ETSI TS 138 508-1 V15.0.0 (2018-07)

5G;
5GS;
User Equipment (UE) conformance specification;
Part 1: Common test environment
(3GPP TS 38.508-1 version 15.0.0 Release 15)

Reference
DTS/TSGR-0538508-1vf00

Keywords
5G

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

The present document can be downloaded from:
http://www.etsi.org/standards-search

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status.
Information on the current status of this and other ETSI documents is available at
https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx

If you find errors in the present document, please send your comment to one of the following services:
https://portal.etsi.org/People/CommiteeSupportStaff.aspx

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (https://ipr.etsi.org/).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

Foreword

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

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under http://webapp.etsi.org/key/queryform.asp.

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Contents

Foreword

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

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

The present document is part 1 of a multi-part deliverable covering the 5G System (5GS) User Equipment (UE) conformance specification, as identified below:

- **3GPP TS 38.508-1: "5GS; User Equipment (UE) conformance specification; Part 1: Common test environment"** (the present document).
- 3GPP TS 38.508-2 [10]: "5GS; User Equipment (UE) conformance specification; Part 2: Common Implementation Conformance Statement (ICS) proforma".

1 Scope

The present document defines the test environment for the 5G System.

This specification covers all aspects, including NG-RAN, 5GC and interworking between 5GS and EPS used for conformance tests of User Equipment (UE).

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 36.508: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification".

[3] 3GPP TS 36.300: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access (E-UTRAN); Overall description; Stage 2".

[4] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC) protocol specification".

[5] 3GPP TS 38.300: "NR; Overall description; Stage 2".

[6] 3GPP TS 38.331: "NR; Radio Resource Control (RRC); Protocol specification".

[7] 3GPP TS 38.101-1: “NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone”.

[8] 3GPP TS 38.101-2: “NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone”.

[9] 3GPP TS 38.101-3: “NR; User Equipment (UE) radio transmission and reception; Part 3: Range 1 and Range 2 Interworking operation with other radios”.

[10] 3GPP TS 38.508-2: "5GS; User Equipment (UE) conformance specification; Part 2: Common Implementation Conformance Statement (ICS) proforma".

[11] 3GPP TS 38.509: "5GS; Special conformance testing functions for User Equipment (UE)".

[12] 3GPP TS 38.523-1: "5GS; User Equipment (UE) conformance specification; Part 1: Protocol".

[13] 3GPP TS 38.133: “NR; Requirements for support of radio resource management”.

[14] 3GPP TS 38.521-1: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: Range 1 Standalone".

[15] 3GPP TS 38.521-2: “NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: Range 1 Standalone”.

[16] 3GPP TS 38.521-3: “NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 3: Range 1 and Range 2 Interworking operation with other radios”.

[17] 3GPP TS 38.521-4: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 4: Performance".

[18] 3GPP TS 38.533: "NR; User Equipment (UE) conformance specification; Radio resource management".

[19] 3GPP TS 38.523-2: "5GS; User Equipment (UE) conformance specification; Part 2: Applicability of protocol test cases".

[20] 3GPP TS 38.321: "NR; Medium Access Control (MAC) protocol specification".

[21] 3GPP TS 36.214: "Evolved Universal Terrestrial Radio Access (E-UTRA); Physical layer; Measurements".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

3.2 Symbols

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

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP 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 3GPP TR 21.905 [1].

4 Common test environments

4.1 Environmental conditions

The requirements in this clause apply to all types of UE(s).

4.1.1 Temperature

Regarding FR1 the UE shall fulfil all the requirements in the full temperature range of:

Table 4.1.1-1: Temperature conditions for FR1

+15°C to +35°C	For normal conditions (with relative humidity of 25 % to 75 %)
-10°C to +55°C	For extreme conditions (see IEC publications 68-2-1 and 68-2-2)

Outside this temperature range the UE, if powered on, shall not make ineffective use of the radio frequency spectrum. In no case shall the UE exceed the transmitted levels as defined in clause 6.2 for extreme operation.

The normative reference for this requirement is TS 38.101-1 [7] Annex E.2.

All RF requirements for UEs operating in FR2 are defined over the air and can only be tested in an OTA chamber.

Regarding FR2 the UE shall fulfil all requirements in the temperature range defined in Table 4.1.1-2.

Table 4.1.1-2: Temperature conditions

+ 25 °C ± [10] °C	For normal (room temperature) conditions with relative humidity of 25% to 75%
-10°C to +55°C	For extreme conditions

Outside this temperature range the UE, if powered on, shall not make ineffective use of the radio frequency spectrum. In no case shall the UE exceed the transmitted levels as defined in TS 38.101-2[8] for extreme operation.

The normative reference for this requirement is TS 38.101-2 [8] Annex E.1.

Some tests are performed also in extreme temperature conditions. These test conditions are denoted as TL (temperature low, -10°C) and TH (temperature high, +55°C).

4.1.2 Voltage

Editor's Note: This clause is incomplete. The following items are missing or are incomplete:

- Methodology to control the voltage in a case which a power cable is not connected to DUT is FFS since it is not agreed whether we can connect the power cable to DUT at the OTA measurement situation yet.

Regarding both FR1 and FR2 the UE shall fulfil all the requirements in the full voltage range, i.e. the voltage range between the extreme voltages.

The manufacturer shall declare the lower and higher extreme voltages and the approximate shutdown voltage. For the equipment that can be operated from one or more of the power sources listed below, the lower extreme voltage shall not be higher, and the higher extreme voltage shall not be lower than that specified below.

Table 4.1.2-1: Voltage conditions

Power source	Lower extreme voltage	Higher extreme voltage	Normal conditions voltage
AC mains	0,9 * nominal	1,1 * nominal	nominal
Regulated lead acid battery	0,9 * nominal	1,3 * nominal	1,1 * nominal
Non regulated batteries: Leclanché Lithium Mercury/nickel & cadmium	 0,85 * nominal 0,95 * nominal 0,90 * nominal	 Nominal 1,1 * Nominal	 Nominal 1,1 * Nominal Nominal

Outside this voltage range the UE if powered on, shall not make ineffective use of the radio frequency spectrum. In no case shall the UE exceed the transmitted levels as defined in TS 38.101-2[8] for extreme operation. In particular, the UE shall inhibit all RF transmissions when the power supply voltage is below the manufacturer declared shutdown voltage.

The normative reference for this requirement is TS 38.101-1 [7] Annex E.2 and TS 38.101-2 [8] Annex E.2.

Some tests are performed also in extreme voltage conditions. These test conditions are denoted as VL (lower extreme voltage) and VH (higher extreme voltage).

4.2 Common requirements of test equipment

Mobile conformance testing can be categorized into 3 distinct areas:

- RF Conformance Testing consisting of:
  - Transmission and Reception Conformance Testing.
  - Performance Conformance Testing.
- RRM Conformance Testing.
- Signalling Conformance Testing.

The test equipment required for each category of testing may or not be different, depending on the supplier of the test equipment. However, there will be some generic requirements of the test equipment that are essential for all three categories of test, and these are specified in this clause.

In addition, there will be requirements to test operation in multi-system configurations other than E-UTRA and NR dual connectivity (EN-DC). However, these would not form a common test equipment requirement for the three test areas and are not considered in the present document.

4.2.1 General functional requirements

NOTE: This clause has been written such that it does not constrain the implementation of different architectures and designs of test equipment.

All test equipment used to perform conformance testing for frequency range 1 on a UE shall provide the following minimum functionality:

- Conducted test method

All test equipment used to perform conformance testing for frequency range 2 on a UE shall provide the following minimum functionality:

- OTA test method

All test equipment used to perform conformance testing on a UE shall provide a platform suitable for testing UE's that are either:

- non-standalone(NSA) mode; or
- standalone(SA) mode.

All test equipment used to perform conformance testing on a UE shall provide a platform suitable for testing UE's that are either of following duplex mode for NR and E-UTRA (NSA only) respectively.

a) FDD Mode; or

b) TDD Mode; or

c) both FDD/TDD Modes.

All test equipment shall provide the following minimum functionality.

- The capability of emulating a single NR cell and a single E-UTRA (for NSA mode only) cell with the appropriate channels to allow the UE to register on the cell.
- The capability to allow the UE to set up an RRC connection with the system simulator, and to maintain the connection for the duration of the test.
- The capability (for the specific test):
  - to select and support an appropriate radio bearer for the downlink;
  - to set up and support the appropriate radio bearer for the uplink;

4.2.2 Minimum functional requirements

4.2.2.1 Supported Cell Configuration

The System Simulator shall provide the capability to simulate a minimum number of cells whose number and capabilities are governed by the test cases that need to be performed (test cases are defined in 3GPP TS 38.523-1 [12](Signalling), 3GPP TS 38.521-1 [14], 38.521-2 [15], 38.521-3 [16] (TRx) and 38.521-4 [17] (Performance) and 3GPP TS 38.533 [18] (RRM).

To perform test cases requiring multiple cell(s), the system simulator shall provide multiple cells offering the capabilities as required by the test case.

The type and number of channels (especially physical channels) constitute an important set of capabilities for a cell. The following clauses list possible channels that may be supported by the SS. Each channel type, however, and the minimum number of channels needed are only mandatory if specific test cases require them.

The mapping between Logical and Transport channels is as described in 3GPP TS 38.321 [20]. Similarly, the mapping between Transport channels and Physical channels is as described in 3GPP TS 38.211, TS 38.302 and TS 38.212. The reference measurement channels (mapping between Transport channels and Physical channels for PDSCH/PDCCH) are defined in 3GPP TS 38.521-1 [14] annex A

4.2.2.1.1 Supported Channels for an E-UTRA cell (NSA mode only)

Requirement for supported channels for E-UTRA cell is described in TS 36.508[2].

4.2.2.1.2 Supported Channels for a NR cell

4.2.2.1.1.1 Logical channels

Logical channel	Minimum number	Comments
BCCH	0 for EN-DC, TBD for SA	
CCCH	0 for EN-DC, TBD for SA	
DCCH	0 for EN-DC, TBD for SA	Split SRB or SRB3 is optional in EN-DC
PCCH	0 for EN-DC, TBD for SA	
DTCH	n	Depending on SS's support for RB service testing

4.2.2.1.1.2 Transport channels

Transport channel	Minimum number	Comments
BCH	1	
PCH	N/A for EN-DC, TBD for SA	
RACH	1	
DL-SCH	1	
UL-SCH	1	

4.2.2.1.1.3 Physical channels

Physical channel	Minimum number	Comments
PBCH	1	Physical Broadcast Channel
PDCCH	1	The physical downlink control channel carries scheduling assignments and other control information.
PDSCH	1	Physical Downlink Shared Channel
PUCCH	1	The physical uplink control channel carries uplink control information
PUSCH	1	Physical Uplink Shared Channel
PRACH	1	Physical Random Access Channel

4.2.2.1.1.4 Physical signals

Physical signal	Minimum number	Comments
Demodulation reference signal	NA	UL
Sounding Reference signal	NA	UL, if applicable
Phase Tracking Reference Signal	NA	UL, if applicable
Demodulation reference signal(PDSCH)	NA	DL
Demodulation reference signal(PDCCH)	NA	DL
Demodulation reference signal(PBCH)	NA	DL

Physical signal	Minimum number	Comments
Phase Tracking Reference Signal	NA	DL, if applicable
CSI reference signal	NA	DL
Primary synchronisation signal	NA	DL
Secondary synchronisation signal	NA	DL

4.3 Reference test conditions

4.3.1 Test frequencies

The test frequencies are based on operating bands defined in TS 38.101-1 [7], TS 38.101-2 [8] and TS 38.101-3 [9].

Editor's note: The lists of test frequencies of NR operating bands and band combinations should be selected and updated based on TS 38.101-1,2,3 and specific test requirements evolvement. The example table formats are based on TS 36.508 [2] for one operating band and two operating bands. Details and further enhancement are needed, but the intention is to create a uniform structure.

The Mid test channel bandwidth definition for RF is given in Table 4.3.1-1 and Table 4.3.1-2 for FR1 and FR2 respectively.

Table 4.3.1-1: Mid Test Channel bandwidths for each NR band, FR1

NR band / UE Mid Test Channel bandwidth	
NR Band	Mid [MHz]
n1	15
n2	15
n3	15
n5	15
n7	15
n8	15
n20	15
n28	15
n38	15
n41	50
n50	40
n51	5
n66	20
n70	15
n71	15
n74	15
n75	15
n76	5
n77	50
n78	50
n79	60
n80	20
n81	15
n82	15
n83	15
n84	15

Table 4.3.1-2 Mid Test Channel bandwidths for each NR band, FR2

NR band / UE Mid Test Channel bandwidth	
NR Band	**Mid [MHz]**
n257	[200]
n258	[200]
n260	[200]
NOTE 1:	If Mid channel bandwidth is not supported by the UE in UL and/or DL, select the closest lower channel BW supported by the UE in both UL and DL.

4.3.1.1 Test frequencies for NR operating bands in FR1

4.3.1.1.1 Operating bands in FR1

4.3.1.1.1.1 Reference test frequencies for NR operating band n1

Table 4.3.1.1.1.1-1: NR operating band n1

Range	Bandwidth [MHz]	FFS	Frequency of Uplink [MHz]	FFS	Frequency of Downlink [MHz]
Low Range	FFS				
	FFS				
Mid Range	FFS				
High Range	FFS				
	FFS				

4.3.1.1.1.2 Reference test frequencies for NR operating band n2

Table 4.3.1.1.1.2-1: NR operating band n2

Range	Bandwidth [MHz]	FFS	Frequency of Uplink [MHz]	FFS	Frequency of Downlink [MHz]
Low Range	FFS				
	FFS				
Mid Range	FFS				
High Range	FFS				
	FFS				

4.3.1.1.1.3 – 4.3.1.1.1.40 FFS

4.3.1.1.1.41 Reference test frequencies for NR operating band n41

4.3.1.1.1.41.1 SCS 15 kHz

Table 4.3.1.1.1.41.1-1: Common parameters for SCS 15 kHz in NR operating band n41

	point A [MHz]	point A [ARFCN]	k0
DL	2496.015	499203	[0]
UL	2496.015	499203	[0]

Table 4.3.1.1.1.41.1-2: SSB for SCS 15 kHz in NR operating band n41

SSB ID	GSCN [N]	GSCN [MHz]	SSB [ARFCN]	k_{SSB}	Bandwidth [MHz]	Bandwidth [RBs]	offset point A to SSB midpoint [RBs]
Low Range	FFS	FFS	FFS	FFS	FFS	FFS	FFS
	FFS	FFS	FFS	FFS	FFS	FFS	FFS
Mid Range	134	2592.96	518592	7	10	52	512
	FFS	FFS	FFS	FFS	FFS	FFS	FFS
High Range	FFS	FFS	FFS	FFS	FFS	FFS	FFS
	FFS	FFS	FFS	FFS	FFS	FFS	FFS

Table 4.3.1.1.1.41.1-3: Test frequencies for NR operating band n41

Test Frequency ID	Bandwidth [MHz]	Bandwidth [RBs]	offset pointA to carrier [RBs]
Low Range	10	52	0
	15	79	0
	20	106	0
	40	216	0
	50	270	0
Mid Range	10	52	512
	15	79	499
	20	106	485
	40	216	430
	50	270	403
High Range	10	52	1024
	15	79	997
	20	106	970
	40	216	860
	50	270	806

4.3.1.1.1.41.2 SCS 30 kHz

Table 4.3.1.1.1.41.2-1: Common parameters for SCS 30 kHz in NR operating band n41

	point A [MHz]	point A [ARFCN]	k0
DL	2496.030	499206	[0]
UL	2496.030	499206	[0]

Table 4.3.1.1.1.41.2-2: SSB for SCS 30 kHz in NR operating band n41

SSB ID	GSCN [N]	GSCN [MHz]	SSB [ARFCN]	k_{SSB}	Bandwidth [MHz]	Bandwidth [RBs]	offset point A to SSB midpoint [RBs]
Low Range	FFS	FFS	FFS	FFS	FFS	FFS	FFS
	FFS	FFS	FFS	FFS	FFS	FFS	FFS
Mid Range	134	2592.96	518592	6	10	24	257
	FFS	FFS	FFS	FFS	FFS	FFS	FFS
High Range	FFS	FFS	FFS	FFS	FFS	FFS	FFS
	FFS	FFS	FFS	FFS	FFS	FFS	FFS
Note 1: k_{SSB} is expressed in terms of 15 kHz subcarrier spacing							

Table 4.3.1.1.1.41.2-3: Test frequencies for NR operating band n41

Test Frequency ID	Bandwidth [MHz]	Bandwidth [RBs]	offset pointA to carrier [RBs]
Low Range	10	24	0
	15	38	0
	20	51	0
	40	106	0
	50	133	0
	60	162	0
	80	217	0
	100	273	0
Mid Range	10	24	256
	15	38	249
	20	51	243
	40	106	215
	50	133	202
	60	162	187
	80	217	160
	100	273	132
High Range	10	24	513
	15	38	499
	20	51	486
	40	106	431
	50	133	404
	60	162	375
	80	217	320
	100	273	264

4.3.1.1.1.41.3 SCS 60 kHz

Table 4.3.1.1.1.41.3-1: Common parameters for SCS 60 kHz in NR operating band n41

	point A [MHz]	point A [ARFCN]	k0
DL	2496.060	499212	[0]
UL	2496.060	499212	[0]

Table 4.3.1.1.1.41.3-2: SSB for SCS 60 kHz in NR operating band n41

SSB ID	GSCN [N]	GSCN [MHz]	SSB [ARFCN]	k_{SSB}	Bandwidth [MHz]	Bandwidth [RBs]	offset point A to SSB midpoint [RBs]
Low Range	FFS	FFS	FFS	FFS	FFS	FFS	FFS
	FFS	FFS	FFS	FFS	FFS	FFS	FFS
Mid Range	134	2592.96	518592	4	10	11	129
	FFS	FFS	FFS	FFS	FFS	FFS	FFS
High Range	FFS	FFS	FFS	FFS	FFS	FFS	FFS
	FFS	FFS	FFS	FFS	FFS	FFS	FFS
Note 1: is expressed in terms of 15 kHz subcarrier spacing							

Table 4.3.1.1.1.41.3-3: Test frequencies for NR operating band n41

Test Frequency ID	Bandwidth [MHz]	Bandwidth [RBs]	offset pointA to carrier [RBs]
Low Range	10	11	0
	15	18	0
	20	24	0
	40	51	0
	50	65	0
	60	79	0
	80	107	0
	100	135	0
Mid Range	10	11	129
	15	18	125
	20	24	122
	40	51	109
	50	65	102
	60	79	94
	80	107	81
	100	135	67
High Range	10	11	258
	15	18	251
	20	24	245
	40	51	218
	50	65	204
	60	79	190
	80	107	162
	100	135	134

4.3.1.1.1.42 – 4.3.1.1.1.70 FFS

4.3.1.1.1.71 Reference test frequencies for NR operating band n71

4.3.1.1.1.71.1 SCS 15 kHz

Table 4.3.1.1.1.71.1-1: Common parameters for SCS 15 kHz in NR operating band n71

	point A [MHz]	point A [ARFCN]	k0
DL	617.01	123402	[0]
UL	663.01	132602	[0]

Table 4.3.1.1.1.71.1-2: SSB for SCS 15 kHz in NR operating band n71

SSB ID	GSCN [N]	GSCN [MHz]	SSB [ARFCN]	k_{SSB}	Bandwidth [MHz]	Bandwidth [RBs]	offset point A to SSB midpoint [RBs]
Low Range	FFS	FFS	FFS	FFS	FFS	FFS	FFS
	FFS	FFS	FFS	FFS	FFS	FFS	FFS
Mid Range	[2114]	[634.505]	[126901]	[9]	10	52	[103]
	FFS	FFS	FFS	FFS	FFS	FFS	FFS
High Range	FFS	FFS	FFS	FFS	FFS	FFS	FFS
	FFS	FFS	FFS	FFS	FFS	FFS	FFS

Table 4.3.1.1.1.71.1-3: DL Test frequencies for NR operating band n71

Test Frequency ID	Bandwidth [MHz]	Bandwidth [RBs]	offset pointA to carrier [RBs]
Low Range	5	25	0
	10	52	0
	15	79	0
	20	106	0
Mid Range	5	25	85
	10	52	71
	15	79	58
	20	106	44
High Range	5	25	168
	10	52	141
	15	79	114
	20	106	87

Table 4.3.1.1.1.71.1-4: UL Test frequencies for NR operating band n71

Test Frequency ID	Bandwidth [MHz]	Bandwidth [RBs]	offset pointA to carrier [RBs]
Low Range	5	25	0
	10	52	0
	15	79	0
	20	106	0
Mid Range	5	25	85
	10	52	71
	15	79	58
	20	106	44
High Range	5	25	168
	10	52	141
	15	79	114
	20	106	87

4.3.1.1.1.71.2 SCS 30 kHz

Table 4.3.1.1.1.71.2-1: Common parameters for SCS 30 kHz in NR operating band n71

	point A [MHz]	point A [ARFCN]	k0
DL	617.015	123403	[0]
UL	663.015	132603	[0]

Table 4.3.1.1.1.71.2-2: SSB for SCS 30 kHz in NR operating band n71

SSB ID	GSCN [N]	GSCN [MHz]	SSB [ARFCN]	k_{SSB}	Bandwidth [MHz]	Bandwidth [RBs]	offset point A to SSB midpoint [RBs]
Low Range	FFS	FFS	FFS	FFS	FFS	FFS	FFS
	FFS	FFS	FFS	FFS	FFS	FFS	FFS
Mid Range	[2114]	[634.505]	[126901]	[9]	10	52	[103]
	FFS	FFS	FFS	FFS	FFS	FFS	FFS
High Range	FFS	FFS	FFS	FFS	FFS	FFS	FFS
	FFS	FFS	FFS	FFS	FFS	FFS	FFS
Note 1: k_{SSB} is expressed in terms of 15 kHz subcarrier spacing							

Table 4.3.1.1.1.71.2-3: DL Test frequencies for NR operating band n71

Test Frequency ID	Bandwidth [MHz]	Bandwidth [RBs]	offset pointA to carrier [RBs]
Low Range	10	24	0
	15	38	0
	20	51	0
Mid Range	10	24	35
	15	38	28
	20	51	22
High Range	10	24	72
	15	38	58
	20	51	45

Table 4.3.1.1.1.71.2-4: UL Test frequencies for NR operating band n71

Test Frequency ID	Bandwidth [MHz]	Bandwidth [RBs]	offset pointA to carrier [RBs]
Low Range	10	24	0
	15	38	0
	20	51	0
Mid Range	10	24	35
	15	38	28
	20	51	22
High Range	10	24	72
	15	38	58
	20	51	45

4.3.1.1.2 Intra-band CA in FR1

4.3.1.1.3 Inter-band CA in FR1

4.3.1.1.4 Operating bands for DC in FR1

4.3.1.1.5 Operating band combination for SUL in FR1

4.3.1.2 Test frequencies for NR operating bands in FR2

4.3.1.2.1 Operating bands in FR2

Table 4.3.1.2.1-1: NR operating band n257

Range	Bandwidth [MHz]	FFS	Frequency of Uplink [MHz]	FFS	Frequency of Downlink [MHz]
Low Range	FFS				
	FFS				
Mid Range	FFS				
High Range	FFS				
	FFS				

Table 4.3.1.2.1-2: NR operating band n258

Range	Bandwidth [MHz]	FFS	Frequency of Uplink [MHz]	FFS	Frequency of Downlink [MHz]
Low Range	FFS				
	FFS				
Mid Range	FFS				
High Range	FFS				
	FFS				

4.3.1.2.2 Intra-band CA in FR2

4.3.1.2.3 Inter-band CA in FR2

4.3.1.3 Test frequencies for NR operation with other radios

4.3.1.3.1 Inter-band CA

Table 4.3.1.3.1-1: Inter-band CA combination CA_n71A_n257A

Range	FFS	NR FR1					NR FR2				
		BW [RB]	FFS	f_{UL} [MHz]	FFS	f_{DL} [MHz]	BW [RB]	FFS	f_{UL} [MHz]	FFS	f_{DL} [MHz]
Low	FFS										
	FFS										
Mid	FFS										
	FFS										
High	FFS										
	FFS										

4.3.1.3.2 EN-DC (two bands)

4.3.1.3.2.1 Reference test frequencies for EN-DC combinations beginning with B1

Table 4.3.1.3.2.1-28: EN-DC combination DC_1_n28

Range	FFS	E-UTRA					NR				
		BW [RB]	N_{UL}	f_{UL} [MHz]	N_{DL}	f_{DL} [MHz]	BW [RB]	FFS	f_{UL} [MHz]	FFS	f_{DL} [MHz]
Low	FFS										
	FFS										
Mid	FFS										
	FFS										
High	FFS										
	FFS										

4.3.1.3.2.2 – 4.3.1.3.24 FFS

4.3.1.3.2.25 Reference test frequencies for EN-DC combinations beginning with B25

4.3.1.3.2.25.1 – 4.3.1.3.2.25.40 FFS

4.3.1.3.2.25.41 Reference test frequencies for EN-DC combination DC_25A_n41A / DC_25A_n41A

The test frequencies for B25A are found in TS 36.508 [2] Table 4.3.1.1.25-1.

The test frequencies for n41A are found in sub clause 4.3.1.1.1.41:

4.3.1.3.2.26 – 4.3.1.3.2.40 FFS

4.3.1.3.2.41 Reference test frequencies for EN-DC combinations beginning with B41

4.3.1.3.2.41.1 – 4.3.1.3.2.41.40 FFS

4.3.1.3.2.41.41 Reference test frequencies for EN-DC combination DC_(n)41AA / DC_(n)41AA

Table 4.3.1.3.2.41.41-1 identifies the EARFCN and frequency of the LTE CC for each NR CC. Test frequencies for NR operating band n41, SCS 30 kHz, are defined in 4.3.1.1.1.41.2.

Table 4.3.1.3.2.41.41-1: Test frequencies for EN-DC combination DC_(n)41AA / DC_(n)41AA (two bands)

Test Frequency ID	NR Bandwidth [MHz]	LTE Bandwidth [MHz]	LTE EARFCN	LTE Freq [MHz]
Low Range (LTE-NR)	40	20	FFS	FFS
	60	20	FFS	FFS
	80	20	FFS	FFS
	100	20	FFS	FFS
(NR-LTE)	40	20	FFS	FFS
	60	20	FFS	FFS
	80	20	FFS	FFS
	100	20	FFS	FFS
Mid Range (LTE-NR)	40	20	40324	2563.43
	60	20	40224	2553.35
	80	20	40126	2543.63
	100	20	40026	2533.55
(NR-LTE)	40	20	40906	2621.59
	60	20	41007	2631.67
	80	20	41108	2641.75
	100	20	41208	2651.83
High Range (LTE-NR)	40	20	FFS	FFS
	60	20	FFS	FFS
	80	20	FFS	FFS
	100	20	FFS	FFS
(NR-LTE)	40	20	FFS	FFS
	60	20	FFS	FFS
	80	20	FFS	FFS
	100	20	FFS	FFS

4.3.1.3.2.41.41A Reference test frequencies for EN-DC combination DC_41A_n41A / DC_41A_n41A

Table 4.3.1.3.2.41.41A-1 identifies the EARFCN and frequency of the LTE CC for each NR CC. Test frequencies for NR operating band n41, SCS 30 kHz, are defined in 4.3.1.1.1.41.2.

