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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 ETSI Drafting Rules (Verbal forms for the expression of provisions).

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Foreword

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 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

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

- shall indicates a mandatory requirement to do something
- shall not indicates an interdiction (prohibition) to do something
- NOTE 1: The constructions "shall" and "shall not" are confined to the context of normative provisions, and do not appear in Technical Reports.
- NOTE 2: The constructions "must" and "must not" are not used as substitutes for "shall" and "shall not". Their use is avoided insofar as possible, and they are not used in a normative context except in a direct citation from an external, referenced, non-3GPP document, or so as to maintain continuity of style when extending or modifying the provisions of such a referenced document.
- 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
- NOTE 3: 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
- NOTE 4: The constructions "can" and "cannot" shall not to be used as 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

NOTE 5: 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 Vehicle-to-Everything (V2X) services in 5G System (5GS) based on the architectural requirements defined in 3GPP TS 23.287 [2].

The protocol aspects for V2X services in 5G System (5GS) are described in 3GPP TS 24.587 [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 23.287: "Architecture enhancements for 5G System (5GS) to support Vehicle-to-Everything (V2X) services".
- [3] 3GPP TS 24.587: "Vehicle-to-Everything (V2X) services in 5G System (5GS); Stage 3".
- [4] 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3".
- [5] ISO TS 17419 ITS-AID AssignedNumbers : <u>http://standards.iso.org/iso/ts/17419/TS17419%20Assigned%20Numbers/TS17419_ITS-</u> AID_AssignedNumbers.pdf
- [6] ITU-T Recommendation E.212: "The international identification plan for public networks and subscriptions", 2016-09-23.
- [7] 3GPP TS 23.032: "Universal Geographical Area Description (GAD)".
- [8] IEEE 1609.3 2016: "IEEE Standard for Wireless Access in Vehicular Environments (WAVE) --Networking Services".
- [9] ISO 29281-1 2013: "Intelligent transport systems -- Communication access for land mobiles (CALM) -- Non-IP networking -- Part 1: Fast networking & transport layer protocol (FNTP)".
- [10] ETSI EN 302 636-3 v1.2.1: "Intelligent Transport Systems (ITS); Vehicular Communications; GeoNetworking; Part 3: Network Architecture".
- [11] 3GPP TS 24.526: "UE policies for 5G System (5GS); Stage 3".
- [12] 3GPP TS 38.331: "NR; Radio Resource Control (RRC) protocol specification".
- [13] 3GPP TS 36.101: "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) radio transmission and reception".
- [14] 3GPP TS 38.101-1: "NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone".
- [15] 3GPP TS 38.101-2: "NR; User Equipment (UE) radio transmission and reception; Part 2: Range 2 Standalone".
- [16] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC) protocol specification".

- [17] 3GPP TS 23.003: "Numbering, addressing and identification".
- [18] 3GPP TS 24.008: "Mobile radio interface Layer 3 specification; Core network protocols; Stage 3".
- [19] 3GPP TS 24.502: "Access to the 3GPP 5G Core Network (5GCN) via non-3GPP access networks".

3 Definitions of terms 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].

example: text used to clarify abstract rules by applying them literally.

For the purposes of the present document, the following terms and definitions given in 3GPP TS 24.587 [3] apply:

E-UTRA-PC5

NR-PC5

V2X service identifier

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].

FSA	Frequency Selection Area
MBS	Multicast/Broadcast Services
NID	Network Identifier
NR CGI	New Radio Cell Global Identity
SNPN	Stand-alone Non-Public Network
TMGI	Temporary Mobile Group Identity
V2X	Vehicle-to-Everything
V2XP	V2X Policy

4 Descriptions of UE policies for V2X

4.1 Overview

The V2XP in 5GS include:

- UE policies for V2X communication over PC5 (see clause 4.2); and
- UE policies for V2X communication over Uu (see clause 4.3).

The V2XP 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 V2X communication over PC5

The UE policies for V2X communication over PC5 are defined in clause 5.2.3 of 3GPP TS 24.587 [3].

The generic description of the UE policies for V2X communication over PC5 are specified in NOTE: 3GPP TS 23.287 [2].

UE policies for V2X communication over Uu 4.3

The UE policies for V2X communication over Uu are defined in clause 5.2.4 of 3GPP TS 24.587 [3].

NOTE: The generic description of the UE policies for V2X communication over Uu are specified in 3GPP TS 23.287 [2].

Encoding of UE policies for V2X 5

5.1 Overview

The UE policies for V2X are provided to the UE in a V2X policy (V2XP) UE policy part using the UE policy delivery service as specified in 3GPP TS 24.501 [4] annex D.

Encoding of V2X policy (V2XP) UE policy part 5.2

5.2.1 General

The purpose of the V2XP is to indicate UE policies for V2X communication over PC5 and UE policies for V2X communication over Uu.

The V2XP is encoded as shown in figures 5.2.1.1 to 5.2.1.3 and table 5.2.1.1 according to the UE policy part top level format (see annex D of 3GPP TS 24.501 [4]).

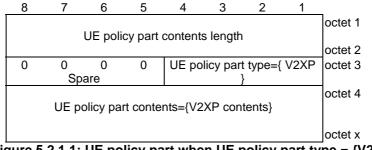


Figure 5.2.1.1: UE policy part when UE policy part type = {V2XP}

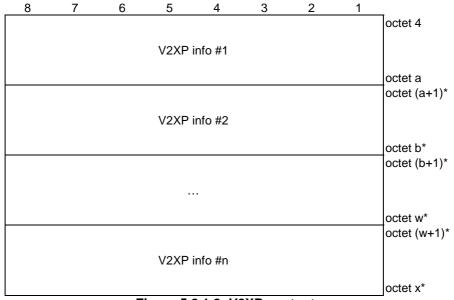


Figure 5.2.1.2: V2XP contents

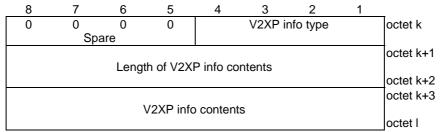


Figure 5.2.1.3: V2XP info

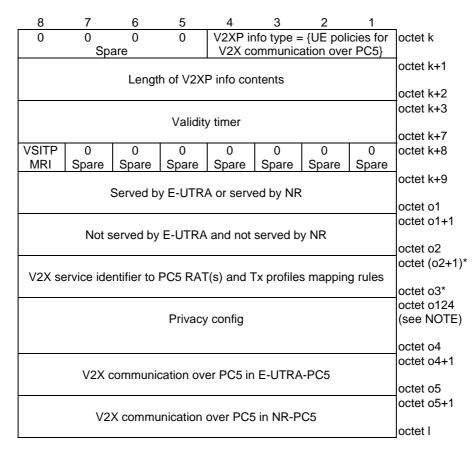


UE policy part type field is set to '0011' (=V2XP) as specified in 3GPP TS 24.501 [4] annex D. UE policy part contents length field indicate the length of the V2XP contents in octets. V2XP contents (octets 4 to x) V2XP contents consist of 1 or more V2XP info(s) (see figure 5.2.1.2). V2XP info type (bit 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 V2X communication over PC5 0 0 1 0 UE policies for V2X communication over Uu All other values are reserved. Bits 8 to 5 of octet k are spare and shall be encoded as zero. Length of V2XP info contents (octets k+1 to k+2) indicates the length of the V2XP info contents field. V2XP info contents (octets k+3 to I) can be UE policies for V2X communication over PC5 (see clause 5.3.1) or UE policies for V2X communication over Uu (see clause 5.4.1).

5.3 Encoding of UE policies for V2X communication over PC5

5.3.1 General

The UE policies for V2X communication over PC5 are coded as shown in figures 5.3.1.1 and table 5.3.1.1.



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

Figure 5.3.1.1: V2XP Info = {UE policies for V2X communication over PC5}

Table 5.3.1.1: V2XP Info = {UE policies for V2X communication over PC5}

V2XP info type (bit 1 to 4 of octet k) shall be set to "0001" (UE policies communication over PC5)	for V2X										
Length of Length of V2XP info contents (octets k+1 to k+2) indicates the length of V2XP info contents.											
Validity timer: The validity timer field provides the expiration time of validity of the UE communication over PC5. The validity timer field is a binary coded rep UTC time, in seconds since midnight UTC of January 1, 1970 (not cou seconds).	resentation of a										
V2X service identifier to PC5 RAT(s) and Tx profiles mapping rules inc	licator										
(VSITPMRI) The VSITPMRI bit indicates presence of the V2X service identifier to P Tx profiles mapping rules field. Bit	C5 RAT(s) and										
 V2X service identifier to PC5 RAT(s) and Tx profiles mapping rules V2X service identifier to PC5 RAT(s) and Tx profiles mapping rules 											
Served by E-UTRA or served by NR: The served by E-UTRA or served by NR field is coded according to figure 5.3.1.2 and table 5.3.1.2, and contains configuration parameters for V2X communication over PC5 when the UE is served by E-UTRA or served by NR.											
Not served by E-UTRA and not served by NR: The not served by E-UTRA and not served by NR field is coded according to figure 5.3.1.6 and table 5.3.1.6, and contains configuration parameters for V2X communication over PC5 when the UE is not served by E-UTRA or NR.											
V2X service identifier to PC5 RAT(s) and Tx profiles mapping rules: The V2X service identifier to PC5 RAT(s) and Tx profiles mapping rule according to figure 5.3.1.12 and table 5.3.1.12, and contains a list of V identifier to PC5 RAT(s) and Tx profiles mapping rules.											
Privacy config: The Privacy config field is coded according to figure 5.3.1.15 and table contains configuration parameters for privacy configuration.	5.3.1.15, and										
V2X communication over PC5 in E-UTRA-PC5: The V2X communication over PC5 in E-UTRA-PC5 field is coded according to figure 5.3.1.19 and table 5.3.1.19, and contains configuration parameters for V2X communication over PC5 in E-UTRA-PC5.											
V2X communication over PC5 in NR-PC5: The V2X communication over PC5 in NR-PC5 field is coded according figure 5.3.1.31 and table 5.3.1.31, and contains configuration parameter communication over PC5 in NR-PC5.											
If the length of V2XP info contents field indicates a length bigger than i figure 5.3.1.1, receiving entity shall ignore any superfluous octets locat the V2XP info contents.											
<u>8 7 6 5 4 3 2 1</u>	octet k+9										
Length of served by E-UTRA or served by NR contents	octet k+10										
	octet k+10										

octet o1 Figure 5.3.1.2: Served by E-UTRA or served by NR

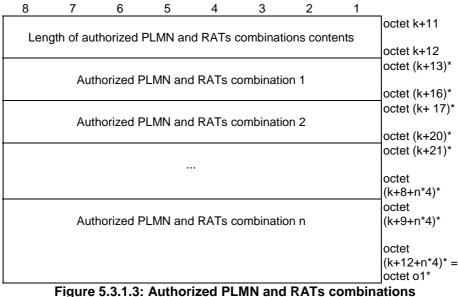
Authorized PLMN and RATs combinations

octet k+11



Authorized PLMN and RATs combinations: The authorized PLMN and RATs combinations field is coded according to figure 5.3.1.3 and table 5.3.1.3.

If the length of served by E-UTRA or served by NR contents field indicates a length bigger than indicated in figure 5.3.1.2, receiving entity shall ignore any superfluous octets located at the end of the served by E-UTRA or served by NR contents.



igure 5.5.1.5. Authorized F Linin and ICATS combinations

Table 5.3.1.3: Authorized PLMN and RATs combinations

Authorized PLMN and RATs combination: The authorized PLMN and RATs combination field is coded according to figure 5.3.1.4 and table 5.3.1.4.

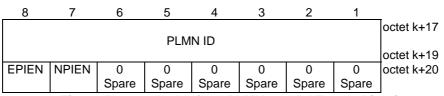


Figure 5.3.1.4: Authorized PLMN and RATs combination

PLMN ID:
The PLMN ID field is coded according to figure 5.3.1.5 and table 5.3.1.5.
E-UTRA-PC5 indicator when served by E-UTRA or served by NR (EPIEN):
The EPIEN bit indicates whether the UE is authorized to use V2X communication over
E-UTRA-PC5 in the PLMN indicated by the PLMN ID field when served by E-UTRA or
served by NR. Bit
8
0 Not authorized
1 Authorized
NR-PC5 indicator when served by E-UTRA or served by NR (NPIEN):
The NPIEN bit indicates whether the UE is authorized to use V2X communication over
NR-PC5 in the PLMN indicated by the PLMN ID field when served by E-UTRA or served by NR.
Bit
7
0 Not authorized
1 Authorized

Table 5.3.1.4: Authorized PLMN and RATs combination

8	7	6	5	4	3	2	1	
	MCC	digit 2			MCC	digit 1		octet k+17
	MNC	digit 3			MCC	digit 3		octet k+18
	MNC	digit 2			MNC	digit 1		octet k+19
		-				-		

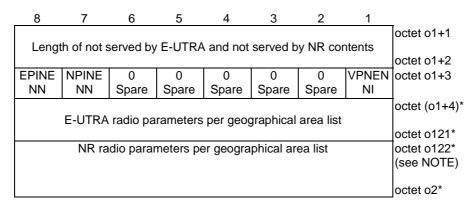
Figure 5.3.1.5: PLMN ID

Table 5.3.1.5: PLMN ID

Mobile country code (MCC): The MCC field is coded as in ITU-T Recommendation E.212 [6], annex A.

Mobile network code (MNC):

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".



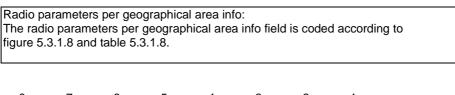
NOTE: The field is placed immediately after the last present preceding field.

