**3GPP TSG-CT WG1 Meeting #136-eC1-22xxxx**

**E-Meeting, 12th – 20th May 2022**

|  |
| --- |
| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **24.555** | **CR** | **0001** | **rev** | **3** | **Current version:** | **17.0.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  | ProSeP update |
|  |  |
| ***Source to WG:*** | OPPO, Nokia, Nokia Shanghai Bell |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5G\_ProSe |  | ***Date:*** | 2022-5-5 |
|  |  |  |  |  |
| ***Category:*** | F |  | ***Release:*** | Rel-17 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | In TS 23.304, the PC5 DRX configuration, traffic descriptor mapping rules and privacy timer were added.The corresponding stage 3 coding is needed. |
|  |  |
| ***Summary of change:*** | Add PC5 DRX configuration, traffic descriptor mapping rules and privacy timer. |
|  |  |
| ***Consequences if not approved:*** | Missing stage 2 requirements. |
|  |  |
| ***Clauses affected:*** | 5.3.2, 5.4.2, 5.5.2 and 5.6.2 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Rev 1: Change referred parameter in 38.331 for PC5 DRX cycle. Correct the coding of ProSe identifiers to NR Tx profiles for broadcast and groupcast mapping rules. Add co-signer. |

\* \* \* First Change \* \* \* \*

### 5.3.2 Information elements coding

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| 0 | 0 | 0 | 0 | ProSeP info type = {UE policies for 5G ProSe direct discovery} | octet k |
| Spare |
| Length of ProSeP info contents | octet k+1octet k+2 |
| Validity timer | octet k+3octet k+7 |
| Served by NG-RAN | octet k+8octet o1 |
| Not served by NG-RAN | octet o1+1octet o2 |
| ProSe direct discovery UE ID | octet o2+1octet o2+3 |
| Group member discovery parameters | octet o2+4octet o3 |
| ProSe identifiers | octet o3+1octet o4 |
| ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rules  | octet o4+1octet l |

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

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

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of served by NG-RAN contents | octet k+8octet k+9 |
| Authorization for direct discovery info 1 | octet k+10octet o50 |
| Authorization for direct discovery info 2 | octet o50+1octet o51 |
| … | octet o51+1octet o52 |
| Authorization for direct discovery info n | octet o52+1octet o1 |

Figure 5.3.2.2: Served by NG-RAN

Table 5.3.2.2: Served by NG-RAN

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of authorization for direct discovery info contents | octet o50+1octet o50+2 |
| 0spare | 0spare | 0spare | 0spare | 0spare | Role | Model | DDT | octet o50+3 |
| Authorized PLMN info | octet o50+4octet o51 |

Figure 5.3.2.3: Authorization for direct discovery info

Table 5.3.2.3: Authorization for direct discovery info

|  |
| --- |
| Direct discovery type (DDT) (octet o50+3 bit 1):Bit **1**0 Open1 Restricted |
|  |
| Model (octet o50+3 bit 2):Bit **2**0 A1 B |
|  |
| If Model bit is set to "A", Role (octet o50+3 bit 3):Bit **3**0 Announcing1 Monitoring |
|  |
| If Model bit is set to "B", Role (octet o50+3 bit 3):Bit **3**0 Discoverer1 Discoveree |
|  |
| Authorized PLMN info (octet o50+4 to o51):The authorized PLMN info field is coded according to figure 5.3.2.4 and table 5.3.2.4, or figure 5.3.2.4B and table 5.3.2.4B. |
| If the length of authorization for direct discovery info field is bigger than indicated in figure 5.3.2.3, receiving entity shall ignore any superfluous octets located at the end of the authorization for direct discovery info. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of authorized PLMN info contents | octet o50+4octet o50+5 |
| Authorized PLMN and range 1 | octet (o50+6)\*octet (o50+9)\* |
| Authorized PLMN and range 2 | octet (o50+10)\*octet (o50+13)\* |
| ... | octet (o50+14)\*octet o150\* |
| Authorized PLMN and range n | octet (o150+1)\*octet o51\* |

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

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

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| PLMN ID | octet o50+6octet o50+8 |
| Range | octet o50+9 |

Figure 5.3.2.4A: Authorized PLMN and range

Table 5.3.2.4A: Authorized PLMN and range

|  |
| --- |
| PLMN ID:The PLMN ID field is coded according to figure 5.3.2.5 and table 5.3.2.5. |
|  |
| Range:Bits**8 7 6 5 4 3 2 1**0 0 0 0 0 0 0 1 Short0 0 0 0 0 0 1 0 Medium0 0 0 0 0 0 1 1 LongThe other values are reserved. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of authorized PLMN info contents | octet o50+4octet o50+5 |
| Authorized PLMN 1 | octet (o50+6)\*octet (o50+8)\* |
| Authorized PLMN 2 | octet (o50+9)\*octet (o50+11)\* |
| ... | octet (o50+12)\*octet o150\* |
| Authorized PLMN n | octet (o150+1)\*octet o51\* |

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

Table 5.3.2.4B: Authorized PLMN

|  |
| --- |
| Authorized PLMN:The authorized PLMN field is coded according to figure 5.3.2.5 and table 5.3.2.5. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| MCC digit 2 | MCC digit 1 | octet o50+6 |
| MNC digit 3 | MCC digit 3 | octet o50+7 |
| MNC digit 2 | MNC digit 1 | octet o50+8 |

Figure 5.3.2.5: PLMN ID

Table 5.3.2.5: PLMN ID

|  |
| --- |
| Mobile country code (MCC) (octet o50+5, octet o50+6 bit 1 to 4):The MCC field is coded as in ITU-T Recommendation E.212 [5], annex A. |
|  |
| Mobile network code (MNC) (octet o50+6 bit 5 to 8, octet o50+7):The coding of MNC field is the responsibility of each administration but BCD coding shall be used. The MNC shall consist of 2 or 3 digits. If a network operator decides to use only two digits in the MNC, MNC digit 3 shall be coded as "1111". |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of not served by NG-RAN contents | octet o1+1octet o1+2 |
| 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | PDNNI | octet o1+3 |
| NR radio parameters per geographical area list | octet (o1+4)\*octet o10\* |
| Default PC5 DRX configuration | octet (o10+1)\*octet o2\* |

Figure 5.3.2.6: Not served by NG-RAN

Table 5.3.2.6: Not served by NG-RAN

|  |
| --- |
| 5G ProSe direct discovery when not served by NG-RAN indicator (PDNNI) (octet o1+3 bit 1):The PDNNI bit indicates whether the UE is authorized to perform 5G ProSe direct discovery when not served by NG-RAN.Bit**1**0 Not authorized1 Authorized |
|  |
| NR radio parameters per geographical area list (octet o1+4 to o10):If PDNNI bit is set to "Authorized", the NR radio parameters per geographical area list field is present otherwise the NR radio parameters per geographical area list field is absent. It is coded according to figure 5.3.2.7 and table 5.3.2.7. |
| Default PC5 DRX configuration (octet o10+1 to o2):If PDNNI bit is set to "Authorized", the default PC5 DRX configuration is present otherwise the default PC5 DRX configuration is absent. It is coded according to figure 5.3.2.11a and table 5.3.2.11a. |
|  |
| If the length of not served by NG-RAN contents field is bigger than indicated in figure 5.3.2.6, receiving entity shall ignore any superfluous octets located at the end of the not served by NG-RAN contents. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of radio parameters per geographical area list contents | octet o1+4octet o1+5 |
| Radio parameters per geographical area info 1 | octet (o1+6)\*octet o6\* |
| Radio parameters per geographical area info 2 | octet (o6+1)\*octet o7\* |
| ... | octet (o7+1)\*octet o8\* |
| Radio parameters per geographical area info n | octet (o8+1)\*octet o10\* |