Table 4.3.1.3.2.41.41A-1: Test frequencies for EN-DC combination DC_41A_(n)41A / DC_41A_(n)41A (two bands)

Test Frequency ID	NR Bandwidth [MHz]	LTE Bandwidth [MHz]	LTE EARFCN	LTE Freq [kHz]
Low Range (LTE-NR)	40	20	FFS	FFS
	60	20	FFS	FFS
	80	20	FFS	FFS
	100	20	FFS	FFS
(NR-LTE)	40	20	FFS	FFS
	60	20	FFS	FFS
	80	20	FFS	FFS
	100	20	FFS	FFS
Mid Range (LTE-NR)	40	20	40224	2553.43
	60	20	40124	2543.35
	80	20	40026	2533.63
	100	20	39926	2523.55
(NR-LTE)	40	20	41006	2631.59
	60	20	41107	2641.67
	80	20	41208	2651.75
	100	20	41308	2661.83
High Range (LTE-NR)	40	20	FFS	FFS
	60	20	FFS	FFS
	80	20	FFS	FFS
	100	20	FFS	FFS
(NR-LTE)	40	20	FFS	FFS
	60	20	FFS	FFS
	80	20	FFS	FFS
	100	20	FFS	FFS

4.3.1.3.3 EN-DC (three bands)

4.3.1.3.4 EN-DC (four bands)

4.3.1.3.5 EN-DC (five bands)

4.3.2 Radio conditions

4.3.2.1 FR1, normal propagation condition for connected

The downlink connection between the System Simulator and the UE is without Additive White Gaussian Noise, and has no fading or multipath effects.

The uplink connection between the UE and System Simulator is without Additive White Gaussian Noise, and has no fading or multipath effects.

4.3.2.2 FR2, condition for OTA

FFS

4.3.3 Physical channel allocations

4.3.3.1 E-UTRA

The same physical channel allocations as in TS 36.508 [2] clause 4.3.3 applies.

4.3.3.2 NR

4.3.3.2.1 Antennas

For FR1 testing, if the UE has two or four Rx antennas, the same downlink signal is applied to each antenna. All UE Rx antennas shall be connected unless otherwise stated in the test case.

4.3.3.2.2 Downlink physical channels and physical signals

FFS

4.3.3.2.3 Mapping of downlink physical channels and signals to physical resources

Parameters for mapping of downlink physical channels and signals are specified as follows.

Normal Cyclic Prefix

N_{ID}^{cell}, Physical layer cell identity = [100] is used as the default physical layer cell identity
SCS, Subcarrier spacing = 15 kHz for FR1 FDD (the same SCS is used for synch and data)
SCS, Subcarrier spacing = 30 kHz for FR1 TDD (the same SCS is used for synch and data), except for band n51 where SCS = 15 kHz
SCS, Subcarrier spacing = 120 kHz for FR2 TDD (the same SCS is used for synch and data)

For Signalling testing, the default system bandwidth is [10] MHz and single SS Tx antenna is used, in FR1, unless specified otherwise in the test case. The mapping of downlink physical channels to physical resources for Single Tx Antenna is FFS

For RF testing, the mapping of DL physical channels to resource element is defined in TBD

4.3.3.2.4 Uplink physical channels and physical signals

[FFS].

4.3.3.2.5 Mapping of uplink physical channels and signals to physical resources

[FFS].

4.3.4 Signal levels

4.3.4.1 Signal levels for conducted testing

4.3.4.1.1 Downlink signal levels

For E-UTRA cell in EN-DC with FR1 NR, the downlink power setting specified in Table 4.3.4.1-1 of TS 36.508[2] are used unless otherwise specified in a test case.

4.3.4.2 Signal levels for OTA testing

As defined in clause 5.2.1.2 for RF tests.

As defined in clause 6.2.1.2 for Signalling tests.

As defined in clause 7.2.1.2 for RRM tests.

4.3.5 Standard test signals

4.3.6 Physical layer parameters

4.3.6.1 Downlink physical layer parameters

4.3.6.1.1 Physical layer parameters for scheduling of PUSCH

4.3.6.1.1.1 Physical layer parameters for DCI format 0_0

DCI format 0_0 is used for the scheduling of PUSCH in one cell.

Default physical layer parameters for DCI format 0_0 are specified in table 4.3.6.1.1.1-1.

Table 4.3.6.1.1.1-1: Physical layer parameters for DCI format 0_0

Parameter	Value	Value in binary
Identifier for DCI formats	Indicating an UL DCI format	[“0”]
Frequency domain resource assignment	Dependent on test parameters	-
Time domain resource assignment	Dependent on test parameters	-
Frequency hopping flag	[w/o hopping]	[“0”]
Modulation and coding scheme	Dependent on test parameters	
New data indicator	Set for every data transmission/retransmission according to the rules specified in TS 38.321	-
Redundancy version	Dependent on test parameters	-
HARQ process number	Depending on test parameters	-
TPC command for scheduled PUSCH	[0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213]	[“01”]
UL/SUL indicator	[Not present (0 bit for UEs not configured with SUL in the cell]	-

4.3.6.1.1.2 Physical layer parameters for DCI format 0_1

DCI format 0_1 is used for the scheduling of PUSCH in one cell.

Default physical layer parameters for DCI format 0_1 are specified in table 4.3.6.1.1.2-1.

Table 4.3.6.1.1.2-1: Physical layer parameters for DCI format 0_1

Parameter	Value	Value in binary
Carrier indicator	[Not present]	-
UL/SUL indicator	[Not present (0 bit for UEs not configured with SUL in the cell)]	-
Identifier for DCI formats	Indicating an UL DCI format	[“0”]
Bandwidth part indicator	[Not present (indicating active BWP, not present in case of only one *BWP-Id* as per Table 4.6.3-4)]	-
Frequency domain resource assignment	Dependent on test parameters	-
Time domain resource assignment	Dependent on test parameters	-
Frequency hopping flag	[Not present]	-
Modulation and coding scheme	Dependent on test parameters	-
New data indicator	Set for every data transmission/retransmission according to the rules specified in TS 38.321	-
Redundancy version	Dependent on test parameters	-
HARQ process number	Depending on test parameters	-
1st downlink assignment index	[$V_{\mathrm{T-DAI}}^{\mathrm{UL}}$ = 1 as per Table 9.1.3-2 in TS 38.213]	[“00”]
2nd downlink assignment index	[Not present (0 bit if one HARQ-ACK sub-codebook)]	-
TPC command for scheduled PUSCH	[0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213]	[“01”]
SRS resource indicator	[Not present]	-
Precoding information and number of layers	[Not present (0 bits for 1 antenna port and *TxConfig* = Codebook as per Table 4.6.3-15)]	-
Antenna ports	[0 DMRS ports (PUSCH-tp=Disabled, UL-DMRS-config-type=1, UL-DMRS-max-len=1, rank = 1)]	[“000”]
SRS request	No aperiodic SRS resource set triggered as per Table 7.3.1.1.2-24 in TS 38.212 (no SUL configured)	[“00”]
CSI request	[Not present]	-
CBG transmission information	[Not present]	-
PTRS-DMRS association	[DMRS port 0]	[“00”]
beta_offset indicator	[Not present (0 bit if the higher layer parameter dynamic in uci-on-PUSCH is not configured)]	-
DMRS sequence initialization	[n_{SCID} = 0 (ScramblingID0 is not present as per Table 4.6.3-36)]	[“0”]

4.3.6.1.2 Physical layer parameters for scheduling of PDSCH

4.3.6.1.2.1 Physical layer parameters for DCI format 1_0

DCI format 1_0 is used for the scheduling of PDSCH in one cell.

Default physical layer parameters for DCI format 1_0 are specified in table 4.3.6.1.2.1-1.

Table 4.3.6.1.2.1-1: Physical layer parameters for DCI format 1_0

Parameter	Value	Value in binary
Identifier for DCI formats	Indicating a DL DCI format	["01"]
Frequency domain resource assignment	Dependent on test parameters	-
Time domain resource assignment	Dependent on test parameters	-
VRB-to-PRB mapping	[Non-interleaved]	["0"]
Modulation and coding scheme	Dependent on test parameters	-
New data indicator	Set for every data transmission/retransmission according to the rules specified in TS 38.321	-
Redundancy version	Dependent on test parameters	-
HARQ process number	Depending on test parameters	-
Downlink assignment index	[$V_{\text{C-DAI}}^{\text{DL}}$ / $V_{\text{T-DAI}}^{\text{DL}}$ = 1 as per Table 9.1.3-1 in TS 38.213]	["00"]
TPC command for scheduled PUCCH	[0 dB (accumulated TPC) as per Table 7.2.1-1 in TS 38.213]	["01"]
PUCCH resource indicator	[*PUCCH-ResourceId[1]* = [0] as defined in Table 4.6.3-84 (Mapping as per Table 9.2.3-2 in TS 38.213)]	["000"]
PDSCH-to-HARQ_feedback timing indicator	[2 slots as specified in 9.2.3 in TS 38.213]	["001"]

4.3.6.1.2.2 Physical layer parameters for DCI format 1_1

DCI format 1_1 is used for the scheduling of PDSCH in one cell.

Default physical layer parameters for DCI format 1_1 are specified in table 4.3.6.1.2.2-1.

Table 4.3.6.1.2.2-1: Physical layer parameters for DCI format 1_1

Parameter	Value	Value in binary
Carrier indicator	[Not present]	-
Identifier for DCI formats	Indicating a DL DCI format	["1"]
Bandwidth part indicator	[Not present]	-
Frequency domain resource assignment	Dependent on test parameters	-
Time domain resource assignment	Dependent on test parameters	-
VRB-to-PRB mapping	[Non-interleaved]	["0"]
PRB bundling size indicator	[Not present (semi-static PRB_bundling)]	-
Rate matching indicator	[Not present]	-
ZP CSI-RS trigger	[Not present]	-
Modulation and coding scheme (TB1)	Dependent on test parameters	-
New data indicator (TB1)	Set for every data transmission/retransmission according to the rules specified in TS 38.321	-
Redundancy version (TB1)	Dependent on test parameters	-
Modulation and coding scheme (TB2)	Dependent on test parameters	-
New data indicator (TB2)	Set for every data transmission/retransmission according to the rules specified in TS 38.321	-
Redundancy version (TB2)	Dependent on test parameters	-
HARQ process number	Depending on test parameters	-
Downlink assignment index	[$V_{\text{C-DAI}}^{\text{DL}}$ / $V_{\text{T-DAI}}^{\text{DL}}$ = 1 as per Table 9.1.3-1 in TS 38.213]	["00"]
TPC command for scheduled PUCCH	[0 dB (accumulated TPC) as per Table 7.2.1-1 in TS 38.213]	["01"]
PUCCH resource indicator	[*PUCCH-ResourceId[1]* = [0] as defined in Table 4.6.3-84 (Mapping as per Table 9.2.3-2 in TS 38.213)]	["000"]
PDSCH-to-HARQ_feedback timing indicator	[2 slots] as per Table 9.2.3-1 in TS 38.213 and *dl-DataToUL-ACK* in Table [4.6.3-84]	["010"]
Antenna port(s)	[DMRS port 0 as per Table 7.3.1.2.2-1 in TS 38.212 (*dmrs-Type* = [Not present] and *maxLength* = [Not present] as per Table 4.6.3-29)]	["0000"]
Transmission configuration indication	[Not present (0 bits, *tci-PresentInDCI* = [Not present] as per Table 4.6.3-17)]	-
SRS request	No aperiodic SRS resource set triggered as per Table 7.3.1.1.2-24 in TS 38.212 (no SUL configured)	["00"]
CBG transmission information	[Not present]	-
CBG flushing out information	[Not present]	-
DMRS sequence initialization	[n_{SCID} = 0 (scramblingID0 is not present as per Table 4.6.3-29)]	["0"]

4.3.6.1.3 Physical layer parameters for other purposes

4.3.6.1.3.1 Physical layer parameters for DCI format 2_0

DCI format 2_0 is used for notifying the slot format.

Default physical layer parameters for DCI format 2_0 are specified in table 4.3.6.1.3.1-1.

Table 4.3.6.1.3.1-1: Physical layer parameters for DCI format 2_0

Parameter	Value	Value in binary
Identifier for DCI formats	TBD	TBD
Slot format indicator 1	TBD	TBD
Slot format indicator 2	TBD	TBD
Slot format indicator *N*	TBD	TBD

4.3.6.1.3.2 Physical layer parameters for DCI format 2_1

DCI format 2_1 is used for notifying the PRB(s) and OFDM symbol(s) where UE may assume no transmission is intended for the UE.

Default physical layer parameters for DCI format 2_1 are specified in table 4.3.6.1.3.2-1.

Table 4.3.6.1.3.2-1: Physical layer parameters for DCI format 2_1

Parameter	Value	Value in binary
Identifier for DCI formats	TBD	TBD
Pre-emption indication 1	TBD	TBD
Pre-emption indication 2	TBD	TBD
Pre-emption indication N	TBD	TBD

4.3.6.1.3.3 Physical layer parameters for DCI format 2_2

DCI format 2_2 is used for the transmission of TPC commands for PUCCH and PUSCH.

Default physical layer parameters for DCI format 2_2 are specified in table 4.3.6.1.3.3-1.

Table 4.3.6.1.3.3-1: Physical layer parameters for DCI format 2_2

Parameter	Value	Value in binary
Identifier for DCI formats	TBD	TBD
TPC command number 1	[0 dB (accumulated TPC) as per Table 7.1.1-1 and Table 7.2.1-1 in TS 38.213]	[“01”]
TPC command number 2	[0 dB (accumulated TPC) as per Table 7.1.1-1 and Table 7.2.1-1 in TS 38.213]	[“01”]
TPC command number N	[0 dB (accumulated TPC) as per Table 7.1.1-1 and Table 7.2.1-1 in TS 38.213]	[“01”]

4.3.6.1.3.4 Physical layer parameters for DCI format 2_3

DCI format 2_3 is used for the transmission of a group of TPC commands for SRS transmissions by one or more UEs. Along with a TPC command, a SRS request may also be transmitted.

Default physical layer parameters for DCI format 2_3 are specified in table 4.3.6.1.3.4-1.

Table 4.3.6.1.3.4-1: Physical layer parameters for DCI format 2_3

Parameter	Value	Value in binary
Identifier for DCI formats	TBD	TBD
block number 1	TBD	TBD
SRS request (block number 1)	TBD	TBD
TPC command number (block number 1)	[0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213]	["01"]
block number 2	TBD	TBD
SRS request (block number 2)	TBD	TBD
TPC command number (block number 2)	[0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213]	["01"]
block number B	TBD	TBD
SRS request (block number B)	TBD	TBD
TPC command number (block number B)	[0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213]	["01"]

4.4 Reference system configurations

The reference system configurations specified in this sub clause apply to all test cases unless otherwise specified.

4.4.1 Simulated network scenarios

The simulated network scenarios will simulate UE operation in either standalone NR, standalone E-UTRA or in non-standalone NR and E-UTRA networks. For non-standalone case either the NR or the E-UTRA radio access acts as the master anchor node. For both standalone and non-standalone cases, the simulated networks may be single mode networks (FDD or TDD) or dual mode networks (FDD+TDD). For the standalone NR case the simulated networks may also be inter-RAT networks ((FDD or TDD) + (E-UTRA FDD or E-UTRA TDD).

Simulated network scenarios to be tested are listed in this sub clause.

NOTE 1: The number of cells specified does not necessarily correspond to the maximum number of resources to be configured simultaneously in test equipment. Please refer to sub-clause 6.1 for such information.

NOTE 2: For NAS test cases see sub clause 6.3.2.

4.4.1.1 Standalone cell network scenarios

4.4.1.1.1 Standalone E-UTRA single cell and multi cell network scenarios

For standalone E-UTRA FDD or TDD single cell environment see TS 36.508 [2], clause 4.4.1.1.

For standalone E-UTRA FDD or TDD multi cell network scenarios see TS 36.508 [2], clause 4.4.1.2.

4.4.1.1.2 Standalone NR single cell network scenarios

For standalone NR FDD or TDD single cell environment, NR Cell 1 is used.

4.4.1.1.3 Standalone NR single mode multi cell network scenarios

For standalone NR FDD or TDD intra-frequency multi cell environment, NR Cell 1, NR Cell 2 and NR Cell 4 are used.

For standalone NR FDD or TDD inter-frequency multi cell environment, NR Cell 1, NR Cell 3 and NR Cell 6 are used.

For standalone NR FDD or TDD inter-band cell environment, NR Cell 1 and NR Cell 10 are used.

For standalone NR FDD or TDD multi tracking area intra-frequency multi cell environment, NR Cell 1 and NR Cell 11 are used.

For standalone NR FDD or TDD multi tracking area inter-frequency multi cell environment, NR Cell 1 and NR Cell 23 are used.

For standalone NR FDD or TDD multi PLMN inter-frequency multi cell environment, NR Cell 1, NR Cell 12, NR Cell 13 and NR Cell 14 are used.

4.4.1.1.4 Standalone NR dual mode multi cell network scenarios

For standalone NR FDD and TDD multi cell environment, NR Cell 1, NR Cell 10 and NR Cell 31 are used.

For standalone NR FDD and TDD multi PLMN multi cell environment, NR Cell 1, NR Cell 28, NR Cell 29 and NR Cell 30 are used.

In addition, standalone NR single mode multi cell network scenarios defined in clause 4.4.1.1.3 are combined with the dual mode scenarios defined in this clause when additional intra or inter-frequency cells are used.

4.4.1.1.5 Standalone NR 3GPP Inter-RAT network scenarios

For standalone NR FDD or TDD single cell with E-UTRA FDD or E-UTRA TDD single cell inter-RAT environment:

- NR Cell 1 is used for the NR cell; and
- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell.

For standalone NR FDD or TDD single cell with E-UTRA FDD or E-UTRA TDD multi cell inter-RAT environment:

- NR Cell 1 is used for the NR cell; and
- Cell 1, Cell 2 and Cell 4, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and

4.4.1.2 Non-standalone cell network scenarios

4.4.1.2.1 Non-standalone E-UTRA single cell and NR single cell network scenarios

For non-standalone NR FDD or TDD single cell and E-UTRA FDD or TDD single cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1 is used for the NR cell.

4.4.1.2.2 Non-standalone E-UTRA single cell and NR single mode multi cell network scenarios

For non-standalone E-UTRA single cell and FDD or TDD NR intra-frequency single mode multi cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 2 and NR Cell 4 are used for NR cells.

For non-standalone E-UTRA single cell and FDD or TDD NR inter-frequency single mode multi cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 3 and NR Cell 6 are used for the NR cells.

For non-standalone E-UTRA single cell and FDD or TDD NR inter-band single mode multi cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1 and NR Cell 10 are used for the NR cells.

4.4.1.2.3 Non-standalone E-UTRA single mode multi cell and NR single mode multi cell network scenarios

For non-standalone E-UTRA intra-frequency single mode multi cell and FDD or TDD NR intra-frequency single mode multi cell environment:

- E-UTRA Cell 1, Cell 2 and Cell 4, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 2 and NR Cell 4 are used for NR cells.

For non-standalone FDD or TDD E-UTRA intra-frequency single mode multi cell and FDD or TDD NR inter-frequency single mode multi cell environment:

- E-UTRA Cell 1, Cell 2 and Cell 4, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 3 and NR Cell 6 are used for the NR cells.

For non-standalone FDD or TDD E-UTRA inter-frequency single mode multi cell and FDD or TDD NR inter-frequency single mode multi cell environment:

- E-UTRA Cell 1, Cell 3 and Cell 6, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 3 and NR Cell 6 are used for the NR cells.

For non-standalone single E-UTRA cell and FDD or TDD NR inter-band single mode multi cell environment:

- E-UTRA Cell 1, Cell 2 and Cell 4, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and
- NR Cell 1 and NR Cell 10 are used for the NR cells.

4.4.1.2.4 Non-standalone E-UTRA single cell and NR dual mode multi cell network scenarios

Editor's note: It is FFS if the NR dual mode multi cell environment needs to include multiple E-UTRA cells in addition to the multiple NR cells.

For non-standalone single E-UTRA cell and FDD and TDD NR dual mode multi cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 10 and NR Cell 31 are used for the NR cells.

In addition, standalone NR single mode multi cell network scenarios defined in clause 4.4.1.2.2 are combined with the dual mode scenarios defined in this clause when additional intra or inter-frequency NR cells are used.

4.4.2 Simulated cells

NOTE 1: For NAS test cases see subclause [FFS].

NOTE 2: Test frequency and range defined in table 4.4.2-1 do not apply to TS 38.521-1, TS 38.521-2 and TS 38.521-3 test cases.

Test frequencies and simulated NR cells are defined in table 4.4.2-1. Test frequencies and simulated E-UTRA cells are defined in TS 36.508 [2] table 4.4.2-1.

For NR cells, NRf1 is the default test frequency. For E-UTRA cells, f1 as specified in TS 36.508 [2] table 4.2.2-1 is the default test frequency.

Default parameters for simulated NR cells are specified in table 4.4.2-1A and table 4.4.2-2.

Default parameters for simulated E-UTRA cells are specified in TS 36.508 [2] table 4.4.2-1A and table 4.4.2-2.

Common parameters for NR simulated cells are specified in clauses 4.4.3 to 4.4.6A.

Common parameters for E-UTRA simulated cells are specified in TS 36.508 [2] clauses 4.4.3 to 4.4.6A.

Other cell specific parameters are specified in clause 4.4.7.

Editor's note: Notes 2 to 6 in Table 4.4.2-1 for NR cells have been inherited from TS 36.508 [2] Table 4.4.2-1 for E-UTRA cells assuming that similar notes will be needed for NR cells. The notes and the references in the table to the notes are marked by []-brackets pending the confirmation if the notes are needed or not.

Table 4.4.2-1: Definition of test frequencies and simulated NR cells

Test frequency	RAT	Operating band	Range	Simulated NR cells
NRf1	NR	Operating band under test	Mid ([Note 1], [Note 3], [Note 6])	NR Cell 1, NR Cell 2, NR Cell 4, NR Cell 11 ([Note 2])
NRf2	NR	Operating band under test	High ([Note 1], [Note 4], [Note 6])	NR Cell 3, NR Cell 12, NR Cell 23
NRf3	NR	Operating band under test	Low ([Note 1], [Note 5], [Note 6])	NR Cell 6, NR Cell 13
NRf4	NR	Operating band under test	([Note 1])	NR Cell 14
NRf5	NR	Operating band for inter-band cells	Mid ([Note 1])	NR Cell 10, NR Cell 30, NR Cell 31
NRf6	NR	Operating band for inter-band cells	High ([Note 1])	NR Cell 28, NR Cell 29
NRf7	NR	Operating band for inter-band cells	Low ([Note 1])	

[Note 1: For signalling test, see clause [6.2.3].]
[Note 2: For signalling test, simultaneous co-existence of NR Cell 2 with NR Cell 11 is not allowed.]
[Note 3: For RRM test with intra-band contiguous CA, the set of contiguous component carriers are “Mid”, with the test frequencies specified in clauses [4.3.1.1.xA] for FDD and [4.3.1.2.xA] for TDD]
[Note 4: For RRM test with intra-band contiguous CA, the set of contiguous component carriers are “High”, with the test frequencies specified in clauses [4.3.1.1.xA] for FDD and [4.3.1.2.xA] for TDD]
[Note 5: For RRM test with intra-band contiguous CA, the set of contiguous component carriers are “Low”, with the test frequencies specified in clauses [4.3.1.1.xA] for FDD and [4.3.1.2.xA] for TDD.]
[Note 6: For RRM test with intra-band non-contiguous CA, the test frequencies for the set of non-contiguous component carriers are specified in clauses [4.3.1.1.xA] for FDD and [4.3.1.2.xA] for TDD without any regard to range. Thus “Low”, “Mid” and “High” information in this table does not apply. Unless otherwise stated, test point with maximum Wgap is chosen.]

Table 4.4.2-2: Default NR parameters for simulated NR cells

cell ID	NR Cell Identifier		Physical layer cell identity	PRACH-rootSequenceIndex FDD	PRACH-rootSequenceIndex TDD
	gNB Identifier	Cell Identity		$L_{RA} = 139$ Note 1	$L_{RA} = 139$ Note 1
NR Cell 1	'0000 0000 0000 0000 0001'B	'0000 0000'B	0	0	0
NR Cell 2	'0000 0000 0000 0000 0001'B	'0000 0010'B	2	32	32
NR Cell 3	'0000 0000 0000 0000 0010'B	'0000 0011'B	3	0	0
NR Cell 4	'0000 0000 0000 0000 0011'B	'0000 0100'B	4	64	64
NR Cell 6	'0000 0000 0000 0000 0100'B	'0000 0110'B	6	0	0
NR Cell 10	'0000 0000 0000 0000 0101'B	'0000 1010'B	10	0	0
NR Cell 11	'0000 0000 0000 0000 0110'B	'0000 1011'B	11	96	96
NR Cell 12	'0000 0000 0000 0000 0010'B	'0000 1100'B	12	32	32
NR Cell 13	'0000 0000 0000 0000 0100'B	'0000 1101'B	13	32	32
NR Cell 14	'0000 0000 0000 0000 0111'B	'0000 1110'B	14	0	0
NR Cell 23	'0000 0000 0000 0000 0110'B	'0001 0111'B	23	64	64
NR Cell 28	'0000 0000 0000 0000 0010'B	'0001 1100'B	28	0	0
NR Cell 29	'0000 0000 0000 0000 0100'B	'0001 1101'B	29	32	32
NR Cell 30	'0000 0000 0000 0000 0111'B	'0001 1110'B	30	32	32
NR Cell 31	'0000 0000 0000 0000 0110'B	'0001 1111'B	31	64	64
Note 1:	To avoid collision of the preambles between intra-frequency cells, with the default *zeroCorrelationZoneConfig* value set to 15, the *PRACH-rootSequenceIndex* values have been separated by 32 root sequences per intra-frequency cell.				

Table 4.4.2-3: Default NAS parameters for simulated NR cells for 5GC testing

FFS

4.4.3 Common parameters for simulated NR cells

The parameters specified in this sub clause apply to the simulated NR cells in standalone NR and non-standalone network scenarios unless otherwise specified.

The common parameters for the simulated E-UTRA cells for standalone E-UTRA and non-standalone network scenarios are specified in TS 36.508 [2] clause 4.4.3 unless otherwise specified.

4.4.3.1 Common configurations of system information blocks

4.4.3.1.1 Combinations of system information blocks for E-UTRA standalone, EN-DC and NGEN-DC

The combination of system information blocks for standalone E-UTRA, EN-DC and NGEN-DC network scenarios are specified in TS 36.508 [2] clause 4.4.3.1.

For EN-DC and NGEN-DC network scenarios the SS shall in addition to broadcasting the E-UTRA system information blocks also broadcast the NR MIB on the NR cell(s).

