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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 <u>ETSI Drafting Rules</u> (Verbal forms for the expression of provisions).

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In the present document, modal verbs have the following meanings:

shall indicates a mandatory requirement to do something

shall not indicates an interdiction (prohibition) to do something

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should	indicates a recommendation to do something
should not	indicates a recommendation not to do something
may	indicates permission to do something
need not	indicates permission not to do something

The construction "may not" is ambiguous and is not used in normative elements. The unambiguous constructions "might not" or "shall not" are used instead, depending upon the meaning intended.

can	indicates that something is possible				
cannot	indicates that something is impossible				

The constructions "can" and "cannot" are not substitutes for "may" and "need not".

will	indicates that something is certain or expected to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document
will not	indicates that something is certain or expected not to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document
might	indicates a likelihood that something will happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

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might not indicates a likelihood that something will not happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

In addition:

- is (or any other verb in the indicative mood) indicates a statement of fact
- is not (or any other negative verb in the indicative mood) indicates a statement of fact

The constructions "is" and "is not" do not indicate requirements.

1 Scope

The present document defines User Equipment (UE) policies that are used to configure the UE for Proximity-based Services (ProSe) in 5G System (5GS) based on the architectural requirements defined in 3GPP TS 23.304 [2].

The protocol aspects for 5G ProSe are described in 3GPP TS 24.554 [3].

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 23.304: "Proximity based Services (ProSe) in the 5G System (5GS); Stage 2".
- [3] 3GPP TS 24.554: "Proximity-services (ProSe) in 5G System (5GS) protocol aspects; Stage 3".
- [4] 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3".
- [5] ITU-T Recommendation E.212: "The international identification plan for public networks and subscriptions", 2016-09-23.
- [6] 3GPP TS 23.032: "Universal Geographical Area Description (GAD)".
- [7] 3GPP TS 38.331: "NR; Radio Resource Control (RRC) protocol specification".
- [8] 3GPP TS 38.101-1: "NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone".
- [9] 3GPP TS 38.101-2: "NR; User Equipment (UE) radio transmission and reception; Part 2: Range 2 Standalone".
- [10] 3GPP TS 23.003: "Numbering, addressing and identification".
- [11] 3GPP TS 24.526: "User Equipment (UE) policies for 5G System (5GS); Stage 3".
- [12] IETF RFC 4122: "A Universally Unique IDentifier (UUID) URN Namespace".

3 Definitions of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms 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 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].

5G ProSe5G Proximity-based ServicesProSeP5G ProSe Policy

4 Descriptions of UE policies for 5G ProSe

4.1 Overview

The ProSe policy in 5GS includes:

- a) UE policies for 5G ProSe direct discovery (see clause 4.2);
- b) UE policies for 5G ProSe direct communications (see clause 4.3); and
- c) UE policies for 5G ProSe UE-to-network relay (see clause 4.4).

The ProSe policy can be delivered from the PCF to the UE. The UE policy delivery procedure is specified in 3GPP TS 24.501 [4].

4.2 UE policies for 5G ProSe direct discovery

The UE policies for 5G ProSe direct discovery are defined in clause 5.2.3 of 3GPP TS 24.554 [3]. The generic description of the UE policies for 5G ProSe direct discovery is specified in 3GPP TS 23.304 [2].

4.3 UE policies for 5G ProSe direct communications

The UE policies for 5G ProSe direct communications are defined in clause 5.2.4 of 3GPP TS 24.554 [3]. The generic description of the UE policies for 5G ProSe direct communications is specified in 3GPP TS 23.304 [2].

4.4 UE policies for 5G ProSe UE-to-network relay

The UE policies for 5G ProSe UE-to-network relay UE are defined in clause 5.2.5 of 3GPP TS 24.554 [3]. The generic description of the UE policies for 5G ProSe UE-to-network relay is specified in 3GPP TS 23.304 [2].

The UE policies for 5G ProSe remote UE are defined in clause 5.2.5 of 3GPP TS 24.554 [3]. The generic description of the UE policies for 5G ProSe remote UE is specified in 3GPP TS 23.304 [2].

5 Encoding of UE policies for 5G ProSe

5.1 Overview

The UE policies for 5G ProSe are provided to the UE in a 5G ProSe policy (ProSeP) UE policy part using the UE policy delivery service as specified in 3GPP TS 24.501 [4] annex D.

5.2 Encoding of 5G ProSe policy UE policy part

The purpose of the ProSeP is to indicate UE policies for 5G ProSe direct discovery, 5G ProSe direct communications, 5G ProSe UE-to-network relay UE, 5G ProSe remote UE and UE policies for 5G ProSe usage reporting configuration and rules.

The ProSeP is encoded as shown in figures 5.2.1 to 5.2.3 and table 5.2.1 according to the UE policy part top level format (see annex D of 3GPP TS 24.501 [4]).

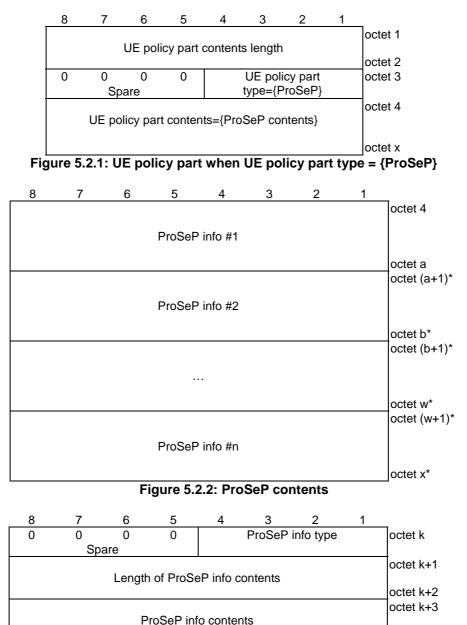


Figure 5.2.3: ProSeP info

octet I

Table 5.2.1: ProSeP information format

UE policy part type field is set to '0100' (=ProSeP) as specified in 3GPP TS 24.501 [4] annex D.									
UE policy part contents length field indicate the length of the ProSeP contents in octets.									
ProSeP contents (octets 4 to x)									
ProSeP contents consist of 1 or more ProSeP info(s) (see figure 5.2.2).									
ProSeP info type (bit 1 to 4 of octet k) shall be set according to the following: Bits									
4 3 2 1									
0 0 0 1 UE policies for 5G ProSe direct discovery									
0 0 1 0 UE policies for 5G ProSe direct communications									
0 0 1 1 UE policies for 5G ProSe UE-to-network relay UE									
0 1 0 0 UE policies for 5G ProSe remote UE									
0 1 0 1 UE policies for 5G ProSe usage reporting configuration and rules									
All other values are reserved.									
Bits 8 to 5 of octet k are spare and shall be encoded as zero.									
Length of ProSeP info contents (octets k+1 to k+2) indicates the length of the ProSeP									
info contents field.									
ProSeP info contents (octets k+3 to I) can be UE policies for 5G ProSe direct discovery (see clause 5.3), UE policies for 5G ProSe direct communications (see clause 5.4), UE policies for 5G ProSe UE-to-network relay UE (see clause 5.5), UE policies for 5G ProSe remote UE (clause 5.6) or UE policies for 5G ProSe usage reporting configuration and rules (clause 5.7).									

5.3 Encoding of UE policies for 5G ProSe direct discovery

5.3.1 General

The UE policies for 5G ProSe direct discovery are coded as shown in figures 5.3.1.1 and table 5.3.1.1.

5.3.2 Information elements coding

8	7	6	5	4	3	2	1			
0	0	0	0		P info typ ProSe d			octet k		
	octet k+1									
Length of ProSeP info contents										
		octet k+2								
			Validit	timor				octet k+3		
			Validity	y uniei				octet k+7		
-								octet k+8		
		5	Served by	NG-RA	N			Colorino		
			,					octet o1		
								octet o1+1		
		No	t served l	by NG-R	AN					
								octet o2		
		D 0.						octet o2+1		
		P1056	e direct di	scovery				octet o2+3		
								octet 02+3		
	(Group me	mber dis	coverv p	arameter	s		00101 0214		
		o.oopo		66161) p		•		octet o3		
								octet o3+1		
								octet o4		
								octet o4+1		
ProSe	identifie	r to defau				initial di	scovery			
L			nalling ma				<u> </u>	_octet ct discover		

Figure 5.3.2.1: ProSeP Info = {UE policies for 5G ProSe direct discovery}

ProSeP info type (bit 1 to 4 of octet k) shall be set to "0001" (UE policies for 5G ProSe direct discovery)
Length of ProSeP info contents (octets k+1 to k+2) indicates the length of ProSeP info contents.
Validity timer (octet k+3 to k+7): The validity timer field provides the expiration time of validity of the UE policies for 5G ProSe direct discovery. The validity timer field is a binary coded representation of a UTC time, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).
Served by NG-RAN (octet k+8 to o1): The served by NG-RAN field is coded according to figure 5.3.2.2 and table 5.3.2.2, and contains configuration parameters for 5G ProSe direct discovery when the UE is served by NG-RAN.
Not served by NG-RAN (octet o1+1 to o2): The not served by NG-RAN field is coded according to figure 5.3.2.6 and table 5.3.2.6, and contains configuration parameters for 5G ProSe direct discovery when the UE is not served by NG-RAN.
ProSe Direct Discovery UE ID (octet o2+1 to o2+3): The ProSe Direct Discovery UE ID is a 24-bit long bit string.
Group member discovery parameters (octet o2+4 to o3): The group member discovery parameters field is coded according to figure 5.3.2.12 and table 5.3.2.12 and contains group member discovery parameters.
ProSe identifiers (octet o3+1 to o4): The ProSe identifiers field is coded according to figure 5.3.2.14 and table 5.3.2.14 and contains ProSe identifiers.
ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rules (octet o4+1 to o5): The ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rules field is coded according to figure 5.3.2.15 and table 5.3.2.15 and contains ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rules.
If the length of ProSeP info contents field is bigger than indicated in figure 5.3.2.1, receiving entity shall ignore any superfluous octets located at the end of the ProSeP info contents.

Table 5.3.2.1: ProSeP Info = {UE policies for 5G ProSe direct discovered	ery}
--	------

8	7	6	5	4	3	2	1				
								octet k+8			
	Length of served by NG-RAN contents										
								octet k+9			
								octet k+10			
	ŀ	Authorizati	on for diı	rect disco	overy info	1					
								octet o50			
	A	Authorizati	on for dii	rect disco	overv info	2					
	Authorization for direct discovery info 2										
								octet o51+1			
								octet o52			
	octet o52+1										
	ŀ	Authorizati	on for dir	rect disco	overy info	n					
					,			octet o1			
		Fic	uro 5 3	2 2. 50	rved by	NG_PA	N	-			

Figure 5.3.2.2: Served by NG-RAN

Table 5.3.2.2: Served by NG-RAN

Authorization for direct discovery info: The authorization for direct discovery info field is coded according to figure 5.3.2.3 and table 5.3.2.3.

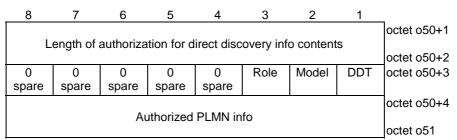


Figure 5.3.2.3: Authorization for direct discovery info



Direct discovery type (DDT) (octet o50+3 bit 1):	
Bit 1	
0 Open	
1 Restricted	
Model (octet o50+3 bit 2): Bit 2 0 A 1 B	
If Model bit is set to "A", Role (octet o50+3 bit 3): Bit 3	
0 Announcing 1 Monitoring	
If Model bit is set to "B", Role (octet o50+3 bit 3): Bit 3	
0 Discoverer 1 Discoveree	
Authorized PLMN info (octet o50+4 to o51): The authorized PLMN info field is coded according to figure 5.3.2.4 and table 5.3.2.4, or figure 5.3.2.4B and table 5.3.2.4B.	
If the length of authorization for direct discovery info field is bigger than indicated in figure 5.3.2.3, receiving entity shall ignore any superfluous octets located at the end o the authorization for direct discovery info.	f

8	7	6	5	4	3	2	1					
								octet o50+4				
	Length of authorized PLMN info contents											
								octet (050+6)*				
		Author	ized PLN	/N and r	ange 1							
								octet (050+9)*				
					_			octet (050+10)*				
		Author	ized PLN	MN and r	ange 2							
								octet (050+13)*				
								octet (050+14)*				
				••				octet o150*				
		Author	ized PLN	//N and r	ange n							
								octet o51*				

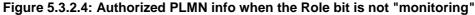
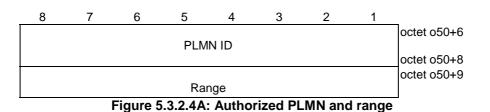
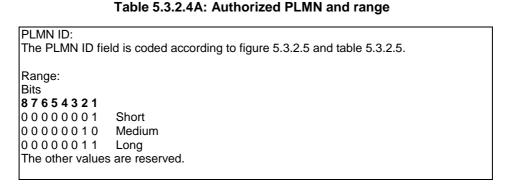


Table 5.3.2.4: Authorized PLMN info when the Role bit is not "monitoring"

Authorized PLMN and range: The authorized PLMN and range field is coded according to figure 5.3.2.4A and table 5.3.2.4A.





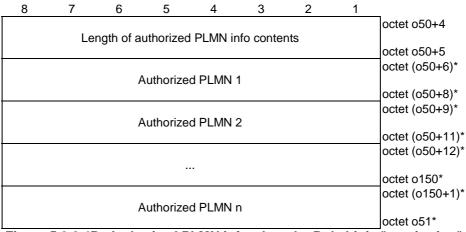


Figure 5.3.2.4B: Authorized PLMN info when the Role bit is "monitoring"

Authorized PLMN:										
The authorized PLMN field is coded according to figure 5.3.2.5 and table 5.3.2.5.										
					0 0					
J										
8	7	6	5	4	3	2	1			
	MCC	digit 2			MCC	diait 1		octet o50+6		
		a.g.t <u>–</u>				a.g.t .				
	MNIC	digit 3			MCC	digit 3		octet o50+7		
	IVIINC	uigit 3			NICC	uigit 3				
	MNC	digit 2			MNC	digit 1		octet o50+8		

Table 5.3.2.4B: Authorized PLMN

Figure 5.3.2.5: PLMN ID

Table 5.3.2.5: PLMN ID

Mobile country code (MCC) (octet o50+5, octet o50+6 bit 1 to 4): The MCC field is coded as in ITU-T Recommendation E.212 [5], annex A.

Mobile network code (MNC) (octet o50+6 bit 5 to 8, octet o50+7): The coding of MNC field is the responsibility of each administration but BCD coding shall be used. The MNC shall consist of 2 or 3 digits. If a network operator decides to use only two digits in the MNC, MNC digit 3 shall be coded as "1111".

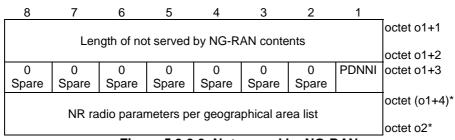


Figure 5.3.2.6: Not served by NG-RAN

Table 5.3.2.6: Not served by NG-RAN

5G ProSe direct discovery when not served by NG-RAN indicator (PDNNI) (octet o1+3 bit 1): The PDNNI bit indicates whether the UE is authorized to perform 5G ProSe direct discovery when not served by NG-RAN. Bit 1 0 Not authorized Authorized 1 NR radio parameters per geographical area list (octet o1+4 to o2): If PNNI bit is set to "Authorized", the NR radio parameters per geographical area list field is present otherwise the NR radio parameters per geographical area list field is absent. It is coded according to figure 5.3.2.7 and table 5.3.2.7. If the length of not served by NG-RAN contents field is bigger than indicated in figure 5.3.2.6, receiving entity shall ignore any superfluous octets located at the end of the not served by NG-RAN contents.

