENUMERATED { true, false, ... }

```

Neighbour-Node-Cells-List ::= SEQUENCE (SIZE(1..maxnoofNeighbourNodeCellsIAB)) OF Neighbour-Node-Cells-List-Item

```
Neighbour-Node-Cells-List-Item ::= SEQUENCE{
    nRCGI                                NRCGI,
    gNB-CU-UE-FlAP-ID   GNB-CU-UE-FlAP-ID   OPTIONAL,
    gNB-DU-UE-FlAP-ID   GNB-DU-UE-FlAP-ID   OPTIONAL,
    peer-Parent-Node-Indicator           ENUMERATED {true, ...} OPTIONAL,
    iAB-DU-Cell-Resource-Configuration-Mode-Info  OPTIONAL,
    iAB-STC-Info                       IAB-STC-Info   OPTIONAL,
    rACH-Config-Common                  RACH-Config-Common  OPTIONAL,
    rACH-Config-Common-IAB              RACH-Config-Common-IAB  OPTIONAL,
    cSI-RS-Configuration                OCTET STRING   OPTIONAL,
    sR-Configuration                    OCTET STRING   OPTIONAL,
    pDCCH-ConfigSIB1                    OCTET STRING   OPTIONAL,
    sCS-Common                           OCTET STRING   OPTIONAL,
    iE-Extensions                        ProtocolExtensionContainer {{Neighbour-Node-Cells-List-Item-ExtIEs}}  OPTIONAL
}
```

```
Neighbour-Node-Cells-List-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

NeedforGap ::= ENUMERATED {true, ...}

NeedForGapsInfoNR ::= OCTET STRING

NeedForGapNCSGInfoNR ::= OCTET STRING

NeedForGapNCSGInfoEUTRA ::= OCTET STRING

```
Neighbour-Cell-Information-Item ::= SEQUENCE {
    nRCGI                                NRCGI,
    intendedTDD-DL-ULConfig              IntendedTDD-DL-ULConfig  OPTIONAL,
    iE-Extensions                        ProtocolExtensionContainer {{ Neighbour-Cell-Information-ItemExtIEs }}  OPTIONAL
}
```

```
Neighbour-Cell-Information-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

NeighbourNR-CellsForSON-List ::= SEQUENCE (SIZE(1.. maxNeighbourCellforSON)) OF NeighbourNR-CellsForSON-Item

```
NeighbourNR-CellsForSON-Item ::= SEQUENCE {
    nRCGI                                NRCGI,
    nR-ModeInfoRel16                     NR-ModeInfoRel16     OPTIONAL,
    sSB-PositionsInBurst                  SSB-PositionsInBurst  OPTIONAL,
    nRPRACHConfig                         NRPRACHConfig        OPTIONAL,
    iE-Extensions                          ProtocolExtensionContainer {{ NeighbourNR-CellsForSON-Item-ExtIEs }}  OPTIONAL,
    ...
}
```

```
NeighbourNR-CellsForSON-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```

NGRANAllocationAndRetentionPriority ::= SEQUENCE {
    priorityLevel          PriorityLevel,
    pre-emptionCapability  Pre-emptionCapability,
    pre-emptionVulnerability Pre-emptionVulnerability,
    iE-Extensions          ProtocolExtensionContainer { { NGRANAllocationAndRetentionPriority-ExtIEs } } OPTIONAL
}

NGRANAllocationAndRetentionPriority-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

NGRANHighAccuracyAccessPointPosition ::= SEQUENCE {
    latitude          INTEGER (-2147483648.. 2147483647),
    longitude         INTEGER (-2147483648.. 2147483647),
    altitude          INTEGER (-64000..1280000),
    uncertaintySemi-major INTEGER (0..255),
    uncertaintySemi-minor INTEGER (0..255),
    orientationOfMajorAxis INTEGER (0..179),
    horizontalConfidence INTEGER (0..100),
    uncertaintyAltitude INTEGER (0..255),
    verticalConfidence INTEGER (0..100),

    iE-Extensions          ProtocolExtensionContainer { { NGRANHighAccuracyAccessPointPosition-ExtIEs } } OPTIONAL
}

NGRANHighAccuracyAccessPointPosition-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

NID ::= BIT STRING (SIZE(44))

NonFlterminatingTopologyIndicator ::= ENUMERATED {
    true,
    ...
}

NR-CGI-List-For-Restart-Item ::= SEQUENCE {
    nRCGI          NRCGI,
    iE-Extensions  ProtocolExtensionContainer { { NR-CGI-List-For-Restart-ItemExtIEs } } OPTIONAL,
    ...
}

NR-CGI-List-For-Restart-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

NR-PRSBeamInformation ::= SEQUENCE {
    nR-PRSBeamInformationList NR-PRSBeamInformationList,
    LCStoGCSTranslationList  LCStoGCSTranslationList OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { NR-PRSBeamInformation-ExtIEs } } OPTIONAL
}

```

```

NR-PRSBearInformation-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
    ...
}

NR-PRSBearInformationList ::= SEQUENCE (SIZE(1.. maxnoofPRS-ResourceSets)) OF NR-PRSBearInformationItem

NR-PRSBearInformationItem ::= SEQUENCE {
    PRSResourceSetID      PRS-Resource-Set-ID,
    PRSAngleList          PRSAngleList,
    iE-Extensions         ProtocolExtensionContainer { { NR-PRSBearInformationItem-ExtIEs } } OPTIONAL
}

NR-PRSBearInformationItem-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
    ...
}

NR-TADV ::= INTEGER (0.. 7690)

NRRedCapUEIndication ::= ENUMERATED {true, ...}

NRPagingeDRXInformation ::= SEQUENCE {
    nrpaging-eDRX-Cycle-Idle      NRPaging-eDRX-Cycle-Idle,
    nrpaging-Time-Window          NRPaging-Time-Window          OPTIONAL,
    iE-Extensions                 ProtocolExtensionContainer { {NRPagingeDRXInformation-ExtIEs} } OPTIONAL,
    ...
}

NRPagingeDRXInformation-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
    ...
}

NRPaging-eDRX-Cycle-Idle ::= ENUMERATED {
    hfquarter, hfhalf, hf1, hf2, hf4,
    hf8, hf16, hf32, hf64, hf128, hf256, hf512, hf1024,
    ...
}

NRPaging-Time-Window ::= ENUMERATED {
    s1, s2, s3, s4, s5,
    s6, s7, s8, s9, s10,
    s11, s12, s13, s14, s15, s16,
    ...,
    s17, s18, s19, s20, s21,
    s22, s23, s24, s25, s26,
    s27, s28, s29, s30, s31, s32
}

NRPagingeDRXInformationforRRCINACTIVE ::= SEQUENCE {
    nrpaging-eDRX-Cycle-Inactive      NRPaging-eDRX-Cycle-Inactive,
    iE-Extensions                     ProtocolExtensionContainer { { NRPagingeDRXInformationforRRCINACTIVE-ExtIEs } } OPTIONAL,
    ...
}

```



```

NRPagingeDRXInformationforRRCINACTIVE-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
  ...
}

NRPaging-eDRX-Cycle-Inactive ::= ENUMERATED {
  hfquarter, hfhalf, hf1,
  ...
}

NonDynamic5QIDescriptor ::= SEQUENCE {
  fiveQI                INTEGER (0..255, ...),
  qosPriorityLevel      INTEGER (1..127)           OPTIONAL,
  averagingWindow      AveragingWindow           OPTIONAL,
  maxDataBurstVolume   MaxDataBurstVolume        OPTIONAL,
  iE-Extensions        ProtocolExtensionContainer { { NonDynamic5QIDescriptor-ExtIEs } } OPTIONAL
}

NonDynamic5QIDescriptor-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
  { ID id-CNPacketDelayBudgetDownlink CRITICALITY ignore EXTENSION ExtendedPacketDelayBudget PRESENCE optional }|
  { ID id-CNPacketDelayBudgetUplink   CRITICALITY ignore EXTENSION ExtendedPacketDelayBudget PRESENCE optional },
  ...
}

NonDynamicPQIDescriptor ::= SEQUENCE {
  fiveQI                INTEGER (0..255, ...),
  qosPriorityLevel      INTEGER (1..8, ...)        OPTIONAL,
  averagingWindow      AveragingWindow           OPTIONAL,
  maxDataBurstVolume   MaxDataBurstVolume        OPTIONAL,
  iE-Extensions        ProtocolExtensionContainer { { NonDynamicPQIDescriptor-ExtIEs } } OPTIONAL
}

NonDynamicPQIDescriptor-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
  ...
}

NonUPTrafficType ::= ENUMERATED {ue-associated, non-ue-associated, non-fl, bap-control-pdu,...}

NoofDownlinkSymbols ::= INTEGER (0..14)

NoofUplinkSymbols   ::= INTEGER (0..14)

Notification-Cause ::= ENUMERATED {fulfilled, not-fulfilled, ...}

NotificationControl ::= ENUMERATED {active, not-active, ...}

NotificationInformation ::= SEQUENCE {
  message-Identifier MessageIdentifier,
  serialNumber       SerialNumber,
  iE-Extensions      ProtocolExtensionContainer { { NotificationInformationExtIEs } } OPTIONAL,
  ...
}

NotificationInformationExtIEs FlAP-PROTOCOL-EXTENSION ::= {
  ...
}

```

```

}

NPNBroadcastInformation ::= CHOICE {
    sNPN-Broadcast-Information          NPN-Broadcast-Information-SNPN,
    pNI-NPN-Broadcast-Information      NPN-Broadcast-Information-PNI-NPN,
    choice-extension                    ProtocolIE-SingleContainer { {NPNBroadcastInformation-ExtIEs} }
}

NPNBroadcastInformation-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

NPN-Broadcast-Information-SNPN ::= SEQUENCE {
    broadcastSNPNID-List                BroadcastSNPN-ID-List,
    iE-Extension                        ProtocolExtensionContainer { {NPN-Broadcast-Information-SNPN-ExtIEs} } OPTIONAL,
    ...
}

NPN-Broadcast-Information-SNPN-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

NPN-Broadcast-Information-PNI-NPN ::= SEQUENCE {
    broadcastPNI-NPN-ID-Information     BroadcastPNI-NPN-ID-List,
    iE-Extension                        ProtocolExtensionContainer { {NPN-Broadcast-Information-PNI-NPN-ExtIEs} } OPTIONAL,
    ...
}

NPN-Broadcast-Information-PNI-NPN-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

NPNSupportInfo ::= CHOICE {
    sNPN-Information                    NID,
    choice-extension                    ProtocolIE-SingleContainer { { NPNSupportInfo-ExtIEs } }
}

NPNSupportInfo-ExtIEs                FLAP-PROTOCOL-IES ::= {
    ...
}

NRCarrierList ::= SEQUENCE (SIZE(1..maxnoofNRSCSs)) OF NRCarrierItem

NRCarrierItem ::= SEQUENCE {
    carrierSCS                          NRSCS,
    offsetToCarrier                      INTEGER (0..2199, ...),
    carrierBandwidth                     INTEGER (0..maxnoofPhysicalResourceBlocks, ...),
    iE-Extension                        ProtocolExtensionContainer { {NRCarrierItem-ExtIEs} } OPTIONAL,
    ...
}

NRCarrierItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

NRFreqInfo ::= SEQUENCE {
    nRARFCN          INTEGER (0..maxNRARFCN),
    sul-Information SUL-Information OPTIONAL,
    freqBandListNr  SEQUENCE (SIZE(1..maxnoofNrCellBands)) OF FreqBandNrItem,
    iE-Extensions  ProtocolExtensionContainer { { NRFreqInfoExtIEs } } OPTIONAL,
    ...
}

NRFreqInfoExtIEs          FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-FrequencyShift7p5khz    CRITICALITY ignore  EXTENSION FrequencyShift7p5khz  PRESENCE optional },
    ...
}

NRCGI ::= SEQUENCE {
    pLMN-Identity          PLMN-Identity,
    nRCellIdentity        NRCellIdentity,
    iE-Extensions         ProtocolExtensionContainer { { NRCGI-ExtIEs } } OPTIONAL,
    ...
}

NRCGI-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

NR-Mode-Info ::= CHOICE {
    fDD          FDD-Info,
    tDD          TDD-Info,
    choice-extension          ProtocolIE-SingleContainer { { NR-Mode-Info-ExtIEs } }
}

NR-Mode-Info-ExtIEs FLAP-PROTOCOL-IES ::= {
    { ID id-NR-U          CRITICALITY ignore  TYPE NR-U-Channel-Info-List PRESENCE optional },
    ...
}

NR-ModeInfoRel16 ::= CHOICE {
    fDD          FDD-InfoRel16,
    tDD          TDD-InfoRel16,
    choice-extension          ProtocolIE-SingleContainer { { NR-ModeInfoRel16-ExtIEs } }
}

NR-ModeInfoRel16-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

NRPRACHConfig ::= SEQUENCE {
    ulPRACHConfigList          NRPRACHConfigList          OPTIONAL,
    sulPRACHConfigList          NRPRACHConfigList          OPTIONAL,
    iE-Extension                ProtocolExtensionContainer { { NRPRACHConfig-ExtIEs } } OPTIONAL,
    ...
}

```

```
NRPRACHConfig-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
NRCeIIIdentity ::= BIT STRING (SIZE(36))
```

```
NRNRB ::= ENUMERATED { nrb11, nrb18, nrb24, nrb25, nrb31, nrb32, nrb38, nrb51, nrb52, nrb65, nrb66, nrb78, nrb79, nrb93, nrb106, nrb107, nrb121,
nrb132, nrb133, nrb135, nrb160, nrb162, nrb189, nrb216, nrb217, nrb245, nrb264, nrb270, nrb273, ..., nrb33, nrb62, nrb124, nrb148, nrb248, nrb44,
nrb58, nrb92, nrb119, nrb188, nrb242}
```

```
NRPCI ::= INTEGER(0..1007)
```

```
NRPRACHConfigList ::= SEQUENCE (SIZE(0..maxnoofPRACHconfigs)) OF NRPRACHConfigItem
```

```
NRPRACHConfigItem ::= SEQUENCE {
    nRSCS NRSCS,
    prachFreqStartfromCarrier INTEGER (0..maxnoofPhysicalResourceBlocks-1, ...),
    prachFDM ENUMERATED {one, two, four, eight, ...},
    prachConfigIndex INTEGER (0..255, ..., 256..262),
    ssb-perRACH-Occasion ENUMERATED {oneEighth, oneFourth, oneHalf, one,
two, four, eight, sixteen, ...},
    freqDomainLength FreqDomainLength,
    zeroCorrelZoneConfig INTEGER (0..15),
    iE-Extension ProtocolExtensionContainer { { NRPRACHConfigItem-ExtIEs } } OPTIONAL,
    ...
}
```

```
NRPRACHConfigItem-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
NRSCS ::= ENUMERATED { scs15, scs30, scs60, scs120, ..., scs480, scs960}
```

```
NRUERLFReportContainer ::= OCTET STRING
```

```
NR-U-Channel-Info-List ::= SEQUENCE (SIZE (1..maxnoofNR-UChannelIDs)) OF NR-U-Channel-Info-Item
```

```
NR-U-Channel-Info-Item ::= SEQUENCE {
    nr-U-channel-ID INTEGER(1.. maxnoofNR-UChannelIDs,...),
    nR-ARFCN INTEGER (0..maxNRARFCN),
    bandwidth ENUMERATED{mHz-10,mHz-20,mHz-40, mHz-60, mHz-80,...},
    iE-Extensions ProtocolExtensionContainer { { NR-U-Channel-Info-List-ExtIEs } } OPTIONAL,
    ...
}
```

```
NR-U-Channel-Info-List-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
NR-U-Channel-List ::= SEQUENCE (SIZE (1..maxnoofNR-UChannelIDs)) OF NR-U-Channel-Item
```

```

NR-U-Channel-Item ::= SEQUENCE {
    nR-U-ChannelID          INTEGER(1..maxnoofNR-UChannelIDs),
    channelOccupancyTimePercentageDL  ChannelOccupancyTimePercentage,
    energyDetectionThreshold  EnergyDetectionThreshold,
    iE-Extensions          ProtocolExtensionContainer { { NR-U-Channel-Item-ExtIEs } } OPTIONAL,
    ...
}

NR-U-Channel-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

NumberOfActiveUEs ::= INTEGER(0..16777215, ...)

NumberOfBroadcasts ::= INTEGER (0..65535)

NumberOfBroadcastRequest ::= INTEGER (0..65535)

NumberOfTRPRxTEG ::= ENUMERATED {two, three, four, six, eight, ...}

NumberOfTRPRxTxTEG ::= ENUMERATED {wo, three, four, six, eight, ...}

NumDLULSymbols ::= SEQUENCE {
    numDLSymbols          INTEGER (0..13, ...),
    numULSymbols          INTEGER (0..13, ...),
    iE-Extensions          ProtocolExtensionContainer { { NumDLULSymbols-ExtIEs } } OPTIONAL
}

NumDLULSymbols-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-permutation          CRITICALITY ignore EXTENSION Permutation          PRESENCE optional },
    ...
}

NRV2XServicesAuthorized ::= SEQUENCE {
    vehicleUE          VehicleUE          OPTIONAL,
    pedestrianUE          PedestrianUE          OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { {NRV2XServicesAuthorized-ExtIEs} } OPTIONAL
}

NRV2XServicesAuthorized-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

NRUESidelinkAggregateMaximumBitrate ::= SEQUENCE {
    uENRSidelinkAggregateMaximumBitrate          BitRate,
    iE-Extensions          ProtocolExtensionContainer { {NRUESidelinkAggregateMaximumBitrate-ExtIEs} } OPTIONAL
}

NRUESidelinkAggregateMaximumBitrate-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

NZP-CSI-RS-ResourceID ::= INTEGER (0..191)

-- O

OffsetToPointA ::= INTEGER (0..2199,...)

```
OnDemandPRS-Info ::= SEQUENCE {
    onDemandPRSRequestAllowed          BIT STRING (SIZE (16)),
    allowedResourceSetPeriodicityValues BIT STRING (SIZE (24)) OPTIONAL,
    allowedPRSBandwidthValues          BIT STRING (SIZE (64)) OPTIONAL,
    allowedResourceRepetitionFactorValues BIT STRING (SIZE (8))  OPTIONAL,
    allowedResourceNumberOfSymbolsValues BIT STRING (SIZE (8))  OPTIONAL,
    allowedCombSizeValues              BIT STRING (SIZE (8))  OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { OnDemandPRS-Info-ExtIEs } } OPTIONAL,
    ...
}
```

```
OnDemandPRS-Info-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

-- P

PacketDelayBudget ::= INTEGER (0..1023, ...)

```
PacketErrorRate ::= SEQUENCE {
    pER-Scalar PER-Scalar,
    pER-Exponent PER-Exponent,
    iE-Extensions ProtocolExtensionContainer { { PacketErrorRate-ExtIEs } } OPTIONAL,
    ...
}
```

```
PacketErrorRate-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

PER-Scalar ::= INTEGER (0..9, ...)

PER-Exponent ::= INTEGER (0..9, ...)

```
PagingCell-Item ::= SEQUENCE {
    nRCGI NRCGI ,
    iE-Extensions ProtocolExtensionContainer { { PagingCell-ItemExtIEs } } OPTIONAL
}
```

```
PagingCell-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-LastUsedCellIndication CRITICALITY ignore EXTENSION LastUsedCellIndication PRESENCE optional }|
    { ID id-PEISubgroupingSupportIndication CRITICALITY ignore EXTENSION PEISubgroupingSupportIndication PRESENCE optional },
    ...
}
```

```
PagingDRX ::= ENUMERATED {
    v32,
```

```

    v64,
    v128,
    v256,
    ...
}

PagingIdentity ::= CHOICE {
    rANUEPagingIdentity RANUEPagingIdentity,
    cNUEPagingIdentity CNUEPagingIdentity,
    choice-extension      ProtocolIE-SingleContainer { { PagingIdentity-ExtIEs } }
}

PagingCause ::= ENUMERATED { voice, ...}

PagingIdentity-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

PagingOrigin ::= ENUMERATED { non-3gpp, ...}

PagingPriority ::= ENUMERATED { priolevel1, priolevel2, priolevel3, priolevel4, priolevel5, priolevel6, priolevel7, priolevel8,...}

PEIPSAssistanceInfo ::= SEQUENCE {
    cNSubgroupID      CNSubgroupID,
    iE-Extensions     ProtocolExtensionContainer { { PEIPSAssistanceInfo-ExtIEs } }    OPTIONAL
}

PEIPSAssistanceInfo-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

RelativePathDelay ::= CHOICE {
    k0                INTEGER (0..16351),
    k1                INTEGER (0..8176),
    k2                INTEGER (0..4088),
    k3                INTEGER (0..2044),
    k4                INTEGER (0..1022),
    k5                INTEGER (0..511),
    choice-extension  ProtocolIE-SingleContainer { { RelativePathDelay-ExtIEs } }
}

RelativePathDelay-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

Parent-IAB-Nodes-NA-Resource-Configuration-List ::= SEQUENCE (SIZE(1..maxnoofHSNASlots)) OF Parent-IAB-Nodes-NA-Resource-Configuration-Item

Parent-IAB-Nodes-NA-Resource-Configuration-Item ::= SEQUENCE {
    nADownlink        NADownlink        OPTIONAL,
    nAUplink          NAUplink          OPTIONAL,
    nAFlexible        NAFlexible        OPTIONAL,
    iE-Extensions     ProtocolExtensionContainer { { Parent-IAB-Nodes-NA-Resource-Configuration-Item-ExtIEs } } OPTIONAL
}

```

```

Parent-IAB-Nodes-NA-Resource-Configuration-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

PartialSuccessCell ::= SEQUENCE {
  broadcastCellList      BroadcastCellList,
  iE-Extensions          ProtocolExtensionContainer { { PartialSuccessCell-ExtIEs } } OPTIONAL,
  ...
}

PartialSuccessCell-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

PathlossReferenceInfo ::= SEQUENCE {
  pathlossReferenceSignal PathlossReferenceSignal,
  iE-Extensions           ProtocolExtensionContainer { {PathlossReferenceInfo-ExtIEs} } OPTIONAL
}

PathlossReferenceInfo-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

PathlossReferenceSignal ::= CHOICE {
  sSB                               SSB,
  dL-PRS                           DL-PRS,
  choice-extension                 ProtocolIE-SingleContainer {{PathlossReferenceSignal-ExtIEs }}
}

PathlossReferenceSignal-ExtIEs FLAP-PROTOCOL-IES ::= {
  ...
}

PathSwitchConfiguration ::= SEQUENCE {
  targetRelayUEID             BIT STRING(SIZE(24)),
  remoteUELocalID            RemoteUELocalID,
  t420                       ENUMERATED {ms50, ms100, ms150, ms200, ms500, ms1000, ms2000, ms10000},
  iE-Extensions              ProtocolExtensionContainer { { PathSwitchConfiguration-ExtIEs } } OPTIONAL,
  ...
}

PathSwitchConfiguration-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

PC5QoSFlowIdentifier ::= INTEGER (1..2048)

PC5-QoS-Characteristics ::= CHOICE {
  non-Dynamic-PQI            NonDynamicPQIDescriptor,
  dynamic-PQI                DynamicPQIDescriptor,
  choice-extension          ProtocolIE-SingleContainer { { PC5-QoS-Characteristics-ExtIEs } }
}

PC5-QoS-Characteristics-ExtIEs FLAP-PROTOCOL-IES ::= {
  ...
}

```



```

}

PC5QoSParameters ::= SEQUENCE {
    pC5-QoS-Characteristics      PC5-QoS-Characteristics,
    pC5-QoS-Flow-Bit-Rates      PC5FlowBitRates          OPTIONAL,
    iE-Extensions                ProtocolExtensionContainer { { PC5QoSParameters-ExtIEs } } OPTIONAL,
    ...
}

PC5QoSParameters-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PC5FlowBitRates ::= SEQUENCE {
    guaranteedFlowBitRate      BitRate,
    maximumFlowBitRate        BitRate,
    iE-Extensions              ProtocolExtensionContainer { { PC5FlowBitRates-ExtIEs } } OPTIONAL,
    ...
}

PC5FlowBitRates-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PC5RLCChannelID ::= INTEGER (1..512, ...)

PC5RLCChannelQoSInformation ::= CHOICE {
    pC5RLCChannelQoS          QoSFlowLevelQoSParameters,
    pC5ControlPlaneTrafficType ENUMERATED {srb1,srb2,...},
    choice-extension          ProtocolIE-SingleContainer { { PC5RLCChannelQoSInformation-ExtIEs } }
}

PC5RLCChannelQoSInformation-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

PC5RLCChannelToBeSetupList ::= SEQUENCE (SIZE(1.. maxnoofPC5RLCChannels)) OF PC5RLCChannelToBeSetupItem

PC5RLCChannelToBeSetupItem ::= SEQUENCE {
    pC5RLCChannelID          PC5RLCChannelID,
    remoteUELocalID          RemoteUELocalID          OPTIONAL,
    pC5RLCChannelQoSInformation PC5RLCChannelQoSInformation,
    rLCMode                  RLCMode,
    iE-Extensions            ProtocolExtensionContainer { { PC5RLCChannelToBeSetupItem-ExtIEs } } OPTIONAL,
    ...
}

PC5RLCChannelToBeSetupItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PC5RLCChannelToBeModifiedList ::= SEQUENCE (SIZE(1.. maxnoofPC5RLCChannels)) OF PC5RLCChannelToBeModifiedItem

```

```

PC5RLCChannelToBeModifiedItem ::= SEQUENCE {
    pC5RLCChannelID          PC5RLCChannelID,
    remoteUELocalID          RemoteUELocalID          OPTIONAL,
    pC5RLCChannelQoSInformation PC5RLCChannelQoSInformation OPTIONAL,
    rLCMode                  RLCMode                  OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { PC5RLCChannelToBeModifiedItem-ExtIEs } } OPTIONAL,
    ...
}

PC5RLCChannelToBeModifiedItem-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PC5RLCChannelToBeReleasedList ::= SEQUENCE (SIZE(1.. maxnoofPC5RLCChannels)) OF PC5RLCChannelToBeReleasedItem

PC5RLCChannelToBeReleasedItem ::= SEQUENCE {
    pC5RLCChannelID          PC5RLCChannelID,
    remoteUELocalID          RemoteUELocalID          OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { PC5RLCChannelToBeReleasedItem-ExtIEs } } OPTIONAL,
    ...
}

PC5RLCChannelToBeReleasedItem-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PC5RLCChannelSetupList ::= SEQUENCE (SIZE(1.. maxnoofPC5RLCChannels)) OF PC5RLCChannelSetupItem

PC5RLCChannelSetupItem ::= SEQUENCE {
    pC5RLCChannelID          PC5RLCChannelID,
    remoteUELocalID          RemoteUELocalID          OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { PC5RLCChannelSetupItem-ExtIEs } } OPTIONAL,
    ...
}

PC5RLCChannelSetupItem-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PC5RLCChannelFailedToBeSetupList ::= SEQUENCE (SIZE(1.. maxnoofPC5RLCChannels)) OF PC5RLCChannelFailedToBeSetupItem

PC5RLCChannelFailedToBeSetupItem ::= SEQUENCE {
    pC5RLCChannelID          PC5RLCChannelID,
    remoteUELocalID          RemoteUELocalID          OPTIONAL,
    cause                    Cause                    OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { PC5RLCChannelFailedToBeSetupItem-ExtIEs } } OPTIONAL,
    ...
}

PC5RLCChannelFailedToBeSetupItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PC5RLCChannelModifiedList ::= SEQUENCE (SIZE(1.. maxnoofPC5RLCChannels)) OF PC5RLCChannelModifiedItem

```

```

PC5RLCChannelModifiedItem ::= SEQUENCE {
    pC5RLCChannelID          PC5RLCChannelID,
    remoteUELocalID          RemoteUELocalID          OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { PC5RLCChannelModifiedItem-ExtIEs } } OPTIONAL,
    ...
}

PC5RLCChannelModifiedItem-ExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PC5RLCChannelFailedToBeModifiedList ::= SEQUENCE (SIZE(1.. maxnoofPC5RLCChannels)) OF PC5RLCChannelFailedToBeModifiedItem

PC5RLCChannelFailedToBeModifiedItem ::= SEQUENCE {
    pC5RLCChannelID          PC5RLCChannelID,
    remoteUELocalID          RemoteUELocalID          OPTIONAL,
    cause                    Cause          OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { PC5RLCChannelFailedToBeModifiedItem-ExtIEs } } OPTIONAL,
    ...
}

PC5RLCChannelFailedToBeModifiedItem-ExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PC5RLCChannelRequiredToBeModifiedList ::= SEQUENCE (SIZE(1.. maxnoofPC5RLCChannels)) OF PC5RLCChannelRequiredToBeModifiedItem

PC5RLCChannelRequiredToBeModifiedItem ::= SEQUENCE {
    pC5RLCChannelID          PC5RLCChannelID,
    remoteUELocalID          RemoteUELocalID          OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { PC5RLCChannelRequiredToBeModifiedItem-ExtIEs } } OPTIONAL,
    ...
}

PC5RLCChannelRequiredToBeModifiedItem-ExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PC5RLCChannelRequiredToBeReleasedList ::= SEQUENCE (SIZE(1.. maxnoofPC5RLCChannels)) OF PC5RLCChannelRequiredToBeReleasedItem

PC5RLCChannelRequiredToBeReleasedItem ::= SEQUENCE {
    pC5RLCChannelID          PC5RLCChannelID,
    remoteUELocalID          RemoteUELocalID          OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { PC5RLCChannelRequiredToBeReleasedItem-ExtIEs } } OPTIONAL,
    ...
}

PC5RLCChannelRequiredToBeReleasedItem-ExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDCCH-BlindDetectionSCG ::= OCTET STRING

```

```

PDCMeasurementPeriodicity ::= ENUMERATED
{ms80, ms120, ms160, ms240, ms320, ms480, ms640, ms1024, ms1280, ms2048, ms2560, ms5120, ...}

PDCMeasurementQuantities ::= SEQUENCE (SIZE (1.. maxnoofMeasPDC)) OF ProtocolIE-SingleContainer { {PDCMeasurementQuantities-ItemIEs} }

PDCMeasurementQuantities-ItemIEs FLAP-PROTOCOL-IES ::= {
  { ID id-PDCMeasurementQuantities-Item  CRITICALITY reject  TYPE PDCMeasurementQuantities-Item  PRESENCE mandatory}
}

PDCMeasurementQuantities-Item ::= SEQUENCE {
  pDCmeasurementQuantitiesValue          PDCMeasurementQuantitiesValue,
  iE-Extensions                          ProtocolExtensionContainer { { PDCMeasurementQuantitiesValue-ExtIEs} } OPTIONAL
}

PDCMeasurementQuantitiesValue-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

PDCMeasurementQuantitiesValue ::= ENUMERATED {
  nr-pdc-tadv,
  gNB-rx-tx,
  ...
}

PDCMeasurementResult ::= SEQUENCE {
  pDCMeasuredResultsList                PDCMeasuredResultsList,
  iE-Extensions                          ProtocolExtensionContainer { { PDCMeasurementResult-ExtIEs} } OPTIONAL
}

PDCMeasurementResult-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

PDCMeasuredResultsList ::= SEQUENCE (SIZE(1..maxnoofMeasPDC)) OF PDCMeasuredResults-Item

PDCMeasuredResults-Item ::= SEQUENCE {
  pDCMeasuredResults-Value              PDCMeasuredResults-Value,
  iE-Extensions                          ProtocolExtensionContainer {{ PDCMeasuredResults-Item-ExtIEs }} OPTIONAL
}

PDCMeasuredResults-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

PDCMeasuredResults-Value ::= CHOICE {
  pDC-TADV-NR                            PDC-TADV-NR,
  pDC-RxTxTimeDiff                       PDC-RxTxTimeDiff,
  choice-extension                        ProtocolIE-SingleContainer { { PDCMeasuredResults-Value-ExtIEs} }
}

PDCMeasuredResults-Value-ExtIEs FLAP-PROTOCOL-IES ::= {
  ...
}

```

```
PDCReportType ::= ENUMERATED {
    onDemand,
    periodic,
    ...
}

PDC-RxTxTimeDiff ::= INTEGER (0..61565, ...)

PDC-TADV-NR ::= INTEGER (0..62500, ...)

PDCP-SN ::= INTEGER (0..4095)

PDCPSNLength ::= ENUMERATED { twelve-bits, eighteen-bits, ... }

PDUSessionID ::= INTEGER (0..255)

PEISubgroupingSupportIndication ::= ENUMERATED { true, ... }

ReportingPeriodicityValue ::= INTEGER (0..512, ...)

Periodicity ::= INTEGER (0..640000, ...)

PeriodicitySRS ::= ENUMERATED { ms0p125, ms0p25, ms0p5, ms0p625, ms1, ms1p25, ms2, ms2p5, ms4, ms5, ms8, ms10, ms16, ms20, ms32, ms40, ms64, ms80,
ms160, ms320, ms640, ms1280, ms2560, ms5120, ms10240, ... }

PeriodicityList ::= SEQUENCE (SIZE(1.. maxnoSRS-ResourcePerSet)) OF PeriodicityList-Item

PeriodicityList-Item ::= SEQUENCE {
    periodicitySRS PeriodicitySRS,
    iE-Extensions ProtocolExtensionContainer { { PeriodicityList-ItemExtIEs } } OPTIONAL
}

PeriodicityList-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Permutation ::= ENUMERATED { dfu, ufd, ... }

Ph-InfoMCG ::= OCTET STRING

Ph-InfoSCG ::= OCTET STRING

PLMN-Identity ::= OCTET STRING (SIZE(3))

PlayoutDelayForMediaStartup ::= OCTET STRING

PortNumber ::= BIT STRING (SIZE (16))

PosAssistance-Information ::= OCTET STRING

PosAssistanceInformationFailureList ::= OCTET STRING
```

```

PosBroadcast ::= ENUMERATED {
    start,
    stop,
    ...
}

PosConextRevIndication ::= ENUMERATED {true, ...}

PositioningBroadcastCells ::= SEQUENCE (SIZE (1..maxnoBcastCell)) OF NRCGI

PosMeasGapPreConfigList ::= SEQUENCE {
    posMeasGapPreConfigToAddModList      OCTET STRING          OPTIONAL,
    posMeasGapPreConfigToReleaseList     OCTET STRING          OPTIONAL,
    iE-Extensions      ProtocolExtensionContainer { { PosMeasGapPreConfigList-ExtIEs} } OPTIONAL
}

PosMeasGapPreConfigList-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

MeasurementPeriodicity ::= ENUMERATED
{ms120, ms240, ms480, ms640, ms1024, ms2048, ms5120, ms10240, min1, min6, min12, min30, ..., ms20480, ms40960, extended }

MeasurementPeriodicityExtended ::= ENUMERATED {ms160, ms320, ms1280, ms2560, ms61440, ms81920, ms368640, ms737280, ms1843200, ...}

PosMeasurementPeriodicityNR-AoA ::= ENUMERATED {
    ms160,
    ms320,
    ms640,
    ms1280,
    ms2560,
    ms5120,
    ms10240,
    ms20480,
    ms40960,
    ms61440,
    ms81920,
    ms368640,
    ms737280,
    ms1843200,
    ...
}

PosMeasurementQuantities ::= SEQUENCE (SIZE(1.. maxnoofPosMeas)) OF PosMeasurementQuantities-Item

PosMeasurementQuantities-Item ::= SEQUENCE {
    posMeasurementType      PosMeasurementType,
    timingReportingGranularityFactor  INTEGER (0..5) OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { { PosMeasurementQuantities-ItemExtIEs} } OPTIONAL
}