4.4.3.1.2 Combinations of system information blocks for NR standalone and NE-DC

FFS

4.5 Generic procedures

4.5.1 General

The generic procedures are used by test cases to get UE under test into RRC_IDLE, RRC_INACTIVE or RRC_CONNECTED state.

A test case controls the SS by specifying the required RRC state and a set of generic procedure parameters applicable for the intended testing.

The connectivity *EN-DC* is MR-DC via E-UTRA-NR Dual Connectivity. This is a UE connected to the EPC. The connectivity *E-UTRA*, *NR*, *NGEN-DC*, *NE-DC* are all a UE connected to the 5GC.

Table 4.5.1-1 Generic procedure parameters

Parameter	Values	Description	Parameter condition
Connectivity	*E-UTRA*	NG-RAN E-UTRA Radio Access	Mandatory
	NR	NG-RAN NR Radio Access	
	EN-DC	E-UTRA-NR Dual Connectivity	
	NGEN-DC	NG-RAN E-UTRA-NR Dual Connectivity	
	NE-DC	NR-E-UTRA Dual Connectivity	
Bearers	*MCG and SCG*	MCG and SCG	Mandatory when Connectivity is set to *EN-DC*, *NGEN-DC* or *NE-DC* and when the generic procedures are used by test cases to get UE under test into RRC_CONNECTED state. Optional otherwise.
	MCG and split	MCG and split	
	MCG only	MCG only	
Test Mode	*On*	UE test mode active as specified in TS 38.509 [11], clause5.2.2.	Optional
Test Function	*On*	UE test mode active with one of the UE test loop modes activated as specified in TS 38.509 [11], clauses 5.2.2 and 5.3.2.	Optional

Editor's Note: The following values are not available to use in the current version of this specification because details are still FFS: Connectivity (E-UTRA, NR, NGEN-DC, NE-DC).

4.5.2 RRC_IDLE

4.5.2.1 Initiation

The SS shall:

1> if connectivity is *EN-DC*

2> use 1 E-UTRA cell and 1 NR cell, default parameters;

2> perform according to the table 4.5.2.2-1: E-UTRA RRC_IDLE;

4.5.2.2 Procedures

Table 4.5.2.2-1: E-UTRA RRC_IDLE

St	Procedure	Message Sequence	
		U - S	Message
1-9	Same as TS 36.508 [2] table 4.5.2.3-1, steps 1-9a2.	-	-
-	EXCEPTION: Steps 10a1 to 10a2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-
10a1 - 10a2	IF Test Mode = *On* OR Test Loop Function = *On* THEN same as TS 36.508 [2] table 4.5.2A.3-1, steps 10-11. The ACTIVATE TEST MODE is using the associated condition for the test loop.	-	-
-	EXCEPTION: Steps 11a1 to 11b9b1 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-
11a1 - 11a9 b1	IF Test Loop Function = *On* THEN same as TS 36.508 [2] table 4.5.2A.3-1, steps 12-20b1.	-	-
11b1 - 11b9 b1	ELSE, same as TS 36.508 [2] table 4.5.2.3-1, steps 10-18b1.	-	-

4.5.2.3 Specific message contents

All specific message contents shall be according TS 36.508 [2] clause 4.6 and 4.7.

4.5.3 RRC_INACTIVE

4.5.3.1 Initiation

FFS

4.5.4 RRC_CONNECTED

4.5.4.1 Initiation

The SS shall:

1> perform according to clause 4.5.2 RRC_IDLE;

1> if connectivity is *EN-DC*:

2> use 1 E-UTRA cell and 1 NR cell, default parameters;

2> perform according to the table 4.5.4.2-1: E-UTRA RRC_CONNECTED;

4.5.4.2 Procedures

Table 4.5.4.2-1: E-UTRA RRC_CONNECTED

St	Procedure	Message Sequence	
		U - S	Message
1-6	Same as TS 36.508 [2] table 4.5.3.3-1, steps 2-7.	-	-
7	Same as TS 36.508 [2] table 4.5.3.3-1, step 8. The *RRCConnectionReconfiguration* is using condition SRB2-DRB(1,0) and the associated condition for bearers *MCG and SCG or MCG and split.* For bearers *MCG only* there's no associated condition.	<--	*RRC: RRCConnectionReconfiguration* NAS: ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST
8-9	Same as TS 36.508 [2] table 4.5.3.3-1, steps 9-10a1.	-	-
-	EXCEPTION: Steps 10a1 to 10a2 describe behaviour which depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-
10a1 - 10a2	IF Test Loop Function=*On,* same as TS 36.508 [2] table 4.5.4.3-1, steps 1-2. The CLOSE UE TEST LOOP is using the associated condition for the test loop.	-	-

4.5.4.3 Specific message contents

All specific message contents shall be according clause 4.6 and TS 36.508 [2] clause 4.6 and 4.7 with the exceptions below.

Table 4.5.4.3-1: Message ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST (step 7, Table 4.5.4.2-1)

Derivation path: TS 36.508 [2] Table 4.7.3-3			
Information Element	**Value/Remark**	**Comment**	**Condition**
EPS QoS	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
TFT	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Negotiated QoS	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Negotiated LLC SAPI	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Radio priority	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Protocol configuration options	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Extended protocol configuration options	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		

4.6 Default NG-RAN RRC message and information elements contents

4.6.1 Contents of RRC messages

– *MIB*

Table 4.6.1-1: *MIB*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MIB ::= SEQUENCE {			
systemFrameNumber	A valid value as defined in TS 38.331 [6]		
subCarrierSpacingCommon	scs15or60		FR1_FDD
	scs30or120		FR1_TDD
	scs30or120		FR2_TDD
ssb-subcarrierOffset	0		
dmrs-TypeA-Position	pos2		
pdcch-ConfigSIB1	0		
cellBarred	notBarred		
intraFreqReselection	allowed		
spare	0		
}			

Condition	Explanation
FR1_FDD	FDD frequency range < 6GHz
FR1_TDD	TDD frequency range < 6GHz
FR2_TDD	TDD frequency range > 6GHz

– *MeasurementReport*

Table [4.6.1-2]: *MeasurementReport*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasurementReport ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
measurementReport ::= SEQUENCE {			
measResults	FFS		
}			
}			
}			
}			

Condition	Explanation

– *RRCReconfiguration*

Table 4.6.1-3: RRCReconfiguration

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier	Table 4.6.5-1.	
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	Not present		
secondaryCellGroup	CellGroupConfig	OCTET STRING (CONTAINING CellGroupConfig)	EN-DC
measConfig	Not present		
	MeasConfig	Measurements configuration	MEAS
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
MEAS	A NR measurement is configured

– *RRCReconfigurationComplete*

Table 4.6.1-4: RRCReconfigurationComplete

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfigurationComplete ::= SEQUENCE {			
rrc-TransactionIdentifier	Not checked		
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfigurationComplete ::= SEQUENCE {			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			
}			

– *SIB1*

Table [4.6.1-5]: *SIB1*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB1 ::= SEQUENCE {			
ssb-PositionsInBurst ::= SEQUENCE {			
inOneGroup	FFS		
groupPresence	FFS		
}			
ssb-periodicityServingCell	FFS		
ss-PBCH-BlockPower	FFS		
frequencyInfoUL	FFS		
supplementaryUplink ::= SEQUENCE {			
frequencyInfoUL	FFS		
}			
tdd-UL-DL-configuration	FFS		
pucch-Format0-BaseSequenceHopping	FFS		
PUCCH-Format1-BaseSequenceHopping	FFS		
}			

Condition	Explanation

4.6.2 System information blocks

FFS

4.6.3 Radio resource control information elements

Editor's Note: Updated based on TS 38.331 V15.1.0 and of baseline CR R2-1806391.

– *AdditionalSpectrumEmission*

Table 4.6.3-1: AdditionalSpectrumEmission

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
AdditionalSpectrumEmission	0		

– *Alpha*

Table 4.6.3-2: *Alpha*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Alpha	alpha0		

– *ARFCN-ValueNR*

Table 4.6.3-3: *ARFCN-ValueNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ARFCN-ValueNR	ARFCN-ValueNR		
	Downlink ARFCN of the SSB under test. See table 4.3.1.n-n.		DL_SSB
	Downlink ARFCN of the point A under test. See table 4.3.1.n-n.		DL_PointA
	Uplink ARFCN of the point A under test. See table 4.3.1.n-n		UL_PointA

Condition	Explanation
DL_SSB	IE absoluteFrequencySSB for downlink
DL_PointA	IE absoluteFrequencyPointA for downlink
UL_PointA	IE absoluteFrequencyPointA for uplink

– *BWP*

Table 4.6.3-4: *BWP*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BWP ::= SEQUENCE {			
locationAndBandwidth	0		
subcarrierSpacing	SubcarrierSpacing		
cyclicPrefix	Not present		
}			

Table 4.6.3-5: *BWP-Uplink*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BWP-Uplink ::= SEQUENCE {			
bwp-Id	BWP-Id		
bwp-Common	[BWP-UplinkCommon]		
bwp-Dedicated	[BWP-UplinkDedicated]		
}			

Table 4.6.3-6: BWP-UplinkCommon

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BWP-UplinkCommon ::= SEQUENCE {			
genericParameters	BWP		
rach-ConfigCommon CHOICE {			
setup	RACH-ConfigCommon		
}			
pusch-ConfigCommon CHOICE {			
setup	PUSCH-ConfigCommon		
}			
pucch-ConfigCommon CHOICE {			
setup	PUCCH-ConfigCommon		
}			
}			

Table 4.6.3-7: BWP-UplinkDedicated

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BWP-UplinkDedicated ::= SEQUENCE {			
pucch-Config CHOICE {			
setup	PUCCH-Config		
}			
pusch-Config CHOICE {			
setup	PUSCH-Config		
}			
configuredGrantConfig	Not present		
srs-Config	Not present		
beamFailureRecoveryConfig	Not present		
}			

Table 4.6.3-8: *BWP-Downlink*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BWP-Downlink ::= SEQUENCE {			
bwp-Id	BWP-Id		
bwp-Common	BWP-DownlinkCommon		
bwp-Dedicated	BWP-DownlinkDedicated		
}			

Table 4.6.3-9: BWP-DownlinkCommon

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BWP-DownlinkCommon ::= SEQUENCE {			
genericParameters	BWP		
pdcch-ConfigCommon CHOICE {			
setup	PDCCH-ConfigCommon		
}			
pdsch-ConfigCommon CHOICE {			
setup	PDSCH-ConfigCommon		
}			
}			

Table 4.6.3-10: BWP-DownlinkDedicated

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BWP-DownlinkDedicated ::= SEQUENCE {			
pdcch-Config CHOICE {			
setup	PDCCH-Config		
}			
pdsch-Config CHOICE {			
setup	PDSCH-Config		
}			
sps-Config	Not present		
radioLinkMonitoringConfig	Not present		
}			

– *BWP-Id*

Table 4.6.3-11: *BWP-Id*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BWP-Id	0		

– *BeamFailureRecoveryConfig*

Table 4.6.3-12: *BeamFailureRecoveryConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BeamFailureRecoveryConfig ::= SEQUENCE {			
FFS			
}			

– *CellGroupConfig*

Table 4.6.3-13: *CellGroupConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CellGroupConfig ::= SEQUENCE {			
cellGroupId	CellGroupId		
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF SEQUENCE {	1 entry		EN-DC
RLC-Bearer-Config[1]	RLC-Bearer-Config		
}			
rlc-BearerToReleaseList	Not present		
mac-CellGroupConfig	MAC-CellGroupConfig		
physicalCellGroupConfig	PhysicalCellGroupConfig		
spCellConfig SEQUENCE {			
servCellIndex	Not present		
	ServCellIndex		EN-DC
reconfigurationWithSync	Not present		
reconfigurationWithSync SEQUENCE {			EN-DC
spCellConfigCommon	ServingCellConfigCommon		
newUE-Identity	RNTI-Value		
t304	ms1000		
rach-ConfigDedicated CHOICE {			
uplink	RACH-ConfigDedicated		
}			
}			
rlf-TimersAndConstants CHOICE {			
[setup]	[RLF-TimersAndConstants]		
}			
rlmInSyncOutOfSyncThreshold	Not present		
spCellConfigDedicated	ServingCellConfig		
}			
sCellToAddModList	Not present		
sCellToReleaseList	Not present		
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity

– *CellGroupId*

Table 4.6.3-14: *CellGroupId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CellGroupId	1		

– *CodebookConfig*

Table 4.6.3-15: *CodebookConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CodebookConfig ::= SEQUENCE {			
codebookType CHOICE {			
type1 SEQUENCE {			
subType CHOICE {			
typeI-SinglePanel SEQUENCE {			
nrOfAntennaPorts CHOICE {			
moreThanTwo SEQUENCE {			
n1-n2 CHOICE {			
two-one-TypeI-SinglePanel-Restriction	11111111		FR2
four-one-TypeI-SinglePanel-Restriction	11111111 11111111		FR1
},			
typeI-SinglePanel-codebookSubsetRestriction-i2	11111111 11111111		
}			
},			
typeI-SinglePanel-ri-Restriction	11111111		
},			
},			
codebookMode	1		
},			
}			
}			

– *ConfiguredGrantConfig*

Table 4.6.3-16: *ConfiguredGrantConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ConfiguredGrantConfig ::= SEQUENCE {			
FFS			
}			

– *ControlResourceSet*

Table 4.6.3-17: *ControlResourceSet*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ControlResourceSet ::= SEQUENCE {			
controlResourceSetId	ControlResourceSetId		
frequencyDomainResources	11110000 00000000 00000000 00000000 00000000 00000		
duration	1		
cce-REG-MappingType CHOICE {			
nonInterleaved	null		
}			
precoderGranularity	sameAsREG-bundle		
tci-StatesPDCCH-ToAddList	Not present		
tci-StatesPDCCH-ToReleaseList	Not present		
tci-PresentInDCI	Not present		
pdcch-DMRS-ScramblingID	Not present		
}			

– *ControlResourceSetId*

Table 4.6.3-18: *ControlResourceSetId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ControlResourceSetId	0		

– *CrossCarrierSchedulingConfig*

Table 4.6.3-19: *CrossCarrierSchedulingConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CrossCarrierSchedulingConfig::= SEQUENCE {			
FFS			
}			

– *CSI-AperiodicTriggerStateList*

Table 4.6.3-20: *CSI-AperiodicTriggerStateList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-AperiodicTriggerStateList ::= SEQUENCE (SIZE (1..maxNrOfCSI-AperiodicTriggers)) OF {	1 entry		
CSI-AperiodicTriggerState[1] SEQUENCE (SIZE(1..maxNrofReportConfigPerAperiodicTrigger)) OF {	[1 entry]		
reportConfigId[1]	CSI-ReportConfigId		
resourcesForChannel[1] CHOICE {			
nzp-CSI-RS SEQUENCE {			
resourceSet	8		FR1
	16		FR2
qcl-info SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF {	1 entry		
TCI-StateId[1]	TCI-StateId		
}			
}			
}			
csi-IM-ResourcesforInteference[1]	8		FR1
	16		FR2
nzp-CSI-RS-ResourcesforInterference[1]	8		FR1
	16		FR2
}			
}			

– *CSI-FrequencyOccupation*

Table 4.6.3-21: *CSI-FrequencyOccupation*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-FrequencyOccupation ::= SEQUENCE {			
startingRB	0		
nrofRBs	160		FR1_60MHz
	216		FR1_80MHz
	272		FR1_100MHz
	132		FR2_200MHz
	52		TRS
}			

Condition	Explanation
FR1_60MHz	FR1 is used under the test. CBW is set to 60MHz.
FR1_80MHz	FR1 is used under the test. CBW is set to 80MHz.
FR1_100MHz	FR1 is used under the test. CBW is set to 100MHz.
FR2_200MHz	FR2 is used under the test. CBW is set to 200MHz.
TRS	Tracking-Reference Signal

– *CSI-IM-Resource*

Table 4.6.3-22: *CSI-IM-Resource*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-IM-Resource ::= SEQUENCE {			
csi-IM-ResourceId	CSI-IM-ResourceId		
csi-IM-ResourceElementPattern CHOICE {			
pattern1 SEQUENCE {			
subcarrierLocation-p1	s4		
symbolLocation-p1	3		FR1
	4		FR2
}			
}			
freqBand	CSI-FrequencyOccupation		
periodicityAndOffset	Not present		
}			

– *CSI-IM-ResourceId*

Table 4.6.3-23: *CSI-IM-ResourceId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-IM-ResourceId	7		FR1
	31		FR2

– *CSI-IM-ResourceSet*

Table 4.6.3-24: *CSI-IM-ResourceSet*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-IM-ResourceSet ::= SEQUENCE {			
csi-IM-ResourceSetId	CSI-IM-ResourceSetId		
csi-IM-Resources SEQUENCE (SIZE(1..maxNrofCSI-IM-ResourcesPerSet)) {	1 entry		
CSI-IM-ResourceId[1]	CSI-IM-ResourceId		
}			
}			

– *CSI-IM-ResourceSetId*

Table 4.6.3-25: *CSI-IM-ResourceSetId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-IM-ResourceSetId	0		

– *CSI-MeasConfig*

Table 4.6.3-26: *CSI-MeasConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-MeasConfig::= SEQUENCE {			
nzp-CSI-RS-ResourceToAddModList SEQUENCE {	1 entry		
NZP-CSI-RS-Resource[1]	NZP-CSI-RS-Resource		
}			
nzp-CSI-RS-ResourceToReleaseList	[Not present]		
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE {	1 entry		
NZP-CSI-RS-ResourceSet[1]	NZP-CSI-RS-ResourceSet		
}			
nzp-CSI-RS-ResourceSetToReleaseList	Not present		
csi-IM-ResourceToAddModList SEQUENCE {	1 entry		
CSI-IM-Resource[1]	CSI-IM-Resource		
}			
csi-IM-ResourceToReleaseList	Not present		
csi-IM-ResourceSetToAddModList SEQUENCE {	1 entry		
CSI-IM-ResourceSet[1]	CSI-IM-ResourceSet		
}			
csi-IM-ResourceSetToReleaseList	Not present		
csi-SSB-ResourceSetToAddModList SEQUENCE {	1 entry		
CSI-SSB-ResourceSet[1]	CSI-SSB-ResourceSet		
}			
csi-SSB-ResourceSetToAddReleaseList	Not present		
csi-ResourceConfigToAddModList SEQUENCE {	1 entry		
CSI-ResourceConfig[1]	CSI-ResourceConfig		
}			
csi-ResourceConfigToReleaseList	Not present		
csi-ReportConfigToAddModList	1 entry		
CSI-ReportConfig[1]	CSI-ReportConfig		
}			
csi-ReportConfigToReleaseList	Not present		
reportTriggerSize	1		
aperiodicTriggerStateList SetupRelease {			
setup	CSI-AperiodicTriggerStateList		
}			
semiPersistentOnPUSCH-TriggerStateList	Not present		
}			

– *CSI-ReportConfig*

Table 4.6.3-27: *CCSI-ReportConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-ReportConfig ::= SEQUENCE {			
reportConfigId	CSI-ReportConfigId		
carrier	ServCellIndex		
resourcesForChannelMeasurement	CSI-ResourceConfigId		
csi-IM-ResourcesForInterference	CSI-ResourceConfigId		
nzp-CSI-RS-ResourcesForInterference	CSI-ResourceConfigId		
reportConfigType CHOICE {			
aperiodic SEQUENCE {			
reportSlotOffsetList	FFS		
}			
}			
reportQuantity CHOICE {			
cri-RI-PMI-CQI	NULL,		FR1
cri-RI-LI-PMI-CQI	NULL		FR2
}			
reportFreqConfiguration SEQUENCE {			
cqi-FormatIndicator	widebandCQI		
pmi-FormatIndicator	widebandPMI		
csi-ReportingBand	Not present		
}			
timeRestrictionForChannelMeasurements	configured		
timeRestrictionForInterferenceMeasurements	configured		
codebookConfig	CodebookConfig		
nrofCQIsPerReport	n2		
groupBasedBeamReporting CHOICE {			
disabled SEQUENCE {			
nrofReportedRS	n1		
}			
}			
cqi-Table	table2		FR1
	table1		FR2
subbandSize	value2		
bler-Target	Not present		
non-PMI-PortIndication	Not present		
}			
}			

– *CSI-ReportConfigId*

Table 4.6.3-28: *CCSI-ReportConfigId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-ReportConfigID	0		

– *CSI-ResourceConfig*

Table 4.6.3-29: *CSI-ResourceConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	CSI-ResourceConfigId		
csi-RS-ResourceSetList CHOICE {	FFS		
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig))	FFS		
csi-SSB-ResourceSetList SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourceSetsPerConfig))	FFS		
}			
csi-IM-ResourceSetList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSetsPerConfig))	FFS		
},			
bwp-Id	BWP-Id		
resourceType	aperiodic		
}			

– *CSI-ResourceConfigId*

Table 4.6.3-30: *CSI-ResourceConfigId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-ResourceConfigId	0		

– *CSI-ResourcePeriodicityAndOffset*

Table 4.6.3-31: *CSI-ResourcePeriodicityAndOffset*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-ResourcePeriodicityAndOffset ::= SEQUENCE {		Waiting for RAN4 decision.	
slots4	FFS		
slots5	FFS		
slots8	FFS		
slots10	FFS		
slots16	FFS		
slots20	FFS		
slots32	FFS		
slots40	FFS		
slots64	FFS		
slots80	FFS		
slots160	FFS		
slots320	FFS		
slots640	FFS		
}			

– *CSI-RS-ResourceMapping*

Table 4.6.3-32: *CSI-RS-ResourceMapping*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	1000		TRS
row4	010		FR2
other	011110		FR1
}			
nrofPorts	p8		FR1
	p4		FR2
	p1		TRS
firstOFDMSymbolInTimeDomain	3		FR1
	13		FR2
	4		TRS
firstOFDMSymbolInTimeDomain2	Not present		
cdm-Type	fd-CDM2		
	noCDM		TRS
density CHOICE {			
one	NULL		
three	NULL		TRS
}			
freqBand	CSI-FrequencyOccupation		
}			

Condition	**Explanation**
TRS	Tracking-Reference Signal

– *CSI-SemiPersistentOnPUSCH-TriggerStateList*

Table 4.6.3-33: *CSI-SemiPersistentOnPUSCH-TriggerStateList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-SemiPersistentOnPUSCH-TriggerStateList ::= SEQUENCE {			
FFS			
}			

– *CSI-SSB-ResourceSetId*

Table 4.6.3-34: *CSI-SSB-ResourceId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-SSB-ResourceSetId	FFS		

– *CSI-SSB-ResourceSet*

Table 4.6.3-35: *CSI-SSB-ResourceSet*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-SSB-ResourceSet ::= SEQUENCE {			
FFS			
}			

– *DMRS-DownlinkConfig*

Table 4.6.3-36: *DMRS-DownlinkConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DMRS-DownlinkConfig ::= SEQUENCE {			
dmrs-Type	Not present		
dmrs-AdditionalPosition	pos1		FR1_FDD, FR1_TDD
	[pos0]		FR2_TDD
dmrs-group1	[111111110000]		FR1
	[111100000000]		FR2
dmrs-group2	Not present		
maxLength	Not present		
scramblingID0	Not present		
scramblingID1	Not present		
phaseTrackingRS	Not present		FR1
phaseTrackingRS CHOICE {			FR2
[setup]	[PTRS-DownlinkConfig]		
}			
}			

Condition	Explanation
FR1_FDD	FDD frequency range < 6GHz
FR1_TDD	TDD frequency range < 6GHz
FR2_TDD	TDD frequency range > 6GHz

– *DMRS-UplinkConfig*

Table 4.6.3-37: DMRS-UplinkConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DMRS-UplinkConfig ::= SEQUENCE {			
dmrs-Type	Not present		
dmrs-AdditionalPosition	pos1		FR1_FDD, FR1_TDD
	[pos0]		FR2_TDD
phaseTrackingRS CHOICE {			
setup	PTRS-UplinkConfig		
}			
maxLength	Not present		
transformPrecodingDisabled SEQUENCE {			
scramblingID0	Not present		
scramblingID1	Not present		
}			
transformPrecodingEnabled	Not present		
}			

Condition	Explanation
FR1_FDD	FDD frequency range < 6GHz
FR1_TDD	TDD frequency range < 6GHz
FR2_TDD	TDD frequency range > 6GHz

– *DownlinkPreemption*

Table 4.6.3-38: *DownlinkPreemption*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DownlinkPreemption ::= SEQUENCE {			
FFS			
}			

– *DRB-Identity*

Table 4.6.3-39: *DRB-Identity*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DRB-Identity	2		
	1		DRB1

Condition	Explanation
DRB1	DRB-Identity 1

– *EUTRA-MBSFN-SubframeConfigList*

Table 4.6.3-40: *EUTRA-MBSFN-SubframeConfigList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
EUTRA-MBSFN-SubframeConfigList::= SEQUENCE {			
FFS			
}			

– *FilterCoefficient*

Table 4.6.3-41: *FilterCoefficient*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FilterCoefficient	fc4		

– *FreqBandIndicatorNR*

Table 4.6.3-42: *FreqBandIndicatorNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FreqBandIndicatorNR	Operating band under test		

– *FrequencyInfoDL*

Table 4.6.3-43: *FrequencyInfoDL*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FrequencyInfoDL::= SEQUENCE {			
absoluteFrequencySSB	ARFCN-ValueNR with condition DL_SSB		
ssb-SubcarrierOffset	Not present		
frequencyBandList	MultiFrequencyBandList NR		
absoluteFrequencyPointA	ARFCN-ValueNR with condition DL_PointA		
scs-SpecificCarrierList SEQUENCE (SIZE (1..maxSCSs)) OF	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier		
}			
}			

– *FrequencyInfoUL*

Table 4.6.3-44: *FrequencyInfoUL*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FrequencyInfoUL::= SEQUENCE {			
frequencyBandList	[MultiFrequencyBandList NR]		
absoluteFrequencyPointA	[ARFCN-ValueNR with condition UL_PointA]		
scs-SpecificCarriers SEQUENCE (SIZE (1..maxSCSs)) OF {	[1 entry]		
SCS-SpecificCarrier[1]	[SCS-SpecificCarrier]		
}			
additionalSpectrumEmission	[AdditionalSpectrumEmission]		
p-Max	[P-Max]		
frequencyShift7p5khz	[Not present]		
}			

– *GSCN-ValueNR*

Table 4.6.3-45: *GSCN-ValueNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
GSCN-ValueNR	FFS		

– *Hysteresis*

Table 4.6.3-46: *Hysteresis*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Hysteresis	[0]	This value is temporarily set in RAN5#79.	