Figure 5.3.1.6: Not served by E-UTRA and not served by NR

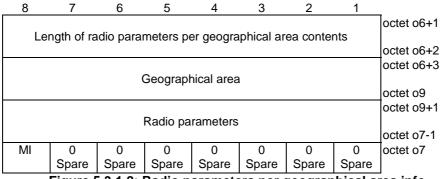
V2X communication over PC5 when not served by E-UTRA and not served by NR
indicator (VPNENNI): The VPNENNI bit indicates whether the UE is authorized to use V2X communication over PC5 when not served by E-UTRA and not served by NR.
Bit
1 0 Not authorized
1 Authorized
E-UTRA-PC5 indicator when not served by E-UTRA and not served by NR (PEINENN): The EPINENN bit indicates whether the UE is authorized to use V2X communication over E-UTRA-PC5 when not served by E-UTRA and not served by NR. Bit 8
 Not authorized Authorized
NR-PC5 indicator when not served by E-UTRA and not served by NR (NPINENN): The NPINENN bit indicates whether the UE is authorized to use V2X communication over NR-PC5 when not served by E-UTRA and not served by NR. Bit 7
0 Not authorized 1 Authorized
E-UTRA radio parameters per geographical area list: If EPINENN bit is set to "Authorized", the E-UTRA radio parameters per geographical area list field is present otherwise the E-UTRA radio parameters per geographical area list field is absent. It is coded according to figure 5.3.1.7 and table 5.3.1.7.
NR radio parameters per geographical area list: If NPINENN 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 5.3.1.7 and table 5.3.1.7.
If the length of not served by E-UTRA and not served by NR contents field indicates a length bigger than indicated in figure 5.3.1.6, receiving entity shall ignore any superfluous octets located at the end of the not served by E-UTRA and not served by NR contents.

Table 5.3.1.6: Not served by E-UTRA and not served by NR

	8	7	6	5	4	3	2	1	
Γ							н. <i>с</i>		octet o1+4
	Leng	tents	octet o1+5						
T									octet (o1+6)*
		Radio	o paramet	ters per g	jeograph	ical area	into 1		octet o6*
F			paramet						octet (06+1)*
			octet o7*						
F									octet (07+1)*
				•					octet o8*
F									octet (08+1)*
		Radio	o paramet	ters per g	geograph	ical area	info n		
L		_octet o121* area list							
				P					











Geographical area:
The geographical area field is coded according to figure 5.3.1.9 and table 5.3.1.9.
Radio parameters:
The radio parameters field is coded according to figure 5.3.1.11 and table 5.3.1.11, applicable in the geographical area indicated by the geographical area field when not served by E-UTRA and not served by NR.
Managed indicator (MI):
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 indicates a length
bigger than indicated in figure 5.3.1.8, receiving entity shall ignore any superfluous octets located at the end of the radio parameters per geographical area contents.
botets hould at the ond of the radio parameters per geographical area contents.

8	7	6	5	4	3	2	1				
	octet o6+3										
	Length of geographical area contents										
			- ·					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)*			
			0					octet (o6-			
			Coord	inate n				1+6*n)*			
								octet			
								(o6+4+6*n)* = octet o9*			
1		Fi	gure 5.3	8.1.9: G	eograph	nical are	a				

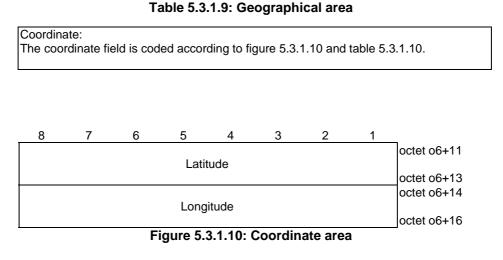


Table 5.3.1.10: Coordinate area

Latitude: The latitude field is coded according to clause 6.1 of 3GPP TS 23.032 [7]. Longitude: The longitude field is coded according to clause 6.1 of 3GPP TS 23.032 [7].

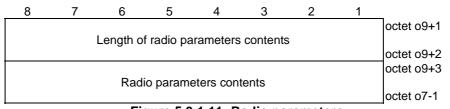


Figure 5.3.1.11: Radio parameters



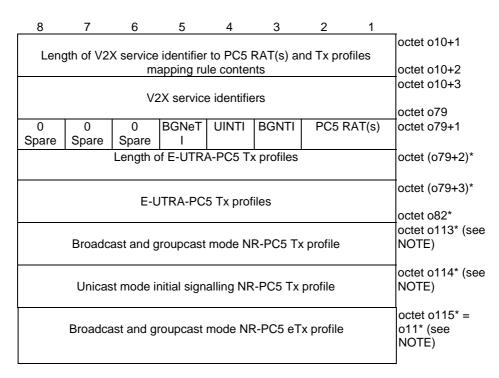
Radio parameters contents: In E-UTRA radio parameters per geographical area list, radio parameters are defined as *SL-V2X-Preconfiguration* in clause 9 of 3GPP TS 36.331 [16]. In NR radio parameters per geographical area list, radio parameters are defined as *SL-PreconfigurationNR* in clause 9.3 of 3GPP TS 38.331 [12].

8	7	6	5	4	3	2	1				
								octet o2+1			
Leng	Length of V2X service identifier to PC5 RAT(s) and Tx profiles mapping rules contents										
	,							octet (o2+3)*			
V2X sei	vice idei	ntifier to H	PC5 RAT	(s) and I	x profiles	mapping	g rule 1	octet o10*			
								octet (o10+1)*			
V2X sei	vice idei	ntifier to H	PC5 RAT	(s) and I	x profiles	mapping	g rule 2	octet o11*			
								octet o12*			
								octet (012+1)*			
V2X se	rvice ide	ntifier to F	PC5 RAT	(s) and T	x profiles	mapping	g rule n	octet o3*			

Figure 5.3.1.12: V2X service identifier to PC5 RAT(s) and Tx profiles mapping rules

Table 5.3.1.12: V2X service identifier to PC5 RAT(s) and Tx profiles mapping rules

V2X service identifier to PC5 RAT(s) and Tx profiles mapping rule: The V2X service identifier to PC5 RAT(s) and Tx profiles mapping rule field is coded according to figure 5.3.1.13 and table 5.3.1.13.



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

Figure 5.3.1.13: V2X service identifier to PC5 RAT(s) and Tx profiles mapping rule

Table 5.3.1.13: V2X service identifier to PC5 RAT(s) and Tx profiles mapping rule

V2X service identifiers: The V2X service identifiers field is coded according to figure 5.3.1.14 and table 5.3.1.14. Unicast mode initial signalling NR-PC5 Tx profile indicator (UINTI) The UINTI bit indicates presence of the unicast mode NR-PC5 Tx profile field. Bit 4 0 unicast mode initial signalling NR-PC5 Tx profile field is absent unicast mode initial signalling NR-PC5 Tx profile field is present 1 Broadcast and groupcast mode NR-PC5 Tx profile indicator (BGNTI) The BGNTI bit indicates presence of the broadcast and groupcast mode NR-PC5 Tx profile field. Bit 3 0 broadcast and groupcast mode NR-PC5 Tx profile field is absent 1 broadcast and groupcast mode NR-PC5 Tx profile field is present Broadcast and groupcast mode NR-PC5 eTx profile indicator (BGNeTI) The BGNeTI bit indicates presence of the broadcast and groupcast mode NR-PC5 eTx profile field. Bit 5 broadcast and groupcast mode NR-PC5 eTx profile field is absent 0 broadcast and groupcast mode NR-PC5 eTx profile field is present 1 If the PC5 RAT field is set to "E-UTRA-PC5", then the BGNTI bit is set to "broadcast and groupcast mode NR-PC5 Tx profile field is absent" and the UINTI bit is set to "unicast mode initial signalling NR-PC5 Tx profile field is absent" and the BGNeTI bit is set to "broadcast and groupcast mode NR-PC5 eTx profile field is absent". If the PC5 RAT field is set to "NR-PC5" or "Both E-UTRA-PC5 and NR-PC5", then the BGNTI bit can be set to "broadcast and groupcast mode NR-PC5 Tx profile field is absent" or "broadcast and groupcast mode NR-PC5 Tx profile field is present", and the UINTI bit can be set to "unicast mode initial signalling NR-PC5 Tx profile field is absent" or "unicast mode initial signalling NR-PC5 Tx profile field is present", and the BGNeTI bit can be set to "broadcast and groupcast mode NR-PC5 eTx profile field is absent" or "broadcast and groupcast mode NR-PC5 eTx profile field is present". PC5 RAT(s): The PC5 RAT(s) field indicates the PC5 RAT(s) mapped to the V2X service identifiers. Bits 21 0 0 E-UTRA-PC5 0 1 NR-PC5 1 0 Both E-UTRA-PC5 and NR-PC5 All other values are spare. If the PC5 RAT field is set to "E-UTRA-PC5" or "Both E-UTRA-PC5 and NR-PC5", the length of E-UTRA-PC5 Tx profiles field and the E-UTRA-PC5 Tx profiles field are present otherwise the length of E-UTRA-PC5 Tx profiles field and the E-UTRA-PC5 Tx profiles field are absent. If the PC5 RAT field is set to a spare value, the receiving entity shall ignore the V2X service identifier to PC5 RAT(s) and Tx profiles mapping rule. E-UTRA-PC5 Tx profiles: The E-UTRA-PC5 Tx profiles field is coded as v2x-TxProfileList in clause 9.3.2 of 3GPP TS 36.331 [16]. Broadcast and groupcast mode NR-PC5 Tx profile field: The broadcast and groupcast mode NR-PC5 Tx profile field indicates NR Tx profile corresponding to the NR-PC5 for broadcast mode V2X communication over PC5 and groupcast mode V2X communication over PC5. The broadcast and groupcast mode NR-PC5 Tx profile field is coded as SL-TxProfiler17 in clause 9.3 of 3GPP TS 38.331 [12]. Broadcast and groupcast mode NR-PC5 eTx profile field:

The broadcast and groupcast mode NR-PC5 eTx profile field indicates NR eTx profile corresponding to the NR-PC5 for broadcast mode V2X communication over PC5 and groupcast mode V2X communication over PC5. The broadcast and groupcast mode NR-PC5 eTx profile field is coded as SL-TxProfile-r18 in clause 6.2.2 of 3GPP TS 38.331 [12].

Unicast mode initial signalling NR-PC5 Tx profile field:

The unicast mode initial signalling NR-PC5 Tx profile field indicates NR Tx profile corresponding to transmitting and receiving initial signalling of the PC5 unicast link establishment.

The unicast mode initial signalling NR-PC5 Tx profile field is coded as *SL-TxProfile-r17* in clause 9.3 of 3GPP TS 38.331 [12].

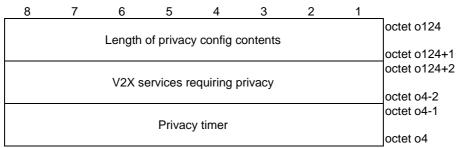
If the length of V2X service identifier to PC5 RAT(s) and Tx profiles mapping rule contents field indicates a length bigger than indicated in figure 5.3.1.13, receiving entity shall ignore any superfluous octets located at the end of the V2X service identifier to PC5 RAT(s) and Tx profiles mapping rule contents.

8	7	6	5	4	3	2	1					
								octet o10+3				
	Length of V2X service identifiers contents											
								octet o10+4				
								octet (010+5)*				
		V2	2X service	e identifie	er 1							
								octet (010+8)*				
								octet (o10+9)*				
		V2	2X service	e identifie	er 2							
								octet (010+12)*				
								octet (010+13)*				
								octet (o10+n*4)*				
		VC	Vacria	e identifie				octet				
		V Z	A Service	e identille				(o10+1+n*4)*				
								octet				
								(o10+4+n*4)*				
								= octet o79*				
		Eiau	Iro 5 3 1	11.1/2	V convid	o idonti	fiore					

Figure 5.3.1.14: V2X service identifiers

Table 5.3.1.14: V2X service identifiers

V2X service identifier: The V2X service identifier field contains a binary coded V2X service identifier as specified in ISO TS 17419 ITS-AID AssignedNumbers [5].



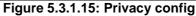


Table 5.3.1.15: Privacy config

V2X services requiring privacy: The V2X services requiring privacy field is coded according to figure 5.3.1.16 and table 5.3.1.16. Privacy timer: 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 V2X communication over the PC5 when privacy is required.

If the length of privacy config contents field indicates a length bigger than indicated in figure 5.3.1.15, receiving entity shall ignore any superfluous octets located at the end of

the privacy config contents.

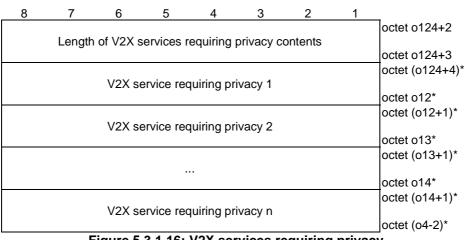


Figure 5.3.1.16: V2X services requiring privacy

Table 5.3.1.16: V2X services requiring privacy

V2X service requiring privacy: The V2X service requiring privacy field is coded according to figure 5.3.1.17 and table 5.3.1.17.

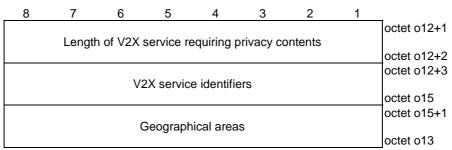


Figure 5.3.1.17: V2X service requiring privacy

Table 5.3.1.17: V2X service requiring privacy

V2X service identifiers: The V2X service identifiers field is coded according to figure 5.3.1.14 and table 5.3.1.14. Geographical areas: The geographical areas field is coded according to figure 5.3.1.18 and table 5.3.1.18. If the length of V2X service requiring privacy contents field indicates a length bigger than indicated in figure 5.3.1.17, receiving entity shall ignore any superfluous octets

located at the end of the V2X service requiring privacy contents.