8	7	6	5	4	3	2	1	
								octet o1+4
Leng	gth of rad	io param	eters per	geograp	hical area	a list con	tents	
								octet o1+5
								octet (01+6)*
	Radio	paramet	ers per g	geographi	ical area	info 1		
								octet o6*
								octet (06+1)*
	Radio	paramet	ers per g	geographi	ical area	info 2		
								octet o7*
								octet (07+1)*
			•	••				
								octet o8*
								octet (08+1)*
	Radio	paramet	ers per g	geographi	ical area	info n		
		5 2 2 7.1						octet o2*

Figure 5.3.2.7: Radio parameters per geographical area list



Radio parameters per geographical area info: The radio parameters per geographical area info field is coded according to figure 5.3.2.8 and table 5.3.2.8.

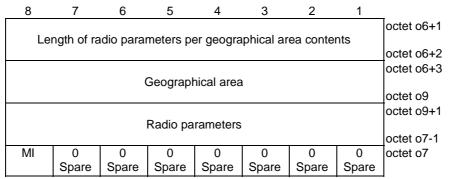


Figure 5.3.2.8: Radio parameters per geographical area info

Table 5.3.2.8: Radio parameters per geographical area info

Geographical area (octet o6+3 to o9): The geographical area field is coded according to figure 5.3.2.9 and table 5.3.2.9. Radio parameters (octet o9 to o7-1): The radio parameters field is coded according to figure 5.3.2.11 and table 5.3.2.11, applicable in the geographical area indicated by the geographical area field when not served by NG-RAN. Managed indicator (MI) (octet o7 bit 8): The managed indicator indicates how the radio parameters indicated in the radio parameters field in the geographical area indicated by the geographical area field are managed. Bit 8 0 Non-operator managed Operator managed 1 If the length of radio parameters per geographical area contents field is bigger than indicated in figure 5.3.2.8, receiving entity shall ignore any superfluous octets located at the end of the radio parameters per geographical area contents.

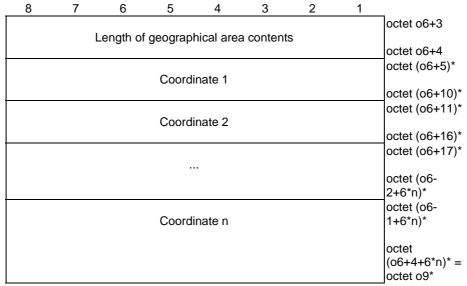


Figure 5.3.2.9: Geographical area

Table 5.3.2.9: Geographical area

Coordinate:	
The coordinate field is coded according to figure 5.3.2.10 and table 5.3.2.10.	

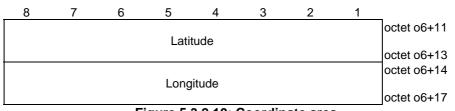


Figure 5.3.2.10: Coordinate area



	Latitude: The latitude field is coded according to clause 6.1 of 3GPP TS 23.032 [6].								
5	Longitude: The longitude field is coded according to clause 6.1 of 3GPP TS 23.032 [6].								
8	7	6	5	4	3	2	1	_	
8	7	6	5	4	3	2	1		09+1

Length of radio parameters contents	octet o9+1
Length of radio parameters contents	octet o9+2
Dadia accordante contente	octet o9+3
Radio parameters contents	octet o7-1

Figure 5.3.2.11: Radio parameters

Table 5.3.2.11: Radio parameters

Radio parameters contents: Radio parameters are defined as *SL-PreconfigurationNR* in clause 9.3 of 3GPP TS 38.331 [7].

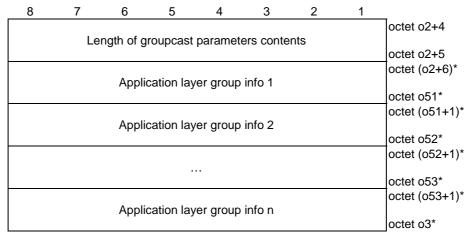


Figure 5.3.2.12: Groupcast parameters

Table 5.3.2.12: Groupcast parameters

Application layer group info: The application layer group info field is coded according to figure 5.3.2.13 and table 5.3.2.13.

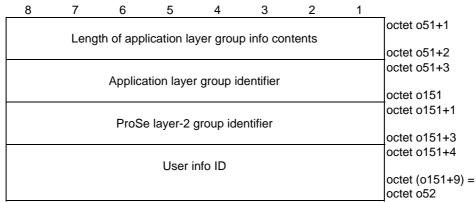


Figure 5.3.2.13: Application layer group info

Table 5.3.2.13: Application layer group info

Application layer group identifier (octet o51+3 to o151): The first octet of application layer group identifier field is the length of application group identifier. The value of application group identifier field is a bit string. The format of application group identifier parameter is out of scope of this specification. ProSe layer-2 group identifier (octet o151+1 to o151+3) The ProSe layer-2 group identifier field is a binary coded layer-2 identifier.

User info ID (octet o151+4 to o52) The value of the User info ID parameter is a 48-bit long bit string. The format of the User info ID parameter is out of scope of this specification.

If the length of application layer group info contents field is bigger than indicated in figure 5.3.2.13, receiving entity shall ignore any superfluous octets located at the end of the application layer group info contents.

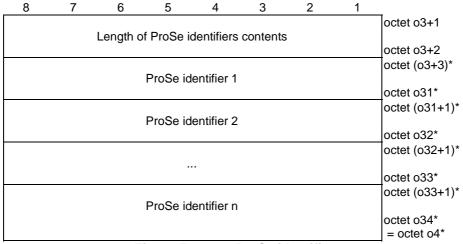


Figure 5.3.2.14: ProSe identifiers

Table 5.3.2.14: ProSe identifiers

ProSe id	entifier:							
The Pros	The ProSe identifier field contains a sequence of a sixteen octet OS Id field, a one octet OS App Id length field, and an OS App Id field. The OS Id field shall be							
transmitt	ed first. The OS Id field contains a Universally Unique IDentifier (UUID) as							
specified	l in IETF RFC 4122 [12].							
NOTE:	Further definition of the format of OS App ID is beyond the scope of this							
	specification.							

8	7	6	5	4	3	2	1		
Lengt	Length of ProSe identifier to default destination layer-2 ID for initial								
	disc	overy sig	nalling m	apping r	ules cont	ents			
								octet o4+2	
								octet (o4+3)*	
ProSe	e identifier			,		initial dis	covery		
		sigr	nalling ma	apping ru	ile 1			octet o54*	
								octet (o54+1)*	
ProSe	e identifier	to defau	lt destina	tion laye	r-2 ID for	initial dis	covery		
		sigr	nalling ma	apping ru	ıle 2			octet o55*	
								octet (o55+1)*	
								octet o56*	
								octet (056+1)*	
ProSe identifier to default destination layer-2 ID for initial discovery									
		sigr	nalling ma	apping ru	ıle n			octet I*	

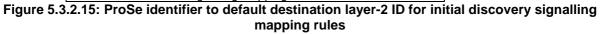


Table 5.3.2.15: ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rules

ProSe identifier to destination layer-2 ID for broadcast mapping rule: The ProSe identifier to destination layer-2 ID for broadcast mapping rule field is coded according to figure 5.3.2.16 and table 5.3.2.16. identifier.

19

8	7	6	5	4	3	2	1	
Length					nation lay		or initial	octet o54+1
		, , ,						octet o54+2
								octet o54+3
			ProSe id	dentifiers	i			
								octet o154
								octet o154+1
	Destina	ition layer	-2 ID for	initial di	scovery si	ignalling		
								octet (0154+3)
 		. 1.41						= octet o55

Figure 5.3.2.16: ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rule

Table 5.3.2.16: ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rule

ProSe identifiers (octet o54+3 to o154): The ProSe identifiers field is coded according to figure 5.3.2.14 and table 5.3.2.14. Destination layer-2 ID for initial discovery signalling (octet o154+1 to o55): The destination layer-2 ID for initial discovery signalling field is a binary coded layer-2

If the length of ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rule contents field is bigger than indicated in figure 5.3.2.16, receiving entity shall ignore any superfluous octets located at the end of the ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rule contents.

5.4 Encoding of UE policies for 5G ProSe direct communications

5.4.1 General

The UE policies for 5G ProSe direct communication are coded as shown in figures 5.4.1.1 and table 5.4.1.1.

5.4.2 Information elements coding

8	7	6	5	4	3	2	1	
0	0 Spa	0 are	0		or 5G Pr	e = {UE oSe dired nication}		octet k
		Length	of ProSe	eP info co	ontents			octet k+1 octet k+2
	Validity timer							octet k+3 octet k+7
	Served by NG-RAN							
	Not served by NG-RAN Privacy config 5G ProSe direct communication in NR-PC5							octet o1+1 octet o2
								octet o2+1 octet o4
								octet o4+1 octet o5
	ProSe a	pplicatio	n to path	preferen	ce mapp	ing rules		octet o5+1 octet I

Figure 5.4.2.1: ProSeP Info = {UE policies for 5G ProSe direct communication}

Table 5.4.2.1: ProSeP Info = {UE policies for 5G ProSe direct communication}

ProSeP info type (bit 1 to 4 of octet k) shall be set to "0010" (UE policies for 5G ProSe
direct communication)
Length of ProSeP info contents (octets k+1 to k+2) indicates the length of ProSeP info contents.
Validity timer (octet k+3 to k+7): The validity timer field provides the expiration time of validity of the UE policies for 5G ProSe direct communication. The validity timer field is a binary coded representation of a UTC time, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).
Served by NG-RAN (octet k+8 to o1): The served by NG-RAN field is coded according to figure 5.4.2.2 and table 5.4.2.2, and contains configuration parameters for 5G ProSe direct communication when the UE is served by NG-RAN.
Not served by NG-RAN (octet o1+1 to o2): The not served by NG-RAN field is coded according to figure 5.4.2.5 and table 5.4.2.5, and contains configuration parameters for 5G ProSe direct communication when the UE is not served by NG-RAN.
Privacy config (octet o2+1 to o4): The privacy config field is coded according to figure 5.4.2.11 and table 5.4.2.11, and contains configuration parameters for privacy configuration.
5G ProSe direct communication in NR-PC5 (octet o4+1 to o5): The 5G ProSe direct communication in NR-PC5 field is coded according to figure 5.4.2.16 and table 5.4.2.16, and contains configuration parameters for 5G ProSe direct communication in NR-PC5.
ProSe application to path preference mapping rules (octet o5+1 to l): The ProSe application to path preference mapping rules field is coded according to figure 5.4.2.38 and table 5.4.2.38, and contains configuration parameters for ProSe application to path preference mapping rules.
If the length of ProSeP info contents field is bigger than indicated in figure 5.4.2.1, receiving entity shall ignore any superfluous octets located at the end of the ProSeP info contents.

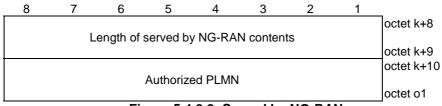


Figure 5.4.2.2: Served by NG-RAN

Table 5.4.2.2: Served by NG-RAN

Authorized PLMN (octet k+10 to o1): The authorized PLMN field is coded according to figure 5.4.2.3 and table 5.4.2.3.

If the length of served by NG-RAN contents field is bigger than indicated in figure 5.4.2.2, receiving entity shall ignore any superfluous octets located at the end of the served by NG-RAN contents.

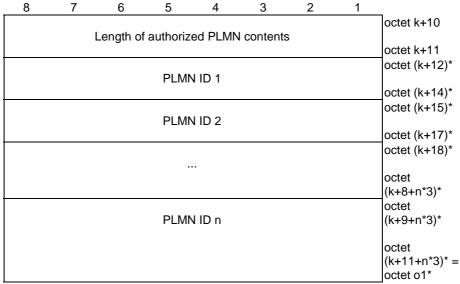


Figure 5.4.2.3: Authorized PLMN

Table 5.4.2.3: Authorized PLMN

PLMN ID:	
The PLMN ID field is coded according to figure 5.4.2.4 and table 5.4.2.4.	

8	7	6	5	4	3	2	1	
	MCC	digit 2			MCC	digit 1		octet k+15
	MNC	digit 3			octet k+16			
	MNC	digit 2			MNC	digit 1		octet k+17

Figure 5.4.2.4: PLMN ID

Table 5.4.2.4: PLMN ID

Mobile country code (MCC) (octet k+15, octet k+16 bit 1 to 4): The MCC field is coded as in ITU-T Recommendation E.212 [5], annex A.

Mobile network code (MNC) (octet k+16 bit 5 to 8, octet k+17): The coding of MNC field is the responsibility of each administration but BCD coding shall be used. The MNC shall consist of 2 or 3 digits. If a network operator decides to use only two digits in the MNC, MNC digit 3 shall be coded as "1111".

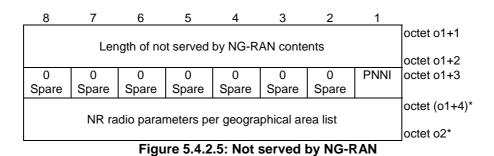


Table 5.4.2.5: Not	served by NG-RAN
--------------------	------------------

5G ProSe direct communication when not served by NG-RAN indicator (PNNI) (octet o1+3 bit 1):
The PNNI bit indicates whether the UE is authorized to use 5G ProSe direct communication when not served by NG-RAN.
Bit
0 Not authorized
1 Authorized
NR radio parameters per geographical area list (octet o1+4 to o2):
If PNNI bit is set to "Authorized", the NR radio parameters per geographical area list field is present otherwise the NR radio parameters per geographical area list field is absent. It is coded according to figure 5.4.2.6 and table 5.4.2.6.
If the length of not served by NG-RAN contents field is bigger than indicated in

figure 5.4.2.5, receiving entity shall ignore any superfluous octets located at the end of the not served by NG-RAN contents.

8	7	6	5	4	3	2	1				
Le	noth of rac	lio param	eters per	deograf	phical area	a list con	itents	octet o1+4			
	Length of radio parameters per geographical area list contents										
								octet (01+6)*			
	Radio	o parame	ters per ç	geograph	nical area i	info 1		octet o6*			
	Radio parameters per geographical area info 2										
								octet o7*			
								octet (07+1)*			
			•					octet o8*			
	Padi	narame	tors por (neograph	nical area i	info n		octet (08+1)*			
		•						octet o2*			

Figure 5.4.2.6: Radio parameters per geographical area list

Table 5.4.2.6: Radio parameters per geographical area

Radio parameters per geographical area info: The radio parameters per geographical area info field is coded according to figure 5.4.2.7 and table 5.4.2.7.

8	7	6	5	4	3	2	1			
Le	octet o6+1									
	110	octet o6+2								
		octet o6+3								
	Geographical area									
		octet o9+1								
		octet o7-1								
MI	0	0	0	0	0	0	0	octet o7		
	Spare	Spare	Spare	Spare	Spare	Spare	Spare			
	Figure 5.4.2.7: Radio parameters per geographical area info									

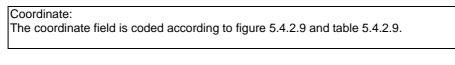
Table 5.4.2.7: Radio parameters per geographical area info

Geographical area (octet o6+3 to o9):
The geographical area field is coded according to figure 5.4.2.8 and table 5.4.2.8.
Radio parameters (octet o9 to o7-1): The radio parameters field is coded according to figure 5.4.2.10 and table 5.4.2.10, applicable in the geographical area indicated by the geographical area field when not served by NG-RAN.
Managed indicator (MI) (octet o7 bit 8): The managed indicator indicates how the radio parameters indicated in the radio parameters field in the geographical area indicated by the geographical area field are managed. Bit
8
0 Non-operator managed
1 Operator managed
If the length of radio parameters per geographical area contents field is bigger than indicated in figure 5.4.2.7, receiving entity shall ignore any superfluous octets located at the end of the radio parameters per geographical area contents.