– *LogicalChannelConfig*

Table 4.6.3-47: *LogicalChannelConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
LogicalChannelConfig ::= SEQUENCE {			
ul-SpecificParameters SEQUENCE {			
priority	1		
prioritisedBitRate	infinity		
bucketSizeDuration	ms50		
allowedServingCells	Not present		
allowedSCS-List	Not present		
maxPUSCH-Duration	Not present		
configuredGrantType1Allowed	Not present		
logicalChannelGroup	[1]		HI
	[2]		LO
schedulingRequestID	Not present		
logicalChannelSR-Mask	false		
logicalChannelSR-DelayTimerApplied	false		
}			
}			

Condition	**Explanation**
HI	Used for DRBs with high logical channel priority
LO	Used for DRBs with low logical channel priority

– *LogicalChannelIdentity*

Table 4.6.3-48: *LogicalChannelIdentity*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
LogicalChannelIdentity	1		

– *MAC-CellGroupConfig*

Table 4.6.3-49: *MAC-CellGroupConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MAC-CellGroupConfig ::= SEQUENCE {			
drx-Config CHOICE {			
setup SEQUENCE {			
drx-onDurationTimer CHOICE {			
milliSeconds	[ms6]		
}			
drx-InactivityTimer	[ms1280]		
drx-HARQ-RTT-TimerDL	[56]		
drx-HARQ-RTT-TimerUL	[56]		
drx-RetransmissionTimerDL	[sl16]		FR1
	[sl64]		FR2
drx-RetransmissionTimerUL	[sl16]		FR1
	[sl64]		FR2
drx-LongCycleStartOffset CHOICE {			
ms10240	[0]		
}			
shortDRX	[not present]		
drx-SlotOffset	[0]		
}			
}			
schedulingRequestConfig	SchedulingRequest-Config		
bsr-Config SEQUENCE {			
periodicBSR-Timer	[sf1]		
retxBSR-Timer	[sf80]		
logicalChannelSR-DelayTimer	[Not present]		
}			
tag-Config SEQUENCE {			
tag-ToReleaseList	Not present		
tag-ToAddModList SEQUENCE (SIZE (1..maxNrofTAGs)) OF SEQUENCE {	1 entry		
tag-Id	0		
timeAlignmentTimer	[infinity]		
}			
}			
phr-Config CHOICE {			
setup SEQUENCE {			
phr-PeriodicTimer	[sf10]		
phr-ProhibitTimer	[sf0]		
phr-Tx-PowerFactorChange	[dB1]		
multiplePHR	[true]		
phr-Type2PCell	false		
phr-Type2OtherCell	false		
phr-ModeOtherCG	real		
}			
}			
skipUplinkTxDynamic	false		
cs-RNTI	Not present		
}			

– *MeasConfig*

Table 4.6.3-50: *MeasConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasConfig::= SEQUENCE {			
measObjectToRemoveList	Not present		
measObjectToAddModList	MeasObjectToAddModList		
reportConfigToRemoveList	Not present		
reportConfigToAddModList	ReportConfigToAddModList		
measIdToRemoveList	Not present		
measIdToAddModList	MeasIdToAddModList		
s-MeasureConfig	Not present		
quantityConfig	QuantityConfig		
measGapConfig	Not present		
}			

– *MeasGapConfig*

Table 4.6.3-51: *MeasGapConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasGapConfig ::= SEQUENCE {			
gapFR2 CHOICE {			
setup SEQUENCE {			
gapOffset	FFS		
mgl	FFS		
mgrp	FFS		
mgta	FFS		
}			
}			
}			

– *MeasId*

Table 4.6.3-52: *MeasId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasId	1		

– *MeasIdToAddModList*

Table 4.6.3-53: *MeasIdToAddModList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasIdToAddModList::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF SEQUENCE {	1 entry		
measId[1]	MeasId		
measObjectId[1]	MeasObjectId		
reportConfigId[1]	ReportConfigId		
}			

– *MeasObjectEUTRA*

Table 4.6.3-54: *MeasObjectEUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FFS			

– *MeasObjectId*

Table 4.6.3-55: *MeasObjectId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasObjectId	[1]		

– *MeasObjectNR*

Table 4.6.3-56: *MeasObjectNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasObjectNR::= SEQUENCE {			
ssbFrequency	ARFCN-ValueNR with condition DL_SSB		
refFreqCSI-RS	Not present		
referenceSignalConfig SEQUENCE {			
ssb-ConfigMobility SEQUENCE {			
subcarrierSpacing	SubcarrierSpacing		
ssb-ToMeasure CHOICE {			
setup SEQUENCE {			
shortBitmap	0100		f<3GHz
mediumBitmap	01000000		3GHz<f<6GHz
longBitmap	[01000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000]		f>6GHz
}			
}			
useServingCellTimingForSync	true		
smtc1 SEQUENCE {			
periodicityAndOffset CHOICE {			
sf20	0		FR1
sf160	0		FR2
}			
duration	sf2		FR1
	sf5		FR2
}			
smtc2	Not present		
ss-RSSI-Measurement	[Not present]	This value is temporarily set in RAN5#79.	
}			
csi-rs-ResourceConfigMobility	Not present		
absThreshSS-BlocksConsolidation SEQUENCE {			
thresholdRSRP	RSRP-Range		
thresholdRSRQ	Not present		
thresholdSINR	Not present		
}			
absThreshCSI-RS-Consolidation SEQUENCE {			
thresholdRSRP	RSRP-Range		
thresholdRSRQ	Not present		
thresholdSINR	Not present		
}			
nrofSS-BlocksToAverage	[2]	This value is temporarily set in RAN5#79.	
nrofCSI-RS-ResourcesToAverage	Not present		
quantityConfigIndex	[1]	This value is temporarily set in RAN5#79.	
offsetFreq SEQUENCE {			
rsrpOffsetSSB	dB0		
rsrqOffsetSSB	dB0		
sinrOffsetSSB	dB0		
rsrpOffsetCSI-RS	dB0		
rsrqOffsetCSI-RS	dB0		
sinrOffsetCSI-RS	dB0		
}			
cellsToRemoveList	Not present		
cellsToAddModList	Not present		
blackCellsToRemoveList	Not present		
blackCellsToAddModList	Not present		
whiteCellsToRemoveList	Not present		
whiteCellsToAddModList	Not present		

}			

– *MeasObjectToAddModList*

Table 4.6.3-57: *MeasObjectToAddModList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasObjectToAddModList::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF SEQUENCE {	1 entry		
measObjectId[1]	MeasObjectId		
measObject CHOICE {			
measObjectNR	MeasObjectNR		
}			
}			

– *MeasResults*

Table 4.6.3-58: *MeasResults*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasResults::= SEQUENCE {			
FFS			
}			

– *MeasResultSCG-Failure*

Table 4.6.3-59: *MeasResultSCG-Failure*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasResultSCG-Failure ::= SEQUENCE {			
FFS			
}			

– *MeasResultCellListSFTD*

Table 4.6.3-60: *MeasResultCellListSFTD*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasResultCellListSFTD ::= SEQUENCE {			
FFS			
}			

– *MultiFrequencyBandListNR*

Table 4.6.3-61: *MultiFrequencyBandListNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MultiFrequencyBandListNR ::= SEQUENCE (SIZE (1..maxNrofMultiBands)) OF {	1 entry		
FreqBandIndicatorNR[1]	FreqBandIndicatorNR		
}			

– *NZP-CSI-RS-Resource*

Table 4.6.3-62: *NZP-CSI-RS-Resource*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NZP-CSI-RS-Resource ::= SEQUENCE {			
nzp-CSI-RS-ResourceId	NZP-CSI-RS-ResourceId		
resourceMapping	CSI-RS-ResourceMapping		
powerControlOffset	3		
powerControlOffsetSS	Not present		
scramblingID	ScramblingId		
periodicityAndOffset	FFS		
	CSI-ResourcePeriodicityAndOffset		TRS
qcl-InfoPeriodicCSI-RS	TCI-StateId		
	Not present		Aperiodic
}			

Condition	Explanation
TRS	Tracking-Reference Signal

– *NZP-CSI-RS-ResourceId*

Table 4.6.3-63: *NZP-CSI-RS-ResourceId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NZP-CSI-RS-ResourceId	0		

– *NZP-CSI-RS-ResourceSet*

Table 4.6.3-64: *NZP-CSI-RS-ResourceSet*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NZP-CSI-RS-ResourceSet ::= SEQUENCE {			
nzp-CSI-ResourceSetId	NZP-CSI-RS-ResourceSetId		
nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF {	[1 entry]		
NZP-CSI-RS-ResourceId[1]	NZP-CSI-RS-ResourceId		
}			
repetition	off		
aperiodicTriggeringOffset	0		
trs-Info	FFS		
	true		TRS
}			

Condition	Explanation
TRS	Tracking-Reference Signal

– *NZP-CSI-ResourceSetId*

Table 4.6.3-65: *NZP-CSI-ResourceSetId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NZP-CSI-ResourceSetId	0		

– *P-Max*

Table 4.6.3-66: *P-Max*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
P-Max	[23]		FR1
	[26]		FR2

– *PCI-List*

Table 4.6.3-67: *PCI-List*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PCI-List ::= SEQUENCE {			
FFS			
}			

– *PCI-Range*

Table 4.6.3-68: *PCI-Range*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PCI-Range ::= SEQUENCE {			
start	PhysCellId		
range	FFS		
}			

– *PCI-RangeElement*

Table 4.6.3-69: *PCI-RangeElement*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PCI-RangeElement ::= SEQUENCE {			
FFS			
}			

– *PCI-RangeIndex*

Table 4.6.3-70: *PCI-RangeIndex*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PCI-RangeIndex	0		

– *PCI-RangeIndexList*

Table 4.6.3-71: *PCI-RangeIndexList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PCI-RangeIndexList ::= SEQUENCE {			
FFS			
}			

– *PDCCH-Config*

Table 4.6.3-72: *PDCCH-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDCCH-Config::= SEQUENCE {			
controlResourceSetToAddModList SEQUENCE (SIZE (1..3)) OF SEQUENCE {	1 entry		
ControlResourceSet[1]	ControlResourceSet		
}			
controlResourceSetToReleaseList	Not present		
searchSpacesToAddModList SEQUENCE(SIZE (1..10)) OF SEQUENCE {	1 entry		
SearchSpace[1]	SearchSpace with condition USS		
}			
searchSpacesToReleaseList	Not present		
downlinkPreemption	Not present		
slotFormatIndicator	Not present		
tpc-PUSCH	Not present		
tpc-PUCCH	Not present		
tpc-SRS	Not present		
}			

– *PDCCH-ConfigCommon*

Table 4.6.3-73: *PDCCH-ConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDCCH-ConfigCommon::= SEQUENCE {			
commonControlResourcesSets SEQUENCE (SIZE(1..2)) OF {	1 entry		
ControlResourceSet[1]	ControlResourceSet		
}			
commonSearchSpaces SEQUENCE(SIZE (1..4)) OF {	[1entry]		
SearchSpace[1]	SearchSpace with condition CSS		
}			
searchSpaceSIB1	Not present		
searchSpaceOtherSystemInformation	Not present		
pagingSearchSpace	Not present		
ra-SearchSpace	SearchSpaceId with condition CSS		
}			

– *PDCP-Config*

Table 4.6.3-74: *PDCP-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDCP-Config ::= SEQUENCE {			
drb SEQUENCE {			
discardTimer	infinity		
pdcp-SN-Size-UL	len18bits		
pdcp-SN-Size-DL	len18bits		
headerCompression CHOICE {			
notUsed	Null		
}			
integrityProtection	Not present		
statusReportRequired	true		
outOfOrderDelivery	false		
}			
moreThanOneRLC	Not present		
moreThanOneRLC SEQUENCE {			Split
primaryPath SEQUENCE {			
cellGroup	CellGroupId		
logicalChannel	LogicalChannelIdentity		
}			
ul-DataSplitThreshold	infinity		
pdcp-Duplication	Not present		
}			
t-Reordering	Not present		
}			

Condition	Explanation
Split	More than one RLC.

– *PDSCH-Config*

Table 4.6.3-75: *PDSCH-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDSCH-Config ::= SEQUENCE {			
dataScramblingIdentityPDSCH	[0]		
dmrs-DownlinkForPDSCH-MappingTypeA CHOICE {			
setup	DMRS-DownlinkConfig		
}			
dmrs-DownlinkForPDSCH-MappingTypeB	Not present		
tci-StatesToAddModList SEQUENCE(SIZE (1.. maxNrofTCI-States)) OF {			
TCI-State[1]	TCI-State		
}			
tci-StatesToReleaseList	Not present		
vrb-ToPRB-Interleaver	n2		
resourceAllocation	resourceAllocationType0		
pdsch-TimeDomainAllocationList	Not present		
pdsch-AggregationFactor	Not present		
rateMatchPatternToAddModList SEQUENCE(SIZE (1.. maxNrofRateMatchPatterns)) OF {	1 entry		
RateMatchPattern[1]	RateMatchPattern		
}			
rateMatchPatternToReleaseList	Not present		
rateMatchPatternGroup1	Not present		
rateMatchPatternGroup2	Not present		
rbg-Size	config1		
mcs-Table	qam256		FR1
	qam64		FR2
maxNrofCodeWordsScheduledByDCI	n2		
prb-BundlingType CHOICE {			
staticBundling SEQUENCE {			
bundleSize	wideband		
}			
}			
zp-CSI-RS-ResourceToAddModList	Not present		
zp-CSI-RS-ResourceToReleaseList	Not present		
aperiodic-ZP-CSI-RS-ResourceSetsToAddModList SEQUENCE(SIZE (1.. maxNrofZP-CSI-RS-Resource-Sets)) OF {	1 entry		
ZP-CSI-RS-ResourceSet[1]	ZP-CSI-RS-ResourceSet		
}			
aperiodic-ZP-CSI-RS-ResourceSetsToReleaseList	Not present		
sp-ZP-CSI-RS-ResourceSetsToAddModList	Not present		
sp-ZP-CSI-RS-ResourceSetsToReleaseList	Not present		
p-ZP-CSI-RS-ResourceSet	Not present		
}			

– *PDSCH-ConfigCommon*

Table 4.6.3-76: *PDSCH-ConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDSCH-ConfigCommon ::= SEQUENCE {			
pdsch-TimeDomainAllocationList	PDSCH-TimeDomainResourceAllocationList		
}			

– *PDSCH-ServingCellConfig*

Table 4.6.3-77: *PDSCH-ServingCellConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDSCH-ServingCellConfig ::= SEQUENCE {			
codeBlockGroupTransmission	Not present		
xOverhead	[xOh6]		
nrofHARQ-ProcessesForPDSCH	[n16]		
pucch-Cell	[ServCellIndex]		
}			

– *PDSCH-TimeDomainResourceAllocationList*

Table 4.6.3-78: *PDSCH-TimeDomainResourceAllocationList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDSCH-TimeDomainResourceAllocationList::= SEQUENCE(SIZE(1..maxNrofDL-Allocations)) OF {	2 entries		FR1
PDSCH-TimeDomainResourceAllocation[1] SEQUENCE {		Start symbol(S)=0, Length(L)=14	
k0	[Not present]		
mappingType	[typeA]		
startSymbolAndLength	[0011011]		
}			
PDSCH-TimeDomainResourceAllocation[2] SEQUENCE {		S=0, L=6	
k0	[Not present]		
mappingType	[typeA]		
startSymbolAndLength	[1000110]		
}			
}			
PDSCH-TimeDomainResourceAllocationList ::= SEQUENCE (SIZE(1..maxNrofDL-Allocations)) OF {	[1 entry]		FR2
PDSCH-TimeDomainResourceAllocation[1] SEQUENCE {		S=0, L=14	
k0	[Not present]		
mappingType	[typeA]		
startSymbolAndLength	[0011011]		
}			
}			

– *PhysicalCellGroupConfig*

Table 4.6.3-79: *PhysicalCellGroupConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PhysicalCellGroupConfig ::= SEQUENCE {			
harq-ACK-SpatialBundlingPUCCH	[true]		
harq-ACK-SpatialBundlingPUSCH	[true]		
p-NR	P-Max		
pdsch-HARQ-ACK-Codebook	semiStatic		
tpc-SRS-RNTI	Not present		
tpc-PUCCH-RNTI	Not present		
tpc-PUSCH-RNTI	Not present		
sp-CSI-RNTI	Not present		
}			

– *PhysCellId*

Table 4.6.3-80: *PhysCellId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PhysCellId	Set according to table 4.4.2-2 for the NR Cell.		

– *PRB-Id*

Table 4.6.3-81: *PRB-Id*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PRB-Id	0		
	Set to value of the number of RBs - 1 corresponding to 10 MHz channel bandwidth in clause 4.3.1 for the carrier and subcarrier under test.		secondHop PRB

Condition	Explanation
secondHopPRB	The IE secondHopPRB in PUCCH-Resource is now set.

– *PTRS-DownlinkConfig*

Table 4.6.3-82: *PTRS-DownlinkConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PTRS-DownlinkConfig ::= SEQUENCE {			
frequencyDensity	FFS	Waiting for RAN4 decision.	
timeDensity	FFS	Waiting for RAN4 decision.	
epre-RatioPort1	[0]		
epre-RatioPort2	[Not present]		
resourceElementOffset	[Not present]		
}			

– *PTRS-UplinkConfig*

Table 4.6.3-83: *PTRS-UplinkConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PTRS-UplinkConfig ::= SEQUENCE {			
modeSpecificParameters CHOICE {			
cp-OFDM SEQUENCE {			
frequencyDensity	Not present		
timeDensity	Not present		
maxNrofPorts	n1		
resourceElementOffset	Not present		
ptrs-Power	p00		
}			
}			
}			

– *PUCCH-Config*

Table 4.6.3-84: *PUCCH-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUCCH-Config ::= SEQUENCE {			
resourceSetToAddModList SEQUENCE (SIZE (1..maxNrofPUCCH-ResourceSets)) OF SEQUENCE {	4 entries		
{			
pucch-ResourceSetId[1]	0		
resourceList[[1] SEQUENCE (SIZE (0..maxNrofPUCCH-ResourcesPerSet)) OF {	8 enties		
PUCCH-ResourceId[1]	0		
PUCCH-ResourceId[2]	1		
PUCCH-ResourceId[3]	2		
PUCCH-ResourceId[4]	3		
PUCCH-ResourceId[5]	4		
PUCCH-ResourceId[6]	5		
PUCCH-ResourceId[7]	6		
PUCCH-ResourceId[8]	7		
}			
maxPayloadMinus1[1]	256		
}			
{			
pucch-ResourceSetId[2]	1		
resourceList[2] SEQUENCE (SIZE (8..maxNrofPUCCH-ResourcesPerSet)) OF {	8 entries		
PUCCH-ResourceId[1]	8		
PUCCH-ResourceId[2]	9		
PUCCH-ResourceId[3]	10		
PUCCH-ResourceId[4]	11		
PUCCH-ResourceId[5]	12		
PUCCH-ResourceId[6]	13		
PUCCH-ResourceId[7]	14		
PUCCH-ResourceId[8]	15		
}			
}			
{			
maxPayloadMinus1[2]	256		
pucch-ResourceSetId[3]	2		
resourceList[3] SEQUENCE (SIZE (8..maxNrofPUCCH-ResourcesPerSet)) OF {	8 entries		
PUCCH-ResourceId[1]	8		
PUCCH-ResourceId[2]	9		
PUCCH-ResourceId[3]	10		
PUCCH-ResourceId[4]	11		
PUCCH-ResourceId[5]	12		
PUCCH-ResourceId[6]	13		
PUCCH-ResourceId[7]	14		
PUCCH-ResourceId[8]	15		
}			
}			
{			
maxPayloadMinus1[3]	256		
pucch-ResourceSetId[4]	3		
resourceList[4] SEQUENCE (SIZE (8..maxNrofPUCCH-ResourcesPerSet)) OF {	8 entries		
PUCCH-ResourceId[1]	8		
PUCCH-ResourceId[2]	9		
PUCCH-ResourceId[3]	10		
PUCCH-ResourceId[4]	11		
PUCCH-ResourceId[5]	12		
PUCCH-ResourceId[6]	13		
PUCCH-ResourceId[7]	14		
PUCCH-ResourceId[8]	15		
}			
maxPayloadMinus1[4]	256		
}			

}			
resourceSetToReleaseList	Not present		
resourceToAddModList SEQUENCE (SIZE (1..maxNrofPUCCH-Resources)) OF SEQUENCE {	[16 entries]		
{			
pucch-ResourceId[1]	0		
startingPRB[1]	PRB-Id		
intraSlotFrequencyHopping[[1]	enabled		
secondHopPRB[1]	PRB-Id with condition secondHopPRB		
format[1] CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	[0		
}			
}			
}			
{			
pucch-ResourceId[2]	1		
startingPRB[2]	PRB-Id		
intraSlotFrequencyHopping[[2]	enabled		
secondHopPRB[2]	PRB-Id with condition secondHopPRB		
format[2] CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	2		
}			
}			
}			
{			
pucch-ResourceId[3]	2		
startingPRB[3]	PRB-Id		
intraSlotFrequencyHopping[[3]	enabled		
secondHopPRB[3]	PRB-Id with condition secondHopPRB		
format[3] CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	4		
}			
}			
}			
{			
pucch-ResourceId[4]	3		
startingPRB[4]	PRB-Id		
intraSlotFrequencyHopping[[4]	enabled		
secondHopPRB[4]	PRB-Id with condition secondHopPRB		
format[4] CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	6		
}			
}			
}			
{			
pucch-ResourceId[5]	4		
startingPRB[5]	PRB-Id		
intraSlotFrequencyHopping[[5]	enabled		
secondHopPRB[5]	PRB-Id with condition secondHopPRB		

format[5] CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	8		
}			
}			
}			
{			
pucch-ResourceId[6]	5		
startingPRB[6]	PRB-Id		
intraSlotFrequencyHopping[[6]	enabled		
secondHopPRB[6]	PRB-Id with condition secondHopPRB		
format[6] CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	10		
}			
}			
}			
{			
pucch-ResourceId[7]	6		
startingPRB[7]	PRB-Id		
intraSlotFrequencyHopping[[7]	enabled		
secondHopPRB[7]	PRB-Id with condition secondHopPRB		
format[7] CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	12		
}			
}			
}			
{			
pucch-ResourceId[8]	7		
startingPRB[8]	PRB-Id		
intraSlotFrequencyHopping[[8]	enabled		
secondHopPRB[8]	PRB-Id with condition secondHopPRB		
format[8] CHOICE {			
format1 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	14		
startingSymbolIndex	0		
timeDomainOCC	0		
}			
}			
}			
{			
pucch-ResourceId[9]	8		
startingPRB[9]	PRB-Id		
intraSlotFrequencyHopping[[9]	enabled		
secondHopPRB[9]	PRB-Id with condition secondHopPRB		
format[9] CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	0		
}			
}			
}			

{			
pucch-ResourceId[10]	9		
startingPRB[10]	PRB-Id		
intraSlotFrequencyHopping[[10]	enabled		
secondHopPRB[10]	PRB-Id with condition secondHopPRB		
format[10] CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	2		
}			
}			
}			
{			
pucch-ResourceId[11]	10		
startingPRB[11]	PRB-Id		
intraSlotFrequencyHopping[[11]	enabled		
secondHopPRB[11]	PRB-Id with condition secondHopPRB		
format[11] CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	4		
}			
}			
}			
{			
pucch-ResourceId[12]	11		
startingPRB[12]	PRB-Id		
intraSlotFrequencyHopping[[12]	enabled		
secondHopPRB[12]	PRB-Id with condition secondHopPRB		
format[12] CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	6		
}			
}			
}			
{			
pucch-ResourceId[13]	12		
startingPRB[13]	PRB-Id		
intraSlotFrequencyHopping[[13]	enabled		
secondHopPRB[13]	PRB-Id with condition secondHopPRB		
format[13] CHOICE {			
format2 SEQUENCE {			
nrofPRB	6		
nrofSymbols	2		
startingSymbolIndex	8		
}			
}			
}			
{			
pucch-ResourceId[14]	13		
startingPRB[14]	PRB-Id		
intraSlotFrequencyHopping[[14]	enabled		
secondHopPRB[14]	PRB-Id with condition secondHopPRB		
format[14] CHOICE {			
format2 SEQUENCE {			
nrofPRBsinitial	6		
nrofSymbols	2		

startingSymbolIndex	10		
}			
}			
}			
{			
pucch-ResourceId[15]	14		
startingPRB[15]	PRB-Id		
intraSlotFrequencyHopping[[15]	enabled		
secondHopPRB[15]	PRB-Id with condition secondHopPRB		
format[15] CHOICE {			
format2 SEQUENCE {			
nrofPRB	6		
nrofSymbols	2		
startingSymbolIndex	12		
}			
}			
}			
{			
pucch-ResourceId[16]	15		
startingPRB[16]	PRB-Id		
intraSlotFrequencyHopping[[16]	enabled		
secondHopPRB[16]	PRB-Id with condition secondHopPRB		
format[16] CHOICE {			
format4 SEQUENCE {			
nrofSymbols	14		
occ-Length	n2		
occ-Index	n0		
startingSymbolIndex	0		
}			
}			
}			
}			
resourceToReleaseList	Not present		
format1CHOICE {			
setup SEQUENCE {			
interslotFrequencyHopping	enabled		
additionalDMRS	true		
maxCodeRate	zeroDot25		
nrofSlots	Not present		
pi2PBSK	Not present		
simultaneousHARQ-ACK-CSI	true		
}			
}			
format2 CHOICE {			
setup SEQUENCE {			
interslotFrequencyHopping	enabled		
additionalDMRS	true		
maxCodeRate	zeroDot25		
nrofSlots	Not present		
pi2PBSK	Not present		
simultaneousHARQ-ACK-CSI	true		
}			
}			
format3 CHOICE {			
setup SEQUENCE {			
interslotFrequencyHopping	enabled		
additionalDMRS	True		
maxCodeRate	zeroDot25		
nrofSlots	Not present		
pi2PBSK	Not present		
simultaneousHARQ-ACK-CSI	true		
}			
}			

format4 CHOICE {			
setup SEQUENCE {			
interslotFrequencyHopping	enabled		
additionalDMRS	True		
maxCodeRate	zeroDot25		
nrofSlots	Not present		
pi2PBSK	Not present		
simultaneousHARQ-ACK-CSI	true		
}			
}			
schedulingRequestResourceToAddModList SEQUENCE (SIZE (1..maxNrofSR-Resources)) OF SEQUENCE {	1 entry		
SchedulingRequestResourceConfig[1]	SchedulingRequestResourceConfig		
}			
schedulingRequestResourceToReleaseList	Not present		
multi-CSI-PUCCH-ResourceList	Not present		
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF {			
INTEGER[1]	2		
INTEGER[2]	3		
INTEGER[3]	4		
INTEGER[4]	5		
INTEGER[5]	6		
INTEGER[6]	7		
INTEGER[7]	8		
INTEGER[8]	9		
}			
spatialRelationInfoToAddModList	Not present		
spatialRelationInfoToReleaseList	Not present		
pucch-PowerControl	PUCCH-PowerControl		
}			

– *PUCCH-ConfigCommon*

Table 4.6.3-85: *PUCCH-ConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUCCH-ConfigCommon ::= SEQUENCE {			
pucch-ResourceCommon	[Not present]		
pucch-GroupHopping	neither		
hoppingId	Not present		
p0-nominal	90		
}			