```

```

PosMeasurementQuantities-ItemExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
}
...
}

PosMeasurementResult ::= SEQUENCE (SIZE (1.. maxNoofPosMeas)) OF PosMeasurementResultItem

PosMeasurementResultItem ::= SEQUENCE {
    measuredResultsValue      MeasuredResultsValue,
    timeStamp                  TimeStamp,
    measurementQuality         TRPMeasurementQuality OPTIONAL,
    measurementBeamInfo        MeasurementBeamInfo     OPTIONAL,
    iE-Extensions              ProtocolExtensionContainer { { PosMeasurementResultItemExtIEs } } OPTIONAL
}

PosMeasurementResultItemExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-ARP-ID             CRITICALITY ignore EXTENSION ARP-ID           PRESENCE optional }|
    { ID id-SRSResourcetype    CRITICALITY ignore EXTENSION SRSResourcetype PRESENCE optional }|
    { ID id-LoS-NLoSInformation CRITICALITY ignore EXTENSION LoS-NLoSInformation PRESENCE optional },
    ...
}

PosMeasurementResultList ::= SEQUENCE (SIZE(1.. maxNoOfMeasTRPs)) OF PosMeasurementResultList-Item

PosMeasurementResultList-Item ::= SEQUENCE {
    posMeasurementResult      PosMeasurementResult,
    trPID                      TRPID,
    iE-Extensions              ProtocolExtensionContainer { { PosMeasurementResultList-ItemExtIEs} } OPTIONAL
}

PosMeasurementResultList-ItemExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-NRCGI              CRITICALITY ignore EXTENSION NRCGI           PRESENCE optional },
    ...
}

PosMeasurementType ::= ENUMERATED {
    gnb-rx-tx,
    ul-srs-rsrp,
    ul-aoa,
    ul-rtoa,
    ... ,
    multiple-ul-aoa,
    ul-srs-rsrpp
}

PosReportCharacteristics ::= ENUMERATED {
    ondemand,
    periodic,
    ...
}

PosResourceSetType ::= CHOICE {
    periodic      PosResourceSetTypePR,
    semi-persistent PosResourceSetTypeSP,
    aperiodic     PosResourceSetTypeAP,
}

```

```

    choice-extension    ProtocolIE-SingleContainer {{ PosResourceSetType-ExtIEs }}
}

PosResourceSetType-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

PosResourceSetTypePR ::= SEQUENCE {
    posperiodicSet      ENUMERATED{true, ...},
    iE-Extensions      ProtocolExtensionContainer { { PosResourceSetTypePR-ExtIEs} }    OPTIONAL
}

PosResourceSetTypePR-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PosResourceSetTypeSP ::= SEQUENCE {
    possemi-persistentSet      ENUMERATED{true, ...},
    iE-Extensions              ProtocolExtensionContainer { { PosResourceSetTypeSP-ExtIEs} }    OPTIONAL
}

PosResourceSetTypeSP-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PosResourceSetTypeAP ::= SEQUENCE {
    sRSResourceTrigger-List    INTEGER(1..3),
    iE-Extensions              ProtocolExtensionContainer { { PosResourceSetTypeAP-ExtIEs} }    OPTIONAL
}

PosResourceSetTypeAP-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PosSITypeList ::= SEQUENCE (SIZE(1.. maxnoofPosSITypes)) OF PosSIType-Item
PosSIType-Item ::= SEQUENCE {
    posIType                PosSIType ,
    iE-Extensions           ProtocolExtensionContainer { { PosSIType-ItemExtIEs } }    OPTIONAL
}

PosSIType-ItemExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PosSIType ::= INTEGER (1..32, ...)

PosSRSResourceID-List ::= SEQUENCE (SIZE (1..maxnoSRS-PosResourcePerSet)) OF SRSPosResourceID

PosSRSResource-Item ::= SEQUENCE {
    srs-PosResourceId        SRSPosResourceID,
    transmissionCombPos      TransmissionCombPos,
    startPosition             INTEGER (0..13),
    nrofSymbols               ENUMERATED {n1, n2, n4, n8, n12},
    freqDomainShift           INTEGER (0..268),
}

```



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c-SRS                INTEGER (0..63),
groupOrSequenceHopping  ENUMERATED { neither, groupHopping, sequenceHopping },
resourceTypePos        ResourceTypePos,
sequenceId             INTEGER (0.. 65535),
spatialRelationPos     SpatialRelationPos OPTIONAL,
iE-Extensions          ProtocolExtensionContainer { { PosSRSResource-Item-ExtIEs } } OPTIONAL
}

PosSRSResource-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PosSRSResource-List ::= SEQUENCE (SIZE (1..maxnoSRS-PosResources)) OF PosSRSResource-Item

PosSRSResourceSet-Item ::= SEQUENCE {
    possrsResourceSetID      INTEGER(0..15),
    possrsResourceID-List    PosSRSResourceID-List,
    posresourceSetType       PosResourceSetType,
    iE-Extensions            ProtocolExtensionContainer { { PosSRSResourceSet-Item-ExtIEs } } OPTIONAL
}

PosSRSResourceSet-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PosSRSResourceSet-List ::= SEQUENCE (SIZE (1..maxnoSRS-PosResourceSets)) OF PosSRSResourceSet-Item

PrimaryPathIndication ::= ENUMERATED {
    true,
    false,
    ...
}

Pre-emptionCapability ::= ENUMERATED {
    shall-not-trigger-pre-emption,
    may-trigger-pre-emption
}

Pre-emptionVulnerability ::= ENUMERATED {
    not-pre-emptable,
    pre-emptable
}

PriorityLevel ::= INTEGER { spare (0), highest (1), lowest (14), no-priority (15) } (0..15)

ProtectedEUTRAResourceIndication ::= OCTET STRING

Protected-EUTRA-Resources-Item ::= SEQUENCE {
    spectrumSharingGroupID    SpectrumSharingGroupID,
    eUTRACells-List          EUTRACells-List,
    iE-Extensions            ProtocolExtensionContainer { { Protected-EUTRA-Resources-ItemExtIEs } } OPTIONAL
}

Protected-EUTRA-Resources-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {

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}
...
}
PRRSConfiguration ::= SEQUENCE {
    pRSResourceSet-List      PRRSResourceSet-List,
    iE-Extensions            ProtocolExtensionContainer { { PRRSConfiguration-ExtIEs } } OPTIONAL
}

PRRSConfiguration-ExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PRRSInformationPos ::= SEQUENCE {
    pRS-IDPos                INTEGER(0..255),
    pRS-Resource-Set-IDPos   INTEGER(0..7),
    pRS-Resource-IDPos      INTEGER(0..63) OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { PRRSInformationPos-ExtIEs } } OPTIONAL
}

PRRSInformationPos-ExtIEs   FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PRRS-Measurement-Info-List ::= SEQUENCE (SIZE(1..maxFreqLayers)) OF PRRS-Measurement-Info-List-Item

PRRS-Measurement-Info-List-Item ::= SEQUENCE {
    pointA                   INTEGER (0..3279165),
    measPRSPeriodicity       ENUMERATED {ms20, ms40, ms80, ms160, ...},
    measPRSOffset            INTEGER (0..159, ...),
    measurementPRSLength     ENUMERATED {ms1dot5, ms3, ms3dot5, ms4, ms5dot5, ms6, ms10, ms20},
    iE-Extensions            ProtocolExtensionContainer { { PRRS-Measurement-Info-List-Item-ExtIEs } } OPTIONAL,
    ...
}

PRRS-Measurement-Info-List-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Potential-SpCell-Item ::= SEQUENCE {
    potential-SpCell-ID      NRCGI ,
    iE-Extensions            ProtocolExtensionContainer { { Potential-SpCell-ItemExtIEs } } OPTIONAL,
    ...
}

Potential-SpCell-ItemExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PRRSAngleList ::= SEQUENCE (SIZE(1.. maxnoofPRS-ResourcesPerSet)) OF PRRSAngleItem

PRRSAngleItem ::= SEQUENCE {
    nR-PRS-Azimuth           INTEGER (0..359),

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nR-PRS-Azimuth-fine      INTEGER (0..9),
nR-PRS-Elevation        INTEGER (0..180),
nR-PRS-Elevation-fine   INTEGER (0..9),
iE-Extensions           ProtocolExtensionContainer { { PRSAngleItem-ItemExtIEs } } OPTIONAL
}

PRSAngleItem-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  { ID id-PRS-Resource-ID    CRITICALITY ignore EXTENSION PRS-Resource-ID    PRESENCE optional },
  ...
}

PRSConfigRequestType ::= ENUMERATED {configure, off, ...}

PRSMuting ::= SEQUENCE {
  pRSMutingOption1      PRSMutingOption1      OPTIONAL,
  pRSMutingOption2      PRSMutingOption2      OPTIONAL,
  iE-Extensions         ProtocolExtensionContainer { { PRSMuting-ExtIEs } } OPTIONAL
}

PRSMuting-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

PRSMutingOption1 ::= SEQUENCE {
  mutingPattern          DL-PRSMutingPattern,
  mutingBitRepetitionFactor  ENUMERATED{rf1,rf2,rf4,rf8,...},
  iE-Extensions         ProtocolExtensionContainer { { PRSMutingOption1-ExtIEs } } OPTIONAL
}

PRSMutingOption1-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

PRSMutingOption2 ::= SEQUENCE {
  mutingPattern          DL-PRSMutingPattern,
  iE-Extensions         ProtocolExtensionContainer { { PRSMutingOption2-ExtIEs } } OPTIONAL
}

PRSMutingOption2-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

PRS-Resource-ID ::= INTEGER (0..63)

PRSResource-List ::= SEQUENCE (SIZE (1..maxnoofPRSresources)) OF PRSResource-Item

PRSResource-Item ::= SEQUENCE {
  pRSResourceID          PRS-Resource-ID,
  sequenceID             INTEGER(0..4095),
  rEOffset               INTEGER(0..11,...),
  resourceSlotOffset     INTEGER(0..511),
  resourceSymbolOffset   INTEGER(0..12),
  qCLInfo                PRSResource-QCLInfo    OPTIONAL,
  iE-Extensions         ProtocolExtensionContainer { { PRSResource-Item-ExtIEs } } OPTIONAL
}

```

```

}

PRSResource-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

PRSResource-QCLInfo ::= CHOICE {
  qCLSourceSSB          PRSResource-QCLSourceSSB,
  qCLSourcePRS          PRSResource-QCLSourcePRS,
  choice-extension     ProtocolIE-SingleContainer { { PRSResource-QCLInfo-ExtIEs } }
}

PRSResource-QCLInfo-ExtIEs FLAP-PROTOCOL-IES ::= {
  ...
}

PRSResource-QCLSourceSSB ::= SEQUENCE {
  pCI-NR                INTEGER(0..1007),
  sSB-Index             SSB-Index OPTIONAL,
  iE-Extensions         ProtocolExtensionContainer { { PRSResource-QCLSourceSSB-ExtIEs } } OPTIONAL,
  ...
}

PRSResource-QCLSourceSSB-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

PRSResource-QCLSourcePRS ::= SEQUENCE {
  qCLSourcePRSResourceSetID  PRS-Resource-Set-ID,
  qCLSourcePRSResourceID     PRS-Resource-ID OPTIONAL,
  iE-Extensions              ProtocolExtensionContainer { { PRSResource-QCLSourcePRS-ExtIEs } } OPTIONAL
}

PRSResource-QCLSourcePRS-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

PRS-Resource-Set-ID ::= INTEGER(0..7)

PRSResourceSet-List ::= SEQUENCE (SIZE (1.. maxnoofPRSresourceSets)) OF PRSResourceSet-Item
PRSResourceSet-Item ::= SEQUENCE {
  pRSResourceSetID          PRS-Resource-Set-ID,
  subcarrierSpacing         ENUMERATED{kHz15, kHz30, kHz60, kHz120, ...},
  pRSbandwidth              INTEGER(1..63),
  startPRB                  INTEGER(0..2176),
  pointA                    INTEGER (0..3279165),
  combSize                  ENUMERATED{n2, n4, n6, n12, ...},
  cPType                    ENUMERATED{normal, extended, ...},
  resourceSetPeriodicity    ENUMERATED{n4,n5,n8,n10,n16,n20,n32,n40,n64,n80,n160,n320,n640,n1280,n2560,n5120,n10240,n20480,n40960,
n81920,...},
  resourceSetSlotOffset     INTEGER(0..81919,...),
  resourceRepetitionFactor  ENUMERATED{rf1,rf2,rf4,rf6,rf8,rf16,rf32,...},
  resourceTimeGap           ENUMERATED{tg1,tg2,tg4,tg8,tg16,tg32,...},
  resourceNumberOfSymbols   ENUMERATED{n2,n4,n6,n12,...},
  pRSMuting                 PRSMuting OPTIONAL,

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    pRSResourceTransmitPower      INTEGER(-60..50),
    pRSResource-List              PRSResource-List,
    iE-Extensions                 ProtocolExtensionContainer { { PRSResourceSet-Item-ExtIEs } } OPTIONAL
}

PRSResourceSet-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PRSTransmissionOffIndication ::= CHOICE {
    pRSTransmissionOffPerTRP      NULL,
    pRSTransmissionOffPerResourceSet PRSTransmissionOffPerResourceSet,
    pRSTransmissionOffPerResource PRSTransmissionOffPerResource,
    choice-extension              ProtocolIE-SingleContainer { { PRSTransmissionOffIndication-ExtIEs } }
}

PRSTransmissionOffIndication-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

PRSTransmissionOffPerResource ::= SEQUENCE (SIZE (1..maxnoofPRSresourceSets)) OF PRSTransmissionOffPerResource-Item

PRSTransmissionOffPerResource-Item ::= SEQUENCE {
    pRSResourceSetID              PRS-Resource-Set-ID,
    pRSTransmissionOffIndicationPerResourceList SEQUENCE (SIZE(1.. maxnoofPRSresources)) OF PRSTransmissionOffIndicationPerResource-Item,
    iE-Extensions                 ProtocolExtensionContainer { { PRSTransmissionOffPerResource-Item-ExtIEs } } OPTIONAL,
    ...
}

PRSTransmissionOffPerResource-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PRSTransmissionOffIndicationPerResource-Item ::= SEQUENCE {
    pRSResourceID                PRS-Resource-ID,
    iE-Extensions                 ProtocolExtensionContainer { { PRSTransmissionOffIndicationPerResource-Item-ExtIEs } } OPTIONAL,
    ...
}

PRSTransmissionOffIndicationPerResource-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PRSTransmissionOffInformation ::= SEQUENCE {
    pRSTransmissionOffIndication PRSTransmissionOffIndication,
    iE-Extensions                 ProtocolExtensionContainer { { PRSTransmissionOffInformation-ExtIEs } } OPTIONAL,
    ...
}

PRSTransmissionOffInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PRSTransmissionOffPerResourceSet ::= SEQUENCE (SIZE (1..maxnoofPRSresourceSets)) OF PRSTransmissionOffPerResourceSet-Item

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PRSTransmissionOffPerResourceSet-Item ::= SEQUENCE {
    pRSResourceSetID          PRS-Resource-Set-ID,
    iE-Extensions             ProtocolExtensionContainer { { PRSTransmissionOffPerResourceSet-Item-ExtIEs } } OPTIONAL,
    ...
}

PRSTransmissionOffPerResourceSet-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PWS-Failed-NR-CGI-Item ::= SEQUENCE {
    nRCGI                     NRCGI,
    numberOfBroadcasts        NumberOfBroadcasts,
    iE-Extensions             ProtocolExtensionContainer { { PWS-Failed-NR-CGI-ItemExtIEs } } OPTIONAL,
    ...
}

PWS-Failed-NR-CGI-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PWSSystemInformation ::= SEQUENCE {
    sIBtype                   SIBType-PWS,
    sIBmessage                 OCTET STRING,
    iE-Extensions             ProtocolExtensionContainer { { PWSSystemInformationExtIEs } } OPTIONAL,
    ...
}

PWSSystemInformationExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-NotificationInformation CRITICALITY ignore EXTENSION NotificationInformation PRESENCE optional } |
    { ID id-AdditionalSIBMessageList CRITICALITY reject EXTENSION AdditionalSIBMessageList PRESENCE optional },
    ...
}

PrivacyIndicator ::= ENUMERATED {immediate-MDT, logged-MDT, ...}

PRS-ID ::= INTEGER(0..255)

PRSTRList ::= SEQUENCE (SIZE(1.. maxnoofTRPs)) OF PRSTRPItem

PRSTRPItem ::= SEQUENCE {
    trp-ID                    TRPID,
    requestedDLPRSTransmissionCharacteristics RequestedDLPRSTransmissionCharacteristics OPTIONAL,
    -- The IE shall be present if the PRS Configuration Request Type IE is set to "configure" --
    pRSTransmissionOffInformation PRSTransmissionOffInformation OPTIONAL,
    -- The IE shall be present if the PRS Configuration Request Type IE is set to "off" --

    iE-Extensions             ProtocolExtensionContainer { { PRSTRPItem-ExtIEs } } OPTIONAL,
    ...
}

PRSTRPItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {

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```

}
...
}
RequestedDLPRSTransmissionCharacteristics ::= SEQUENCE {
    requestedDLPRSResourceSet-List      RequestedDLPRSResourceSet-List,
    numberOfFrequencyLayers             INTEGER(1..4)                      OPTIONAL,
    startTimeAndDuration                StartTimeAndDuration              OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { RequestedDLPRSTransmissionCharacteristics-ExtIEs } } OPTIONAL,
    ...
}
RequestedDLPRSTransmissionCharacteristics-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

RequestedDLPRSResourceSet-List ::= SEQUENCE (SIZE (1..maxnoofPRSresourceSets)) OF RequestedDLPRSResourceSet-Item

RequestedDLPRSResourceSet-Item ::= SEQUENCE {
    prSbandwidth                       INTEGER(1..63),
    combSize                            ENUMERATED{n2, n4, n6, n12, ...}          OPTIONAL,
    resourceSetPeriodicity              ENUMERATED{n4,n5,n8,n10,n16,n20,n32,n40,n64,n80,n160,n320,n640,n1280,n2560,n5120,n10240,n20480,n40960,
n81920,...} OPTIONAL,
    resourceRepetitionFactor            ENUMERATED{rf1,rf2,rf4,rf6,rf8,rf16,rf32,...}          OPTIONAL,
    resourceNumberOfSymbols             ENUMERATED{n2,n4,n6,n12,...}          OPTIONAL,
    requestedDLPRSResource-List         RequestedDLPRSResource-List      OPTIONAL,
    resourceSetStartTimeAndDuration     StartTimeAndDuration            OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { RequestedDLPRSResourceSet-Item-ExtIEs } } OPTIONAL,
    ...
}
RequestedDLPRSResourceSet-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

RequestedDLPRSResource-List ::= SEQUENCE (SIZE (1..maxnoofPRSresources)) OF RequestedDLPRSResource-Item

RequestedDLPRSResource-Item ::= SEQUENCE {
    qCLInfo                             PRSResource-QCLInfo             OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { RequestedDLPRSResource-Item-ExtIEs } } OPTIONAL,
    ...
}
RequestedDLPRSResource-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

PRSTransmissionTRPList ::= SEQUENCE (SIZE(1.. maxnoofTRPs)) OF PRSTransmissionTRPItem

PRSTransmissionTRPItem ::= SEQUENCE {
    trP-ID                              TRPID,
    prSconfiguration                    PRSConfiguration,
    iE-Extensions                       ProtocolExtensionContainer { { PRSTransmissionTRPItem-ExtIEs } } OPTIONAL,
    ...
}

```

```

PRSTransmissionTRPItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- Q

QCI ::= INTEGER (0..255)

QoEInformation ::= SEQUENCE {
    qoEInformationList      QoEInformationList,
    iE-Extensions          ProtocolExtensionContainer { { QoEInformation-ExtIEs} } OPTIONAL
}

QoEInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

QoEInformationList ::= SEQUENCE (SIZE(1.. maxnoofQoEInformation)) OF QoEInformationList-Item

QoEInformationList-Item ::= SEQUENCE {
    qoEMetrics              QoEMetrics OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { { QoEInformationList-Item-ExtIEs} } OPTIONAL
}

QoEInformationList-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

QoEMetrics ::= SEQUENCE {
    appLayerBufferLevelList      AppLayerBufferLevelList OPTIONAL,
    playoutDelayForMediaStartup  PlayoutDelayForMediaStartup OPTIONAL,
    iE-Extensions                ProtocolExtensionContainer { { QoEMetrics-ExtIEs} } OPTIONAL,
    ...
}

QoEMetrics-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

QoS-Characteristics ::= CHOICE {
    non-Dynamic-5QI            NonDynamic5QIDescriptor,
    dynamic-5QI                Dynamic5QIDescriptor,
    choice-extension           ProtocolIE-SingleContainer { { QoS-Characteristics-ExtIEs } }
}

QoS-Characteristics-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

QoSFlowIdentifier ::= INTEGER (0..63)

QoSFlowLevelQoSParameters ::= SEQUENCE {

```



```

    qoS-Characteristics          QoS-Characteristics,
    nGRANAllocationRetentionPriority  NGRANAllocationAndRetentionPriority,
    gBR-QoS-Flow-Information      GBR-QoSFlowInformation          OPTIONAL,
    reflective-QoS-Attribute      ENUMERATED {subject-to, ...}      OPTIONAL,
    iE-Extensions                 ProtocolExtensionContainer { { QoSFlowLevelQoSParameters-ExtIEs } } OPTIONAL
}

QoSFlowLevelQoSParameters-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  { ID id-PDUSessionID              CRITICALITY ignore  EXTENSION PDUSessionID          PRESENCE optional } |
  { ID id-ULPDUSessionAggregateMaximumBitRate  CRITICALITY ignore  EXTENSION BitRate          PRESENCE optional } |
  { ID id-QoSMonitoringRequest      CRITICALITY ignore  EXTENSION QoSMonitoringRequest  PRESENCE optional } |
  { ID id-PDCPTerminatingNodeDLTNLAddrInfo  CRITICALITY ignore  EXTENSION TransportLayerAddress  PRESENCE optional },
  ...
}

QoSFlowMappingIndication ::= ENUMERATED {ul,dl,...}

QoSInformation ::= CHOICE {
  eUTRANQoS          EUTRANQoS,
  choice-extension   ProtocolIE-SingleContainer { { QoSInformation-ExtIEs } }
}

QoSInformation-ExtIEs FLAP-PROTOCOL-IES ::= {
  { ID id-DRB-Information          CRITICALITY ignore  TYPE DRB-Information          PRESENCE mandatory },
  ...
}

QoSMonitoringRequest ::= ENUMERATED {ul, dl, both, ..., stop}

QoSParaSetIndex ::= INTEGER (1..8, ...)

QoSParaSetNotifyIndex ::= INTEGER (0..8, ...)

-- R

RACH-Config-Common ::= OCTET STRING

RACH-Config-Common-IAB ::= OCTET STRING

RACHReportContainer ::= OCTET STRING

RACHReportInformationList ::= SEQUENCE (SIZE(1.. maxnoofRACHReports)) OF RACHReportInformationItem

RACHReportInformationItem ::= SEQUENCE {
  rACHReportContainer  RACHReportContainer,
  uEAssitantIdentifier  GNB-DU-UE-FlAP-ID          OPTIONAL,
  iE-Extensions        ProtocolExtensionContainer { { RACHReportInformationItem-ExtIEs } } OPTIONAL,
  ...
}

RACHReportInformationItem-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

```

```

RadioResourceStatus ::= SEQUENCE {
    sSBAreaRadioResourceStatusList      SSBAreaRadioResourceStatusList,
    iE-Extensions      ProtocolExtensionContainer { { RadioResourceStatus-ExtIEs } } OPTIONAL
}

RadioResourceStatus-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-SliceRadioResourceStatus      CRITICALITY ignore  EXTENSION SliceRadioResourceStatus      PRESENCE optional } |
    { ID id-MIMOPRBusageInformation      CRITICALITY ignore  EXTENSION MIMOPRBusageInformation      PRESENCE optional },
    ...
}

MIMOPRBusageInformation ::= SEQUENCE {
    dl-GBR-PRB-usage-for-MIMO      INTEGER (0..100),
    ul-GBR-PRB-usage-for-MIMO      INTEGER (0..100),
    dl-non-GBR-PRB-usage-for-MIMO  INTEGER (0..100),
    ul-non-GBR-PRB-usage-for-MIMO  INTEGER (0..100),
    dl-Total-PRB-usage-for-MIMO    INTEGER (0..100),
    ul-Total-PRB-usage-for-MIMO    INTEGER (0..100),
    iE-Extensions      ProtocolExtensionContainer { { MIMOPRBusageInformation-ExtIEs } } OPTIONAL,
    ...
}

MIMOPRBusageInformation-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

RANAC ::= INTEGER (0..255)

RAN-MeasurementID ::= INTEGER (1.. 65536, ...)

RAN-UE-MeasurementID ::= INTEGER (1.. 256, ...)

RAN-UE-PDC-MeasID ::= INTEGER (1..16, ...)

RANUEID ::= OCTET STRING (SIZE (8))

RANUEPagingIdentity ::= SEQUENCE {
    iRNTI      BIT STRING (SIZE(40)),
    iE-Extensions      ProtocolExtensionContainer { { RANUEPagingIdentity-ExtIEs } } OPTIONAL
}

RANUEPagingIdentity-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

RAT-FrequencyPriorityInformation ::= CHOICE {
    eNDC      SubscriberProfileIDforRFP,
    nGRAN      RAT-FrequencySelectionPriority,
    choice-extension      ProtocolIE-SingleContainer { { RAT-FrequencyPriorityInformation-ExtIEs } }
}

RAT-FrequencyPriorityInformation-ExtIEs  FLAP-PROTOCOL-IES ::= {
    ...
}

```

```

}
RAT-FrequencySelectionPriority ::= INTEGER (1.. 256, ...)

RBSetConfiguration ::= SEQUENCE {
    subcarrierSpacing          SubcarrierSpacing,
    rBSetSize                  RBSetSize,
    nUmberRBsets               INTEGER(1..maxnoofRBsetsPerCell),
    iE-Extensions              ProtocolExtensionContainer { { RBSetConfiguration-ExtIEs } } OPTIONAL
}

RBSetConfiguration-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
    ...
}

RBSetSize ::= ENUMERATED { rb2, rb4, rb8, rb16, rb32, rb64}

Re-routingEnableIndicator ::= ENUMERATED {
    true,
    false,
    ...
}

Redcap-Bcast-Information ::= BIT STRING(SIZE(8))

RedCapIndication ::= ENUMERATED {true, ...}

Reestablishment-Indication ::= ENUMERATED {
    reestablished,
    ...
}

ReferencePoint ::= CHOICE {
    coordinateID                CoordinateID,
    referencePointCoordinate     AccessPointPosition,
    referencePointCoordinateHA   NGRANHighAccuracyAccessPointPosition,
    choice-Extension             ProtocolIE-SingleContainer { { ReferencePoint-ExtIEs } }
}

ReferencePoint-ExtIEs FlAP-PROTOCOL-IES ::= {
    ...
}

ReferenceSFN ::= INTEGER (0..1023)

ReferenceSignal ::= CHOICE {
    nZP-CSI-RS                  NZP-CSI-RS-ResourceID,
    sSB                         SSB,
    sRS                         SRSResourceID,
    positioningSRS              SRSPosResourceID,
    dL-PRS                      DL-PRS,
    choice-extension             ProtocolIE-SingleContainer {{ReferenceSignal-ExtIEs }}
}

```

```
}  
ReferenceSignal-ExtIEs FLAP-PROTOCOL-IES ::= {  
    ...  
}  
RelativeCartesianLocation ::= SEQUENCE {  
    xYZunit          ENUMERATED {mm, cm, dm, ...},  
    xvalue           INTEGER (-65536..65535),  
    yvalue           INTEGER (-65536..65535),  
    zvalue           INTEGER (-32768..32767),  
    locationUncertainty LocationUncertainty,  
    iE-Extensions    ProtocolExtensionContainer { { RelativeCartesianLocation-ExtIEs } } OPTIONAL  
}  
RelativeCartesianLocation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {  
    ...  
}  
RelativeGeodeticLocation ::= SEQUENCE {  
    milli-Arc-SecondUnits ENUMERATED {zerodot03, zerodot3, three, ...},  
    heightUnits           ENUMERATED {mm, cm, m, ...},  
    deltaLatitude         INTEGER (-1024.. 1023),  
    deltaLongitude        INTEGER (-1024.. 1023),  
    deltaHeight           INTEGER (-1024.. 1023),  
    locationUncertainty   LocationUncertainty,  
    iE-extensions         ProtocolExtensionContainer {{RelativeGeodeticLocation-ExtIEs }} OPTIONAL  
}  
RelativeGeodeticLocation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {  
    ...  
}  
RemoteUELocalID ::= INTEGER (0..255, ...)  
  
ReferenceTime ::= OCTET STRING  
RegistrationRequest ::= ENUMERATED{start, stop, add, ...}  
ReportCharacteristics ::= BIT STRING (SIZE(32))  
ReportingPeriodicity ::= ENUMERATED{ms500, ms1000, ms2000, ms5000, ms10000, ...}  
RequestedBandCombinationIndex ::= OCTET STRING  
RequestedFeatureSetEntryIndex ::= OCTET STRING  
RequestedP-MaxFR2 ::= OCTET STRING  
Requested-PDCCH-BlindDetectionSCG ::= OCTET STRING  
RequestedSRSTransmissionCharacteristics ::= SEQUENCE {
```

```

    numberOfTransmissions      INTEGER (0..500, ...)      OPTIONAL,
-- The IE shall be present if the Resource Type IE is set to "periodic" --
    resourceType                ENUMERATED {periodic, semi-persistent, aperiodic,...},
    bandwidthSRS                BandwidthSRS,
    sRSResourceSetList          SRSResourceSetList          OPTIONAL,
    sSBInformation              SSBInformation              OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { { RequestedSRSTransmissionCharacteristics-ExtIEs } } OPTIONAL
}

RequestedSRSTransmissionCharacteristics-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  { ID id-SrsFrequency          CRITICALITY ignore EXTENSION SrsFrequency          PRESENCE optional },
  ...
}

RequestType ::= ENUMERATED {offer, execution, ...}

ResourceCoordinationEUTRACellInfo ::= SEQUENCE {
  eUTRA-Mode-Info              EUTRA-Coex-Mode-Info,
  eUTRA-PRACH-Configuration    EUTRA-PRACH-Configuration,
  iE-Extensions                ProtocolExtensionContainer { { ResourceCoordinationEUTRACellInfo-ExtIEs } } OPTIONAL,
  ...
}

ResourceCoordinationEUTRACellInfo-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  {ID id-IgnorePRACHConfiguration CRITICALITY reject EXTENSION IgnorePRACHConfiguration PRESENCE optional },
  ...
}

ResourceCoordinationTransferInformation ::= SEQUENCE {
  meNB-Cell-ID                 EUTRA-Cell-ID,
  resourceCoordinationEUTRACellInfo ResourceCoordinationEUTRACellInfo OPTIONAL,
  iE-Extensions                ProtocolExtensionContainer { { ResourceCoordinationTransferInformation-ExtIEs } } OPTIONAL,
  ...
}

ResourceCoordinationTransferInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

ResourceCoordinationTransferContainer ::= OCTET STRING

ResourceSetType ::= CHOICE {
  periodic                    ResourceSetTypePeriodic,
  semi-persistent             ResourceSetTypeSemi-persistent,
  aperiodic                   ResourceSetTypeAperiodic,
  choice-extension            ProtocolIE-SingleContainer {{ ResourceSetType-ExtIEs }}
}

ResourceSetType-ExtIEs FLAP-PROTOCOL-IES ::= {
  ...
}

ResourceSetTypePeriodic ::= SEQUENCE {

```

```

    periodicSet      ENUMERATED{true, ...},
    iE-Extensions    ProtocolExtensionContainer { { ResourceSetTypePeriodic-ExtIEs } } OPTIONAL
}

ResourceSetTypePeriodic-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

ResourceSetTypeSemi-persistent ::= SEQUENCE {
    semi-persistentSet ENUMERATED{true, ...},
    iE-Extensions      ProtocolExtensionContainer { { ResourceSetTypeSemi-persistent-ExtIEs } } OPTIONAL
}

ResourceSetTypeSemi-persistent-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

ResourceSetTypeAperiodic ::= SEQUENCE {
    sRSResourceTrigger-List INTEGER(1..3),
    slotoffset              INTEGER(0..32),
    iE-Extensions           ProtocolExtensionContainer { { ResourceSetTypeAperiodic-ExtIEs } } OPTIONAL
}

ResourceSetTypeAperiodic-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

RepetitionPeriod ::= INTEGER (0..131071, ...)