8	7	6	5	4	3	2	1	
								octet o6+3
	1	Length of	geograp	nical are	a content	S		octet o6+4
								octet (06+5)*
			Coord	inate 1				octet (06+10)*
								octet (06+11)*
			Coord	inate 2				octet (06+16)*
								octet (06+17)*
								octet (o6- 2+6*n)*
								octet (o6-
			Coord	inate n				1+6*n)*
								octet (o6+4+6*n)* = octet o9*

Figure 5.4.2.8: Geographical area

Table 5.4.2.8: Geographical area



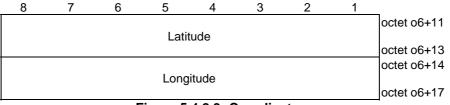


Figure 5.4.2.9: Coordinate area

Table 5.4.2.9: Coordinate area

Latitude: The latitude field is coded according to clause 6.1 of 3GPP TS 23.032 [6]. Longitude: The longitude field is coded according to clause 6.1 of 3GPP TS 23.032 [6].

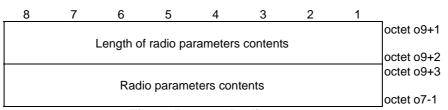


Figure 5.4.2.10: Radio parameters

Table 5.4.2.10: Radio parameters

Radio parameters contents: Radio parameters are defined as *SL-PreconfigurationNR* in clause 9.3 of 3GPP TS 38.331 [7].

8	7	6	5	4	3	2	1					
								octet o2+1				
	Length of privacy config contents											
	- · · ·											
	ProSe applications requiring privacy											
	octet o4-1											
	octet o4											

Figure 5.4.2.11: Privacy config

Table 5.4.2.11: Privacy config

ProSe applications requiring privacy (octet o2+3 to o4-2): The ProSe applications requiring privacy field is coded according to figure 5.4.2.12 and table 5.4.2.12.

Privacy timer (octet o4-1, octet o4):

The privacy timer field contains binary encoded duration, in units of seconds, after which the UE shall change the source layer-2 ID self-assigned by the UE while performing transmission of 5G ProSe direct communication when privacy is required.

If the length of privacy config contents field is bigger than indicated in figure 5.4.2.11, receiving entity shall ignore any superfluous octets located at the end of the privacy config contents.

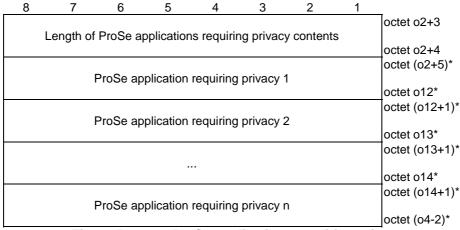


Figure 5.4.2.12: ProSe applications requiring privacy



ProSe application requiring privacy: The ProSe application requiring privacy field is coded according to figure 5.4.2.13 and table 5.4.2.13.

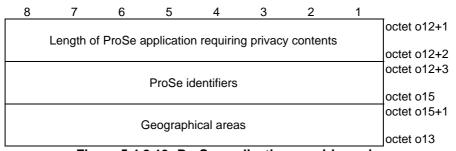


Figure 5.4.2.13: ProSe application requiring privacy

Table 5.4.2.13: ProSe application requiring privacy

ProSe identifiers (octet o12+3 to o15): The ProSe identifiers field is coded according to figure 5.4.2.14 and table 5.4.2.14. Geographical areas (octet o15+1 to o13): The geographical areas field is coded according to figure 5.4.2.15 and table 5.4.2.15. If the length of ProSe applications requiring privacy contents field is bigger than indicated in figure 5.4.2.13, receiving entity shall ignore any superfluous octets located at the end of the ProSe applications requiring privacy contents.

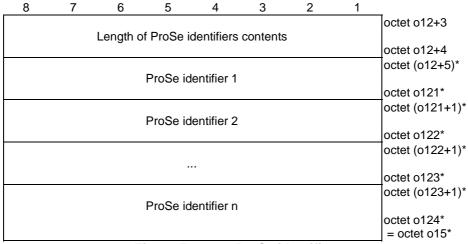


Figure 5.4.2.14: ProSe identifiers

Table 5.4.2.14: ProSe identifiers

ProSe identifier: The ProSe identifier field contains a sequence of a sixteen octet OS Id field, a one octet OS App Id length field, and an OS App Id field. The OS Id field shall be transmitted first. The OS Id field contains a Universally Unique IDentifier (UUID) as specified in IETF RFC 4122 [12].

NOTE: Further definition of the format of OS App ID is beyond the scope of this specification.

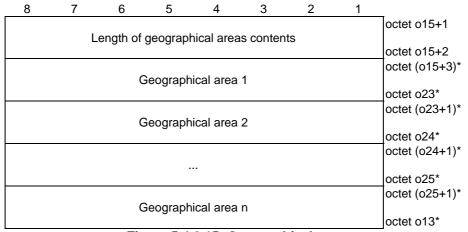


Figure 5.4.2.15: Geographical areas

Table 5.4.2.15: Geographical areas

Geographical area: The geographical area field is coded according to figure 5.4.2.8 and table 5.4.2.8.

8	7	6	5	4	3	2	1					
	octet o4+1											
Leng	octet o4+2											
DDL2I BI												
	octet (o4+4)*											
	ProSe identifier to ProSe NR frequency mapping rules											
								octet o45* octet o108				
ProSe i	dentifier t	o destina	tion laye	r-2 ID for	broadca	st mappir	ng rules	(see NOTE)				
								octet o46				
								octet 046+1				
		Gr	oupcast	paramete	ers							
								octet o47				
DraCa	i de estitie e	to deation	ation law				n allia a	octet o47+1				
ProSe	identifier	to destin	mappin		or unicast	initial sig	nalling	octet o48				
			тарра	ig raioo				octet o48+1				
F	ProSe ide	ntifier to	PC5 QoS	S parame	ters map	ping rules	3					
								octet o49				
			AS confi	aurotion				octet o49+1				
			AS confi	guration				octet o50				
								octet (o50+1)*				
	Def	ault desti	nation lag	yer-2 ID f	or broad	cast						
								octet (o50+3)*				
								octet o93 (see NOTE)				
	NR-PC5 unicast security policies											
	octet (o84+1)											
ProSe	e identifie	r to defau	ult mode	of comm	unication	mapping	rules					
								octet o85 =				
1 C 11'	1 1 '	1	.1 . 6	.1 1 .		1	<u>~ 1.1</u>	octet I				

NOTE: The field is placed immediately after the last present preceding field.

Figure 5.4.2.16: 5G ProSe direct communication over PC5 in NR-PC5

Table 5.4.2.16: 5G ProSe direct communication over PC5 in NR-PC5

Default destination layer-2 ID for broadcast indicator (DDL2IBI) (octet o4+3 bit 8): The DDL2IBI bit indicates presence of the default destination layer-2 ID for broadcast field. Bit 8 0 Default destination layer-2 ID for broadcast field is absent 1 Default destination layer-2 ID for broadcast field is present ProSe identifier to ProSe NR frequency mapping rules indicator (PINFMRI) (octet o4+3 bit 7): The PINFMRI bit indicates presence of the ProSe identifier to ProSe NR frequency mapping rules field. Bit 7 ProSe identifier to ProSe NR frequency mapping rules field is absent 0 ProSe identifier to ProSe NR frequency mapping rules field is present 1 ProSe identifier to ProSe NR frequency mapping rules (octet o4+4 to o45): The ProSe identifier to ProSe NR frequency mapping rules field is coded according to figure 5.4.2.17 and table 5.4.2.17. ProSe identifier to destination layer-2 ID for broadcast mapping rules (octet o108 to o46): The ProSe identifier to destination layer-2 ID for broadcast mapping rules field is coded according to figure 5.4.2.22 and table 5.4.2.22. Groupcast parameters (octet o46+1 to o47): The groupcast parameters field is coded according to figure 5.4.2.24 and table 5.4.2.24. ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rules (octet o47+1 to o48): The ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rules field is coded according to figure 5.4.2.26 and table 5.4.2.26. ProSe identifier to PC5 QoS parameters mapping rules (octet o48+1 to o49): The ProSe identifier to PC5 QoS parameters mapping rules field is coded according to figure 5.4.2.28 and table 5.4.2.28. AS configuration (octet o49+1 to o50): The AS configuration field is coded according to figure 5.4.2.30 and table 5.4.2.30. Default destination layer-2 ID for broadcast (octet o50+1 to o50+3): The default destination layer-2 ID for broadcast field is a binary coded layer-2 identifier. NR-PC5 unicast security policies (octet o93 to o84): The NR-PC5 unicast security policies field is coded according to figure 5.4.2.34 and table 5.4.2.34. ProSe identifier to default mode of communication mapping rules (o84+1 to I): The ProSe identifier to default mode of communication mapping rules is coded according to figure 5.4.2.37 and table 5.4.2.37. If the length of 5G ProSe direct communication over PC5 in NR-PC5 contents field is bigger than indicated in figure 5.4.2.16, receiving entity shall ignore any superfluous octets located at the end of the 5G ProSe direct communication over PC5 in NR-PC5 contents.

8	7	6	5	4	3	2	1				
								octet o4+4			
Ler	Length of ProSe identifier to ProSe NR frequency mapping rules										
	contents										
								octet (04+6)*			
	ProSe ide	entifier to	ProSe N	R freque	ncy mapp	ing rule	1				
								octet o51*			
							_	octet (051+1)*			
	ProSe ide	entifier to	ProSe N	R freque	ncy mapp	ing rule	2				
								octet o52*			
								octet (052+1)*			
								octet o53*			
				D (octet (053+1)*			
	ProSe ide	entifier to	ProSe N	R freque	ncy mapp	ing rule	n				
								octet o45*			

Figure 5.4.2.17: ProSe identifier to ProSe NR frequency mapping rules

Table 5.4.2.17: ProSe identifier to ProSe NR frequency mapping rules

ProSe identifier to ProSe NR frequency mapping rule: The ProSe identifier to ProSe NR frequency mapping rule is coded according to figure 5.4.2.18 and table 5.4.2.18.

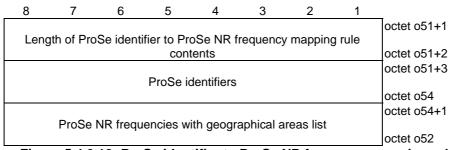


Figure 5.4.2.18: ProSe identifier to ProSe NR frequency mapping rule

Table 5.4.2.18: ProSe identifier to ProSe NR frequency mapping rule

ProSe identifiers (octet o51+3 to o54): The ProSe identifiers field is coded according to figure 5.4.2.14 and table 5.4.2.14. ProSe NR frequencies with geographical areas list (octet o54+1 to o52): The ProSe NR frequencies with geographical areas list field is coded according to figure 5.4.2.19 and table 5.4.2.19.

If the length of ProSe identifier to ProSe NR frequency mapping rule contents field is bigger than indicated in figure 5.4.2.18, receiving entity shall ignore any superfluous octets located at the end of the ProSe identifier to ProSe NR frequency mapping rule contents.

8	7	6	5	4	3	2	1				
								octet o54+1			
Length	Length of ProSe NR frequencies with geographical areas list contents										
								octet o54+2			
	D 0 - N	D (octet (054+3)*			
	ProSe N	R frequer	icles with	n geogra	phical are	as into 1		octet o55*			
								octet (055+1)*			
	ProSe N	R frequer	ncies with	n deodra	nhical are	as info 2)	000000000000000000000000000000000000			
	ProSe NR frequencies with geographical areas info 2										
								octet o56* octet (o56+1)*			
								octet o57*			
								octet (057+1)*			
	ProSe N	R frequer	ncies with	n geogra	phical are	as info r	n				
								octet o52*			

Figure 5.4.2.19: ProSe NR frequencies with geographical areas list

Table 5.4.2.19: ProSe NR frequencies with geographical areas list

ProSe NR frequencies with geographical areas info: The ProSe NR frequencies with geographical areas info field is coded according to figure 5.4.2.20 and table 5.4.2.20.

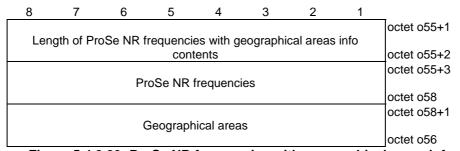


Figure 5.4.2.20: ProSe NR frequencies with geographical areas info

Table 5.4.2.20: ProSe NR frequencies with geographical areas info

ProSe NR frequencies (octet o55+3 to o58): The ProSe NR frequencies field is coded according to figure 5.4.2.21 and table 5.4.2.21. Geographical areas (octet o58+1 to o56): The geographical areas field is coded according to figure 5.4.2.15 and table 5.4.2.15.

If the length of ProSe NR frequencies with geographical areas info contents field is bigger than indicated in figure 5.4.2.20, receiving entity shall ignore any superfluous octets located at the end of the ProSe NR frequencies with geographical areas info contents.

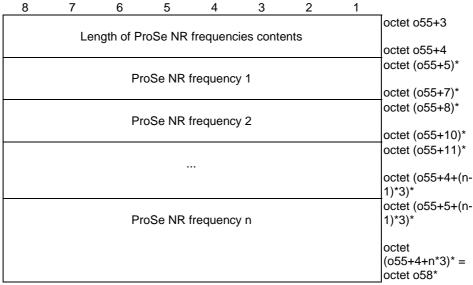


Figure 5.4.2.21: ProSe NR frequencies

Table 5.4.2.21: ProSe NR frequencies

ProSe NR frequency: ProSe NR frequency is coded according to the NR-ARFCN value defined in 3GPP TS 38.101-1 [8] and 3GPP TS 38.101-2 [9].

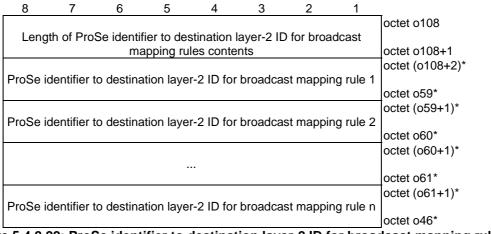


Figure 5.4.2.22: ProSe identifier to destination layer-2 ID for broadcast mapping rules

Table 5.4.2.22: ProSe identifier to destination layer-2 ID for broadcast mapping rules

ProSe identifier to destination layer-2 ID for broadcast mapping rule: The ProSe identifier to destination layer-2 ID for broadcast mapping rule field is coded according to figure 5.4.2.23 and table 5.4.2.23.

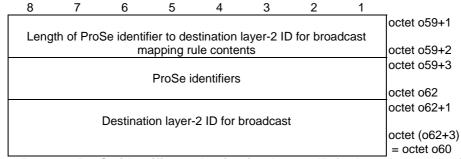
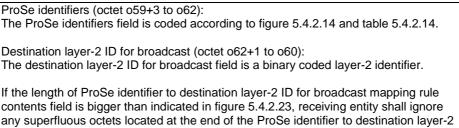


Figure 5.4.2.23: ProSe identifier to destination layer-2 ID for broadcast mapping rule

Table 5.4.2.23: ProSe identifier to destination layer-2 ID for broadcast mapping rule



ID for broadcast mapping rule contents.