– *PUCCH-PathlossReferenceRS-Id*

Table 4.6.3-86: *PUCCH-PathlossReferenceRS-Id*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUCCH-PathlossReferenceRS-Id	0		

– *PUCCH-PowerControl*

Table 4.6.3-87: *PUCCH-PowerControl*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUCCH-PowerControl ::= SEQUENCE {			
deltaF-PUCCH-f0	0		
deltaF-PUCCH-f1	0		
deltaF-PUCCH-f2	0		
deltaF-PUCCH-f3	0		
deltaF-PUCCH-f4	0		
p0-Set	Not present		
pathlossReferenceRSs SEQUENCE (SIZE (1..maxNrofPUCCH-PathlossReferenceRSs)) OF SEQUENCE {	1 entry		
pucch-PathlossReferenceRS-Id[1]	PUCCH-PathlossReferenceRS-Id		
referenceSignal CHOICE {			
ssb-Index	SSB-Index		
}			
}			
twoPUCCH-PC-AdjustmentStates	Not present		
}			

– *PUCCH-TPC-CommandConfig*

Table 4.6.3-88: *PUCCH-TPC-CommandConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUCCH-TPC-CommandConfig ::= SEQUENCE {			
FFS			
}			

– *PUSCH-Config*

Table 4.6.3-89: *PUSCH-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUSCH-Config ::= SEQUENCE {			
dataScramblingIdentityPUSCH	0		
txConfig	codebook		
dmrs-UplinkForPUSCH-MappingTypeA	Not present		
dmrs-UplinkForPUSCH-MappingTypeB CHOICE {			
setup	DMRS-UplinkConfig		
}			
pusch-PowerControl	PUSCH-PowerControl		
frequencyHopping	Not present		
frequencyHoppingOffsetLists	Not present		
resourceAllocation	resourceAllocationType1		
pusch-TimeDomainAllocationList	Not present		
pusch-AggregationFactor	Not present		
mcs-Table	qam256		FR1
	Not present		FR2
mcs-TableTransformPrecoder	qam256		FR1
	Not present		FR2
transformPrecoder	enabled		
codebookSubset	nonCoherent		
maxRank	2		
rbg-Size	Not present		
uci-OnPUSCH CHOICE {			
setup SEQUENCE {			
betaOffsets CHOICE {			
semiStatic SEQUENCE {			
betaOffsetACK-Index1	9		
betaOffsetACK-Index2	9		
betaOffsetACK-Index3	9		
betaOffsetCSI-Part1-Index1	6		
betaOffsetCSI-Part1-Index2	6		
betaOffsetCSI-Part2-Index1	6		
betaOffsetCSI-Part2-Index2	6		
}			
}			
}			
}			
}			

– *PUSCH-ConfigCommon*

Table 4.6.3-90: *PUSCH-ConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUSCH-ConfigCommon ::= SEQUENCE {			
groupHoppingEnabledTransformPrecoding	enabled		
pusch-TimeDomainAllocationList	PUSCH-TimeDomainResourceAllocationList		
msg3-DeltaPreamble	1		
p0-NominalWithGrant	90		
}			

– *PUSCH-PowerControl*

Table 4.6.3-91: *PUSCH-PowerControl*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUSCH-PowerControl ::= SEQUENCE {			
tpc-Accumulation	Not present		
msg3-Alpha	alpha08		
p0-NominalWithoutGrant	-90		
p0-AlphaSets SEQUENCE (SIZE (1..maxNrofP0-PUSCH-AlphaSets)) OF SEQUENCE {	1 entry		
p0-PUSCH-AlphaSetId	0		
p0	0		
alpha	alpha08		
}			
pathlossReferenceRSToAddModList SEQUENCE (SIZE (1..maxNrofPUSCH-PathlossReferenceRSs)) OF SEQUENCE {	1 entry		
pusch-PathlossReferenceRS-Id	0		
referenceSignal CHOICE{			
ssb-Index	SSB-Index		
}			
}			
pathlossReferenceRSToReleaseList	Not present		
twoPUSCH-PC-AdjustmentStates	Not present		
deltaMCS	Not present		
sri-PUSCH-MappingToAddModList SEQUENCE (SIZE (1..maxNrofSRI-PUSCH-Mappings)) OF SEQUENCE {	[1 entry]		
sri-PUSCH-PowerControlId	0		
sri-PUSCH-PathlossReferenceRS-Id	0		
sri-P0-PUSCH-AlphaSetId	0		
sri-PUSCH-ClosedLoopIndex	i0		
}			
sri-PUSCH-MappingToReleaseList	Not present		
}			

– *PUSCH-ServingCellConfig*

Table 4.6.3-92: *PUSCH-ServingCellConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUSCH-ServingCellConfig ::= SEQUENCE {			
codeBlockGroupTransmission	Not present		
rateMatching	[limitedBufferRM]		
xOverhead	Not present		
}			

– *PUSCH-TimeDomainResourceAllocationList*

Table 4.6.3-93: *PUSCH-TimeDomainResourceAllocationList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUSCH-TimeDomainResourceAllocationList ::= SEQUENCE (SIZE(1..maxNrofUL-Allocations)) OF SEQUENCE {	1 entry		
k2	n7		FR1
	n4		FR2
mappingType	typeB		
startSymbolAndLength	0011011		FR1
	0001110		FR2
}			

– *PUSCH-TPC-CommandConfig*

Table 4.6.3-94: *PUSCH-TPC-CommandConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUSCH-TPC-CommandConfig ::= SEQUENCE {			
tpc-Index	[Not present]		
tpc-IndexSUL	[Not present]		
targetCell	[Not present]		
}			

– *Q-OffsetRange*

Table 4.6.3-95: *Q-OffsetRange*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Q-OffsetRange	dB0		

– *QuantityConfig*

Table 4.6.3-96: *QuantityConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
QuantityConfig::= SEQUENCE {			
quantityConfigNR-List SEQUENCE (SIZE (1..maxNrofQuantityConfig)) OF SEQUENCE {	2 entries		
quantityConfigCell[1] SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
cs-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
quantityConfigRS-Index[1] SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
cs-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
quantityConfigCell[2] SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
cs-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
quantityConfigRS-Index[2] SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
cs-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
}			

– *RACH-ConfigCommon*

Table 4.6.3-97: *RACH-ConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RACH-ConfigCommon::= SEQUENCE {			
rach-ConfigGeneric	RACH-ConfigGeneric		
totalNumberOfRA-Preambles	Not present		
ssb-perRACH-OccasionAndCB-PreamblesPerSSB CHOICE {			
one	n8		
}			
groupBconfigured	Not present		
ra-ContentionResolutionTimer	sf64		
rsrp-ThresholdSSB	RSRP-Range		
rsrp-ThresholdSSB-SUL	RSRP-Range		
prach-RootSequenceIndex CHOICE {			
l139	Set according to table 4.4.2-2 for the NR Cell.		
}			
msg1-SubcarrierSpacing	SubcarrierSpacing		
restrictedSetConfig	unrestrictedSet		
msg3-transformPrecoding	Not present		
}			

– *RACH-ConfigGeneric*

Table 4.6.3-98: *RACH-ConfigGeneric*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RACH-ConfigGeneric ::= SEQUENCE {			
prach-ConfigurationIndex	161		
msg1-FDM	four		
msg1-FrequencyStart	0		
zeroCorrelationZoneConfig	15		
preambleReceivedTargetPower	[0]		
preambleTransMax	n7		
powerRampingStep	dB4		
ra-ResponseWindow	s120		
}			

– *RACH-ConfigDedicated*

Table 4.6.3-99: *RACH-ConfigDedicated*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RACH-ConfigDedicated::= SEQUENCE {			
cfra-Resources CHOICE {			
ssb SEQUENCE {			
ssb-ResourceList SEQUENCE (SIZE(1..maxRA-SSB-Resources)) OF {			
ssb	SSB-Index		
ra-PreambleIndex	8		
}			
ra-ssb-OccasionMaskIndex	0		
}			
}			
cfra-Occasions	Not present		
}			

– *RadioBearerConfig*

Table 4.6.3-100: *RadioBearerConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RadioBearerConfig ::= SEQUENCE {			
srb-ToAddModList	Not present		
srb-ToAddModList SEQUENCE {			SRB3
SRB-Identity	SRB-Identity		
reestablishPDCP	Not present		
discardOnPDCP	FFS		
pdcp-Config	PDCP-Config		
}			
srb3-ToRelease	Not present		
drb-ToAddModList	Not present		
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF SEQUENCE {	1 entry		EN-DC
cnAssociation CHOICE {			
eps-BearerIdentity	6		
sdap-Config	Not present		
}			
drb-Identity	DRB-Identity		
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		
}			
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF SEQUENCE {	1 entry		MCG_NR_PDCP
cnAssociation CHOICE {			
eps-BearerIdentity	5		
sdap-Config	Not present		
}			
drb-Identity	DRB-Identity using condition DRB1		
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		
}			
}			
drb-ToReleaseList	Not present		
securityConfig SEQUENCE {			
securityAlgorithmConfig	SecurityAlgorithmConfig		
keyToUse	s-KgNB		
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
SRB3	Establishment of SRB3
MCG_NR_PDCP	EN-DC MCG DRB configured with NR PDCP.

– *RadioLinkMonitoringConfig*

Table 4.6.3-101: *RadioLinkMonitoringConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RadioLinkMonitoringConfig ::= SEQUENCE {			
FFS			
}			

– *RadioLinkMonitoringRSId*

Table 4.6.3-102: *RadioLinkMonitoringRSId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RadioLinkMonitoringRSId	FFS		

– *RateMatchPattern*

Table 4.6.3-103: *RateMatchPattern*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RateMatchPattern ::= SEQUENCE {			
rateMatchPatternId	RateMatchPatternId		
patternType CHOICE {			
[controlResourceSet]	[ControlResourceSetId]		
},			
subcarrierSpacing	[SubcarrierSpacing]		
mode	[semiStatic]		
}			

– *RateMatchPatternId*

Table 4.6.3-104: *RateMatchPatternId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RateMatchPatternId	[0]		

– *RateMatchPatternLTE-CRS*

Table 4.6.3-105: *RateMatchPatternLTE-CRS*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RateMatchPatternLTE-CRS ::= SEQUENCE {			
FFS			
}			

– *ReportConfigId*

Table 4.6.3-106: *ReportConfigId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReportConfigId	1		

– *ReportConfigNR*

Table 4.6.3-107: *ReportConfigNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReportConfigNR::= SEQUENCE {			
reportType CHOICE {			
eventTriggered SEQUENCE {			
eventId CHOICE {			
eventA1 SEQUENCE {			EVENT_A1
a1-Threshold SEQUENCE {			
rsrp	RSRP-Range		
rsrq	RSRQ-Range		
sinr	SINR-Range		
}			
reportOnLeave	[false]	This value is temporarily set in RAN5#79.	
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger with condition EVENT_A1		
}			
eventA2 SEQUENCE {			EVENT_A2
a2-Threshold SEQUENCE {			
rsrp	RSRP-Range		
rsrq	RSRQ-Range		
sinr	SINR-Range		
}			
reportOnLeave	[false]	This value is temporarily set in RAN5#79.	
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
}			
eventA3 SEQUENCE {			EVENT_A3
a3-Offset SEQUENCE {			
rsrp	[0]	This value is temporarily set in RAN5#79.	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger with condition EVENT_A3		
useWhiteCellList	false		
}			
eventA4 SEQUENCE {			EVENT_A4
a4-Threshold SEQUENCE {			
rsrp	RSRP-Range		
rsrq	RSRQ-Range		
sinr	SINR-Range		
}			
reportOnLeave	[false]	This value is temporarily set in RAN5#79.	
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useWhiteCellList	[false]	This value is temporarily set in RAN5#79.	
}			
eventA5 SEQUENCE {			EVENT_A5
a5-Threshold1 SEQUENCE {			
rsrp	RSRP-Range		
rsrq	RSRQ-Range		
sinr	SINR-Range		
}			
a5-Threshold2 SEQUENCE {			
rsrp	RSRP-Range		

rsrq	RSRQ-Range		
sinr	SINR-Range		
}			
reportOnLeave	[false]	This value is temporarily set in RAN5#79.	
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useWhiteCellList	[false]	This value is temporarily set in RAN5#79.	
}			
eventA6 SEQUENCE {			EVENT_A6
a6-Offset SEQUENCE {			
rsrp	[0]	This value is temporarily set in RAN5#79.	
}			
reportOnLeave	[false]	This value is temporarily set in RAN5#79.	
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useWhiteCellList	[false]	This value is temporarily set in RAN5#79.	
}			
}			
rsType	ssb		
reportInterval	ReportInterval		
reportAmount	r2		
reportQuantityCell SEQUENCE {			
rsrp	true		
rsrq	true		
sinr	true		
}			
maxReportCells	8		
reportQuantityRsIndexes	Not present		
maxNrofRSIndexesToReport	Not present		
includeBeamMeasurements	false		
reportAddNeighMeas	Not present		
}			
}			
}			

Condition	Explanation
EVENT_A1	Configuration of Event A1
EVENT_A2	Configuration of Event A2
EVENT_A3	Configuration of Event A3
EVENT_A4	Configuration of Event A4
EVENT_A5	Configuration of Event A5
EVENT_A6	Configuration of Event A6

– *ReportConfigToAddModList*

Table 4.6.3-108: *ReportConfigToAddModList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReportConfigToAddModList::= SEQUENCE(SIZE (1..maxReportConfigId)) OF SEQUENCE {	1 entry		
reportConfigId[1]	ReportConfigId		
reportConfig[1] CHOICE {			
reportConfigNR	ReportConfigNR		
}			
}			

– *ReportInterval*

Table 4.6.3-109: *ReportInterval*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReportInterval	ms480		

– *RLC-Bearer-Config*

Table 4.6.3-110: *RLC-Bearer-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RLC-Bearer-Config ::= SEQUENCE {			
logicalChannelIdentity[1]	LogicalChannelIdentity		
servedRadioBearer[1] CHOICE {			
drb-Identity	DRB-Identity		
}			
reestablishRLC[1]	Not present		
RLC-Config[1]	RLC-Config using condition AM.		
mac-LogicalChannelConfig[1]	LogicalChannelConfig using condition HI		AM
	LogicalChannelConfig using condition LO		UM
}			

Condition	Explanation
AM	RLC AM
UM	RLC UM

– *RLC-Config*

Table 4.6.3-111: *RLC-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RLC-Config ::= CHOICE {			
am SEQUENCE {			AM
ul-AM-RLC SEQUENCE {			
sn-FieldLength	[size18]		
t-PollRetransmit	[ms30]		FR1
	[ms80]		FR2
pollPDU	[p32768]		
pollByte	[mB18]		
maxRetxThreshold	[t8]		
}			
dl-AM-RLC SEQUENCE {			
sn-FieldLength	[size18]		
t-Reassembly	[ms30]		FR1
	[ms80]		FR2
t-StatusProhibit	[ms30]		
}			
}			
am SEQUENCE {		9.2.1.3 /TS 36.331	SRB3
ul-AM-RLC SEQUENCE {			
sn-FieldLength	[size18]		
t-PollRetransmit	[ms30]		FR1
	[ms80]		FR2
pollPDU	[p32768]		
pollByte	[mB18]		
maxRetxThreshold	[t8]		
}			
dl-AM-RLC SEQUENCE {			
sn-FieldLength	[size18]		
t-Reassembly	[ms30]		
	[ms80]		FR2
t-StatusProhibit	[ms30]		
}			
}			
}			

Condition	Explanation
AM	RLC AM
SRB3	Establishment of SRB3

– *RLF-TimersAndConstants*

Table 4.6.3-112: *RLF-TimersAndConstants*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RLF-TimersAndConstants ::= SEQUENCE {			
t310	[ms1000]		
n310	[n1]		
n311	[n1]		
}			

– *RNTI-Value*

Table 4.6.3-113: *RNTI-Value*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RNTI-Value	0		

– *RSRP-Range*

Table 4.6.3-114: *RSRP-Range*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RSRP-Range	[0]	Mapping table is not yet specified in 38.133. This value is temporarily set in RAN5#79.	

– *RSRQ-Range*

Table 4.6.3-115: *RSRQ-Range*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RSRQ-Range	[0]	Mapping table is not yet specified in 38.133. This value is temporarily set in RAN5#79.	

– *SCellIndex*

Table 4.6.3-116: *SCellIndex*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SCellIndex	1		

– *SchedulingRequestConfig*

Table 4.6.3-117: *SchedulingRequestConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**

SchedulingRequestConfig ::= SEQUENCE {
schedulingRequestToAddModList
(SIZE(1..maxNrofSR-ConfigPerCellGroup)) OF
SEQUENCE {
	1 entry		

schedulingRequestId	SchedulingRequestId		
sr-ProhibitTimer	Not present		
sr-TransMax	n16		
}			
schedulingRequestToReleaseList	Not present		
}			

– *SchedulingRequestId*

Table 4.6.3-117A: *SchedulingRequestId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SchedulingRequestId	0		

– *SchedulingRequestResourceConfig*

Table 4.6.3-118: *SchedulingRequestResourceConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SchedulingRequestResourceConfig ::= SEQUENCE {			
schedulingRequestResourceId	SchedulingRequestResourceId		
schedulingRequestID	0		
periodicityAndOffset CHOICE {			
sym2	[NULL]		
}			
resource	0		
}			

– *SchedulingRequestResourceId*

Table 4.6.3-119: *SchedulingRequestResourceId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SchedulingRequestResourceId	1		

– *ScramblingId*

Table 4.6.3-120: *ScramblingId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ScramblingId	0		

– *SCS-SpecificCarrier*

Table 4.6.3-121: *SCS-SpecificCarrier*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SCS-SpecificCarrier ::= SEQUENCE {			
offsetToCarrier	Set to value of offset point to carrier in clause 4.3.1 for the carrier and subcarrier spacing under test.		
subcarrierSpacing	SubcarrierSpacing		
k0	Set to value of k0 in clause 4.3.1 for the carrier and subcarrier spacing under test.		
carrierBandwidth	Set to value of the number of RBs correspondent to 10 MHz channel bandwidth in clause 4.3.1 for the carrier and subcarrier under test.		
}			

– *SDAP-Config*

Table 4.6.3-122: *SDAP-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SDAP-Config ::= SEQUENCE {			
FFS			
}			

– *SearchSpace*

Table 4.6.3-123: *SearchSpace*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SearchSpace ::= SEQUENCE {			
searchSpaceId	SearchSpaceId with condition CSS		CSS
	SearchSpaceId with condition USS		USS
controlResourceSetId	ControlResourceSetId		
monitoringSlotPeriodicityAndOffset CHOICE {			
sl1	NULL		
}			
monitoringSymbolsWithinSlot	10000000000000		
nrofCandidates SEQUENCE {			
aggregationLevel1	n0		
aggregationLevel2	n8		
	n2		FR1_5MHz
aggregationLevel4	n0		
	[n1]		FR1_5MHz
	[n5]		FR2_200MHz
aggregationLevel8	[n8]		
	[n6]		FR1_60MHz
	[n0]		FR1_5MHz
	[n2]		FR2_200MHz
aggregationLevel16	n0		
}			
searchSpaceType CHOICE {			
common SEQUENCE {			CSS
dci-Format0-0-AndFormat1-0 SEQUENCE {			
}			
dci-Format2-0	Not present		
dci-Format2-1	Not present		
dci-Format2-2	Not present		
dci-Format2-3	Not present		
}			
ue-Specific SEQUENCE {			USS
dci-Formats	formats0-0-And-1-0		
}			
}			
}			

Condition	Explanation
FR1_5MHz	FR1 is used under the test. CBW is set to 5MHz.
FR1_60MHz	FR1 is used under the test. CBW is set to 60MHz.
FR1_80MHz	FR1 is used under the test. CBW is set to 80MHz.
FR1_100MHz	FR1 is used under the test. CBW is set to 100MHz.
FR2_200MHz	FR2 is used under the test. CBW is set to 200MHz.
CSS	Common SearchSpace
USS	UE-Specific SearchSpace

Table 4.6.3-124: Void

– *SearchSpaceId*

Table 4.6.3-125: *SearchSpaceId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SearchSpaceID	0		CSS
	1		USS

Condition	Explanation
CSS	Common SearchSpace
USS	UE-Specific SearchSpace

– *SecurityAlgorithmConfig*

Table 4.6.3-126: *SecurityAlgorithmConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SecurityAlgorithmConfig ::= SEQUENCE {			
cipheringAlgorithm	nea2		
integrityProtAlgorithm	nia2		
}			

– *ServCellIndex*

Table 4.6.3-127: *ServCellIndex*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ServCellIndex	0		

– *ServingCellConfig*

Table 4.6.3-128: *ServingCellConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ServingCellConfig ::= SEQUENCE {			
tdd-UL-DL-ConfigurationDedicated	Not present		
initialDownlinkBWP	BWP-DownlinkDedicated		
downlinkBWP-ToReleaseList	Not present		
downlinkBWP-ToAddModList	Not present		
firstActiveDownlinkBWP-Id	Not present		
bwp-InactivityTimer	Not present		
defaultDownlinkBWP-Id	BWP-Id		
uplinkConfig SEQUENCE {			
initialUplinkBWP	BWP-UplinkDedicated		
uplinkBWP-ToReleaseList	Not present		
uplinkBWP-ToAddModList	Not present		
firstActiveUplinkBWP-Id	Not present		
pusch-ServingCellConfig CHOICE {			
setup	PUSCH-ServingCellConfig		
}			
carrierSwitching	Not present		
}			
supplementaryUplink	Not present		
pdsch-ServingCellConfig CHOICE {			
setup	PDSCH-ServingCellConfig		
}			
csi-MeasConfig	Not present		
sCellDeactivationTimer	Not present		
crossCarrierSchedulingConfig	Not present		
tag-Id	0		
ue-BeamLockFunction	Not present		
pathlossReferenceLinking	pCell		
}			

– *ServingCellConfigCommon*

Table 4.6.3-129: *ServingCellConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ServingCellConfigCommon ::= SEQUENCE {			
physCellId	PhysCellId		
frequencyInfoDL	FrequencyInfoDL		
initialDownlinkBWP	BWP-DownlinkCommon		
uplinkConfigCommon SEQUENCE {			
frequencyInfoUL	FrequencyInfoUL		
initialUplinkBWP	BWP-UplinkCommon		
}			
supplementaryUplinkConfig	Not present		
n-TimingAdvanceOffset	Not present		
ssb-PositionsInBurst CHOICE {			
shortBitmap	0100		FREQ<=3GHz
mediumBitmap	01000000		FR1 and FREQ>3GHz
}			
ssb-periodicityServingCell	ms20		
dmrs-TypeA-Position	pos2		
lte-CRS-ToMatchAround	Not present		
rateMatchPatternToAddModList	Not present		
rateMatchPatternToReleaseList	Not present		
subcarrierSpacing	Not present		
tdd-UL-DL-ConfigurationCommon1	Not present		
tdd-UL-DL-ConfigurationCommon2	Not present		
ss-PBCH-BlockPower	[0]		
}			

Condition	Explanation
FREQ<=3GHz	Frequency range <= 3GHz
FREQ>3GHz	Frequency range > 3GHz

– *SINR-Range*

Table 4.6.3-130: *SINR-Range*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SINR-Range	[0]	Mapping table is not yet specified in 38.133. This value is temporarily set in RAN5#79.	

– *SlotFormatCombinationsPerCell*

Table 4.6.3-131: *SlotFormatCombinationsPerCell*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SlotFormatCombinationsPerCell ::= SEQUENCE {			
FFS			
}			

– *SlotFormatIndicator*

Table 4.6.3-132: *SlotFormatIndicator*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SlotFormatIndicator ::= SEQUENCE {			
FFS			
}			

– *SPS-Config*

Table 4.6.3-133: *SPS-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SPS-Config ::= SEQUENCE {			
FFS			
}			

– *SRB-Identity*

Table 4.6.3-134: *SRB-Identity*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SRB-Identity	3		

– *SRS-Config*

Table 4.6.3-135: *SRS-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SRS-Config ::= SEQUENCE {			
FFS			
}			

– *SRS-CarrierSwitching*

Table 4.6.3-136: *SRS-CarrierSwitching*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SRS-CarrierSwitching ::= SEQUENCE {			
FFS			
}			

– *SRS-TPC-CommandConfig*

Table 4.6.3-137: *SRS-TPC-CommandConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SRS-TPC-CommandConfig ::= SEQUENCE {			
FFS			
}			

– *SSB-Index*

Table 4.6.3-138: *SSB-Index*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SSB-Index	0		

– *SubcarrierSpacing*

Table 4.6.3-139: *SubcarrierSpacing*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SubcarrierSpacing	kHz15		FR1_FDD
	kHz30		FR1_TDD
	[kHz120]		FR2_TDD

Condition	Explanation
FR1_FDD	FDD frequency range < 6GHz
FR1_TDD	TDD frequency range < 6GHz
FR2_TDD	TDD frequency range > 6GHz

– *TCI-State*

Table 4.6.3-140: *TCI-State*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
TCI-State ::= SEQUENCE {			
tci-StateId	TCI-StateId		
qcl-Type1 SEQUENCE {			
cell	Not present		
bwp-Id	Not present		
referenceSignal CHOICE {			
ssb	SSB-Index		
}			
qcl-Type	typeD		
}			
qcl-Type2	Not present		
nrofPTRS-Ports	n1		
}			

– *TCI-StateId*

Table 4.6.3-141: *TCI-StateId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
TCI-StateId	0		

– *TDD-UL-DL-Config*

Table 4.6.3-142: *TDD-UL-DL-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
TDD-UL-DL-ConfigCommon ::= SEQUENCE {			
referenceSubcarrierSpacing	[SubcarrierSpacing]		
dl-UL-TransmissionPeriodicity	[ms5]		FR1
	[ms0p625]		FR2
nrofDownlinkSlots	[7]		FR1
	[4]		FR2
nrofDownlinkSymbols	[6]		FR1
	[12]		FR2
nrofUplinkSlots	[2]		FR1
	[1]		FR2
nrofUplinkSymbols	[4]		FR1
	[0]		FR2
}			

– *TimeToTrigger*

Table 4.6.3-143: *TimeToTrigger*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
TimeToTrigger	[ms0]		EVENT_A1
	ms320		EVENT_A3

Condition	**Explanation**
EVENT_A1	Configuration of Event A1
EVENT_A3	Configuration of Event A3

– *ZP-CSI-RS-Resource*

Table 4.6.3-144: *ZP-CSI-RS-Resource*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ZP-CSI-RS-Resource ::= SEQUENCE {			
zp-CSI-RS-ResourceId	ZP-CSI-RS-ResourceId		
resourceMapping	CSI-RS-ResourceMapping		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset		
}			

– *ZP-CSI-RS-ResourceSet*

Table 4.6.3-145: *ZP-CSI-RS-ResourceSet*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ZP-CSI-RS-ResourceSet ::= SEQUENCE {			
zp-CSI-RS-ResourceSetId	ZP-CSI-RS-ResourceSetId		
zp-CSI-RS-ResourceIdList SEQUENCE (SIZE(1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF {	1 entry		
ZP-CSI-RS-ResourceId[1]	FFS		
}			
}			

– *ZP-CSI-RS-ResourceSetId*

Table 4.6.3-146: *ZP-CSI-RS-ResourceSetId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ZP-CSI-RS-ResourceSetId	FFS		

4.6.4 UE capability information elements

Editor's Note: Updated based on R2-1806391 Merged CR to 38331.