ReportingRequestType ::= SEQUENCE {
    eventType              EventType,
    reportingPeriodicityValue ReportingPeriodicityValue OPTIONAL,
    -- C-ifEventTypesIsPeriodic: This IE shall be present if the Event Type IE is set to "periodic" in the Event Type IE.
    iE-Extensions         ProtocolExtensionContainer { {ReportingRequestType-ExtIEs} } OPTIONAL
}

ReportingRequestType-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

ResourceType ::= CHOICE {
    periodic              ResourceTypePeriodic,
    semi-persistent      ResourceTypeSemi-persistent,
    aperiodic            ResourceTypeAperiodic,
    choice-extension     ProtocolIE-SingleContainer {{ ResourceType-ExtIEs }}
}

ResourceType-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

ResourceTypePeriodic ::= SEQUENCE {
    periodicity           ENUMERATED{slot1, slot2, slot4, slot5, slot8, slot10, slot16, slot20, slot32, slot40, slot64, slot80, slot160, slot320,
    slot640, slot1280, slot2560, ...},

```

```
    offset          INTEGER(0..2559, ...),
    iE-Extensions   ProtocolExtensionContainer { { ResourceTypePeriodic-ExtIEs } } OPTIONAL
}

ResourceTypePeriodic-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

ResourceTypeSemi-persistent ::= SEQUENCE {
    periodicity     ENUMERATED{slot1, slot2, slot4, slot5, slot8, slot10, slot16, slot20, slot32, slot40, slot64, slot80, slot160, slot320,
slot640, slot1280, slot2560, ...},
    offset          INTEGER(0..2559, ...),
    iE-Extensions   ProtocolExtensionContainer { { ResourceTypeSemi-persistent-ExtIEs } } OPTIONAL
}

ResourceTypeSemi-persistent-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

ResourceTypeAperiodic ::= SEQUENCE {
    aperiodicResourceType ENUMERATED{true, ...},
    iE-Extensions         ProtocolExtensionContainer { { ResourceTypeAperiodic-ExtIEs } } OPTIONAL
}

ResourceTypeAperiodic-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

ResourceTypePos ::= CHOICE {
    periodic          ResourceTypePeriodicPos,
    semi-persistent   ResourceTypeSemi-persistentPos,
    aperiodic         ResourceTypeAperiodicPos,
    choice-extension  ProtocolIE-SingleContainer {{ ResourceTypePos-ExtIEs }}
}

ResourceTypePos-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

ResourceTypePeriodicPos ::= SEQUENCE {
    periodicity     ENUMERATED{slot1, slot2, slot4, slot5, slot8, slot10, slot16, slot20, slot32, slot40, slot64, slot80, slot160, slot320,
slot640, slot1280, slot2560, slot5120, slot10240, slot40960, slot81920, ..., slot128, slot256, slot512, slot20480},
    offset          INTEGER(0..81919, ...),
    iE-Extensions   ProtocolExtensionContainer { { ResourceTypePeriodicPos-ExtIEs } } OPTIONAL
}

ResourceTypePeriodicPos-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

ResourceTypeSemi-persistentPos ::= SEQUENCE {
    periodicity     ENUMERATED{slot1, slot2, slot4, slot5, slot8, slot10, slot16, slot20, slot32, slot40, slot64, slot80, slot160, slot320,
slot640, slot1280, slot2560, slot5120, slot10240, slot40960, slot81920, ..., slot128, slot256, slot512, slot20480},
    offset          INTEGER(0..81919, ...),
```

```

    iE-Extensions      ProtocolExtensionContainer { { ResourceTypeSemi-persistentPos-ExtIEs } } OPTIONAL
  }
ResourceTypeSemi-persistentPos-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}
ResourceTypeAperiodicPos ::= SEQUENCE {
  slotOffset          INTEGER (0..32),
  iE-Extensions      ProtocolExtensionContainer { { ResourceTypeAperiodicPos-ExtIEs } } OPTIONAL
}
ResourceTypeAperiodicPos-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}
RLCDuplicationInformation ::= SEQUENCE {
  rLCDuplicationStateList      RLCDuplicationStateList,
  primaryPathIndication        PrimaryPathIndication OPTIONAL,
  iE-Extensions                ProtocolExtensionContainer { { RLCDuplicationInformation-ExtIEs } } OPTIONAL
}
RLCDuplicationInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}
RLCDuplicationStateList ::= SEQUENCE (SIZE(1..maxnoofRLCDuplicationState)) OF RLCDuplicationState-Item
RLCDuplicationState-Item ::=SEQUENCE {
  duplicationState      DuplicationState,
  iE-Extensions        ProtocolExtensionContainer { { RLCDuplicationState-Item-ExtIEs } } OPTIONAL,
  ...
}
RLCDuplicationState-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}
RLCFailureIndication ::= SEQUENCE {
  associatedLCID          LCID,
  iE-Extensions          ProtocolExtensionContainer { { RLCFailureIndication-ExtIEs } } OPTIONAL
}
RLCFailureIndication-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}
RLCMode ::= ENUMERATED {
  rlc-am,
  rlc-um-bidirectional,
  rlc-um-unidirectional-ul,
  rlc-um-unidirectional-dl,
  ...
}

```



```

}

RLC-Status ::= SEQUENCE {
    reestablishment-Indication Reestablishment-Indication,
    iE-Extensions              ProtocolExtensionContainer { { RLC-Status-ExtIEs } } OPTIONAL,
    ...
}

RLC-Status-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

RLFReportInformationList ::= SEQUENCE (SIZE(1.. maxnoofRLFReports)) OF RLFReportInformationItem

RLFReportInformationItem ::= SEQUENCE {
    nRUERLFReportContainer NRUERLFReportContainer,
    uEAssitantIdentifier   GNB-DU-UE-FLAP-ID          OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { { RLFReportInformationItem-ExtIEs } } OPTIONAL,
    ...
}

RLFReportInformationItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

RIMRSDetectionStatus ::= ENUMERATED {rs-detected, rs-disappeared, ...}

RRCContainer ::= OCTET STRING

RRCContainer-RRCSetupComplete ::= OCTET STRING

RRCDeliveryStatus ::= SEQUENCE {
    delivery-status          PDCP-SN,
    triggering-message       PDCP-SN,
    iE-Extensions           ProtocolExtensionContainer { { RRCDeliveryStatus-ExtIEs } } OPTIONAL}

RRCDeliveryStatus-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

RRCDeliveryStatusRequest ::= ENUMERATED {true, ...}

RRCReconfigurationCompleteIndicator ::= ENUMERATED {
    true,
    ...,
    failure
}

RRC-Version ::= SEQUENCE {
    latest-RRC-Version       BIT STRING (SIZE(3)),
    iE-Extensions           ProtocolExtensionContainer { { RRC-Version-ExtIEs } } OPTIONAL}

RRC-Version-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {

```

```

    {ID id-latest-RRC-Version-Enhanced      CRITICALITY ignore EXTENSION OCTET STRING (SIZE(3))  PRESENCE optional },
    ...
}

RoutingID ::= OCTET STRING

ResponseTime ::= SEQUENCE {
    time          INTEGER (1..128,...),
    timeUnit      ENUMERATED {second, ten-seconds, ten-milliseconds,...},
    iE-Extensions ProtocolExtensionContainer { { ResponseTime-ExtIEs } }  OPTIONAL,
    ...
}

ResponseTime-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

RxTxTimingErrorMargin ::= ENUMERATED {tc0dot5, tc1, tc2, tc4, tc8, tc12, tc16, tc20, tc24, tc32, tc40, tc48, tc64, tc80, tc96, tc128, ...}

-- S

SCell-FailedtoSetup-Item ::= SEQUENCE {
    sCell-ID      NRCGI      ,
    cause         Cause      OPTIONAL ,
    iE-Extensions ProtocolExtensionContainer { { SCell-FailedtoSetup-ItemExtIEs } }  OPTIONAL,
    ...
}

SCell-FailedtoSetup-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SCell-FailedtoSetupMod-Item ::= SEQUENCE {
    sCell-ID      NRCGI      ,
    cause         Cause      OPTIONAL ,
    iE-Extensions ProtocolExtensionContainer { { SCell-FailedtoSetupMod-ItemExtIEs } }  OPTIONAL,
    ...
}

SCell-FailedtoSetupMod-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SCell-ToBeRemoved-Item ::= SEQUENCE {
    sCell-ID      NRCGI      ,
    iE-Extensions ProtocolExtensionContainer { { SCell-ToBeRemoved-ItemExtIEs } }  OPTIONAL,
    ...
}

SCell-ToBeRemoved-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SCell-ToBeSetup-Item ::= SEQUENCE {

```

```

sCell-ID          NRCGI      ,
sCellIndex        SCellIndex,
sCellULConfigured CellULConfigured OPTIONAL,
iE-Extensions     ProtocolExtensionContainer { { SCell-ToBeSetup-ItemExtIEs } } OPTIONAL,
...
}

SCell-ToBeSetup-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  { ID id-ServingCellMO      CRITICALITY ignore EXTENSION ServingCellMO      PRESENCE optional },
  ...
}

SCell-ToBeSetupMod-Item ::= SEQUENCE {
  sCell-ID          NRCGI      ,
  sCellIndex        SCellIndex,
  sCellULConfigured CellULConfigured OPTIONAL,
  iE-Extensions     ProtocolExtensionContainer { { SCell-ToBeSetupMod-ItemExtIEs } } OPTIONAL,
  ...
}

SCell-ToBeSetupMod-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  { ID id-ServingCellMO      CRITICALITY ignore EXTENSION ServingCellMO      PRESENCE optional },
  ...
}

SCellIndex ::= INTEGER (1..31, ...)

SCGActivationRequest ::= ENUMERATED {activate-scg, deactivate-scg, ...}

SCGActivationStatus ::= ENUMERATED {scg-activated, scg-deactivated, ...}

SCGIndicator ::= ENUMERATED{released, ...}

SCS-480 ::= INTEGER(0..319)

SCS-960 ::= INTEGER(0..639)

SCS-SpecificCarrier ::= SEQUENCE {
  offsetToCarrier      INTEGER (0..2199,...),
  subcarrierSpacing    ENUMERATED {kHz15, kHz30, kHz60, kHz120,..., kHz480, kHz960},
  carrierBandwidth     INTEGER (1..275,...),
  iE-Extensions        ProtocolExtensionContainer { { SCS-SpecificCarrier-ExtIEs } } OPTIONAL
}

SCS-SpecificCarrier-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

SDBearerConfigurationQueryIndication ::= ENUMERATED {true, ...}

SDBearerConfigurationInfo ::= SEQUENCE {
  sDBearerConfig-List  SDBearerConfig-List,
  iE-Extensions        ProtocolExtensionContainer { { SDBearerConfigurationInfo-ExtIEs } } OPTIONAL
}

```

```

SDTBearerConfigurationInfo-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
    ...
}

SDTBearerConfig-List ::= SEQUENCE (SIZE(1..maxnoofSDBearers)) OF SDTBearerConfig-List-Item

SDTBearerConfig-List-Item ::= SEQUENCE{
    sDTBearerType                SDTBearerType,
    sDTRLCBearerConfiguration    SDTRLCBearerConfiguration,
    iE-Extensions                ProtocolExtensionContainer {{ SDTBearerConfig-List-Item-ExtIEs}}    OPTIONAL
}

SDTBearerConfig-List-Item-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
    ...
}

SDTBearerType ::= CHOICE {
    sRB                SRBID,
    dRB                DRBID,
    choice-extension   ProtocolIE-SingleContainer {{ SDTBearerType-ExtIEs }}
}

SDTBearerType-ExtIEs FlAP-PROTOCOL-IES ::= {
    ...
}

SDT-MAC-PHY-CG-Config ::= OCTET STRING

SDTInformation ::= SEQUENCE {
    sdtIndicator                ENUMERATED {true,...},
    sdtAssistentInformation     ENUMERATED {singlepacket, multiplepackets,...}    OPTIONAL,
    iE-Extensions              ProtocolExtensionContainer { { SDTInformation-ExtIEs } }    OPTIONAL
}

SDTInformation-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
    ...
}

SDTRLCBearerConfiguration ::= OCTET STRING

SDT-Termination-Request ::= ENUMERATED {radio-link-problem, normal, ...}

Search-window-information ::= SEQUENCE {
    expectedPropagationDelay    INTEGER (-3841..3841,...),
    delayUncertainty            INTEGER (1..246,...),
    iE-Extensions              ProtocolExtensionContainer { { Search-window-information-ExtIEs } }    OPTIONAL
}

Search-window-information-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

SerialNumber ::= BIT STRING (SIZE (16))

SIBType-PWS ::= INTEGER (6..8, ...)

SelectedBandCombinationIndex ::= OCTET STRING

SelectedFeatureSetEntryIndex ::= OCTET STRING

CG-ConfigInfo ::= OCTET STRING

ServCellIndex ::= INTEGER (0..31, ...)

ServingCellMO ::= INTEGER (1..64, ...)

ServingCellMO-List-Item ::= SEQUENCE {
    servingCellMO          ServingCellMO,
    sSB-Frequency          INTEGER (0..3279165),
    iE-Extensions          ProtocolExtensionContainer { { ServingCellMO-List-Item-ExtIEs } } OPTIONAL
}

ServingCellMO-List-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

ServingCellMO-encoded-in-CGC-List ::= SEQUENCE (SIZE(1.. maxNrofBWPs)) OF ServingCellMO-encoded-in-CGC-Item

ServingCellMO-encoded-in-CGC-Item ::= SEQUENCE {
    servingCellMO          ServingCellMO,
    iE-Extensions          ProtocolExtensionContainer { { ServingCellMO-encoded-in-CGC-Item-ExtIEs } } OPTIONAL,
    ...
}

ServingCellMO-encoded-in-CGC-Item-ExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Served-Cell-Information ::= SEQUENCE {
    nRCGI                  NRCGI,
    nRPCI                  NRPCI,
    fiveGS-TAC             FiveGS-TAC          OPTIONAL,
    configured-EPS-TAC     Configured-EPS-TAC  OPTIONAL,
    servedPLMNs            ServedPLMNs-List,
    nR-Mode-Info           NR-Mode-Info,
    measurementTimingConfiguration OCTET STRING,
    iE-Extensions          ProtocolExtensionContainer { { Served-Cell-Information-ExtIEs } } OPTIONAL,
    ...
}

Served-Cell-Information-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-RANAC          CRITICALITY ignore EXTENSION RANAC          PRESENCE optional }|
    { ID id-ExtendedServedPLMNs-List CRITICALITY ignore EXTENSION ExtendedServedPLMNs-List PRESENCE optional }|
    { ID id-Cell-Direction CRITICALITY ignore EXTENSION Cell-Direction PRESENCE optional }|
    { ID id-BPLMN-ID-Info-List CRITICALITY ignore EXTENSION BPLMN-ID-Info-List PRESENCE optional }|
    { ID id-Cell-Type      CRITICALITY ignore EXTENSION CellType      PRESENCE optional }|
}

```

```

    { ID id-ConfiguredTACIndication          CRITICALITY ignore EXTENSION ConfiguredTACIndication PRESENCE optional }|
    { ID id-AggressorNBSetID                 CRITICALITY ignore EXTENSION AggressorNBSetID PRESENCE optional }|
    { ID id-VictimNBSetID                    CRITICALITY ignore EXTENSION VictimNBSetID PRESENCE optional }|
    { ID id-IAB-Info-IAB-DU                  CRITICALITY ignore EXTENSION IAB-Info-IAB-DU PRESENCE optional }|
    { ID id-SSB-PositionsInBurst             CRITICALITY ignore EXTENSION SSB-PositionsInBurst PRESENCE optional }|
    { ID id-NRPRACHConfig                    CRITICALITY ignore EXTENSION NRPRACHConfig PRESENCE optional }|
    { ID id-SFN-Offset                       CRITICALITY ignore EXTENSION SFN-Offset PRESENCE optional }|
    { ID id-NPNBroadcastInformation          CRITICALITY reject EXTENSION NPNBroadcastInformation PRESENCE optional }|
    { ID id-Supported-MBS-FSA-ID-List        CRITICALITY ignore EXTENSION Supported-MBS-FSA-ID-List PRESENCE optional }|
    { ID id-Redcap-Bcast-Information         CRITICALITY ignore EXTENSION Redcap-Bcast-Information PRESENCE optional },
    ...
}

Serving-Cells-List ::= SEQUENCE (SIZE(1..maxnoofServingCells)) OF Serving-Cells-List-Item

Serving-Cells-List-Item ::= SEQUENCE{
    nRCGI                NRCGI,
    iAB-MT-Cell-NA-Resource-Configuration-Mode-Info  IAB-MT-Cell-NA-Resource-Configuration-Mode-Info  OPTIONAL,
    iE-Extensions        ProtocolExtensionContainer {{Serving-Cells-List-Item-ExtIEs}}  OPTIONAL
}

Serving-Cells-List-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Supported-MBS-FSA-ID-List ::= SEQUENCE (SIZE(1.. maxnoofMBSFSAs)) OF MBS-FrequencySelectionArea-Identity

MBS-FrequencySelectionArea-Identity ::= OCTET STRING (SIZE(3))

SFN-Offset ::= SEQUENCE {
    sFN-Time-Offset      BIT STRING (SIZE(24)),
    iE-Extensions        ProtocolExtensionContainer { {SFN-Offset-ExtIEs} }  OPTIONAL,
    ...
}

SFN-Offset-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Served-Cells-To-Add-Item ::= SEQUENCE {
    served-Cell-Information  Served-Cell-Information,
    gNB-DU-System-Information  GNB-DU-System-Information  OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { Served-Cells-To-Add-ItemExtIEs} }  OPTIONAL,
    ...
}

Served-Cells-To-Add-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Served-Cells-To-Delete-Item ::= SEQUENCE {
    oldNRCGI                NRCGI ,
    iE-Extensions            ProtocolExtensionContainer { { Served-Cells-To-Delete-ItemExtIEs } }  OPTIONAL,
    ...
}

```

```

}

Served-Cells-To-Delete-ItemExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Served-Cells-To-Modify-Item ::= SEQUENCE {
    oldNRCGI                NRCGI                ,
    served-Cell-Information  Served-Cell-Information ,
    gNB-DU-System-Information GNB-DU-System-Information OPTIONAL ,
    iE-Extensions           ProtocolExtensionContainer { { Served-Cells-To-Modify-ItemExtIEs } } OPTIONAL,
    ...
}

Served-Cells-To-Modify-ItemExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Served-EUTRA-Cells-Information ::= SEQUENCE {
    eUTRA-Mode-Info          EUTRA-Mode-Info,
    protectedEUTRAResourceIndication ProtectedEUTRAResourceIndication,
    iE-Extensions           ProtocolExtensionContainer { {Served-EUTRA-Cell-Information-ExtIEs} } OPTIONAL,
    ...
}

Served-EUTRA-Cell-Information-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Service-State ::= ENUMERATED {
    in-service,
    out-of-service,
    ...
}

Service-Status ::= SEQUENCE {
    service-state            Service-State,
    switchingOffOngoing      ENUMERATED {true, ...} OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { { Service-Status-ExtIEs } }    OPTIONAL,
    ...
}

Service-Status-ExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

RelativeTime1900 ::=    BIT STRING (SIZE (64))

ShortDRXCycleLength ::= ENUMERATED {ms2, ms3, ms4, ms5, ms6, ms7, ms8, ms10, ms14, ms16, ms20, ms30, ms32, ms35, ms40, ms64, ms80, ms128, ms160,
ms256, ms320, ms512, ms640, ...}

ShortDRXCycleTimer ::= INTEGER (1..16)

```

```

SIB1-message ::= OCTET STRING

SIB10-message ::= OCTET STRING

SIB12-message ::= OCTET STRING

SIB13-message ::= OCTET STRING

SIB14-message ::= OCTET STRING

SIB15-message ::= OCTET STRING

SIB17-message ::= OCTET STRING

SIB20-message ::= OCTET STRING

Sitype ::= INTEGER (1..32, ...)

Sitype-List ::= SEQUENCE (SIZE(1.. maxnoofSITypes)) OF Sitype-Item

Sitype-Item ::= SEQUENCE {
    sitype          Sitype ,
    iE-Extensions  ProtocolExtensionContainer { { Sitype-ItemExtIEs } }    OPTIONAL
}

Sitype-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SibtypetobeupdatedListItem ::= SEQUENCE {
    sIBtype          INTEGER (2..32,...),
    sIBmessage       OCTET STRING,
    valueTag         INTEGER (0..31,...),
    iE-Extensions   ProtocolExtensionContainer { { SibtypetobeupdatedListItem-ExtIEs } }    OPTIONAL,
    ...
}

SibtypetobeupdatedListItem-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    {ID id-areaScope  CRITICALITY ignore EXTENSION AreaScope  PRESENCE optional},
    ...
}

SidelinkRelayConfiguration ::= SEQUENCE {
    gNB-DU-UE-FlAPIDofRelayUE  GNB-DU-UE-FlAP-ID,
    remoteUELocalID             RemoteUELocalID,
    sidelinkConfigurationContainer  SidelinkConfigurationContainer    OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { { SidelinkRelayConfiguration-ExtIEs } }    OPTIONAL,
    ...
}

SidelinkRelayConfiguration-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```



```

SidelinkConfigurationContainer ::= OCTET STRING

SLDRBID ::= INTEGER (1..512, ...)

SLDRBInformation ::= SEQUENCE {
    sLDRB-QoS          PC5QoSParameters,
    flowsMappedToSLDRB-List FlowsMappedToSLDRB-List,
    ...
}

SLDRBs-FailedToBeModified-Item ::= SEQUENCE {
    sLDRBID          SLDRBID ,
    cause           Cause          OPTIONAL,
    iE-Extensions   ProtocolExtensionContainer { { SLDRBs-FailedToBeModified-ItemExtIEs } } OPTIONAL
}

SLDRBs-FailedToBeModified-ItemExtIEs   FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SLDRBs-FailedToBeSetup-Item ::= SEQUENCE {
    sLDRBID SLDRBID,
    cause   Cause          OPTIONAL,
    iE-Extensions   ProtocolExtensionContainer { { SLDRBs-FailedToBeSetup-ItemExtIEs } }          OPTIONAL
}

SLDRBs-FailedToBeSetup-ItemExtIEs   FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SLDRBs-FailedToBeSetupMod-Item ::= SEQUENCE {
    sLDRBID          SLDRBID ,
    cause           Cause          OPTIONAL ,
    iE-Extensions   ProtocolExtensionContainer { { SLDRBs-FailedToBeSetupMod-ItemExtIEs } } OPTIONAL
}

SLDRBs-FailedToBeSetupMod-ItemExtIEs   FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SLDRBs-Modified-Item ::= SEQUENCE {
    sLDRBID          SLDRBID,
    iE-Extensions   ProtocolExtensionContainer { { SLDRBs-Modified-ItemExtIEs } }          OPTIONAL
}

SLDRBs-Modified-ItemExtIEs   FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SLDRBs-ModifiedConf-Item ::= SEQUENCE {
    sLDRBID          SLDRBID,
    iE-Extensions   ProtocolExtensionContainer { { SLDRBs-ModifiedConf-ItemExtIEs } }          OPTIONAL
}

```

```

SLDRBs-ModifiedConf-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

SLDRBs-Required-ToBeModified-Item ::= SEQUENCE {
  sLDRBID          SLDRBID,
  iE-Extensions   ProtocolExtensionContainer { { SLDRBs-Required-ToBeModified-ItemExtIEs } } OPTIONAL
}

SLDRBs-Required-ToBeModified-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

SLDRBs-Required-ToBeReleased-Item ::= SEQUENCE {
  sLDRBID          SLDRBID,
  iE-Extensions   ProtocolExtensionContainer { { SLDRBs-Required-ToBeReleased-ItemExtIEs } } OPTIONAL
}

SLDRBs-Required-ToBeReleased-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

SLDRBs-Setup-Item ::= SEQUENCE {
  sLDRBID          SLDRBID,
  iE-Extensions   ProtocolExtensionContainer { { SLDRBs-Setup-ItemExtIEs } } OPTIONAL
}

SLDRBs-Setup-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

SLDRBs-SetupMod-Item ::= SEQUENCE {
  sLDRBID          SLDRBID,
  iE-Extensions   ProtocolExtensionContainer { { SLDRBs-SetupMod-ItemExtIEs } } OPTIONAL
}

SLDRBs-SetupMod-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

SLDRBs-ToBeModified-Item ::= SEQUENCE {
  sLDRBID          SLDRBID,
  sLDRBInformation SLDRBInformation OPTIONAL,
  rLCMode          RLCMode OPTIONAL,
  iE-Extensions   ProtocolExtensionContainer { { SLDRBs-ToBeModified-ItemExtIEs } } OPTIONAL
}

SLDRBs-ToBeModified-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

SLDRBs-ToBeReleased-Item ::= SEQUENCE {
  sLDRBID          SLDRBID,

```

```

    iE-Extensions    ProtocolExtensionContainer { { SLDRBs-ToBeReleased-ItemExtIEs } }    OPTIONAL
}

SLDRBs-ToBeReleased-ItemExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SLDRBs-ToBeSetup-Item ::= SEQUENCE {
    sLDRBID                SLDRBID,
    sLDRBInformation        SLDRBInformation,
    rLCMode                RLCMode,

    iE-Extensions    ProtocolExtensionContainer { { SLDRBs-ToBeSetup-ItemExtIEs } }    OPTIONAL
}

SLDRBs-ToBeSetup-ItemExtIEs        FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SLDRBs-ToBeSetupMod-Item    ::= SEQUENCE {
    sLDRBID                SLDRBID,
    sLDRBInformation        SLDRBInformation,
    rLCMode                RLCMode    OPTIONAL,
    iE-Extensions    ProtocolExtensionContainer { { SLDRBs-ToBeSetupMod-ItemExtIEs } }    OPTIONAL
}

SLDRBs-ToBeSetupMod-ItemExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SLDRXCycleList ::= SEQUENCE (SIZE(1.. maxnoofSLdestinations)) OF SLDRXCycleItem
SLDRXCycleItem ::= SEQUENCE {
    rXUEID                BIT STRING (SIZE(24)),
    sLDRXInformation        SLDRXInformation,
    iE-Extensions    ProtocolExtensionContainer { { SLDRXCycleItem-ExtIEs } }    OPTIONAL,
    ...
}

SLDRXCycleItem-ExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SLDRXInformation    ::= CHOICE {
    sLDRXCycle                SLDRXCycleLength,
    nosLDRX                SLDRXConfigurationIndicator,
    choice-extension    ProtocolIE-SingleContainer { { SLDRXInformation-ExtIEs } }
}

SLDRXCycleLength ::= ENUMERATED{ms10, ms20, ms32, ms40, ms60, ms64, ms70, ms80, ms128, ms160, ms256, ms320, ms512, ms640, ms1024, ms1280, ms2048,
ms2560, ms5120, ms10240, ...}

SLDRXConfigurationIndicator ::= ENUMERATED{ release, ...}

```

```

SLDRXInformation-ExtIEs FlAP-PROTOCOL-IES ::= {
  ...
}

SL-PHY-MAC-RLC-Config ::= OCTET STRING

SL-RLC-ChannelToAddModList ::= OCTET STRING

SL-ConfigDedicatedEUTRA-Info ::= OCTET STRING

SliceAvailableCapacity ::= SEQUENCE {
  sliceAvailableCapacityList SliceAvailableCapacityList,
  iE-Extensions              ProtocolExtensionContainer { { SliceAvailableCapacity-ExtIEs } } OPTIONAL
}

SliceAvailableCapacity-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
  ...
}

SliceAvailableCapacityList ::= SEQUENCE (SIZE(1.. maxnoofBPLMNsNR)) OF SliceAvailableCapacityItem

SliceAvailableCapacityItem ::= SEQUENCE {
  plmnIdentity          PLMN-Identity,
  snssaiAvailableCapacity-List  SNSSAIAvailableCapacity-List,
  iE-Extensions        ProtocolExtensionContainer { { SliceAvailableCapacityItem-ExtIEs } } OPTIONAL
}

SliceAvailableCapacityItem-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
  ...
}

SNSSAIAvailableCapacity-List ::= SEQUENCE (SIZE(1.. maxnoofSliceItems)) OF SNSSAIAvailableCapacity-Item

SNSSAIAvailableCapacity-Item ::= SEQUENCE {
  snssai          SNSSAI,
  sliceAvailableCapacityValueDownlink INTEGER (0..100)  OPTIONAL,
  sliceAvailableCapacityValueUplink   INTEGER (0..100)  OPTIONAL,
  iE-Extensions        ProtocolExtensionContainer { { SNSSAIAvailableCapacity-Item-ExtIEs } } OPTIONAL
}

SNSSAIAvailableCapacity-Item-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
  ...
}

SliceRadioResourceStatus ::= SEQUENCE {
  sliceRadioResourceStatus SliceRadioResourceStatus-List,
  iE-Extensions            ProtocolExtensionContainer { { SliceRadioResourceStatus-ExtIEs } } OPTIONAL
}

SliceRadioResourceStatus-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
  ...
}

```

```

SliceRadioResourceStatus-List ::= SEQUENCE (SIZE(1..maxnoofBPLMNsNR)) OF SliceRadioResourceStatus-Item

SliceRadioResourceStatus-Item ::= SEQUENCE {
    pLMNIdentity          PLMN-Identity,
    sNSSAIRadioResourceStatus-List  SNSSAIRadioResourceStatus-List,
    iE-Extensions         ProtocolExtensionContainer { { SliceRadioResourceStatus-Item-ExtIEs } } OPTIONAL
}

SliceRadioResourceStatus-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SNSSAIRadioResourceStatus-List ::= SEQUENCE (SIZE(1.. maxnoofSliceItems)) OF SNSSAIRadioResourceStatus-Item

SNSSAIRadioResourceStatus-Item ::= SEQUENCE {
    sNSSAI          SNSSAI,
    sNSSAIdlGBRPRUsage          INTEGER (0..100),
    sNSSAIulGBRPRUsage          INTEGER (0..100),
    sNSSAIdlNonGBRPRUsage       INTEGER (0..100),
    sNSSAIulNonGBRPRUsage       INTEGER (0..100),
    sNSSAIdlTotalPRBAllocation   INTEGER (0..100),
    sNSSAIulTotalPRBAllocation   INTEGER (0..100),
    iE-Extensions              ProtocolExtensionContainer { { SNSSAIRadioResourceStatus-Item-ExtIEs } } OPTIONAL
}

SNSSAIRadioResourceStatus-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SliceSupportList ::= SEQUENCE (SIZE(1.. maxnoofSliceItems)) OF SliceSupportItem

SliceSupportItem ::= SEQUENCE {
    sNSSAI SNSSAI,
    iE-Extensions          ProtocolExtensionContainer { { SliceSupportItem-ExtIEs } } OPTIONAL
}

SliceSupportItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SliceToReportList ::= SEQUENCE (SIZE(1.. maxnoofBPLMNsNR)) OF SliceToReportItem

SliceToReportItem ::= SEQUENCE {
    pLMNIdentity          PLMN-Identity,
    sNSSAIlist            SNSSAI-list,
    iE-Extensions         ProtocolExtensionContainer { { SliceToReportItem-ExtIEs } } OPTIONAL
}

SliceToReportItem-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SlotNumber ::= INTEGER (0..79)

```

```

SNSSAI-list ::= SEQUENCE (SIZE(1.. maxnoofSliceItems)) OF SNSSAI-Item

SNSSAI-Item ::= SEQUENCE {
    sNSSAI          SNSSAI,
    iE-Extensions  ProtocolExtensionContainer { { SNSSAI-Item-ExtIEs } } OPTIONAL
}

SNSSAI-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Slot-Configuration-List ::= SEQUENCE (SIZE(1.. maxnoofslots)) OF Slot-Configuration-Item

Slot-Configuration-Item ::= SEQUENCE {
    slotIndex          INTEGER (0..5119, ...),
    symbolAllocInSlot  SymbolAllocInSlot,
    iE-Extensions     ProtocolExtensionContainer { { Slot-Configuration-ItemExtIEs } } OPTIONAL
}

Slot-Configuration-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SNSSAI ::= SEQUENCE {
    sST          OCTET STRING (SIZE(1)),
    sD          OCTET STRING (SIZE(3)) OPTIONAL ,
    iE-Extensions  ProtocolExtensionContainer { { SNSSAI-ExtIEs } } OPTIONAL
}

SNSSAI-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SpatialDirectionInformation ::= SEQUENCE {
    nR-PRSBeamInformation  NR-PRSBeamInformation,
    iE-Extensions         ProtocolExtensionContainer { { SpatialDirectionInformation-ExtIEs } } OPTIONAL
}

SpatialDirectionInformation-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SpatialRelationInfo ::= SEQUENCE {
    spatialRelationforResourceID          SpatialRelationforResourceID,
    iE-Extensions         ProtocolExtensionContainer { {SpatialRelationInfo-ExtIEs} } OPTIONAL
}

SpatialRelationInfo-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SpatialRelationforResourceID ::= SEQUENCE (SIZE(1..maxnoofSpatialRelations)) OF SpatialRelationforResourceIDItem

```

```

SpatialRelationForResourceIDItem ::= SEQUENCE {
    referenceSignal      ReferenceSignal,
    iE-Extensions       ProtocolExtensionContainer { { SpatialRelationForResourceIDItem-ExtIEs } } OPTIONAL
}

SpatialRelationForResourceIDItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SpatialRelationPerSRSResource ::= SEQUENCE {
    spatialRelationPerSRSResource-List SpatialRelationPerSRSResource-List,
    iE-Extensions       ProtocolExtensionContainer { { SpatialRelationPerSRSResource-ExtIEs } } OPTIONAL,
    ...
}

SpatialRelationPerSRSResource-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SpatialRelationPerSRSResource-List ::= SEQUENCE(SIZE (1.. maxnoSRS-ResourcePerSet)) OF SpatialRelationPerSRSResourceItem

SpatialRelationPerSRSResourceItem ::= SEQUENCE {
    referenceSignal      ReferenceSignal,
    iE-Extensions       ProtocolExtensionContainer { { SpatialRelationPerSRSResourceItem-ExtIEs } } OPTIONAL,
    ...
}

SpatialRelationPerSRSResourceItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SpatialRelationPos ::= CHOICE {
    sSBPos                SSB,
    pRSInformationPos     PRSInformationPos,
    choice-extension      ProtocolIE-SingleContainer {{ SpatialInformationPos-ExtIEs }}
}

SpatialInformationPos-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

SpectrumSharingGroupID ::= INTEGER (1..maxCelllineNB)

SRBID ::= INTEGER (0..3, ...)

SRBs-FailedToBeSetup-Item ::= SEQUENCE {
    sRBID                SRBID ,
    cause                Cause OPTIONAL,
    iE-Extensions       ProtocolExtensionContainer { { SRBs-FailedToBeSetup-ItemExtIEs } } OPTIONAL,
    ...
}

SRBs-FailedToBeSetup-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

}

SRBs-FailedToBeSetupMod-Item ::= SEQUENCE {
    sRBID          SRBID,
    cause          Cause,
    iE-Extensions ProtocolExtensionContainer { { SRBs-FailedToBeSetupMod-ItemExtIEs } } OPTIONAL,
    ...
}

SRBs-FailedToBeSetupMod-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SRBs-Modified-Item ::= SEQUENCE {
    sRBID          SRBID,
    lCID          LCID,
    iE-Extensions ProtocolExtensionContainer { { SRBs-Modified-ItemExtIEs } } OPTIONAL,
    ...
}

SRBs-Modified-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SRBs-Required-ToBeReleased-Item ::= SEQUENCE {
    sRBID          SRBID,
    iE-Extensions ProtocolExtensionContainer { { SRBs-Required-ToBeReleased-ItemExtIEs } } OPTIONAL,
    ...
}

SRBs-Required-ToBeReleased-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SRBs-Setup-Item ::= SEQUENCE {
    sRBID          SRBID,
    lCID          LCID,
    iE-Extensions ProtocolExtensionContainer { { SRBs-Setup-ItemExtIEs } } OPTIONAL,
    ...
}

SRBs-Setup-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SRBs-SetupMod-Item ::= SEQUENCE {
    sRBID          SRBID,
    lCID          LCID,
    iE-Extensions ProtocolExtensionContainer { { SRBs-SetupMod-ItemExtIEs } } OPTIONAL,
    ...
}

SRBs-SetupMod-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```



```

}

SRBs-ToBeReleased-Item ::= SEQUENCE {
    sRBID          SRBID,
    iE-Extensions ProtocolExtensionContainer { { SRBs-ToBeReleased-ItemExtIEs } } OPTIONAL,
    ...
}

SRBs-ToBeReleased-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SRBs-ToBeSetup-Item ::= SEQUENCE {
    sRBID          SRBID ,
    duplicationIndication DuplicationIndication OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { SRBs-ToBeSetup-ItemExtIEs } } OPTIONAL,
    ...
}

SRBs-ToBeSetup-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-AdditionalDuplicationIndication CRITICALITY ignore EXTENSION AdditionalDuplicationIndication PRESENCE optional }|
    { ID id-SDTRLCBearerConfiguration      CRITICALITY ignore EXTENSION SDTRLCBearerConfiguration PRESENCE optional }|
    { ID id-SRBMappingInfo                  CRITICALITY ignore EXTENSION UuRLCChannelID PRESENCE optional },
    ...
}

SRBs-ToBeSetupMod-Item ::= SEQUENCE {
    sRBID          SRBID,
    duplicationIndication DuplicationIndication OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { SRBs-ToBeSetupMod-ItemExtIEs } } OPTIONAL,
    ...
}

SRBs-ToBeSetupMod-ItemExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-AdditionalDuplicationIndication CRITICALITY ignore EXTENSION AdditionalDuplicationIndication PRESENCE optional }|
    { ID id-SRBMappingInfo                  CRITICALITY ignore EXTENSION UuRLCChannelID PRESENCE optional }|
    { ID id-CG-SDTindicatorSetup           CRITICALITY reject EXTENSION CG-SDTindicatorSetup PRESENCE optional },
    ...
}

SRSCarrier-List ::= SEQUENCE (SIZE(1.. maxnoSRS-Carriers)) OF SRSCarrier-List-Item

SRSCarrier-List-Item ::= SEQUENCE {
    pointA          INTEGER (0..3279165),
    uplinkChannelBW-PerSCS-List UplinkChannelBW-PerSCS-List,
    activeULBWP     ActiveULBWP,
    pci             NRPCI OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { SRSCarrier-List-Item-ExtIEs } } OPTIONAL
}

SRSCarrier-List-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

SRSConfig ::= SEQUENCE {
    sRSResource-List          SRSResource-List          OPTIONAL,
    posSRSResource-List      PosSRSResource-List      OPTIONAL,
    sRSResourceSet-List      SRSResourceSet-List      OPTIONAL,
    posSRSResourceSet-List   PosSRSResourceSet-List   OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { SRSConfig-ExtIEs } } OPTIONAL
}

SRSConfig-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SRSConfiguration ::= SEQUENCE {
    sRSCarrier-List          SRSResource-List,
    iE-Extensions            ProtocolExtensionContainer { { SRSConfiguration-ExtIEs } } OPTIONAL
}

SRSConfiguration-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SrsFrequency ::= INTEGER (0..3279165)

SRSPortIndex ::= ENUMERATED {id1000, id1001, id1002, id1003,...}

SRSPosResourceID ::= INTEGER (0..63)

SRSResource ::= SEQUENCE {
    sRSResourceID            SRSResourceID,
    nrofSRS-Ports            ENUMERATED {port1, ports2, ports4},
    transmissionComb          TransmissionComb,
    startPosition            INTEGER (0..13),
    nrofSymbols              ENUMERATED {n1, n2, n4},
    repetitionFactor          ENUMERATED {n1, n2, n4},
    freqDomainPosition        INTEGER (0..67),
    freqDomainShift           INTEGER (0..268),
    c-SRS                    INTEGER (0..63),
    b-SRS                    INTEGER (0..3),
    b-hop                    INTEGER (0..3),
    groupOrSequenceHopping    ENUMERATED { neither, groupHopping, sequenceHopping },
    resourceType              ResourceType,
    sequenceID               INTEGER (0..1023),
    iE-Extensions            ProtocolExtensionContainer { { SRSResource-ExtIEs } } OPTIONAL
}

SRSResource-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SRSResourceID ::= INTEGER (0..63)

SRSResourceID-List ::= SEQUENCE (SIZE (1..maxnoSRS-ResourcePerSet)) OF SRSResourceID

SRSResource-List ::= SEQUENCE (SIZE (1..maxnoSRS-Resources)) OF SRSResource

```

```

SRSResourceSet ::= SEQUENCE {
    sRSResourceSetID          SRSResourceSetID,
    sRSResourceID-List       SRSResourceID-List,
    resourceSetType          ResourceType,
    iE-Extensions            ProtocolExtensionContainer { { SRSResourceSet-ExtIEs } } OPTIONAL
}

SRSResourceSet-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SRSResourceSetID ::= INTEGER (0..15, ...)