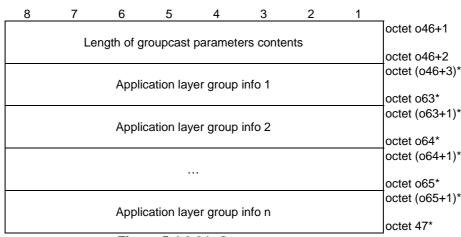
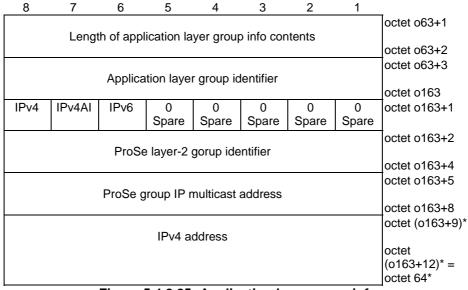
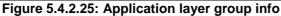


Figure 5.4.2.24: Groupcast parameters

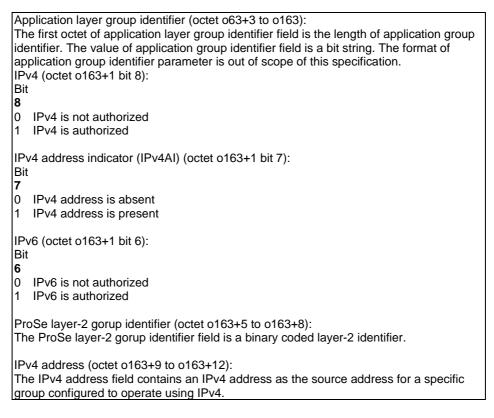
Table 5.4.2.24: Groupcast parameters

Application layer group info: The application layer group info field is coded according to figure 5.4.2.25 and table 5.4.2.25.









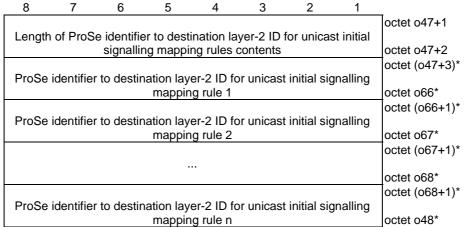


Figure 5.4.2.26: ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rules

Table 5.4.2.26: ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rules

ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rule: The ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rule field is coded according to figure 5.4.2.27 and table 5.4.2.27.

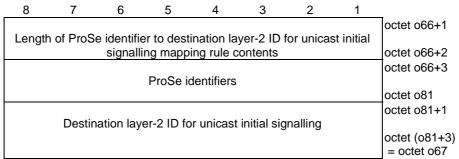


Figure 5.4.2.27: ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rule

Table 5.4.2.27: ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rule

ProSe identifiers (octet o66+3 to o81): The ProSe identifiers field is coded according to figure 5.4.2.14 and table 5.4.2.14. Destination layer-2 ID for unicast initial signalling (octet o81+1 to o67): The destination layer-2 ID for unicast initial signalling field is a binary coded layer-2 identifier. If the length of ProSe identifier to destination layer-2 ID for unicast initial signalling

mapping rule contents field is bigger than indicated in figure 5.4.2.27, receiving entity shall ignore any superfluous octets located at the end of the ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rule contents.

8	7	6	5	4	3	2	1	
								octet o48+1
Leng	th of ProS	Se identifie	er to PC	5 QoS pa	arameters	mapping	g rules	
			cont	ents				octet o48+2
								octet (o48+3)*
	ProSe ide	ntifier to F	PC5 QoS	S parame	ters mapp	oing rule	1	
								octet o70*
							_	octet (o70+1)*
	ProSe ide	entifier to F	PC5 QoS	s parame	ters mapp	ping rule	2	
								octet o71*
								octet (o71+1)*
								octet o72*
								octet (072+1)*
	-rose ide	ntifier to I	-05 Q05	o parame	ters mapp	oing rule	n	
								octet o49*

Figure 5.4.2.28: ProSe identifier to PC5 QoS parameters mapping rules

Table 5.4.2.28: ProSe identifier to PC5 QoS parameters mapping rules

ProSe identifier to PC5 QoS parameters mapping rule: The ProSe identifier to PC5 QoS parameters mapping rule field is coded according to figure 5.4.2.29 and table 5.4.2.29.

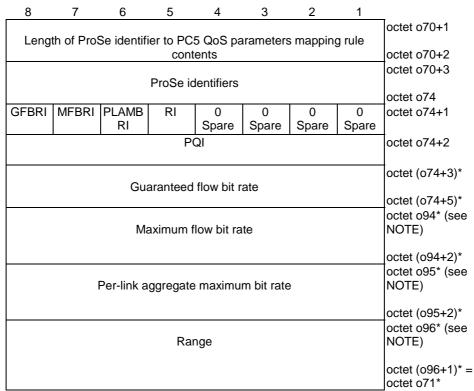




Figure 5.4.2.29: ProSe identifier to PC5 QoS parameters mapping rule

Table 5.4.2.29: ProSe identifier to PC5 QoS parameters mapping rule

ProSe identifiers (octet o70+3 to o74): The ProSe identifiers field is coded according to figure 5.4.2.14 and table 5.4.2.14. Guaranteed flow bit rate indicator (GFBRI) (octet o74+1 bit 8): The GFBRI bit indicates presence of guaranteed flow bit rate field. Bit 8 0 Guaranteed flow bit rate field is absent 1 Guaranteed flow bit rate field is present Maximum flow bit rate indicator (MFBRI) (octet o74+1 bit 7): The MFBRI bit indicates presence of maximum flow bit rate field. Bit 7 Maximum flow bit rate field is absent 0 Maximum flow bit rate field is present 1 Per-link aggregate maximum bit rate indicator (PLAMBRI) (octet o74+1 bit 6): The PLAMBRI bit indicates presence of per-link aggregate maximum bit rate field. Bit 6 0 Per-link aggregate maximum bit rate field is absent Per-link aggregate maximum bit rate field is present 1 Range indicator (RI) (octet o74+1 bit 5): The RI bit indicates presence of range field. Bit 5 0 Range field is absent 1

Range field is present

PQI (octet o74+2): Bits 87654321 00000000 Reserved 00000001 to Spare 00010100 00010101 **PQI 21** 00010110 **PQI 22** 00010111 **PQI 23** 00011000 PQI 24 00011001 PQI 25 00011010 PQI 26 00011011 to Spare 00110110 00110111 **PQI 55** 00111000 PQI 56 00111001 PQI 57 00111010 **PQI 58** 00111011 **PQI 59** 00111100 **PQI 60** 00111101 **PQI 61** 00111110 to Spare 01011001 01011010 **PQI 90** 01011011 PQI 91 01011100 PQI 92 01011101 **PQI 93** 01011110 to Spare 01111111 10000000 to Operator-specific PQIs 11111110 11111111 Reserved

If the UE receives a PQI value (excluding the reserved PQI values) that it does not understand, the UE shall choose a PQI value from the set of PQI values defined in this version of the protocol (see 3GPP TS 23.304 [2]) and associated with:

- GBR resource type, if the ProSe identifier to PC5 QoS parameters mapping rule includes the guaranteed flow bit rate field; and

 non-GBR resource type, if the ProSe identifier to PC5 QoS parameters mapping rule does not include the guaranteed flow bit rate field.

The UE shall use this chosen PQI value for internal operations only. The UE shall use the received PQI value in subsequent 5G ProSe direct communication over PC5 signalling procedures.

Guaranteed flow bit rate (octet o74+3 to o74+5): The guaranteed flow bit rate field indicates guaranteed flow bit rate for both sending and receiving and contains one octet indicating the unit of the guaranteed flow bit rate followed by two octets containing the value of the guaranteed flow bit rate. Unit of the guaranteed flow bit rate: Bits 87654321 00000000 value is not used 00000001 value is incremented in multiples of 1 Kbps 00000010 value is incremented in multiples of 4 Kbps value is incremented in multiples of 16 Kbps 00000011 00000100 value is incremented in multiples of 64 Kbps value is incremented in multiples of 256 Kbps 00000101 value is incremented in multiples of 1 Mbps 00000110 value is incremented in multiples of 4 Mbps 00000111 00001000 value is incremented in multiples of 16 Mbps value is incremented in multiples of 64 Mbps 00001001 value is incremented in multiples of 256 Mbps 00001010 value is incremented in multiples of 1 Gbps 00001011 00001100 value is incremented in multiples of 4 Gbps 00001101 value is incremented in multiples of 16 Gbps 00001110 value is incremented in multiples of 64 Gbps 00001111 value is incremented in multiples of 256 Gbps 00010000 value is incremented in multiples of 1 Tbps 00010001 value is incremented in multiples of 4 Tbps 00010010 value is incremented in multiples of 16 Tbps 00010011 value is incremented in multiples of 64 Tbps 00010100 value is incremented in multiples of 256 Tbps 00010101 value is incremented in multiples of 1 Pbps 00010110 value is incremented in multiples of 4 Pbps 00010111 value is incremented in multiples of 16 Pbps 00011000 value is incremented in multiples of 64 Pbps value is incremented in multiples of 256 Pbps 00011001 Other values shall be interpreted as multiples of 256 Pbps in this version of the protocol.

Value of the guaranteed flow bit rate is binary coded value of the guaranteed flow bit rate in units defined by the unit of the guaranteed flow bit rate.

Maximum flow bit rate (octet o94 to o94+2): The maximum flow bit rate field indicates maximum flow bit rate for both sending and receiving and contains one octet indicating the unit of the maximum flow bit rate followed by two octets containing the value of the maximum flow bit rate. Unit of the maximum flow bit rate: Bits 87654321 00000000 value is not used 00000001 value is incremented in multiples of 1 Kbps 00000010 value is incremented in multiples of 4 Kbps 00000011 value is incremented in multiples of 16 Kbps 00000100 value is incremented in multiples of 64 Kbps 00000101 value is incremented in multiples of 256 Kbps value is incremented in multiples of 1 Mbps 00000110 value is incremented in multiples of 4 Mbps 00000111 00001000 value is incremented in multiples of 16 Mbps value is incremented in multiples of 64 Mbps 00001001 value is incremented in multiples of 256 Mbps 00001010 00001011 value is incremented in multiples of 1 Gbps 00001100 value is incremented in multiples of 4 Gbps 00001101 value is incremented in multiples of 16 Gbps 00001110 value is incremented in multiples of 64 Gbps 00001111 value is incremented in multiples of 256 Gbps 00010000 value is incremented in multiples of 1 Tbps 00010001 value is incremented in multiples of 4 Tbps 00010010 value is incremented in multiples of 16 Tbps 00010011 value is incremented in multiples of 64 Tbps 00010100 value is incremented in multiples of 256 Tbps 00010101 value is incremented in multiples of 1 Pbps 00010110 value is incremented in multiples of 4 Pbps 00010111 value is incremented in multiples of 16 Pbps 00011000 value is incremented in multiples of 64 Pbps value is incremented in multiples of 256 Pbps 00011001 Other values shall be interpreted as multiples of 256 Pbps in this version of the protocol.

Value of the maximum flow bit rate is binary coded value of the maximum flow bit rate in units defined by the unit of the maximum flow bit rate.

Per-link aggregate maximum bit rate (octet o95 to o95+2): The per-link aggregate maximum bit rate field indicates per-link aggregate maximum bit rate for both sending and receiving and contains one octet indicating the unit of the perlink aggregate maximum bit rate followed by two octets containing the value of the perlink aggregate maximum bit rate. Unit of the per-link aggregate maximum bit rate: Bits 87654321 00000000 value is not used 00000001 value is incremented in multiples of 1 Kbps 00000010 value is incremented in multiples of 4 Kbps 00000011 value is incremented in multiples of 16 Kbps 00000100 value is incremented in multiples of 64 Kbps value is incremented in multiples of 256 Kbps 00000101 value is incremented in multiples of 1 Mbps 00000110 00000111 value is incremented in multiples of 4 Mbps value is incremented in multiples of 16 Mbps 00001000 00001001 value is incremented in multiples of 64 Mbps value is incremented in multiples of 256 Mbps 00001010 00001011 value is incremented in multiples of 1 Gbps value is incremented in multiples of 4 Gbps 00001100 00001101 value is incremented in multiples of 16 Gbps 00001110 value is incremented in multiples of 64 Gbps 00001111 value is incremented in multiples of 256 Gbps 00010000 value is incremented in multiples of 1 Tbps 00010001 value is incremented in multiples of 4 Tbps 00010010 value is incremented in multiples of 16 Tbps 00010011 value is incremented in multiples of 64 Tbps 00010100 value is incremented in multiples of 256 Tbps 00010101 value is incremented in multiples of 1 Pbps 00010110 value is incremented in multiples of 4 Pbps 00010111 value is incremented in multiples of 16 Pbps value is incremented in multiples of 64 Pbps 00011000 value is incremented in multiples of 256 Pbps 00011001 Other values shall be interpreted as multiples of 256 Pbps in this version of the protocol. Value of the per-link aggregate maximum bit rate is binary coded value of the per-link aggregate maximum bit rate in units defined by the unit of the per-link aggregate maximum bit rate. Range (octet o96 to o71): The range field indicates a binary encoded value of the range in meters. If the length of ProSe identifier to PC5 QoS parameters mapping rule contents field is bigger than indicated in figure 5.4.2.28, receiving entity shall ignore any superfluous octets located at the end of the ProSe identifier to PC5 QoS parameters mapping rule contents. 8 7 6 5 4 3 2 1

Figure 5.4.2.30: AS configuration	
SLRB mapping rules	octet o50
	octet o49+3
	octet o49+2
Length of AS configuration contents	00101 04341
	octet o49+1

Table 5.4.2.30: AS configuration

SLRB mapping rules: The SLRB mapping rules field is coded according to figure 5.4.2.31 and table 5.4.2.31.

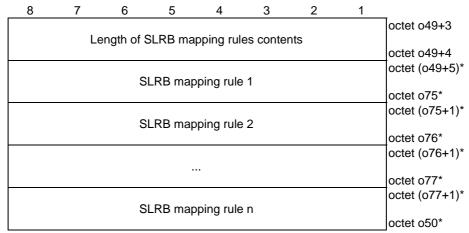


Figure 5.4.2.31: SLRB mapping rules

Table 5.4.2.31: SLRB mapping rules

SLRB mapping rule: The SLRB mapping rule field is coded according to figure 5.4.2.32 and table 5.4.2.32.

8	7	6	5	4	3	2	1	
								octet o75+1
	L	ength of	SLRB ma	apping ru	le content	ts		
								octet o75+2
								octet o75+3
			PC5 Qo	S profile				
								octet o78
			Length	of SLRB				octet o78+1
								octet o78+2
								octet o78+3
			SL	RB				
								octet o76

Figure 5.4.2.32: SLRB mapping rule

Table 5.4.2.32: SLRB mapping rule

PC5 QoS profile octet (o75+3 to o78): The PC5 QoS profile field is coded according to figure 5.4.2.33 and table 5.4.2.33. SLRB (o78+3 to o76): SLRB is defined as *SL-PreconfigurationNR* in clause 9.3 of 3GPP TS 38.331 [7]. If the length of SLRB mapping rule contents field is bigger than indicated in

figure 5.4.2.32, receiving entity shall ignore any superfluous octets located at the end of the SLRB mapping rule contents.

8	7	6	5	4	3	2	1						
	Length of PC5 QoS profile contents												
GFBRI													
	RI Spare PQI												
	PQI												
		Gu	aranteed	flow bit r	ate			a atat (aZE + 0)*					
								octet (075+9)* octet 097* (see					
		Ma	aximum f	low bit ra	te			NOTE)					
								octet (097+2)*					
								octet o98* (see					
	F	Per-link a	ggregate	e maximu	m bit rate	e		NOTE)					
								octet (098+2)*					
								octet o99* (see					
			Rar	nge				NOTE)					
	n	n	-	1	n			octet (099+1)*					
0 Spare	0 Spare	0 Spare	0 Spare	0 Spare	P	riority lev	el	octet o100* (see NOTE)					
Opare	Opare	Opare	Opare	Opare				octet o101*					
			Averagin	g window	1			(see NOTE)					
								octet (o101+1)*					
	Maximum data burst volume												
	a field is placed immediately often the last present preseding field												

NOTE: The field is placed immediately after the last present preceding field.