– *AccessStratumRelease*

Table 4.6.4-1: *AccessStratumRelease*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
AccessStratumRelease	Same as indicated in TC applicability in TS 38.523-2 [19]		

– *BandCombinationList*

Table 4.6.4-2: *BandCombinationList*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
BandCombinationList::= SEQUENCE (SIZE (1..maxBandComb)) OF SEQUENCE {	1 entry		
BandAndDL-ParametersList[1] ::= SEQUENCE (SIZE (1..maxSimultaneousBands)) OF CHOICE {			
BandAndDL-ParametersEUTRA ::= SEQUENCE {			
bandEUTRA	FreqBandIndicatorEUTRA		
ca-BandwidthClassDL-EUTRA	[Not checked]		
intraBandContiguousCC-InfoDL-EUTRA-List SEQUENCE (SIZE (1.. maxNrofServingCellsEUTRA)) OF SEQUENCE {	1 entry		
mimo-CapabilityDL[1]	[Not checked]		
}			
}			
BandAndDL-ParametersNR ::= SEQUENCE {			
bandNR	FreqBandIndicatorNR		
ca-BandwidthClassDL	[Not checked]		
intraBandFreqSeparationDL	[Not checked]		
intraBandContiguousCC-InfoDL-List SEQUENCE (SIZE (1.. maxNrofServingCells)) OF SEQUENCE {	1 entry		
maxNumberMIMO-LayersPDSCH[1]	[Not checked]		
}			
}			
bandCombinationsUL[1]	[Not checked]		
bandCombinationParametersList[1] SEQUENCE (SIZE (1..maxBandComb)) OF SEQUENCE {	1 entry		
CA-ParametersNR[1] ::= SEQUENCE {			
multipleTimingAdvances	[Not checked]		
simultaneousRxTxInterBandCA	[Not checked]		
supportedBandwidthCombinationSet	[Not checked]		
}			
MRDC-Parameters[1] ::= SEQUENCE {			
singleUL-Transmission	[Not checked]		
ul-SharingEUTRA-NR	[Not checked]		
ul-SwitchingTimeEUTRA-NR	[Not checked]		
simultaneousRxTxInterBandENDC	[Not checked]		
asyncIntraBandENDC	[Not checked]		
basebandProcesingCombinationMRDC	BasebandProcessingCombinationMRDC		
}			
}			
}			

– *BandCombinationParametersUL-List*

Table 4.6.4-3: *BandCombinationParametersUL-List*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
BandCombinationParametersUL-List::= SEQUENCE (SIZE (1..maxBandComb)) OF {	1 entry		
bandParametersUL-EUTRA[1] ::= SEQUENCE {			
ca-BandwidthClassUL-EUTRA	[Not checked]		
intraBandContiguousCC-InfoUL-EUTRA-List SEQUENCE (SIZE (1.. maxNrofServingCellsEUTRA)) OF SEQUENCE {	1 entry		
mimo-CapabilityUL[1]	[Not checked]		
}			
}			
bandParametersUL-NR[1] ::= SEQUENCE {			
ca-BandwidthClassUL	[Not checked]		
intraBandFreqSeparationUL	[Not checked]		
intraBandContiguousCC-InfoUL-List SEQUENCE (SIZE (1.. maxNrofServingCells)) OF SEQUENCE {			
maxNumberMIMO-LayersCB-PUSCH	[Not checked]		
maxNumberMIMO-LayersNonCB-PUSCH	[Not checked]		
}			
}			
}			

– *BasebandCombinationParametersUL-List*

Table 4.6.4-4: *BasebandCombinationParametersUL-List*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
BasebandCombinationParametersUL-List::= SEQUENCE (SIZE (1..maxBasebandProcComb)) OF SEQUENCE {	1 entry		
ca-BandwidthClassUL[1]	CA-BandwidthClassNR		
freqRange[1]	[Not checked]		
basebandParametersPerCC-UL[1] SEQUENCE (SIZE (1.. maxNrofServingCells)) OF SEQUENCE {	1 entry		
supportedSubcarrierSpacingUL[1]	[Not checked]		
supportedBandwidthUL[1] CHOICE {			
fr1	[Not checked]		
fr2	[Not checked]		
}			
scalingFactor0dot75[1]	[Not checked]		
maxNumberMIMO-LayersCB-PUSCH[1]	[Not checked]		
maxNumberMIMO-LayersNonCB-PUSCH[1]	[Not checked]		
supportedModulationOrderUL[1]	[Not checked]		
supportedSRS-Resources[1]	[Not checked]		
srs-TxSwitch[1]	[Not checked]		
lowLatencyCSI-Feedback[1]	[Not checked]		
pusch-DifferentTB-PerSlot SEQUENCE {			
scs-15kHz	[Not checked]		
scs-30kHz	[Not checked]		
scs-60kHz	[Not checked]		
scs-120kHz	[Not checked]		
}			
twoPUCCH-Group[1]	[Not checked]		
diffNumerologyAcrossPUCCH-Group[1]	[Not checked]		
diffNumerologyWithinPUCCH-Group[1]	[Not checked]		
crossCarrierScheduling[1]	[Not checked]		
supportedNumberTAG[1]	[Not checked]		
dynamicSwitchSUL[1]	[Not checked]		
simultaneousTxSUL-NonSUL[1]	[Not checked]		
searchSpaceSharingCA-UL[1]	[Not checked]		
}			
}			

– *BasebandProcessingCombinationMRDC*

Table 4.6.45]: *BasebandProcessingCombinationMRDC*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
BasebandProcessingCombinationMRDC::= SEQUENCE (SIZE (1..maxBasebandProcComb)) OF SEQUENCE {	1 entry		
basebandProcessingCombinationIndexMN[1]	BasebandProcessingCombinationIndex		
basebandProcessingCombinationLinkedIndexSN[1]	[Not checked]		
}			
}			

– *CA-BandwidthClassNR*

Table 4.6.4-6: *CA-BandwidthClassNR*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
CA-BandwidthClassNR	[Not checked]		

– *CA-BandwidthClassEUTRA*

Table 4.6.4-7: *CA-BandwidthClassEUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
CA-BandwidthClassEUTRA	[Not checked]		

– *FreqBandIndicatorEUTRA*

Table 4.6.4-8: *FreqBandIndicatorEUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FreqBandIndicatorEUTRA	EUTRA Operating band under test		

– *FreqBandList*

Table 4.6.4-9: *FreqBandList*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FreqBandList::= SEQUENCE (SIZE (1..maxBandsMRDC)) OF CHOICE {			
bandEUTRA	FreqBandIndicatorEUTRA		
bandNR	FreqBandIndicatorNR		
}			

– *FreqSeparationClass*

Table 4.6.4-10: *FreqSeparationClass*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FreqSeparationClass	[Not checked]		

– *MIMO-Layers*

Table 4.6.4-11: *MIMO-Layers*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
MIMO-LayersDL	[Not checked]		
MIMO-LayersUL	[Not checked]		

– *ModulationOrder*

Table 4.6.4-12: *ModulationOrder*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
ModulationOrder	[Not checked]		

– *RAT-Type*

Table 4.6.4-13: *RAT-Type*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
RAT-Type	eutra-nr		

– *SupportedBasebandProcessingCombination*

Table 4.6.4-14: *SupportedBasebandProcessingCombination*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
SupportedBasebandProcessingCombination::= SEQUENCE {			
basebandParametersDL[1] SEQUENCE (SIZE (1..maxSimultaneousBands)) OF BasebandParametersPerBandDL SEQUENCE {	1 entry		
ca-BandwidthClassDL[1]	CA-BandwidthClassNR		
freqRange[1]	[Not checked]		
basebandParametersPerCC-DL[1] SEQUENCE (SIZE (1.. maxNrofServingCells)) OF {	1 entry		
supportedSubcarrierSpacingDL[1]	[Not checked]		
supportedBandwidthDL[1] CHOICE {			
fr1	[Not checked]		
fr2	[Not checked]		
}			
scalingFactor0dot75[1]	[Not checked]		
timeDurationForQCL[1] SEQUENCE {			
scs-60kHz	[Not checked]		
sch-120kHz	[Not checked]		
}			
scellWithoutSSB[1]	[Not checked]		
csi-RS-MeasSCellWithoutSSB[1]	[Not checked]		
maxNumberMIMO-LayersPDSCH[1]	MIMO-LayersDL		
supportedModulationOrderDL[1]	ModulationOrder		
srs-AssocCSI-RS[1]	[Not checked]		
type1-3-CSS[1]	[Not checked]		
pdcchMonitoringAnyOccasions[1]	[Not checked]		
ue-SpecificUL-DL-Assignment[1]	[Not checked]		
pdsch-DifferentTB-PerSlot[1] SEQUENCE {			
scs-15kHz	[Not checked]		
scs-30kHz	[Not checked]		
scs-60kHz	[Not checked]		
scs-120kHz	[Not checked]		
}			
crossCarrierScheduling[1]	[Not checked]		
searchSpaceSharingCA-DL[1]	[Not checked]		
}			
}			
basebandParametersUL[1] BIT STRING (SIZE (1..maxBasebandProcComb))	[Not checked]		
}			
}			

– *UE-CapabilityRAT-ContainerList*

Table 4.6.4-15: *UE-CapabilityRAT-ContainerList*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-CapabilityRAT-ContainerList::= SEQUENCE (SIZE (0.. maxRAT-CapabilityContainers)) OF SEQUENCE {	1 entry		
rat-Type[1]	RAT-Type		
ue-CapabilityRAT-Container[1]	UE-MRDC-Capability		EN-DC
}			
}			

– *UE-MRDC-Capability*

Table 4.6.4-16: *UE-MRDC-Capability*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-MRDC-Capability::= SEQUENCE {			
measParametersMRDC SEQUENCE {			
measParametersMRDC-Common SEQUENCE {			
independentGapConfig	[Not checked]		
}			
measParametersMRDC-XDD-Diff SEQUENCE {			
sftd-MeasPSCell	[Not checked]		
sftd-MeasNR-Cell	[Not checked]		
}			
measParametersMRDC-FRX-Diff SEQUENCE {			
simultaneousRxDataSSB- DiffNumerology	[Not checked]		
}			
}			
rf-ParametersMRDC SEQUENCE {			
supportedBandCombination	BandCombinationList		
bandCombinationParametersUL-List	BandCombinationParametersUL-List		
}			
phy-ParametersMRDC SEQUENCE {			
phy-ParametersMRDC-XDD-Diff SEQUENCE {			
dynamicPowerSharing	[Not checked]		
tdm-Pattern	[Not checked]		
}			
phy-ParametersMRDC-FRX-Diff SEQUENCE {			
dynamicPowerSharing	[Not checked]		
tdm-Pattern	[Not checked]		
}			
}			
generalParametersMRDC SEQUENCE {			
splitSRB-WithOneUL-Path	[Not checked]		
splitDRB-withUL-Both-MCG-SCG	[Not checked]		
srb3	[Not checked]		
}			
fdd-Add-UE-MRDC-Capabilities SEQUENCE {			
phy-ParametersMRDC-XDD-Diff SEQUENCE {			
dynamicPowerSharing	[Not checked]		
tdm-Pattern	[Not checked]		
}			
measParametersMRDC-XDD-Diff SEQUENCE {			
sftd-MeasPSCell	[Not checked]		
sftd-MeasNR-Cell	[Not checked]		
}			
generalParametersMRDC SEQUENCE {			
splitSRB-WithOneUL-Path	[Not checked]		
splitDRB-withUL-Both-MCG-SCG	[Not checked]		
srb3	[Not checked]		
}			
}			
tdd-Add-UE-MRDC-Capabilities SEQUENCE {			
phy-ParametersMRDC-XDD-Diff SEQUENCE {			
dynamicPowerSharing	[Not checked]		
tdm-Pattern	[Not checked]		
}			
measParametersMRDC-XDD-Diff SEQUENCE {			
sftd-MeasPSCell	[Not checked]		
sftd-MeasNR-Cell	[Not checked]		
}			
generalParametersMRDC SEQUENCE {			
splitSRB-WithOneUL-Path	[Not checked]		
splitDRB-withUL-Both-MCG-SCG	[Not checked]		
srb3	[Not checked]		
}			
}			

fr1-Add-UE-MRDC-Capabilities SEQUENCE {			
phy-ParametersMRDC-FRX-Diff SEQUENCE {			
dynamicPowerSharing	[Not checked]		
tdm-Pattern	[Not checked]		
}			
measParametersMRDC-FRX-Diff SEQUENCE {			
simultaneousRxDataSSB-DiffNumerology	[Not checked]		
}			
}			
fr2-Add-UE-MRDC-Capabilities			
phy-ParametersMRDC-FRX-Diff SEQUENCE {			
dynamicPowerSharing	[Not checked]		
tdm-Pattern	[Not checked]		
}			
measParametersMRDC-FRX-Diff SEQUENCE {			
simultaneousRxDataSSB-DiffNumerology	[Not checked]		
}			
}			
lateNonCriticalExtension	[Not checked]		
nonCriticalExtension SEQUENCE {	[Not checked]		
}			
}			

– *UE-NR-Capability*

Table 4.6.4-17: UE-NR-Capability

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-NR-Capability::= SEQUENCE {			
accessStratumRelease	AccessStratumRelease		
pdcp-Parameters SEQUENCE {			
supportedROHC-Profiles SEQUENCE {			
profile0x0000	[Not checked]		
profile0x0001	[Not checked]		
profile0x0002	[Not checked]		
profile0x0003	[Not checked]		
profile0x0004	[Not checked]		
profile0x0006	[Not checked]		
profile0x0101	[Not checked]		
profile0x0102	[Not checked]		
profile0x0103	[Not checked]		
profile0x0104	[Not checked]		
}			
maxNumberROHC-ContextSessions	[Not checked]		
uplinkOnlyROHC-Profiles	[Not checked]		
continueROHC-Context	[Not checked]		
outOfOrderDelivery	[Not checked]		
}			
rlc-Parameters SEQUENCE {			
am-WithShortSN	[Not checked]		
um-WithShortSN	[Not checked]		
um-WIthLongSN	[Not checked]		
}			
mac-Parameters SEQUENCE {			
mac-ParametersCommon SEQUENCE {			
lcp-Restriction	[Not checked]		
pucch-SpatialRelInfoMAC-CE	[Not checked]		
}			
mac-ParametersXDD-Diff SEQUENCE {			
skipUplinkTxDynamic	[Not checked]		
logicalChannelSR-DelayTimer	[Not checked]		
longDRX-Cycle	[Not checked]		
shortDRX-Cycle	[Not checked]		
multipleSR-Configurations	[Not checked]		
multipleConfiguredGrantConfigurations	[Not checked]		
}			
}			
phy-Parameters SEQUENCE {			
phy-ParametersCommon SEQUENCE {			
csi-RS-CFRA-ForHO	[Not checked]		
dynamicPRB-BundlingDL	[Not checked]		
sp-CSI-ReportPUCCH	[Not checked]		
sp-CSI-ReportPUSCH	[Not checked]		
nzp-CSI-RS-IntefMgmt	[Not checked]		
type2-SP-CSI-Feedback-LongPUCCH	[Not checked]		
multipleCORESET	[Not checked]		
dynamicSFI	[Not checked]		
precoderGranularityCORESET	[Not checked]		
dynamicHARQ-ACK-Codebook	[Not checked]		
semiStaticHARQ-ACK-Codebook	[Not checked]		
spatialBundlingHARQ-ACK	[Not checked]		
dynamicBetaOffsetInd-HARQ-ACK-CSI	[Not checked]		
pucch-Repetition-F1-3-4	[Not checked]		
ra-Type0-PUSCH	[Not checked]		
dynamicSwitchRA-Type0-1-PDSCH	[Not checked]		
dynamicSwitchRA-Type0-1-PUSCH	[Not checked]		
pdsch-MappingTypeA	[Not checked]		
pdsch-MappingTypeB	[Not checked]		
interleavingVRB-ToPRB-PDSCH	[Not checked]		
interleavingVRB-ToPRB-PUSCH	[Not checked]		

interSlotFreqHopping-PUSCH	[Not checked]		
type1-PUSCH-RepetitionOneSlot	[Not checked]		
type1-PUSCH-RepetitionMultiSlots	[Not checked]		
type2-PUSCH-RepetitionOneSlot	[Not checked]		
type2-PUSCH-RepetitionMultiSlots	[Not checked]		
pusch-RepetitionMultiSlots	[Not checked]		
pdsch-RepetitionMultiSlots	[Not checked]		
downlinkSPS	[Not checked]		
configuredUL-GrantType1	[Not checked]		
configuredUL-GrantType2	[Not checked]		
pre-EmptIndication-DL	[Not checked]		
cbg-TransIndication	[Not checked]		
cbg-FlushIndication-DL	[Not checked]		
dynamicHARQ-ACK-CodeB-CBG-Retx-DL	[Not checked]		
rateMatchingResrcSetSemi-Static	[Not checked]		
rateMatchingResrcSetDynamic	[Not checked]		
rateMatchingLTE-CRS	[Not checked]		
bwp-SwitchingDelay	[Not checked]		
}			
phy-ParametersXDD-Diff SEQUENCE {			
twoPUCCH-F0-2-ConsecSymbols	[Not checked]		
twoDifferentTPC-Loop-PUSCH	[Not checked]		
twoDifferentTPC-Loop-PUCCH	[Not checked]		
}			
phy-ParametersFRX-Diff SEQUENCE {			
oneFL-DMRS-TwoAdditionalDMRS	[Not checked]		
twoFL-DMRS	[Not checked]		
twoFL-DMRS-TwoAdditionalDMRS	[Not checked]		
oneFL-DMRS-ThreeAdditionalDMRS	[Not checked]		
supportedDMRS-TypeDL	[Not checked]		
supportedDMRS-TypeUL	[Not checked]		
semiOpenLoopCSI	[Not checked]		
csi-ReportWithoutPMI	[Not checked]		
csi-ReportWithCRI	[Not checked]		
csi-ReportWithoutCQI	[Not checked]		
onePortsPTRS	[Not checked]		
twoPUCCH-F0-2-ConsecSymbols	[Not checked]		
pucch-F2-WithFH	[Not checked]		
pucch-F3-WithFH	[Not checked]		
pucch-F4-WithFH	[Not checked]		
freqHoppingPUCCH-F0-2	[Not checked]		
freqHoppingPUCCH-F1-3-4	[Not checked]		
mux-SR-HARQ-ACK-CSI-PUCCH	[Not checked]		
uci-CodeBlockSegmentation	[Not checked]		
onePUCCH-LongAndShortFormat	[Not checked]		
twoPUCCH-AnyOthersInSlot	[Not checked]		
intraSlotFreqHopping-PUSCH	[Not checked]		
pusch-LBRM	[Not checked]		
pdcch-BlindDetectionCA	[Not checked]		
tpc-PUSCH-RNTI	[Not checked]		
tpc-PUCCH-RNTI	[Not checked]		
tpc-SRS-RNTI	[Not checked]		
absoluteTPC-Command	[Not checked]		
twoDifferentTPC-Loop-PUSCH	[Not checked]		
twoDifferentTPC-Loop-PUCCH	[Not checked]		
pusch-HalfPi-BPSK	[Not checked]		
pucch-F3-4-HalfPi-BPSK	[Not checked]		
oneSymbolGP-TDD	[Not checked]		
almostContiguousCP-OFDM-UL	[Not checked]		
}			
phy-ParametersFR1 SEQUENCE {			
pdcchMonitoringSingleOccasion	[Not checked]		
scs-60kHz	[Not checked]		
pdsch-256QAM-FR1	[Not checked]		
}			

phy-ParametersFR2 SEQUENCE {			
calibrationGapPA	[Not checked]		
}			
supportedBasebandProcessingCombination	SupportedBasebandProcessingCombination		
basebandCombinationParametersUL-List	BasebandCombinationParametersUL-List		
}			
rf-Parameters SEQUENCE {			
supportedBandListNR SEQUENCE (SIZE (1..maxBands)) OF SEQUENCE {	1 Entry		
bandNR[1]	FreqBandIndicatorNR		
modifiedMPR-Behaviour[1]	[Not checked]		
maxChannelBW-PerCC[1]	[Not checked]		
mimo-ParametersPerBand[1] SEQUENCE {			
timeDurationForQCL SEQUENCE {			
scs-60kHz	[Not checked]		
sch-120kHz	[Not checked]		
}			
maxNumberMIMO-LayersPDSCH	MIMO-LayersDL		
maxNumberMIMO-LayersCB-PUSCH	MIMO-LayersUL		
maxNumberMIMO-LayersNonCB-PUSCH	MIMO-LayersUL		
maxNumberConfiguredTCIstates	[Not checked]		
maxNumberActiveTCI-PerCC	[Not checked]		
pusch-TransCoherence	[Not checked]		
beamCorrespondence	[Not checked]		
periodicBeamReport	[Not checked]		
aperiodicBeamReport	[Not checked]		
sp-BeamReportPUCCH	[Not checked]		
sp-BeamReportPUSCH	[Not checked]		
beamManagementSSB-CSI-RS SEQUENCE {			
maxNumberSSB-CSI-RS-ResourceOneTx	[Not checked]		
maxNumberSSB-CSI-RS-ResourceTwoTx	[Not checked]		
supportedCSI-RS-Density	[Not checked]		
}			
maxNumberRxBeam	[Not checked]		
maxNumberRxTxBeamSwitchDL SEQUENCE {			
scs-15kHz	[Not checked]		
scs-30kHz	[Not checked]		
scs-60kHz	[Not checked]		
scs-120kHz	[Not checked]		
scs-240kHz	[Not checked]		
}			
maxNumberNonGroupBeamReporting	[Not checked]		
groupBeamReporting	[Not checked]		
uplinkBeamManagement SEQUENCE {			
maxNumberSRS-ResourcePerSet	[Not checked]		
maxNumberSRS-ResourceSet	[Not checked]		
}			
maxNumberCSI-RS-BFR	[Not checked]		
maxNumberSSB-BFR	[Not checked]		
maxNumberCSI-RS-SSB-BFR	[Not checked]		
twoPortsPTRS	[Not checked]		
supportedSRS-Resources SEQUENCE {			
maxNumberAperiodicSRS-PerBWP	[Not checked]		
maxNumberAperiodicSRS-PerBWP-PerSlot	[Not checked]		
maxNumberPeriodicSRS-PerBWP	[Not checked]		
maxNumberPeriodicSRS-PerBWP-PerSlot	[Not checked]		
maxNumberSemiPersitentSRS-PerBWP	[Not checked]		
maxNumberSP-SRS-PerBWP-PerSlot	[Not checked]		
maxNumberSRS-Ports-PerResource	[Not checked]		
}			
srs-TxSwitch SEQUENCE {			
supportedSRS-TxPortSwitch	[Not checked]		
txSwitchImpactToRx	[Not checked]		

}			
maxNumberSimultaneousSRS-PerCC	[Not checked]		
lowLatencyCSI-Feedback	[Not checked]		
}			
extendedCP[1]	[Not checked]		
phaseCoherenceUL[1]	[Not checked]		
scellWithoutSSB[1]	[Not checked]		
csi-RS-MeasSCellWithoutSSB[1]	[Not checked]		
srs-AssocCSI-RS[1]	[Not checked]		
type1-3-CSS[1]	[Not checked]		
multipleTCI[1]	[Not checked]		
pdcchMonitoringAnyOccasions[1]	[Not checked]		
ue-SpecificUL-DL-Assignment[1]	[Not checked]		
pdsch-DifferentTB-PerSlot[1] SEQUENCE {			
scs-15kHz	[Not checked]		
scs-30kHz	[Not checked]		
scs-60kHz	[Not checked]		
scs-120kHz	[Not checked]		
}			
pusch-DifferentTB-PerSlot[1] SEQUENCE {			
scs-15kHz	[Not checked]		
scs-30kHz	[Not checked]		
scs-60kHz	[Not checked]		
scs-120kHz	[Not checked]		
}			
bwp-SameNumerology[1]	[Not checked]		
bwp-DiffNumerology[1]	[Not checked]		
twoPUCCH-Group[1]	[Not checked]		
diffNumerologyAcrossPUCCH-Group[1]	[Not checked]		
diffNumerologyWithinPUCCH-Group[1]	[Not checked]		
crossCarrierScheduling[1]	[Not checked]		
supportedNumberTAG[1]	[Not checked]		
simultaneousTxSUL-NonSUL[1]	[Not checked]		
searchSpaceSharingCA-DL[1]	[Not checked]		
searchSpaceSharingCA-UL[1]	[Not checked]		
pdsch-256QAM-FR2[1]	[Not checked]		
pusch-256QAM[1]	[Not checked]		
}			
supportedBandCombination	BandCombinationList		
bandCombinationParametersUL-List	BandCombinationParametersUL-List		
}			
measParameters SEQUENCE {			
measParametersXDD-Diff SEQUENCE {			
intraAndInterF-MeasAndReport	[Not checked]		
eventA-MeasAndReport	[Not checked]		
}			
measParametersFRX-Diff SEQUENCE {			
ss-SINR-Meas	[Not checked]		
csi-RSRP-AndRSRQ-MeasWithSSB	[Not checked]		
csi-RSRP-AndRSRQ-MeasWithoutSSB	[Not checked]		
csi-SINR-Meas	[Not checked]		
csi-RS-RLM	[Not checked]		
}			
}			
fdd-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersXDD-Diff SEQUENCE {			
twoPUCCH-F0-2-ConsecSymbols	[Not checked]		
twoDifferentTPC-Loop-PUSCH	[Not checked]		
twoDifferentTPC-Loop-PUCCH	[Not checked]		
}			
mac-ParametersXDD-Diff SEQUENCE {			
skipUplinkTxDynamic	[Not checked]		
logicalChannelSR-DelayTimer	[Not checked]		
longDRX-Cycle	[Not checked]		