Figure 5.3.2.7: Radio parameters per geographical area list

Table 5.3.2.7: Radio parameters per geographical area list

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of radio parameters per geographical area contents | octet o6+1octet o6+2 |
| Geographical area | octet o6+3octet o9 |
| Radio parameters | octet o9+1octet o7-1 |
| MI | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | octet o7 |

Figure 5.3.2.8: Radio parameters per geographical area info

Table 5.3.2.8: Radio parameters per geographical area info

|  |
| --- |
| Geographical area (octet o6+3 to o9):The geographical area field is coded according to figure 5.3.2.9 and table 5.3.2.9. |
|  |
| Radio parameters (octet o9 to o7-1):The radio parameters field is coded according to figure 5.3.2.11 and table 5.3.2.11, applicable in the geographical area indicated by the geographical area field when not served by NG-RAN. |
|  |
| Managed indicator (MI) (octet o7 bit 8):The managed indicator indicates how the radio parameters indicated in the radio parameters field in the geographical area indicated by the geographical area field are managed.Bit**8**0 Non-operator managed1 Operator managed |
|  |
| If the length of radio parameters per geographical area contents field is bigger than indicated in figure 5.3.2.8, receiving entity shall ignore any superfluous octets located at the end of the radio parameters per geographical area contents. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of geographical area contents | octet o6+3octet o6+4 |
| Coordinate 1 | octet (o6+5)\*octet (o6+10)\* |
| Coordinate 2 | octet (o6+11)\*octet (o6+16)\* |
| ... | octet (o6+17)\*octet (o6-2+6\*n)\* |
| Coordinate n | octet (o6-1+6\*n)\*octet (o6+4+6\*n)\* = octet o9\* |

Figure 5.3.2.9: Geographical area

Table 5.3.2.9: Geographical area

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Latitude | octet o6+11octet o6+13 |
| Longitude | octet o6+14octet o6+17 |

Figure 5.3.2.10: Coordinate area

Table 5.3.2.10: Coordinate area

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of radio parameters contents | octet o9+1octet o9+2 |
| Radio parameters contents | octet o9+3octet o7-1 |

Figure 5.3.2.11: Radio parameters

Table 5.3.2.11: Radio parameters

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of default PC5 DRX configuration contents | octet o10+1octet o10+2 |
| Default PC5 DRX configuration contents | octet o10+3octet o2 |

Figure 5.3.2.11a: Default PC5 DRX configuration

Table 5.3.2.11a: 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 [7]. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of groupcast parameters contents | octet o2+4octet o2+5 |
| Application layer group info 1 | octet (o2+6)\*octet o51\* |
| Application layer group info 2 | octet (o51+1)\*octet o52\* |
| … | octet (o52+1)\*octet o53\* |
| Application layer group info n | octet (o53+1)\*octet o3\* |

Figure 5.3.2.12: Groupcast parameters

Table 5.3.2.12: Groupcast parameters

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of application layer group info contents | octet o51+1octet o51+2 |
| Application layer group identifier | octet o51+3octet o151 |
| ProSe layer-2 group identifier | octet o151+1octet o151+3 |
| User info ID | octet o151+4octet (o151+9) = octet o52 |

Figure 5.3.2.13: Application layer group info

Table 5.3.2.13: Application layer group info

|  |
| --- |
| Application layer group identifier (octet o51+3 to o151):The first octet of application layer group identifier field is the length of application group identifier. The value of application group identifier field is a bit string. The format of application group identifier parameter is out of scope of this specification. |
|  |
| ProSe layer-2 group identifier (octet o151+1 to o151+3) |
| The ProSe layer-2 group identifier field is a binary coded layer-2 identifier. |
|  |
| User info ID (octet o151+4 to o52) |
| The value of the User info ID parameter is a 48-bit long bit string. The format of the User info ID parameter is out of scope of this specification. |
| If the length of application layer group info contents field is bigger than indicated in figure 5.3.2.13, receiving entity shall ignore any superfluous octets located at the end of the application layer group info contents. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifiers contents | octet o3+1octet o3+2 |
| ProSe identifier 1 | octet (o3+3)\*octet o31\* |
| ProSe identifier 2 | octet (o31+1)\*octet o32\* |
| ... | octet (o32+1)\*octet o33\* |
| ProSe identifier n | octet (o33+1)\*octet o34\* = octet o4\* |

Figure 5.3.2.14: ProSe identifiers

Table 5.3.2.14: ProSe identifiers

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rules contents | octet o4+1octet o4+2 |
| ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rule 1 | octet (o4+3)\*octet o54\* |
| ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rule 2 | octet (o54+1)\*octet o55\* |
| ... | octet (o55+1)\*octet o56\* |
| ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rule n | octet (o56+1)\*octet l\* |

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

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

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rule contents | octet o54+1octet o54+2 |
| ProSe identifiers | octet o54+3octet o154 |
| Destination layer-2 ID for initial discovery signalling | octet o154+1octet (o154+3) = octet o55 |

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

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

|  |
| --- |
| ProSe identifiers (octet o54+3 to o154):The ProSe identifiers field is coded according to figure 5.3.2.14 and table 5.3.2.14. |
|  |
| Destination layer-2 ID for initial discovery signalling (octet o154+1 to o55):The destination layer-2 ID for initial discovery signalling field is a binary coded layer-2 identifier. |
|  |
| If the length of ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rule contents field is bigger than indicated in figure 5.3.2.16, receiving entity shall ignore any superfluous octets located at the end of the ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rule contents. |
|  |

\* \* \* Next Change \* \* \* \*

### 5.4.2 Information elements coding

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| 0 | 0 | 0 | 0 | ProSeP info type = {UE policies for 5G ProSe direct communication} | octet k |
| Spare |
| Length of ProSeP info contents | octet k+1octet k+2 |
| Validity timer | octet k+3octet k+7 |
| Served by NG-RAN | octet k+8octet o1 |
| Not served by NG-RAN | octet o1+1octet o2 |
| Privacy config | octet o2+1octet o4 |
| 5G ProSe direct communication in NR-PC5 | octet o4+1octet o5 |
| ProSe application to path preference mapping rules | octet o5+1octet o10 |
| ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rules | octet o10+1octet l |

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

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

|  |
| --- |
| ProSeP info type (bit 1 to 4 of octet k) shall be set to "0010" (UE policies for 5G ProSe direct communication) |
|  |
| Length of ProSeP info contents (octets k+1 to k+2) indicates the length of ProSeP info contents. |
|  |
| Validity timer (octet k+3 to k+7):The validity timer field provides the expiration time of validity of the UE policies for 5G ProSe direct communication. The validity timer field is a binary coded representation of a UTC time, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). |
|  |
| Served by NG-RAN (octet k+8 to o1):The served by NG-RAN field is coded according to figure 5.4.2.2 and table 5.4.2.2, and contains configuration parameters for 5G ProSe direct communication when the UE is served by NG-RAN. |
|  |
| Not served by NG-RAN (octet o1+1 to o2):The not served by NG-RAN field is coded according to figure 5.4.2.5 and table 5.4.2.5, and contains configuration parameters for 5G ProSe direct communication when the UE is not served by NG-RAN. |
|  |
| Privacy config (octet o2+1 to o4):The privacy config field is coded according to figure 5.4.2.11 and table 5.4.2.11, and contains configuration parameters for privacy configuration. |
|  |
| 5G ProSe direct communication in NR-PC5 (octet o4+1 to o5):The 5G ProSe direct communication in NR-PC5 field is coded according to figure 5.4.2.16 and table 5.4.2.16, and contains configuration parameters for 5G ProSe direct communication in NR-PC5. |
|  |
| ProSe application to path preference mapping rules (octet o5+1 to o10):The ProSe application to path preference mapping rules field is coded according to figure 5.4.2.38 and table 5.4.2.38, and contains configuration parameters for ProSe application to path preference mapping rules. |
|  |
| ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rules (octet o10+1 to l):The ProSe identifiers to NR Tx profiles for broadcast and groupcast mapping rules field is coded according to figure 5.4.2.41 and table 5.4.2.41, and contains configuration parameters for ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rules. |
|  |
| If the length of ProSeP info contents field is bigger than indicated in figure 5.4.2.1, receiving entity shall ignore any superfluous octets located at the end of the ProSeP info contents. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of served by NG-RAN contents | octet k+8octet k+9 |
| Authorized PLMN | octet k+10octet o1 |