Figure 5.4.2.33:PC5 QoS profile

ETSI

Table 5.4.2.33:PC5 QoS profile

Guaranteed flow bit rate indicator (GFBRI) (075+5 bit 8): The GFBRI bit indicates presence of guaranteed flow bit rate field. Bit 8 0 Guaranteed flow bit rate field is absent Guaranteed flow bit rate field is present 1 Maximum flow bit rate indicator (MFBRI) (075+5 bit 7): The MFBRI bit indicates presence of maximum flow bit rate field. Bit 0 Maximum flow bit rate field is absent Maximum flow bit rate field is present 1 Per-link aggregate maximum bit rate indicator (PLAMBRI) (075+5 bit 6): The PLAMBRI bit indicates presence of per-link aggregate maximum bit rate field. Bit 6 Per-link aggregate maximum bit rate field is absent 0 Per-link aggregate maximum bit rate field is present 1 Range indicator (RI) (075+5 bit 5): The RI bit indicates presence of range field. Bit 5 0 Range field is absent Range field is present 1 Priority level octet indicator (OPLI) (075+5 bit 4): The OPLI bit indicates presence of the octet of the priority level field. Bit 0 The octet of the priority level is absent 1 The octet of the priority level is present Averaging window indicator (AWI) (075+5 bit 3): The AWI bit indicates presence of averaging window field. Bit 3 0 Averaging window field is absent 1 Averaging window field is present Maximum data burst volume indicator (MDBVI) (075+5 bit 2): The MDBVI bit indicates presence of maximum data burst volume field. Bit 2 0 Maximum data burst volume field is absent Maximum data burst volume field is present 1

ETSI

PQI (075+6): Bits 87654321 00000000 Reserved 00000001 to Spare 00010100 00010101 **PQI 21** 00010110 PQI 22 00010111 PQI 23 00011000 PQI 24 00011001 PQI 25 00011010 PQI 26 00011011 to Spare 00110110 00110111 **PQI 55** 00111000 PQI 56 00111001 PQI 57 00111010 **PQI 58** 00111011 PQI 59 00111100 PQI 60 00111101 PQI 61 00111110 Spare to 01011001 01011010 PQI 90 01011011 PQI 91 01011100 PQI 92 01011101 PQI 93 01011110 to Spare 01111111 10000000 Operator-specific PQIs to 11111110 11111111 Reserved

If the UE receives a PQI value (excluding the reserved PQI values) that it does not understand, the UE shall choose a PQI value from the set of PQI values defined in this version of the protocol (see 3GPP TS 23.304 [2]) and associated with:

- GBR resource type, if the PC5 QoS profile includes the guaranteed flow bit rate field; and

- non-GBR resource type, if the PC5 QoS profile does not include the guaranteed flow bit rate field.

The UE shall use this chosen PQI value for internal operations only. The UE shall use the received PQI value in subsequent 5G ProSe direct communication over PC5 signalling procedures.

Guaranteed flow bit rate octet (075+7 to 075+9): The guaranteed flow bit rate field indicates guaranteed flow bit rate for both sending and receiving and contains one octet indicating the unit of the guaranteed flow bit rate followed by two octets containing the value of the guaranteed flow bit rate. Unit of the guaranteed flow bit rate: Bits 87654321 00000000 value is not used 00000001 value is incremented in multiples of 1 Kbps 00000010 value is incremented in multiples of 4 Kbps value is incremented in multiples of 16 Kbps 00000011 00000100 value is incremented in multiples of 64 Kbps value is incremented in multiples of 256 Kbps 00000101 value is incremented in multiples of 1 Mbps 00000110 value is incremented in multiples of 4 Mbps 00000111 00001000 value is incremented in multiples of 16 Mbps value is incremented in multiples of 64 Mbps 00001001 value is incremented in multiples of 256 Mbps 00001010 value is incremented in multiples of 1 Gbps 00001011 00001100 value is incremented in multiples of 4 Gbps 00001101 value is incremented in multiples of 16 Gbps 00001110 value is incremented in multiples of 64 Gbps 00001111 value is incremented in multiples of 256 Gbps 00010000 value is incremented in multiples of 1 Tbps 00010001 value is incremented in multiples of 4 Tbps 00010010 value is incremented in multiples of 16 Tbps 00010011 value is incremented in multiples of 64 Tbps 00010100 value is incremented in multiples of 256 Tbps 00010101 value is incremented in multiples of 1 Pbps 00010110 value is incremented in multiples of 4 Pbps 00010111 value is incremented in multiples of 16 Pbps 00011000 value is incremented in multiples of 64 Pbps value is incremented in multiples of 256 Pbps 00011001 Other values shall be interpreted as multiples of 256 Pbps in this version of the protocol.

Value of the guaranteed flow bit rate is binary coded value of the guaranteed flow bit rate in units defined by the unit of the guaranteed flow bit rate.

Maximum flow bit rate (097 to 097+2): The maximum flow bit rate field indicates maximum flow bit rate for both sending and receiving and contains one octet indicating the unit of the maximum flow bit rate followed by two octets containing the value of the maximum flow bit rate. Unit of the maximum flow bit rate: Bits 87654321 00000000 value is not used 00000001 value is incremented in multiples of 1 Kbps 00000010 value is incremented in multiples of 4 Kbps 00000011 value is incremented in multiples of 16 Kbps 00000100 value is incremented in multiples of 64 Kbps 00000101 value is incremented in multiples of 256 Kbps value is incremented in multiples of 1 Mbps 00000110 value is incremented in multiples of 4 Mbps 00000111 00001000 value is incremented in multiples of 16 Mbps value is incremented in multiples of 64 Mbps 00001001 value is incremented in multiples of 256 Mbps 00001010 value is incremented in multiples of 1 Gbps 00001011 00001100 value is incremented in multiples of 4 Gbps value is incremented in multiples of 16 Gbps 00001101 00001110 value is incremented in multiples of 64 Gbps 00001111 value is incremented in multiples of 256 Gbps 00010000 value is incremented in multiples of 1 Tbps 00010001 value is incremented in multiples of 4 Tbps 00010010 value is incremented in multiples of 16 Tbps 00010011 value is incremented in multiples of 64 Tbps 00010100 value is incremented in multiples of 256 Tbps 00010101 value is incremented in multiples of 1 Pbps 00010110 value is incremented in multiples of 4 Pbps 00010111 value is incremented in multiples of 16 Pbps 00011000 value is incremented in multiples of 64 Pbps value is incremented in multiples of 256 Pbps 00011001 Other values shall be interpreted as multiples of 256 Pbps in this version of the protocol.

Value of the maximum flow bit rate is binary coded value of the maximum flow bit rate in units defined by the unit of the maximum flow bit rate.

profile contents.

50

Per-link aggregate maximum bit rate (098 to 098+2): The per-link aggregate maximum bit rate field indicates per-link aggregate maximum bit rate for both sending and receiving and contains one octet indicating the unit of the perlink aggregate maximum bit rate followed by two octets containing the value of the perlink aggregate maximum bit rate. Unit of the per-link aggregate maximum bit rate: Bits 87654321 00000000 value is not used 00000001 value is incremented in multiples of 1 Kbps value is incremented in multiples of 4 Kbps 00000010 00000011 value is incremented in multiples of 16 Kbps value is incremented in multiples of 64 Kbps 00000100 00000101 value is incremented in multiples of 256 Kbps value is incremented in multiples of 1 Mbps 00000110 00000111 value is incremented in multiples of 4 Mbps 00001000 value is incremented in multiples of 16 Mbps 00001001 value is incremented in multiples of 64 Mbps 00001010 value is incremented in multiples of 256 Mbps 00001011 value is incremented in multiples of 1 Gbps value is incremented in multiples of 4 Gbps 00001100 00001101 value is incremented in multiples of 16 Gbps 00001110 value is incremented in multiples of 64 Gbps 00001111 value is incremented in multiples of 256 Gbps value is incremented in multiples of 1 Tbps 00010000 00010001 value is incremented in multiples of 4 Tbps 00010010 value is incremented in multiples of 16 Tbps value is incremented in multiples of 64 Tbps 00010011 00010100 value is incremented in multiples of 256 Tbps 00010101 value is incremented in multiples of 1 Pbps 00010110 value is incremented in multiples of 4 Pbps value is incremented in multiples of 16 Pbps 00010111 00011000 value is incremented in multiples of 64 Pbps value is incremented in multiples of 256 Pbps 00011001 Other values shall be interpreted as multiples of 256 Pbps in this version of the protocol. Value of the per-link aggregate maximum bit rate is binary coded value of the per-link aggregate maximum bit rate in units defined by the unit of the per-link aggregate maximum bit rate. Range (099 to 099+1): The range field indicates a binary encoded value of the range in meters. Priority level (octet o100 bit 1 to 3): The priority level field contains a ProSe per-packet priority value. Bits 321 000 PPPP value 1 0 0 1 PPPP value 2 010 PPPP value 3 011 PPPP value 4 100 PPPP value 5 101 PPPP value 6 110 PPPP value 7 111 PPPP value 8 Averaging window (o101 to o101+1): The averaging window field indicates a binary representation of the averaging window for both sending and receiving in milliseconds. Maximum data burst volume (o102 to o78): The maximum data burst volume field indicates a binary representation of the maximum data burst volume for both sending and receiving in octets. If the length of PC5 QoS profile contents field is bigger than indicated in figure 5.4.2.33, receiving entity shall ignore any superfluous octets located at the end of the PC5 QoS

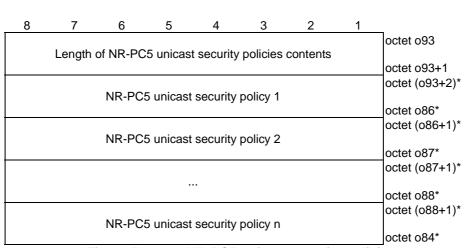


Figure 5.4.2.34: NR-PC5 unicast security policies

Table 5.4.2.34: NR-PC5 unicast security policies

NR-PC5 unicast security policy: The NR-PC5 unicast security policy field is coded according to figure 5.4.2.35 and table 5.4.2.35.

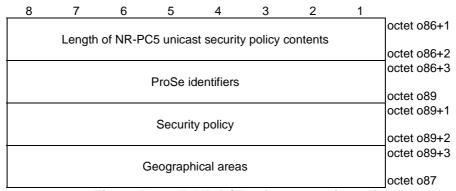


Figure 5.4.2.35: NR-PC5 unicast security policy

Table 5.4.2.35: NR-PC5 unicast security policy

ProSe identifiers (o86+3 to o89): The ProSe identifiers field is coded according to figure 5.4.2.14 and table 5.4.2.14. Security policy (o89+1 to o89+2): The security policy field is coded according to figure 5.4.2.36 and table 5.4.2.36. Geographical areas (o89+3 to o87): The geographical areas field is coded according to figure 5.4.2.15 and table 5.4.2.15. If the length of NR-PC5 unicast security policy contents field is bigger than indicated in figure 5.4.2.35, the receiving entity shall ignore any superfluous octets located at the end of the NR-PC5 unicast security policy contents.

8	7	6	5	4	3	2	1	
0	Signallir	ng cipherir	ng policy	0	Signa	alling inte	grity	octet o89+1
spare				spare	prot	ection po	licy	
0	User	plane ciph	nering	0	User	plane inte	grity	octet o89+2
spare		policy		spare	prot	ection po	licy	
			Eiguro A	1 2 26.	Socurity	v noliov		

Figure 5.4.2.36: Security policy

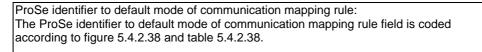
Signalling integrity protection policy (octet o89+1 bit 1 to 3): Bits									
3 2 1 0 0 0 Signalling integrity protection not needed 0 0 1 Signalling integrity protection preferred 0 1 0 Signalling integrity protection required 0 1 1 Image: Signalling integrity protection required 0 1 1 Reserved									
If the UE receives a signalling integrity protection policy value that the UE does not understand, the UE shall interpret the value as 010 "Signalling integrity protection required".									
Signalling ciphering policy (octet o89+1 bit 5 to 7): Bits 7 6 5 0 0 0 Signalling ciphering not needed 0 0 1 Signalling ciphering preferred 0 1 0 Signalling ciphering required 0 1 1									
0 1 1 to Spare 1 1 0 1 1 1 Reserved									
If the UE receives a signalling ciphering policy value that the UE does not understand, the UE shall interpret the value as 010 "Signalling ciphering required".									
Bit 4 and 8 of octet o89+1 are spare and shall be coded as zero.									
User plane integrity protection policy (octet o89+2 bit 1 to 3): Bits 3 2 1 0 0 0 User plane integrity protection not needed 0 0 1 User plane integrity protection preferred 0 1 0 User plane integrity protection required 0 1 1 to Spare									
1 1 0 1 1 1 Reserved									
If the UE receives a user plane integrity protection policy value that the UE does not understand, the UE shall interpret the value as 010 "User plane integrity protection required".									
User plane ciphering policy (octet o89+2 bit 5 to 7): Bits									
7 6 5 0 0 User plane ciphering not needed 0 1 User plane ciphering preferred 0 1 0 0 1 0 0 1 1 to Spare 1 1									
1 1 1 Reserved									
If the UE receives a user plane ciphering policy value that the UE does not understand, the UE shall interpret the value as 010 "User plane ciphering required".									
Bit 4 and 8 of octet o89+2 are spare and shall be coded as zero.									

Table 5.4.2.36: Security policy

8	7	6	5	4	3	2	1	
								octet o84+1
Length o	of ProSe	identifier		It mode contents	of commu	nication r	napping	octet o84+2
					. ,.			octet (084+3)*
ProSe	Identifie	r to defau	lit mode	of comm	unication	mapping	rule 1	octet o90*
ProSe	identifie	r to defau	It mode	of comm	unication	mapping	rule 2	octet (o90+1)*
						11 0		octet o91*
								octet (o91+1)*
								octet o92*
ProSe	identifie	r to defau	It mode	of comm	unication	mapping	rule n	octet (092+1)*
						.1 0		octet o85*

Figure 5.4.2.37: ProSe identifier to default mode of communication mapping rules

Table 5.4.2.37: ProSe identifier to default mode of communication mapping rules



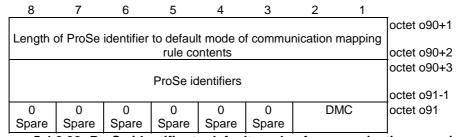


Figure 5.4.2.38: ProSe identifier to default mode of communication mapping rule

Table 5.4.2.38: ProSe identifier to default mode of communication mapping rule

ProSe identifiers (o90+3 to o91-1): The ProSe application identifiers field is coded according to figure 5.4.2.14 and table 5.4.2.14.
Default mode of communication (DMC) (octet o91 bit 1 to 2): The DMC field indicates the default mode of communication. Bits 2 1 0 0 unicast 0 1 groupcast 1 0 broadcast 1 1 spare
If the DMC field is set to a spare value, the receiving entity shall ignore the ProSe application identifier to default mode of communication mapping rule.
If the length of ProSe identifier to default mode of communication mapping rule contents field is bigger than indicated in figure 5.4.2.37, receiving entity shall ignore any superfluous octets located at the end of the ProSe identifier to default mode of communication mapping rule contents.

-

-

8	7	6	5	4	3	2	1	
								octet o5+1
Leng	optot oF 12							
			CON	tents				octet o5+2 octet (o5+3)*
F	ProSe a	polication	to path	preferen	ce mappii	na rule 1		00101 (00+3)
•		PP	. to pain	protoron	66epp.	ing raile i		octet o150*
								octet (0150+1)*
F	ProSe a	pplicatior	n to path	preferen	ce mappii	ng rule 2		
								octet o151*
								octet (0151+1)*
				••				octet o152*
								octet (0152+1)*
F	ProSe a	pplicatior	to path	preferen	ce mappii	ng rule n		
						-		octet I*

Figure 5.4.2.39: ProSe application to path preference mapping rules

Table 5.4.2.39: ProSe application to path preference mapping rules

ProSe application to path preference mapping rule: The ProSe application to path preference mapping rule field is coded according to figure 5.4.2.40 and table 5.4.2.40.