shortDRX-Cycle	[Not checked]		
multipleSR-Configurations	[Not checked]		
multipleConfiguredGrantConfigurations	[Not checked]		
}			
measParametersXDD-Diff SEQUENCE {			
intraAndInterF-MeasAndReport	[Not checked]		
eventA-MeasAndReport	[Not checked]		
}			
}			
tdd-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersXDD-Diff SEQUENCE {			
twoPUCCH-F0-2-ConsecSymbols	[Not checked]		
twoDifferentTPC-Loop-PUSCH	[Not checked]		
twoDifferentTPC-Loop-PUCCH	[Not checked]		
}			
mac-ParametersXDD-Diff SEQUENCE {			
skipUplinkTxDynamic	[Not checked]		
logicalChannelSR-DelayTimer	[Not checked]		
longDRX-Cycle	[Not checked]		
shortDRX-Cycle	[Not checked]		
multipleSR-Configurations	[Not checked]		
multipleConfiguredGrantConfigurations	[Not checked]		
}			
measParametersXDD-Diff SEQUENCE {			
intraAndInterF-MeasAndReport	[Not checked]		
eventA-MeasAndReport	[Not checked]		
}			
fr1-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersFRX-Diff SEQUENCE {			
oneFL-DMRS-TwoAdditionalDMRS	[Not checked]		
twoFL-DMRS	[Not checked]		
twoFL-DMRS-TwoAdditionalDMRS	[Not checked]		
oneFL-DMRS-ThreeAdditionalDMRS	[Not checked]		
supportedDMRS-TypeDL	[Not checked]		
supportedDMRS-TypeUL	[Not checked]		
semiOpenLoopCSI	[Not checked]		
csi-ReportWithoutPMI	[Not checked]		
csi-ReportWithCRI	[Not checked]		
csi-ReportWithoutCQI	[Not checked]		
onePortsPTRS	[Not checked]		
twoPUCCH-F0-2-ConsecSymbols	[Not checked]		
pucch-F2-WithFH	[Not checked]		
pucch-F3-WithFH	[Not checked]		
pucch-F4-WithFH	[Not checked]		
freqHoppingPUCCH-F0-2	[Not checked]		
freqHoppingPUCCH-F1-3-4	[Not checked]		
mux-SR-HARQ-ACK-CSI-PUCCH	[Not checked]		
uci-CodeBlockSegmentation	[Not checked]		
onePUCCH-LongAndShortFormat	[Not checked]		
twoPUCCH-AnyOthersInSlot	[Not checked]		
intraSlotFreqHopping-PUSCH	[Not checked]		
pusch-LBRM	[Not checked]		
pdcch-BlindDetectionCA	[Not checked]		
tpc-PUSCH-RNTI	[Not checked]		
tpc-PUCCH-RNTI	[Not checked]		
tpc-SRS-RNTI	[Not checked]		
absoluteTPC-Command	[Not checked]		
twoDifferentTPC-Loop-PUSCH	[Not checked]		
twoDifferentTPC-Loop-PUCCH	[Not checked]		
pusch-HalfPi-BPSK	[Not checked]		
pucch-F3-4-HalfPi-BPSK	[Not checked]		
oneSymbolGP-TDD	[Not checked]		
almostContiguousCP-OFDM-UL	[Not checked]		
}			
measParametersFRX-Diff SEQUENCE {			

ss-SINR-Meas	[Not checked]		
csi-RSRP-AndRSRQ-MeasWithSSB	[Not checked]		
csi-RSRP-AndRSRQ-MeasWithoutSSB	[Not checked]		
csi-SINR-Meas	[Not checked]		
csi-RS-RLM	[Not checked]		
}			
}			
fr2-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersFRX-Diff SEQUENCE {	[Not checked]		
oneFL-DMRS-TwoAdditionalDMRS	[Not checked]		
twoFL-DMRS	[Not checked]		
twoFL-DMRS-TwoAdditionalDMRS	[Not checked]		
oneFL-DMRS-ThreeAdditionalDMRS	[Not checked]		
supportedDMRS-TypeDL	[Not checked]		
supportedDMRS-TypeUL	[Not checked]		
semiOpenLoopCSI	[Not checked]		
csi-ReportWithoutPMI	[Not checked]		
csi-ReportWithCRI	[Not checked]		
csi-ReportWithoutCQI	[Not checked]		
onePortsPTRS	[Not checked]		
twoPUCCH-F0-2-ConsecSymbols	[Not checked]		
pucch-F2-WithFH	[Not checked]		
pucch-F3-WithFH	[Not checked]		
pucch-F4-WithFH	[Not checked]		
freqHoppingPUCCH-F0-2	[Not checked]		
freqHoppingPUCCH-F1-3-4	[Not checked]		
mux-SR-HARQ-ACK-CSI-PUCCH	[Not checked]		
uci-CodeBlockSegmentation	[Not checked]		
onePUCCH-LongAndShortFormat	[Not checked]		
twoPUCCH-AnyOthersInSlot	[Not checked]		
intraSlotFreqHopping-PUSCH	[Not checked]		
pusch-LBRM	[Not checked]		
pdcch-BlindDetectionCA	[Not checked]		
tpc-PUSCH-RNTI	[Not checked]		
tpc-PUCCH-RNTI	[Not checked]		
tpc-SRS-RNTI	[Not checked]		
absoluteTPC-Command	[Not checked]		
twoDifferentTPC-Loop-PUSCH	[Not checked]		
twoDifferentTPC-Loop-PUCCH	[Not checked]		
pusch-HalfPi-BPSK	[Not checked]		
pucch-F3-4-HalfPi-BPSK	[Not checked]		
oneSymbolGP-TDD	[Not checked]		
almostContiguousCP-OFDM-UL	[Not checked]		
}			
measParametersFRX-Diff SEQUENCE {			
ss-SINR-Meas	[Not checked]		
csi-RSRP-AndRSRQ-MeasWithSSB	[Not checked]		
csi-RSRP-AndRSRQ-MeasWithoutSSB	[Not checked]		
csi-SINR-Meas	[Not checked]		
csi-RS-RLM	[Not checked]		
}			
}			
lateNonCriticalExtension	[Not checked]		
nonCriticalExtension SEQUENCE {			
}			
}			

4.6.5 Other information elements

– *RRC-TransactionIdentifier*

Table 4.6.5-1: RRC-TransactionIdentifier

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
RRC-TransactionIdentifier	0		

4.7 Default 5GC NAS message and information elements contents

4.8 Reference configurations

4.8.1 Radio configurations

– *RRCReconfiguration-DRB(n, m)*

Table 4.8.1-1: RRCReconfiguration-DRB (n, m)

Derivation Path: TS 38.508-1, table 4.6.1-3			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	RadioBearerConfig-DRB(n,m)		
secondaryCellGroup	CellGroupConfig-DRB(n.m)		
}			
}			
}			

– *CellGroupConfig-DRB(n, m)*

Table 4.8.1-2: CellGroupConfig-DRB(n, m)

Derivation Path: TS 38.508-1, table 4.6.3-13: CellGroupConfig			
Information Element	**Value/remark**	**Comment**	**Condition**
CellGroupConfig::= SEQUENCE {			
cellGroupId	1		
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF SEQUENCE {	n+m entries	BID is the total number of established DRBs in the UE, before applying the contents of this IE	
logicalChannelIdentity[k, k=1..n+m]	k, k=1..n+m		
servedRadioBearer[k, k=BID+n..BID+n+m] CHOICE {			
drb-Identity	k, k=BID+n..BID+n+m		
}			
reestablishRLC[k, k=1..n+m]	[Not present]		
RLC-Config[k, k=BID+1..BID+n]	RLC-Config using condition AM.	n AM RLC DRBs	n>0
RLC-Config[k, k=BID+n..BID+n+m]	RLC-Config using condition UM.	m UM RLC DRBs	m>0
mac-LogicalChannelConfig[k, k=1..n+m]	k, k=1..n+m		
}			
}			

Condition	Explanation
n>0	n is greater than zero
m>0	m is greater than zero

– *RadioBearerConfig-DRB (n, m)*

Table 4.8.1-3: RadioBearerConfig-DRB (n, m)

Derivation Path: TS 38.508-1, table 4.6.3-100 and condition EN-DC			
Information Element	**Value/remark**	**Comment**	**Condition**
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF SEQUENCE {	n+m entries	BID is the total number of established DRBs in the UE, before applying the contents of this IE	
cnAssociation[k] CHOICE {			
eps-BearerIdentity	k, k=BID+n..BID+n+m		
sdap-Config	Not present		
}			
drb-Identity[k]	k, k=BID+n..BID+n+m		
reestablishPDCP[k]	Not present		
recoverPDCP[k]	Not present		
pdcp-Config[k]	PDCP-Config		
}			
}			
}			

5 Test environments for RF test

5.1 Requirements of test equipment

5.1.1 Requirements for transmission and reception tests

5.1.1.1 Requirements common for conducted and OTA tests

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to transmission and reception tests and common for conducted and OTA tests.

5.1.1.2 Requirements for conducted tests

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to conducted test environment for transmission and reception tests.

5.1.1.3 Requirements for OTA tests

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to OTA test environment for transmission and reception tests.

5.1.2 Requirements for performance tests

5.1.2.1 Requirements common for conducted and OTA tests

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to performance tests and common for conducted and OTA tests.

5.1.2.2 Requirements for conducted test method

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to conducted test environment for performance tests.

5.1.2.3 Requirements for OTA test method

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to OTA test environment for performance tests.

5.2 Reference test conditions

5.2.1 Signal levels

5.2.1.1 Signal Levels for conducted testing

Editor's note: Power levels defined in this section are under discussion

For NR FR1 cell, the downlink power settings in Table 5.2.1.1-1 and Table 5.2.1.1-2 are used unless otherwise specified in a test case.

Table 5.2.1.1-1: Default Downlink power levels for FR1 NR cell (5MHz – 25MHz)

	SCS(kHz)	Unit	Channel bandwidth				
			5MHz	10MHz	15MHz	20MHz	25MHz
Channel BW Power	15	dBm	-60	-57	-55	-54	-53
	30	dBm	-61	-57	-55	-54	-53
	60	dBm	N/A	-58	-56	-54	-53
SS/PBCH SSS EPRE	All	dBm/15kHz (Note 3)	-85	-85	-85	-85	-85
Note 1: The channel bandwidth powers are informative, based on -85dBm/15kHz SS/PBCH SSS EPRE, then scaled according to the number of RBs and rounded to the nearest integer dBm value. Full RE allocation with no boost or deboost is assumed. Note 2: The power level is specified at each UE Rx antenna. Note 3: DL level is applied for any of the Subcarrier Spacing configuration (μ) with the same power spectrum density of -85dBm/15kHz.							

Table 5.2.1.1-2: Default Downlink power levels for FR1 NR cell (30MHz – 100MHz)

	SCS(kHz)	Unit	Channel bandwidth					
			30MHz	40MHz	50MHz	60MHz	80MHz	100MHz
Channel BW Power	15	dBm	-52	-51	-50	N/A	N/A	N/A
	30	dBm	-52	-51	-50	-49	-48	-47
	60	dBm	-52	-51	-50	-49	-48	-47
SS/PBCH SSS EPRE	All	dBm/15kHz (Note 3)	-85	-85	-85	-85	-85	-85
Note 1: The channel bandwidth powers are informative, based on -85dBm/15kHz SS/PBCH SSS EPRE, then scaled according to the number of RBs and rounded to the nearest integer dBm value. Full RE allocation with no boost or deboost is assumed. Note 2: The power level is specified at each UE Rx antenna. Note 3: DL level is applied for any of the Subcarrier Spacing configuration (μ) with the same power spectrum density of -85dBm/15kHz.								

The uncertainty value is specified in TS 38.521-1 [14] Annex F or in TS 38.521-2 [15] Annex F.

5.2.1.2 Signal Levels for OTA testing

5.2.1.2.1 Downlink Signal Levels

For E-UTRA cell in EN-DC with FR2 NR, the downlink power settings in table 5.2.1.2.1-1 are used unless otherwise specified in a test case.

Table 5.2.1.2.1-1: Default Downlink power levels for E-UTRA cell in EN-DC with FR2 NR

	Unit	Channel bandwidth					
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
RS EPRE	dBm/15kHz	N/A	N/A	[-114.5] to -78.2		N/A	N/A
Note 1: The power level is specified at RSRP reference point as defined in TS 36.214 [21]							

For FR2 NR cell, the downlink power settings in table 5.2.1.2.1-2 are used unless otherwise specified in a test case.

Table 5.2.1.2.1-2: Default Downlink power levels for FR2 NR in EN-DC with FR2 NR

TBD

6 Test environments for Signalling test

6.1 Requirements of test equipment

6.1.1 Requirements common for conducted and OTA tests

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to signalling tests and common for conducted and OTA tests.

6.1.2 Requirements for conducted test method

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to conducted test environment for signalling tests.

6.1.3 Requirements for OTA test method

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to OTA test environment for signalling tests.

6.2 Reference test conditions

6.2.1 Physical Channel Allocations

6.2.1.1 Antennas

If the UE has two or more Rx antennas, the same downlink signal is applied to each one, except if MIMO is tested. All UE Rx antennas shall be connected.

If the UE has one Rx antenna, the downlink signal is applied to it.

6.2.1.2 Downlink physical channels and physical signals

Power allocation of downlink physical channels for Signalling test cases is specified in table 6.2.1.2-1.

Table 6.2.1.2-1: Power allocation for OFDM symbols and reference signals for Signalling test cases

Physical Channel	EPRE Ratio	Comment
PBCH	PBCH = 0 dB	Absolute EPRE conveyed to DUT by *SS-PBCH-BlockPower*(38.214 4.1)
PSS	PSS = 0 dB	Absolute EPRE conveyed to DUT by *SS-PBCH-BlockPower*(38.214 4.1)
SSS	SSS = 0 dB	Absolute EPRE conveyed to DUT by *SS-PBCH-BlockPower*(38.214 4.1)
PDCCH	PDCCH = 0 dB	0dB EPRE ratio to SSS
PDCCH DM-RS	PDCCH DM-RS = 0dB	0dB EPRE ratio to SSS
PDSCH	PDSCH = -3 dB	To reduce interference from PDSCH of intra-frequency neighbour cells. Conveyed to DUT by *Pc* as EPRE ratio to CSI-RS (38.214 5.2.2.3.1)
PDSCH DM-RS	PDSCH DM-RS = 0dB	0dB EPRE ratio to SSS
PDSCH PT-RS	PDSCH PT-RS=0dB	0dB EPRE ratio to SSS (38.214 4.1) (Note 1)
PBCH DM-RS	PBCH DM-RS = 0dB	0dB EPRE ratio to SSS (38.214 4.1)
CSI-RS	CSI-RS = 0dB	Conveyed to DUT by *Pc_SS* as EPRE ratio to SS/PBCH block *(38.215* 5.2.2.3.1) (Note 1)
Note 1: CSI-RS configured if the test cases defined in 38.523-1 [12] requires		

6.2.2 Signal levels

6.2.2.1 Signal Levels for conducted testing

The power levels defined in this section are based on the assumption that the SS uncertainty and RSRP measurement accuracy should be similar to LTE when the active Bandwidth Part per serving cell is configured with a maximum of 20MHz.

Editor's note: Once RAN4 has defined the UE RSRP measurement accuracy, the power levels defined in this section need to be adapted.

For NR FR1 cell, the downlink power settings in Table 6.2.2.1-1 and 6.2.2.1-2 are used unless otherwise specified in a test case.

Table 6.2.2.1-1: Default Downlink power levels for FR1 NR cell (5MHz – 25MHz)

	SCS(kHz)	Unit	Channel bandwidth				
			5MHz	10MHz	15MHz	20MHz	25MHz
Channel BW Power	15	dBm	-60	-57	-55	-54	-53
	30	dBm	-61	-57	-55	-54	-53
	60	dBm	N/A	-58	-56	-54	-53
SS/PBCH SSS EPRE	All	dBm/15kHz (Note 3)	[-85]	[-85]	[-85]	[-85]	[-85]

Note 1: The channel bandwidth powers are informative, based on [-85]dBm/15kHz SS/PBCH SSS EPRE, then scaled according to the number of RBs and rounded to the nearest integer dBm value. Full RE allocation with no boost or deboost is assumed.
Note 2: The power level is specified at each UE Rx antenna.
Note 3: DL level is applied for any of the Subcarrier Spacing configuration (μ) with the same power spectrum density of [-85] dBm/15kHz.

Table 6.2.2.1-2: Default Downlink power levels for FR1 NR cell (30MHz – 100MHz)

	SCS(kHz)	Unit	Channel bandwidth					
			30MHz	40MHz	50MHz	60MHz	80MHz	100MHz
Channel BW Power	15	dBm	-52	-51	-50	N/A	N/A	N/A
	30	dBm	-52	-51	-50	-49	-48	-47
	60	dBm	-52	-51	-50	-49	-48	-47
SS/PBCH SSS EPRE	All	dBm/15kHz (Note 3)	[-85]	[-85]	[-85]	[-85]	[-85]	[-85]

Note 1: The channel bandwidth powers are informative, based on [-85]dBm/15kHz SS/PBCH SSS EPRE, then scaled according to the number of RBs and rounded to the nearest integer dBm value. Full RE allocation with no boost or deboost is assumed.
Note 2: The power level is specified at each UE Rx antenna.
Note 3: DL level is applied for any of the Subcarrier Spacing configuration (μ) with the same power spectrum density of [-85]dBm/15kHz.

The default settings of suitable cells and non-suitable cells for NR are specified in table 6.2.2.1-3.

Cells which are expected to be undetectable for UE under test shall fulfil the condition of non-suitable "Off" cell in table 6.2.2.1-3.

Table 6.2.2.1-3: Default settings of suitable / non-suitable cells

Power level type	NR (Note 1-3)		E-UTRAN
	Unit	Power level	
Serving cell	dBm/15kHz	[-85]	Table 6.2.2.1-1 [2]
Suitable neighbour intra-frequency cell	dBm/15kHz	[-91]	Table 6.2.2.1-1 [2]
Suitable neighbour inter-frequency cell	dBm/15kHz	[-97]	Table 6.2.2.1-1 [2]
Non-suitable cell	dBm/15kHz	[-115]	Table 6.2.2.1-1 [2]
Non-suitable "Off" cell	dBm/15kHz	[≤ -145]	Table 6.2.2.1-1 [2]

Note 1: The power level is specified in terms of SS/PBCH SSS EPRE instead of RSRP as RSRP is a measured value and cannot be directly controlled by the SS.
Note 2: The power level is specified at each UE Rx antenna.
Note 3: DL level is applied for any of the Subcarrier Spacing configuration (μ) with the same power spectrum density of [-85]dBm/15kHz.

The default signal level uncertainty is specified in table 6.2.2.1-4 for any level specified, unless a tighter uncertainty is specified by a test case in TS 38.523-1 [12].

Table 6.2.2.1-4: SS signal level uncertainty

	Absolute signal level uncertainty for each cell	Relative signal level uncertainty between multiple cells
Intra-frequency	+/-[3] dB at each test port	+/-[3] dB
Inter-frequency	+/-[3] dB at each test port	See Note 1
Note 1: For Inter-frequency cells the relative signal level uncertainty between multiple cells is determined by the absolute uncertainty of each cell, and does not have any additional constraint.		

SS/PBCH SSS EPRE setting should be equal to or higher than [FFS] dBm except for Non-suitable "Off" cell. The figure is chosen to ensure that for all bands the DL signal is within the RSRP measurement range specified in TS 38.133 [13], taking into account the SS default absolute signal level uncertainty.

NOTE: (The power spectral density of a white noise source; specified in TS 38.133 [13]) can be assumed to be -Infinity [dBm/15kHz] for all intra and inter frequency test cases. It is applicable to both idle mode and connected mode in TS 38.523-1 [12], unless otherwise specified in specific test cases.

6.2.2.2 Signal Levels for OTA testing

TBD

7 Test environments for RRM tests

7.1 Requirements of test equipment

7.1.1 Requirements common for conducted and OTA tests

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to RRM tests and common for conducted and OTA tests.

7.1.2 Requirements for conducted test method

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to conducted test environment for RRM tests.

7.1.3 Requirements for OTA test method

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to OTA test environment for RRM tests.

7.2 Reference test conditions

7.2.1 Signal levels

7.2.1.1 Signal Levels for conducted testing

TBD

7.2.1.2 Signal Levels for OTA testing

TBD

Annex A (informative): Connection Diagrams

A.1 Definition of Terms

System Simulator or SS – A device or system, that is capable of generating simulated Node B signalling and analysing UE signalling responses on one or more RF channels, in order to create the required test environment for the UE under test. It will also include the following capabilities:

1. Measurement and control of the UE Tx output power through TPC commands
2. Measurement of Throughput
3. Measurement of signalling timing and delays
4. Ability to simulate UTRAN and/or E-UTRAN and/or GERAN signalling

Test System – A combination of devices brought together into a system for the purpose of making one or more measurements on a UE in accordance with the test case requirements. A test system may include one or more System Simulators if additional signalling is required for the test case. The following diagrams are all examples of Test Systems.

NOTE 1: The above terms are logical definitions to be used to describe the test methods used in the documents TS38.521-1, TS38.521-2, TS38.521-3, TS 38.523-1 and TS38.533 in practice, real devices called 'System Simulators' may also include additional measurement capabilities or may only support those features required for the test cases they are designed to perform.

NOTE 2: Components in the connection diagrams:
The components in the connection diagrams represent ideal components. They are intended to display the wanted signal flow. They don't mandate real implementations.

Connection: Each connection is displayed as a one or two sided arrow, showing the intended signal flow. In some cases, for some tests, some connections shown may not be necessary (for example UL RX connection for a second cell).

Circulator: The signal, entering one port, is conducted to the adjacent port, indicated by the arrow. The attenuation among the above mentioned ports is ideally 0 and the isolation among the other ports is ideally ∞.

Splitter: a splitter has one input and 2 or more outputs. The signal at the input is equally divided to the outputs. The attenuation from input to the outputs is ideally 0 and the isolation between the outputs is ideally ∞.

Combiner: a combiner has one output and 2 or more inputs. The signals at the inputs are conducted to the output, all with the same, ideally 0 attenuation. The isolation between the inputs is ideally ∞.

Switch: contacts a sink (or source) alternatively to two or more sources (or sinks).

Fader: The fader has one input and one output. The MIMO fading channel is represented by several single faders (e.g. 8 in case of a MIMO antenna configuration 4x2) The correlation among the faders is described in TS 36.521-1 clause B.2.2. In some cases, for some tests, diagrams with fader(s) are referenced when no fading is required; in this case the fader(s) is omitted.

Attenuator: TBD

Test Equipment Part (TE): is the section of the connection diagram focused including a combination of devices to perform one or several measurements on a UE depending on the test requirements specified in 3GPP TS 38.101-1 [7], 3GPP TS 38.101-2 [8] and 3GPP TS 38.101-3 [9]. The basic TE is the system simulator to enable the connection between the gNB (and the eNB, if NSA mode) and the DUT. The number of cells, the number of streams per cell and how to combine them, channel and propagations conditions, etc. are also part of the TE. Other instruments as external spectrum analyser, interferer generators, external faders or external AWGN generators can be also considered part of the TE, as these instruments allow to measure a test requirement or to set the UE under certain conditions.

DUT Part (UE): for conducted measurement this section is focused on the number of physical antenna connectors and how to combine in the DUT. For radiated measurement this section shows the connections needed to translate the UL/DL streams to the radiated part.

A.2 General considerations on Connections Diagram

In order to improve the maintainability and the readability of this section and to make easy to identify the whole connection diagram to use per each test case, several considerations have been used for this section:

- The whole connection diagram to use for a specific test has been split in Test Equipment (TE) and User Equipment (UE) parts.
- The same connection diagram will be used for SA and NSA, where the LTE link is specified in each connection diagram (TE and UE) with a dashed line (and this part will be only used for NSA).
- To obtain the whole connection diagram required per each test case is necessary to specify the TE part required for each measurement and the UE part will depend on the UE antenna implementation.

A.3 Connections Diagram

A.3.1 Test Equipment Parts

Editor's note: RAN4 has not defined yet any interferer requirement for NSA in TS 38.101-3 then Receiver tests using Signal Generator connection diagrams do not include LTE part.