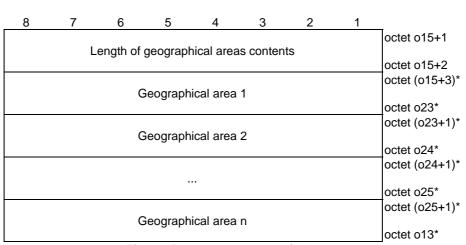


Figure 5.3.1.18: Geographical areas

Table 5.3.1.18: Geographical areas

Geographical area: The geographical area field is coded according to figure 5.3.1.9 and table 5.3.1.9.

8	7	6	5	4	3	2	1					
	octet o4+1											
Lengt	Length of V2X communication over PC5 in E-UTRA-PC5 contents											
DDL2II	VSIEF	VSAPI	PPMR	0	0	0	0	octet o4+2 octet o4+3				
DDL2II	MRI	VOALI		Spare	Spare	Spare	Spare	00101 04+0				
				1	1		1	octet o4+4				
V22	X service	identifier	to destin	ation laye	er-2 ID m	apping ru	ules	octet o26				
		PPPF	to PDB	mapping	rules			octet (o26+1)*				
					- uloo			octet o27*				
								octet o120*				
V2X	service i	dentifier t	o V2X E-	UTRA fre	equency r	mapping	rules	(see NOTE)				
								octet o28*				
								octet 020				
		V2X ser	vices aut	horized fo	or PPPR			(see NOTE)				
								(00011012)				
	octet o29*											
	octet o107*											
	(see NOTE)											
	octet (0107+2)* = octet 05*											

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

Figure 5.3.1.19: V2X communication over PC5 in E-UTRA-PC5

Table 5.3.1.19: V2X communication over PC5 in E-UTRA-PC5

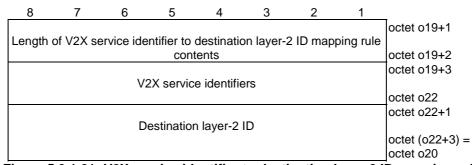
Default destination layer-2 ID indicator (DDL2II): The DDL2II bit indicates presence of the default destination layer-2 ID field. Bit 8 0 Default destination laver-2 ID field is absent Default destination layer-2 ID field is present 1 V2X service identifier to V2X E-UTRA frequency mapping rules indicator (VSIEFMRI): The VSIEFMRI bit indicates presence of the V2X service identifier to V2X E-UTRA frequency mapping rules field. Bit 7 0 V2X service identifier to V2X E-UTRA frequency mapping rules field is absent 1 V2X service identifier to V2X E-UTRA frequency mapping rules field is present V2X services authorized for PPPR indicator (VSAPI): The VSAPI bit indicates presence of the V2X services authorized for PPPR field. Bit 6 0 V2X services authorized for PPPR field is absent 1 V2X services authorized for PPPR field is present PPPP to PDB mapping rules indicator (PPMRI): The PPMRI bit indicates presence of the PPPP to PDB mapping rules field. Bit 5 0 PPPP to PDB mapping rules field is absent PPPP to PDB mapping rules field is present 1 V2X service identifier to destination layer-2 ID mapping rules: The V2X service identifier to destination layer-2 ID mapping rules field is coded according to figure 5.3.1.20 and table 5.3.1.20. PPPP to PDB mapping rules: The PPPP to PDB mapping rules field is coded according to figure 5.3.1.22 and table 5.3.1.22. V2X service identifier to V2X E-UTRA frequency mapping rules: The V2X service identifier to V2X E-UTRA frequency mapping rules field is coded according to figure 5.3.1.24 and table 5.3.1.24. V2X services authorized for PPPR: The V2X services authorized for PPPR field is coded according to figure 5.3.1.29 and table 5.3.1.29. Default destination layer-2 ID: The default destination layer-2 ID field is a binary coded layer 2 identifier. If the length of V2X communication over PC5 in E-UTRA-PC5 contents field indicates a length bigger than indicated in figure 5.3.1.19, receiving entity shall ignore any superfluous octets located at the end of the V2X communication over PC5 in E-UTRA-PC5contents.

	8	7	6	5	4	3	2	1	
ſ									octet o4+4
	Lengt	h of V2X	service ic	dentifier t	o destina	ation layer	-2 ID ma	apping	
				rules co	ontents				octet o4+5
									octet (04+6)*
	V2X	(service	identifier	to destina	ation lay	er-2 ID ma	apping ru	ule 1	
-									octet o19*
					- 4 1			.1. 0	octet (019+1)*
	V2X	service	Identifier	to destina	ation laye	er-2 ID ma	apping ri	ule 2	a at at a 200*
-									octet o20*
									octet (o20+1)*
				•					octet o21*
-									octet (o21+1)*
	V2X	service	identifier	to destina	ation lave	er-2 ID ma	appina ri	ıle n	00101 (021+1)
	v 27				adoniay		~PP9		octet o26*

Figure 5.3.1.20: V2X service identifier to destination layer-2 ID mapping rules

Table 5.3.1.20: V2X service identifier to destination layer-2 ID mapping rules

V2X service identifier to destination layer-2 ID mapping rule: The V2X service identifier to destination layer-2 ID mapping rule field is coded according to figure 5.3.1.21 and table 5.3.1.21.



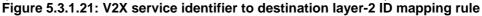


Table 5.3.1.21: V2X service identifier to destination layer-2 ID mapping rule

V2X service identifiers: The V2X service identifiers field is coded according to figure 5.3.1.14 and table 5.3.1.14.

Destination layer-2 ID: The destination layer-2 ID field is a binary coded layer 2 identifier.

If the length of V2X service identifier to destination layer-2 ID mapping rule contents field indicates a length bigger than indicated in figure 5.3.1.21, receiving entity shall ignore any superfluous octets located at the end of the V2X service identifier to destination layer-2 ID mapping rule contents.

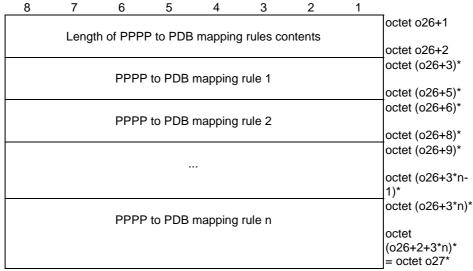


Figure 5.3.1.22: PPPP to PDB mapping rules

Table 5.3.1.22: PPPP to PDB mapping rules

PPPP to PDB mapping rule: The PPPP to PDB mapping rule field is coded according to figure 5.3.1.23 and table 5.3.1.23.

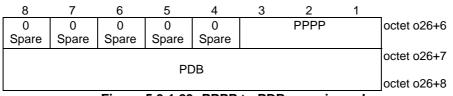
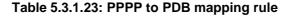


Figure 5.3.1.23: PPPP to PDB mapping rule



ProSe per-packet priority (PPPP): The PPPP field is a ProSe per-packet priority value. Bits **3 2 1** 0 0 0 PPPP value 1 0 0 1 PPPP value 2 0 1 0 PPPP value 3 0 1 1 PPPP value 4 1 0 0 PPPP value 5 1 0 1 PPPP value 6 1 1 0 PPPP value 7 1 1 1 PPPP value 8 Packet delay budget (PDB): The PDB field indicates binary encoded the packet delay budget value in miliseconds

to which the ProSe per-packet priority value indicated by the PPPP field is mapped.

8	7	6	5	4	3	2	1	
								octet o120*
Length	of V2X s	service ide	entifier to	V2X E-l	JTRA free	quency m	napping	
			rules co	ontents				octet (0120+2)*
								octet (0120+3)*
V2X	service id	dentifier to	o V2X E-I	UTRA fre	equency r	napping	rule 1	
								octet o33*
								octet (o33+1)*
V2X	service id	dentifier to	5 V2X E-I	UIRA fre	equency r	napping	rule 2	
								octet o34*
								octet (o34+1)*
								octet o35*
Vov								octet (o35+1)*
V2X	service io	dentifier to) VZX E-	UIRATI	equency r	napping	rule h	
								octet o28*

Figure 5.3.1.24: V2X service identifier to V2X E-UTRA frequency mapping rules

Table 5.3.1.24: V2X service identifier to V2X E-UTRA frequency mapping rules

V2X service identifier to V2X E-UTRA frequency mapping rule: The V2X service identifier to V2X E-UTRA frequency mapping rule is coded according to figure 5.3.1.25 and table 5.3.1.25.

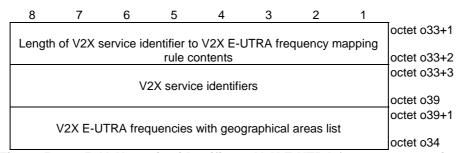


Figure 5.3.1.25: V2X service identifier to V2X E-UTRA frequency mapping rule

Table 5.3.1.25: V2X service identifier to V2X E-UTRA frequency mapping rule

V2X service identifiers: The V2X service identifiers field is coded according to figure 5.3.1.14 and table 5.3.1.14.

V2X E-UTRA frequencies with geographical areas list: The V2X E-UTRA frequencies with geographical areas list field is coded according to figure 5.3.1.26 and table 5.3.1.26.

If the length of V2X service identifier to V2X E-UTRA frequency mapping rule contents field indicates a length bigger than indicated in figure 5.3.1.25, receiving entity shall ignore any superfluous octets located at the end of the V2X service identifier to V2X E-UTRA frequency mapping rule contents.

1	8	7	6	5	4	3	2	1			
									octet o39+1		
	Length of V2X E-UTRA frequencies with geographical areas list										
				cont	ents				octet o39+2		
									octet (o39+3)*		
	V2	X E-UT	RA frequ	encies w	ith geogi	aphical a	reas info	1			
									octet o40*		
				_				_	octet (o40+1)*		
	V2	X E-UT	RA frequ	encies w	ith geogi	aphical a	reas info	2			
									octet o41*		
									octet (041+1)*		
									octet o42*		
			·• • •		• • •				octet (042+1)*		
	V2	X E-UI	RA frequ	encies w	ith geogi	aphical a	reas info	n			
									octet o34*		



Table 5.3.1.26: V2X E-UTRA frequencies with geographical areas list

V2X E-UTRA frequencies with geographical areas info: The V2X E-UTRA frequencies with geographical areas info field is coded according to figure 5.3.1.27 and table 5.3.1.27.

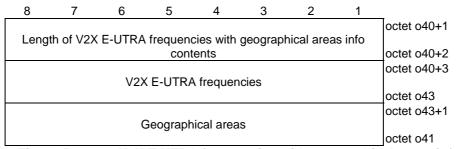




Table 5.3.1.27: V2X E-UTRA frequencies with geographical areas info

V2X E-UTRA frequencies:

The V2X E-UTRA frequencies field is coded according to figure 5.3.1.28 and table 5.3.1.28.

Geographical areas:

The geographical areas field is coded according to figure 5.3.1.18 and table 5.3.1.18.

If the length of V2X E-UTRA frequencies with geographical areas info contents field indicates a length bigger than indicated in figure 5.3.1.27, receiving entity shall ignore any superfluous octets located at the end of the V2X E-UTRA frequencies with geographical areas info contents.

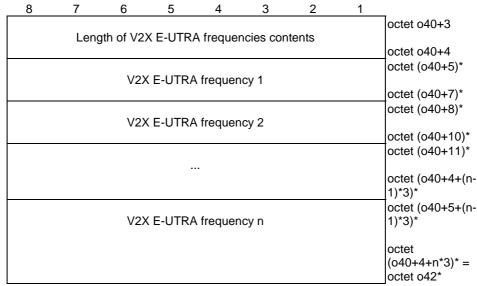


Figure 5.3.1.28: V2X E-UTRA frequencies

Table 5.3.1.28: V2X E-UTRA frequencies

V2X E-UTRA frequency: V2X E-UTRA frequency is coded according to the EARFCN value defined in 3GPP TS 36.101 [13].

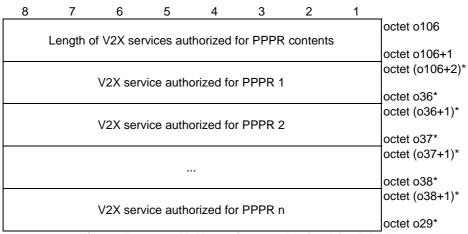
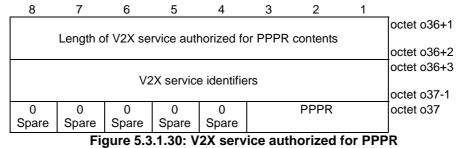
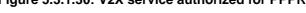


Figure 5.3.1.29: V2X services authorized for PPPR

Table 5.3.1.29: V2X services authorized for PPPR

V2X service authorized for PPPR: The V2X services authorized for PPPR field is coded according to figure 5.3.1.30 and table 5.3.1.30.







V2X service identifiers:								
The V2X service identifiers field is coded according to figure 5.3.1.14 and								
table 5.3.1.14.								
ProSe per-packet reliability (PPPR):								
The PPPR field is a ProSe per-packet reliability value.								
Bits								
3 2 1								
0 0 0 PPPR value 1								
0 0 1 PPPR value 2								
0 1 0 PPPR value 3								
0 1 1 PPPR value 4								
100 PPPR value 5								
1 0 1 PPPR value 6								
110 PPPR value 7								
1 1 1 PPPR value 8								
If the length of V2X service authorized for PPPR contents field indicates a length bigger than indicated in figure 5.3.1.30, receiving entity shall ignore any superfluous octets located at the end of the V2X service authorized for PPPR contents.								