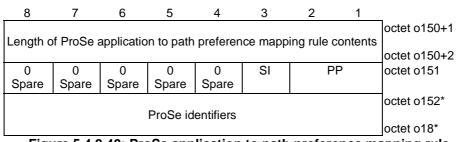


Figure 5.4.2.40: ProSe application to path preference mapping rule

ProSe identifiers (o152 to o18): If the service indication field is set to value 1 "For all ProSe service", the ProSe identifiers field shall not be included in ProSe application to path preference mapping rule field. If the service indication field is set to value 0 "Not for all ProSe service", the ProSe identifiers field is coded according to figure 5.4.2.14 and table 5.4.2.14. Path preference (PP) (octet o151 bit 1 to 2): The PP field indicates the path preference. Bits 21 0 0 No preference 0 1 PC5 preferred 1 0 Uu preferred 1 1 spare If the PP field is set to a spare value, the receiving entity shall interpret as "00". Service indication (SI) (octet o151 bit 3): The SI field indicates whether the path preference is for all ProSe service or not. Bits 3 For all ProSe service 1 0 Not for all ProSe service If the length of ProSe application to path preference mapping rule contents field is bigger than indicated in figure 5.4.2.40, receiving entity shall ignore any superfluous octets located at the end of the ProSe application to path preference mapping rule contents.

Table 5.4.2.40: ProSe application to path preference mapping rule

5.5 Encoding of UE policies for 5G ProSe UE-to-network relay UE

5.5.1 General

The UE policies for 5G ProSe UE-to-network relay UE are coded as shown in figures 5.5.2.1 and table 5.5.2.1.

8	7	6	5	4	3	2	1	_
0	0 Spa	0 are	0		roSe UE	e = {UE -to-netw E}	policies ork relay	octet k
			(- - · ·		,		octet k+1
		Length	of ProS	eP info co	ontents			octet k+2
								octet k+2
			Validi	ty timer				00101 1110
				,				octet k+7
								octet k+8
		S	Served b	y NG-RAN	1			
								octet o1
		No	tconvod	by NG-R				octet o1+1
		INU	i serveu	by NG-N				octet o2
								octet o2+1
				sending th				
anno	ouncemer			nformatio		receivin	ng the	octet o3
		discove	y signal	ling for so	licitation			
		Lloo	r infa ID	for diago	(o m (octet o3+1
		Use		for discov	very			octet o3+6
								octet 03+0
			RSC	info list				
								octet o4
								octet o4+1
	5QI	to PC5 C	QoS para	ameters m	apping r	ules		
								octet o5
Droße	idontifier	to Dro	onnliss	tion conve	r oddroo			octet o5+1
ProSe	identifier	to ProSe	applica	tion serve	r addres	s mappir	ig rules	octet l

5.5.2 Information elements coding

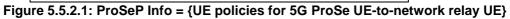


Table 5.5.2.1: ProSeP Info = {UE policies for 5G ProSe UE-to-network relay UE}

	•									
ProSeP info type (bit 1 to 4 of octet k) shall be set to "0011" (UE policie UE-to-network relay UE)	es for 5G ProSe									
Length of ProSeP info contents (octets k+1 to k+2) indicates the length contents.	Length of ProSeP info contents (octets k+1 to k+2) indicates the length of ProSeP info contents.									
Validity timer (octet k+3 to k+7): The validity timer field provides the expiration time of validity of the UE policies for 5G ProSe UE-to-network relay UE. The validity timer field is a binary coded representation of a UTC time, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).										
Served by NG-RAN (octet k+8 to o1): The served by NG-RAN field is coded according to figure 5.5.2.2 and ta contains configuration parameters for 5G ProSe UE-to-network relay U is served by NG-RAN.										
Not served by NG-RAN (octet o1+1 to o2): The not served by NG-RAN field is coded according to figure 5.5.2.5 ar and contains configuration parameters for 5G ProSe UE-to-network rel and communication when the UE is not served by NG-RAN.										
Default destination layer-2 IDs for sending the discovery signalling for announcement and additional information and for receiving the discovery signalling for solicitation (octet o2+1 to o3): The default destination layer-2 IDs for sending the discovery signalling for announcement and additional information and for receiving the discovery signalling for solicitation is coded according to figure 5.5.2.11a and table 5.5.2.11a and contains a list of the default destination layer-2 IDs for the initial UE-to-network relay discovery signalling.										
User info ID for discovery (octet o3+1 to o3+6): The value of the User info ID parameter is a 48-bit long bit string. The format of the User info ID parameter is out of scope of this specification.										
RSC info list (octet o3+7 to o4): The RSC info list field is coded according to figure 5.5.2.12 and table 5 contains the RSCs related paramters.	.5.2.12 and									
5QI to PC5 QoS parameters mapping rules (octet o4+1 to o5): The 5QI to PC5 QoS parameters mapping rules field is coded accordin figure 5.5.2.17 and table 5.5.2.17 and contains the 5QI to PC5 QoS pa mapping rules.										
ProSe identifier to ProSe application server address mapping rules (oc The ProSe identifier to ProSe application server address mapping rules according to figure 5.5.2.19 and table 5.5.2.19 and contains the ProSe ProSe application server address mapping rules.	s field is coded									
If the length of ProSeP info contents field is bigger than indicated in figure receiving entity shall ignore any superfluous octets located at the end of info contents.										
8 7 6 5 4 3 2 1										
Length of served by NG-RAN contents	octet k+8									
Authorizated PLMN list for layer-3 relay UE	octet k+9 octet (k+10)*									
Authorizated PLMN list for layer-2 relay UE	octet o50* octet (o50+1)*									
octet o1*										

Figure 5.5.2.2: Served by NG-RAN

Table 5.5.2.2: Served by NG-RAN

Authorizated PLMN list for layer-3 relay UE: The authorizated PLMN list for layer-3 relay UE field is coded according to figure 5.5.2.3 and table 5.5.2.3.

Authorizated PLMN list for layer-2 relay UE: The authorizated PLMN list for layer-2 relay UE field is coded according to figure 5.5.2.3 and table 5.5.2.3.

Length of authorized PLMN list contents	octet k+10
Length of autionzed r Living list contents	octet k+11
	octet (k+12)*
Authorized PLMN 1	octet (k+14)*
	octet (k+15)*
Authorized PLMN 2	
	octet (k+17)* octet (k+18)*
	octet (050-3)*
Authorized PLMN n	octet (050-2)*
	octet o50*

Figure 5.5.2.3: Authorized PLMN list

Table 5.5.2.3: Authorized PLMN list

Authorized PLMN: The authorized PLMN field is coded according to figure 5.5.2.4 and table 5.5.2.4.

8	7	6	5	4	3	2	1	
	MCC d	ligit 2			MCC	digit 1		octet k+15
	MNC d	ligit 3			MCC	digit 3		octet k+16
	MNC d	ligit 2			MNC	digit 1		octet k+17

Figure 5.5.2.4: PLMN ID

Table 5.5.2.4: PLMN ID

Mobile country code (MCC) (octet k+15, octet k+16 bit 1 to 4): The MCC field is coded as in ITU-T Recommendation E.212 [5], annex A.

Mobile network code (MNC) (octet k+16 bit 5 to 8, octet k+17): The coding of MNC field is the responsibility of each administration but BCD coding shall be used. The MNC shall consist of 2 or 3 digits. If a network operator decides to use only two digits in the MNC, MNC digit 3 shall be coded as "1111".

8	7	6	5	4	3	2	1	
								octet o1+1
	Ler	igth of no	t served	by NG-R	AN conte	ents		
								octet o1+2
								octet o1+3
NR ra	dio parar	neters pe	er geogra	phical ar	ea list for	UE-to-ne	etwork	
			relay di	scovery				octet o51
								octet o51+1
NR ra	dio parar	neters pe	er geogra	phical ar	ea list for	UE-to-ne	etwork	
		re	elay comr	nunicatio	n			octet o2
		Fiau	re 5.5.2	.5: Not	served	bv NG-F	RAN	

Figure 5.5.2.5: Not served by NG-RA	N
-------------------------------------	---

NR radio parameters per geographical area list for UE-to-network relay discovery (octet o1+3 to o51):

The NR radio parameters per geographical area list for UE-to-network relay discovery field is coded according to figure 5.5.2.6 and table 5.5.2.6.

NR radio parameters per geographical area list for UE-to-network relay communication (octet o51+1 to o2):

The NR radio parameters per geographical area list for UE-to-network relay communication field is coded according to figure 5.5.2.7 and table 5.5.2.7.

If the length of not served by NG-RAN contents field is bigger than indicated in figure 5.5.2.5, receiving entity shall ignore any superfluous octets located at the end of the not served by NG-RAN contents.

8	7	6	5	4	3	2	1	
Lenath	of NR ra	adio paran	neters pe	er aeoara	ohical are	ea list for	UE-to-	octet o1+3
				scovery o				octet o1+4
	Radi	o paramet	ers ner (reograph	ical area i	info 1		octet o1+5
	Radio	oparamet	iera her (geograph				octet o510
	Radie	o paramet	ters per g	geograph	ical area i	info 2		octet (0510+1)*
								octet o511*
								octet (0511+1)*
			-					octet o512*
	Padi	o poromot		noograph	ical area i	info n		octet (0512+1)*
	Radio	o paramet	leis pei (yeograph	ical alea l	inio n		octet o51*

Figure 5.5.2.6: NR radio parameters per geographical area list for UE-to-network relay discovery

Table 5.5.2.6: NR radio parameters per geographical area list for UE-to-network relay discovery

Radio parameters per geographical area info: The radio parameters per geographical area info field is coded according to figure 5.5.2.8 and table 5.5.2.8.

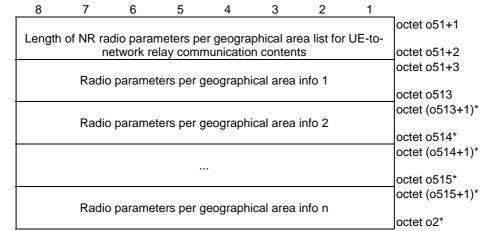


Figure 5.5.2.7: NR radio parameters per geographical area list for UE-to-network relay communication

Table 5.5.2.7: NR radio parameters per geographical area list for UE-to-network relay communication

Radio parameters per geographical area info: The radio parameters per geographical area info field is coded according to figure 5.5.2.8 and table 5.5.2.8.

8	7	6	5	4	3	2	1			
								octet o510+1		
Le	ngth of ra	adio parai	meters pe	er geogra	phical ar	ea conte	nts			
								octet o510+2		
								octet o510+3		
		(Geograpl	nical area	l					
								octet o5100		
								octet o5100+1		
			Radio pa	rameters						
								octet o511-1		
MI	0	0	0	0	0	0	0	octet o511		
	Spare	Spare	Spare	Spare	Spare	Spare	Spare			
	Figure 5.5.2.9: Dedie permetere per geographical erec infe									

Figure 5.5.2.8: Radio parameters per geographical area info

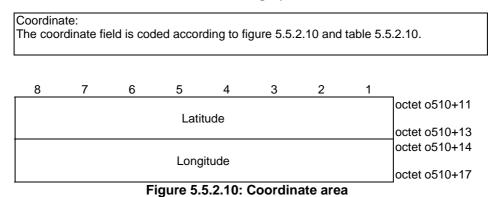
Table 5.5.2.8: Radio parameters per geographical area info

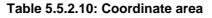
Geographical area (octet o510+3 to o5100):
The geographical area field is coded according to figure 5.5.2.9 and table 5.5.2.9.
Radio parameters (octet o5100+1 to o511-1): The radio parameters field is coded according to figure 5.3.2.11 and table 5.3.2.11, applicable in the geographical area indicated by the geographical area field when not served by NG-RAN.
Managed indicator (MI) (octet o511 bit 8): The managed indicator indicates how the radio parameters indicated in the radio parameters field in the geographical area indicated by the geographical area field are managed. Bit
8 0 Non-operator managed
0 Non-operator managed 1 Operator managed
If the length of radio parameters per geographical area contents field is bigger than indicated in figure 5.5.2.8, receiving entity shall ignore any superfluous octets located at the end of the radio parameters per geographical area contents.

8	7	6	5	4	3	2	1	
	octet o510+							
	I	Length of	geograp	nical are	a content	5		octet o510+4
			Coord	inoto 1				octet (0510+5)*
			Coord	inate 1				octet
								(0510+10)*
			Coord	inate 2				octet (o510+11)*
								octet (o510+16)*
								octet
								(0510+17)*
								octet (o510-
								2+6*n)* octet (o510-
			Coord	inate n				1+6*n)*
								aatat
								octet (o510+4+6*n)*
								= octet o5100*

Figure 5.5.2.9: Geographical area

Table 5.5.2.9: Geographical area





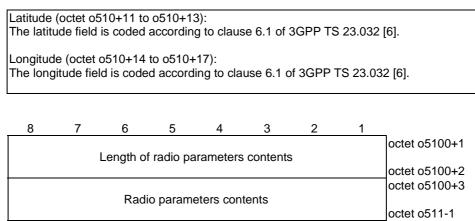




Table 5.5.2.11: Radio parameters

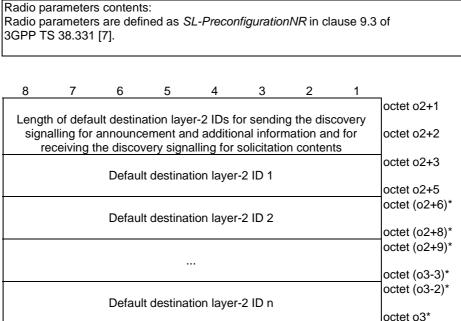


Figure 5.5.2.11a: Default destination layer-2 IDs for sending the discovery signalling for announcement and additional information and for receiving the discovery signalling for solicitation

Table 5.5.2.11a: Default destination layer-2 IDs for sending the discovery signalling for announcement and additional information and for receiving the discovery signalling for solicitation

> Default destination layer-2 ID (octet o2+3 to o2+5): The default destination layer-2 ID is a 24-bit long bit string.

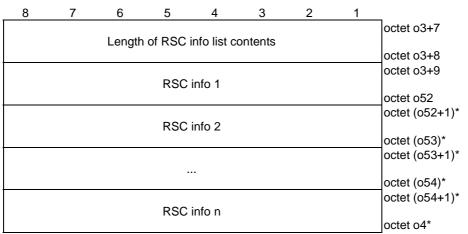
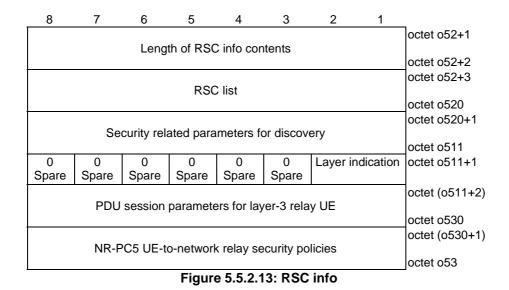


Figure 5.5.2.12: RSC info list

Table 5.5.2.12: RSC info list

RSC info: The RSC info field is coded according to figure 5.5.2.13 and table 5.5.2.13.