Figure 5.4.2.2: Served by NG-RAN

Table 5.4.2.2: Served by NG-RAN

|  |
| --- |
| Authorized PLMN (octet k+10 to o1):The authorized PLMN field is coded according to figure 5.4.2.3 and table 5.4.2.3. |
|  |
| If the length of served by NG-RAN contents field is bigger than indicated in figure 5.4.2.2, receiving entity shall ignore any superfluous octets located at the end of the served by NG-RAN contents. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of authorized PLMN contents | octet k+10octet k+11 |
| PLMN ID 1 | octet (k+12)\*octet (k+14)\* |
| PLMN ID 2 | octet (k+15)\*octet (k+17)\* |
| ... | octet (k+18)\*octet (k+8+n\*3)\* |
| PLMN ID n | octet (k+9+n\*3)\*octet (k+11+n\*3)\* = octet o1\* |

Figure 5.4.2.3: Authorized PLMN

Table 5.4.2.3: Authorized PLMN

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

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

Figure 5.4.2.4: PLMN ID

Table 5.4.2.4: PLMN ID

|  |
| --- |
| Mobile country code (MCC) (octet k+15, octet k+16 bit 1 to 4):The MCC field is coded as in ITU-T Recommendation E.212 [5], annex A. |
|  |
| Mobile network code (MNC) (octet k+16 bit 5 to 8, octet k+17):The coding of MNC field is the responsibility of each administration but BCD coding shall be used. The MNC shall consist of 2 or 3 digits. If a network operator decides to use only two digits in the MNC, MNC digit 3 shall be coded as "1111". |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of not served by NG-RAN contents | octet o1+1octet o1+2 |
| 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | PNNI | octet o1+3 |
| NR radio parameters per geographical area list | octet (o1+4)\*octet o16\* |
| PC5 DRX configuration for broadcast and groupcast | octet (o16+1)\*octet o2\* |

Figure 5.4.2.5: Not served by NG-RAN

Table 5.4.2.5: Not served by NG-RAN

|  |
| --- |
| 5G ProSe direct communication when not served by NG-RAN indicator (PNNI) (octet o1+3 bit 1):The PNNI bit indicates whether the UE is authorized to use 5G ProSe direct communication when not served by NG-RAN.Bit**1**0 Not authorized1 Authorized |
| NR radio parameters per geographical area list (octet o1+4 to o16):If PNNI bit is set to "Authorized", the NR radio parameters per geographical area list field is present otherwise the NR radio parameters per geographical area list field is absent. It is coded according to figure 5.4.2.6 and table 5.4.2.6. |
| PC5 DRX configuration for broadcast and groupcast (octet o16+1 to o2):If PNNI bit is set to "Authorized", the PC5 DRX configuration for broadcast and groupcast field is present otherwise the PC5 DRX configuration for broadcast and groupcast field is absent. It is coded according to figure 5.4.2.10a and table 5.4.2.10a. |
|  |
| If the length of not served by NG-RAN contents field is bigger than indicated in figure 5.4.2.5, receiving entity shall ignore any superfluous octets located at the end of the not served by NG-RAN contents. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of radio parameters per geographical area list contents | octet o1+4octet o1+5 |
| Radio parameters per geographical area info 1 | octet (o1+6)\*octet o6\* |
| Radio parameters per geographical area info 2 | octet (o6+1)\*octet o7\* |
| ... | octet (o7+1)\*octet o8\* |
| Radio parameters per geographical area info n | octet (o8+1)\*octet o16\* |

Figure 5.4.2.6: Radio parameters per geographical area list

Table 5.4.2.6: Radio parameters per geographical area list

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of radio parameters per geographical area contents | octet o6+1octet o6+2 |
| Geographical area | octet o6+3octet o9 |
| Radio parameters | octet o9+1octet o7-1 |
| MI | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | octet o7 |

Figure 5.4.2.7: Radio parameters per geographical area info

Table 5.4.2.7: Radio parameters per geographical area info

|  |
| --- |
| Geographical area (octet o6+3 to o9):The geographical area field is coded according to figure 5.4.2.8 and table 5.4.2.8. |
|  |
| Radio parameters (octet o9 to o7-1):The radio parameters field is coded according to figure 5.4.2.10 and table 5.4.2.10, applicable in the geographical area indicated by the geographical area field when not served by NG-RAN. |
|  |
| Managed indicator (MI) (octet o7 bit 8):The managed indicator indicates how the radio parameters indicated in the radio parameters field in the geographical area indicated by the geographical area field are managed.Bit**8**0 Non-operator managed1 Operator managed |
|  |
| If the length of radio parameters per geographical area contents field is bigger than indicated in figure 5.4.2.7, receiving entity shall ignore any superfluous octets located at the end of the radio parameters per geographical area contents. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of geographical area contents | octet o6+3octet o6+4 |
| Coordinate 1 | octet (o6+5)\*octet (o6+10)\* |
| Coordinate 2 | octet (o6+11)\*octet (o6+16)\* |
| ... | octet (o6+17)\*octet (o6-2+6\*n)\* |
| Coordinate n | octet (o6-1+6\*n)\*octet (o6+4+6\*n)\* = octet o9\* |

Figure 5.4.2.8: Geographical area

Table 5.4.2.8: Geographical area

|  |
| --- |
| Coordinate:The coordinate field is coded according to figure 5.4.2.9 and table 5.4.2.9. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Latitude | octet o6+11octet o6+13 |
| Longitude | octet o6+14octet o6+17 |

Figure 5.4.2.9: Coordinate area

Table 5.4.2.9: Coordinate area

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of radio parameters contents | octet o9+1octet o9+2 |
| Radio parameters contents | octet o9+3octet o7-1 |

Figure 5.4.2.10: Radio parameters

Table 5.4.2.10: Radio parameters

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of PC5 DRX configuration for broadcast and groupcast contents | octet o16+1octet o16+2 |
| PC5 QoS profile to PC5 DRX cycle mapping rules | octet o16+3octet o17 |
| Default PC5 DRX configuration | octet o17+1octet o2 |

Figure 5.4.2.10a: PC5 DRX configuration for broadcast and groupcast

Table 5.4.2.10a: PC5 DRX configuration for broadcast and groupcast

|  |
| --- |
| 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 5.4.2.10b and table 5.4.2.10b. |
|  |
| Default PC5 DRX configuration:The default PC5 DRX configuration field is coded accoding to figure 5.3.2.11a and table 5.3.2.11a. |
|  |
| If the length of PC5 DRX configuration for broadcast and groupcast contents field indicates a length bigger than indicated in figure 5.4.2.5, receiving entity shall ignore any superfluous octets located at the end of the PC5 DRX configuration for broadcast and groupcast contents. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of PC5 QoS profile to PC5 DRX cycle mapping rules contents | octet o16+3octet o16+4 |
| PC5 QoS profile to PC5 DRX cycle mapping rule 1 | octet (o16+5)\*octet o160\* |
| PC5 QoS profile to PC5 DRX cycle mapping rule 2 | octet (o160+1)\*octet o161\* |
| ... | octet (o161+1)\*octet o162\* |
| PC5 QoS profile to PC5 DRX cycle mapping rule n | octet (o162+1)\*octet o17\* |

Figure 5.4.2.10b: PC5 QoS profile to PC5 DRX cycle mapping rules

Table 5.4.2.10b: 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 5.4.2.10c and table 5.4.2.10c. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of PC5 QoS profile to PC5 DRX cycle mapping rule contents | octet o160+1octet o160+2 |
| PC5 QoS profile | octet o160+3octet o1600 |
| PC5 DRX cycle | octet o1600+1=o161 |