8	7	6	5	4	3	2	1	
	octet o5+1							
Len	octet o5+2							
DDL2I	octet 05+2							
BI	VSINF MRI	PDBGI	0 Spare	0 Spare	0 Spare	0 Spare	0 Spare	
	octet (o5+4)*							
V2								
	octet o45* octet o108							
V2X se	vice iden	ntifier to d	estinatio	n laver-2	ID for bro	hadcast n	nanning	(see NOTE)
V2/ 30				es			apping	
								octet o46
								octet o46+1
V2X se	rvice iden	ntifier to d		•	ID for gro	oupcast n	napping	
			ru	es				octet o47
V2X	sorvico i	dentifier t	o destina	ation lave	r-2 ID for	unicast i	nitial	octet o47+1
V2/	Service			apping ru		unicasti	mai	octet o48
		Ŭ	U	11 0				octet o48+1
V2>	(service	identifier	to PC5 C	QoS para	meters m	apping ru	ules	
								octet o49
			AS confi	aurotion				octet o49+1
			AS COIII	guration				octet o50
								octet (050+1)*
	Def	ault desti	nation lag	yer-2 ID f	or broade	cast		
								octet (050+3)*
				.,				octet o93 (see
		NR-PC	ounicast	security	policies			NOTE)
								octet o84
								octet (084+1)
V2X s								
	octet o85							
		octet (085+1)*						
PC5 D	octet o123* =							
			signa	anny				octet
L								

NOTE: The field is placed immediately after the last present preceding field. Figure 5.3.1.31: V2X communication over PC5 in NR-PC5 Table 5.3.1.31: V2X communication over PC5 in NR-PC5

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Default destination layer-2 ID for broadcast indicator (DDL2IBI): The DDL2IBI bit indicates presence of the default destination layer-2 ID for broadcast field. Bit 8 Default destination layer-2 ID for broadcast field is absent 0 1 Default destination layer-2 ID for broadcast field is present V2X service identifier to V2X NR frequency mapping rules indicator (VSINFMRI): The VSINFMRI bit indicates presence of the V2X service identifier to V2X NR frequency mapping rules field. Bit V2X service identifier to V2X NR frequency mapping rules field is absent 0 V2X service identifier to V2X NR frequency mapping rules field is present 1 PC5 DRX configuration for broadcast, groupcast and unicast initial signalling indicator (PDBGI): The PDBGI bit indicates presence of the PC5 DRX configuration for broadcast groupcast and unicast initial signalling field. Bit 6 0 PC5 DRX configuration for broadcast, groupcast and unicast initial signalling field is absent 1 PC5 DRX configuration for broadcast, groupcast and unicast initial signalling field is present V2X service identifier to V2X NR frequency mapping rules: The V2X service identifier to V2X NR frequency mapping rules field is coded according to figure 5.3.1.32 and table 5.3.1.32. V2X service identifier to destination layer-2 ID for broadcast mapping rules: The V2X service identifier to destination layer-2 ID for broadcast mapping rules field is coded according to figure 5.3.1.37 and table 5.3.1.37. V2X service identifier to destination layer-2 ID for groupcast mapping rules: The V2X service identifier to destination layer-2 ID for groupcast mapping rules field is coded according to figure 5.3.1.39 and table 5.3.1.39. V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules: The V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules field is coded according to figure 5.3.1.41 and table 5.3.1.41. V2X service identifier to PC5 QoS parameters mapping rules: The V2X service identifier to PC5 QoS parameters mapping rules field is coded according to figure 5.3.1.43 and table 5.3.1.43. AS configuration: The AS configuration field is coded according to figure 5.3.1.46a and table 5.3.1.46a. Default destination layer-2 ID for broadcast: The default destination layer-2 ID for broadcast field is a binary coded layer 2 identifier. NR-PC5 unicast security policies: The NR-PC5 unicast security policies field is coded according to figure 5.3.1.50 and table 5.3.1.50. V2X service identifier to default mode of communication mapping rules: The V2X service identifier to default mode of communication mapping rules is coded according to figure 5.3.1.53 and table 5.3.1.53. PC5 DRX configuration for broadcast, groupcast and unicast initial signalling. The PC5 DRX configuration for broadcast, groupcast and unicast initial signalling field indicates the PC5 DRX configuration for broadcast, groupcast and unicast initial signalling when not served by E-UTRA and not served by NR, and is coded according to figure 5.3.1.55 and table 5.3.1.55.

If the length of V2X communication over PC5 in NR-PC5 contents field indicates a length bigger than indicated in figure 5.3.1.31, receiving entity shall ignore any superfluous octets located at the end of the V2X communication over PC5 in NR-PC5 contents.

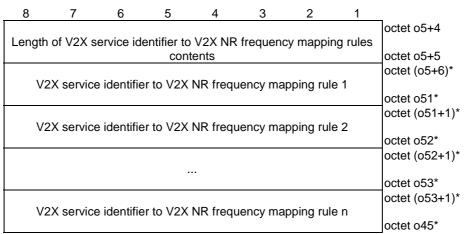


Figure 5.3.1.32: V2X service identifier to V2X NR frequency mapping rules

Table 5.3.1.32: V2X service identifier to V2X NR frequency mapping rules

V2X service identifier to V2X NR frequency mapping rule: The V2X service identifier to V2X NR frequency mapping rule is coded according to figure 5.3.1.33 and table 5.3.1.33.

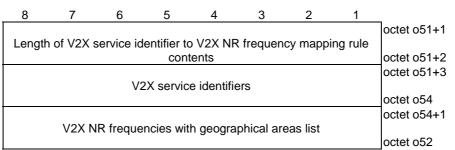


Figure 5.3.1.33: V2X service identifier to V2X NR frequency mapping rule

Table 5.3.1.33: V2X service identifier to V2X NR frequency mapping rule

V2X service identifiers: The V2X service identifiers field is coded according to figure 5.3.1.14 and table 5.3.1.14.

V2X NR frequencies with geographical areas list: The V2X NR frequencies with geographical areas list field is coded according to figure 5.3.1.34 and table 5.3.1.34.

If the length of V2X service identifier to V2X NR frequency mapping rule contents field indicates a length bigger than indicated in figure 5.3.1.33, receiving entity shall ignore any superfluous octets located at the end of the V2X service identifier to V2X NR frequency mapping rule contents.

8	7	6	5	4	3	2	1				
								octet o54+1			
Length	octet o54+2										
								octet (054+2)*			
	V2X NF	R frequen	cies with	geograp	hical area	as info 1		00101 (054+3)			
				9009. op				octet o55*			
	octet (055+1)*										
	V2X NR frequencies with geographical areas info 2										
	octet o57* octet (o57+1)*										
		1	-	5 5 1	hical area	-		octet o52*			
		4 04.14			al a a sudd		ا م ما با م	areas l'at			

Figure 5.3.1.34: V2X NR frequencies with geographical areas list

Table 5.3.1.34: V2X NR frequencies with geographical areas list

V2X NR frequencies with geographical areas info: The V2X NR frequencies with geographical areas info field is coded according to figure 5.3.1.35 and table 5.3.1.35.

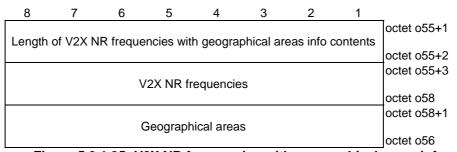


Figure 5.3.1.35: V2X NR frequencies with geographical areas info

Table 5.3.1.35: V2X NR frequencies with geographical areas info

V2X NR frequencies:

The V2X NR frequencies field is coded according to figure 5.3.1.36 and table 5.3.1.36.

Geographical areas:

The geographical areas field is coded according to figure 5.3.1.18 and table 5.3.1.18.

If the length of V2X NR frequencies with geographical areas info contents field indicates a length bigger than indicated in figure 5.3.1.35, receiving entity shall ignore any superfluous octets located at the end of the V2X NR frequencies with geographical areas info contents.

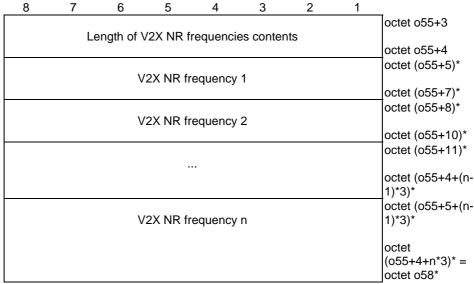


Figure 5.3.1.36: V2X NR frequencies

Table 5.3.1.36: V2X NR frequencies

V2X NR frequency: V2X NR frequency is coded according to the NR-ARFCN value defined in 3GPP TS 38.101-1 [14] and 3GPP TS 38.101-2 [15].

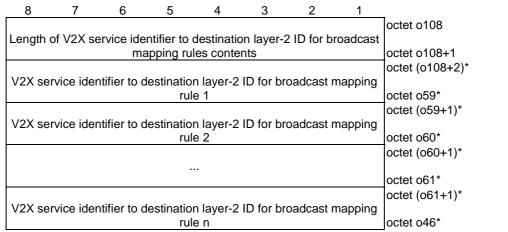


Figure 5.3.1.37: V2X service identifier to destination layer-2 ID for broadcast mapping rules

Table 5.3.1.37: V2X service identifier to destination layer-2 ID for broadcast mapping rules

V2X service identifier to destination layer-2 ID for broadcast mapping rule: The V2X service identifier to destination layer-2 ID for broadcast mapping rule field is coded according to figure 5.3.1.38 and table 5.3.1.38.

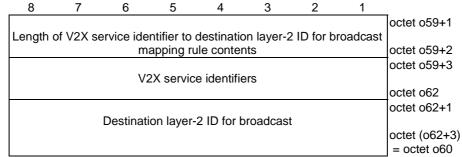


Figure 5.3.1.38: V2X service identifier to destination layer-2 ID for broadcast mapping rule

Table 5.3.1.38: V2X service identifier to destination layer-2 ID for broadcast mapping rule

V2X service identifiers: The V2X service identifiers field is coded according to figure 5.3.1.14 and table 5.3.1.14.								
	Destination layer-2 ID for broadcast: The destination layer-2 ID for broadcast field is a binary coded layer 2 identifier.							
rule cor entity s	If the length of V2X service identifier to destination layer-2 ID for broadcast mapping rule contents field indicates a length bigger than indicated in figure 5.3.1.38, receiving entity shall ignore any superfluous octets located at the end of the V2X service identifier to destination layer-2 ID for broadcast mapping rule contents.							
8	7	6	5	4	3	2	1	
								octet o46+1

	octet o46+1
Length of V2X service identifier to destination layer-2 ID for groupcast mapping rules contents	octet o46+2
V2X service identifier to destination layer-2 ID for groupcast mapping	octet (046+3)*
rule 1	octet o63*
V2X service identifier to destination layer-2 ID for groupcast mapping	octet (063+1)*
rule 2	octet o64*
	octet (064+1)*
	octet o65*
V2X service identifier to destination layer-2 ID for groupcast mapping	octet (065+1)*
rule n	octet o47*

Figure 5.3.1.39: V2X service identifier to destination layer-2 ID for groupcast mapping rules

Table 5.3.1.39: V2X service identifier to destination layer-2 ID for groupcast mapping rules

V2X service identifier to destination layer-2 ID for groupcast mapping rule: The V2X service identifier to destination layer-2 ID for groupcast mapping rule field is coded according to figure 5.3.1.40 and table 5.3.1.40.

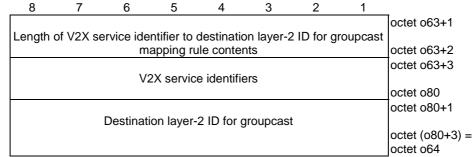


Figure 5.3.1.40: V2X service identifier to destination layer-2 ID for groupcast mapping rule

Table 5.3.1.40: V2X service identifier to destination layer-2 ID for groupcast mapping rule

The V2	V2X service identifiers: The V2X service identifiers field is coded according to figure 5.3.1.14 and able 5.3.1.14.								
	Destination layer-2 ID for groupcast: The destination layer-2 ID for groupcast field is a binary coded layer 2 identifier.								
If the length of V2X service identifier to destination layer-2 ID for groupcast mapping rule contents field indicates a length bigger than indicated in figure 5.3.1.40, receiving entity shall ignore any superfluous octets located at the end of the V2X service identifier to destination layer-2 ID for groupcast mapping rule contents.									
8	7	6	5	4	3	2	1		

	octet o47+1
Length of V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules contents	octet o47+2
	octet (o47+3)*
V2X service identifier to destination layer-2 ID for unicast initial	
signalling mapping rule 1	octet o66*
	octet (066+1)*
V2X service identifier to destination layer-2 ID for unicast initial	
signalling mapping rule 2	octet o67*
	octet (067+1)*
	octet o68*
	octet (068+1)*
V2X service identifier to destination layer-2 ID for unicast initial	
signalling mapping rule n	octet o48*

Figure 5.3.1.41: V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules

Table 5.3.1.41: V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules

V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule: The V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule field is coded according to figure 5.3.1.42 and table 5.3.1.42.

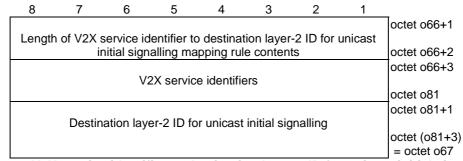


Figure 5.3.1.42: V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule

Table 5.3.1.42: V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule

V2X service identifiers: The V2X service identifiers field is coded according to figure 5.3.1.14 and table 5.3.1.14.

Destination layer-2 ID for unicast initial signalling: The destination layer-2 ID for unicast initial signalling field is a binary coded layer 2 identifier.

If the length of V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule contents field indicates a length bigger than indicated in figure 5.3.1.42, receiving entity shall ignore any superfluous octets located at the end of the V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule contents.

8	7	6	5	4	3	2	1		
	() (0) (505.0	•			octet o48+1	
Lengti	Length of V2X service identifier to PC5 QoS parameters mapping rules contents								
		i de retifierr						octet (048+3)*	
V2X	service	laentiner	10 PC5 G	los parai	meters m	apping ru	lie 1	octet o70*	
								octet (o70+1)*	
V2X	service	Identifier		los parai	meters m	apping ru	lie 2	octet o71*	
								octet (o71+1)*	
			-					octet o72*	
								octet (o72+1)*	
V2X	service	Identifier	to PC5 C	loS para	meters m	apping ru	ile n	octet o49*	

Figure 5.3.1.43: V2X service identifier to PC5 QoS parameters mapping rules

Table 5.3.1.43: V2X service identifier to PC5 QoS parameters mapping rules

V2X service identifier to PC5 QoS parameters mapping rule: The V2X service identifier to PC5 QoS parameters mapping rule field is coded according to figure 5.3.1.46 and table 5.3.1.46.