Editor's note: How to define the Security related parameters for discovery is FFS and depends on SA3 final requirements

Table 5.	5.2.13:	RSC	info
----------	---------	-----	------

RSC list (octet o52+3 to o520): The RSC list field is coded according to figure 5.5.2.14 and table 5.5.2.14. Security related parameters for discovery (octet o520+1 to o511): The security related parameters for discovery field is coded according to figure 5.5.2.15 and table 5.5.2.15. Layer indication (octet o511+1): Bits 21 0 1 Layer 3 10Layer2 The other values are reserved. PDU session parameters for layer-3 relay UE (octet o511+2 to o53): The PDU session parameters for layer-3 relay UE field is coded according to figure 5.5.2.16 and table 5.5.2.16. NR-PC5 UE-to-network relay security policies (octet o530+1 to octet o53) The NR-PC5 UE-to-network relay security policies is coded as the NR-PC5 unicast security policies defined in figure 5.4.2.34 and table 5.4.2.34. Q 7 6 5 Λ 3 2 1

0	7 0	5		3	2	_
						octet o52+3
	Lei	ngth of RS	C list con	itents		
						octet o52+4
						octet o52+5
		RS	C 1			
						octet o52+7
						octet (052+8)*
		RS	C 2			
						octet (o52+10)*
						octet (052+11)*
						octet (0520-3)*
		RS	Cn			octet (0520-2)*
						octet o520*

Figure 5.5.2.14: RSC list

Table 5.5.2.14: RSC list

2 1	3	4	5	6	7	8
_						
E content	r-3 relay U	ers for lay	paramet	J session	th of PDL	Lengt
		PDNN	PSNSS	PSSC	PATP	Spare
sion type	PDU see		AI	M		Oparo
		NN	DN			
		SSAL	S-NS			
			0.11			
C mode	SS	s type rence	Acces prefe		Spare	

Figure 5.5.2.16: PDU session parameters for layer-3 relay UE

Table 5.5.2.16: PDU session parameters for layer-3 relay UE

PDU session type (bits 3 to 1 of octet o511+4): The PDU session type field shall be encoded as the PDU session type value part of the PDU session type information element defined in clause 9.11.4.11 of 3GPP TS 24.501 [4]. Presence of DNN (PDNN) (bit 4 of octet o511+4) PDNN indicates whether the DNN field is present or not. Bit 4 0 DNN field is not included 1 DNN field is included Presence of S-NSSAI (PSNSSAI) (bit 5 of octet o511+4) PSNSSAI indicates whether the S-NSSAI field is present or not. Bit 5 0 S-NSSAI field is not included 1 S-NSSAI field is included Presence of SSC mode (PSSCM) (bit 6 of octet o511+4) PSSCM indicates whether the SSC mode field is present or not. Bit 6 0 SSC mode field is not included (NOTE) 1 SSC mode field is included Presence of access type preference (PATP) (bit 7 of octet o511+4) PATP indicates whether the access type preference mode field is present or not. Bit 7 0 Access type preference field is not included (NOTE) 1 Access type preference field is included DNN (octet o511+5 to o512): The DNN field shall be encoded as a sequence of a one octet DNN length field and a DNN value field of a variable size. The DNN value contains an APN as defined in 3GPP TS 23.003 [10]. S-NSSAI (octet o512+1 to o53-1): The S-NSSAI field shall be encoded as a sequence of a one octet S-NSSAI length field and an S-NSSAI value field of a variable size. The S-NSSAI value shall be encoded as the value part of the S-NSSAI information element defined in clause 9.11.2.8 of 3GPP TS 24.501 [4]. SSC mode (bits 3 to 1 of octet o53): The SSC mode field shall be encoded as the value part of the SSC mode information element defined in clause 9.11.4.16 of 3GPP TS 24.501 [4]. Access type preference (bits 5 to 4 of octet o53): The access type preference field shall be encoded as the value part of the access type information element defined in clause 9.11.2.1A of 3GPP TS 24.501 [4]. NOTE: Since SSC mode field and access type preference field are coded in the same octet, this octet is not included only when both PSSCM and PATP are set to 0.

8	7	6	5	4	3	2	1	
								octet o4+1
L	Length of 5	5QI to PC5	QoS para	ameters r	napping r	ules con	itents	actation (1)
								octet o4+2
	F	QI to PC5 (motoro m		10.1		octet o4+3
	5		205 para	meters n	apping it	lie i		octet o55
								octet (055+1)*
	5	QI to PC5 (DoS para	meters m	anning ri	ıle 2		
	Ŭ		goo pulu	inotoro ii	apping re	10 2		octet o56*
								octet (056+1)*
								,
								octet o57*
								octet (057+1)*
	5	QI to PC5 (QoS para	meters m	happing ru	ule n		
								octet o5*
	— • • • • • •			DOF OF	• • • • • • • •			

Figure 5.5.2.17: 5QI to PC5 QoS parameters mapping rules



5QI to PC5 QoS parameters mapping rule: The 5QI to PC5 QoS parameters mapping rule field is coded according to figure 5.5.2.18 and table 5.5.2.18 and contains the 5QI to PC5 QoS parameters mapping rule.

8	7	6	5	4	3	2	1	
Lan	when at EC		0-0				to oto	octet o55+1
Len	gtn of 5G	al to PC5	QoS par	ameters	mapping	rule con	tents	octet o55+2
			F	QI				octet o55+3
			5					octet o55+4
			Р	QI				
		PI	DB adjus	tment fac	ctor			octet o55+5
			DO	0.15-6				octet (055+6)*
			RSG	C list				octet o56*

Figure 5.5.2.18: 5QI to PC5 QoS parameters mapping rule

Table 5.5.2.18: 5QI to PC5 QoS parameters mapping rule

5QI (octet o55+3):												
	its 7	; 6	5	1	2	2	1					
0	0	0	0	0	0	0	0 1		Res 5QI		ed	
		0							5QI			
		0 0							5QI 5QI			
0	0	0	0	0	1	0	1		5QI	5		
		0 0							5QI 5QI			
0	0	0	0	1	0	0	0		5QI	8		
		0 0							5QI 5QI			
	0	0	0	1	0	1	1		50	10		
0		to 0										
0	1	0	0	0	0	0	1		5QI	65		
0	1	0 0	0	0	0	1	0 1		5QI 5QI			
		0							Spa			
		0 0					1 0		5QI 5QI			
0	1	0	0	0	1	1	1		5QI			
		0 0							5QI 5QI			
0		0							5QI			
0 0		0 0				1 0			5QI 5QI			
0		0	0	1	1	0	1		50	70		
^		to 0		S			• 0					
0	1	0	0	1	1	1	1		5QI			
0 0		0 0					0		5QI Spa			
-	1	0	1				0		5QI			
0		0 0		0 0	-		1 0		5QI 5QI			
		0		-		-			5QI			
0 0		0 0					0 1		5QI	86		
0		to		S								
0 1		1 0										
ľ	-							or-s	spec	ific	5QI	s
1 1	1 1	1 1	1 1	1 1					Res	erv	ed	
['	'	'	'	'	'	'		1.00		u	

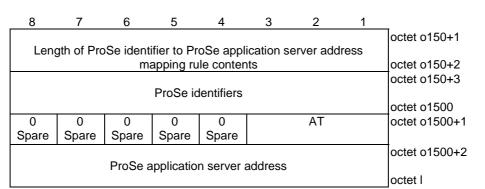
PQI (octet o55+4): Bits 87654321 00000000 Reserved 00000001 to Spare 00010100 00010101 PQI 21 PQI 22 00010110 00010111 PQI 23 00011000 PQI 24 00011001 PQI 25 00011010 PQI 26 00011011 to Spare 00110110 00110111 **PQI 55** 00111000 PQI 56 00111001 PQI 57 00111010 **PQI 58** 00111011 PQI 59 00111100 PQI 60 00111101 PQI 61 00111110 to Spare 01011001 01011010 PQI 90 01011011 PQI 91 01011100 PQI 92 01011101 **PQI 93** 01011110 to Spare 01111111 10000000 to Operator-specific PQIs 11111110 11111111 Reserved PDB adjustment factor (octet o55+5): The PDB adjustment factor field is a binary coded representation of a percentage of the standardized PDB identified by the PQI. RSC list (octet o55+6 to o56): The RSC list field is coded according to figure 5.5.2.14 and table 5.5.2.14.

8	7	6	5	4	3	2	1				
								octet o5+1			
Len											
	octet o5+2 octet (o5+3)*										
ProSe	identifier	to ProSe	applicat	ion serve	r address	s mappin	g rule 1				
								octet o150*			
D 0	:							octet (0150+1)*			
ProSe	Identifier	to ProSe	applicat	ion serve	r address	s mappin	g rule 2	octet o151*			
								octet (0151+1)*			
				•••				octet o152*			
								octet (0152+1)*			
ProSe	identifier	to ProSe	applicat	ion serve	r address	s mappin	g rule n				
						••	-	octet I*			

Figure 5.5.2.19: ProSe identifier to ProSe application server address mapping rules

Table 5.5.2.19: ProSe identifier to ProSe application server address mapping rules

ProSe identifier to ProSe application server address mapping rule: The ProSe identifier to ProSe application server address mapping rule field is coded according to figure 5.5.2.20 and table 5.5.2.20.



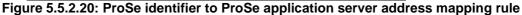


Table 5.5.2.20: ProSe identifier to ProSe application server address mapping rule

ProSe identifiers (o150+3 to o1500): The ProSe identifiers field is coded according to figure 5.3.2.14 and table 5.3.2.14. Address type (AT) (octet o1500+1 bit 1 to 3): The AT field indicates the ProSe application server address type. Bits 321 001 IPv4 010 IPv6 011 FQDN The other values are reserved. If the AT indicates IPv4, then the ProSe application server address field contains an IPv4 address in 4 octets. If the AT indicates IPv6, then the ProSe application server address field contains an IPv6 address in 16 octets. If the AT indicates FQDN, then the ProSe application server address field contains a sequence of one octet FQDN length field and a FQDN value of variable size. The FQDN value field shall be encoded as defined in clause 28.3.2.1 in 3GPP TS 23.003 [10]. If the length of ProSe identifier to ProSe application server address mapping rule

contents field is bigger than indicated in figure 5.5.2.19, receiving entity shall ignore any superfluous octets located at the end of the ProSe identifier to ProSe application server address mapping rule contents.

5.6 Encoding of UE policies for 5G ProSe remote UE

5.6.1 General

The UE policies for 5G ProSe remote UE are coded as shown in figures 5.6.2.1 and table 5.6.2.1.

Information elements coding 5.6.2

8	7	6	5	4	3	2	1	
0	0 0 0 0 ProSeP info type = {UE policies Spare for 5G ProSe remote UE}							octet k
	1							
	octet k+1							
								octet k+2
								octet k+3
			Validit	y timer				
								octet k+7
		~			. I			octet k+8
		3	Served by	NG-RAI	N			a atat a 1
								octet o1
		No	tooncod		A N I			octet o1+1
		INO	t served	by NG-R	AN			octet o2
								octet 02+1
Default	destinatio	n lavar-2		endina t	ha discov	orv signs	lling for	
	olicitation							octet o3
					l informat			00101 00
	0.11							octet o3+1
		Use	r info ID	for disco	verv			
					,			octet o3+6
								octet o3+7
			RSC ii	nfo list				
								octet I
								octet I+1
N3ľ	WF selec	tion infori	mation fo	r 5G Pro	Se layer-	3 remote	UE	
								octet m
Figur	e 5.6.2.1	1: ProSe	P Info :	a 3U} =	olicies f	or 5G P	roSe re	mote UE}

Figure 5.6.2.1: ProSeP Info = {UE policies for 5G ProSe remote UE}

Editor's note: How to define the security parameters used for UE-to-network relay depends on SA3 final requirements.

Table 5.6.2.1: ProSeP Info = {UE policies for 5G ProSe remote UE}

ProSeP info type (bit 1 to 4 of octet k) shall be set to "0100" (UE policies for 5G ProSe remote UE) Length of ProSeP info contents (octets k+1 to k+2) indicates the length of ProSeP info contents. Validity timer (octet k+3 to k+7): The validity timer field provides the expiration time of validity of the UE policies for 5G ProSe remote UE. The validity timer field is a binary coded representation of a UTC time, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). Served by NG-RAN (octet k+8 to o1): The served by NG-RAN field is coded according to figure 5.6.2.2 and table 5.6.2.2, and contains configuration parameters for 5G ProSe remote UE when the UE is served by NG-RAN. Not served by NG-RAN (octet o1+1 to o2): The not served by NG-RAN field is coded according to figure 5.6.2.5 and table 5.6.2.5. and contains configuration parameters for 5G ProSe UE-to-network relay discovery and communication when the UE is not served by NG-RAN. Default destination layer-2 IDs for sending the discovery signalling for solicitation and for receiving the discovery signalling for announcement and additional information (octet o2+1 to o3): The default destination layer-2 IDs for sending the discovery signalling for solicitation and for receiving the discovery signalling for announcement and additional information is coded according to figure 5.6.2.11a and table 5.6.2.11a and contains a list of the default destination layer-2 IDs for the initial UE-to-network relay discovery signalling. User info ID for discovery (octet o3+1 to o3+6): The value of the User info ID parameter is a 48-bit long bit string. The format of the User info ID parameter is out of scope of this specification. RSC info list (octet o3+7 to I): The RSC info list field is coded according to figure 5.6.2.12 and table 5.6.2.12 and contains the RSCs related paramters. N3IWF selection information for 5G ProSe layer-3 remote UE (octet I+1 to m): The N3IWF selection information for 5G ProSe layer-3 remote UE field is coded according to figure 5.6.2.17 and table 5.6.2.17, and contains two parts: 1) N3IWF identifier configuration (either FQDN or IP address) for 5G ProSe laver-3 remote UE: 2) 5G ProSe layer-3 UE-to-network relay access node selection information. If the length of ProSeP info contents field is bigger than indicated in figure 5.6.2.1, receiving entity shall ignore any superfluous octets located at the end of the ProSeP info contents. 5 8 7 6 4 3 2 1 octet k+8 Length of served by NG-RAN contents octet k+9 0 0 0 0 0 0 0 13RI octet (k+10)* Spare Spare Spare Spare Spare Spare Spare

Authorized PLMN list for layer-2 remote UE

octet (k+11)* octet o1*

Figure 5.6.2.2: Served by NG-RAN

Table 5.6.2.2: Served by NG-RAN

Layer-3 remote UE authorization indication (L3RI) (octet k+10, bit 1): The layer-3 remote UE authorization indication field indicates whether the UE is authorized to act as a layer-3 remote UE. Bits 1 0 Not authorized to act as a layer-3 remote UE 1 Authorized to act as a layer-3 remote UE

Authorized PLMN list for layer-2 remote UE (octet k+11 to o1): The authorized PLMN list for layer-2 remote UE field is coded according to figure 5.6.2.3 and table 5.6.2.3.

8	7	6	5	4	3	2	1	
					ist conter			octet k+11
	octet k+12							
								octet (k+13)*
		A	Authorize	d PLMN	1			octet (k+15)*
								octet (k+16)*
		A	Authorize	d PLMN	2			a atat (k + 19)*
								octet (k+18)* octet (k+19)*
								octet (050-3)* octet (050-2)*
		A	Authorize	d PLMN	n			00.01 (000-2)
								octet o50*

Figure 5.6.2.3: Authorized PLMN list

Table 5.6.2.3: Authorized PLMN list

Authorized PLM	N:
The authorized I	PLMN field is coded according to figure 5.6.2.4 and table 5.6.2.4.

8	7	6	5	4	3	2	1	
	MCC	digit 2			MCC	digit 1		octet k+16
	MNC	digit 3			MCC	digit 3		octet k+17
	MNC	digit 2			MNC	digit 1		octet k+18
			C !		4. DI M			

Figure 5.6.2.4: PLMN ID

Table 5.6.2.4: PLMN ID

Mobile country code (MCC) (octet k+16, octet k+17 bit 1 to 4): The MCC field is coded as in ITU-T Recommendation E.212 [5], annex A.

Mobile network code (MNC) (octet k+17 bit 5 to 8, octet k+18): The coding of MNC field is the responsibility of each administration but BCD coding shall be used. The MNC shall consist of 2 or 3 digits. If a network operator decides to use only two digits in the MNC, MNC digit 3 shall be coded as "1111".

8	7	6	5	4	3	2	1				
								octet o1+1			
	Length of not served by NG-RAN contents										
								octet o1+2			
								octet o1+3			
NR ra	NR radio parameters per geographical area list for UE-to-network										
	relay discovery										
								octet o51+1			
NR ra	dio parar	neters pe	r geogra	phical are	ea list for	UE-to-ne	etwork				
	-	re	alay comr	nunicatio	n			octet o2			
		Figu	re 5.6.2	.5: Not	served	by NG-F	RAN				

NR radio parameters per geographical area list for UE-to-network relay discovery (octet o1+3 to o51):

The NR radio parameters per geographical area list for UE-to-network relay discovery field is coded according to figure 5.6.2.6 and table 5.6.2.6.