SRSResourceSetList ::= SEQUENCE (SIZE(1..maxnoSRS-ResourceSets)) OF SRSResourceSetItem

SRSResourceSetItem ::= SEQUENCE {
    numSRSresourcesperset    INTEGER (1..16, ...) OPTIONAL,
    periodicityList          PeriodicityList          OPTIONAL,
    spatialRelationInfo      SpatialRelationInfo      OPTIONAL,
    pathlossReferenceInfo    PathlossReferenceInfo    OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { SRSResourceSetItemExtIEs } } OPTIONAL
}

SRSResourceSetItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-SRSSpatialRelationPerSRSResource    CRITICALITY ignore EXTENSION SpatialRelationPerSRSResource PRESENCE optional},
    ...
}

SRSResourceSet-List ::= SEQUENCE (SIZE (1..maxnoSRS-ResourceSets)) OF SRSResourceSet

SRSResourceTrigger ::= SEQUENCE {
    aperiodicSRSResourceTriggerList          AperiodicSRSResourceTriggerList,
    iE-Extensions            ProtocolExtensionContainer { {SRSResourceTrigger-ExtIEs} } OPTIONAL
}

SRSResourceTrigger-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SRSResourcetype ::= SEQUENCE {
    sRSResourceTypeChoice          SRSResourceTypeChoice,
    iE-Extensions            ProtocolExtensionContainer { { SRSResourcetype-ExtIEs} } OPTIONAL,
    ...
}

SRSResourcetype-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-SRSPortIndex          CRITICALITY ignore EXTENSION SRSPortIndex PRESENCE optional },
    ...
}

SRSResourceTypeChoice ::= CHOICE {
    sRSResourceInfo          SRSInfo,

```

```

    posSRSResourceInfo      PosSRSInfo,
    choice-extension        ProtocolIE-SingleContainer { { SRSResourceTypeChoice-ExtIEs } }
}

SRSResourceTypeChoice-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

SRSInfo ::= SEQUENCE {
    sRSResource      SRSResourceID,
    ...
}

SRSPosRRCTInactiveConfig ::= OCTET STRING

SRSPosRRCTInactiveQueryIndication ::= ENUMERATED {true, ...}

PosSRSInfo ::= SEQUENCE {
    posSRSResourceID      SRSPosResourceID,
    ...
}

SSB ::= SEQUENCE {
    pCI-NR      NRPCI,
    ssb-index   SSB-Index OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { {SSB-ExtIEs} } OPTIONAL
}

SSBCoverageModification-List ::= SEQUENCE (SIZE (1..maxnoofSSBAreas)) OF SSBCoverageModification-Item

SSBCoverageModification-Item ::= SEQUENCE {
    sSBIndex      INTEGER(0..63),
    sSBCoverageState SSB-CoverageState,
    iE-Extensions ProtocolExtensionContainer { { SSBCoverageModification-Item-ExtIEs } } OPTIONAL,
    ...
}

SSBCoverageModification-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SSBCoverageState ::= INTEGER (0..15, ...)

SSB-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SSB-freqInfo ::= INTEGER (0..maxNRARFCN)

SSB-Index ::= INTEGER(0..63)

SSB-subcarrierSpacing ::= ENUMERATED {kHz15, kHz30, kHz120, kHz240, spare3, spare2, spare1, ...}

```

```

SSB-transmissionPeriodicity ::= ENUMERATED {sf10, sf20, sf40, sf80, sf160, sf320, sf640, ...}

SSB-transmissionTimingOffset ::= INTEGER (0..127, ...)

SSB-transmissionBitmap ::= CHOICE {
    shortBitmap      BIT STRING (SIZE (4)),
    mediumBitmap     BIT STRING (SIZE (8)),
    longBitmap       BIT STRING (SIZE (64)),
    choice-extension ProtocolIE-SingleContainer { { SSB-transmissionBitmap-ExtIEs } }
}

SSB-transmissionBitmap-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

SSBAreaCapacityValueList ::= SEQUENCE (SIZE(1.. maxnoofSSBAreas)) OF SSBAreaCapacityValueItem

SSBAreaCapacityValueItem ::= SEQUENCE {
    sSBIndex          INTEGER(0..63),
    sSBAreaCapacityValue INTEGER (0..100),
    iE-Extensions     ProtocolExtensionContainer { { SSBAreaCapacityValueItem-ExtIEs } } OPTIONAL
}

SSBAreaCapacityValueItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SSBAreaRadioResourceStatusList ::= SEQUENCE (SIZE(1.. maxnoofSSBAreas)) OF SSBAreaRadioResourceStatusItem

SSBAreaRadioResourceStatusItem ::= SEQUENCE {
    sSBIndex          INTEGER(0..63),
    sSBAreaDLGBRPRUsage INTEGER (0..100),
    sSBAreaULGBRPRUsage INTEGER (0..100),
    sSBAreaDLnon-GBRPRUsage INTEGER (0..100),
    sSBAreaULnon-GBRPRUsage INTEGER (0..100),
    sSBAreaDLTotalPRUsage INTEGER (0..100),
    sSBAreaULTotalPRUsage INTEGER (0..100),
    dLSchedulingPDCCHCEUsage INTEGER (0..100) OPTIONAL,
    uLSchedulingPDCCHCEUsage INTEGER (0..100) OPTIONAL,
    iE-Extensions     ProtocolExtensionContainer { { SSBAreaRadioResourceStatusItem-ExtIEs } } OPTIONAL
}

SSBAreaRadioResourceStatusItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SSBInformation ::= SEQUENCE {
    sSBInformationList SSBInformationList,
    iE-Extensions     ProtocolExtensionContainer { { SSBInformation-ExtIEs } } OPTIONAL
}

SSBInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

}

SSBInformationList ::= SEQUENCE (SIZE(1.. maxnoofSSBs)) OF SSBInformationItem

SSBInformationItem ::= SEQUENCE {
    sSB-Configuration      SSB-TF-Configuration,
    pCI-NR                 NRPCI,
    iE-Extensions          ProtocolExtensionContainer { { SSBInformationItem-ExtIEs } } OPTIONAL
}

SSBInformationItem-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SSB-PositionsInBurst ::= CHOICE {
    shortBitmap             BIT STRING (SIZE (4)),
    mediumBitmap            BIT STRING (SIZE (8)),
    longBitmap              BIT STRING (SIZE (64)),
    choice-extension        ProtocolIE-SingleContainer { {SSB-PositionsInBurst-ExtIEs} }
}

SSB-PositionsInBurst-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

SSB-TF-Configuration ::= SEQUENCE {
    sSB-frequency           INTEGER (0..3279165),
    sSB-subcarrier-spacing  ENUMERATED {kHz15, kHz30, kHz60, kHz120, kHz240, ...},
    sSB-Transmit-power      INTEGER (-60..50),
    sSB-periodicity         ENUMERATED {ms5, ms10, ms20, ms40, ms80, ms160, ...},
    sSB-half-frame-offset   INTEGER(0..1),
    sSB-SFN-offset          INTEGER(0..15),
    sSB-position-in-burst   SSB-PositionsInBurst OPTIONAL,
    sFNInitialisationTime   RelativeTime1900 OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { { SSB-TF-Configuration-ExtIEs} } OPTIONAL
}

SSB-TF-Configuration-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SSBToReportList ::= SEQUENCE (SIZE(1.. maxnoofSSBAreas)) OF SSBToReportItem

SSBToReportItem ::= SEQUENCE {
    sSBIndex                INTEGER(0..63),
    iE-Extensions          ProtocolExtensionContainer { { SSBToReportItem-ExtIEs} } OPTIONAL
}

SSBToReportItem-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

StartTimeAndDuration ::= SEQUENCE {

```

```

    startTime      RelativeTime1900      OPTIONAL,
    duration       INTEGER (0..90060, ...) OPTIONAL,
    iE-Extensions  ProtocolExtensionContainer { { StartTimeAndDuration-ExtIEs } } OPTIONAL,
    ...
}

StartTimeAndDuration-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SUL-Information ::= SEQUENCE {
    SUL-NRARFCN          INTEGER (0..maxNRARFCN),
    SUL-transmission-Bandwidth  Transmission-Bandwidth,
    iE-Extensions       ProtocolExtensionContainer { { SUL-InformationExtIEs } } OPTIONAL,
    ...
}

SUL-InformationExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-CarrierList      CRITICALITY ignore EXTENSION NRCarrierList      PRESENCE optional } |
    { ID id-FrequencyShift7p5khz  CRITICALITY ignore EXTENSION FrequencyShift7p5khz  PRESENCE optional },
    ...
}

SubcarrierSpacing ::= ENUMERATED { kHz15, kHz30, kHz60, kHz120, kHz240, spare3, spare2, spare1, ...}

SubscriberProfileIDforRFP ::= INTEGER (1..256, ...)

SuccessfulHOREportInformationList ::= SEQUENCE (SIZE(1.. maxnoofSuccessfulHOREports)) OF SuccessfulHOREportInformation-Item

SuccessfulHOREportInformation-Item ::= SEQUENCE {
    successfulHOREportContainer      OCTET STRING,
    iE-Extensions  ProtocolExtensionContainer { { SuccessfulHOREportInformation-Item-ExtIEs } } OPTIONAL
}

SuccessfulHOREportInformation-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SULAccessIndication ::= ENUMERATED {true,...}

SupportedSULFreqBandItem ::= SEQUENCE {
    freqBandIndicatorNr  INTEGER (1..1024,...),
    iE-Extensions       ProtocolExtensionContainer { { SupportedSULFreqBandItem-ExtIEs } } OPTIONAL,
    ...
}

SupportedSULFreqBandItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

SurvivalTime ::= INTEGER (0.. 1920000,...)

SymbolAllocInSlot ::= CHOICE {

```

```

    all-DL                NULL,
    all-UL                NULL,
    both-DL-and-UL       NumDLULSymbols,
    choice-extension     ProtocolIE-SingleContainer { { SymbolAllocInSlot-ExtIEs } }
}

SymbolAllocInSlot-ExtIEs FlAP-PROTOCOL-IES ::= {
    ...
}

SystemFrameNumber ::= INTEGER (0..1023)

SystemInformationAreaID ::= BIT STRING (SIZE (24))

-- T

FiveGS-TAC ::= OCTET STRING (SIZE(3))

Configured-EPS-TAC ::= OCTET STRING (SIZE(2))

TargetCellList ::= SEQUENCE (SIZE(1..maxnoofCHOcells)) OF TargetCellList-Item

TargetCellList-Item ::= SEQUENCE {
    target-cell                NRCGI,
    iE-Extensions              ProtocolExtensionContainer { { TargetCellList-Item-ExtIEs } } OPTIONAL
}

TargetCellList-Item-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
    ...
}

NSAGSupportList ::= SEQUENCE (SIZE(1.. maxnoofNSAGs)) OF NSAGSupportItem

NSAGSupportItem ::= SEQUENCE {
    nSAG-ID                    NSAG-ID,
    nSAGSliceSupport           ExtendedSliceSupportList,
    iE-Extensions              ProtocolExtensionContainer { {NSAGSupportItem-ExtIEs} } OPTIONAL,
    ...
}

NSAGSupportItem-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
    ...
}

NSAG-ID ::= INTEGER (0..255, ...)

TDD-Info ::= SEQUENCE {
    nRFreqInfo                 NRFreqInfo,
    transmission-Bandwidth     Transmission-Bandwidth,
    iE-Extensions              ProtocolExtensionContainer { {TDD-Info-ExtIEs} } OPTIONAL,
    ...
}

TDD-Info-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {

```



```

    {ID id-IntendedTDD-DL-ULConfig CRITICALITY ignore EXTENSION IntendedTDD-DL-ULConfig PRESENCE optional}|
    {ID id-TDD-UL-DLConfigCommonNR CRITICALITY ignore EXTENSION TDD-UL-DLConfigCommonNR PRESENCE optional }|
    {ID id-CarrierList CRITICALITY ignore EXTENSION NRCarrierList PRESENCE optional },
    ...
}

TDD-InfoRel16 ::= SEQUENCE {
    tDD-FreqInfo FreqInfoRel16 OPTIONAL,
    sUL-FreqInfo FreqInfoRel16 OPTIONAL,
    tDD-UL-DLConfigCommonNR TDD-UL-DLConfigCommonNR OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { {TDD-InfoRel16-ExtIEs} } OPTIONAL,
    ...
}

TDD-InfoRel16-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

TDD-UL-DLConfigCommonNR ::= OCTET STRING

TRPTEGInformation ::= CHOICE {
    rxTx-TEG RxTxTEG,
    rx-TEG RxTEG,
    choice-extension ProtocolIE-SingleContainer { { TRPTEGInformation-ExtIEs} }
}

TRPTEGInformation-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

RxTxTEG ::= SEQUENCE {
    tRP-RxTx-TEGInformation TRP-RxTx-TEGInformation,
    tRP-Tx-TEGInformation TRP-Tx-TEGInformation OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { RxTxTEG-ExtIEs } } OPTIONAL,
    ...
}

RxTxTEG-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

RxTEG ::= SEQUENCE {
    tRP-Rx-TEGInformation TRP-Rx-TEGInformation,
    tRP-Tx-TEGInformation TRP-Tx-TEGInformation,
    iE-Extensions ProtocolExtensionContainer { { RxTEG-ExtIEs } } OPTIONAL,
    ...
}

RxTEG-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

TimeReferenceInformation ::= SEQUENCE {

```

```

referenceTime                ReferenceTime,
referenceSFN                 ReferenceSFN,
uncertainty                  Uncertainty,
timeInformationType          TimeInformationType,
iE-Extensions                ProtocolExtensionContainer { { TimeReferenceInformation-ExtIEs } } OPTIONAL
}

TimeReferenceInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

TimeInformationType ::= ENUMERATED {localClock}

TimeStamp ::= SEQUENCE {
  systemFrameNumber          SystemFrameNumber,
  slotIndex                  TimeStampSlotIndex,
  measurementTime            RelativeTime1900 OPTIONAL,
  iE-Extension                ProtocolExtensionContainer { { TimeStamp-ExtIEs } } OPTIONAL
}

TimeStamp-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

TimeStampSlotIndex ::= CHOICE {
  sCS-15                     INTEGER(0..9),
  sCS-30                     INTEGER(0..19),
  sCS-60                     INTEGER(0..39),
  sCS-120                    INTEGER(0..79),
  choice-extension           ProtocolIE-SingleContainer { { TimeStampSlotIndex-ExtIEs } }
}

TimeStampSlotIndex-ExtIEs FLAP-PROTOCOL-IES ::= {
  { ID id-SCS-480            CRITICALITY reject TYPE SCS-480 PRESENCE mandatory}|
  { ID id-SCS-960            CRITICALITY reject TYPE SCS-960 PRESENCE mandatory},
  ...
}

TimeToWait ::= ENUMERATED {v1s, v2s, v5s, v10s, v20s, v60s, ...}

TimingErrorMargin ::= ENUMERATED {m0Tc, m2Tc, m4Tc, m6Tc, m8Tc, m12Tc, m16Tc, m20Tc, m24Tc, m32Tc, m40Tc, m48Tc, m56Tc, m64Tc, m72Tc, m80Tc, ...}

TimingMeasurementQuality ::= SEQUENCE {
  measurementQuality         INTEGER(0..31),
  resolution                  ENUMERATED{m0dot1, m1, m10, m30, ...},
  iE-Extensions                ProtocolExtensionContainer { { TimingMeasurementQuality-ExtIEs } } OPTIONAL
}

TimingMeasurementQuality-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

TMGI ::= OCTET STRING (SIZE(6))

```

```

TNLAssociationUsage ::= ENUMERATED {
    ue,
    non-ue,
    both,
    ...
}

TNLCapacityIndicator ::= SEQUENCE {
    dLTNLOfferedCapacity      INTEGER (1.. 16777216,...),
    dLTNLAvailableCapacity    INTEGER (0.. 100,...),
    uLTNLOfferedCapacity      INTEGER (1.. 16777216,...),
    uLTNLAvailableCapacity    INTEGER (0.. 100,...),
    iE-Extensions             ProtocolExtensionContainer { { TNLCapacityIndicator-ExtIEs } } OPTIONAL
}

TNLCapacityIndicator-ExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

TraceActivation ::= SEQUENCE {
    traceID                    TraceID,
    interfacesToTrace           InterfacesToTrace,
    traceDepth                  TraceDepth,
    traceCollectionEntityIPAddress TransportLayerAddress,
    iE-Extensions              ProtocolExtensionContainer { {TraceActivation-ExtIEs} } OPTIONAL
}

TraceActivation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    {ID id-mdtConfiguration      CRITICALITY ignore EXTENSION MDTConfiguration PRESENCE optional}|
    {ID id-TraceCollectionEntityURI CRITICALITY ignore EXTENSION URI-address PRESENCE optional},
    ...
}

TraceDepth ::= ENUMERATED {
    minimum,
    medium,
    maximum,
    minimumWithoutVendorSpecificExtension,
    mediumWithoutVendorSpecificExtension,
    maximumWithoutVendorSpecificExtension,
    ...
}

TraceID ::= OCTET STRING (SIZE(8))

TrafficMappingInfo ::= CHOICE {
    iptolayer2TrafficMappingInfo      IPTolayer2TrafficMappingInfo,
    bAPlayerBHRLCchannelMappingInfo    BAPlayerBHRLCchannelMappingInfo,
    choice-extension                    ProtocolIE-SingleContainer { { TrafficMappingInfo-ExtIEs } }
}

TrafficMappingInfo-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

```

```

TransportLayerAddress ::= BIT STRING (SIZE(1..160, ...))

TransactionID ::= INTEGER (0..255, ...)

Transmission-Bandwidth ::= SEQUENCE {
    nRSCS NRSCS,
    nRNRB NRNRB,
    iE-Extensions ProtocolExtensionContainer { { Transmission-Bandwidth-ExtIEs} } OPTIONAL,
    ...
}

Transmission-Bandwidth-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

TransmissionComb ::= CHOICE {
    n2 SEQUENCE {
        combOffset-n2 INTEGER (0..1),
        cyclicShift-n2 INTEGER (0..7)
    },
    n4 SEQUENCE {
        combOffset-n4 INTEGER (0..3),
        cyclicShift-n4 INTEGER (0..11)
    },
    choice-extension ProtocolIE-SingleContainer { { TransmissionComb-ExtIEs} }
}

TransmissionComb-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

TransmissionCombPos ::= CHOICE {
    n2 SEQUENCE {
        combOffset-n2 INTEGER (0..1),
        cyclicShift-n2 INTEGER (0..7)
    },
    n4 SEQUENCE {
        combOffset-n4 INTEGER (0..3),
        cyclicShift-n4 INTEGER (0..11)
    },
    n8 SEQUENCE {
        combOffset-n8 INTEGER (0..7),
        cyclicShift-n8 INTEGER (0..5)
    },
    choice-extension ProtocolIE-SingleContainer { { TransmissionCombPos-ExtIEs} }
}

TransmissionCombPos-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

TransmissionStopIndicator ::= ENUMERATED {true, ... }

Transport-UP-Layer-Address-Info-To-Add-List ::= SEQUENCE (SIZE(1.. maxnoofTLAs)) OF Transport-UP-Layer-Address-Info-To-Add-Item

```

```

Transport-UP-Layer-Address-Info-To-Add-Item ::= SEQUENCE {
    iP-SecTransportLayerAddress      TransportLayerAddress,
    gTPTransportLayerAddressToAdd    GTPTLAs                      OPTIONAL,
    iE-Extensions                    ProtocolExtensionContainer { { Transport-UP-Layer-Address-Info-To-Add-ItemExtIEs } } OPTIONAL
}

Transport-UP-Layer-Address-Info-To-Add-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Transport-UP-Layer-Address-Info-To-Remove-List ::= SEQUENCE (SIZE(1.. maxnoofTLAs)) OF Transport-UP-Layer-Address-Info-To-Remove-Item

Transport-UP-Layer-Address-Info-To-Remove-Item ::= SEQUENCE {
    iP-SecTransportLayerAddress      TransportLayerAddress,
    gTPTransportLayerAddressToRemove GTPTLAs                      OPTIONAL,
    iE-Extensions                    ProtocolExtensionContainer { { Transport-UP-Layer-Address-Info-To-Remove-ItemExtIEs } } OPTIONAL
}

Transport-UP-Layer-Address-Info-To-Remove-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

TransmissionActionIndicator ::= ENUMERATED {stop, ..., restart }

TRPBeamAntennaInformation ::= SEQUENCE {
    choice-TRP-Beam-Antenna-Info-Item Choice-TRP-Beam-Antenna-Info-Item ,
    iE-Extensions                    ProtocolExtensionContainer {{ TRPBeamAntennaInformation-ExtIEs}} OPTIONAL,
    ...
}

TRPBeamAntennaInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

Choice-TRP-Beam-Antenna-Info-Item ::= CHOICE {
    reference          TRPID,
    explicit           TRP-BeamAntennaExplicitInformation,
    noChange           NULL,
    choice-extension   ProtocolIE-SingleContainer { { Choice-TRP-Beam-Info-Item-ExtIEs } }
}

Choice-TRP-Beam-Info-Item-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

TRP-BeamAntennaExplicitInformation ::= SEQUENCE {
    trp-BeamAntennaAngles      TRP-BeamAntennaAngles,
    lcs-to-gcs-translation     LCS-to-GCS-Translation              OPTIONAL,
    iE-Extensions              ProtocolExtensionContainer {{ TRP-BeamAntennaExplicitInformation-ExtIEs}} OPTIONAL,
    ...
}

TRP-BeamAntennaExplicitInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {

```

```

}
...
}

TRP-BeamAntennaAngles ::= SEQUENCE (SIZE (1.. maxnoAzimuthAngles)) OF TRP-BeamAntennaAnglesList-Item

TRP-BeamAntennaAnglesList-Item ::= SEQUENCE {
  trp-azimuth-angle          INTEGER (0..359),
  trp-azimuth-angle-fine     INTEGER (0..9) OPTIONAL,
  trp-elevation-angle-list   SEQUENCE (SIZE (1.. maxnoElevationAngles)) OF TRP-ElevationAngleList-Item,
  iE-Extensions              ProtocolExtensionContainer {{ TRP-BeamAntennaAnglesList-Item-ExtIEs}} OPTIONAL,
  ...
}

TRP-BeamAntennaAnglesList-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

TRP-ElevationAngleList-Item ::= SEQUENCE {
  trp-elevation-angle        INTEGER (0..180),
  trp-elevation-angle-fine   INTEGER (0..9) OPTIONAL,
  trp-beam-power-list        SEQUENCE (SIZE (2..maxNumResourcesPerAngle)) OF TRP-Beam-Power-Item,
  iE-Extensions              ProtocolExtensionContainer {{ TRP-ElevationAngleList-Item-ExtIEs}} OPTIONAL,
  ...
}

TRP-ElevationAngleList-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

TRP-Beam-Power-Item ::= SEQUENCE {
  pRSResourceSetID          PRS-Resource-Set-ID OPTIONAL,
  pRSResourceID             PRS-Resource-ID,
  relativePower              INTEGER (0..30), --negative value
  relativePowerFine          INTEGER (0..9) OPTIONAL,
  iE-Extensions              ProtocolExtensionContainer {{ TRP-Beam-Power-Item-ExtIEs}} OPTIONAL,
  ...
}

TRP-Beam-Power-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

TRPID ::= INTEGER (0.. maxnoofTRPs, ...)

TRPInformation ::= SEQUENCE {
  trPID                      TRPID,
  trPInformationTypeResponseList TRPInformationTypeResponseList,
  iE-Extensions              ProtocolExtensionContainer { { TRPInformation-ExtIEs } } OPTIONAL
}

TRPInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

```

```

}

TRPInformationItem ::= SEQUENCE {
    trpInformation          TRPInformation,
    iE-Extensions           ProtocolExtensionContainer { { TRPInformationItem-ExtIEs } } OPTIONAL
}

TRPInformationItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

TRPInformationTypeItem ::= ENUMERATED {
    nrPCI,
    nG-RAN-CGI,
    arfcn,
    pRSConfig,
    sSBConfig,
    sFNInitTime,
    spatialDirectInfo,
    geoCoord,
    ...,
    trp-type,
    ondemandPRS,
    trpTxTeg,
    beam-antenna-info
}

TRPInformationTypeResponseList ::= SEQUENCE (SIZE(1.. maxnoofTRPInfoTypes)) OF TRPInformationTypeResponseItem

TRPInformationTypeResponseItem ::= CHOICE {
    pCI-NR                NRPCI,
    nG-RAN-CGI            NR CGI,
    nRARFCN               INTEGER (0..maxNRARFCN),
    pRSConfiguration     PRSConfiguration,
    sSBInformation        SSBInformation,
    sFNInitialisationTime RelativeTime1900,
    spatialDirectionInformation SpatialDirectionInformation,
    geographicalCoordinates GeographicalCoordinates,
    choice-extension      ProtocolIE-SingleContainer { { TRPInformationTypeResponseItem-ExtIEs } }
}

TRPInformationTypeResponseItem-ExtIEs FLAP-PROTOCOL-IES ::= {
    { ID id-TRPType          CRITICALITY reject      TYPE TRPType          PRESENCE mandatory }|
    { ID id-OnDemandPRS      CRITICALITY reject      TYPE OnDemandPRS-Info PRESENCE mandatory }|
    { ID id-TRPTxTEGAssociation CRITICALITY reject      TYPE TRPTxTEGAssociation PRESENCE optional }|
    { ID id-TRPBeamAntennaInformation CRITICALITY reject      TYPE TRPBeamAntennaInformation PRESENCE mandatory },
    ...
}

TRPList ::= SEQUENCE (SIZE(1.. maxnoofTRPs)) OF TRPListItem

TRPListItem ::= SEQUENCE {

```

```

    tRPID                TRPID,
    iE-Extensions        ProtocolExtensionContainer { { TRPListItem-ExtIEs } } OPTIONAL
}

TRPListItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

TRPMeasurementQuality ::= SEQUENCE {
    tRPMeasurementQuality-Item TRPMeasurementQuality-Item,
    iE-Extensions              ProtocolExtensionContainer { {TRPMeasurementQuality-ExtIEs} } OPTIONAL
}

TRPMeasurementQuality-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

TRPMeasurementQuality-Item ::= CHOICE {
    timingMeasurementQuality    TimingMeasurementQuality,
    angleMeasurementQuality     AngleMeasurementQuality,
    choice-extension            ProtocolIE-SingleContainer { { TRPMeasurementQuality-Item-ExtIEs } }
}

TRPMeasurementQuality-Item-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

TRP-MeasurementRequestList ::= SEQUENCE (SIZE (1..maxNoOfMeasTRPs)) OF TRP-MeasurementRequestItem

TRP-MeasurementRequestItem ::= SEQUENCE {
    tRPID                TRPID,
    search-window-information Search-window-information OPTIONAL,
    iE-extensions        ProtocolExtensionContainer { { TRP-MeasurementRequestItem-ExtIEs } } OPTIONAL
}

TRP-MeasurementRequestItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-NRCGI                CRITICALITY ignore EXTENSION NRCGI                PRESENCE optional }|
    { ID id-AoA-SearchWindow     CRITICALITY ignore EXTENSION AoA-AssistanceInfo PRESENCE optional }|
    { ID id-NumberOfTRPRxTEG     CRITICALITY ignore EXTENSION NumberOfTRPRxTEG PRESENCE optional }|
    { ID id-NumberOfTRPRxTxTEG   CRITICALITY ignore EXTENSION NumberOfTRPRxTxTEG PRESENCE optional },
    ...
}

TRP-PRS-Info-List ::= SEQUENCE (SIZE(1.. maxnoofPRSTRPs)) OF TRP-PRS-Info-List-Item

TRP-PRS-Info-List-Item ::= SEQUENCE {
    tRP-ID                TRPID,
    nR-PCI                NRPCI,
    cGI-NR                NRCGI                OPTIONAL,
    pRSConfiguration      PRSConfiguration,
    iE-Extensions        ProtocolExtensionContainer { { TRP-PRS-Info-List-Item-ExtIEs} } OPTIONAL,
    ...
}

```



```
TRP-PRS-Info-List-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

TRPPositionDefinitionType ::= CHOICE {
    direct          TRPPositionDirect,
    referenced      TRPPositionReferenced,
    choice-extension
                                     ProtocolIE-SingleContainer { { TRPPositionDefinitionType-ExtIEs } }
}

TRPPositionDefinitionType-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

TRPPositionDirect ::= SEQUENCE {
    accuracy        TRPPositionDirectAccuracy,
    iE-extensions   ProtocolExtensionContainer { { TRPPositionDirect-ExtIEs } } OPTIONAL
}

TRPPositionDirect-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

TRPPositionDirectAccuracy ::= CHOICE {
    trPPosition          AccessPointPosition,
    trPHAPosition        NGRANHighAccuracyAccessPointPosition,
    choice-extension     ProtocolIE-SingleContainer { { TRPPositionDirectAccuracy-ExtIEs } }
}

TRPPositionDirectAccuracy-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

TRPPositionReferenced ::= SEQUENCE {
    referencePoint      ReferencePoint,
    referencePointType  TRPReferencePointType,
    iE-extensions       ProtocolExtensionContainer { { TRPPositionReferenced-ExtIEs } } OPTIONAL
}

TRPPositionReferenced-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

TRPReferencePointType ::= CHOICE {
    trPPositionRelativeGeodetic      RelativeGeodeticLocation,
    trPPositionRelativeCartesian     RelativeCartesianLocation,
    choice-extension                 ProtocolIE-SingleContainer { { TRPReferencePointType-ExtIEs } }
}

TRPReferencePointType-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}
```

```

TRP-Rx-TEGInformation ::= SEQUENCE {
    tRP-Rx-TEGID                INTEGER (0..31),
    tRP-Rx-TimingErrorMargin    TimingErrorMargin,
    iE-Extensions                ProtocolExtensionContainer { { TRP-Rx-TEGInformation-ExtIEs } } OPTIONAL,
    ...
}

TRP-Rx-TEGInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

TRP-RxTx-TEGInformation ::= SEQUENCE {
    tRP-RxTx-TEGID                INTEGER (0..255),
    tRP-RxTx-TimingErrorMargin    RxTxTimingErrorMargin,
    iE-Extensions                ProtocolExtensionContainer { { TRP-RxTx-TEGInformation-ExtIEs } } OPTIONAL,
    ...
}

TRP-RxTx-TEGInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

TRP-Tx-TEGInformation ::= SEQUENCE {
    tRP-Tx-TEGID                INTEGER (0..7),
    tRP-Tx-TimingErrorMargin    TimingErrorMargin,
    iE-Extensions                ProtocolExtensionContainer { { TRP-Tx-TEGInformation-ExtIEs } } OPTIONAL,
    ...
}

TRP-Tx-TEGInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

TRPTxTEGAssociation ::= SEQUENCE (SIZE(1.. maxnoTRPTEGs)) OF TRPTEG-Item

TRPTEG-Item ::= SEQUENCE {
    tRP-Tx-TEGInformation        TRP-Tx-TEGInformation,
    dl-PRSResourceSetID         PRS-Resource-Set-ID,
    dl-PRSResourceID-List       SEQUENCE (SIZE(1.. maxnoofPRS-ResourcesPerSet)) OF DLPRSResourceID-Item OPTIONAL,
    iE-Extensions                ProtocolExtensionContainer { { TRPTEGItem-ExtIEs } } OPTIONAL,
    ...
}

TRPTEGItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

DLPRSResourceID-Item ::= SEQUENCE {
    dl-PRSResourceID            PRS-Resource-ID,
    iE-Extensions                ProtocolExtensionContainer { { DLPRSResource-Item-ExtIEs } } OPTIONAL,
    ...
}

```

```

DLPRSResource-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

TypeOfError ::= ENUMERATED {
  not-understood,
  missing,
  ...
}

Transport-Layer-Address-Info ::= SEQUENCE {
  transport-UP-Layer-Address-Info-To-Add-List      Transport-UP-Layer-Address-Info-To-Add-List      OPTIONAL,
  transport-UP-Layer-Address-Info-To-Remove-List  Transport-UP-Layer-Address-Info-To-Remove-List  OPTIONAL,
  iE-Extensions      ProtocolExtensionContainer { { Transport-Layer-Address-Info-ExtIEs } }      OPTIONAL
}