Figure 5.3.1.44: void

Table 5.3.1.44: void

Figure 5.3.1.45: void

8	7	6	5	4	3	2	1	_			
L a sa astin	octet o70+1										
Length	Length of V2X service identifier to PC5 QoS parameters mapping rule contents										
		octet o70+2 octet o70+3									
		V2	X servic	e identifie	ers						
								octet o74			
GFBRI	MFBRI	PLAMB RI	RI	0	0	0	0	octet o74+1			
		KI	D	Spare QI	Spare	Spare	Spare	octet o74+2			
			F	QI				00101 074+2			
								octet (074+3)*			
		Gua	aranteed	flow bit r	ate						
								octet (074+5)*			
		Ma	vimum f	flow bit ra	ato			octet (o94)* (see NOTE)			
		IVIC						NOTE)			
								octet (o94+2)*			
		_						octet (o95)* (see			
		Per-link a	ggregate	e maximu	m bit rate	;		NOTE)			
								octet (095+2)*			
		octet (o96)* (see									
	NOTE)										
	octet (096+2)* =										
								octet 071*			

Table 5.3.1.45: void

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

Figure 5.3.1.46: V2X service identifier to PC5 QoS parameters mapping rule

Table 5.3.1.46: V2X service identifier to PC5 QoS parameters mapping rule

V2X service identifiers: The V2X service identifiers field is coded according to figure 5.3.1.14 and table 5.3.1.14. Guaranteed flow bit rate indicator (GFBRI): 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): The MFBRI bit indicates presence of maximum flow bit rate field. Bit 7 0 Maximum flow bit rate field is absent 1 Maximum flow bit rate field is present Per-link aggregate maximum bit rate indicator (PLAMBRI): 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 1 Per-link aggregate maximum bit rate field is present Range indicator (RI): The RI bit indicates presence of range field. Bit 5 0 Range field is absent 1 Range field is present

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PQI:						
Bits						
87654321						
00000000	Reserved					
00000001						
to Spare						
00010100						
00010101	PQI 21					
00010110	PQI 22					
00010111	PQI 23					
00011000						
to Spare						
00110110						
00110111	PQI 55					
00111000	PQI 56					
00111001	PQI 57					
00111010	PQI 58					
00111011	PQI 59					
00111100						
to Spare						
01011001	BOLOO					
01011010	PQI 90					
01011011	PQI 91					
01011100						
to Spare						
01111111						
100000000 to Operator-						
	specific PQIS					
11111111	Reserved					
If the UE receives	s a PQI value (excluding the reserved PQI values) that it does not					
	JE shall choose a PQI value from the set of PQI values defined in this					
	otocol (see 3GPP TS 23.287 [2]) and associated with:					
- GBR resource type, if the V2X service identifier to PC5 QoS parameters						

- GBR resource type, if the V2X service identifier to PC5 QoS parameters mapping rule includes the guaranteed flow bit rate field; and

- non-GBR resource type, if the V2X service 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 V2X communication over PC5 signalling procedures.

Guaranteed flow						
	flow bit rate field indicates guaranteed flow bit rate for both sending					
	nd 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.					
	anteed 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					
00001000	value is incremented in multiples of 4 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					
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					
0 0 0 1 1 0 0 1 value is incremented in multiples of 256 Pbps						
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						

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						
The maximum flow bit rate field indicates maximum flow bit rate for both sending and						
	contains one octet indicating the unit of the maximum flow bit rate					
Ionowed by two	o octets containing the value of the maximum flow bit rate.					
I Init of the may	kimum flow bit rate:					
Bits	and now bit rate.					
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					
00000110	value is incremented in multiples of 1 Mbps					
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					
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					
00011001	value is incremented in multiples of 256 Pbps					
	hall be interpreted as multiples of 256 Pbps in this version of the					
protocol.						
Volue of the m	avimum flow hit rate is hinany added value of the mavimum flow hit rate					
	aximum 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: 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 00000101 value is incremented in multiples of 256 Kbps 00000110 value is incremented in multiples of 1 Mbps value is incremented in multiples of 4 Mbps 00000111 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 00010000 value is incremented in multiples of 1 Tbps value is incremented in multiples of 4 Tbps 00010001 00010010 value is incremented in multiples of 16 Tbps value is incremented in multiples of 64 Tbps 00010011 value is incremented in multiples of 256 Tbps 00010100 00010101 value is incremented in multiples of 1 Pbps value is incremented in multiples of 4 Pbps 00010110 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 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 The range field indicates a binary encoded value of the range in meters. If the length of V2X service identifier to PC5 QoS parameters mapping rule contents field indicates a length bigger than indicated in figure 5.3.1.46, receiving entity shall ignore any superfluous octets located at the end of the V2X service identifier to PC5 QoS parameters mapping rule contents.

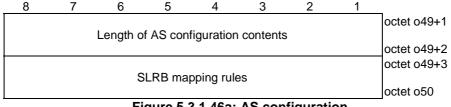


Figure 5.3.1.46a: AS configuration

Table 5.3.1.46a: AS configuration

SLRB mapping rules:

The SLRB mapping rules field is coded according to figure 5.3.1.47 and table 5.3.1.47.

If the length of AS configuration contents field indicates a length bigger than indicated in figure 5.3.1.46a, receiving entity shall ignore any superfluous octets located at the end of the AS configuration contents.

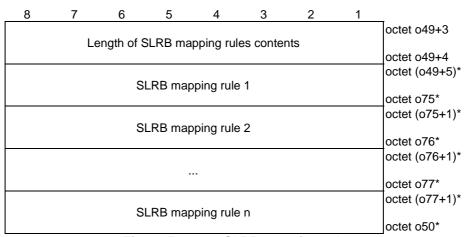


Figure 5.3.1.47: SLRB mapping rules

Table 5.3.1.47: SLRB mapping rules

SLRB mapping rule: The SLRB mapping rule field is coded according to figure 5.3.1.48 and table 5.3.1.48.

8	7	6	5	4	3	2	1	
	_							octet o75+1
	L	ength of	SLRB ma	apping ru	le conten	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 5.3.1.48: SLRB mapping rule

Table 5.3.1.48: SLRB mapping rule

PC5 QoS profile: The PC5 QoS profile field is coded according to figure 5.3.1.49 and table 5.3.1.49. SLRB SLRB is defined as *SL-PreconfigurationNR* in clause 9.3 of 3GPP TS 38.331 [12]. If the length of SLRB mapping rule contents field indicates a length bigger than indicated in figure 5.3.1.48, 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	_
	octet o75+3							
		Length of	100 QC		contents			octet o75+4
GFBRI	MFBRI	PLAMB RI	RI	PLOI	AWI	MDBVI	0 Spare	octet o73+5
		T	P	QI			Opure	octet o75+6
		Gua	aranteed	flow bit r	ate			octet (075+7)*
								octet (075+9)*
		Ма	aximum f	low bit ra	te			octet o97* (see NOTE)
								octet (097+2)*
-								octet o98* (see
		Per-link a	ggregate	e maximu	m bit rate	;		NOTE)
								octet (098+2)*
			Rai	nge				octet o99* (see NOTE)
								octet (099+1)*
0	0	0	0	0	Р	riority lev	el	octet o100*
Spare	Spare	Spare	Spare	Spare				(see NOTE) octet o101*
	(see NOTE)							
	octet (o101+1)*							
	octet o102*							
	(see NOTE)							
	octet (0102+1)*							
								= octet o78*

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

Figure 5.3.1.49:PC5 QoS profile

Table 5.3.1.49:PC5 QoS profile

Guaranteed flow bit rate indicator (GFBRI): 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): 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): 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): 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): 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): The AWI bit indicates presence of averaging window field. Bit 3 0 Averaging window field is absent Averaging window field is present 1 Maximum data burst volume indicator (MDBVI): 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

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PQI:	
Bits	
87654321	
00000000	Reserved
00000001	
to Spare	
00010100	
00010101	PQI 21
00010110	PQI 22
00010111	PQI 23
00011000	
to Spare	
00110110	
00110111	PQI 55
00111000	PQI 56
00111001	PQI 57
00111010	PQI 58
00111011	PQI 59
00111100	
to Spare	
01011001	
	PQI 90
01011011	PQI 91
01011100	
to Spare	
01111111	
10000000	
to Operator-	specific PQIs
1111110	
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 23.287 [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 V2X communication over PC5 signalling procedures.

Guaranteed flow bit rate:							
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.							
	anteed 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						
0 0 0 0 0 1 0 1 0 0 0 0 0 1 1 0	value is incremented in multiples of 256 Kbps						
00000110	value is incremented in multiples of 1 Mbps						
00001000	value is incremented in multiples of 4 Mbps value is incremented in multiples of 16 Mbps						
00001000							
00001010	value is incremented in multiples of 64 Mbps value is incremented in multiples of 256 Mbps						
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						
00011001	value is incremented in multiples of 256 Pbps						
Other values sha	all 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							

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 b							
	ow 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.							
Iollowed by two	ociers containing the value of the maximum now bit rate.						
Linit of the maxi	mum flow bit rate:						
Bits	main now bit rate.						
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						
00000110	value is incremented in multiples of 1 Mbps						
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						
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						
00011001	value is incremented in multiples of 256 Pbps						
	all be interpreted as multiples of 256 Pbps in this version of the						
protocol.							
	ximum 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: 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 00000101 value is incremented in multiples of 256 Kbps 00000110 value is incremented in multiples of 1 Mbps 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 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 00011001 value is incremented in multiples of 256 Pbps 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: The range field indicates a binary encoded value of the range in meters. Priority level: 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 0 1 1 PPPP value 4 100 PPPP value 5 101 PPPP value 6 110 PPPP value 7 111 PPPP value 8 Averaging window: The averaging window field indicates a binary representation of the averaging window for both sending and receiving in milliseconds. Maximum data burst volume: The maximum data burst volume field indicates a binary representation of the maximum data burst volume for both sending and receiving in octets.

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If the length of PC5 QoS profile contents field indicates a length bigger than indicated in figure 5.3.1.49, receiving entity shall ignore any superfluous octets located at the end of the PC5 QoS profile contents.

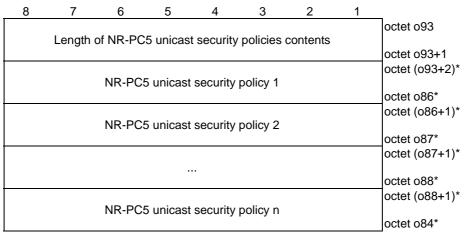


Figure 5.3.1.50: NR-PC5 unicast security policies

Table 5.3.1.50: NR-PC5 unicast security policies

NR-PC5 unicast security policy: The NR-PC5 unicast security policy field is coded according to figure 5.3.1.51 and table 5.3.1.51.

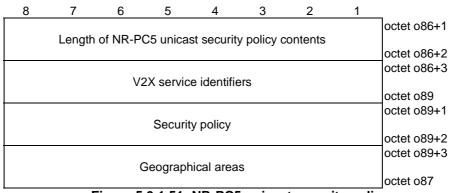


Figure 5.3.1.51: NR-PC5 unicast security policy

Table 5.3.1.51: NR-PC5 unicast security policy

V2X service identifiers: The V2X service identifiers field is coded according to figure 5.3.1.14 and table 5.3.1.14. Security policy: The security policy field is coded according to figure 5.3.1.52 and table 5.3.1.52 Geographical areas: The geographical areas field is coded according to figure 5.3.1.18 and table 5.3.1.18. If the length of NR-PC5 unicast security policy contents field indicates a length bigger than indicated in figure 5.3.1.51, 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	Signallin	g cipherir	ng policy	0	Sign	alling inte	grity	octet o89+1
spare				spare	pro	tection po	licy	
0	User	plane ciph	nering	0	User	plane inte	egrity	octet o89+2
spare		policy		spare	pro	tection po	licy	
			Figure 5	5.3.1.52:	Securit	y policy		

ETSI

Bit	S	C .	egrity protection policy (octet o89+1, bit 1 to 3):				
3	2	1					
0	0	0	Signalling integrity protection not needed				
0		1	Signalling integrity protection preferred				
0	1	0	Signalling integrity protection required				
-	1	1	Signaling integrity protection required				
0	-	-					
		Spare					
1	1	0					
1	1	1	Reserved				
			vives a signalling integrity protection policy value that the UE does not				
un	ders	stand, tl	he UE shall interpret the value as 010 "Signalling integrity protection				
rec	luire	ed".					
		ling cipl	hering policy (octet o89+1, bit 5 to 7):				
Bit							
7	6	5					
0	0	0	Signalling ciphering not needed				
0	0	-	Signalling ciphering preferred				
0	1	0	Signalling ciphering required				
0	1	1					
U	•	-					
		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 a	nd 8 of	octet o89+1 are spare and shall be coded as zero.				
Us Bit		lane int	tegrity protection policy (octet o89+2, bit 1 to 3):				
	2	1					
0	0	0	User plane integrity protection not needed				
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				
un		stand, th	vives a user plane integrity protection policy value that the UE does not the UE shall interpret the value as 010 "User plane integrity protection				
Us Bit		lane cip	ohering policy (octet o89+2, bit 5 to 7):				
7	6	5					
0	0	0	User plane ciphering not needed				
		1	User plane ciphering preferred				
0	0						
0	1	0	User plane ciphering required				
0	1	1					
	to	Spare					
1	1	0					
1	1	1	Reserved				
			vives a user plane ciphering policy value that the UE does not understand, nterpret the value as 010 "User plane ciphering required".				
Bit	4 a	nd 8 of	octet o89+2 are spare and shall be coded as zero.				