A.3.1.1 Basic Transmitter/Receiver tests

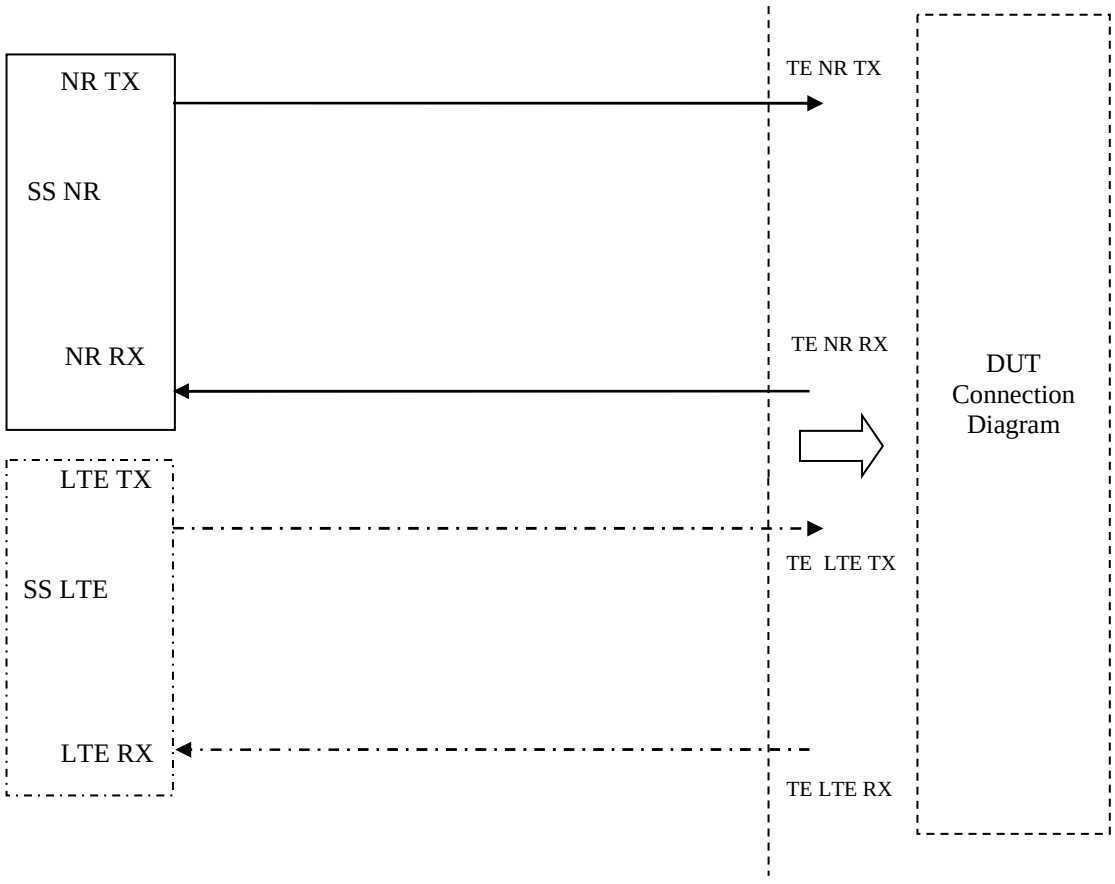

Figure A.3.1.1.1: Test Equipment connection for basic single cell, RX and TX tests

A.3.1.2 Transmitter tests using Spectrum Analyser

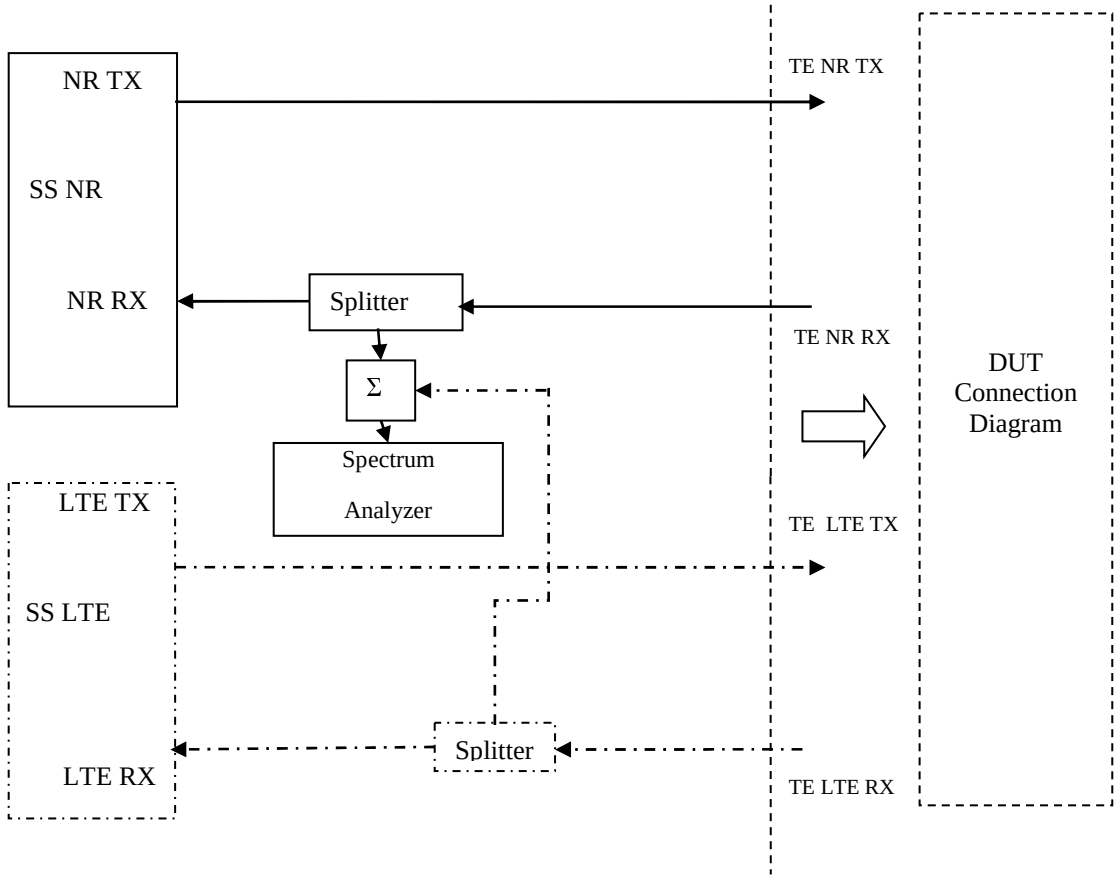

Figure A.3.1.2.1: Test Equipment connection for TX-tests with additional Spectrum Analyzer

A.3.1.3 Transmitter tests using Spectrum Analyser and Signal Generator

A.3.1.4 Receiver tests using Signal Generator

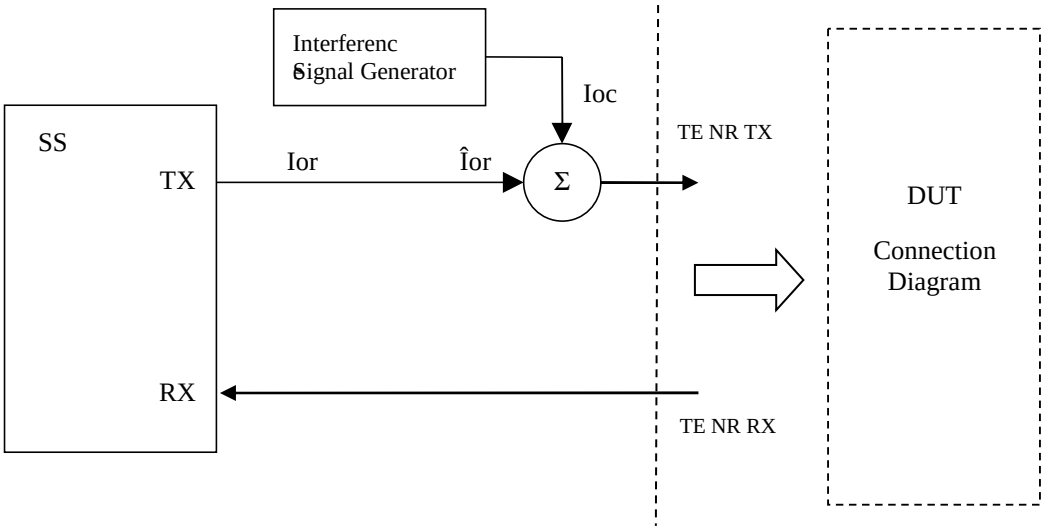

Figure A.3.1.4.1: Test Equipment connection for Receiver tests with Modulated Interference

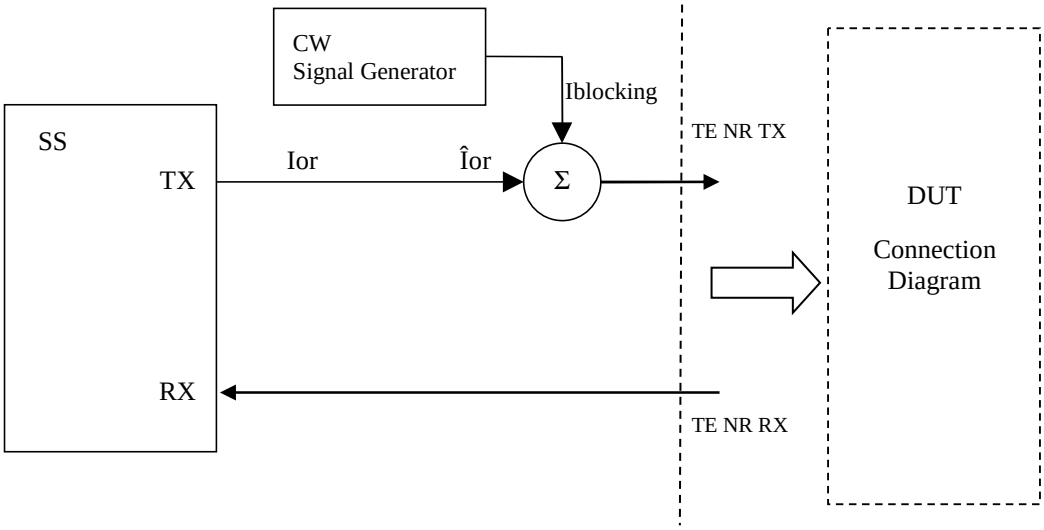

Figure A.3.1.4.2: Test Equipment connection for Receiver tests with CW Interference

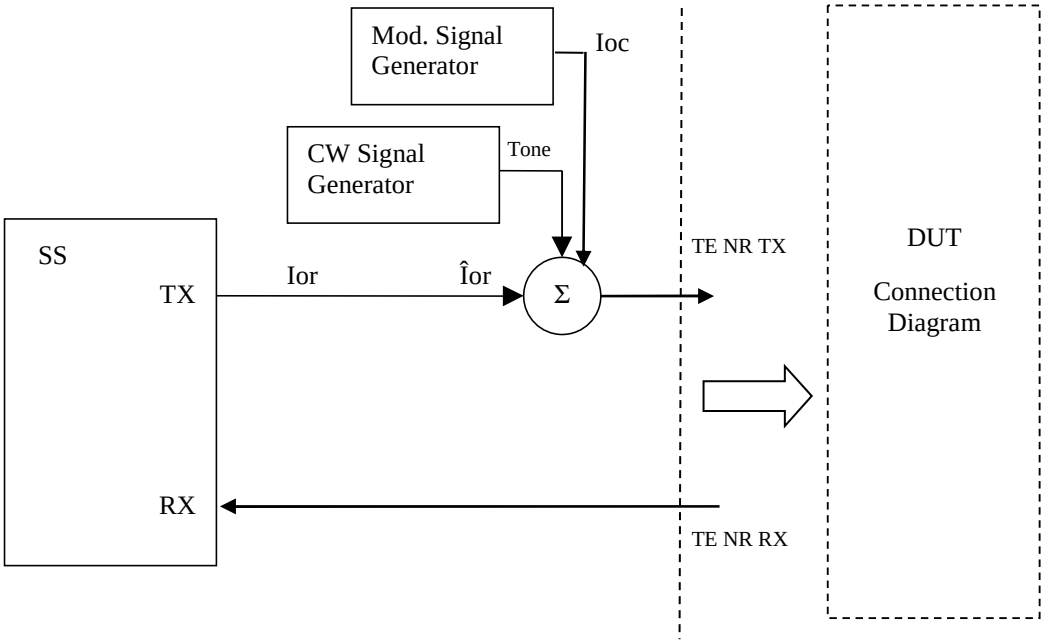

Figure A.3.1.4.3: Test Equipment connection for Receiver tests both Modulated and additional CW Interference signal

A.3.1.5 Receiver tests using Spectrum Analyser

FFS

A.3.1.6 Receiver Performance tests

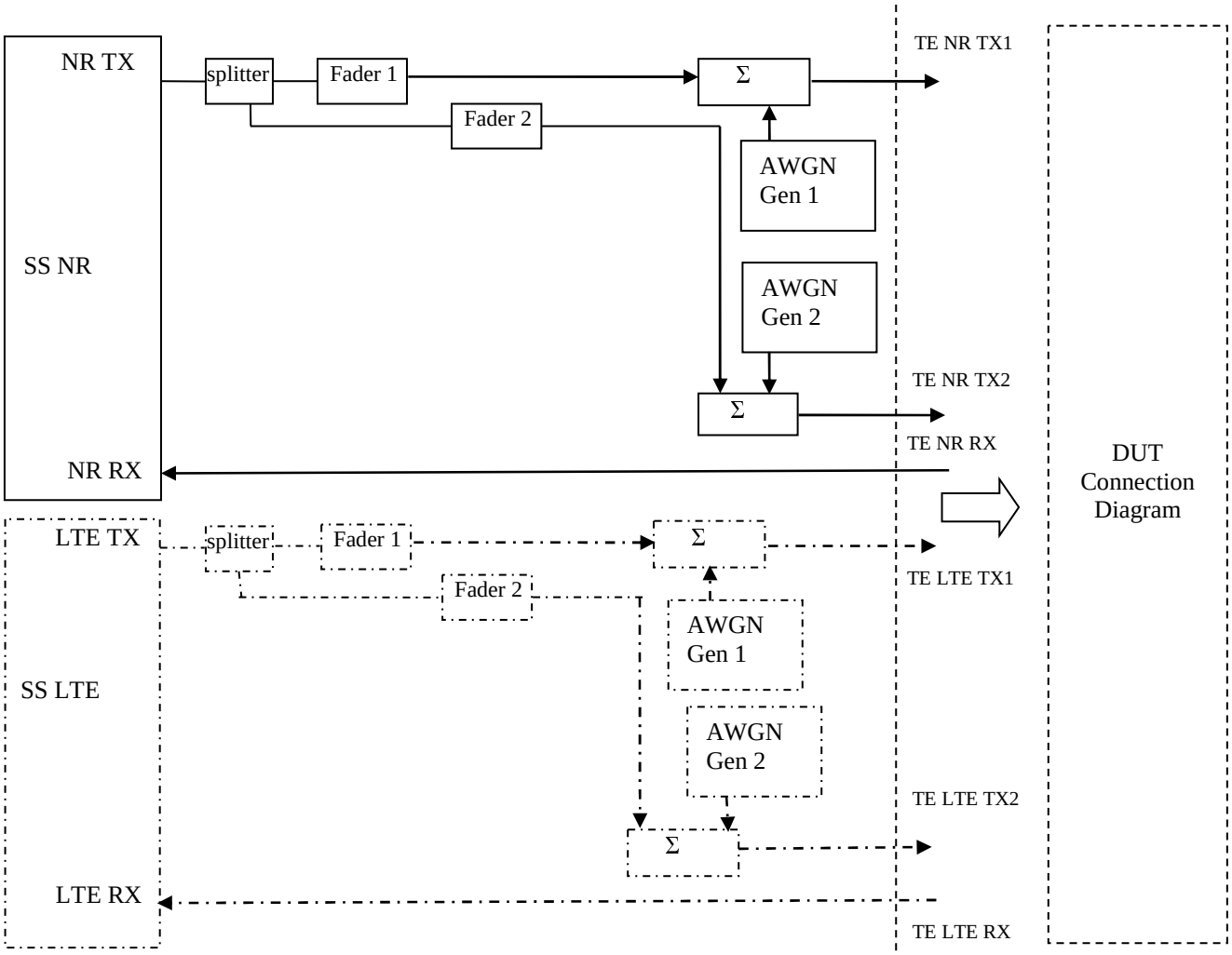

Figure A.3.1.6.1: Test Equipment connection for Receiver Performance tests with antenna configuration 1x2

A.3.2 User Equipment Parts

A.3.2.1 Conducted Measurements

A.3.2.1.1 General

The User Equipment part is focused on the number of physical antenna connectors and how to combine in the DUT. Depending on the DUT implementation only one of the following connection diagrams applies. These connection diagrams are examples of User equipment parts.

A.3.2.1.2 One Antenna Connector

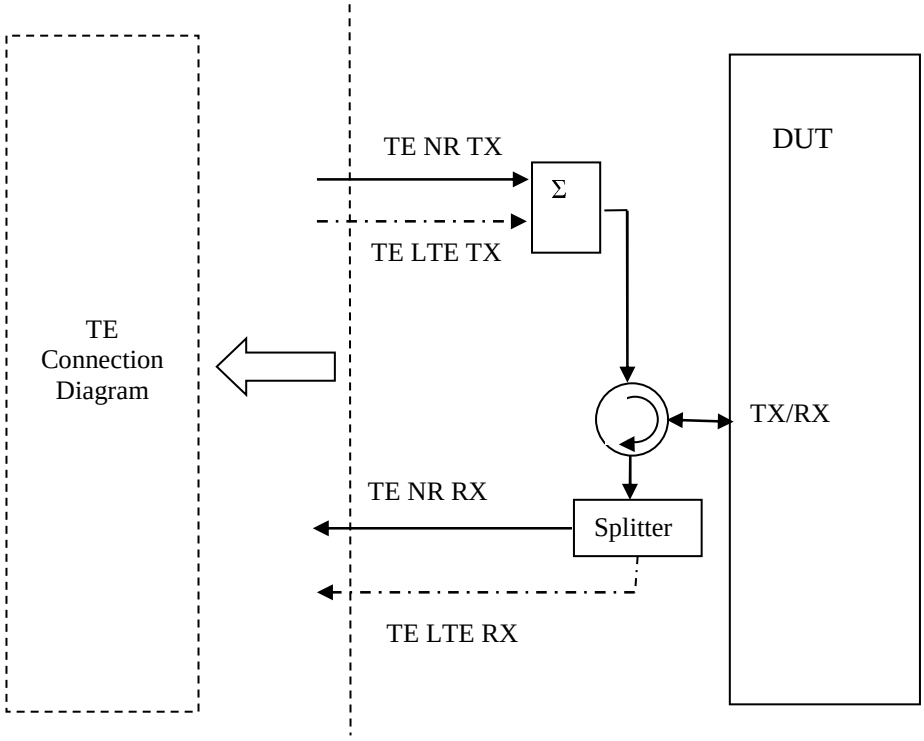

Figure A.3.2.1.2.1: User Equipment connection for single basic cell

A.3.2.1.3 Two Antenna Connectors

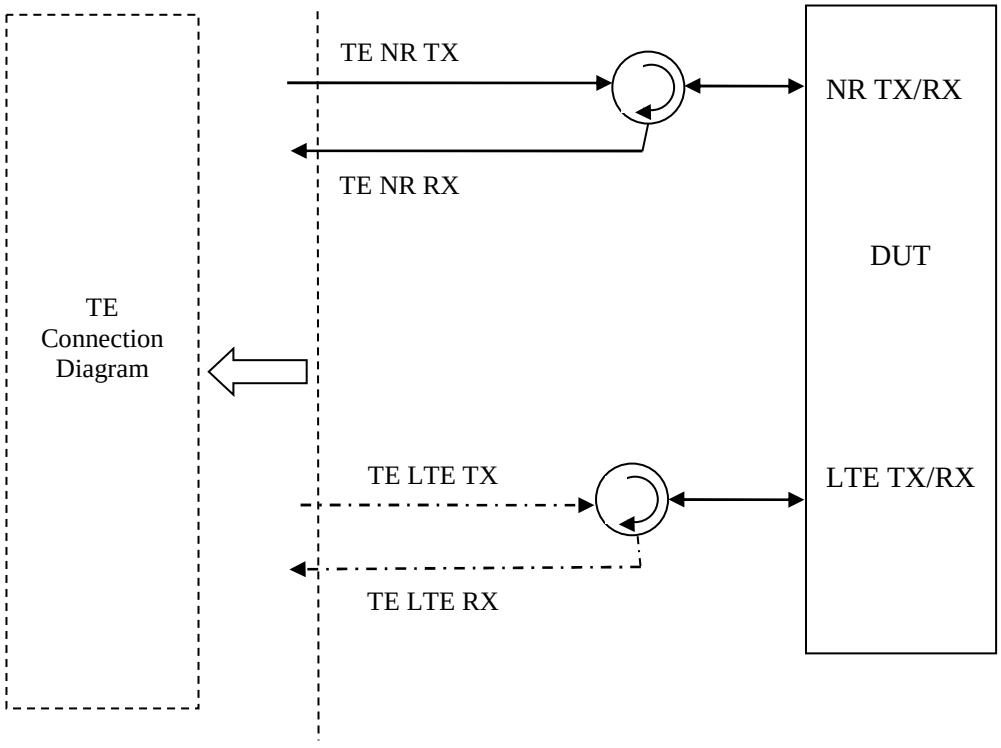

Figure A.3.2.1.3.1: User Equipment connection for single basic cell with NR and LTE cells at different separated connectors

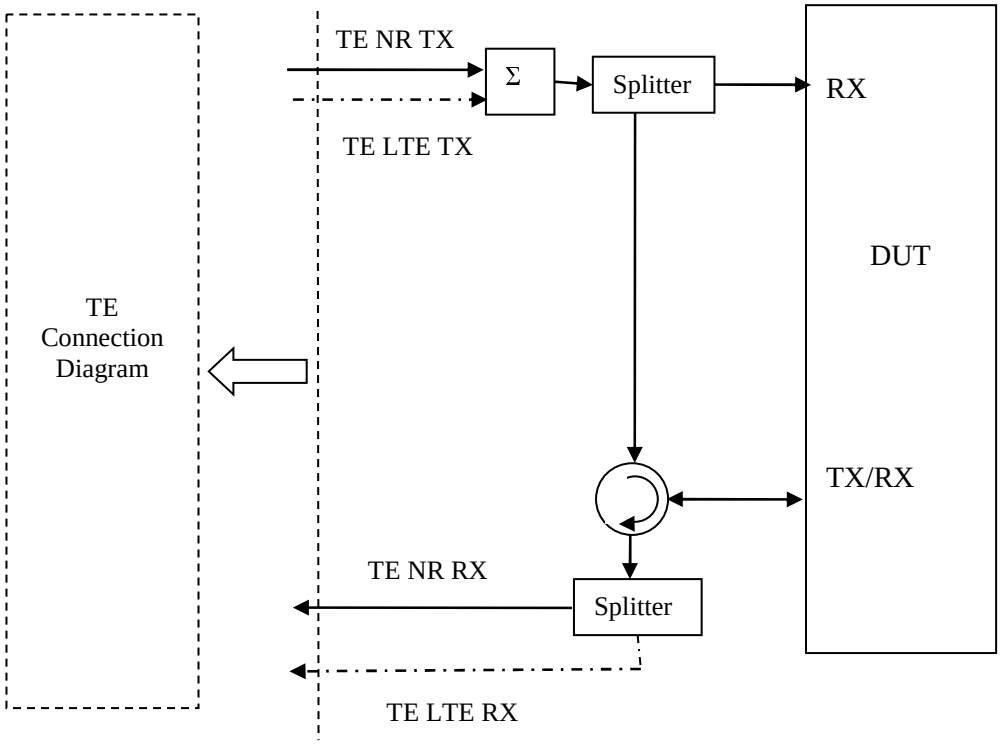

Figure A.3.2.1.3.2: User Equipment connection for single basic cell with NR and LTE cells at the same connectors for both cells

A.3.2.1.4 Three Antenna Connectors

FFS

A.3.2.1.5 Four Antenna Connectors

FFS

Annex B (informative): Change history

Change history							
Date	**Meeting**	**TDoc**	**CR**	**Rev**	**Cat**	**Subject/Comment**	**New version**
2017-12	RAN5#77	R5-176995	-	-	-	TP on clauses of test equipment requirement in 38.508-1	0.1.0
2017-12	RAN5#77	R5-176779	-	-	-	Add references	0.1.0
2017-12	RAN5#77	R5-176917	-	-	-	Introduce general chapter for generic procedures	0.1.0
2017-12	RAN5#77	R5-176918	-	-	-	Add generic procedures RRC_IDLE and RRC_CONNECTED	0.1.0
2017-12	RAN5#77	R5-176920	-	-	-	Introduce RRC chapters	0.1.0
2018-01	RAN5#1-5G-NR Adhoc	R5-180066	-	-	-	Definition of downlink physical layer parameters for NR	0.2.0
2018-03	RAN5#78	R5-181697	-	-	-	Addition of the environmental information into TS 38.508-1	0.3.0
2018-03	RAN5#78	R5-180265	-	-	-	Introduce chapter for reference configurations	0.3.0
2018-03	RAN5#78	R5-181311	-	-	-	Update the general chapter	0.3.0
2018-03	RAN5#78	R5-180382	-	-	-	Update RRCReconfiguration	0.3.0
2018-03	RAN5#78	R5-180383	-	-	-	Add draft RRC messages	0.3.0
2018-03	RAN5#78	R5-180577	-	-	-	Update chapter for test frequencies	0.3.0
2018-03	RAN5#78	R5-180709	-	-	-	Add CellGroupConfig	0.3.0
2018-03	RAN5#78	R5-180773	-	-	-	Add radioBearerConfig	0.3.0
2018-03	RAN5#78	R5-180775	-	-	-	Add draft Radio resource control information elements	0.3.0
2018-03	RAN5#78	R5-180966	-	-	-	Update RRC Connected state	0.3.0
2018-03	RAN5#78	R5-181035	-	-	-	Update RRC IDLE state	0.3.0
2018-03	RAN5#78	R5-180253	-	-	-	Revised WID on: UE Conformance Test Aspects - 5G system with NR and LTE	0.3.0
2018-04	RAN5#1-5G-NR Adhoc	R5-181812	-	-	-	Update Radio resource control information elements	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-182109	-	-	-	Update CellGroupConfig	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-182064	-	-	-	Update radioBearerConfig	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-182062	-	-	-	Update MIB	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-182063	-	-	-	Introduce radio conditions	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-181786	-	-	-	Update RRCReconfiguration	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-181971	-	-	-	Add Other information elements	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-182065	-	-	-	Update chapter 4.5.1 General	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-181813	-	-	-	Update RRC IDLE state	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-182066	-	-	-	Update RRC CONNECTED state	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-182110	-	-	-	Text proposal to add clause 4.4 reference system configurations to TS 38.508-1	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-182067	-	-	-	TP for definition of physical channel allocations in 38.508-1	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-182091	-	-	-	TP for clauses of signal level	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-181972	-	-	-	TP for updating of Downlink physical layer parameters	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-181893	-	-	-	Addition of UE capability information elements	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-181973	-	-	-	TP for adding Mid channel BW definition in TS 38.508-1	0.4.0

2018-04	RAN5#1-5G-NR Adhoc	R5-181974	-	-	-	Addition of SRB3	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-182068	-	-	-	Update MeasConfig information elements	0.4.0
2018-05	RAN5#79	R5-183082	-	-	-	Update radio resource control information elements	1.0.0
2018-05	RAN5#79	R5-182288	-	-	-	TP for updating of downlink physical layer parameters in 38.508-1	1.0.0
2018-05	RAN5#79	R5-182349	-	-	-	Corrections to clause 4.4 reference system configurations	1.0.0
2018-05	RAN5#79	R5-182792	-	-	-	TP for clauses of Supported Channels for a NR cell	1.0.0
2018-05	RAN5#79	R5-183218	-	-	-	pCR update chapter for test frequencies - EN-DC	1.0.0
2018-05	RAN5#79	R5-183234	-	-	-	TP for updating of physical channel allocation part in 38.508-1	1.0.0
2018-05	RAN5#79	R5-183256	-	-	-	pCR update chapter for test frequencies - FR1	1.0.0
2018-05	RAN5#79	R5-183916	-	-	-	TP for Annex A in TS 38.508-1 and adding a set of Connection Diagrams	1.0.0
2018-05	RAN5#79	R5-183920	-	-	-	Introduction of Environmental conditions for FR1	1.0.0
2018-05	RAN5#79	R5-182249	-	-	-	Add reference to NR cell table	1.0.0
2018-05	RAN5#79	R5-183210	-	-	-	Update PDCCH	1.0.0
2018-05	RAN5#79	R5-182312	-	-	-	Update chapter 4.5.1 General	1.0.0
2018-05	RAN5#79	R5-182313	-	-	-	Update RRC CONNECTED state	1.0.0
2018-05	RAN5#79	R5-183087	-	-	-	Addition of new RRCReconfiguration definition for AM/UM bearers	1.0.0
2018-05	RAN5#79	R5-183088	-	-	-	Updates to UE capability information elements	1.0.0
2018-05	RAN5#79	R5-183250	-	-	-	Updates to UE capability information elements	1.0.0
2018-05	RAN5#79	R5-183083	-	-	-	Update RACH	1.0.0
2018-05	RAN5#79	R5-183084	-	-	-	Update ARFCN	1.0.0
2018-05	RAN5#79	R5-183211	-	-	-	Update BWP-UplinkDedicated	1.0.0
2018-05	RAN5#79	R5-183212	-	-	-	Update serving cell	1.0.0
2018-05	RAN5#79	R5-183214	-	-	-	Update RadioBearerConfig	1.0.0
2018-05	RAN5#79	R5-183215	-	-	-	Update RRCReconfiguration	1.0.0
2018-05	RAN5#79	R5-182381	-	-	-	Update MIB	1.0.0
2018-05	RAN5#79	R5-183090	-	-	-	Update RRCReconfiguration for measurements	1.0.0
2018-05	RAN5#79	R5-183264	-	-	-	Corrections to clause 4.5	1.0.0
2018-05	RAN5#79	R5-183249	-	-	-	Correction to the Table CellGroupConfig	1.0.0
2018-05	RAN5#79	R5-183255	-	-	-	Update of FR1 signal levels	1.0.0
2018-05	RAN5#79	R5-183216	-	-	-	Update CellGroupConfig and some related information elements	1.0.0
2018-05	RAN5#79	R5-183086	-	-	-	Update CSI-MeasConfig	1.0.0
2018-05	RAN5#79	R5-183260	-	-	-	Update some information elements related to MeasConfig	1.0.0
2018-06	RAN#80	RP-181207	-	-	-	put under revision control as v15.0.0 with small editorial changes	15.0.0

History

Document history		
V15.0.0	July 2018	Publication