Transport-Layer-Address-Info-ExtIEs      FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

TRPType ::= ENUMERATED {
  prsOnlyTP,
  srsOnlyRP,
  tp,
  rp,
  trp,
  ...
}

TSCAssistanceInformation ::= SEQUENCE {
  periodicity      Periodicity,
  burstArrivalTime      BurstArrivalTime      OPTIONAL,
  iE-Extensions      ProtocolExtensionContainer { {TSCAssistanceInformation-ExtIEs} }      OPTIONAL,
  ...
}

TSCAssistanceInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  { ID id-SurvivalTime      CRITICALITY ignore      EXTENSION SurvivalTime      PRESENCE optional },
  ...
}

TSCTrafficCharacteristics ::= SEQUENCE {
  tSCAssistanceInformationDL      TSCAssistanceInformation      OPTIONAL,
  tSCAssistanceInformationUL      TSCAssistanceInformation      OPTIONAL,
  iE-Extensions      ProtocolExtensionContainer { {TSCTrafficCharacteristics-ExtIEs} }      OPTIONAL,
  ...
}

TSCTrafficCharacteristics-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

TRP-MeasurementUpdateList ::= SEQUENCE (SIZE (1..maxNoOfMeasTRPs)) OF TRP-MeasurementUpdateItem

```

```

TRP-MeasurementUpdateItem ::= SEQUENCE {
    trp-ID                TRPID,
    aoA-window-information AoA-AssistanceInfo OPTIONAL,
    iE-extensions         ProtocolExtensionContainer { { TRP-MeasurementUpdateItem-ExtIEs } } OPTIONAL,
    ...
}

TRP-MeasurementUpdateItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-NumberOfTRPRxTEG          CRITICALITY ignore EXTENSION NumberOfTRPRxTEG          PRESENCE optional } |
    { ID id-NumberOfTRPRxTxTEG       CRITICALITY ignore EXTENSION NumberOfTRPRxTxTEG       PRESENCE optional },
    ...
}

TwoPHRModeMCG ::= ENUMERATED {enabled, ...}

TwoPHRModeSCG ::= ENUMERATED {enabled, ...}

-- U
UAC-Assistance-Info ::= SEQUENCE {
    uACPLMN-List          UACPLMN-List,
    iE-Extensions        ProtocolExtensionContainer { { UAC-Assistance-InfoExtIEs } } OPTIONAL
}

UAC-Assistance-InfoExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

UACPLMN-List ::= SEQUENCE (SIZE(1..maxnoofUACPLMNs)) OF UACPLMN-Item

UACPLMN-Item ::= SEQUENCE {
    pLMNIdentity          PLMN-Identity,
    uACType-List          UACType-List,    iE-Extensions        ProtocolExtensionContainer { { UACPLMN-Item-ExtIEs } } OPTIONAL
}

UACPLMN-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-NID CRITICALITY ignore EXTENSION NID PRESENCE optional },
    ...
}

UACType-List ::= SEQUENCE (SIZE(1..maxnoofUACperPLMN)) OF UACType-Item

UACType-Item ::= SEQUENCE {
    uACReductionIndication UACReductionIndication,
    uACCategoryType        UACCategoryType,
    iE-Extensions          ProtocolExtensionContainer { { UACType-Item-ExtIEs } } OPTIONAL
}

UACType-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

UACCategoryType ::= CHOICE {

```

```

    uACstandardized          UACAction,
    uACOperatorDefined       UACOperatorDefined,
    choice-extension         ProtocolIE-SingleContainer { { UACCategoryType-ExtIEs } }
}

UACCategoryType-ExtIEs FlAP-PROTOCOL-IES ::= {
    ...
}

UACOperatorDefined ::= SEQUENCE {
    accessCategory          INTEGER (32..63,...),
    accessIdentity          BIT STRING (SIZE(7)),
    iE-Extensions          ProtocolExtensionContainer { { UACOperatorDefined-ExtIEs} } OPTIONAL
}

UACOperatorDefined-ExtIEs FlAP-PROTOCOL-EXTENSION ::= {
    ...
}

UACAction ::= ENUMERATED {
    reject-non-emergency-mo-dt,
    reject-rrc-cr-signalling,
    permit-emergency-sessions-and-mobile-terminated-services-only,
    permit-high-priority-sessions-and-mobile-terminated-services-only,
    ...
}

UACReductionIndication ::= INTEGER (0..100)

UE-associatedLogicalFl-ConnectionItem ::= SEQUENCE {
    gNB-CU-UE-FlAP-ID       GNB-CU-UE-FlAP-ID     OPTIONAL,
    gNB-DU-UE-FlAP-ID       GNB-DU-UE-FlAP-ID     OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { { UE-associatedLogicalFl-ConnectionItemExtIEs} } OPTIONAL,
    ...
}

UEAssistanceInformation ::= OCTET STRING

UEAssistanceInformationEUTRA ::= OCTET STRING

UE-associatedLogicalFl-ConnectionItemExtIEs FlAP-PROTOCOL-EXTENSION ::= {
    ...
}

UE-CapabilityRAT-ContainerList ::= OCTET STRING

UEContextNotRetrievable ::= ENUMERATED {true, ...}

UEIdentityIndexValue ::= CHOICE {
    indexLength10          BIT STRING (SIZE (10)),
    choice-extension       ProtocolIE-SingleContainer { {UEIdentityIndexValueChoice-ExtIEs} }
}

```

```

UEIdentityIndexValueChoice-ExtIEs FLAP-PROTOCOL-IES ::= {
  ...
}

UEIdentity-List-For-Paging-Item ::= SEQUENCE {
  ueIdentityIndexValue          UEIdentityIndexValue,
  pagingDRX                     PagingDRX          OPTIONAL,
  iE-Extensions                 ProtocolExtensionContainer { { UEIdentity-List-For-Paging-Item-ExtIEs } } OPTIONAL
}

UEIdentity-List-For-Paging-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

UE-MulticastMRBs-ConfirmedToBeModified-Item ::= SEQUENCE {
  mRB-ID                       MRB-ID,
  mrb-type-reconfiguration     MBSPTPretransmissionTunnelRequired OPTIONAL,
  iE-Extensions                 ProtocolExtensionContainer { { UE-MulticastMRBs-ConfirmedToBeModified-Item-ExtIEs } } OPTIONAL
}

UE-MulticastMRBs-ConfirmedToBeModified-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

UE-MulticastMRBs-RequiredToBeModified-Item ::= SEQUENCE {
  mRB-ID                       MRB-ID,
  mrb-type-reconfiguration     ENUMERATED {true, ...}          OPTIONAL,
  mrb-reconfigured-RLCtype     ENUMERATED {
    rlc-um-ptp,
    rlc-am-ptp,
    rlc-um-dl-ptm,
    two-rlc-um-dl-ptp-and-dl-ptm,
    three-rlc-um-dl-ptp-ul-ptp-dl-ptm,
    two-rlc-am-ptp-um-dl-ptm,
    ...}
    OPTIONAL,
  iE-Extensions                 ProtocolExtensionContainer { { UE-MulticastMRBs-RequiredToBeModified-Item-ExtIEs } } OPTIONAL
}

UE-MulticastMRBs-RequiredToBeModified-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  { ID id-MulticastFLUContextReferenceCU          CRITICALITY reject EXTENSION MulticastFLUContextReferenceCU          PRESENCE
optional},
  ...
}

UE-MulticastMRBs-RequiredToBeReleased-Item ::= SEQUENCE {
  mRB-ID                       MRB-ID,
  iE-Extensions                 ProtocolExtensionContainer { { UE-MulticastMRBs-RequiredToBeReleased-Item-ExtIEs } } OPTIONAL
}

UE-MulticastMRBs-RequiredToBeReleased-Item-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
  ...
}

UE-MulticastMRBs-Setup-Item ::= SEQUENCE {

```

```

    mRB-ID                MRB-ID,
    multicastFlUContextReferenceCU  MulticastFlUContextReferenceCU  OPTIONAL,
    iE-Extensions         ProtocolExtensionContainer { { UE-MulticastMRBs-Setup-Item-ExtIEs } } OPTIONAL
}

UE-MulticastMRBs-Setup-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

UE-MulticastMRBs-ToBeReleased-Item ::= SEQUENCE {
    mRB-ID                MRB-ID,
    iE-Extensions         ProtocolExtensionContainer { { UE-MulticastMRBs-ToBeReleased-Item-ExtIEs } } OPTIONAL
}

UE-MulticastMRBs-ToBeReleased-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

UE-MulticastMRBs-ToBeSetup-Item ::= SEQUENCE {
    mRB-ID                MRB-ID,
    mbsPTPRetransmissionTunnelRequired  MBSPTPRetransmissionTunnelRequired  OPTIONAL,
    mbsPTPForwardingRequiredInformation  MRB-ProgressInformation  OPTIONAL,
    iE-Extensions         ProtocolExtensionContainer { { UE-MulticastMRBs-ToBeSetup-Item-ExtIEs } } OPTIONAL
}

UE-MulticastMRBs-ToBeSetup-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-Source-MRB-ID  CRITICALITY ignore EXTENSION MRB-ID  PRESENCE optional },
    ...
}

UE-MulticastMRBs-ToBeSetup-atModify-Item ::= SEQUENCE {
    mRB-ID                MRB-ID,
    mbsPTPRetransmissionTunnelRequired  MBSPTPRetransmissionTunnelRequired  OPTIONAL,
    mbsPTPForwardingRequiredInformation  MRB-ProgressInformation  OPTIONAL,
    iE-Extensions         ProtocolExtensionContainer { { UE-MulticastMRBs-ToBeSetup-atModify-Item-ExtIEs } } OPTIONAL
}

UE-MulticastMRBs-ToBeSetup-atModify-Item-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

UEPagingCapability ::= SEQUENCE {
    iNACTIVEStatePODetermination  ENUMERATED {supported, ...}  OPTIONAL,
    iE-Extension  ProtocolExtensionContainer { { UEPagingCapability-ExtIEs } }  OPTIONAL,
    ...
}

UEPagingCapability-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-RedCapIndication  CRITICALITY ignore EXTENSION RedCapIndication  PRESENCE optional },
    ...
}

UEReportingInformation ::= SEQUENCE {

```

```

reportingAmount          ENUMERATED {ma0, ma1, ma2, ma4, ma8, ma16, ma32, ma64},
reportingInterval       ENUMERATED {none, one, two, four, eight, ten, sixteen, twenty, thirty-two, sixty-four, ...},
iE-extensions           ProtocolExtensionContainer { { UEReportingInformation-ExtIEs } } OPTIONAL,
...
}

UEReportingInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
...
}
UlTxDirectCurrentMoreCarrierInformation ::= OCTET STRING

UL-AoA ::= SEQUENCE {
  azimuthAoA             INTEGER (0..3599),
  zenithAoA              INTEGER (0..1799) OPTIONAL,
  lCS-to-GCS-Translation LCS-to-GCS-Translation OPTIONAL,
  iE-extensions          ProtocolExtensionContainer { { UL-AoA-ExtIEs } } OPTIONAL,
  ...
}

UL-AoA-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
...
}

UL-BH-Non-UP-Traffic-Mapping ::= SEQUENCE {
  uL-BH-Non-UP-Traffic-Mapping-List UL-BH-Non-UP-Traffic-Mapping-List,
  iE-Extensions ProtocolExtensionContainer { { UL-BH-Non-UP-Traffic-Mapping-ExtIEs } } OPTIONAL
}

UL-BH-Non-UP-Traffic-Mapping-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
...
}

UL-BH-Non-UP-Traffic-Mapping-List ::= SEQUENCE (SIZE(1..maxnoofNonUPTrafficMappings)) OF UL-BH-Non-UP-Traffic-Mapping-Item

UL-BH-Non-UP-Traffic-Mapping-Item ::= SEQUENCE {
  nonUPTrafficType      NonUPTrafficType,
  bhInfo                BHInfo,
  iE-Extensions         ProtocolExtensionContainer { { UL-BH-Non-UP-Traffic-Mapping-ItemExtIEs } } OPTIONAL
}

UL-BH-Non-UP-Traffic-Mapping-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
...
}

ULConfiguration ::= SEQUENCE {
  uLUEConfiguration     ULUEConfiguration,
  iE-Extensions         ProtocolExtensionContainer { { ULConfigurationExtIEs } } OPTIONAL,
  ...
}

ULConfigurationExtIEs FLAP-PROTOCOL-EXTENSION ::= {
...
}

```



```

UL-GapFR2-Config ::= OCTET STRING

UL-RTOA-Measurement ::= SEQUENCE {
    uL-RTOA-MeasurementItem      UL-RTOA-MeasurementItem,
    additionalPath-List          AdditionalPath-List OPTIONAL,
    iE-Extensions                ProtocolExtensionContainer { { UL-RTOA-Measurement-ExtIEs } } OPTIONAL
}

UL-RTOA-Measurement-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-ExtendedAdditionalPathList CRITICALITY ignore EXTENSION ExtendedAdditionalPathList PRESENCE optional} |
    { ID id-TRPRx-TEGInformation CRITICALITY ignore EXTENSION TRP-Rx-TEGInformation PRESENCE optional},
    ...
}

UL-RTOA-MeasurementItem ::= CHOICE {
    k0          INTEGER (0..1970049),
    k1          INTEGER (0..985025),
    k2          INTEGER (0..492513),
    k3          INTEGER (0..246257),
    k4          INTEGER (0..123129),
    k5          INTEGER (0..61565),
    choice-extension ProtocolIE-SingleContainer { { UL-RTOA-MeasurementItem-ExtIEs } }
}

UL-RTOA-MeasurementItem-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

UL-SRS-RSRP ::= INTEGER (0..126)

UL-SRS-RSRPP ::= SEQUENCE {
    firstPathRSRPP          INTEGER (0..126),
    iE-extensions           ProtocolExtensionContainer { { UL-SRS-RSRPP-ExtIEs } } OPTIONAL,
    ...
}

UL-SRS-RSRPP-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

ULUEConfiguration ::= ENUMERATED {no-data, shared, only, ...}

UL-UP-TNL-Information-to-Update-List-Item ::= SEQUENCE {
    uLUPTNLInformation      UPTransportLayerInformation,
    newULUPTNLInformation   UPTransportLayerInformation OPTIONAL,
    bHInfo                  BHInfo,
    iE-Extensions           ProtocolExtensionContainer { { UL-UP-TNL-Information-to-Update-List-ItemExtIEs } } OPTIONAL,
    ...
}

UL-UP-TNL-Information-to-Update-List-ItemExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

UL-UP-TNL-Address-to-Update-List-Item ::= SEQUENCE {
    oldIPAddress                TransportLayerAddress,
    newIPAddress                TransportLayerAddress,
    IE-Extensions    ProtocolExtensionContainer { { UL-UP-TNL-Address-to-Update-List-ItemExtIEs } } OPTIONAL,
    ...
}

UL-UP-TNL-Address-to-Update-List-ItemExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

ULUPTNLInformation-ToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofULUPTNLInformation)) OF ULUPTNLInformation-ToBeSetup-Item

ULUPTNLInformation-ToBeSetup-Item ::=SEQUENCE {
    uLUPTNLInformation    UPTransportLayerInformation,
    IE-Extensions    ProtocolExtensionContainer { { ULUPTNLInformation-ToBeSetup-ItemExtIEs } } OPTIONAL,
    ...
}

ULUPTNLInformation-ToBeSetup-ItemExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    { ID id-BHInfo                CRITICALITY ignore    EXTENSION BHInfo                PRESENCE optional    }|
    { ID id-DRBMappingInfo    CRITICALITY ignore    EXTENSION UuRLCChannelID    PRESENCE optional    },
    ...
}

Uncertainty ::= INTEGER (0..32767, ...)

UplinkChannelBW-PerSCS-List ::= SEQUENCE (SIZE (1..maxnoSCSs)) OF SCS-SpecificCarrier

UplinkTxDirectCurrentListInformation ::= OCTET STRING

UplinkTxDirectCurrentTwoCarrierListInfo ::= OCTET STRING

UPTransportLayerInformation ::= CHOICE {
    gTPTunnel        GPTunnel,
    choice-extension    ProtocolIE-SingleContainer { { UPTransportLayerInformation-ExtIEs} }
}

UPTransportLayerInformation-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

URI-address ::= VisibleString

Uncertainty-range-AoA ::= INTEGER (0..3599)

Uncertainty-range-ZoA ::= INTEGER (0..1799)

UuRLCChannelID ::= BIT STRING (SIZE (16))

UuRLCChannelQoSInformation ::= CHOICE {
    uuRLCChannelQoS                QoSFlowLevelQoSParameters,

```

```

    uuControlPlaneTrafficType      ENUMERATED {srb0,srb1,srb2,...},
    choice-extension                ProtocolIE-SingleContainer { { UuRLCChannelQoSInformation-ExtIEs } }
}

UuRLCChannelQoSInformation-ExtIEs FLAP-PROTOCOL-IES ::= {
    ...
}

UuRLCChannelToBeSetupList ::= SEQUENCE (SIZE(1.. maxnoofUuRLCChannels)) OF UuRLCChannelToBeSetupItem

UuRLCChannelToBeSetupItem ::= SEQUENCE {
    uuRLCChannelID                UuRLCChannelID,
    uuRLCChannelQoSInformation     UuRLCChannelQoSInformation,
    rLCMode                       RLCMode,
    iE-Extensions                 ProtocolExtensionContainer { { UuRLCChannelToBeSetupItem-ExtIEs } } OPTIONAL,
    ...
}

UuRLCChannelToBeSetupItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

UuRLCChannelToBeModifiedList ::= SEQUENCE (SIZE(1.. maxnoofUuRLCChannels)) OF UuRLCChannelToBeModifiedItem

UuRLCChannelToBeModifiedItem ::= SEQUENCE {
    uuRLCChannelID                UuRLCChannelID,
    uuRLCChannelQoSInformation     UuRLCChannelQoSInformation OPTIONAL,
    rLCMode                       RLCMode OPTIONAL,
    iE-Extensions                 ProtocolExtensionContainer { { UuRLCChannelToBeModifiedItem-ExtIEs } } OPTIONAL,
    ...
}

UuRLCChannelToBeModifiedItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

UuRLCChannelToBeReleasedList ::= SEQUENCE (SIZE(1.. maxnoofUuRLCChannels)) OF UuRLCChannelToBeReleasedItem

UuRLCChannelToBeReleasedItem ::= SEQUENCE {
    uuRLCChannelID                UuRLCChannelID,
    iE-Extensions                 ProtocolExtensionContainer { { UuRLCChannelToBeReleasedItem-ExtIEs } } OPTIONAL,
    ...
}

UuRLCChannelToBeReleasedItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

UuRLCChannelSetupList ::= SEQUENCE (SIZE(1.. maxnoofUuRLCChannels)) OF UuRLCChannelSetupItem

UuRLCChannelSetupItem ::= SEQUENCE {
    uuRLCChannelID                UuRLCChannelID,
    iE-Extensions                 ProtocolExtensionContainer { { UuRLCChannelSetupItem-ExtIEs } } OPTIONAL,
    ...
}

```

```

}
UuRLCChannelSetupItem-ExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    ...
}
UuRLCChannelFailedToBeSetupList ::= SEQUENCE (SIZE(1.. maxnoofUuRLCChannels)) OF UuRLCChannelFailedToBeSetupItem
UuRLCChannelFailedToBeSetupItem ::= SEQUENCE {
    uuRLCChannelID      UuRLCChannelID,
    cause               Cause    OPTIONAL,
    iE-Extensions      ProtocolExtensionContainer { { UuRLCChannelFailedToBeSetupItem-ExtIEs } } OPTIONAL,
    ...
}
UuRLCChannelFailedToBeSetupItem-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}
UuRLCChannelModifiedList ::= SEQUENCE (SIZE(1.. maxnoofUuRLCChannels)) OF UuRLCChannelModifiedItem
UuRLCChannelModifiedItem ::= SEQUENCE {
    uuRLCChannelID      UuRLCChannelID,
    iE-Extensions      ProtocolExtensionContainer { { UuRLCChannelModifiedItem-ExtIEs } } OPTIONAL,
    ...
}
UuRLCChannelModifiedItem-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}
UuRLCChannelFailedToBeModifiedList ::= SEQUENCE (SIZE(1.. maxnoofUuRLCChannels)) OF UuRLCChannelFailedToBeModifiedItem
UuRLCChannelFailedToBeModifiedItem ::= SEQUENCE {
    uuRLCChannelID      UuRLCChannelID,
    cause               Cause    OPTIONAL,
    iE-Extensions      ProtocolExtensionContainer { { UuRLCChannelFailedToBeModifiedItem-ExtIEs } } OPTIONAL,
    ...
}
UuRLCChannelFailedToBeModifiedItem-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}
UuRLCChannelRequiredToBeModifiedList ::= SEQUENCE (SIZE(1.. maxnoofUuRLCChannels)) OF UuRLCChannelRequiredToBeModifiedItem
UuRLCChannelRequiredToBeModifiedItem ::= SEQUENCE {
    uuRLCChannelID      UuRLCChannelID,
    iE-Extensions      ProtocolExtensionContainer { { UuRLCChannelRequiredToBeModifiedItem-ExtIEs } } OPTIONAL,
    ...
}
UuRLCChannelRequiredToBeModifiedItem-ExtIEs  FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

}
UuRLCChannelRequiredToBeReleasedList ::= SEQUENCE (SIZE(1.. maxnoofUuRLCChannels)) OF UuRLCChannelRequiredToBeReleasedItem
UuRLCChannelRequiredToBeReleasedItem ::= SEQUENCE {
    uuRLCChannelID          UuRLCChannelID,
    iE-Extensions          ProtocolExtensionContainer { { UuRLCChannelRequiredToBeReleasedItem-ExtIEs } } OPTIONAL,
    ...
}
UuRLCChannelRequiredToBeReleasedItem-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- V
VictimNBSetID ::= SEQUENCE {
    victimNBSetID          GNBSetID,
    iE-Extensions          ProtocolExtensionContainer { { VictimNBSetID-ExtIEs } }          OPTIONAL
}
VictimNBSetID-ExtIEs    FLAP-PROTOCOL-EXTENSION ::= {
    ...
}

VehicleUE ::= ENUMERATED {
    authorized,
    not-authorized,
    ...
}

PedestrianUE ::= ENUMERATED {
    authorized,
    not-authorized,
    ...
}

-- W
-- X
-- Y
-- Z

ZoAInformation ::= SEQUENCE {
    zenithAoA              INTEGER (0..1799),
    LCS-to-GCS-Translation LCS-to-GCS-Translation          OPTIONAL,
    iE-extensions          ProtocolExtensionContainer { { ZoAInformation-ExtIEs } }          OPTIONAL,
    ...
}
ZoAInformation-ExtIEs FLAP-PROTOCOL-EXTENSION ::= {

```

```
} ...
```

```
END
-- ASN1STOP
```

9.4.6 Common Definitions

```
-- ASN1START
-- *****
--
-- Common definitions
--
-- *****

FlAP-CommonDataTypes {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
ngran-access (22) modules (3) flap (3) version1 (1) flap-CommonDataTypes (3) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

Criticality      ::= ENUMERATED { reject, ignore, notify }

Presence        ::= ENUMERATED { optional, conditional, mandatory }

PrivateIE-ID    ::= CHOICE {
    local          INTEGER (0..65535),
    global         OBJECT IDENTIFIER
}

ProcedureCode   ::= INTEGER (0..255)

ProtocolExtensionID ::= INTEGER (0..65535)

ProtocolIE-ID   ::= INTEGER (0..65535)

TriggeringMessage ::= ENUMERATED { initiating-message, successful-outcome, unsuccessful-outcome }

END
-- ASN1STOP
```

9.4.7 Constant Definitions

```
-- ASN1START
-- *****
--
-- Constant definitions
--
```

```

-- *****
FlAP-Constants {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
ngran-access (22) modules (3) flap (3) version1 (1) flap-Constants (4) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- *****
--
-- IE parameter types from other modules.
--
-- *****

IMPORTS
    ProcedureCode,
    ProtocolIE-ID

FROM FlAP-CommonDataTypes;

-- *****
--
-- Elementary Procedures
--
-- *****

id-Reset                               ProcedureCode ::= 0
id-FlSetup                              ProcedureCode ::= 1
id-ErrorIndication                      ProcedureCode ::= 2
id-gNBDCUConfigurationUpdate            ProcedureCode ::= 3
id-gNBCUCUConfigurationUpdate           ProcedureCode ::= 4
id-UEContextSetup                       ProcedureCode ::= 5
id-UEContextRelease                     ProcedureCode ::= 6
id-UEContextModification                 ProcedureCode ::= 7
id-UEContextModificationRequired         ProcedureCode ::= 8
id-UEMobilityCommand                    ProcedureCode ::= 9
id-UEContextReleaseRequest               ProcedureCode ::= 10
id-InitialULRRCCMessageTransfer         ProcedureCode ::= 11
id-DLRRCCMessageTransfer                 ProcedureCode ::= 12
id-ULRRCCMessageTransfer                 ProcedureCode ::= 13
id-privateMessage                        ProcedureCode ::= 14
id-UEInactivityNotification              ProcedureCode ::= 15
id-GNBDUResourceCoordination             ProcedureCode ::= 16
id-SystemInformationDeliveryCommand      ProcedureCode ::= 17
id-Paging                                ProcedureCode ::= 18
id-Notify                                ProcedureCode ::= 19
id-WriteReplaceWarning                   ProcedureCode ::= 20
id-PWSCancel                             ProcedureCode ::= 21
id-PWSRestartIndication                  ProcedureCode ::= 22
id-PWSFailureIndication                  ProcedureCode ::= 23
id-GNBDUStatusIndication                 ProcedureCode ::= 24

```

id-RRCDeliveryReport	ProcedureCode ::= 25
id-FlRemoval	ProcedureCode ::= 26
id-NetworkAccessRateReduction	ProcedureCode ::= 27
id-TraceStart	ProcedureCode ::= 28
id-DeactivateTrace	ProcedureCode ::= 29
id-DUCURadioInformationTransfer	ProcedureCode ::= 30
id-CUDURadioInformationTransfer	ProcedureCode ::= 31
id-BAPMappingConfiguration	ProcedureCode ::= 32
id-GNBDUResourceConfiguration	ProcedureCode ::= 33
id-IABTNLAddressAllocation	ProcedureCode ::= 34
id-IABUPConfigurationUpdate	ProcedureCode ::= 35
id-resourceStatusReportingInitiation	ProcedureCode ::= 36
id-resourceStatusReporting	ProcedureCode ::= 37
id-accessAndMobilityIndication	ProcedureCode ::= 38
id-accessSuccess	ProcedureCode ::= 39
id-cellTrafficTrace	ProcedureCode ::= 40
id-PositioningMeasurementExchange	ProcedureCode ::= 41
id-PositioningAssistanceInformationControl	ProcedureCode ::= 42
id-PositioningAssistanceInformationFeedback	ProcedureCode ::= 43
id-PositioningMeasurementReport	ProcedureCode ::= 44
id-PositioningMeasurementAbort	ProcedureCode ::= 45
id-PositioningMeasurementFailureIndication	ProcedureCode ::= 46
id-PositioningMeasurementUpdate	ProcedureCode ::= 47
id-TRPInformationExchange	ProcedureCode ::= 48
id-PositioningInformationExchange	ProcedureCode ::= 49
id-PositioningActivation	ProcedureCode ::= 50
id-PositioningDeactivation	ProcedureCode ::= 51
id-E-CIDMeasurementInitiation	ProcedureCode ::= 52
id-E-CIDMeasurementFailureIndication	ProcedureCode ::= 53
id-E-CIDMeasurementReport	ProcedureCode ::= 54
id-E-CIDMeasurementTermination	ProcedureCode ::= 55
id-PositioningInformationUpdate	ProcedureCode ::= 56
id-ReferenceTimeInformationReport	ProcedureCode ::= 57
id-ReferenceTimeInformationReportingControl	ProcedureCode ::= 58
id-BroadcastContextSetup	ProcedureCode ::= 59
id-BroadcastContextRelease	ProcedureCode ::= 60
id-BroadcastContextReleaseRequest	ProcedureCode ::= 61
id-BroadcastContextModification	ProcedureCode ::= 62
id-MulticastGroupPaging	ProcedureCode ::= 63
id-MulticastContextSetup	ProcedureCode ::= 64
id-MulticastContextRelease	ProcedureCode ::= 65
id-MulticastContextReleaseRequest	ProcedureCode ::= 66
id-MulticastContextModification	ProcedureCode ::= 67
id-MulticastDistributionSetup	ProcedureCode ::= 68
id-MulticastDistributionRelease	ProcedureCode ::= 69
id-PDCMeasurementInitiation	ProcedureCode ::= 70
id-PDCMeasurementReport	ProcedureCode ::= 71
id-PDCMeasurementInitiationRequest	ProcedureCode ::= 72
id-PDCMeasurementInitiationResponse	ProcedureCode ::= 73
id-PDCMeasurementInitiationFailure	ProcedureCode ::= 74
id-pRSConfigurationExchange	ProcedureCode ::= 75
id-measurementPreconfiguration	ProcedureCode ::= 76
id-measurementActivation	ProcedureCode ::= 77
id-QoEInformationTransfer	ProcedureCode ::= 78


```

id-PDCMeasurementTerminationCommand      ProcedureCode ::= 79
id-PDCMeasurementFailureIndication        ProcedureCode ::= 80
id-PosSystemInformationDeliveryCommand     ProcedureCode ::= 81

```

```

-- *****
--
-- Extension constants
--
-- *****

```

```

maxPrivateIEs                INTEGER ::= 65535
maxProtocolExtensions         INTEGER ::= 65535
maxProtocolIEs                INTEGER ::= 65535
-- *****
--
-- Lists
--
-- *****

```

```

maxNRARFCN                    INTEGER ::= 3279165
maxnoofErrors                  INTEGER ::= 256
maxnoofIndividualFlConnectionsToReset  INTEGER ::= 65536
maxCellingNBDU                 INTEGER ::= 512
maxnoofSCells                  INTEGER ::= 32
maxnoofSRBs                    INTEGER ::= 8
maxnoofDRBs                    INTEGER ::= 64
maxnoofULUPTNLInformation      INTEGER ::= 2
maxnoofDLUPTNLInformation      INTEGER ::= 2
maxnoofBPLMNs                  INTEGER ::= 6
maxnoofCandidateSpCells        INTEGER ::= 64
maxnoofPotentialSpCells        INTEGER ::= 64
maxnoofNrCellBands             INTEGER ::= 32
maxnoofSIBTypes                INTEGER ::= 32
maxnoofSITypes                 INTEGER ::= 32
maxnoofPagingCells             INTEGER ::= 512
maxnoofTNLAssociations         INTEGER ::= 32
maxnoofQoSFlows                INTEGER ::= 64
maxnoofSliceItems              INTEGER ::= 1024
maxCelllineNB                  INTEGER ::= 256
maxnoofExtendedBPLMNs         INTEGER ::= 6
maxnoofUEIDs                   INTEGER ::= 65536
maxnoofBPLMNsNR                INTEGER ::= 12
maxnoofUACPLMNs                INTEGER ::= 12
maxnoofUACperPLMN              INTEGER ::= 64
maxnoofAdditionalSIBs          INTEGER ::= 63
maxnoofslots                   INTEGER ::= 5120
maxnoofTLAs                    INTEGER ::= 16
maxnoofGTPTLAs                 INTEGER ::= 16
maxnoofBHRLCChannels           INTEGER ::= 65536
maxnoofRoutingEntries          INTEGER ::= 1024
maxnoofIABSTCInfo              INTEGER ::= 45
maxnoofSymbols                 INTEGER ::= 14

```

maxnoofServingCells	INTEGER ::= 32
maxnoofDUFSlots	INTEGER ::= 320
maxnoofHSNASlots	INTEGER ::= 5120
maxnoofServedCellsIAB	INTEGER ::= 512
maxnoofChildIABNodes	INTEGER ::= 1024
maxnoofNonUPTrafficMappings	INTEGER ::= 32
maxnoofTLAsIAB	INTEGER ::= 1024
maxnoofMappingEntries	INTEGER ::= 67108864
maxnoofDSInfo	INTEGER ::= 64
maxnoofEgressLinks	INTEGER ::= 2
maxnoofULUPTNLInformationforIAB	INTEGER ::= 32678
maxnoofUPTNLAddresses	INTEGER ::= 8
maxnoofSLDRBs	INTEGER ::= 512
maxnoofQoSParaSets	INTEGER ::= 8
maxnoofPC5QoSFlows	INTEGER ::= 2048
maxnoofSSBAreas	INTEGER ::= 64
maxnoofPhysicalResourceBlocks	INTEGER ::= 275
maxnoofPhysicalResourceBlocks-1	INTEGER ::= 274
maxnoofPRACHconfigs	INTEGER ::= 16
maxnoofRACHReports	INTEGER ::= 64
maxnoofRLFReports	INTEGER ::= 64
maxnoofAdditionalPDCPDuplicationTNL	INTEGER ::= 2
maxnoofRLCDuplicationState	INTEGER ::= 3
maxnoofCHOCells	INTEGER ::= 8
maxnoofMDTPLMNs	INTEGER ::= 16
maxnoofCAGsupported	INTEGER ::= 12
maxnoofNIDsupported	INTEGER ::= 12
maxnoofNRSCSs	INTEGER ::= 5
maxnoofExtSliceItems	INTEGER ::= 65535
maxnoofPosMeas	INTEGER ::= 16384
maxnoofTRPInfoTypes	INTEGER ::= 64
maxnoofTRPs	INTEGER ::= 65535
maxnoofSRSTriggerStates	INTEGER ::= 3
maxnoofSpatialRelations	INTEGER ::= 64
maxnoBcastCell	INTEGER ::= 16384
maxnoofAngleInfo	INTEGER ::= 65535
maxnooflcs-gcs-translation	INTEGER ::= 3
maxnoofPath	INTEGER ::= 2
maxnoofMeasE-CID	INTEGER ::= 64
maxnoofSSBs	INTEGER ::= 255
maxnoSRS-ResourceSets	INTEGER ::= 16
maxnoSRS-ResourcePerSet	INTEGER ::= 16
maxnoSRS-Carriers	INTEGER ::= 32
maxnoSCSs	INTEGER ::= 5
maxnoSRS-Resources	INTEGER ::= 64
maxnoSRS-PosResources	INTEGER ::= 64
maxnoSRS-PosResourceSets	INTEGER ::= 16
maxnoSRS-PosResourcePerSet	INTEGER ::= 16
maxnoofPRS-ResourceSets	INTEGER ::= 2
maxnoofPRS-ResourcesPerSet	INTEGER ::= 64
maxNoOfMeasTRPs	INTEGER ::= 64
maxnoofPRSresourceSets	INTEGER ::= 8
maxnoofPRSresources	INTEGER ::= 64
maxnoofSuccessfulHOREports	INTEGER ::= 64