Figure 5.4.2.10c: PC5 QoS profile to PC5 DRX cycle mapping rule

Table 5.4.2.10c: PC5 QoS profile to PC5 DRX cycle mapping rule

|  |
| --- |
| PC5 QoS profile:The PC5 QoS profile field is coded according to figure 5.4.2.33 and table 5.4.2.33. |
|  |
| PC5 DRX cycle: |
| The PC5 DRX cycle field is coded as *sl-DRX-GC-BC-Cycle-r17* in clause 6.3.5 of 3GPP TS 38.331 [7]. |
|  |
| If the length of PC5 QoS profile to PC5 DRX cycle mapping rule contents field indicates a length bigger than indicated in figure 5.4.2.10b, receiving entity shall ignore any superfluous octets located at the end of the PC5 QoS profile to PC5 DRX cycle mapping rule contents. |

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

Figure 5.4.2.11: Privacy config

Table 5.4.2.11: Privacy config

|  |
| --- |
| ProSe applications requiring privacy (octet o2+3 to o4-2):The ProSe applications requiring privacy field is coded according to figure 5.4.2.12 and table 5.4.2.12. |
|  |
| Privacy timer (octet o4-1, octet o4): |
| The privacy timer field contains binary encoded duration, in units of seconds, after which the UE shall change the source layer-2 ID self-assigned by the UE while performing transmission of 5G ProSe direct communication when privacy is required. |
|  |
| If the length of privacy config contents field is bigger than indicated in figure 5.4.2.11, receiving entity shall ignore any superfluous octets located at the end of the privacy config contents. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe applications requiring privacy contents | octet o2+3octet o2+4 |
| ProSe application requiring privacy 1 | octet (o2+5)\*octet o12\* |
| ProSe application requiring privacy 2 | octet (o12+1)\*octet o13\* |
| ... | octet (o13+1)\*octet o14\* |
| ProSe application requiring privacy n | octet (o14+1)\*octet (o4-2)\* |

Figure 5.4.2.12: ProSe applications requiring privacy

Table 5.4.2.12: ProSe applications requiring privacy

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe application requiring privacy contents | octet o12+1octet o12+2 |
| ProSe identifiers | octet o12+3octet o15 |
| Geographical areas | octet o15+1octet o13 |

Figure 5.4.2.13: ProSe application requiring privacy

Table 5.4.2.13: ProSe application requiring privacy

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifiers contents | octet o12+3octet o12+4 |
| ProSe identifier 1 | octet (o12+5)\*octet o121\* |
| ProSe identifier 2 | octet (o121+1)\*octet o122\* |
| ... | octet (o122+1)\*octet o123\* |
| ProSe identifier n | octet (o123+1)\*octet o124\* = octet o15\* |

Figure 5.4.2.14: ProSe identifiers

Table 5.4.2.14: ProSe identifiers

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of geographical areas contents | octet o15+1octet o15+2 |
| Geographical area 1 | octet (o15+3)\*octet o23\* |
| Geographical area 2 | octet (o23+1)\*octet o24\* |
| ... | octet (o24+1)\*octet o25\* |
| Geographical area n | octet (o25+1)\*octet o13\* |

Figure 5.4.2.15: Geographical areas

Table 5.4.2.15: Geographical areas

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of 5G ProSe direct communication in NR-PC5 contents | octet o4+1octet o4+2 |
| DDL2IBI | PINFMRI | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | octet o4+3 |
| ProSe identifier to ProSe NR frequency mapping rules | octet (o4+4)\*octet o45\* |
| ProSe identifier to destination layer-2 ID for broadcast mapping rules | octet o108(see NOTE)octet o46 |
| Groupcast parameters | octet o46+1octet o47 |
| ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rules | octet o47+1octet o48 |
| ProSe identifier to PC5 QoS parameters mapping rules | octet o48+1octet o49 |
| AS configuration | octet o49+1octet o50 |
| Default destination layer-2 ID for broadcast | octet (o50+1)\*octet (o50+3)\*  |
| NR-PC5 unicast security policies | octet o93 (see NOTE)octet o84 |
| ProSe identifier to default mode of communication mapping rules | octet (o84+1)octet o85 = octet l |

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

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

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

|  |
| --- |
| Default destination layer-2 ID for broadcast indicator (DDL2IBI) (octet o4+3 bit 8):The DDL2IBI bit indicates presence of the default destination layer-2 ID for broadcast field.Bit**8**0 Default destination layer-2 ID for broadcast field is absent1 Default destination layer-2 ID for broadcast field is present |
|  |
| ProSe identifier to ProSe NR frequency mapping rules indicator (PINFMRI) (octet o4+3 bit 7):The PINFMRI bit indicates presence of the ProSe identifier to ProSe NR frequency mapping rules field.Bit**7**0 ProSe identifier to ProSe NR frequency mapping rules field is absent1 ProSe identifier to ProSe NR frequency mapping rules field is present |
|  |
| ProSe identifier to ProSe NR frequency mapping rules (octet o4+4 to o45):The ProSe identifier to ProSe NR frequency mapping rules field is coded according to figure 5.4.2.17 and table 5.4.2.17. |
|  |
| ProSe identifier to destination layer-2 ID for broadcast mapping rules (octet o108 to o46):The ProSe identifier to destination layer-2 ID for broadcast mapping rules field is coded according to figure 5.4.2.22 and table 5.4.2.22. |
|  |
| Groupcast parameters (octet o46+1 to o47):The groupcast parameters field is coded according to figure 5.4.2.24 and table 5.4.2.24. |
|  |
| ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rules (octet o47+1 to o48):The ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rules field is coded according to figure 5.4.2.26 and table 5.4.2.26. |
|  |
| ProSe identifier to PC5 QoS parameters mapping rules (octet o48+1 to o49):The ProSe identifier to PC5 QoS parameters mapping rules field is coded according to figure 5.4.2.28 and table 5.4.2.28. |
|  |
| AS configuration (octet o49+1 to o50):The AS configuration field is coded according to figure 5.4.2.30 and table 5.4.2.30. |
|  |
| Default destination layer-2 ID for broadcast (octet o50+1 to o50+3):The default destination layer-2 ID for broadcast field is a binary coded layer-2 identifier. |
|  |
| NR-PC5 unicast security policies (octet o93 to o84):The NR-PC5 unicast security policies field is coded according to figure 5.4.2.34 and table 5.4.2.34. |
| ProSe identifier to default mode of communication mapping rules (o84+1 to l):The ProSe identifier to default mode of communication mapping rules is coded according to figure 5.4.2.37 and table 5.4.2.37. |
| If the length of 5G ProSe direct communication over PC5 in NR-PC5 contents field is bigger than indicated in figure 5.4.2.16, receiving entity shall ignore any superfluous octets located at the end of the 5G ProSe direct communication over PC5 in NR-PC5 contents. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifier to ProSe NR frequency mapping rules contents | octet o4+4octet o4+5 |
| ProSe identifier to ProSe NR frequency mapping rule 1 | octet (o4+6)\*octet o51\* |
| ProSe identifier to ProSe NR frequency mapping rule 2 | octet (o51+1)\*octet o52\* |
| ... | octet (o52+1)\*octet o53\* |
| ProSe identifier to ProSe NR frequency mapping rule n | octet (o53+1)\*octet o45\* |

Figure 5.4.2.17: ProSe identifier to ProSe NR frequency mapping rules

Table 5.4.2.17: ProSe identifier to ProSe NR frequency mapping rules

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifier to ProSe NR frequency mapping rule contents | octet o51+1octet o51+2 |
| ProSe identifiers | octet o51+3octet o54 |
| ProSe NR frequencies with geographical areas list | octet o54+1octet o52 |