Table 5.3.1.52: Security policy

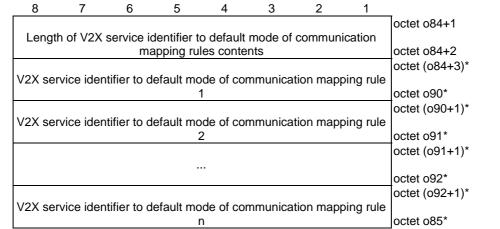


Figure 5.3.1.53: V2X service identifier to default mode of communication mapping rules

Table 5.3.1.53: V2X service identifier to default mode of communication mapping rules

V2X service identifier to default mode of communication mapping rule: The V2X service identifier to default mode of communication mapping rule field is coded according to figure 5.3.1.54 and table 5.3.1.54.

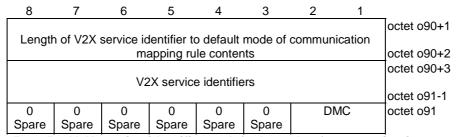
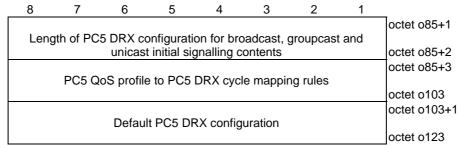


Figure 5.3.1.54: V2X service identifier to default mode of communication mapping rule

Table 5.3.1.54: V2X service identifier to default mode of communication mapping rule

V2X service identifiers: The V2X service identifiers field is coded according to figure 5.3.1.14 and table 5.3.1.14. Default mode of communication (DMC): The DMC field indicates the default mode of communication. Bits 21 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 V2X service identifier to default mode of communication mapping rule. If the length of V2X service identifier to default mode of communication mapping rule contents field indicates a length bigger than indicated in figure 5.3.1.54, receiving entity shall ignore any superfluous octets located at the end of the V2X service identifier to default mode of communication mapping rule contents.



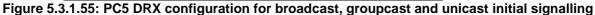


Table 5.3.1.55: PC5 DRX configuration for broadcast, groupcast and unicast initial signalling

PC5 QoS profile to PC5 DRX cycle mapping rules: The PC5 QoS profile to PC5 DRX cycle mapping rules field is coded according to figure 5.3.1.56 and table 5.3.1.56.

Default PC5 DRX configuration: The default PC5 DRX configuration field is coded according to figure 5.3.1.58 and table 5.3.1.58.

If the length of PC5 DRX configuration for broadcast, groupcast and unicast initial signalling contents field indicates a length bigger than indicated in figure 5.3.1.55, receiving entity shall ignore any superfluous octets located at the end of the PC5 DRX configuration for broadcast, groupcast contents and unicast initial signalling.

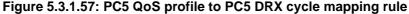
8	7	6	5	4	3	2	1	
1		0						octet o85+3
Length		los profil	e to PC5	DRX CYC	le mappir	ng rules c	contents	octet o85+4
						a mula 1		octet (085+5)*
	PU3 Q	os prome			e mappin	g rule 1		octet o124*
		0						octet (0124+1)*
	PC5 Q	os profile	e to PC5 L	JRX CYCI	e mappin	g rule 2		octet o125*
								octet (0125+1)*
			••					octet o126*
								octet (0126+1)*
	PC5 Q	oS profile	e to PC5 L	ORX cycl	e mappin	g rule n		octet o123*

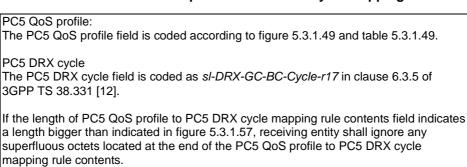
Figure 5.3.1.56: PC5 QoS profile to PC5 DRX cycle mapping rules

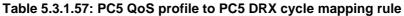
Table 5.3.1.56: PC5 QoS profile to PC5 DRX cycle mapping rules

PC5 QoS profile to PC5 DRX cycle mapping rule: The PC5 QoS profile to PC5 DRX cycle mapping rule field is coded according to figure 5.3.1.57 and table 5.3.1.57.

8 7	6	5	4	3	2	1	
Longth of DC		ile te DCE				ontonto	octet o124+1
Length of PC	5 QOS pron	lie to PC5	DRX Cyc	cie mappi	ng rule c	ontents	octet o124+2
		PC5 Qo	S profile				octet o124+3
		FC3 Q0	S prome				octet o127
			V avala				octet oo127+1
		PC5 DR					octet o125







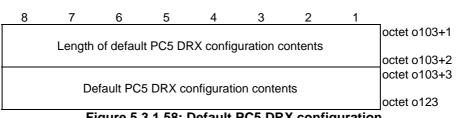


Figure 5.3.1.58: Default PC5 DRX configuration

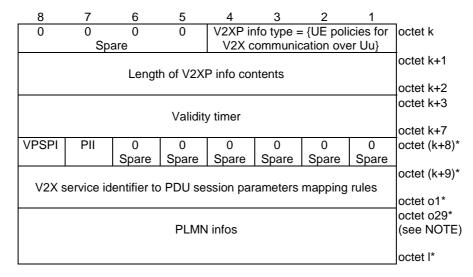
Table 5.3.1.58: Default PC5 DRX configuration

Default PC5 DRX configuration contents: The default PC5 DRX configuration field is coded as *sl-DefaultDRX-GC-BC-r17* in clause 6.3.5 of 3GPP TS 38.331 [12].

5.4 Encoding of UE policies for V2X communication over Uu

5.4.1 General

The UE policies for V2X communication over Uu are coded as shown in figures 5.4.1.1 and table 5.4.1.1.



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

Figure 5.4.1.1: V2XP Info = {UE policies for V2X communication over Uu}

Table 5.4.1.1: V2XP Info = {UE policies for V2X communication over Uu}

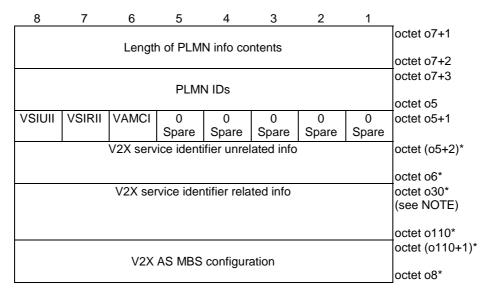
	V2XP info type (bit 1 to 4 of octet k) shall be set to "0010" (UE policies for V2X communication over Uu)							
Length of contents.	Length of V2XP info contents (octets k+1 to k+2) indicates the length of V2XP info contents.							
The validi communio	/alidity timer The validity timer field provides the expiration time of validity of the UE policies for V2X communication over Uu. The validity timer field is a binary coded representation of a JTC time, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).							
The VPSI paramete Bit	/2X service identifier to PDU session parameters mapping rules indicator (VPSPI) The VPSPI bit indicates presence of the V2X service identifier to PDU session parameters mapping rules field. Bit							
								eld is absent eld is present
PLMN info The PII bi Bit 7				e PLMN iı	nfos field			
		eld is abse eld is pres						
V2X servi The V2X according	service i	dentifier t	o PDU s	ession pa	arameters	pping rule s mapping	es g rules	field is coded
	N infos fi							e 5.4.1.2 and nmunication over
	.1.1, rec	eiving ent						indicated in Ited at the end of
8	7	6	5	4	3	2	1	
-	-	-		N infos co			•	octet o29
			PLMN	info 1				

Length of PLMN infos contents	
	octet o29+1
	octet o29+2
PLMN info 1	
	octet o7
	octet (07+1)*
PLMN info 2	
	octet o8*
	octet (08+1)*
	octet o9*
	octet (o9+1)*
PLMN info n	
	octet I*
Figure E 4 4 2. DI MNI infee	

Figure 5.4.1.2: PLMN infos

Table 5.4.1.2: PLMN infos

PLMN info	
The PLMN info field is coded according to figure 5.4.1.3 and table 5.4.1.3.	



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

Figure 5.4.1.3: PLMN info

Table 5.4.1.3: PLMN info

PLMN IDs
The PLMN IDs field is coded according to figure 5.4.1.4 and table 5.4.1.4.
/2X service identifier unrelated info indicator (VSIUII) The VSIUII bit indicates presence of the V2X service identifier unrelated info field. Bit
 V2X service identifier unrelated info field is absent V2X service identifier unrelated info field is present
/2X service identifier related info indicator (VSIRII) The VSIRII bit indicates presence of the V2X service identifier related info field. Bit
 V2X service identifier related info field is absent V2X service identifier related info field is present
/2X AS MBS configuration indicator (VAMCI) The VAMCI bit indicates presence of the V2X AS MBS configuration field. Bit
V2X AS MBS configuration field is absent V2X AS MBS configuration field is present
/2X service identifier unrelated info The V2X service identifier unrelated info field is coded according to figure 5.4.1.6 and able 5.4.1.6, and contains information for V2X services not identified by V2X service dentifiers, applicable in a PLMN indicated in the PLMN IDs field.
/2X service identifier related info The V2X service identifier related info field is coded according to figure 5.4.1.9 and able 5.4.1.9, and contains information for V2X services identified by V2X service dentifiers, applicable in a PLMN indicated in the PLMN IDs field.
/2X AS MBS configuration The V2X AS MBS configuration field is coded according to figure 5.4.1.3A and able 5.4.1.3A.
the length of PLMN info contents field indicates a length bigger than indicated in gure 5.4.1.3, receiving entity shall ignore any superfluous octets located at the end of the PLMN info contents.

8	7	6	5	4	3	2	1			
	Length of V2X AS MBS configuration contents									
0	NIDI	FSAI	FII		MSAI		0	octet o110+2 octet o110+3		
Spare							Spare			
			-					octet o110+4		
			TM	GI				octet o110+9		
								octet		
								(0110+10)*		
			NI	D				aatat		
								octet (o110+15)*		
								octet		
			MBS serv	ice area	1			(0110+16)*		
								octet o130*		
								octet (0130+1)*		
		Fre	equency i	informati	ion			octet o131*		
	FSA IDs information									
		•						octet o132*		
								octet o132+1		
		V2X AS N	MBS SDP	body in	formatior	1				
<u> </u>								octet o8		

Figure 5.4.1.3A: V2X AS MBS configuration

Table 5.4.1.3A: V2X AS MBS configuration

MBS service area indicator (MSAI)
The MSAI indicates the format of the MBS service area
Bit 4 3 2
0 0 MBS service area not included
0 0 1 MBS service area included as MBS TAI list
0 1 0 MBS service area included as NR CGI list 0 1 1 MBS service area included as MBS TAI list and NR CGI list
1 0 0 MBS service area included as geographical area
All other values are reserved.
Frequency information indicator (FII)
The FII bit indicates presence of the frequency information field
Bit 5
0 Frequency information field is absent
1 Frequency information field is present
FSA IDs information indicator (FSAI)
The FSAI bit indicates presence of the FSA IDs information field Bit
6
 FSA IDs information field is absent FSA IDs information field is present
NID indicator (NIDI) The NIDI bit indicates presence of the NID field
Bit
7 0 NID field is absent
1 NID field is present
TMGI
The TMGI field contains the TMGI of the MBS service and is coded as the TMGI field
defined in clause 10.5.6.13 of 3GPP TS 24.008 [Refxx] starting from octet 3.
NID
The NID field contains the NID of an SNPN, and is coded as the NID field defined in
clause 9.2.7 of 3GPP TS 24.502 [Refyy] starting from octet 3.
MBS service area
The MBS service area field contains the information that identifies the service area of the MBS service. When the MSAI field is set to "MBS service area included as MBS
TAI list", "MBS service area included as NR CGI list" or "MBS service area included as
MBS TAI list and NR CGI list", the MBS service area field is coded as the MBS service
area field defined in 3GPP TS 24.501 [4]. When the MSAI field is set to "MBS service area included as geographical area", the MBS service area field is coded as the
geographical area field according to figure 5.4.1.15 and table 5.4.1.15.
Frequency information
The frequency information field contains the information of the MBS frequency and is
coded according to figure 5.4.1.8C and table 5.4.1.8C.
FSA IDs information
The FSA IDs information field contains the list of the MBS frequency selection area IDs
(MBS FSA IDs) and is coded according to figure 5.4.1.8D and table 5.4.1.8D.
V2X AS MBS SDP body information
The V2X AS MBS SDP body information field contains the information of the V2X AS MBS configuration SDP and is coded according to figure 5.4.1.3B and table 5.4.1.3B.

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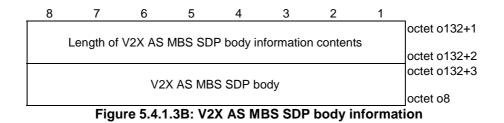


Table 5.4.1.3B: V2X AS MBS SDP body information

V2X AS MBS SDP body The V2X AS MBS SDP body field contains the encoding of the V2X AS MBS configuration SDP as defined in 3GPP TS 24.587 [3].

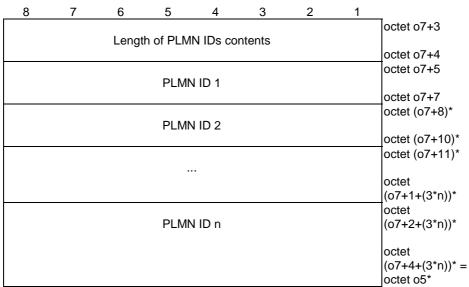


Figure 5.4.1.4: PLMN IDs

Table 5.4.1.4: PLMN IDs

PLMN ID The PLMN ID field is coded according to figure 5.4.1.5 and table 5.4.1.5.

8	7	6	5	4	3	2	1	
	MCC	digit 2			MCC	digit 1		octet o7+8
	MNC	digit 3			MCC	digit 3		octet o7+9
	MNC	digit 2			MNC	digit 1		octet o7+10

Figure 5.4.1.5: PLMN ID

Table 5.4.1.5: PLMN ID

Mobile country code (MCC) The MCC field is coded as in ITU-T Recommendation E.212 [6], annex A. Mobile network code (MNC) 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".