```

maxnoofNR-UChannelIDs          INTEGER ::= 16
maxServedCellforSON            INTEGER ::= 256
maxNeighbourCellforSON         INTEGER ::= 32
maxAffectedCells               INTEGER ::= 32
maxnoofMRBs                    INTEGER ::= 32
maxnoofMBSQoSFlows             INTEGER ::= 64
maxnoofMBSFSAs                 INTEGER ::= 256
maxnoofUEIDforPaging           INTEGER ::= 4096
maxnoofCellsforMBS             INTEGER ::= 512
maxnoofTAforMBS                INTEGER ::= 512
maxnoofMBSAreaSessionIDs       INTEGER ::= 256
maxnoofMBSServiceAreaInformation INTEGER ::= 256
maxnoofIABCongInd              INTEGER ::= 1024
maxnoofNeighbourNodeCellsIAB   INTEGER ::= 1024
maxnoofRBsetsPerCell           INTEGER ::= 8
maxnoofRBsetsPerCell-1         INTEGER ::= 7
maxnoofMeasPDC                 INTEGER ::= 16
maxnoARPs                       INTEGER ::= 16
maxnoofULAoAs                  INTEGER ::= 8
maxNoPathExtended              INTEGER ::= 8
maxnoTRPTEGs                   INTEGER ::= 8
maxFreqLayers                   INTEGER ::= 4
maxNumResourcesPerAngle         INTEGER ::= 24
maxnoAzimuthAngles             INTEGER ::= 3600
maxnoElevationAngles           INTEGER ::= 1801
maxnoofPRSTRPs                 INTEGER ::= 256
maxnoofQoEInformation           INTEGER ::= 16
maxnoofUuRLCChannels           INTEGER ::= 32
maxnoofPC5RLCChannels          INTEGER ::= 512
maxnoofSMBRValues              INTEGER ::= 8
maxnoofMRBsforUE               INTEGER ::= 64
maxnoofMBSSessionsofUE         INTEGER ::= 256
maxnoofSLdestinations          INTEGER ::= 32
maxnoofNSAGs                   INTEGER ::= 256
maxnoofSDTBearers              INTEGER ::= 72
maxnoofServingCellMOs         INTEGER ::= 16
maxNrofBWPs                    INTEGER ::= 8
maxnoofPosSITypes              INTEGER ::= 32

-- *****
--
-- IEs
--
-- *****

id-Cause                        ProtocolIE-ID ::= 0
id-Cells-Failed-to-be-Activated-List ProtocolIE-ID ::= 1
id-Cells-Failed-to-be-Activated-List-Item ProtocolIE-ID ::= 2
id-Cells-to-be-Activated-List   ProtocolIE-ID ::= 3
id-Cells-to-be-Activated-List-Item ProtocolIE-ID ::= 4
id-Cells-to-be-Deactivated-List ProtocolIE-ID ::= 5

```

id-Cells-to-be-Deactivated-List-Item	ProtocolIE-ID ::= 6
id-CriticalityDiagnostics	ProtocolIE-ID ::= 7
id-CUtoDURRCInformation	ProtocolIE-ID ::= 9
id-DRBs-FailedToBeModified-Item	ProtocolIE-ID ::= 12
id-DRBs-FailedToBeModified-List	ProtocolIE-ID ::= 13
id-DRBs-FailedToBeSetup-Item	ProtocolIE-ID ::= 14
id-DRBs-FailedToBeSetup-List	ProtocolIE-ID ::= 15
id-DRBs-FailedToBeSetupMod-Item	ProtocolIE-ID ::= 16
id-DRBs-FailedToBeSetupMod-List	ProtocolIE-ID ::= 17
id-DRBs-ModifiedConf-Item	ProtocolIE-ID ::= 18
id-DRBs-ModifiedConf-List	ProtocolIE-ID ::= 19
id-DRBs-Modified-Item	ProtocolIE-ID ::= 20
id-DRBs-Modified-List	ProtocolIE-ID ::= 21
id-DRBs-Required-ToBeModified-Item	ProtocolIE-ID ::= 22
id-DRBs-Required-ToBeModified-List	ProtocolIE-ID ::= 23
id-DRBs-Required-ToBeReleased-Item	ProtocolIE-ID ::= 24
id-DRBs-Required-ToBeReleased-List	ProtocolIE-ID ::= 25
id-DRBs-Setup-Item	ProtocolIE-ID ::= 26
id-DRBs-Setup-List	ProtocolIE-ID ::= 27
id-DRBs-SetupMod-Item	ProtocolIE-ID ::= 28
id-DRBs-SetupMod-List	ProtocolIE-ID ::= 29
id-DRBs-ToBeModified-Item	ProtocolIE-ID ::= 30
id-DRBs-ToBeModified-List	ProtocolIE-ID ::= 31
id-DRBs-ToBeReleased-Item	ProtocolIE-ID ::= 32
id-DRBs-ToBeReleased-List	ProtocolIE-ID ::= 33
id-DRBs-ToBeSetup-Item	ProtocolIE-ID ::= 34
id-DRBs-ToBeSetup-List	ProtocolIE-ID ::= 35
id-DRBs-ToBeSetupMod-Item	ProtocolIE-ID ::= 36
id-DRBs-ToBeSetupMod-List	ProtocolIE-ID ::= 37
id-DRXCycle	ProtocolIE-ID ::= 38
id-DUtoCURRCInformation	ProtocolIE-ID ::= 39
id-gNB-CU-UE-FlAP-ID	ProtocolIE-ID ::= 40
id-gNB-DU-UE-FlAP-ID	ProtocolIE-ID ::= 41
id-gNB-DU-ID	ProtocolIE-ID ::= 42
id-gNB-DU-Served-Cells-Item	ProtocolIE-ID ::= 43
id-gNB-DU-Served-Cells-List	ProtocolIE-ID ::= 44
id-gNB-DU-Name	ProtocolIE-ID ::= 45
id-NRCellID	ProtocolIE-ID ::= 46
id-oldgNB-DU-UE-FlAP-ID	ProtocolIE-ID ::= 47
id-ResetType	ProtocolIE-ID ::= 48
id-ResourceCoordinationTransferContainer	ProtocolIE-ID ::= 49
id-RRCContainer	ProtocolIE-ID ::= 50
id-SCell-ToBeRemoved-Item	ProtocolIE-ID ::= 51
id-SCell-ToBeRemoved-List	ProtocolIE-ID ::= 52
id-SCell-ToBeSetup-Item	ProtocolIE-ID ::= 53
id-SCell-ToBeSetup-List	ProtocolIE-ID ::= 54
id-SCell-ToBeSetupMod-Item	ProtocolIE-ID ::= 55
id-SCell-ToBeSetupMod-List	ProtocolIE-ID ::= 56
id-Served-Cells-To-Add-Item	ProtocolIE-ID ::= 57
id-Served-Cells-To-Add-List	ProtocolIE-ID ::= 58
id-Served-Cells-To-Delete-Item	ProtocolIE-ID ::= 59
id-Served-Cells-To-Delete-List	ProtocolIE-ID ::= 60
id-Served-Cells-To-Modify-Item	ProtocolIE-ID ::= 61
id-Served-Cells-To-Modify-List	ProtocolIE-ID ::= 62

id-SpCell-ID	ProtocolIE-ID ::= 63
id-SRBID	ProtocolIE-ID ::= 64
id-SRBs-FailedToBeSetup-Item	ProtocolIE-ID ::= 65
id-SRBs-FailedToBeSetup-List	ProtocolIE-ID ::= 66
id-SRBs-FailedToBeSetupMod-Item	ProtocolIE-ID ::= 67
id-SRBs-FailedToBeSetupMod-List	ProtocolIE-ID ::= 68
id-SRBs-Required-ToBeReleased-Item	ProtocolIE-ID ::= 69
id-SRBs-Required-ToBeReleased-List	ProtocolIE-ID ::= 70
id-SRBs-ToBeReleased-Item	ProtocolIE-ID ::= 71
id-SRBs-ToBeReleased-List	ProtocolIE-ID ::= 72
id-SRBs-ToBeSetup-Item	ProtocolIE-ID ::= 73
id-SRBs-ToBeSetup-List	ProtocolIE-ID ::= 74
id-SRBs-ToBeSetupMod-Item	ProtocolIE-ID ::= 75
id-SRBs-ToBeSetupMod-List	ProtocolIE-ID ::= 76
id-TimeToWait	ProtocolIE-ID ::= 77
id-TransactionID	ProtocolIE-ID ::= 78
id-TransmissionActionIndicator	ProtocolIE-ID ::= 79
id-UE-associatedLogicalFl-ConnectionItem	ProtocolIE-ID ::= 80
id-UE-associatedLogicalFl-ConnectionListResAck	ProtocolIE-ID ::= 81
id-gNB-CU-Name	ProtocolIE-ID ::= 82
id-SCell-FailedtoSetup-List	ProtocolIE-ID ::= 83
id-SCell-FailedtoSetup-Item	ProtocolIE-ID ::= 84
id-SCell-FailedtoSetupMod-List	ProtocolIE-ID ::= 85
id-SCell-FailedtoSetupMod-Item	ProtocolIE-ID ::= 86
id-RRCReconfigurationCompleteIndicator	ProtocolIE-ID ::= 87
id-Cells-Status-Item	ProtocolIE-ID ::= 88
id-Cells-Status-List	ProtocolIE-ID ::= 89
id-Candidate-SpCell-List	ProtocolIE-ID ::= 90
id-Candidate-SpCell-Item	ProtocolIE-ID ::= 91
id-Potential-SpCell-List	ProtocolIE-ID ::= 92
id-Potential-SpCell-Item	ProtocolIE-ID ::= 93
id-FullConfiguration	ProtocolIE-ID ::= 94
id-C-RNTI	ProtocolIE-ID ::= 95
id-SpCellULConfigured	ProtocolIE-ID ::= 96
id-InactivityMonitoringRequest	ProtocolIE-ID ::= 97
id-InactivityMonitoringResponse	ProtocolIE-ID ::= 98
id-DRB-Activity-Item	ProtocolIE-ID ::= 99
id-DRB-Activity-List	ProtocolIE-ID ::= 100
id-EUTRA-NR-CellResourceCoordinationReq-Container	ProtocolIE-ID ::= 101
id-EUTRA-NR-CellResourceCoordinationReqAck-Container	ProtocolIE-ID ::= 102
id-Protected-EUTRA-Resources-List	ProtocolIE-ID ::= 105
id-RequestType	ProtocolIE-ID ::= 106
id-ServCellIndex	ProtocolIE-ID ::= 107
id-RAT-FrequencyPriorityInformation	ProtocolIE-ID ::= 108
id-ExecuteDuplication	ProtocolIE-ID ::= 109
id-NRCGI	ProtocolIE-ID ::= 111
id-PagingCell-Item	ProtocolIE-ID ::= 112
id-PagingCell-List	ProtocolIE-ID ::= 113
id-PagingDRX	ProtocolIE-ID ::= 114
id-PagingPriority	ProtocolIE-ID ::= 115
id-SItype-List	ProtocolIE-ID ::= 116
id-UEIdentityIndexValue	ProtocolIE-ID ::= 117
id-gNB-CUSystemInformation	ProtocolIE-ID ::= 118
id-HandoverPreparationInformation	ProtocolIE-ID ::= 119

id-GNB-CU-TNL-Association-To-Add-Item	ProtocolIE-ID ::= 120
id-GNB-CU-TNL-Association-To-Add-List	ProtocolIE-ID ::= 121
id-GNB-CU-TNL-Association-To-Remove-Item	ProtocolIE-ID ::= 122
id-GNB-CU-TNL-Association-To-Remove-List	ProtocolIE-ID ::= 123
id-GNB-CU-TNL-Association-To-Update-Item	ProtocolIE-ID ::= 124
id-GNB-CU-TNL-Association-To-Update-List	ProtocolIE-ID ::= 125
id-MaskedIMEISV	ProtocolIE-ID ::= 126
id-PagingIdentity	ProtocolIE-ID ::= 127
id-DUtoCURRContainer	ProtocolIE-ID ::= 128
id-Cells-to-be-Barred-List	ProtocolIE-ID ::= 129
id-Cells-to-be-Barred-Item	ProtocolIE-ID ::= 130
id-TAISliceSupportList	ProtocolIE-ID ::= 131
id-GNB-CU-TNL-Association-Setup-List	ProtocolIE-ID ::= 132
id-GNB-CU-TNL-Association-Setup-Item	ProtocolIE-ID ::= 133
id-GNB-CU-TNL-Association-Failed-To-Setup-List	ProtocolIE-ID ::= 134
id-GNB-CU-TNL-Association-Failed-To-Setup-Item	ProtocolIE-ID ::= 135
id-DRB-Notify-Item	ProtocolIE-ID ::= 136
id-DRB-Notify-List	ProtocolIE-ID ::= 137
id-NotificationControl	ProtocolIE-ID ::= 138
id-RANAC	ProtocolIE-ID ::= 139
id-PWSSystemInformation	ProtocolIE-ID ::= 140
id-RepetitionPeriod	ProtocolIE-ID ::= 141
id-NumberOfBroadcastRequest	ProtocolIE-ID ::= 142
id-Cells-To-Be-Broadcast-List	ProtocolIE-ID ::= 144
id-Cells-To-Be-Broadcast-Item	ProtocolIE-ID ::= 145
id-Cells-Broadcast-Completed-List	ProtocolIE-ID ::= 146
id-Cells-Broadcast-Completed-Item	ProtocolIE-ID ::= 147
id-Broadcast-To-Be-Cancelled-List	ProtocolIE-ID ::= 148
id-Broadcast-To-Be-Cancelled-Item	ProtocolIE-ID ::= 149
id-Cells-Broadcast-Cancelled-List	ProtocolIE-ID ::= 150
id-Cells-Broadcast-Cancelled-Item	ProtocolIE-ID ::= 151
id-NR-CGI-List-For-Restart-List	ProtocolIE-ID ::= 152
id-NR-CGI-List-For-Restart-Item	ProtocolIE-ID ::= 153
id-PWS-Failed-NR-CGI-List	ProtocolIE-ID ::= 154
id-PWS-Failed-NR-CGI-Item	ProtocolIE-ID ::= 155
id-ConfirmedUEID	ProtocolIE-ID ::= 156
id-Cancel-all-Warning-Messages-Indicator	ProtocolIE-ID ::= 157
id-GNB-DU-UE-AMBR-UL	ProtocolIE-ID ::= 158
id-DRXConfigurationIndicator	ProtocolIE-ID ::= 159
id-RLC-Status	ProtocolIE-ID ::= 160
id-DLPDCPSNLength	ProtocolIE-ID ::= 161
id-GNB-DUConfigurationQuery	ProtocolIE-ID ::= 162
id-MeasurementTimingConfiguration	ProtocolIE-ID ::= 163
id-DRB-Information	ProtocolIE-ID ::= 164
id-ServingPLMN	ProtocolIE-ID ::= 165
id-Protected-EUTRA-Resources-Item	ProtocolIE-ID ::= 168
id-GNB-CU-RRC-Version	ProtocolIE-ID ::= 170
id-GNB-DU-RRC-Version	ProtocolIE-ID ::= 171
id-GNBDUOverloadInformation	ProtocolIE-ID ::= 172
id-CellGroupConfig	ProtocolIE-ID ::= 173
id-RLCFailureIndication	ProtocolIE-ID ::= 174
id-UplinkTxDirectCurrentListInformation	ProtocolIE-ID ::= 175
id-DC-Based-Duplication-Configured	ProtocolIE-ID ::= 176
id-DC-Based-Duplication-Activation	ProtocolIE-ID ::= 177

id-SULAccessIndication	ProtocolIE-ID ::= 178
id-AvailablePLMNList	ProtocolIE-ID ::= 179
id-PDUSessionID	ProtocolIE-ID ::= 180
id-ULPDUSessionAggregateMaximumBitRate	ProtocolIE-ID ::= 181
id-ServingCellMO	ProtocolIE-ID ::= 182
id-QoSFlowMappingIndication	ProtocolIE-ID ::= 183
id-RRCDeliveryStatusRequest	ProtocolIE-ID ::= 184
id-RRCDeliveryStatus	ProtocolIE-ID ::= 185
id-BearerTypeChange	ProtocolIE-ID ::= 186
id-RLCMode	ProtocolIE-ID ::= 187
id-Duplication-Activation	ProtocolIE-ID ::= 188
id-Dedicated-SIDelivery-NeededUE-List	ProtocolIE-ID ::= 189
id-Dedicated-SIDelivery-NeededUE-Item	ProtocolIE-ID ::= 190
id-DRX-LongCycleStartOffset	ProtocolIE-ID ::= 191
id-ULPDCPSNLength	ProtocolIE-ID ::= 192
id-SelectedBandCombinationIndex	ProtocolIE-ID ::= 193
id-SelectedFeatureSetEntryIndex	ProtocolIE-ID ::= 194
id-ResourceCoordinationTransferInformation	ProtocolIE-ID ::= 195
id-ExtendedServedPLMNs-List	ProtocolIE-ID ::= 196
id-ExtendedAvailablePLMN-List	ProtocolIE-ID ::= 197
id-Associated-SCell-List	ProtocolIE-ID ::= 198
id-latest-RRC-Version-Enhanced	ProtocolIE-ID ::= 199
id-Associated-SCell-Item	ProtocolIE-ID ::= 200
id-Cell-Direction	ProtocolIE-ID ::= 201
id-SRBs-Setup-List	ProtocolIE-ID ::= 202
id-SRBs-Setup-Item	ProtocolIE-ID ::= 203
id-SRBs-SetupMod-List	ProtocolIE-ID ::= 204
id-SRBs-SetupMod-Item	ProtocolIE-ID ::= 205
id-SRBs-Modified-List	ProtocolIE-ID ::= 206
id-SRBs-Modified-Item	ProtocolIE-ID ::= 207
id-Ph-InfoSCG	ProtocolIE-ID ::= 208
id-RequestedBandCombinationIndex	ProtocolIE-ID ::= 209
id-RequestedFeatureSetEntryIndex	ProtocolIE-ID ::= 210
id-RequestedP-MaxFR2	ProtocolIE-ID ::= 211
id-DRX-Config	ProtocolIE-ID ::= 212
id-IgnoreResourceCoordinationContainer	ProtocolIE-ID ::= 213
id-UEAssistanceInformation	ProtocolIE-ID ::= 214
id-NeedforGap	ProtocolIE-ID ::= 215
id-PagingOrigin	ProtocolIE-ID ::= 216
id-new-gNB-CU-UE-FlAP-ID	ProtocolIE-ID ::= 217
id-RedirectedRRCmessage	ProtocolIE-ID ::= 218
id-new-gNB-DU-UE-FlAP-ID	ProtocolIE-ID ::= 219
id-NotificationInformation	ProtocolIE-ID ::= 220
id-PLMNAssistanceInfoForNetShar	ProtocolIE-ID ::= 221
id-UEContextNotRetrievable	ProtocolIE-ID ::= 222
id-BPLMN-ID-Info-List	ProtocolIE-ID ::= 223
id-SelectedPLMNID	ProtocolIE-ID ::= 224
id-UAC-Assistance-Info	ProtocolIE-ID ::= 225
id-RANUEID	ProtocolIE-ID ::= 226
id-GNB-DU-TNL-Association-To-Remove-Item	ProtocolIE-ID ::= 227
id-GNB-DU-TNL-Association-To-Remove-List	ProtocolIE-ID ::= 228
id-TNLAssociationTransportLayerAddressgNBDU	ProtocolIE-ID ::= 229
id-portNumber	ProtocolIE-ID ::= 230
id-AdditionalSIBMessageList	ProtocolIE-ID ::= 231

id-Cell-Type	ProtocolIE-ID ::= 232
id-IgnorePRACHConfiguration	ProtocolIE-ID ::= 233
id-CG-Config	ProtocolIE-ID ::= 234
id-PDCCH-BlindDetectionSCG	ProtocolIE-ID ::= 235
id-Requested-PDCCH-BlindDetectionSCG	ProtocolIE-ID ::= 236
id-Ph-InfoMCG	ProtocolIE-ID ::= 237
id-MeasGapSharingConfig	ProtocolIE-ID ::= 238
id-systemInformationAreaID	ProtocolIE-ID ::= 239
id-areaScope	ProtocolIE-ID ::= 240
id-RRCTransport-Block-Setup-Complete	ProtocolIE-ID ::= 241
id-TraceActivation	ProtocolIE-ID ::= 242
id-TraceID	ProtocolIE-ID ::= 243
id-Neighbour-Cell-Information-List	ProtocolIE-ID ::= 244
id-SymbolAllocInSlot	ProtocolIE-ID ::= 246
id-NumDLULSymbols	ProtocolIE-ID ::= 247
id-AdditionalRRMPriorityIndex	ProtocolIE-ID ::= 248
id-DUCURadioInformationType	ProtocolIE-ID ::= 249
id-CUDURadioInformationType	ProtocolIE-ID ::= 250
id-AggressorNBSetID	ProtocolIE-ID ::= 251
id-VictimNBSetID	ProtocolIE-ID ::= 252
id-LowerLayerPresenceStatusChange	ProtocolIE-ID ::= 253
id-Transport-Layer-Address-Info	ProtocolIE-ID ::= 254
id-Neighbour-Cell-Information-Item	ProtocolIE-ID ::= 255
id-IntendedTDD-DL-ULConfig	ProtocolIE-ID ::= 256
id-QosMonitoringRequest	ProtocolIE-ID ::= 257
id-BHChannels-ToBeSetup-List	ProtocolIE-ID ::= 258
id-BHChannels-ToBeSetup-Item	ProtocolIE-ID ::= 259
id-BHChannels-Setup-List	ProtocolIE-ID ::= 260
id-BHChannels-Setup-Item	ProtocolIE-ID ::= 261
id-BHChannels-ToBeModified-Item	ProtocolIE-ID ::= 262
id-BHChannels-ToBeModified-List	ProtocolIE-ID ::= 263
id-BHChannels-ToBeReleased-Item	ProtocolIE-ID ::= 264
id-BHChannels-ToBeReleased-List	ProtocolIE-ID ::= 265
id-BHChannels-ToBeSetupMod-Item	ProtocolIE-ID ::= 266
id-BHChannels-ToBeSetupMod-List	ProtocolIE-ID ::= 267
id-BHChannels-FailedToBeModified-Item	ProtocolIE-ID ::= 268
id-BHChannels-FailedToBeModified-List	ProtocolIE-ID ::= 269
id-BHChannels-FailedToBeSetupMod-Item	ProtocolIE-ID ::= 270
id-BHChannels-FailedToBeSetupMod-List	ProtocolIE-ID ::= 271
id-BHChannels-Modified-Item	ProtocolIE-ID ::= 272
id-BHChannels-Modified-List	ProtocolIE-ID ::= 273
id-BHChannels-SetupMod-Item	ProtocolIE-ID ::= 274
id-BHChannels-SetupMod-List	ProtocolIE-ID ::= 275
id-BHChannels-Required-ToBeReleased-Item	ProtocolIE-ID ::= 276
id-BHChannels-Required-ToBeReleased-List	ProtocolIE-ID ::= 277
id-BHChannels-FailedToBeSetup-Item	ProtocolIE-ID ::= 278
id-BHChannels-FailedToBeSetup-List	ProtocolIE-ID ::= 279
id-BHInfo	ProtocolIE-ID ::= 280
id-BAPAddress	ProtocolIE-ID ::= 281
id-ConfiguredBAPAddress	ProtocolIE-ID ::= 282
id-BH-Routing-Information-Added-List	ProtocolIE-ID ::= 283
id-BH-Routing-Information-Added-List-Item	ProtocolIE-ID ::= 284
id-BH-Routing-Information-Removed-List	ProtocolIE-ID ::= 285
id-BH-Routing-Information-Removed-List-Item	ProtocolIE-ID ::= 286

id-UL-BH-Non-UP-Traffic-Mapping	ProtocolIE-ID ::= 287
id-Activated-Cells-to-be-Updated-List	ProtocolIE-ID ::= 288
id-Child-Nodes-List	ProtocolIE-ID ::= 289
id-IAB-Info-IAB-DU	ProtocolIE-ID ::= 290
id-IAB-Info-IAB-donor-CU	ProtocolIE-ID ::= 291
id-IAB-TNL-Addresses-To-Remove-List	ProtocolIE-ID ::= 292
id-IAB-TNL-Addresses-To-Remove-Item	ProtocolIE-ID ::= 293
id-IAB-Allocated-TNL-Address-List	ProtocolIE-ID ::= 294
id-IAB-Allocated-TNL-Address-Item	ProtocolIE-ID ::= 295
id-IABIPv6RequestType	ProtocolIE-ID ::= 296
id-IABv4AddressesRequested	ProtocolIE-ID ::= 297
id-IAB-Barred	ProtocolIE-ID ::= 298
id-TrafficMappingInformation	ProtocolIE-ID ::= 299
id-UL-UP-TNL-Information-to-Update-List	ProtocolIE-ID ::= 300
id-UL-UP-TNL-Information-to-Update-List-Item	ProtocolIE-ID ::= 301
id-UL-UP-TNL-Address-to-Update-List	ProtocolIE-ID ::= 302
id-UL-UP-TNL-Address-to-Update-List-Item	ProtocolIE-ID ::= 303
id-DL-UP-TNL-Address-to-Update-List	ProtocolIE-ID ::= 304
id-DL-UP-TNL-Address-to-Update-List-Item	ProtocolIE-ID ::= 305
id-NRV2XServicesAuthorized	ProtocolIE-ID ::= 306
id-LTEV2XServicesAuthorized	ProtocolIE-ID ::= 307
id-NRUESidelinkAggregateMaximumBitrate	ProtocolIE-ID ::= 308
id-LTEUESidelinkAggregateMaximumBitrate	ProtocolIE-ID ::= 309
id-SIB12-message	ProtocolIE-ID ::= 310
id-SIB13-message	ProtocolIE-ID ::= 311
id-SIB14-message	ProtocolIE-ID ::= 312
id-SLDRBs-FailedToBeModified-Item	ProtocolIE-ID ::= 313
id-SLDRBs-FailedToBeModified-List	ProtocolIE-ID ::= 314
id-SLDRBs-FailedToBeSetup-Item	ProtocolIE-ID ::= 315
id-SLDRBs-FailedToBeSetup-List	ProtocolIE-ID ::= 316
id-SLDRBs-Modified-Item	ProtocolIE-ID ::= 317
id-SLDRBs-Modified-List	ProtocolIE-ID ::= 318
id-SLDRBs-Required-ToBeModified-Item	ProtocolIE-ID ::= 319
id-SLDRBs-Required-ToBeModified-List	ProtocolIE-ID ::= 320
id-SLDRBs-Required-ToBeReleased-Item	ProtocolIE-ID ::= 321
id-SLDRBs-Required-ToBeReleased-List	ProtocolIE-ID ::= 322
id-SLDRBs-Setup-Item	ProtocolIE-ID ::= 323
id-SLDRBs-Setup-List	ProtocolIE-ID ::= 324
id-SLDRBs-ToBeModified-Item	ProtocolIE-ID ::= 325
id-SLDRBs-ToBeModified-List	ProtocolIE-ID ::= 326
id-SLDRBs-ToBeReleased-Item	ProtocolIE-ID ::= 327
id-SLDRBs-ToBeReleased-List	ProtocolIE-ID ::= 328
id-SLDRBs-ToBeSetup-Item	ProtocolIE-ID ::= 329
id-SLDRBs-ToBeSetup-List	ProtocolIE-ID ::= 330
id-SLDRBs-ToBeSetupMod-Item	ProtocolIE-ID ::= 331
id-SLDRBs-ToBeSetupMod-List	ProtocolIE-ID ::= 332
id-SLDRBs-SetupMod-List	ProtocolIE-ID ::= 333
id-SLDRBs-FailedToBeSetupMod-List	ProtocolIE-ID ::= 334
id-SLDRBs-SetupMod-Item	ProtocolIE-ID ::= 335
id-SLDRBs-FailedToBeSetupMod-Item	ProtocolIE-ID ::= 336
id-SLDRBs-ModifiedConf-List	ProtocolIE-ID ::= 337
id-SLDRBs-ModifiedConf-Item	ProtocolIE-ID ::= 338
id-UEAssistanceInformationEUTRA	ProtocolIE-ID ::= 339
id-PC5LinkAMBR	ProtocolIE-ID ::= 340

id-SL-PHY-MAC-RLC-Config	ProtocolIE-ID ::= 341
id-SL-ConfigDedicatedEUTRA-Info	ProtocolIE-ID ::= 342
id-AlternativeQoSParaSetList	ProtocolIE-ID ::= 343
id-CurrentQoSParaSetIndex	ProtocolIE-ID ::= 344
id-gNBCUMeasurementID	ProtocolIE-ID ::= 345
id-gNBDUMeasurementID	ProtocolIE-ID ::= 346
id-RegistrationRequest	ProtocolIE-ID ::= 347
id-ReportCharacteristics	ProtocolIE-ID ::= 348
id-CellToReportList	ProtocolIE-ID ::= 349
id-CellMeasurementResultList	ProtocolIE-ID ::= 350
id-HardwareLoadIndicator	ProtocolIE-ID ::= 351
id-ReportingPeriodicity	ProtocolIE-ID ::= 352
id-TNLCapacityIndicator	ProtocolIE-ID ::= 353
id-CarrierList	ProtocolIE-ID ::= 354
id-ULCarrierList	ProtocolIE-ID ::= 355
id-FrequencyShift7p5khz	ProtocolIE-ID ::= 356
id-SSB-PositionsInBurst	ProtocolIE-ID ::= 357
id-NRPRACHConfig	ProtocolIE-ID ::= 358
id-RACHReportInformationList	ProtocolIE-ID ::= 359
id-RLFReportInformationList	ProtocolIE-ID ::= 360
id-TDD-UL-DLConfigCommonNR	ProtocolIE-ID ::= 361
id-CNPacketDelayBudgetDownlink	ProtocolIE-ID ::= 362
id-ExtendedPacketDelayBudget	ProtocolIE-ID ::= 363
id-TSCTrafficCharacteristics	ProtocolIE-ID ::= 364
id-ReportingRequestType	ProtocolIE-ID ::= 365
id-TimeReferenceInformation	ProtocolIE-ID ::= 366
id-CNPacketDelayBudgetUplink	ProtocolIE-ID ::= 369
id-AdditionalPDCPDuplicationTNL-List	ProtocolIE-ID ::= 370
id-RLCDuplicationInformation	ProtocolIE-ID ::= 371
id-AdditionalDuplicationIndication	ProtocolIE-ID ::= 372
id-ConditionalInterDUMobilityInformation	ProtocolIE-ID ::= 373
id-ConditionalIntraDUMobilityInformation	ProtocolIE-ID ::= 374
id-targetCellsToCancel	ProtocolIE-ID ::= 375
id-requestedTargetCellGlobalID	ProtocolIE-ID ::= 376
id-ManagementBasedMDTPLMNList	ProtocolIE-ID ::= 377
id-TraceCollectionEntityIPAddress	ProtocolIE-ID ::= 378
id-PrivacyIndicator	ProtocolIE-ID ::= 379
id-TraceCollectionEntityURI	ProtocolIE-ID ::= 380
id-mdtConfiguration	ProtocolIE-ID ::= 381
id-ServingNID	ProtocolIE-ID ::= 382
id-NPNBroadcastInformation	ProtocolIE-ID ::= 383
id-NPNSupportInfo	ProtocolIE-ID ::= 384
id-NID	ProtocolIE-ID ::= 385
id-AvailableSNPN-ID-List	ProtocolIE-ID ::= 386
id-SIB10-message	ProtocolIE-ID ::= 387
id-DLCarrierList	ProtocolIE-ID ::= 389
id-ExtendedTAISliceSupportList	ProtocolIE-ID ::= 390
id-RequestedSRSTransmissionCharacteristics	ProtocolIE-ID ::= 391
id-PosAssistance-Information	ProtocolIE-ID ::= 392
id-PosBroadcast	ProtocolIE-ID ::= 393
id-RoutingID	ProtocolIE-ID ::= 394
id-PosAssistanceInformationFailureList	ProtocolIE-ID ::= 395
id-PosMeasurementQuantities	ProtocolIE-ID ::= 396
id-PosMeasurementResultList	ProtocolIE-ID ::= 397

id-TRPInformationTypeListTRPReq	ProtocolIE-ID ::= 398
id-TRPInformationTypeItem	ProtocolIE-ID ::= 399
id-TRPInformationListTRPResp	ProtocolIE-ID ::= 400
id-TRPInformationItem	ProtocolIE-ID ::= 401
id-LMF-MeasurementID	ProtocolIE-ID ::= 402
id-SRSType	ProtocolIE-ID ::= 403
id-ActivationTime	ProtocolIE-ID ::= 404
id-AbortTransmission	ProtocolIE-ID ::= 405
id-PositioningBroadcastCells	ProtocolIE-ID ::= 406
id-SRSConfiguration	ProtocolIE-ID ::= 407
id-PosReportCharacteristics	ProtocolIE-ID ::= 408
id-PosMeasurementPeriodicity	ProtocolIE-ID ::= 409
id-TRPList	ProtocolIE-ID ::= 410
id-RAN-MeasurementID	ProtocolIE-ID ::= 411
id-LMF-UE-MeasurementID	ProtocolIE-ID ::= 412
id-RAN-UE-MeasurementID	ProtocolIE-ID ::= 413
id-E-CID-MeasurementQuantities	ProtocolIE-ID ::= 414
id-E-CID-MeasurementQuantities-Item	ProtocolIE-ID ::= 415
id-E-CID-MeasurementPeriodicity	ProtocolIE-ID ::= 416
id-E-CID-MeasurementResult	ProtocolIE-ID ::= 417
id-Cell-Portion-ID	ProtocolIE-ID ::= 418
id-SFNInitialisationTime	ProtocolIE-ID ::= 419
id-SystemFrameNumber	ProtocolIE-ID ::= 420
id-SlotNumber	ProtocolIE-ID ::= 421
id-TRP-MeasurementRequestList	ProtocolIE-ID ::= 422
id-MeasurementBeamInfoRequest	ProtocolIE-ID ::= 423
id-E-CID-ReportCharacteristics	ProtocolIE-ID ::= 424
id-ConfiguredTACIndication	ProtocolIE-ID ::= 425
id-Extended-GNB-CU-Name	ProtocolIE-ID ::= 426
id-Extended-GNB-DU-Name	ProtocolIE-ID ::= 427
id-FlCTransferPath	ProtocolIE-ID ::= 428
id-SFN-Offset	ProtocolIE-ID ::= 429
id-TransmissionStopIndicator	ProtocolIE-ID ::= 430
id-SrsFrequency	ProtocolIE-ID ::= 431
id-SCGIndicator	ProtocolIE-ID ::= 432
id-EstimatedArrivalProbability	ProtocolIE-ID ::= 433
id-TRPType	ProtocolIE-ID ::= 434
id-SRSSpatialRelationPerSRSResource	ProtocolIE-ID ::= 435
id-PDCPTerminatingNodeDLTNLAddrInfo	ProtocolIE-ID ::= 436
id-ENBDLTNLAddress	ProtocolIE-ID ::= 437
id-PosMeasurementPeriodicityExtended	ProtocolIE-ID ::= 438
id-PRS-Resource-ID	ProtocolIE-ID ::= 439
id-LocationMeasurementInformation	ProtocolIE-ID ::= 440
id-SliceRadioResourceStatus	ProtocolIE-ID ::= 441
id-CompositeAvailableCapacity-SUL	ProtocolIE-ID ::= 442
id-SuccessfulHOREportInformationList	ProtocolIE-ID ::= 443
id-NR-U-Channel-List	ProtocolIE-ID ::= 444
id-NR-U	ProtocolIE-ID ::= 445
id-Coverage-Modification-Notification	ProtocolIE-ID ::= 446
id-CCO-Assistance-Information	ProtocolIE-ID ::= 447
id-Neighbor-node-CCO-Assistance-Information-List	ProtocolIE-ID ::= 448
id-CellsForSON-List	ProtocolIE-ID ::= 449
id-MIMOPRBusageInformation	ProtocolIE-ID ::= 450
id-gNB-CU-MBS-FlAP-ID	ProtocolIE-ID ::= 451

id-gNB-DU-MBS-FlAP-ID	ProtocolIE-ID ::= 452
id-MBS-Area-Session-ID	ProtocolIE-ID ::= 453
id-MBS-CUtoDURRCInformation	ProtocolIE-ID ::= 454
id-MBS-Session-ID	ProtocolIE-ID ::= 455
id-SNSSAI	ProtocolIE-ID ::= 456
id-MBS-Broadcast-NeighbourCellList	ProtocolIE-ID ::= 457
id-BroadcastMRBs-FailedToBeModified-List	ProtocolIE-ID ::= 458
id-BroadcastMRBs-FailedToBeModified-Item	ProtocolIE-ID ::= 459
id-BroadcastMRBs-FailedToBeSetup-List	ProtocolIE-ID ::= 460
id-BroadcastMRBs-FailedToBeSetup-Item	ProtocolIE-ID ::= 461
id-BroadcastMRBs-FailedToBeSetupMod-List	ProtocolIE-ID ::= 462
id-BroadcastMRBs-FailedToBeSetupMod-Item	ProtocolIE-ID ::= 463
id-BroadcastMRBs-Modified-List	ProtocolIE-ID ::= 464
id-BroadcastMRBs-Modified-Item	ProtocolIE-ID ::= 465
id-BroadcastMRBs-Setup-List	ProtocolIE-ID ::= 466
id-BroadcastMRBs-Setup-Item	ProtocolIE-ID ::= 467
id-BroadcastMRBs-SetupMod-List	ProtocolIE-ID ::= 468
id-BroadcastMRBs-SetupMod-Item	ProtocolIE-ID ::= 469
id-BroadcastMRBs-ToBeModified-List	ProtocolIE-ID ::= 470
id-BroadcastMRBs-ToBeModified-Item	ProtocolIE-ID ::= 471
id-BroadcastMRBs-ToBeReleased-List	ProtocolIE-ID ::= 472
id-BroadcastMRBs-ToBeReleased-Item	ProtocolIE-ID ::= 473
id-BroadcastMRBs-ToBeSetup-List	ProtocolIE-ID ::= 474
id-BroadcastMRBs-ToBeSetup-Item	ProtocolIE-ID ::= 475
id-BroadcastMRBs-ToBeSetupMod-List	ProtocolIE-ID ::= 476
id-BroadcastMRBs-ToBeSetupMod-Item	ProtocolIE-ID ::= 477
id-Supported-MBS-FSA-ID-List	ProtocolIE-ID ::= 478
id-UEIdentity-List-For-Paging-List	ProtocolIE-ID ::= 479
id-UEIdentity-List-For-Paging-Item	ProtocolIE-ID ::= 480
id-MBS-ServiceArea	ProtocolIE-ID ::= 481
id-MulticastMRBs-FailedToBeModified-List	ProtocolIE-ID ::= 482
id-MulticastMRBs-FailedToBeModified-Item	ProtocolIE-ID ::= 483
id-MulticastMRBs-FailedToBeSetup-List	ProtocolIE-ID ::= 484
id-MulticastMRBs-FailedToBeSetup-Item	ProtocolIE-ID ::= 485
id-MulticastMRBs-FailedToBeSetupMod-List	ProtocolIE-ID ::= 486
id-MulticastMRBs-FailedToBeSetupMod-Item	ProtocolIE-ID ::= 487
id-MulticastMRBs-Modified-List	ProtocolIE-ID ::= 488
id-MulticastMRBs-Modified-Item	ProtocolIE-ID ::= 489
id-MulticastMRBs-Setup-List	ProtocolIE-ID ::= 490
id-MulticastMRBs-Setup-Item	ProtocolIE-ID ::= 491
id-MulticastMRBs-SetupMod-List	ProtocolIE-ID ::= 492
id-MulticastMRBs-SetupMod-Item	ProtocolIE-ID ::= 493
id-MulticastMRBs-ToBeModified-List	ProtocolIE-ID ::= 494
id-MulticastMRBs-ToBeModified-Item	ProtocolIE-ID ::= 495
id-MulticastMRBs-ToBeReleased-List	ProtocolIE-ID ::= 496
id-MulticastMRBs-ToBeReleased-Item	ProtocolIE-ID ::= 497
id-MulticastMRBs-ToBeSetup-List	ProtocolIE-ID ::= 498
id-MulticastMRBs-ToBeSetup-Item	ProtocolIE-ID ::= 499
id-MulticastMRBs-ToBeSetupMod-List	ProtocolIE-ID ::= 500
id-MulticastMRBs-ToBeSetupMod-Item	ProtocolIE-ID ::= 501
id-MBSMulticastFlUContextDescriptor	ProtocolIE-ID ::= 502
id-MulticastFlUContext-ToBeSetup-List	ProtocolIE-ID ::= 503
id-MulticastFlUContext-ToBeSetup-Item	ProtocolIE-ID ::= 504
id-MulticastFlUContext-Setup-List	ProtocolIE-ID ::= 505

id-MulticastFlUContext-Setup-Item	ProtocolIE-ID ::= 506
id-MulticastFlUContext-FailedToBeSetup-List	ProtocolIE-ID ::= 507
id-MulticastFlUContext-FailedToBeSetup-Item	ProtocolIE-ID ::= 508
id-IABCongestionIndication	ProtocolIE-ID ::= 509
id-IABConditionalRRCMessagesDeliveryIndication	ProtocolIE-ID ::= 510
id-FlCTransferPathNRDC	ProtocolIE-ID ::= 511
id-BufferSizeThresh	ProtocolIE-ID ::= 512
id-IAB-TNL-Addresses-Exception	ProtocolIE-ID ::= 513
id-BAP-Header-Rewriting-Added-List	ProtocolIE-ID ::= 514
id-BAP-Header-Rewriting-Added-List-Item	ProtocolIE-ID ::= 515
id-Re-routingEnableIndicator	ProtocolIE-ID ::= 516
id-NonFlterminatingTopologyIndicator	ProtocolIE-ID ::= 517
id-EgressNonFlterminatingTopologyIndicator	ProtocolIE-ID ::= 518
id-IngressNonFlterminatingTopologyIndicator	ProtocolIE-ID ::= 519
id-rBSetConfiguration	ProtocolIE-ID ::= 520
id-frequency-Domain-HSNA-Configuration-List	ProtocolIE-ID ::= 521
id-child-IAB-Nodes-NA-Resource-List	ProtocolIE-ID ::= 522
id-Parent-IAB-Nodes-NA-Resource-Configuration-List	ProtocolIE-ID ::= 523
id-uL-FreqInfo	ProtocolIE-ID ::= 524
id-uL-Transmission-Bandwidth	ProtocolIE-ID ::= 525
id-dL-FreqInfo	ProtocolIE-ID ::= 526
id-dL-Transmission-Bandwidth	ProtocolIE-ID ::= 527
id-uL-NR-Carrier-List	ProtocolIE-ID ::= 528
id-dL-NR-Carrier-List	ProtocolIE-ID ::= 529
id-nRFreqInfo	ProtocolIE-ID ::= 530
id-transmission-Bandwidth	ProtocolIE-ID ::= 531
id-nR-Carrier-List	ProtocolIE-ID ::= 532
id-Neighbour-Node-Cells-List	ProtocolIE-ID ::= 533
id-Serving-Cells-List	ProtocolIE-ID ::= 534
id-permutation	ProtocolIE-ID ::= 535
id-MDTPollutedMeasurementIndicator	ProtocolIE-ID ::= 536
id-M5ReportAmount	ProtocolIE-ID ::= 537
id-M6ReportAmount	ProtocolIE-ID ::= 538
id-M7ReportAmount	ProtocolIE-ID ::= 539
id-SurvivalTime	ProtocolIE-ID ::= 540
id-PDCMeasurementPeriodicity	ProtocolIE-ID ::= 541
id-PDCMeasurementQuantities	ProtocolIE-ID ::= 542
id-PDCMeasurementQuantities-Item	ProtocolIE-ID ::= 543
id-PDCMeasurementResult	ProtocolIE-ID ::= 544
id-PDCReportType	ProtocolIE-ID ::= 545
id-RAN-UE-PDC-MeasID	ProtocolIE-ID ::= 546
id-SCGActivationRequest	ProtocolIE-ID ::= 547
id-SCGActivationStatus	ProtocolIE-ID ::= 548
id-PRSTRPList	ProtocolIE-ID ::= 549
id-PRSTransmissionTRPLList	ProtocolIE-ID ::= 550
id-OnDemandPRS	ProtocolIE-ID ::= 551
id-AoA-SearchWindow	ProtocolIE-ID ::= 552
id-TRP-MeasurementUpdateList	ProtocolIE-ID ::= 553
id-ZoAInformation	ProtocolIE-ID ::= 554
id-ResponseTime	ProtocolIE-ID ::= 555
id-ARPLocationInfo	ProtocolIE-ID ::= 556
id-ARP-ID	ProtocolIE-ID ::= 557
id-MultipleULAoA	ProtocolIE-ID ::= 558
id-UL-SRS-RSRPP	ProtocolIE-ID ::= 559

id-SRSResourcetype	ProtocolIE-ID ::= 560
id-ExtendedAdditionalPathList	ProtocolIE-ID ::= 561
id-LoS-NLoSInformation	ProtocolIE-ID ::= 562
id-NumberOfTRPRxTEG	ProtocolIE-ID ::= 564
id-NumberOfTRPRxTxTEG	ProtocolIE-ID ::= 565
id-TRPTxTEGAssociation	ProtocolIE-ID ::= 566
id-TRPTEGInformation	ProtocolIE-ID ::= 567
id-TRPRx-TEGInformation	ProtocolIE-ID ::= 568
id-TRP-PRS-Info-List	ProtocolIE-ID ::= 569
id-PRS-Measurement-Info-List	ProtocolIE-ID ::= 570
id-PRSConfigRequestType	ProtocolIE-ID ::= 571
id-MeasurementTimeOccasion	ProtocolIE-ID ::= 573
id-MeasurementCharacteristicsRequestIndicator	ProtocolIE-ID ::= 574
id-UEReportingInformation	ProtocolIE-ID ::= 575
id-PosConextRevIndication	ProtocolIE-ID ::= 576
id-TRPBeamAntennaInformation	ProtocolIE-ID ::= 577
id-NRRedCapUEIndication	ProtocolIE-ID ::= 578
id-Redcap-Bcast-Information	ProtocolIE-ID ::= 579
id-RANUEPagingDRX	ProtocolIE-ID ::= 580
id-CNUEPagingDRX	ProtocolIE-ID ::= 581
id-NRPagingDRXInformation	ProtocolIE-ID ::= 582
id-NRPagingDRXInformationforRRCINACTIVE	ProtocolIE-ID ::= 583
id-NR-TADV	ProtocolIE-ID ::= 584
id-QoEInformation	ProtocolIE-ID ::= 585
id-CG-SDTQueryIndication	ProtocolIE-ID ::= 586
id-SDT-MAC-PHY-CG-Config	ProtocolIE-ID ::= 587
id-CG-SDTKeptIndicator	ProtocolIE-ID ::= 588
id-CG-SDTindicatorSetup	ProtocolIE-ID ::= 589
id-CG-SDTindicatorMod	ProtocolIE-ID ::= 590
id-CG-SDTSessionInfoOld	ProtocolIE-ID ::= 591
id-SDTInformation	ProtocolIE-ID ::= 592
id-SDTRLCBearerConfiguration	ProtocolIE-ID ::= 593
id-FiveG-ProSeAuthorized	ProtocolIE-ID ::= 594
id-FiveG-ProSeUEPC5AggregateMaximumBitrate	ProtocolIE-ID ::= 595
id-FiveG-ProSePC5LinkAMBR	ProtocolIE-ID ::= 596
id-SRBMappingInfo	ProtocolIE-ID ::= 597
id-DRBMappingInfo	ProtocolIE-ID ::= 598
id-UuRLCChannelToBeSetupList	ProtocolIE-ID ::= 599
id-UuRLCChannelToBeModifiedList	ProtocolIE-ID ::= 600
id-UuRLCChannelToBeReleasedList	ProtocolIE-ID ::= 601
id-UuRLCChannelSetupList	ProtocolIE-ID ::= 602
id-UuRLCChannelFailedToBeSetupList	ProtocolIE-ID ::= 603
id-UuRLCChannelModifiedList	ProtocolIE-ID ::= 604
id-UuRLCChannelFailedToBeModifiedList	ProtocolIE-ID ::= 605
id-UuRLCChannelRequiredToBeModifiedList	ProtocolIE-ID ::= 606
id-UuRLCChannelRequiredToBeReleasedList	ProtocolIE-ID ::= 607
id-PC5RLCChannelToBeSetupList	ProtocolIE-ID ::= 608
id-PC5RLCChannelToBeModifiedList	ProtocolIE-ID ::= 609
id-PC5RLCChannelToBeReleasedList	ProtocolIE-ID ::= 610
id-PC5RLCChannelSetupList	ProtocolIE-ID ::= 611
id-PC5RLCChannelFailedToBeSetupList	ProtocolIE-ID ::= 612
id-PC5RLCChannelFailedToBeModifiedList	ProtocolIE-ID ::= 613
id-PC5RLCChannelRequiredToBeModifiedList	ProtocolIE-ID ::= 614
id-PC5RLCChannelRequiredToBeReleasedList	ProtocolIE-ID ::= 615

id-PC5RLCChannelModifiedList	ProtocolIE-ID ::= 616
id-SidelinkRelayConfiguration	ProtocolIE-ID ::= 617
id-UpdatedRemoteUELocalID	ProtocolIE-ID ::= 618
id-PathSwitchConfiguration	ProtocolIE-ID ::= 619
id-PagingCause	ProtocolIE-ID ::= 620
id-MUSIM-GapConfig	ProtocolIE-ID ::= 621
id-PEIPSAssistanceInfo	ProtocolIE-ID ::= 622
id-UEPagingCapability	ProtocolIE-ID ::= 623
id-LastUsedCellIndication	ProtocolIE-ID ::= 624
id-SIB17-message	ProtocolIE-ID ::= 625
id-GNBDUUESliceMaximumBitRateList	ProtocolIE-ID ::= 626
id-SIB20-message	ProtocolIE-ID ::= 627
id-UE-MulticastMRBs-ToBeReleased-List	ProtocolIE-ID ::= 628
id-UE-MulticastMRBs-ToBeReleased-Item	ProtocolIE-ID ::= 629
id-UE-MulticastMRBs-ToBeSetup-List	ProtocolIE-ID ::= 630
id-UE-MulticastMRBs-ToBeSetup-Item	ProtocolIE-ID ::= 631
id-MulticastMBSSESessionSetupList	ProtocolIE-ID ::= 632
id-MulticastMBSSESessionRemoveList	ProtocolIE-ID ::= 633
id-PosMeasurementAmount	ProtocolIE-ID ::= 634
id-SDT-Termination-Request	ProtocolIE-ID ::= 635
id-pathPower	ProtocolIE-ID ::= 636
id-DU-RX-MT-RX-Extend	ProtocolIE-ID ::= 637
id-DU-TX-MT-TX-Extend	ProtocolIE-ID ::= 638
id-DU-RX-MT-TX-Extend	ProtocolIE-ID ::= 639
id-DU-TX-MT-RX-Extend	ProtocolIE-ID ::= 640
id-BAP-Header-Rewriting-Removed-List	ProtocolIE-ID ::= 641
id-BAP-Header-Rewriting-Removed-List-Item	ProtocolIE-ID ::= 642
id-SLDRXCycleList	ProtocolIE-ID ::= 643
id-TAINSAGSupportList	ProtocolIE-ID ::= 644
id-SL-RLC-ChannelToAddModList	ProtocolIE-ID ::= 645
id-BroadcastAreaScope	ProtocolIE-ID ::= 646
id-ManagementBasedMDTPLMNModificationList	ProtocolIE-ID ::= 647
id-SIB15-message	ProtocolIE-ID ::= 648
id-ActivationRequestType	ProtocolIE-ID ::= 649
id-PosMeasGapPreConfigList	ProtocolIE-ID ::= 650
id-InterFrequencyConfig-NoGap	ProtocolIE-ID ::= 651
id-MBSInterestIndication	ProtocolIE-ID ::= 652
id-UE-MulticastMRBs-ConfirmedToBeModified-List	ProtocolIE-ID ::= 653
id-UE-MulticastMRBs-ConfirmedToBeModified-Item	ProtocolIE-ID ::= 654
id-UE-MulticastMRBs-RequiredToBeModified-List	ProtocolIE-ID ::= 655
id-UE-MulticastMRBs-RequiredToBeModified-Item	ProtocolIE-ID ::= 656
id-UE-MulticastMRBs-RequiredToBeReleased-List	ProtocolIE-ID ::= 657
id-UE-MulticastMRBs-RequiredToBeReleased-Item	ProtocolIE-ID ::= 658
id-L571Info	ProtocolIE-ID ::= 659
id-L1151Info	ProtocolIE-ID ::= 660
id-SCS-480	ProtocolIE-ID ::= 661
id-SCS-960	ProtocolIE-ID ::= 662
id-SRSPortIndex	ProtocolIE-ID ::= 663
id-PEISubgroupingSupportIndication	ProtocolIE-ID ::= 664
id-NeedForGapsInfoNR	ProtocolIE-ID ::= 665
id-NeedForGapNCSGInfoNR	ProtocolIE-ID ::= 666
id-NeedForGapNCSGInfoEUTRA	ProtocolIE-ID ::= 667
id-procedure-code-668-not-to-be-used	ProtocolIE-ID ::= 668
id-procedure-code-669-not-to-be-used	ProtocolIE-ID ::= 669