Figure 5.4.2.18: ProSe identifier to ProSe NR frequency mapping rule

Table 5.4.2.18: ProSe identifier to ProSe NR frequency mapping rule

|  |
| --- |
| ProSe identifiers (octet o51+3 to o54):The ProSe identifiers field is coded according to figure 5.4.2.14 and table 5.4.2.14. |
|  |
| ProSe NR frequencies with geographical areas list (octet o54+1 to o52):The ProSe NR frequencies with geographical areas list field is coded according to figure 5.4.2.19 and table 5.4.2.19. |
|  |
| If the length of ProSe identifier to ProSe NR frequency mapping rule contents field is bigger than indicated in figure 5.4.2.18, receiving entity shall ignore any superfluous octets located at the end of the ProSe identifier to ProSe NR frequency mapping rule contents. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe NR frequencies with geographical areas list contents | octet o54+1octet o54+2 |
| ProSe NR frequencies with geographical areas info 1 | octet (o54+3)\*octet o55\* |
| ProSe NR frequencies with geographical areas info 2 | octet (o55+1)\*octet o56\* |
| ... | octet (o56+1)\*octet o57\* |
| ProSe NR frequencies with geographical areas info n | octet (o57+1)\*octet o52\* |

Figure 5.4.2.19: ProSe NR frequencies with geographical areas list

Table 5.4.2.19: ProSe NR frequencies with geographical areas list

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe NR frequencies with geographical areas info contents | octet o55+1octet o55+2 |
| ProSe NR frequencies | octet o55+3octet o58 |
| Geographical areas | octet o58+1octet o56 |

Figure 5.4.2.20: ProSe NR frequencies with geographical areas info

Table 5.4.2.20: ProSe NR frequencies with geographical areas info

|  |
| --- |
| ProSe NR frequencies (octet o55+3 to o58):The ProSe NR frequencies field is coded according to figure 5.4.2.21 and table 5.4.2.21. |
|  |
| Geographical areas (octet o58+1 to o56):The geographical areas field is coded according to figure 5.4.2.15 and table 5.4.2.15. |
|  |
| If the length of ProSe NR frequencies with geographical areas info contents field is bigger than indicated in figure 5.4.2.20, receiving entity shall ignore any superfluous octets located at the end of the ProSe NR frequencies with geographical areas info contents. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe NR frequencies contents | octet o55+3octet o55+4 |
| ProSe NR frequency 1 | octet (o55+5)\*octet (o55+7)\* |
| ProSe NR frequency 2 | octet (o55+8)\*octet (o55+10)\* |
| ... | octet (o55+11)\*octet (o55+4+(n-1)\*3)\* |
| ProSe NR frequency n | octet (o55+5+(n-1)\*3)\*octet (o55+4+n\*3)\* = octet o58\* |

Figure 5.4.2.21: ProSe NR frequencies

Table 5.4.2.21: ProSe NR frequencies

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifier to destination layer-2 ID for broadcast mapping rules contents | octet o108octet o108+1 |
| ProSe identifier to destination layer-2 ID for broadcast mapping rule 1 | octet (o108+2)\*octet o59\* |
| ProSe identifier to destination layer-2 ID for broadcast mapping rule 2 | octet (o59+1)\*octet o60\* |
| ... | octet (o60+1)\*octet o61\* |
| ProSe identifier to destination layer-2 ID for broadcast mapping rule n | octet (o61+1)\*octet o46\* |

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

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

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifier to destination layer-2 ID for broadcast mapping rule contents | octet o59+1octet o59+2 |
| ProSe identifiers | octet o59+3octet o62 |
| Destination layer-2 ID for broadcast | octet o62+1octet (o62+3) = octet o60 |

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

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

|  |
| --- |
| ProSe identifiers (octet o59+3 to o62):The ProSe identifiers field is coded according to figure 5.4.2.14 and table 5.4.2.14. |
|  |
| Destination layer-2 ID for broadcast (octet o62+1 to o60):The destination layer-2 ID for broadcast field is a binary coded layer-2 identifier. |
|  |
| If the length of ProSe identifier to destination layer-2 ID for broadcast mapping rule contents field is bigger than indicated in figure 5.4.2.23, receiving entity shall ignore any superfluous octets located at the end of the ProSe identifier to destination layer-2 ID for broadcast mapping rule contents. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of groupcast parameters contents | octet o46+1octet o46+2 |
| Application layer group info 1 | octet (o46+3)\*octet o63\* |
| Application layer group info 2 | octet (o63+1)\*octet o64\* |
| … | octet (o64+1)\*octet o65\* |
| Application layer group info n | octet (o65+1)\*octet 47\* |

Figure 5.4.2.24: Groupcast parameters

Table 5.4.2.24: Groupcast parameters

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of application layer group info contents | octet o63+1octet o63+2 |
| Application layer group identifier | octet o63+3octet o163 |
| IPv4 | IPv4AI | IPv6 | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | octet o163+1 |
| ProSe layer-2 gorup identifier | octet o163+2octet o163+4 |
| ProSe group IP multicast address | octet o163+5octet o163+8 |
| IPv4 address | octet (o163+9)\*octet (o163+12)\* = octet 64\* |

Figure 5.4.2.25: Application layer group info

Table 5.4.2.25: Application layer group info

|  |
| --- |
| Application layer group identifier (octet o63+3 to o163):The first octet of application layer group identifier field is the length of application group identifier. The value of application group identifier field is a bit string. The format of application group identifier parameter is out of scope of this specification. |
| IPv4 (octet o163+1 bit 8):Bit**8**0 IPv4 is not authorized1 IPv4 is authorized |
|  |
| IPv4 address indicator (IPv4AI) (octet o163+1 bit 7):Bit**7**0 IPv4 address is absent1 IPv4 address is present |
|  |
| IPv6 (octet o163+1 bit 6):Bit**6**0 IPv6 is not authorized1 IPv6 is authorized |
|  |
| ProSe layer-2 gorup identifier (octet o163+5 to o163+8):The ProSe layer-2 gorup identifier field is a binary coded layer-2 identifier. |
|  |
| IPv4 address (octet o163+9 to o163+12): |
| The IPv4 address field contains an IPv4 address as the source address for a specific group configured to operate using IPv4. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rules contents | octet o47+1octet o47+2 |
| ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rule 1 | octet (o47+3)\*octet o66\* |
| ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rule 2 | octet (o66+1)\*octet o67\* |
| ... | octet (o67+1)\*octet o68\* |
| ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rule n | octet (o68+1)\*octet o48\* |

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

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

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rule contents | octet o66+1octet o66+2 |
| ProSe identifiers | octet o66+3octet o81 |
| Destination layer-2 ID for unicast initial signalling | octet o81+1octet (o81+3) = octet o67 |

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

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

|  |
| --- |
| ProSe identifiers (octet o66+3 to o81):The ProSe identifiers field is coded according to figure 5.4.2.14 and table 5.4.2.14. |
|  |
| Destination layer-2 ID for unicast initial signalling (octet o81+1 to o67):The destination layer-2 ID for unicast initial signalling field is a binary coded layer-2 identifier. |
|  |
| If the length of ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rule contents field is bigger than indicated in figure 5.4.2.27, receiving entity shall ignore any superfluous octets located at the end of the ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rule contents. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifier to PC5 QoS parameters mapping rules contents | octet o48+1octet o48+2 |
| ProSe identifier to PC5 QoS parameters mapping rule 1 | octet (o48+3)\*octet o70\* |
| ProSe identifier to PC5 QoS parameters mapping rule 2 | octet (o70+1)\*octet o71\* |
| ... | octet (o71+1)\*octet o72\* |
| ProSe identifier to PC5 QoS parameters mapping rule n | octet (o72+1)\*octet o49\* |