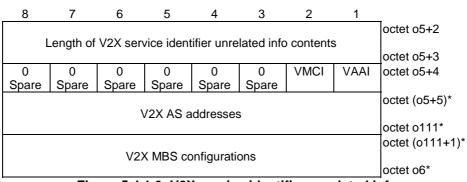


Figure 5.4.1.6: V2X service identifier unrelated info

Table 5.4.1.6: V2X service identifier unrelated info

V2X AS address indicator (VAAI)
The VAAI bit indicates presence of the V2X AS address field.
Bit
1
0 V2X AS address field is absent
1 V2X AS address field is present
V2X MBS configurations indicator (VMCI)
The VMCI bit indicates presence of the V2X MBS configurations field.
Bit
2 0 V2X MBS configurations field is absent
1 V2X MBS configurations field is present
V2X AS addresses
The V2X AS addresses field is coded according to figure 5.4.1.7 and table 5.4.1.7.
The VZA AS addresses field is coded according to figure 3.4.1.7 and table 3.4.1.7.
V2X MPS configurations
V2X MBS configurations
The V2X MBS configurations field is coded according to figure 5.4.1.8A and
table 5.4.1.8A and indicates V2X MBS configurations for receiving V2X communication
over Uu via MBS.
If the length of V2X service identifier unrelated info contents field indicates a length
bigger than indicated in figure 5.4.1.6, receiving entity shall ignore any superfluous
octets located at the end of the V2X service identifier unrelated info contents.

V2X AS address

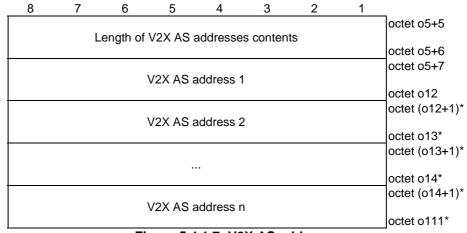


Figure 5.4.1.7: V2X AS addresses

Table 5.4.1.7: V2X AS addresses

The V2X AS address field is coded according to figure 5.4.1.8 and table 5.4.1.8.

	_		_					
8	7	6	5	4	3	2	1	loctet o12+1
	octet o12+2							
I4AI	I6AI	FI	UPUTI	TPBTI	UPDTI	GAI	0	octet o12+3
							Spare	
			IDv/ c	address				octet (o12+4)*
			IF V4 c	audress				octet (o12+7)*
								octet o31*
			IPv6 a	address				(see NOTE)
								octet (031+15)*
			FC	DN				octet o32* (see NOTE)
			Γ.					(See NOTE)
								octet o15*
								octet o33*
	(see NOTE)							
								$a_{0} = (a_{0} + a_{1})^{*}$
								octet (o33+1)* octet o34*
	(see NOTE)							
		- 1 -			transport			, ,
								octet (o34+1)*
			ort for do					octet o35*
	(see NOTE)							
								octet (o35+1)*
	octet o36*							
	(see NOTE)							
								octet o13*

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

Figure 5.4.1.8: V2X AS address

Table 5.4.1.8: V2X AS address

IPv4 Address Indicator (I4AI) The I4AI bit indicates presence of the IPv4 address field. Bit 8 0 IPv4 address field is absent IPv4 address field is present 1 IPv6 Address Indicator (I6AI) The I6AI bit indicates presence of the IPv6 address field. Bit 0 IPv6 address field is absent 1 IPv6 address field is present FQDN Indicator (FI) The FI bit indicates presence of the FQDN field. Bit 6 0 FQDN field is absent 1 FQDN field is present UDP Port for Uplink Transport Indicator (UPUTI) The UPUI bit indicates presence of the UDP port for uplink transport field. Bit 5 0 UDP port for uplink transport field is absent 1 UDP port for uplink transport field is present TCP Port for Bidirectional Transport Indicator (TPBTI) The TPBTI bit indicates presence of the TCP port for bidirectional transport field. Bit 0 TCP port for bidirectional transport field is absent TCP port for bidirectional transport field is present 1 UDP Port for Downlink Transport Indicator (UPUTI) The UPUTI bit indicates presence of the UDP port for downlink transport field. Bit 3 UDP port for downlink transport field is absent 0 UDP port for downlink transport field is present 1 Geographical Area Indicator (GAI) The GAI bit indicates presence of the geographical area field. Bit 2 0 geographical area field is absent geographical area field is present 1 IPv4 address (NOTE 2) The IPv4 address field contains an IPv4 address of a V2X application server. IPv6 address (NOTE 2) The IPv6 address field contains an IPv6 address of a V2X application server. FQDN (NOTE 2) The FQDN field contains an FQDN of a V2X application server. The first octet of the FQDN field indicates length of the FQDN and the remaining octets of the FQDN field contain the FQDN. UDP port for uplink transport (NOTE 1) The UDP port for uplink transport field indicates binary coded UDP port to be used for uplink transport. TCP port for bidirectional transport (NOTE 1) The TCP port for bidirectional transport field indicates binary coded TCP port to be used for bidirectional transport.

UDP port for downlink transport (NOTE 1) The UDP port for downlink transport field indicates binary coded UDP port to be used for downlink transport.

Geographical area

The Geographical area field is coded according to figure 5.4.1.15 and table 5.4.1.15, and contains a list of points of a polygon.

If the length of V2X AS address contents field indicates a length bigger than indicated in figure 5.4.1.8, receiving entity shall ignore any superfluous octets located at the end of the V2X AS address contents.

NOTE 1:	The UDP port for uplink transport field, the TCP port for bidirectional transport field, and the UDP port for downlink transport field are absent when the V2X AS address is present in the V2X service identifier unrelated
NOTE 2:	info. One of the IPv4 address field, the IPv6 address field or the FQDN field is present.

8	7	6	5	4	3	2	1			
								octet o111+1		
	Length of V2X MBS configurations contents									
								octet o111+2		
								octet o111+3		
		V2)	X MBS co	onfiguration	on 1					
								octet o115		
								octet (0115+1)*		
	V2X MBS configuration 2									
				0				octet (0116)*		
								octet (0116+1)*		
								· · · · · · · · · · · · · · · · · · ·		
								octet (0117)*		
								octet (0117+1)*		
		\/2	X MBS co	onfiguratio	on n					
		V 27		mgarau				octet o6*		

Figure 5.4.1.8A: V2X MBS configurations

Table 5.4.1.8A: V2X MBS configurations

V2X MBS configuration The V2X MBS configuration field is coded according to figure 5.4.1.8B and table 5.4.1.8B.

8	7	6	5	4	3	2	1			
	Length of V2X MBS configuration contents									
0 Spare	NIDI	FSAI	FII		MSAI		MST	octet o111+5		
	TMGI									
								octet o111+11		
	NID									
								octet (o111+17)*		
			MBS serv	vice area	I			octet (o111+18)*		
								octet o119*		
		Fr	equency	informati	on			octet (0119+1)*		
			, ,					octet o128*		
		F	SA IDs ir	formatio	'n			octet (0128+1)*		
								octet o129*		
	V2X	MBS con	figuration	SDP bo	dy inform	ation		octet o129+1		
			-		-			octet o115		

Figure 5.4.1.8B: V2X MBS configuration

Table 5.4.1.8B: V2X MBS configuration

MBS service type (MST) The MST indicates the type of the MBS service Bit 1 Broadcast MBS service 0 Multicast MBS service 1 MBS service area indicator (MSAI) The MSAI indicates the format of the MBS service area Bit 43 0 0 0 MBS service area not included 0 0 1 MBS service area included as MBS TAI list 0 1 0 MBS service area included as NR CGI list 1 1 MBS service area included as MBS TAI list and NR CGI list 0 1 0 0 MBS service area included as geographical area All other values are reserved. Frequency information indicator (FII) The FII bit indicates presence of the frequency information field Bit 5 0 Frequency information field is absent 1 Frequency information field is present FSA IDs information indicator (FSAI) The FSAI bit indicates presence of the FSA IDs information field Bit 6 0 FSA IDs information field is absent 1 FSA IDs information field is present NID indicator (NIDI) The NIDI bit indicates presence of the NID field Bit 7 0 NID field is absent NID field is present 1 TMGI The TMGI field contains the TMGI of the MBS service and is coded as the TMGI field defined in clause 10.5.6.13 of 3GPP TS 24.008 [Refxx] starting from octet 3. NID The NID field contains the NID of an SNPN, and is coded as the NID field defined in clause 9.2.7 of 3GPP TS 24.502 [Refyy] starting from octet 3. MBS service area The MBS service area field contains the information that identifies the service area of the MBS service. When the MSAI field is set to "MBS service area included as MBS TAI list", "MBS service area included as NR CGI list" or "MBS service area included as MBS TAI list and NR CGI list", the MBS service area field is coded as the MBS service area field defined in 3GPP TS 24.501 [4]. When the MSAI field is set to "MBS service area included as geographical area", the MBS service area field is coded as the geographical area field according to figure 5.4.1.15 and table 5.4.1.15. Frequency information The frequency information field contains the information of the MBS frequency and is coded according to figure 5.4.1.8C and table 5.4.1.8C. FSA IDs information The FSA IDs information field contains the list of the MBS frequency selection area IDs (MBS FSA IDs) and is coded according to figure 5.4.1.8D and table 5.4.1.8D. V2X MBS configuration SDP body information The V2X MBS configuration SDP body information field contains the information of the V2X MBS configuration SDP and is coded according to figure 5.4.1.8E and table 5.4.1.8E.

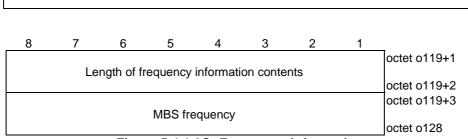
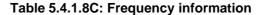


Figure 5.4.1.8C: Frequency information



MBS frequency
The MBS frequency is coded according to the NR-ARFCN value defined in
The MDS frequency is coded according to the MC-ART CM value defined in
3GPP TS 38.101-1 [14] and 3GPP TS 38.101-2 [15].
13 30.101-1 [14] and 30FF 13 30.101-2 [13].

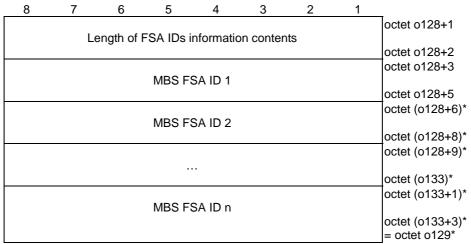


Figure 5.4.1.8D: FSA IDs information

Table 5.4.1.8D: FSA IDs information

MBS FSA ID The MBS FSA ID field contains the value of the MBS frequency selection area ID (MBS FSA ID) and is coded as defined in 3GPP TS 23.003 [17].

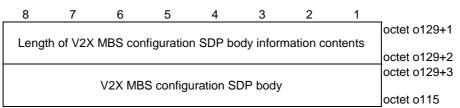
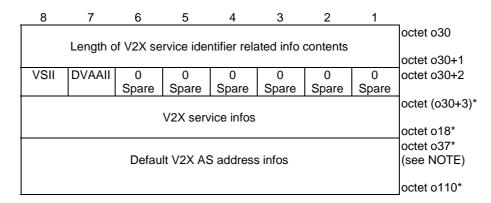


Figure 5.4.1.8E: V2X MBS configuration SDP body information

Table 5.4.1.8E: V2X MBS configuration SDP body information

V2X MBS configuration SDP body The V2X MBS configuration SDP body field contains the encoding of the V2X MBS configuration SDP as defined in 3GPP TS 24.587 [3].



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

Figure 5.4.1.9: V2X service identifier related info



The VSI Bit 8 0 V2X	service in service in	ites pres fos field	is absent		ervice inf	os field.		
The AVS Bit 7 0 Defa	V2X AS ac SII bit indic oult V2X A oult V2X A	cates pre S addres	esence of	the defa	ult V2X A sent	S addres	ss infos	field.
The V2X								able 5.4.1.10 and ess mapping
The defa table 5.4 V2X con If the ler than ind	4.1.13 and nmunication	S addre indicate on over l X service gure 5.4	ss infos fie s default Uu. e identifier 4.1.9, rece	V2X app related iving ent	lication se info conte	erver ado ents field gnore an	dresses indicate y superf	4.1.13 and for the unicast es a length bigger fluous octets
8	7	6	5	4	3	2	1	
	L	ength of	V2X serv	ice infos	contents			octet o30+3 octet o30+4
		,	V2X servi	ce info 1				octet o30+5 octet o20
		,	V2X servi	ce info 2				octet (o20+1)* octet o21* octet (o21+1)*
								octet o22*

Figure 5.4.1.10: V2X service infos

V2X service info n

octet (o22+1)*

octet o18*

	vice info K service	info field	is coded	accordin	ig to figur	e 5.4.1.1	1 and tal	ble 5.4.1.11.
8	7	6	5	4	3	2	1	
Ū		0	0			_	·	octet o20+1
		Length o	f V2X se	rvice info	contents			
								octet o20+2
								octet o20+3
		V2	2X servic	e identifie	ers			
				-	-	-	-	octet o23
VAAI	VMCI	0	0	0	0	0	0	octet o23+1
		Spare	Spare	Spare	Spare	Spare	Spare	1
								octet (o23+2)*
		`	V2X AS a	addresses	5			
								octet o112*
								octet o112+1*
	V2X MBS configurations							
								octet o21*

Table 5.4.1.10: V2X service infos

Figure 5.4.1.11: V2X service info

Table 5.4.1.11: V2X service info

V2X service identifiers
The V2X service identifiers field is coded according to figure 5.4.1.12 and table 5.4.1.12 and indicates a list of V2X service identifier.
V2X AS addresses indicator (VAAI)
V2X AS addresses indicator (VAAI) The AVSII bit indicates presence of the V2X AS addresses field.
Bit
8
 V2X AS addresses field is absent V2X AS addresses field is present
V2X MBS configurations indicator (VMCI)
The VMCI bit indicates presence of the V2X MBS configurations field.
Bit
70 V2X MBS configurations field is absent
1 V2X MBS configurations field is present
V2X AS addresses
The V2X AS addresses field is coded according to figure 5.4.1.7 and table 5.4.1.7 and
indicates V2X application server addresses for V2X services identified by the V2X service identifiers indicated in the V2X service identifiers field.
V2X MBS configurations
The V2X MBS configurations field is coded according to figure 5.4.1.8A and table 5.4.1.8A and indicates V2X MBS configurations for V2X services identified by the
V2X service identifiers indicated in the V2X service identifiers field.
If the length of V2X service info contents field indicates a length bigger than indicated
in figure 5.4.1.11, receiving entity shall ignore any superfluous octets located at the end of the V2X service info contents.