```

id-procedure-code-670-not-to-be-used      ProtocolIE-ID ::= 670
id-Source-MRB-ID                          ProtocolIE-ID ::= 671
id-PosMeasurementPeriodicityNR-AoA       ProtocolIE-ID ::= 672
id-RedCapIndication                       ProtocolIE-ID ::= 673
id-SRSPosRRCInactiveConfig              ProtocolIE-ID ::= 674
id-SDTBearerConfigurationQueryIndication ProtocolIE-ID ::= 675
id-SDTBearerConfigurationInfo           ProtocolIE-ID ::= 676
id-UL-GapFR2-Config                     ProtocolIE-ID ::= 677
id-ConfigRestrictInfoDAPS               ProtocolIE-ID ::= 678
id-UE-MulticastMRBs-Setup-List          ProtocolIE-ID ::= 679
id-UE-MulticastMRBs-Setup-Item          ProtocolIE-ID ::= 680
id-MulticastFlUContextReferenceCU        ProtocolIE-ID ::= 681
id-PosSITypeList                        ProtocolIE-ID ::= 682
id-DAPS-HO-Status                       ProtocolIE-ID ::= 683
id-UplinkTxDirectCurrentTwoCarrierListInfo ProtocolIE-ID ::= 684
id-UE-MulticastMRBs-ToBeSetup-atModify-List ProtocolIE-ID ::= 685
id-UE-MulticastMRBs-ToBeSetup-atModify-Item ProtocolIE-ID ::= 686
id-MC-PagingCell-List                   ProtocolIE-ID ::= 687
id-MC-PagingCell-Item                   ProtocolIE-ID ::= 688
id-SRSPosRRCInactiveQueryIndication     ProtocolIE-ID ::= 689
id-UlTxDirectCurrentMoreCarrierInformation ProtocolIE-ID ::= 690
id-CPACMCGInformation                   ProtocolIE-ID ::= 691
id-TwoPHRModeMCG                        ProtocolIE-ID ::= 692
id-TwoPHRModeSCG                        ProtocolIE-ID ::= 693
id-ExtendedUEIdentityIndexValue         ProtocolIE-ID ::= 694
id-ServingCellMO-List                   ProtocolIE-ID ::= 695
id-ServingCellMO-List-Item              ProtocolIE-ID ::= 696
id-ServingCellMO-encoded-in-CGC-List     ProtocolIE-ID ::= 697

```

```

END
-- ASN1STOP

```

9.4.8 Container Definitions

```

-- ASN1START
-- *****
--
-- Container definitions
--
-- *****

FLAP-Containers {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
ngran-access (22) modules (3) flap (3) version1 (1) flap-Containers (5) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- *****
--
-- IE parameter types from other modules.
--

```



```

-- *****
IMPORTS
    Criticality,
    Presence,
    PrivateIE-ID,
    ProtocolExtensionID,
    ProtocolIE-ID

FROM FlAP-CommonDataTypes
    maxPrivateIEs,
    maxProtocolExtensions,
    maxProtocolIEs

FROM FlAP-Constants;

-- *****
--
-- Class Definition for Protocol IEs
--
-- *****

FlAP-PROTOCOL-IES ::= CLASS {
    &id                ProtocolIE-ID                UNIQUE,
    &criticality       Criticality,
    &Value,
    &presence          Presence
}
WITH SYNTAX {
    ID                &id
    CRITICALITY       &criticality
    TYPE              &Value
    PRESENCE          &presence
}

-- *****
--
-- Class Definition for Protocol IEs
--
-- *****

FlAP-PROTOCOL-IES-PAIR ::= CLASS {
    &id                ProtocolIE-ID                UNIQUE,
    &firstCriticality  Criticality,
    &FirstValue,
    &secondCriticality Criticality,
    &SecondValue,
    &presence          Presence
}
WITH SYNTAX {
    ID                &id
    FIRST CRITICALITY &firstCriticality
    FIRST TYPE        &FirstValue
    SECOND CRITICALITY &secondCriticality
}

```

```

    SECOND TYPE          &SecondValue
    PRESENCE             &presence
}
-- *****
--
-- Class Definition for Protocol Extensions
--
-- *****

FLAP-PROTOCOL-EXTENSION ::= CLASS {
    &id          ProtocolExtensionID          UNIQUE,
    &criticality Criticality,
    &Extension,
    &presence    Presence
}
WITH SYNTAX {
    ID          &id
    CRITICALITY &criticality
    EXTENSION   &Extension
    PRESENCE    &presence
}
-- *****
--
-- Class Definition for Private IEs
--
-- *****

FLAP-PRIVATE-IES ::= CLASS {
    &id          PrivateIE-ID,
    &criticality Criticality,
    &Value,
    &presence    Presence
}
WITH SYNTAX {
    ID          &id
    CRITICALITY &criticality
    TYPE        &Value
    PRESENCE    &presence
}
-- *****
--
-- Container for Protocol IEs
--
-- *****

ProtocolIE-Container {FlAP-PROTOCOL-IES : IEsSetParam} ::=
    SEQUENCE (SIZE (0..maxProtocolIEs)) OF
    ProtocolIE-Field {{IEsSetParam}}

ProtocolIE-SingleContainer {FlAP-PROTOCOL-IES : IEsSetParam} ::=
    ProtocolIE-Field {{IEsSetParam}}

```

```

ProtocolIE-Field {FlAP-PROTOCOL-IES : IESSetParam} ::= SEQUENCE {
    id                FlAP-PROTOCOL-IES.&id                ({IESSetParam}),
    criticality       FlAP-PROTOCOL-IES.&criticality       ({IESSetParam}@id),
    value            FlAP-PROTOCOL-IES.&Value            ({IESSetParam}@id)
}

-- *****
--
-- Container for Protocol IE Pairs
--
-- *****

ProtocolIE-ContainerPair {FlAP-PROTOCOL-IES-PAIR : IESSetParam} ::=
    SEQUENCE (SIZE (0..maxProtocolIEs)) OF
        ProtocolIE-FieldPair {{IESSetParam}}

ProtocolIE-FieldPair {FlAP-PROTOCOL-IES-PAIR : IESSetParam} ::= SEQUENCE {
    id                FlAP-PROTOCOL-IES-PAIR.&id                ({IESSetParam}),
    firstCriticality  FlAP-PROTOCOL-IES-PAIR.&firstCriticality  ({IESSetParam}@id),
    firstValue       FlAP-PROTOCOL-IES-PAIR.&FirstValue       ({IESSetParam}@id),
    secondCriticality FlAP-PROTOCOL-IES-PAIR.&secondCriticality ({IESSetParam}@id),
    secondValue      FlAP-PROTOCOL-IES-PAIR.&SecondValue      ({IESSetParam}@id)
}

-- *****
--
-- Container for Protocol Extensions
--
-- *****

ProtocolExtensionContainer {FlAP-PROTOCOL-EXTENSION : ExtensionSetParam} ::=
    SEQUENCE (SIZE (1..maxProtocolExtensions)) OF
        ProtocolExtensionField {{ExtensionSetParam}}

ProtocolExtensionField {FlAP-PROTOCOL-EXTENSION : ExtensionSetParam} ::= SEQUENCE {
    id                FlAP-PROTOCOL-EXTENSION.&id                ({ExtensionSetParam}),
    criticality       FlAP-PROTOCOL-EXTENSION.&criticality       ({ExtensionSetParam}@id),
    extensionValue    FlAP-PROTOCOL-EXTENSION.&Extension        ({ExtensionSetParam}@id)
}

-- *****
--
-- Container for Private IES
--
-- *****

PrivateIE-Container {FlAP-PRIVATE-IES : IESSetParam} ::=
    SEQUENCE (SIZE (1.. maxPrivateIES)) OF
        PrivateIE-Field {{IESSetParam}}

PrivateIE-Field {FlAP-PRIVATE-IES : IESSetParam} ::= SEQUENCE {
    id                FlAP-PRIVATE-IES.&id                ({IESSetParam}),
    criticality       FlAP-PRIVATE-IES.&criticality       ({IESSetParam}@id),

```