NR radio parameters per geographical area list for UE-to-network relay communication (octet o51+1 to o2):

The NR radio parameters per geographical area list for UE-to-network relay communication field is coded according to figure 5.6.2.7 and table 5.6.2.7.

If the length of not served by NG-RAN contents field is bigger than indicated in figure 5.6.2.5, receiving entity shall ignore any superfluous octets located at the end of the not served by NG-RAN contents.

8	7	6	5	4	3	2	1	
Length	of NR ra	adio parar	notors na	ar deodra	unhical ar	aa list foi	· LIE-to-	octet o1+3
Lengui	octet o1+4							
	Radi	o parame	ters per d	geograph	ical area	info 1		octet o1+5
								octet o510
	Radi	o parame	ters per g	geograph	ical area	info 2		octet (o510+1)*
								octet o511* octet (o511+1)*
								_octet o512* octet (o512+1)*
	Radi	o parame	ters per g	geograph	ical area	info n		
								octet o51*

Figure 5.6.2.6: NR radio parameters per geographical area list for UE-to-network relay discovery

Table 5.6.2.6: NR radio parameters per geographical area list for UE-to-network relay discovery

Radio parameters per geographical area info: The radio parameters per geographical area info field is coded according to figure 5.6.2.8 and table 5.6.2.8.

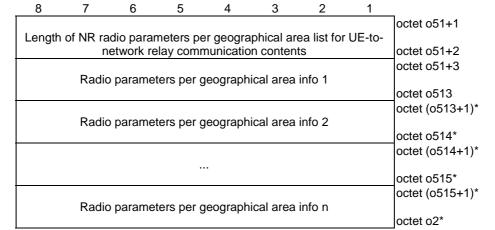


Figure 5.6.2.7: NR radio parameters per geographical area list for UE-to-network relay communication

Table 5.6.2.7: NR radio parameters per geographical area list for UE-to-network relay communication

Radio parameters per geographical area info: The radio parameters per geographical area info field is coded according to figure 5.6.2.8 and table 5.6.2.8.

8	7	6	5	4	3	2	1				
_	octet o510+1										
Le											
	octet o510+2 octet o510+3										
	Geographical area										
								octet o5100			
								octet o5100+1			
			Radio pa	rameters							
	octet o511-1										
MI	0	0	0	0	0	0	0	octet o511			
	Spare	Spare	Spare	Spare	Spare	Spare	Spare				
	Figure 5.C.2.9. Dedie nerometere ner geographical erec infe										

Figure 5.6.2.8: Radio parameters per geographical area info

Table 5.6.2.8: Radio parameters per geographical area info

Geographical area (octet o510+3 to o5100): The geographical area field is coded according to figure 5.6.2.9 and table 5.6.2.9.
Radio parameters (octet o5100+1 to o511-1): The radio parameters field is coded according to figure 5.3.2.11 and table 5.3.2.11, applicable in the geographical area indicated by the geographical area field when not served by NG-RAN.
Managed indicator (MI) (octet o511 bit 8): The managed indicator indicates how the radio parameters indicated in the radio parameters field in the geographical area indicated by the geographical area field are managed. Bit 8
0 Non-operator managed
1 Operator managed
If the length of radio parameters per geographical area contents field is bigger than indicated in figure 5.6.2.8, receiving entity shall ignore any superfluous octets located at the end of the radio parameters per geographical area contents.

8	7	6	5	4	3	2	1					
	Length of geographical area contents											
	Coordinate 1											
								octet (o510+10)*				
			<u> </u>					octet				
			Coord	inate 2				(0510+11)*				
								octet				
								(0510+16)*				
								octet (o510+17)*				
								octet (o510- 2+6*n)*				
								octet (0510-				
			Coord	inate n				1+6*n)*				
								octet				
								(o510+4+6*n)*				
								= octet o5100*				

Figure 5.6.2.9: Geographical area

Table 5.6.2.9: Geographical area

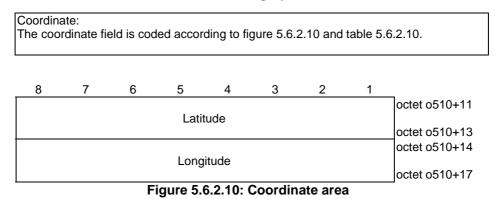
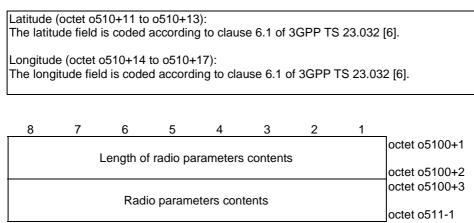


Table 5.6.2.10: Coordinate area





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Table 5.6.2.11: Radio parameters

Radio parameters contents (octet o5100+3 to o511-1): Radio parameters are defined as *SL-PreconfigurationNR* in clause 9.3 of 3GPP TS 38.331 [7].

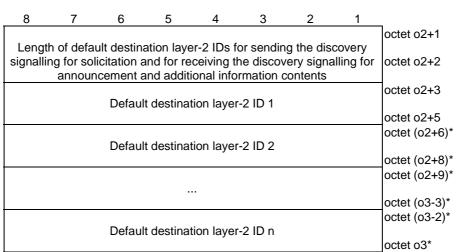


Figure 5.6.2.11a: Default destination layer-2 IDs for sending the discovery signalling for solicitation and for receiving the discovery signalling for announcement and additional information

Table 5.6.2.11a: Default destination layer-2 IDs for sending the discovery signalling for solicitation and for receiving the discovery signalling for announcement and additional information

> Default destination layer-2 ID (octet o2+3 to o2+5): The default destination layer-2 ID is a 24-bit long bit string.

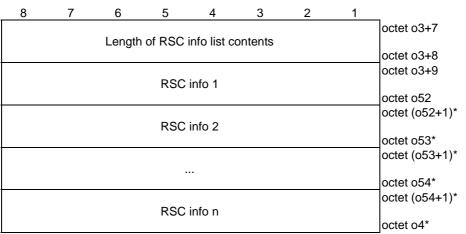


Figure 5.6.2.12: RSC info list

Table 5.6.2.12: RSC info list

RSC info: The RSC info field is coded according to figure 5.6.2.13 and table 5.6.2.13.

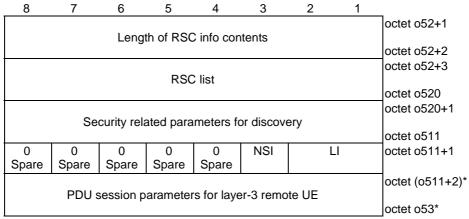


Figure 5.6.2.13: RSC info

Table 5.6.2.13: RSC info

RSC list (octet o52+3 to o520): The RSC list field is coded according to figure 5.6.2.14 and table 5.6.2.14.
Security related parameters for discovery (octet o520+1 to o511): The security related parameters for discovery field is coded according to figure 5.6.2.15 and table 5.6.2.15.
Layer indication (LI) (octet o511+1 bit 1 to 2): Bits 2 1 0 1 Layer 3
1 0 Layer 2
The other values are reserved.
N3IWF support indication (NSI) (octet o511+1 bit 3): Bit 5
 Using N3IWF access for the relayed traffic is not supported Using N3IWF access for the relayed traffic is supported
The NSI is set to "Using N3IWF access for the relayed traffic is supported" only when the LI is set to "Layer 3".
PDU session parameters for layer-3 remote UE (octet o511+2 to o53): The PDU session parameters for layer-3 remote UE field is coded according to figure 5.6.2.16 and table 5.6.2.16.

8	7	6	5	4	3	2	1						
								octet o52+3					
	Length of RSC list contents												
				~ /				octet o52+5					
			RS	C 1				octet o52+7					
								octet (o52+8)*					
			RS	C 2				octet (052+10) ³					
								octet (052+11)					
								octet (0520-3)*					
			RS	Cn				octet (0520-2)*					
								octet o520*					

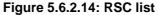


Table 5.6.2.14: RSC list

RSC (octet o52+5 to o52+7):
The RSC identifies a connectivity service that the remote UE wants. The value of the
RSC is a 24-bit long bit string. The values of the RSC from "000001" to "00000F" in
hexadecimal representation are spare and shall not be used in this release of the
specification. The UE shall ignore the spare value of the RSC in this release of
specification. For all other values, the format of the RSC is out of scope of this
specification.

	8	7	6	5	4	3	2	1	
Γ					_				octet o511+2
	Len	gth of PE	OU sessio	on parame	eters for	layer-3 r	elay conte	ents	octet o511+3
F	Spare	PATP	PSSC	PSNSS	PDNN				octet 0511+4
			М	AI		PDL	J session	type	
F									 octet (0511+5)*
				DN	IN				
L									octet o512*
				S-NS	1422				octet (0512+1)*
				0110	00/11				octet (053-1)*
Ī		Spare		Acces prefe			SSC mo	de	octet o53*

Figure 5.6.2.16: PDU session parameters for layer-3 relay

Table 5.0.2.10. T DO Session parameters for layer-5 relay
PDU session type (bits 3 to 1 of octet o511+4): The PDU session type field shall be encoded as the PDU session type value part of the PDU session type information element defined in clause 9.11.4.11 of 3GPP TS 24.501 [4].
Presence of DNN (PDNN) (bit 4 of octet o511+4) PDNN indicates whether the DNN field is present or not. Bit 4 0 DNN field is not included
1 DNN field is included
Presence of S-NSSAI (PSNSSAI) (bit 5 of octet o511+4) PSNSSAI indicates whether the S-NSSAI field is present or not. Bit 5
0 S-NSSAI field is not included 1 S-NSSAI field is included
Presence of SSC mode (PSSCM) (bit 6 of octet o511+4) PSSCM indicates whether the SSC mode field is present or not. Bit 6
0 SSC mode field is not included (NOTE) 1 SSC mode field is included
Presence of access type preference (PATP) (bit 7 of octet o511+4) PATP indicates whether the access type preference mode field is present or not. Bit 7
0 Access type preference field is not included (NOTE) 1 Access type preference field is included
DNN (octet o511+5 to o512): The DNN field shall be encoded as a sequence of a one octet DNN length field and a DNN value field of a variable size. The DNN value contains an APN as defined in 3GPP TS 23.003 [10].
S-NSSAI (octet o512+1 to o53-1): The S-NSSAI field shall be encoded as a sequence of a one octet S-NSSAI length field and an S-NSSAI value field of a variable size. The S-NSSAI value shall be encoded as the value part of the S-NSSAI information element defined in clause 9.11.2.8 of 3GPP TS 24.501 [4].
SSC mode (bits 3 to 1 of octet o53): The SSC mode field shall be encoded as the value part of the SSC mode information element defined in clause 9.11.4.16 of 3GPP TS 24.501 [4].
Access type preference (bits 5 to 4 of octet o53): The access type preference field shall be encoded as the value part of the access type information element defined in clause 9.11.2.1A of 3GPP TS 24.501 [4].
NOTE: Since SSC mode field and access type preference field are coded in the same octet, this octet is not included only when both PSSCM and PATP are set to 0.

Table 5.6.2.16: PDU session parameters for layer-3 relay

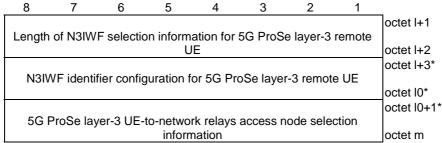


Figure 5.6.2.17: N3IWF selection information for 5G ProSe layer-3 remote UE

Table 5.6.2.17: N3IWF selection information for 5G ProSe layer-3 remote UE

N3IWF identifier configuration for 5G ProSe layer-3 remote UE (octet I+3* to I0*): The N3IWF identifier configuration for 5G ProSe layer-3 remote UE contains a list of home N3IWF identifier entries and is coded according to figure 5.6.2.18 and table 5.6.2.18.

5G ProSe layer-3 UE-to-network relays access node selection information (octet I0+1* to m):

The 5G ProSe layer-3 UE-to-network relays access node selection information contains a sequence of the N3AN node selection information entries and is coded according to figure 5.6.2.19 and table 5.6.2.19.

8 7 6 5 4 3 2 1

	octet I+3*
Length of N3IWF identifier configuration for 5G ProSe layer-3 remote	
UE	octet I+4*
	octet I+5*
Contents of N3IWF identifier configuration for 5G ProSe layer-3	
remote UE	octet I01*

Figure 5.6.2.18: N3IWF identifier configuration for 5G ProSe layer-3 remote UE

Table 5.6.2.18: N3IWF identifier configuration for 5G ProSe layer-3 remote UE

Contents of N3IWF identifier configuration for 5G ProSe layer-3 remote UE (octet I+5* to I01*): The contents of N3IWF identifier configuration for 5G ProSe layer-3 remote UE shall be encoded as the encoding of home N3IWF identifier configuration defined in clause 5.3.3.3 of 3GPP TS 24.526 [11].

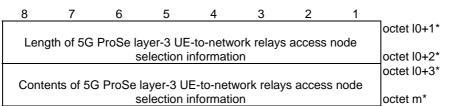


Figure 5.6.2.19: 5G ProSe layer-3 UE-to-network relays access node selection information

Table 5.6.2.19: 5G ProSe layer-3 UE-to-network relays access node selection information

Contents of 5G ProSe layer-3 UE-to-network relays access node selection information (octet I0+3* to m*): The contents of 5G ProSe layer-3 UE-to-network relays access node selection information shall be encoded as the encoding of N3AN node selection information defined in clause 5.3.3.2 of 3GPP TS 24.526 [11].

NOTE: In this release of specification, the "preference" bit (as shown in figure 5.3.3.2.2 of 3GPP TS 24.526 [11]) is always set to "0".

5.7 Encoding of UE policies for 5G ProSe usage reporting configuration and rules

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Annex A (informative): Change history

						Change history	
Date	Meeting	TDoc	CR	Rev	Cat	Subject/Comment	New version
2021-2	CT1#128 e	C1-211187				Draft skeleton provided by the rapporteur.	0.0.0
2021-2	CT1#128 e	C1-210884				Implementing the following p-CR agreed by CT1: C1-210884 Editorial change from the rapporteur. Specification number added.	0.1.0
2021-4	CT1#129 e					Implementing the following p-CR agreed by CT1: C1-212386, C1-212396, C1-212530 Editorial change by the rapporteur.	0.2.0
2021-5	CT1#130 e					Implementing the following p-CR agreed by CT1: C1-213021, C1-213574, C1-213746 Editorial change by the rapporteur.	0.3.0
2021-8	CT1#131 e					Implementing the following p-CR agreed by CT1: C1-214796, C1-214797 Editorial change by the rapporteur.	0.4.0
2021-10	CT1#132 e					Implementing the following p-CR agreed by CT1: C1-215653, C1-216108 Editorial change by the rapporteur.	0.5.0
2021-12	CT#94-e					Implementing the following p-CR agreed by CT1: C1-217146, C1-217147 Editorial change by the rapporteur.	1.0.0
2022-01	CT1#133 bis-e					Implementing the following p-CR agreed by CT1: C1-220067, C1-220068, C1-220743 Correction by rapporteur. Editorial change by the rapporteur.	1.1.0
2022-02	CT1#134 e					Implementing the following p-CR agreed by CT1: C1-221160, C1-221161, C1-221315, C1-221497, C1-221498, C1- 221825, C1-221874 Correction by rapporteur. Editorial change by the rapporteur.	1.2.0
2022-03	CT#95e					TS 25.555 v2.0.0 presented to TCT#95e for approaval	2.0.0
2022-03						TS 25.555 v17.0.0 created by MCC after CT#95e	17.0.0

History

	Document history						
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