Figure 5.4.2.28: ProSe identifier to PC5 QoS parameters mapping rules

Table 5.4.2.28: ProSe identifier to PC5 QoS parameters mapping rules

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifier to PC5 QoS parameters mapping rule contents | octet o70+1octet o70+2 |
| ProSe identifiers | octet o70+3octet o74 |
| GFBRI | MFBRI | PLAMBRI | RI | 0Spare | 0Spare | 0Spare | 0Spare | octet o74+1 |
| PQI | octet o74+2 |
| Guaranteed flow bit rate | octet (o74+3)\*octet (o74+5)\* |
| Maximum flow bit rate | octet o94\* (see NOTE)octet (o94+2)\* |
| Per-link aggregate maximum bit rate | octet o95\* (see NOTE)octet (o95+2)\* |
| Range | octet o96\* (see NOTE)octet (o96+1)\* = octet o71\* |

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

Figure 5.4.2.29: ProSe identifier to PC5 QoS parameters mapping rule

Table 5.4.2.29: ProSe identifier to PC5 QoS parameters mapping rule

|  |
| --- |
| ProSe identifiers (octet o70+3 to o74):The ProSe identifiers field is coded according to figure 5.4.2.14 and table 5.4.2.14. |
|  |
| Guaranteed flow bit rate indicator (GFBRI) (octet o74+1 bit 8):The GFBRI bit indicates presence of guaranteed flow bit rate field.Bit**8**0 Guaranteed flow bit rate field is absent1 Guaranteed flow bit rate field is present |
|  |
| Maximum flow bit rate indicator (MFBRI) (octet o74+1 bit 7):The MFBRI bit indicates presence of maximum flow bit rate field.Bit**7**0 Maximum flow bit rate field is absent1 Maximum flow bit rate field is present |
|  |
| Per-link aggregate maximum bit rate indicator (PLAMBRI) (octet o74+1 bit 6):The PLAMBRI bit indicates presence of per-link aggregate maximum bit rate field.Bit**6**0 Per-link aggregate maximum bit rate field is absent1 Per-link aggregate maximum bit rate field is present |
|  |
| Range indicator (RI) (octet o74+1 bit 5):The RI bit indicates presence of range field.Bit**5**0 Range field is absent1 Range field is present |
|  |
| PQI (octet o74+2):Bits**8 7 6 5 4 3 2 1**0 0 0 0 0 0 0 0 Reserved0 0 0 0 0 0 0 1 to Spare0 0 0 1 0 1 0 00 0 0 1 0 1 0 1 PQI 210 0 0 1 0 1 1 0 PQI 220 0 0 1 0 1 1 1 PQI 230 0 0 1 1 0 0 0 PQI 240 0 0 1 1 0 0 1 PQI 250 0 0 1 1 0 1 0 PQI 260 0 0 1 1 0 1 1 to Spare0 0 1 1 0 1 1 00 0 1 1 0 1 1 1 PQI 550 0 1 1 1 0 0 0 PQI 560 0 1 1 1 0 0 1 PQI 570 0 1 1 1 0 1 0 PQI 580 0 1 1 1 0 1 1 PQI 590 0 1 1 1 1 0 0 PQI 600 0 1 1 1 1 0 1 PQI 610 0 1 1 1 1 1 0 to Spare0 1 0 1 1 0 0 10 1 0 1 1 0 1 0 PQI 900 1 0 1 1 0 1 1 PQI 910 1 0 1 1 1 0 0 PQI 920 1 0 1 1 1 0 1 PQI 930 1 0 1 1 1 1 0 to Spare0 1 1 1 1 1 1 11 0 0 0 0 0 0 0 to Operator-specific PQIs1 1 1 1 1 1 1 01 1 1 1 1 1 1 1 ReservedIf the UE receives a PQI value (excluding the reserved PQI values) that it does not understand, the UE shall choose a PQI value from the set of PQI values defined in this version of the protocol (see 3GPP TS 23.304 [2]) and associated with: - GBR resource type, if the ProSe identifier to PC5 QoS parameters mapping rule includes the guaranteed flow bit rate field; and - non-GBR resource type, if the ProSe identifier to PC5 QoS parameters mapping rule does not include the guaranteed flow bit rate field.The UE shall use this chosen PQI value for internal operations only. The UE shall use the received PQI value in subsequent 5G ProSe direct communication over PC5 signalling procedures. |
|  |
| Guaranteed flow bit rate (octet o74+3 to o74+5):The guaranteed flow bit rate field indicates guaranteed flow bit rate for both sending and receiving and contains one octet indicating the unit of the guaranteed flow bit rate followed by two octets containing the value of the guaranteed flow bit rate.Unit of the guaranteed flow bit rate:Bits**8 7 6 5 4 3 2 1**0 0 0 0 0 0 0 0 value is not used0 0 0 0 0 0 0 1 value is incremented in multiples of 1 Kbps0 0 0 0 0 0 1 0 value is incremented in multiples of 4 Kbps0 0 0 0 0 0 1 1 value is incremented in multiples of 16 Kbps0 0 0 0 0 1 0 0 value is incremented in multiples of 64 Kbps0 0 0 0 0 1 0 1 value is incremented in multiples of 256 Kbps0 0 0 0 0 1 1 0 value is incremented in multiples of 1 Mbps0 0 0 0 0 1 1 1 value is incremented in multiples of 4 Mbps0 0 0 0 1 0 0 0 value is incremented in multiples of 16 Mbps0 0 0 0 1 0 0 1 value is incremented in multiples of 64 Mbps0 0 0 0 1 0 1 0 value is incremented in multiples of 256 Mbps0 0 0 0 1 0 1 1 value is incremented in multiples of 1 Gbps0 0 0 0 1 1 0 0 value is incremented in multiples of 4 Gbps0 0 0 0 1 1 0 1 value is incremented in multiples of 16 Gbps0 0 0 0 1 1 1 0 value is incremented in multiples of 64 Gbps0 0 0 0 1 1 1 1 value is incremented in multiples of 256 Gbps0 0 0 1 0 0 0 0 value is incremented in multiples of 1 Tbps0 0 0 1 0 0 0 1 value is incremented in multiples of 4 Tbps0 0 0 1 0 0 1 0 value is incremented in multiples of 16 Tbps0 0 0 1 0 0 1 1 value is incremented in multiples of 64 Tbps0 0 0 1 0 1 0 0 value is incremented in multiples of 256 Tbps0 0 0 1 0 1 0 1 value is incremented in multiples of 1 Pbps0 0 0 1 0 1 1 0 value is incremented in multiples of 4 Pbps0 0 0 1 0 1 1 1 value is incremented in multiples of 16 Pbps0 0 0 1 1 0 0 0 value is incremented in multiples of 64 Pbps0 0 0 1 1 0 0 1 value is incremented in multiples of 256 PbpsOther values shall be interpreted as multiples of 256 Pbps in this version of the protocol.Value of the guaranteed flow bit rate is binary coded value of the guaranteed flow bit rate in units defined by the unit of the guaranteed flow bit rate. |
|  |
| Maximum flow bit rate (octet o94 to o94+2):The maximum flow bit rate field indicates maximum flow bit rate for both sending and receiving and contains one octet indicating the unit of the maximum flow bit rate followed by two octets containing the value of the maximum flow bit rate.Unit of the maximum flow bit rate:Bits**8 7 6 5 4 3 2 1**0 0 0 0 0 0 0 0 value is not used0 0 0 0 0 0 0 1 value is incremented in multiples of 1 Kbps0 0 0 0 0 0 1 0 value is incremented in multiples of 4 Kbps0 0 0 0 0 0 1 1 value is incremented in multiples of 16 Kbps0 0 0 0 0 1 0 0 value is incremented in multiples of 64 Kbps0 0 0 0 0 1 0 1 value is incremented in multiples of 256 Kbps0 0 0 0 0 1 1 0 value is incremented in multiples of 1 Mbps0 0 0 0 0 1 1 1 value is incremented in multiples of 4 Mbps0 0 0 0 1 0 0 0 value is incremented in multiples of 16 Mbps0 0 0 0 1 0 0 1 value is incremented in multiples of 64 Mbps0 0 0 0 1 0 1 0 value is incremented in multiples of 256 Mbps0 0 0 0 1 0 1 1 value is incremented in multiples of 1 Gbps0 0 0 0 1 1 0 0 value is incremented in multiples of 4 Gbps0 0 0 0 1 1 0 1 value is incremented in multiples of 16 Gbps0 0 0 0 1 1 1 0 value is incremented in multiples of 64 Gbps0 0 0 0 1 1 1 1 value is incremented in multiples of 256 Gbps0 0 0 1 0 0 0 0 value is incremented in multiples of 1 Tbps0 0 0 1 0 0 0 1 value is incremented in multiples of 4 Tbps0 0 0 1 0 0 1 0 value is incremented in multiples of 16 Tbps0 0 0 1 0 0 1 1 value is incremented in multiples of 64 Tbps0 0 0 1 0 1 0 0 value is incremented in multiples of 256 Tbps0 0 0 1 0 1 0 1 value is incremented in multiples of 1 Pbps0 0 0 1 0 1 1 0 value is incremented in multiples of 4 Pbps0 0 0 1 0 1 1 1 value is incremented in multiples of 16 Pbps0 0 0 1 1 0 0 0 value is incremented in multiples of 64 Pbps0 0 0 1 1 0 0 1 value is incremented in multiples of 256 PbpsOther values shall be interpreted as multiples of 256 Pbps in this version of the protocol.Value of the maximum flow bit rate is binary coded value of the maximum flow bit rate in units defined by the unit of the maximum flow bit rate. |
|  |
| Per-link aggregate maximum bit rate (octet o95 to o95+2):The per-link aggregate maximum bit rate field indicates per-link aggregate maximum bit rate for both sending and receiving and contains one octet indicating the unit of the per-link aggregate maximum bit rate followed by two octets containing the value of the per-link aggregate maximum bit rate.Unit of the per-link aggregate maximum bit rate:Bits**8 7 6 5 4 3 2 1**0 0 0 0 0 0 0 0 value is not used0 0 0 0 0 0 0 1 value is incremented in multiples of 1 Kbps0 0 0 0 0 0 1 0 value is incremented in multiples of 4 Kbps0 0 0 0 0 0 1 1 value is incremented in multiples of 16 Kbps0 0 0 0 0 1 0 0 value is incremented in multiples of 64 Kbps0 0 0 0 0 1 0 1 value is incremented in multiples of 256 Kbps0 0 0 0 0 1 1 0 value is incremented in multiples of 1 Mbps0 0 0 0 0 1 1 1 value is incremented in multiples of 4 Mbps0 0 0 0 1 0 0 0 value is incremented in multiples of 16 Mbps0 0 0 0 1 0 0 1 value is incremented in multiples of 64 Mbps0 0 0 0 1 0 1 0 value is incremented in multiples of 256 Mbps0 0 0 0 1 0 1 1 value is incremented in multiples of 1 Gbps0 0 0 0 1 1 0 0 value is incremented in multiples of 4 Gbps0 0 0 0 1 1 0 1 value is incremented in multiples of 16 Gbps0 0 0 0 1 1 1 0 value is incremented in multiples of 64 Gbps0 0 0 0 1 1 1 1 value is incremented in multiples of 256 Gbps0 0 0 1 0 0 0 0 value is incremented in multiples of 1 Tbps0 0 0 1 0 0 0 1 value is incremented in multiples of 4 Tbps0 0 0 1 0 0 1 0 value is incremented in multiples of 16 Tbps0 0 0 1 0 0 1 1 value is incremented in multiples of 64 Tbps0 0 0 1 0 1 0 0 value is incremented in multiples of 256 Tbps0 0 0 1 0 1 0 1 value is incremented in multiples of 1 Pbps0 0 0 1 0 1 1 0 value is incremented in multiples of 4 Pbps0 0 0 1 0 1 1 1 value is incremented in multiples of 16 Pbps0 0 0 1 1 0 0 0 value is incremented in multiples of 64 Pbps0 0 0 1 1 0 0 1 value is incremented in multiples of 256 PbpsOther values shall be interpreted as multiples of 256 Pbps in this version of the protocol.Value of the per-link aggregate maximum bit rate is binary coded value of the per-link aggregate maximum bit rate in units defined by the unit of the per-link aggregate maximum bit rate. |
|  |
| Range (octet o96 to o71): The range field indicates a binary encoded value of the range in meters. |
|  |
| If the length of ProSe identifier to PC5 QoS parameters mapping rule contents field is bigger than indicated in figure 5.4.2.28, receiving entity shall ignore any superfluous octets located at the end of the ProSe identifier to PC5 QoS parameters mapping rule contents. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of AS configuration contents | octet o49+1octet o49+2 |
| SLRB mapping rules | octet o49+3octet o50 |