```
    value          FLAP-PRIVATE-IES.&Value          ({IEsSetParam}{@id})
  }
END
-- ASN1STOP
```

9.5 Message Transfer Syntax

F1AP shall use the ASN.1 Basic Packed Encoding Rules (BASIC-PER) Aligned Variant as transfer syntax, as specified in ITU-T Recommendation X.691 [5].

9.6 Timers

10 Handling of unknown, unforeseen and erroneous protocol data

Clause 10 of TS 38.413 [3] is applicable for the purposes of the present document, with the following additions for non-UE-associated procedures:

- In case of Abstract Syntax Error, when reporting the *Criticality Diagnostics* IE for not comprehended IE/IEgroups or missing IE/IE groups, the *Transaction ID* IE shall also be included;
- In case of Logical Error, when reporting the *Criticality Diagnostics* IE, the *Transaction ID* IE shall also be included;
- In case of Logical Error in a response message of a Class 1 procedure, or failure to comprehend *Transaction ID* IE from a received message, the procedure shall be considered as unsuccessfully terminated or not terminated (e.g., transaction ID unknown in response message), and local error handling shall be initiated.

Annex A (informative): Change History

Change history							
Date	Meeting	TDoc	CR	Rev	Cat	Subject/Comment	New version
2017-06	R3 NR#2	R3-172493	-	-	-	First version	0.1.0
2017-07	R3 NR#2	R3-172640	-	-	-	Incorporated agreed TPs from R3 NR#2 Adhoc	0.2.0
2017-08	R3#97	R3-173451	-	-	-	Incorporated agreed TPs from R3#97	0.3.0
2017-10	R3#97b	R3-174247	-	-	-	Incorporated agreed TPs from R3#97b	0.4.0
2017-12	R3#98	R3-175062	-	-	-	Incorporated agreed TPs from R3#98	0.5.0
2017-12	RAN#78	RP-172287				Submitted for approval to RAN	1.0.0
2017-12	RAN#78					TR approved by RAN plenary	15.0.0
2018-03	RP-79	RP-180468	0001	2	B	Baseline CR for March version of TS 38.473 covering agreements of RAN3#99	15.1.0
2018-04						Editorial correction to ASN.1 (correction to id-TimeToWait ProtocolE-ID)	15.1.1
2018-06	RP-80	RP-181237	0011	6	B	Introduction of SA NR (38.473 Baseline CR covering RAN3 agreements)	15.2.0
2018-06	RP-80	RP-181239	0043	3	F	Essential corrections of EN-DC for NSA NR (38.473 Baseline CR covering RAN3 agreements)	15.2.0
2018-06	RP-80	RP-181237	0045	-	B	F1 support for LTE - NR coexistence	15.2.0
2018-06	RP-80					Correction to ASN.1 and to Change History table	15.2.1
2018-09	RP-81	RP-181920	0055	2	F	Introduction of DU Configuration Query	15.3.0
2018-09	RP-81	RP-181921	0056	4	F	CR to 38.473 on further clarifications on System information transfer over F1	15.3.0
2018-09	RP-81	RP-181921	0058	4	F	CR to 38.473 on corrections to System information delivery	15.3.0
2018-09	RP-81	RP-181920	0059	1	F	CR to 38.473 on corrections to PWS transfer over F1	15.3.0
2018-09	RP-81	RP-181921	0063	3	F	CR to 38.473 on PDCP SN over F1 interface	15.3.0
2018-09	RP-81	RP-181922	0064	3	F	NR Corrections (38.473 Baseline CR covering RAN3-101 agreements)	15.3.0
2018-09	RP-81	RP-181997	0068	-	F	Introduction of UL AMBR on F1	15.3.0
2018-09	RP-81	RP-181921	0072	3	F	Correction on cell management	15.3.0
2018-09	RP-81	RP-181921	0073	2	F	RLC Mode Indication over F1	15.3.0
2018-09	RP-81	RP-181921	0076	3	F	CR to 38.473 on UE Identity Index value	15.3.0
2018-09	RP-81	RP-181920	0077	1	F	Correction for UE Context Modification on presence of ServCellIndex IE	15.3.0
2018-09	RP-81	RP-181920	0078	-	F	Executing duplication for RRC-container	15.3.0
2018-09	RP-81	RP-181921	0079	1	F	Indication of RLC re-establishment at the gNB-DU	15.3.0
2018-09	RP-81	RP-181920	0080	-	F	Exchange of SMTC over F1	15.3.0
2018-09	RP-81	RP-181920	0081	-	F	Solving remaining issues with QoS parameters – TS 38.473	15.3.0
2018-09	RP-81	RP-181921	0090		F	Correction of 5GS TAC	15.3.0
2018-09	RP-81	RP-181921	0095	1	F	Extend the RANAC size to 8bits	15.3.0
2018-09	RP-81	RP-181921	0097	-	F	Corrections of Choice	15.3.0
2018-09	RP-81	RP-181921	0098	1	F	Correction of TNL criticality	15.3.0
2018-09	RP-81	RP-181921	0099	1	F	Corrections of usage of single container	15.3.0
2018-09	RP-81	RP-181921	0105	2	B	RRC version handling	15.3.0
2018-09	RP-81	RP-181921	0106	1	B	Introduction of Overload Handling in F1-C	15.3.0
2018-09	RP-81	RP-181921	0113	-	F	CR to 38.473 on presence of QoS information	15.3.0
2018-09	RP-81	RP-181921	0114	1	F	Correction C-RNTI format	15.3.0
2018-09	RP-81	RP-181921	0115	-	F	Correction of QoS Parameters	15.3.0
2018-09	RP-81	RP-181921	0116	1	F	Correction on F1 Setup Request	15.3.0
2018-12	RP-82	RP-182446	0070	3	F	RRC Delivery Indication	15.4.0
2018-12	RP-82	RP-182446	0117	1	F	Correction of AMBR Enforcement	15.4.0
2018-12	RP-82	RP-182446	0138	-	F	CR for correction on Initial UL RRC message transfer	15.4.0
2018-12	RP-82	RP-182446	0140	1	F	CR to 38.473 on bearer type change indication	15.4.0
2018-12	RP-82	RP-182446	0142	1	F	CR to 38.473 on correction to PWS System Information	15.4.0
2018-12	RP-82	RP-182446	0144	2	F	CR to 38.473 on asymmetric mapping for UL and DL QoS flow	15.4.0
2018-12	RP-82	RP-182447	0145	4	F	Corrections on UE-associated LTE/NR resource coordination	15.4.0
2018-12	RP-82	RP-182446	0147	2	F	CR for F1 Cell Management	15.4.0
2018-12	RP-82	RP-182447	0150	1	F	Missing Transaction ID in non-UE-associated procedures	15.4.0
2018-12	RP-82	RP-182446	0157	1	F	CR to 38.473 on mapping of servingCellMO and Serving Cell	15.4.0
2018-12	RP-82	RP-182446	0160	1	F	CR to 38.473 on UE context modification required procedure	15.4.0
2018-12	RP-82	RP-182447	0165	1	F	Addition of the RLC Mode information for bearer modification	15.4.0
2018-12	RP-82	RP-182448	0167	2	F	Rapporteur CR to align tabular	15.4.0
2018-12	RP-82	RP-182448	0168	2	F	Rapporteur CR to align ASN.1	15.4.0
2018-12	RP-82	RP-182447	0169	2	F	Correction of MaxnoofBPLMNs	15.4.0
2018-12	RP-82	RP-182351	0174	2	F	Correction on PDCP SN length on F1	15.4.0
2018-12	RP-82	RP-182447	0178	2	F	CR for TS 38.473 for MR-DC coordination	15.4.0

2018-12	RP-82	RP-182447	0179	2	F	Support of system information update for active UE without CSS	15.4.0
2018-12	RP-82	RP-182447	0187	1	F	CR to 38.473 on clarification to the presence of UE AMBR	15.4.0
2018-12	RP-82	RP-182506	0195	2	F	CR on Scell release for RLC failure	15.4.0
2018-12	RP-82	RP-182447	0205	1	F	About bandcombinationindex and featureSetEntryIndex	15.4.0
2018-12	RP-82	RP-182447	0211	1	F	CR to 38.473 on DRB PDCP duplication	15.4.0
2018-12	RP-82	RP-182447	0216	1	F	CR to 38.473 on clarifications on system information update over F1	15.4.0
2018-12	RP-82	RP-182448	0219	-	F	Correction of RRC version handling and UE inactivity notification	15.4.0
2019-01	RP-82					- correction to ASN.1: adding a missing change to "WriteReplaceWarningResponseEs F1AP-PROTOCOL-IES ::= {"	15.4.1
2019-03	RP-83	RP-190555	0202	2	F	Indication that cells are only UL or DL on F1	15.5.0
2019-03	RP-83	RP-190554	0204	1	F	AMF initiated UE Context Release failure cause	15.5.0
2019-03	RP-83	RP-190554	0220	1	F	Correction to reconfiguration with sync for gNB-DU	15.5.0
2019-03	RP-83	RP-190554	0225	1	F	Introduction of PH-InforSCG in DU to CU RRC Information	15.5.0
2019-03	RP-83	RP-190554	0226	1	F	CR to 38.473 on Measurement gap coordination	15.5.0
2019-03	RP-83	RP-190554	0228	1	F	CR for TS 38.473 for MR-DC coordination	15.5.0
2019-03	RP-83	RP-190554	0229	2	F	Condition for inclusion of the Dedicated SI Delivery Needed UE List IE	15.5.0
2019-03	RP-83	RP-190554	0230	1	F	Correction of the Transmission stop/restart indication	15.5.0
2019-03	RP-83	RP-190554	0231	-	F	Corrections on gNB-CU/gNB-DU Configuration Update	15.5.0
2019-03	RP-83	RP-190556	0236	2	F	Correction of QoS Flow Mapping Indication	15.5.0
2019-03	RP-83	RP-190554	0244	-	F	Release due to pre-emption	15.5.0
2019-03	RP-83	RP-190554	0245	2	F	CR on RRC container in UE context modification request message	15.5.0
2019-03	RP-83	RP-190554	0246	2	F	CR on UE context modification refuse	15.5.0
2019-03	RP-83	RP-190554	0247	-	F	Transaction ID in Error Indication procedure	15.5.0
2019-03	RP-83	RP-190554	0249	2	F	Cells to be deactivated over F1	15.5.0
2019-03	RP-83	RP-190554	0251	1	F	CR to 38.473 on SRB duplication and LCID	15.5.0
2019-03	RP-83	RP-190554	0258	-	F	CR to 38.473 on corrections for removal of PDCP duplication for SRB	15.5.0
2019-03	RP-83	RP-190554	0263	1	F	CR to 38.473 on transferring UEAssistanceInformation over F1	15.5.0
2019-03	RP-83	RP-190554	0265	-	F	Rapporteur updates	15.5.0
2019-03	RP-83	RP-190554	0266	1	F	Correction on gNB-DU Resource Coordination	15.5.0
2019-03	RP-83	RP-190554	0267	1	F	Endpoint IP address and port	15.5.0
2019-03	RP-83	RP-190554	0268	1	F	Correction to add paging origin IE	15.5.0
2019-03	RP-83	RP-190555	0269	2	F	Multiple SCTP associations over F1AP	15.5.0
2019-03	RP-83	RP-190554	0272	1	F	About Cells Failed to be Activated IE in gNB-CU Configuration Update Ack	15.5.0
2019-03	RP-83	RP-190556	0273	1	F	gNB-DU UE Aggregate Maximum Bit Rate Uplink correction	15.5.0
2019-03	RP-83	RP-190554	0276	1	F	RRC Reconfiguration failure	15.5.0
2019-03	RP-83	RP-190554	0278	1	F	Node behaviour at reception of DU to CU RRC Information	15.5.0
2019-03	RP-83	RP-190554	0281	-	F	Addition of Transaction ID to Initial UL RRC Message Transfer	15.5.0
2019-07	RP-84	RP-191397	0200	5	F	RAN sharing with multiple Cell ID broadcast	15.6.0
2019-07	RP-84	RP-191397	0270	5	F	Addition of Network Access Rate Reduction message	15.6.0
2019-07	RP-84	RP-191397	0271	3	F	RAN UE ID for F1	15.6.0
2019-07	RP-84	RP-191396	0283	2	F	MR-DC resource coordination in F1	15.6.0
2019-07	RP-84	RP-191396	0316	2	F	Full configuration indication from gNB-CU to gNB-DU.	15.6.0
2019-07	RP-84	RP-191396	0322	2	F	CR to 38.473 on clarification to RRC reconfigure complete indicator	15.6.0
2019-07	RP-84	RP-191394	0326	2	F	CR to 38.473 on deconfiguring CA based PDCP duplication for DRB	15.6.0
2019-07	RP-84	RP-191395	0330	3	F	CR to 38.473 on Removal of Multiple TNLAs	15.6.0
2019-07	RP-84	RP-191396	0348	-	F	Full configuration in UE Context Setup	15.6.0
2019-07	RP-84	RP-191396	0351	2	F	CR on PWS segmentation over F1	15.6.0
2019-07	RP-84	RP-191396	0352	1	F	CR on cell type over F1	15.6.0
2019-07	RP-84	RP-191396	0357	-	F	Rapporteur updates: Alignment and editorials	15.5.0
2019-07	RP-84	RP-191396	0358	-	F	Rapporteur update: Correction of Presence for DRB information	15.6.0
2019-07	RP-84	RP-191396	0359	-	F	Rapporteur updates: Correction of Presence for E-UTRA PRACH Configuration	15.6.0
2019-07	RP-84	RP-191396	0370	-	F	Full configuration IE included in the UE Context Modification Response.	15.6.0
2019-07	RP-84	RP-191396	0376		F	CR to 38.473 on clarification for UP TNL Information IE over F1	15.6.0
2019-07	RP-84	RP-191396	0377	2	F	Procedure description on optional IEs in CU to DU RRC information IE.	15.6.0
2019-09	RP-85	RP-192166	0343	3	F	CR on MR-DC low layer coordination with an MgNB-DU	15.7.0
2019-09	RP-85	RP-192166	0344	2	F	CR on MCG PHR format in MgNB-DU	15.7.0
2019-09	RP-85	RP-192166	0388		F	CR on DC Coordination for PDCCH Blind Detection	15.7.0
2019-09	RP-85	RP-192167	0393	1	F	Rapporteur update - clarification of semantics	15.7.0
2019-09	RP-85	RP-192166	0399	1	F	Clarification for TNLA removal	15.7.0
2019-12	RP-86	RP-192915	0318	5	F	Correction about gNB-CU System Information IE	15.8.0
2019-12	RP-86	RP-192915	0447	1	F	On CellGroupConfig handling	15.8.0

2019-12	RP-86	RP-192915	0458	1	F	Correction of S-NSSAI coding	15.8.0
2019-12	RP-86	RP-192915	0459	1	F	Removal of Requested P-MaxFR2	15.8.0
2019-12	RP-86	RP-192915	0479	2	F	Addition of Message Identifier and Serial Number to PWS Cancel Request	15.8.0
2019-12	RP-86	RP-192916	0482	2	F	Clarifications on SCell lists	15.8.0
2019-12	RP-86	RP-192916	0494	-	F	RRC Container in Modification Procedure	15.8.0
2019-12	RP-86	RP-192916	0508	0	F	CR to 38.473 on applicability of the IE Selected BandCombinationIndex and Selected FeatureSetEntryIndex	15.8.0
2019-12	RP-86	RP-192916	0509	1	F	CR to 38.473 on MeasGapSharingConfig and gNB-CU System Information	15.8.0
2019-12	RP-86	RP-192916	0510	1	F	CR to 38.473 on cause values over F1	15.8.0
2019-12	RP-86	RP-192916	0515	2	F	Clarification on Initial UL RRC Message Transfer procedure	15.8.0
2019-12	RP-86	RP-192913	0280	7	F	Trace function support for F1AP	16.0.0
2019-12	RP-86	RP-192908	0287	7	B	Support for CLI	16.0.0
2019-12	RP-86	RP-192913	0314	5	B	Introduction of Additional RRM Policy Index (ARPI)	16.0.0
2019-12	RP-86	RP-192908	0339	6	B	CR to F1-AP for RIM new message	16.0.0
2019-12	RP-86	RP-192915	0460		F	Removal of unused IEs	16.0.0
2019-12	RP-86	RP-192913	0463	1	C	Extending the MDBV Range	16.0.0
2019-12	RP-86	RP-192910	0514	3	B	CR for TS38.473 on supporting SN Resume during the RRCResume procedure	16.0.0
2019-12	RP-86	RP-192914	0518	2	F	Support for setting up IPsec a priori in F1	16.0.0
2020-03	RP-87-e	RP-200428	0522	1	A	Correction of PWS Failure Indication	16.1.0
2020-03	RP-87-e	RP-200428	0525	-	A	Correction of the presence of UL UP TNL Information to be setup List IE in tabular	16.1.0
2020-03	RP-87-e	RP-200425	0527	2	F	Corrections to CLI	16.1.0
2020-03	RP-87-e	RP-200425	0528	1	D	Rapporteur: Editorial updates	16.1.0
2020-03	RP-87-e	RP-200425	0530	2	B	E2E delay measurement for Qos monitoring for URLLC	16.1.0
2020-03	RP-87-e	RP-200428	0534	1	A	Correction relating to Initial UL RRC Message Transfer procedure CR 38.473	16.1.0
2020-07	RP-88-e	RP-201077	0285	17	B	BL CR to 38.473: Support for IAB	16.2.0
2020-07	RP-88-e	RP-201074	0432	12	B	Support of NR V2X over F1	16.2.0
2020-07	RP-88-e	RP-201082	0441	12	B	Addition of SON features	16.2.0
2020-07	RP-88-e	RP-201079	0477	8	B	Introduction of NR_IOT support to TS 38.473	16.2.0
2020-07	RP-88-e	RP-201075	0481	10	B	Baseline CR for introducing Rel-16 NR mobility enhancement	16.2.0
2020-07	RP-88-e	RP-201082	0492	6	B	Addition of MDT features	16.2.0
2020-07	RP-88-e	RP-201080	0502	7	B	Introduction of NPN	16.2.0
2020-07	RP-88-e	RP-201076	0537	1	B	CR38.473 on TDD pattern for NR-DC power control coordination for sol1	16.2.0
2020-07	RP-88-e	RP-201085	0539	-	F	Rapporteur: Corrections after implementation	16.2.0
2020-07	RP-88-e	RP-201090	0543	2	A	Encoding PLMNs in served cell information NR	16.2.0
2020-07	RP-88-e	RP-201091	0545	1	A	Correction for usage of Cell Broadcast Cancelled List	16.2.0
2020-07	RP-88-e	RP-201091	0548	1	A	Correction on UE CONTEXT MODIFICATION REQUIRED message	16.2.0
2020-07	RP-88-e	RP-201085	0561	1	F	Correction on CLI	16.2.0
2020-07	RP-88-e	RP-201090	0567	-	A	Encoding PLMNs in served cell information IEs - semantics corrections	16.2.0
2020-07	RP-88-e	RP-201092	0570	1	A	Correction for UL UP TNL Information	16.2.0
2020-07	RP-88-e	RP-201092	0572	-	A	Correction on RRC Container in Initial UL RRC Messag Transfer	16.2.0
2020-07	RP-88-e	RP-201092	0576	1	A	Correction on RRC Connection Reconfiguration Complete Indicator	16.2.0
2020-07	RP-88-e	RP-201092	0581	2	F	Corrections of Inactive UE Context stored at gNB-DU	16.2.0
2020-07	RP-88-e	RP-201085	0600	2	F	Correction on RF parameters in NR cell information	16.2.0
2020-07	RP-88-e	RP-201090	0601	4	F	Correction of S-NSSAI range	16.2.0
2020-07	RP-88-e	RP-201092	0603	2	A	Correction for Handover Preparation Information	16.2.0
2020-07	RP-88-e	RP-201092	0607	1	A	CR on Concurrent Warning Message Indicator over F1 (Rel-16)	16.2.0
2020-07	RP-88-e	RP-201092	0615	-	A	Section renumbering for PWS cancel	16.2.0
2020-07	RP-88-e	RP-201092	0616	-	A	Correction on DL RRC MESSAGE TRANSFER	16.2.0
2020-07	RP-88-e	RP-201092	0618		A	Addition of abnormal conditions in PWS Cancel procedure	16.2.0
2020-09	RP-89-e	RP-201850	0495	10	B	Introduction of positioning support over F1AP	16.3.0
2020-09	RP-89-e	RP-201956	0557	2	A	Support of PSCell/SCell-only operation mode	16.3.0
2020-09	RP-89-e	RP-201956	0583	5	F	Cell Creation Rejection when max number of supported cells is exceeded at CU CR 38.473	16.3.0
2020-09	RP-89-e	RP-201956	0587	5	A	Measurement gap deactivation over F1AP CR 38.473	16.3.0
2020-09	RP-89-e	RP-201949	0619	2	F	Slot list length correction in TDD UL-DL Configuration	16.3.0
2020-09	RP-89-e	RP-201956	0625	1	F	Addition of abnormal conditions in Write-Replace Warning procedure	16.3.0
2020-09	RP-89-e	RP-201956	0628	2	A	Correction of PSCell/SCell-only mode	16.3.0
2020-09	RP-89-e	RP-201956	0634	1	A	Correction on UE Context Modification Procedure	16.3.0
2020-09	RP-89-e	RP-201956	0639	1	F	Rapporteur Corrections	16.3.0
2020-09	RP-89-e	RP-201949	0640	-	F	Correction of procedure ID	16.3.0
2020-09	RP-89-e	RP-201956	0642	-	A	Correction of PWS cancel	16.3.0
2020-09	RP-89-e	RP-201949	0643	1	F	Corrections on PC5 Link Aggregated Bit Rate	16.3.0
2020-09	RP-89-e	RP-201949	0660	-	F	Correction on the Maximum Number of CHO Preparations in F1AP	16.3.0

2020-09	RP-89-e	RP-201956	0663	1	F	Corrections to 38.473 on node name type	16.3.0
2020-09	RP-89-e	RP-201947	0664	1	F	Correction on IAB-DU configuration	16.3.0
2020-09	RP-89-e	RP-201982	0671		F	Correction on IAB-DU configuration	16.3.0
2020-09	RP-89-e					Correct wrong numbering of protocol IE-ID in clause 9.4.7	16.3.1
2020-12	RP-90-e	RP-202310	0645	2	F	Uniqueness of BH RLC channel ID	16.4.0
2020-12	RP-90-e	RP-202310	0658	3	F	Correction on V2X related information	16.4.0
2020-12	RP-90-e	RP-202310	0665	2	F	Correction on unsuccessful operations of IAB procedures	16.4.0
2020-12	RP-90-e	RP-202310	0666	1	F	Correction on the identification of IAB-donor-DU	16.4.0
2020-12	RP-90-e	RP-202310	0667	2	F	Correction on the Context Setup procedure for IAB node	16.4.0
2020-12	RP-90-e	RP-202310	0668	1	F	Correction on BAP address	16.4.0
2020-12	RP-90-e	RP-202310	0672	1	F	CR on F1-C transfer for Rel-16 IAB	16.4.0
2020-12	RP-90-e	RP-202311	0677	-	F	Correction of F1AP positioning procedures	16.4.0
2020-12	RP-90-e	RP-202311	0678	1	F	Corrections to tabular and asn.1 for NR positioning (F1AP)	16.4.0
2020-12	RP-90-e	RP-202310	0681	1	F	Correction of alternative QoS profile	16.4.0
2020-12	RP-90-e	RP-202313	0683	-	F	Removal of duplicated imports	16.4.0
2020-12	RP-90-e	RP-202312	0684	2	F	Corrections of UL and DL carrier list	16.4.0
2020-12	RP-90-e	RP-202311	0689	1	F	RRC alignment and various correction including ASN.1	16.4.0
2020-12	RP-90-e	RP-202311	0691	1	F	Correction of RLC Duplication Information over F1	16.4.0
2020-12	RP-90-e	RP-202288	0695	3	A	Correction on value range of UAC reduction Indication	16.4.0
2020-12	RP-90-e	RP-202311	0709	1	F	Coupling TRP ID and Cell ID in Measurement procedures	16.4.0
2021-03	RP-91-e	RP-210123	0431	7	B	Introduction of SFN Offset per cell over F1	16.5.0
2021-03	RP-91-e	RP-210240	0632	6	A	Correction on Overlapping Band Handling over F1	16.5.0
2021-03	RP-91-e	RP-210235	0676	2	F	Correction on PRACH coordination	16.5.0
2021-03	RP-91-e	RP-210239	0702	3	F	Cause value on F1 for insufficient UE capabilities CR 38.473	16.5.0
2021-03	RP-91-e	RP-210239	0711	1	F	Update on QoS monitoring control	16.5.0
2021-03	RP-91-e	RP-210233	0715	2	F	Stage-3 CR on transmission stop for Rel-16 DAPS handover	16.5.0
2021-03	RP-91-e	RP-210232	0720	1	F	Correction of NPN related Cell Information	16.5.0
2021-03	RP-91-e	RP-210231	0721	-	F	Correction on IAB configuration	16.5.0
2021-03	RP-91-e	RP-210231	0722	-	F	Correction on BAP address configuration for IAB-donor-DU	16.5.0
2021-03	RP-91-e	RP-210230	0725	1	F	Including SRS frequency information in Positioning Information Request	16.5.0
2021-03	RP-91-e	RP-210231	0728	2	F	CR to 38.473: Correction on IAB related definitions and unsuccessful establishment of a BH RLC channel	16.5.0
2021-03	RP-91-e	RP-210230	0736	-	F	Correction of the PCI IE presence in the ASN.1 for the SRS Configuration	16.5.0
2021-06	RP-92-e	RP-211334	0704	4	A	How to release SCG configuration between MN-CU and MN-DU CR 38.473	16.6.0
2021-06	RP-92-e	RP-211315	0712	2	F	Clarification on TAI Slice Support List	16.6.0
2021-06	RP-92-e	RP-211323	0740	2	F	Enabling CHO with SCG configuration	16.6.0
2021-06	RP-92-e	RP-211327	0743	-	F	Correction of Spatial Relation Information	16.6.0
2021-06	RP-92-e	RP-211317	0744	-	F	Correction on reference to RACH-Report	16.6.0
2021-06	RP-92-e	RP-211330	0753		F	Stage-3 CR on system information message over F1 (Rel-16)	16.6.0
2021-06	RP-92-e	RP-211333	0760	-	A	Correction on SRB ID	16.6.0
2021-06	RP-92-e	RP-211334	0762	3	A	gNB-DU UE Aggregate Maximum Bit Rate Uplink correction	16.6.0
2021-06	RP-92-e	RP-211322	0763	-	F	Miscellaneous corrections on IAB in TS 38.473	16.6.0
2021-06	RP-92-e	RP-211327	0765	1	F	Correction on SFN Initialisation Time	16.6.0
2021-06	RP-92-e	RP-211327	0766	-	F	Correction on relative cartesian coordinate	16.6.0
2021-06	RP-92-e	RP-211322	0770	1	F	Correction on BH RLC CH configured for BAP control PDU	16.6.0
2021-06	RP-92-e	RP-211322	0771	-	F	Correction on gNB-DU Resource Configuration	16.6.0
2021-06	RP-92-e	RP-211322	0772	1	F	Correction on UL BH information configuration for DRBs support CA based duplication	16.6.0
2021-06	RP-92-e	RP-211317	0776	1	F	Correction on MLB for TS 38.473	16.6.0
2021-09	RP-93-e	RP-211876	0790	1	F	Correction of served cell information for NPN	16.7.0
2021-09	RP-93-e	RP-211880	0792	1	F	Correction of wrong CR implementation for Stage-3 CR on transmission stop for Rel-16 DAPS handover	16.7.0
2021-09	RP-93-e	RP-211883	0796	1	F	Adding procedural text for System Frame Number and Slot Number	16.7.0
2021-09	RP-93-e	RP-211881	0800	-	A	Correction of the IE related to E-UTRA resource coordination in F1AP	16.7.0
2021-12	RP-94-e	RP-212864	0804	1	A	Correction on F1 Removal for RAN Sharing in Rel-16	16.8.0
2021-12	RP-94-e	RP-212864	0811	4	F	Incorrect Node Name IE in ASN.1	16.8.0
2021-12	RP-94-e	RP-213174	0822	3	F	Correction on PRS-only TRP	16.8.0
2021-12	RP-94-e	RP-212867	0827	1	F	Support of providing spatial relation per SRS resource from gNB-CU to gNB-DU	16.8.0
2022-03	RP-95-e	RP-220279	0778	4	F	Support of dynamic ACL during dual connectivity	16.9.0
2022-03	RP-95-e	RP-220276	0837	1	F	Correction on packet delay budget for IAB access link in TS 38.473	16.9.0
2022-03	RP-95-e	RP-220276	0838	-	F	CR to 38.473: Correction on IAB TNL Address Allocation procedure	16.9.0
2022-03	RP-95-e	RP-220242	0844	2	F	CR to TS38.473: Correction on PC5 QoS parameters for NR V2X	16.9.0
2022-03	RP-95-e	RP-220281	0847	1	F	Correction on positioning information configuration	16.9.0
2022-03	RP-95-e	RP-220281	0848	1	F	Correction on Measurement Periodicity	16.9.0
2022-03	RP-95-e	RP-220281	0849	1	F	Correction on PRS Beam Information	16.9.0

2022-03	RP-95-e	RP-220281	0850		F	CR for the correction on measurement gap configuration for position	16.9.0
2022-03	RP-95-e	RP-220278	0854	1	F	Correction of frequency information for DL only or UL only cell	16.9.0
2022-03	RP-95-e	RP-220276	0860		F	(Stage-3) Clarification on IAB Address Remove	16.9.0
2022-03	RP-95-e	RP-220221	0710	9	B	Addition of SON features enhancement	17.0.0
2022-03	RP-95-e	RP-220224	0716	6	B	Introduction of NR MBS	17.0.0
2022-03	RP-95-e	RP-220222	0737	13	B	CP-based Congestion Indication for IAB Networks	17.0.0
2022-03	RP-95-e	RP-220221	0738	7	B	BLCR to 38.473: Support of MDT enhancement	17.0.0
2022-03	RP-95-e	RP-220223	0751	7	B	Introduction of Enhanced IIoT support over F1	17.0.0
2022-03	RP-95-e	RP-220218	0777	10	B	SCG BL CR to TS 38.473	17.0.0
2022-03	RP-95-e	RP-220218	0795	5	B	BLCR to TS 38.473 for Conditional PScell Change/Addition	17.0.0
2022-03	RP-95-e	RP-220228	0803	6	B	Introduction of NR Positioning enhancements	17.0.0
2022-03	RP-95-e	RP-220230	0806	6	B	BL CR to F1AP on Rel-17 RedCap	17.0.0
2022-03	RP-95-e	RP-220236	0817	2	B	Addition of NR Timing Advance reporting for NR UL E-CID [NRTADV]	17.0.0
2022-03	RP-95-e	RP-220229	0826	7	B	Support of QoE information transfer	17.0.0
2022-03	RP-95-e	RP-220233	0833	3	B	CG-SDT BLCR to TS38.473	17.0.0
2022-03	RP-95-e	RP-220233	0834	3	B	Support of RACH-based SDT	17.0.0
2022-03	RP-95-e	RP-220231	0842	3	B	Introduction of SideLink Relay	17.0.0
2022-03	RP-95-e	RP-220219	0852	4	B	Introduction of MultiSIM support over F1	17.0.0
2022-03	RP-95-e	RP-220235	0855	4	B	Support for UE Power Saving Enhancements	17.0.0
2022-03	RP-95-e	RP-220232	0856	1	B	(BLCR to TS 38.473) Supporting network slicing enhancement	17.0.0
2022-03	RP-95-e	RP-220236	0858		D	Editorial corrections	17.0.0
2022-06	RP-96	RP-221143	0862	2	F	QoE Rel-17 Corrections	17.1.0
2022-06	RP-96	RP-221132	0863	-	F	Correction of PDC Measurement Periodicity values	17.1.0
2022-06	RP-96	RP-221141	0864	1	F	Correction of R17 SON features enhancement	17.1.0
2022-06	RP-96	RP-221134	0865	1	F	Corrections on NR MBS in F1AP	17.1.0
2022-06	RP-96	RP-221134	0866	-	F	NR MBS F1AP asn.1 correction	17.1.0
2022-06	RP-96	RP-221136	0868	2	F	Correction on CG based SDT	17.1.0
2022-06	RP-96	RP-221150	0879	1	A	F1AP CR for ACL remaining issues	17.1.0
2022-06	RP-96	RP-221145	0880	4	F	CR to 38.473 on Measurement Amount	17.1.0
2022-06	RP-96	RP-221139	0884	-	F	ASN.1 corrections on NR SL relay for 38.473	17.1.0
2022-06	RP-96	RP-221137	0887	2	F	Correction to MUSIM	17.1.0
2022-06	RP-96	RP-221139	0892	1	F	Corrections for SL_relay (F1AP)	17.1.0
2022-06	RP-96	RP-221126	0894	1	F	Correction on RedCap Broadcast Information for TS38.473	17.1.0
2022-06	RP-96	RP-221131	0896	1	F	F1AP ASN.1 review for NR Positioning Enhancements	17.1.0
2022-06	RP-96	RP-221134	0897		F	Remove the editor's notes	17.1.0
2022-06	RP-96	RP-221136	0900	1	F	Correction on SRB SDT indication	17.1.0
2022-06	RP-96	RP-221136	0901	1	F	Correction on SDT termination request in F1	17.1.0
2022-06	RP-96	RP-221141	0902	1	F	Correction on SON feature enhancements - F1AP	17.1.0
2022-06	RP-96	RP-221131	0905	3	F	Positioning corrections for F1AP	17.1.0
2022-06	RP-96	RP-221132	0908	2	F	Correction of PDC Measurement Initiation Failure message	17.1.0
2022-06	RP-96	RP-221805	0910	2	F	Correction for IAB inter-donor DU re-routing and resource multiplexing	17.1.0
2022-06	RP-96	RP-221149	0913	1	A	Correction on IAB-DU cell resource configuration	17.1.0
2022-06	RP-96	RP-221130	0916	2	F	CR to TS38.473: Correction on PC5 DRX parameters for NR V2X	17.1.0
2022-06	RP-96	RP-221139	0920		F	Corrections on Remote UE Local ID	17.1.0
2022-06	RP-96	RP-221141	0921	2	F	F1AP corrections for NR-U	17.1.0
2022-06	RP-96	RP-221152	0923	2	A	Correction for PRS Muting	17.1.0
2022-06	RP-96	RP-221132	0924	2	F	NR-IIoT F1AP correction	17.1.0
2022-06	RP-96	RP-221129	0927	2	F	Supporting network slice AS group	17.1.0
2022-06	RP-96	RP-221129	0928	1	F	Correction of the presence of UE-Slice-MBR	17.1.0
2022-06	RP-96	RP-221141	0929	-	F	Corrections to Load Balancing Enhancements	17.1.0
2022-06	RP-96	RP-221139	0930	2	F	Corrections for SL relay	17.1.0
2022-06	RP-96	RP-221145	0932	2	D	Editorial corrections	17.1.0
2022-06	RP-96	RP-221134	0938	1	F	Correction on MBS features	17.1.0
2022-06	RP-96	RP-221136	0939	1	F	Correction on SDT in F1AP	17.1.0
2022-06	RP-96	RP-221136	0940	1	F	Correction on Rel-17 SDT (F1AP)	17.1.0
2022-06	RP-96	RP-221141	0945	1	F	Correction on update management based MDT user consent	17.1.0
2022-06	RP-96	RP-221131	0948	2	F	Support of multiple measurement instances	17.1.0
2022-06	RP-96	RP-221145	0949	1	F	Supporting the disaster roaming information [MINT]	17.1.0
2022-06	RP-96	RP-221150	0951	2	A	SIB Issues Rel-17	17.1.0
2022-06	RP-96	RP-221150	0953	1	A	gNB-CU and gNB-DU Name in Configuration Update Procedures	17.1.0
2022-06	RP-96	RP-221137	0957	-	F	Clarification on the paging cause	17.1.0
2022-06	RP-96	RP-221143	0958	1	F	CR to 38.473 on ASN.1 corrections of QoE measurement	17.1.0
2022-06	RP-96	RP-221152	0964		A	ASN.1 correction for UL-AoA	17.1.0
2022-06	RP-96	RP-221141	0965	1	F	ASN.1 corrections	17.1.0
2022-06	RP-96	RP-221141	0968	1	F	CCO corrections	17.1.0
2022-06	RP-96	RP-221131	0969	-	F	Corrections to Measurement Pre-configuration Information Transfer	17.1.0
2022-06	RP-96	RP-221628	0971	-	F	Removal of UE Tx TEG Association from F1AP	17.1.0
2022-09	RP-97-e	RP-222201	0889	2	A	Correction on interFrequencyConfig-NoGap	17.2.0

2022-09	RP-97-e	RP-222189	0890	2	F	Correction to SDT for supporting delta signaling	17.2.0
2022-09	RP-97-e	RP-222188	0978	-	F	Correction on Broadcast and Unicast co-existence	17.2.0
2022-09	RP-97-e	RP-222183	0981	1	F	Miscellaneous Correction on IAB	17.2.0
2022-09	RP-97-e	RP-222188	0984	1	F	Further Corrections for NR MBS	17.2.0
2022-09	RP-97-e	RP-222188	0985	2	F	Corrections for the establishment of F1-U ptp retransmission tunnels	17.2.0
2022-09	RP-97-e	RP-222185	0986	3	B	CR for TS38.473 on Extending NR Operation to 71GHz	17.2.0
2022-09	RP-97-e	RP-222186	0988	-	F	Addition of SRS port index	17.2.0
2022-09	RP-97-e	RP-222190	0989	1	F	SL relay corrections	17.2.0
2022-09	RP-97-e	RP-222187	0994	1	F	Correction of UE Paging Capability	17.2.0
2022-09	RP-97-e	RP-222201	0997	1	F	Correction on measurement gap configuration over F1 in Rel-17	17.2.0
2022-09	RP-97-e	RP-222186	0998	2	F	Support of timing error margins for TEGs in F1AP	17.2.0
2022-09	RP-97-e	RP-222188	1000	1	F	Introduction of MBS specific cause values	17.2.0
2022-09	RP-97-e	RP-222188	1001	1	F	Correction on Multicast Group Paging	17.2.0
2022-09	RP-97-e	RP-222188	1002	1	F	Correction on MRB ID Change	17.2.0
2022-09	RP-97-e	RP-222603	1004	4	A	CR to 38.473 on E-CID measurement periodicity	17.2.0
2022-09	RP-97-e	RP-222088	1013	3	F	Correction on RedCap paging capability	17.2.0
2022-09	RP-97-e	RP-222186	1016	1	F	Rel-17 ePos correction for the missing support of SRS-PosRRC-InactiveConfig-r17 configuration	17.2.0
2022-09	RP-97-e	RP-222189	1017	1	F	Transferring CG-SDT configuration and SRS positioning Inactive configuration from DU to CU	17.2.0
2022-09	RP-97-e	RP-222088	1019	1	F	Correction of the maximum PTW length of IDLE eDRX	17.2.0
2022-09	RP-97-e	RP-222189	1021	1	F	Correction on Rel-17 SDT	17.2.0
2022-09	RP-97-e	RP-222638	1025	3	F	Introduction of uplink GapFR2 [NR_RF_FR2_req_enh2-Core]	17.2.0
2022-09	RP-97-e	RP-222186	1027	2	F	Correction to positioning gap configuration	17.2.0
2022-09	RP-97-e	RP-222191	1031	-	F	Correction to Report Characteristics	17.2.0
2022-09	RP-97-e	RP-222186	1034	-	F	Correction on Measurement Time Occasion	17.2.0
2022-09	RP-97-e	RP-222191	1035	1	F	Correction on NR-U MLB	17.2.0
2022-12	RP-98-e	RP-222883	0975	4	A	R17CR for DAPS over F1 to TS38.473	17.3.0
2022-12	RP-98-e	RP-222884	1012	1	A	Correction of on-demand SI for connected UE	17.3.0
2022-12	RP-98-e	RP-222879	1039	1	F	Further correction to Report Characteristics	17.3.0
2022-12	RP-98-e	RP-222882	1043	3	F	Provision of MBS Multicast F1-U references to UE Context in gNB-CU enabling retrieval of data forwarding progress information	17.3.0
2022-12	RP-98-e	RP-222886	1046	2	F	Correction of TRP TEG	17.3.0
2022-12	RP-98-e	RP-222884	1052	2	A	Correction on generation of gap type over F1 in Rel-17	17.3.0
2022-12	RP-98-e	RP-222886	1054	1	F	Correction of Timing Error Margin	17.3.0
2022-12	RP-98-e	RP-222887	1057	1	A	CR to 38.473 on SRS periodicity	17.3.0
2022-12	RP-98-e	RP-222886	1058	1	F	Correction of ASN.1 for UL RTOA Measurement	17.3.0
2022-12	RP-98-e	RP-222887	1060	3	A	Correction on positioning SI delivery over F1AP	17.3.0
2022-12	RP-98-e	RP-222881	1061	1	F	Correction on resource configuration for IAB	17.3.0
2022-12	RP-98-e	RP-222886	1072	-	F	Correction on presence of timing error margin for TRP TEGs	17.3.0
2022-12	RP-98-e	RP-222883	1075	1	A	CR for DAPS state transfer in case of split gNB deployment to Rel-17 38.473	17.3.0
2022-12	RP-98-e	RP-222888	1076	1	F	SL relay corrections	17.3.0
2022-12	RP-98-e	RP-222888	1077	4	F	Correction to 38.473 for SL relay (R17)	17.3.0
2022-12	RP-98-e	RP-222957	1081	5	A	Support of DC Location for two UL CCs in Split architecture	17.3.0
2022-12	RP-98-e	RP-222882	1083	1	F	Correction on NR MBS over F1AP	17.3.0
2022-12	RP-98-e	RP-222882	1084	1	F	Correction on MRB QoS Information	17.3.0
2022-12	RP-98-e	RP-222879	1091	2	F	Correction on Resource Status Reporting procedure over F1	17.3.0
2022-12	RP-98-e	RP-222885	1094	2	F	Support of DC Location for more carriers in Split architecture (The CR is not implemented. The CR is postponed to next plenary meeting due to the fact that it is impossible to modify a paragraph via 2 separate CRs without CR clash)	17.3.0
2022-12	RP-98-e	RP-222886	1100	1	F	Support of DC Location for more carriers in Split architecture	17.3.0
2023-03	RAN#99	RP-230591	1029	4	B	Introduction of two PHR mode [NR_feMIMO-Core]	17.4.0
2023-03	RAN#99	RP-230582	1090	4	F	Correction to conditional MCG configuration in CPAC	17.4.0
2023-03	RAN#99	RP-230589	1093	4	F	Correction to support NCD-SSB RedCap requirements in F1AP	17.4.0
2023-03	RAN#99	RP-230593	1094	3	F	Correction for supporting DC Location for more carriers in Split architecture	17.4.0
2023-03	RAN#99	RP-230585	1097	2	F	Correction of NR PRACH Configuration List for FR2-2	17.4.0
2023-03	RAN#99	RP-230581	1113	1	F	Correction on missing cause value for CG-SDT	17.4.0
2023-03	RAN#99	RP-230589	1114	2	F	Correction on the UE identity index for paging RedCap UE to TS38.473	17.4.0
2023-03	RAN#99	RP-230596	1116	-	A	Correction on IAB UP configuration update	17.4.0
2023-03	RAN#99	RP-230583	1117	1	F	Correction on NR MBS Broadcast aspects	17.4.0
2023-03	RAN#99	RP-230587	1118	1	F	Correction of gNB Rx-Tx Time Difference	17.4.0
2023-03	RAN#99	RP-230590	1120	1	F	Correction of RRC references for SLrelay	17.4.0
2023-03	RAN#99	RP-230593	1121	-	F	Correction of RRC references for DRX	17.4.0
2023-03	RAN#99	RP-230593	1122	-	F	Correction of RRC references	17.4.0
2023-03	RAN#99	RP-230591	1124	2	B	Missing transmission bandwidth configurations in F1AP	17.4.0
2023-03	RAN#99	RP-230583	1125	1	F	Correction of F1 Broadcast Setup	17.4.0
2023-03	RAN#99	RP-230588	1126	-	F	PRS configuration procedure correction	17.4.0

2023-03	RAN#99	RP-230581	1127	1	F	Correction to CellGroupConfig handling for SDT	17.4.0
2023-03	RAN#99	RP-230584	1131	2	F	Correction on NR-U Channel ID	17.4.0
2023-03	RAN#99	RP-230595	1137	2	A	ASN.1 Correction of M6 Configuration	17.4.0
2023-03	RAN#99	RP-230586	1138	1	F	Correction to TS 38.473 on Re-routing Enable Indicator	17.4.0
2023-04	RAN#99	-	-	-	-	Editorial Changes(font, style, line break)	17.4.1

History

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