8	7	6	5	4	3	2	1	
								octet o20+3
	Le	ngth of V	2X servic	ce identifi	ers conte	ents		
								octet o20+4
								octet o20+5
		V2	2X service	e identifie	er 1			
								octet o20+8
								octet (o20+9)*
		V2	2X service	e identifie	er 2			
								octet (o20+12)*
								octet (o20+13)*
								octet (o20+n*4)*
								octet
		V2	2X service	e identifie	er n			(o20+1+n*4)*
								octet o23*

Figure 5.4.1.12: V2X service identifiers

Table 5.4.1.12: V2X service identifiers

V2X service identifier The V2X service identifier field contains a binary coded V2X service identifier as specified in ISO TS 17419 ITS-AID AssignedNumbers [5].

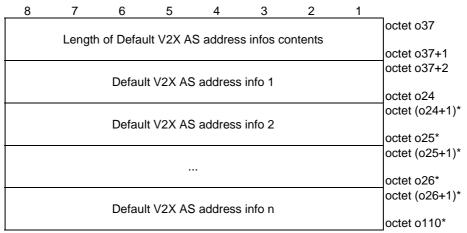
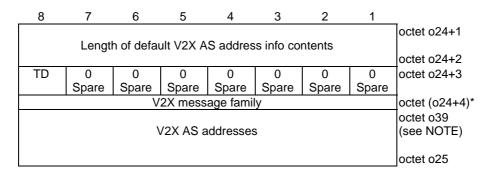


Figure 5.4.1.13: Default V2X AS address infos

Table 5.4.1.13: Default V2X AS address infos

Default V2X AS address info The default V2X AS address info field is coded according to figure 5.4.1.14 and table 5.4.1.14.



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

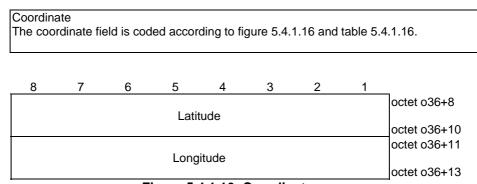
Figure 5.4.1.14: Default V2X AS address info

Table 5.4.1.14: Default V2X AS address info

Type of Data (TD)
The type of data bit indicates type of data.
Bit
8
0 non-IP
1 IP
If the type of data bit is set to "non-IP", then the V2X message family field is present
otherwise the V2X message family field is absent.
V2X message family
Bits
87654321
0 0 0 0 0 0 1 IEEE 1609, see IEEE 1609.3 [8]
0 0 0 0 0 1 0 ISO, see ISO 29281-1 [9]
0 0 0 0 0 1 1 ETSI-ITS, see ETSI EN 302 636-3 [10]
All other values are spare.
V2X AS addresses
The V2X AS addresses field is coded according to figure 5.4.1.7 and table 5.4.1.7 and
indicates V2X application server addresses for type of data identified by the TD bit and
the V2X message family (if the type of data is non-IP).
If the loweth of default VOV AC address info contents field indicates a loweth history them
If the length of default V2X AS address info contents field indicates a length bigger than indicated in figure 5.4.4.14, reacting antity shall impres any superflueue actes leasted
indicated in figure 5.4.1.14, receiving entity shall ignore any superfluous octets located
at the end of the default V2X AS address info contents.

8	7	6	5	4	3	2	1	
			_					octet o36
	L	ength of	Geograp	hical are	a conten	ts		octet o36+1
								octet o36+2
			Coord	inate 1				
								octet o36+7 octet (o36+8)*
			Coord	inate 2				00101 (030+0)
								octet (036+13)
								octet (036+14)
								octet (o36-
								5+6*n)*
			• •					octet (o36-
			Coord	inate n				4+6*n)*
								octet
								(036+1+6*n) *
ļ								= octet o13*

Figure 5.4.1.15: Geographical area





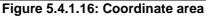


Table 5.4.1.16: Coordinate area

Latitude The latitude field is coded according to clause 6.1 of 3GPP TS 23.032 [7]. Longitude The longitude field is coded according to clause 6.1 of 3GPP TS 23.032 [7].

5 8 7 6 4 3 2 octet k+9 Length of V2X service identifier to PDU session parameters mapping rules contents octet k+10 octet k+11 V2X service identifier to PDU session parameters mapping rule 1 octet o2 octet (o2+1)* V2X service identifier to PDU session parameters mapping rule 2 octet o3* octet (o3+1)* ... octet o4* octet (o4+1)* V2X service identifier to PDU session parameters mapping rule n octet o1*

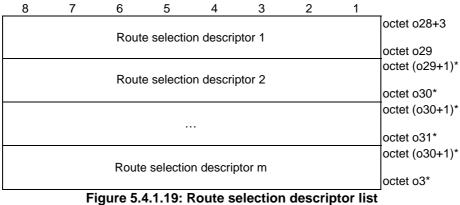
Figure 5.4.1.17: V2X service identifier to PDU session parameters mapping rules

Table 5.4.1.17: V2X service identifier to PDU session parameters mapping rules

V2X service identifier to PDU session parameters mapping rule The V2X service identifier to PDU session parameters mapping rule field is coded according to figure 5.4.1.18 and table 5.4.1.18.

	octet o2+1
Length of V2X service identifier to PDU session parameters mapping	
rule contents	octet o2+2
	octet o2+3
V2X service identifiers	
	octet o28
	octet o28+1
Length of route selection descriptor list	
	octet o28+2
	octet (o28+3)*
Route selection descriptor list	. ,
	octet o3*

Figure 5.4.1.18: V2X service identifier to PDU session parameters mapping rule





8	7	6	5	4	3	2	1	
								octet o28+3
		Length o	f route se	election d	lescriptor			
		-						octet o28+4
	Prece	edence va	alue of ro	ute selec	tion desc	criptor		octet o28+5
								octet o28+6
	Len	gth of rou	te selecti	ion descr	iptor cont	tents		
		-			-			octet o28+7
								octet o28+8
		Route se	lection d	escriptor	contents			
				•				octet o29

Figure 5.4.1.20: Route selection descriptor

Table 5.4.1.18: V2X service identifier to PDU session parameters mapping rule

V2X service identifiers The V2X service identifiers field is coded according to figure 5.4.1.12 and table 5.4.1.12 and indicates a list of V2X service identifier. Route selection descriptor contents (octets o28+8 to o29) The route selection descriptor contents field is of variable size and contains a variable number (at least one) of route selection descriptor components. Each route selection descriptor component shall be encoded as a sequence of a one octet route selection descriptor component type identifier and a route selection descriptor component value field. The route selection descriptor component type identifier shall be transmitted first. Route selection descriptor component type identifier Bits 87654321 00000001 SSC mode type 00000010 S-NSSAI type 00000100 DNN type PDU session type type 00001000 00010000 Transport layer protocol type All other values are spare. If received, they shall be ignored. For "SSC mode type", the route selection descriptor component value field shall be encoded as a one octet SSC mode field. The bits 8 through 4 of the octet shall be spare, and the bits 3 through 1 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]. The "SSC mode type" route selection descriptor component shall not appear more than once in the route selection descriptor. For "S-NSSAI type", the route selection descriptor component value 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]. For "DNN type", the route selection descriptor component value 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 [17]. For "PDU session type type", the route selection descriptor component value field shall be encoded as a one octet PDU session type field. The bits 8 through 4 of the octet shall be spare, and the bits 3 through 1 shall be encoded as the value part of the PDU session type information element defined in clause 9.11.4.11 of 3GPP TS 24.501 [4]. The "PDU session type type" route selection descriptor component shall not appear more than once in the route selection descriptor. For "Transport layer protocol type", the route selection descriptor component value field shall be encoded as: Bits 87654321 00000001 UDP 00000010 TCP All other values are spared. The "Transport layer protocol type" route selection descriptor component appears only when the "PDU session type type" appears and the PDU session type value is set to "IPv4", "IPv6" or "IPv4v6". It shall not appear more than once in the route selection descriptor. If the length of V2X service identifier to PDU session parameters mapping rule contents field indicates a length bigger than indicated in figure 5.4.1.18, receiving entity shall ignore any superfluous octets located at the end of the V2X service identifier to PDU session parameters mapping rule contents.

Annex A (informative): Change history

Change history								
Date	Meeting	TDoc	CR	Rev	Cat	Subject/Comment	New version	
2019-05	CT1#117	C1-193478				Draft skeleton provided in C1-193478 by the rapporteur.	0.0.0	
2019-05	CT1#117					Implementing the following p-CR agreed by CT1: C1-193479	0.1.0	
2019-09	CT1#119					Implementing the following p-CRs agreed by CT1: C1-194553, C1-194847, C1-194849 and C1-194850	0.2.0	
2019-10	CT1#120					Implementing the following p-CRs agreed by CT1: C1-196493	0.3.0	
2019-12	CT#86	CP-193157				Presentation for information at TSG CT	1.0.0	
2019-12	CT#86	CP-193290				A title corrected	1.0.1	
2020-03	CT1#122- e					Implementing the following p-CR agreed by CT1: C1-200652, C1-200933 and C1-200936	1.1.0	
2020-03	CT-87e	CP-200174				Presentation for approval at TSG CT	2.0.0	
2020-03	CT-87e					Version 16.0.0 created after approval	16.0.0	
2020-06	CT-88e	CP-201116	0001	2	В	NR PC5 unicast security policy provisioning	16.1.0	
2020-06	CT-88e	CP-201116	0002	1	F	Clarifications on the V2X policies regarding QoS	16.1.0	
2020-06	CT-88e	CP-201116	0003	1	В	Update to the V2X policies regarding RAN parameters	16.1.0	
2020-06	CT-88e	CP-201116	0004	1	С	Correction of coding of configuration of PC5 RAT selection and Tx profiles	16.1.0	
2020-06	CT-88e	CP-201116	0005	1	F	Correction of coding of configuration of default mode of communication	16.1.0	
2020-06	CT-88e	CP-201116	0006	1	F	Correction of PC5 RAT names	16.1.0	
2020-06	CT-88e	CP-201116	0007	1	F	Correction of coding of PC5 QoS mapping configuration	16.1.0	
2020-06	CT-88e	CP-201116	8000	1	F	Correction in coding of PC5 QoS profile	16.1.0	
2020-06	CT-88e	CP-201116	0009	1	F	Correction of coding of validity timers	16.1.0	
2020-06	CT-88e	CP-201116	0010	1	F	Remove IP address from privacy timer	16.1.0	
2020-09	CT-89e	CP-202248	0013	3	F	Update configuration parameters over Uu to meet stage2 requirements	16.2.0	
2020-09	CT-89e	CP-202158	0014		F	Corrections in V2XP UE policy part	16.2.0	
2020-09	CT-89e	CP-202158	0017		F	Correction of V2XP statement	16.2.0	
2020-09	CT-89e	CP-202158	0018		F	Removal of V2X policy for EPC interworking	16.2.0	
2020-09	CT-89e	CP-202041	0019	2	F	Adding the flag indicating the optional PPPP to PDB mapping rules	16.2.0	
2020-09	CT-89e	CP-202039	0020	3	F	Radio parameters for UE neither served by E-UTRA nor served by NR	16.2.0	
2020-12	CT-90e	CP-203189	0015	1	F	Corrections in UE policies for V2X communication over PC5	16.3.0	
2020-12	CT-90e	CP-203189	0016	1	F	Corrections in UE policies for V2X communication over Uu	16.3.0	
2020-12	CT-90e	CP-203189	0021	1	F	Update RAT selection rule	16.3.0	
2020-12	CT-90e	CP-203189	0022	1	F	V2X service identifier	16.3.0	
2020-12	CT-90e CT-90e	CP-203189 CP-203189	0022	1	F	Some corrections on UE policies for V2X communication	16.3.0	
						over PC5		
2021-03	CT#91e	CP-210108	0024		F	Removal of Tx Profile for NR PC5	16.4.0	
2022-03	CT#95e	CP-220254	0025	1	В	NR-PC5 Tx profiles	17.0.0	
2022-03	CT#95e	CP-220254	0026	-	В	Adding the PC5 DRX configuration for broadcast and groupcast to the UE policies for V2X communication over PC5	17.0.0	
2022-06	CT#96	CP-221216	0027	1	F	Resolving the EN related to defining the PC5 DRX configurations	17.1.0	
2022-06	CT#96	CP-221216	0028	1	F	Resolving the EN related to defining the NR TX Profile	17.1.0	
2022-12	CT#98e	CP-223126		1		Add default Tx profile for initial unicast connection establishment - coding	17.2.0	
2022-12	CT#98e	CP-223126	0031	1	F	Policy configuration of the PC5 DRX parameters for initial signalling of PC5 V2X unicast communication	17.2.0	
2022-12	CT#98e	CP-223126	0032	1	F	Removal of duplicated Table 5.3.1.54	17.2.0	
2022-12	CT#98e CT#101	CP-223120 CP-232195	0032	-	F	Correction on octet numbering in the figure of coordinate	18.0.0	
2024-03	CT#103	CP-240126	0038	4	В	area Encoding of V2X MBS configuration and V2X AS MBS configuration in the policies of V2X in 5GS	18.1.0	
2024-06	CT#104	CP-241199	0040	2	В	Introducing the NR eTx profile for supporting NR PC5 Carrier Aggregation operations - the encoding part	18.2.0	

History

	Document history								
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