Figure 5.4.2.30: AS configuration

Table 5.4.2.30: AS configuration

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of SLRB mapping rules contents | octet o49+3octet o49+4 |
| SLRB mapping rule 1 | octet (o49+5)\*octet o75\* |
| SLRB mapping rule 2 | octet (o75+1)\*octet o76\* |
| ... | octet (o76+1)\*octet o77\* |
| SLRB mapping rule n | octet (o77+1)\*octet o50\* |

Figure 5.4.2.31: SLRB mapping rules

Table 5.4.2.31: SLRB mapping rules

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of SLRB mapping rule contents | octet o75+1octet o75+2 |
| PC5 QoS profile | octet o75+3octet o78 |
| Length of SLRB | octet o78+1octet o78+2 |
| SLRB | octet o78+3octet o76 |

Figure 5.4.2.32: SLRB mapping rule

Table 5.4.2.32: SLRB mapping rule

|  |
| --- |
| PC5 QoS profile octet (o75+3 to o78):The PC5 QoS profile field is coded according to figure 5.4.2.33 and table 5.4.2.33. |
|  |
| SLRB (o78+3 to o76): |
| SLRB is defined as *SL-PreconfigurationNR* in clause 9.3 of 3GPP TS 38.331 [7]. |
|  |
| If the length of SLRB mapping rule contents field is bigger than indicated in figure 5.4.2.32, receiving entity shall ignore any superfluous octets located at the end of the SLRB mapping rule contents. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of PC5 QoS profile contents | octet o75+3octet o75+4 |
| GFBRI | MFBRI | PLAMBRI | RI | PLOI | AWI | MDBVI | 0Spare | octet o75+5 |
| PQI | octet o75+6 |
| Guaranteed flow bit rate | octet (o75+7)\*octet (o75+9)\* |
| Maximum flow bit rate | octet o97\* (see NOTE)octet (o97+2)\* |
| Per-link aggregate maximum bit rate | octet o98\* (see NOTE)octet (o98+2)\* |
| Range | octet o99\* (see NOTE)octet (o99+1)\* |
| 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | Priority level | octet o100\*(see NOTE) |
| Averaging window | octet o101\*(see NOTE)octet (o101+1)\* |
| Maximum data burst volume | octet o102\*(see NOTE)octet (o102+1)\* = octet o78\* |

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

Figure 5.4.2.33:PC5 QoS profile

Table 5.4.2.33:PC5 QoS profile

|  |
| --- |
| Guaranteed flow bit rate indicator (GFBRI) (o75+5 bit 8):The GFBRI bit indicates presence of guaranteed flow bit rate field.Bit**8**0 Guaranteed flow bit rate field is absent1 Guaranteed flow bit rate field is present |
|  |
| Maximum flow bit rate indicator (MFBRI) (o75+5 bit 7):The MFBRI bit indicates presence of maximum flow bit rate field.Bit**7**0 Maximum flow bit rate field is absent1 Maximum flow bit rate field is present |
|  |
| Per-link aggregate maximum bit rate indicator (PLAMBRI) (o75+5 bit 6):The PLAMBRI bit indicates presence of per-link aggregate maximum bit rate field.Bit**6**0 Per-link aggregate maximum bit rate field is absent1 Per-link aggregate maximum bit rate field is present |
|  |
| Range indicator (RI) (o75+5 bit 5): The RI bit indicates presence of range field.Bit**5**0 Range field is absent1 Range field is present |
|  |
| Priority level octet indicator (OPLI) (o75+5 bit 4):The OPLI bit indicates presence of the octet of the priority level field.Bit**4**0 The octet of the priority level is absent1 The octet of the priority level is present |
|  |
| Averaging window indicator (AWI) (o75+5 bit 3):The AWI bit indicates presence of averaging window field.Bit**3**0 Averaging window field is absent1 Averaging window field is present |
|  |
| Maximum data burst volume indicator (MDBVI) (o75+5 bit 2):The MDBVI bit indicates presence of maximum data burst volume field.Bit**2**0 Maximum data burst volume field is absent1 Maximum data burst volume field is present |
|  |
| PQI (o75+6):Bits**8 7 6 5 4 3 2 1**0 0 0 0 0 0 0 0 Reserved0 0 0 0 0 0 0 1 to Spare0 0 0 1 0 1 0 00 0 0 1 0 1 0 1 PQI 210 0 0 1 0 1 1 0 PQI 220 0 0 1 0 1 1 1 PQI 230 0 0 1 1 0 0 0 PQI 240 0 0 1 1 0 0 1 PQI 250 0 0 1 1 0 1 0 PQI 260 0 0 1 1 0 1 1 to Spare0 0 1 1 0 1 1 00 0 1 1 0 1 1 1 PQI 550 0 1 1 1 0 0 0 PQI 560 0 1 1 1 0 0 1 PQI 570 0 1 1 1 0 1 0 PQI 580 0 1 1 1 0 1 1 PQI 590 0 1 1 1 1 0 0 PQI 600 0 1 1 1 1 0 1 PQI 610 0 1 1 1 1 1 0 to Spare0 1 0 1 1 0 0 10 1 0 1 1 0 1 0 PQI 900 1 0 1 1 0 1 1 PQI 910 1 0 1 1 1 0 0 PQI 920 1 0 1 1 1 0 1 PQI 930 1 0 1 1 1 1 0 to Spare0 1 1 1 1 1 1 11 0 0 0 0 0 0 0 to Operator-specific PQIs1 1 1 1 1 1 1 01 1 1 1 1 1 1 1 ReservedIf the UE receives a PQI value (excluding the reserved PQI values) that it does not understand, the UE shall choose a PQI value from the set of PQI values defined in this version of the protocol (see 3GPP TS 23.304 [2]) and associated with: - GBR resource type, if the PC5 QoS profile includes the guaranteed flow bit rate field; and - non-GBR resource type, if the PC5 QoS profile does not include the guaranteed flow bit rate field.The UE shall use this chosen PQI value for internal operations only. The UE shall use the received PQI value in subsequent 5G ProSe direct communication over PC5 signalling procedures. |
|  |
| Guaranteed flow bit rate octet (o75+7 to o75+9):The guaranteed flow bit rate field indicates guaranteed flow bit rate for both sending and receiving and contains one octet indicating the unit of the guaranteed flow bit rate followed by two octets containing the value of the guaranteed flow bit rate.Unit of the guaranteed flow bit rate:Bits**8 7 6 5 4 3 2 1**0 0 0 0 0 0 0 0 value is not used0 0 0 0 0 0 0 1 value is incremented in multiples of 1 Kbps0 0 0 0 0 0 1 0 value is incremented in multiples of 4 Kbps0 0 0 0 0 0 1 1 value is incremented in multiples of 16 Kbps0 0 0 0 0 1 0 0 value is incremented in multiples of 64 Kbps0 0 0 0 0 1 0 1 value is incremented in multiples of 256 Kbps0 0 0 0 0 1 1 0 value is incremented in multiples of 1 Mbps0 0 0 0 0 1 1 1 value is incremented in multiples of 4 Mbps0 0 0 0 1 0 0 0 value is incremented in multiples of 16 Mbps0 0 0 0 1 0 0 1 value is incremented in multiples of 64 Mbps0 0 0 0 1 0 1 0 value is incremented in multiples of 256 Mbps0 0 0 0 1 0 1 1 value is incremented in multiples of 1 Gbps0 0 0 0 1 1 0 0 value is incremented in multiples of 4 Gbps0 0 0 0 1 1 0 1 value is incremented in multiples of 16 Gbps0 0 0 0 1 1 1 0 value is incremented in multiples of 64 Gbps0 0 0 0 1 1 1 1 value is incremented in multiples of 256 Gbps0 0 0 1 0 0 0 0 value is incremented in multiples of 1 Tbps0 0 0 1 0 0 0 1 value is incremented in multiples of 4 Tbps0 0 0 1 0 0 1 0 value is incremented in multiples of 16 Tbps0 0 0 1 0 0 1 1 value is incremented in multiples of 64 Tbps0 0 0 1 0 1 0 0 value is incremented in multiples of 256 Tbps0 0 0 1 0 1 0 1 value is incremented in multiples of 1 Pbps0 0 0 1 0 1 1 0 value is incremented in multiples of 4 Pbps0 0 0 1 0 1 1 1 value is incremented in multiples of 16 Pbps0 0 0 1 1 0 0 0 value is incremented in multiples of 64 Pbps0 0 0 1 1 0 0 1 value is incremented in multiples of 256 PbpsOther values shall be interpreted as multiples of 256 Pbps in this version of the protocol.Value of the guaranteed flow bit rate is binary coded value of the guaranteed flow bit rate in units defined by the unit of the guaranteed flow bit rate. |
|  |
| Maximum flow bit rate (o97 to o97+2):The maximum flow bit rate field indicates maximum flow bit rate for both sending and receiving and contains one octet indicating the unit of the maximum flow bit rate followed by two octets containing the value of the maximum flow bit rate.Unit of the maximum flow bit rate:Bits**8 7 6 5 4 3 2 1**0 0 0 0 0 0 0 0 value is not used0 0 0 0 0 0 0 1 value is incremented in multiples of 1 Kbps0 0 0 0 0 0 1 0 value is incremented in multiples of 4 Kbps0 0 0 0 0 0 1 1 value is incremented in multiples of 16 Kbps0 0 0 0 0 1 0 0 value is incremented in multiples of 64 Kbps0 0 0 0 0 1 0 1 value is incremented in multiples of 256 Kbps0 0 0 0 0 1 1 0 value is incremented in multiples of 1 Mbps0 0 0 0 0 1 1 1 value is incremented in multiples of 4 Mbps0 0 0 0 1 0 0 0 value is incremented in multiples of 16 Mbps0 0 0 0 1 0 0 1 value is incremented in multiples of 64 Mbps0 0 0 0 1 0 1 0 value is incremented in multiples of 256 Mbps0 0 0 0 1 0 1 1 value is incremented in multiples of 1 Gbps0 0 0 0 1 1 0 0 value is incremented in multiples of 4 Gbps0 0 0 0 1 1 0 1 value is incremented in multiples of 16 Gbps0 0 0 0 1 1 1 0 value is incremented in multiples of 64 Gbps0 0 0 0 1 1 1 1 value is incremented in multiples of 256 Gbps0 0 0 1 0 0 0 0 value is incremented in multiples of 1 Tbps0 0 0 1 0 0 0 1 value is incremented in multiples of 4 Tbps0 0 0 1 0 0 1 0 value is incremented in multiples of 16 Tbps0 0 0 1 0 0 1 1 value is incremented in multiples of 64 Tbps0 0 0 1 0 1 0 0 value is incremented in multiples of 256 Tbps0 0 0 1 0 1 0 1 value is incremented in multiples of 1 Pbps0 0 0 1 0 1 1 0 value is incremented in multiples of 4 Pbps0 0 0 1 0 1 1 1 value is incremented in multiples of 16 Pbps0 0 0 1 1 0 0 0 value is incremented in multiples of 64 Pbps0 0 0 1 1 0 0 1 value is incremented in multiples of 256 PbpsOther values shall be interpreted as multiples of 256 Pbps in this version of the protocol.Value of the maximum flow bit rate is binary coded value of the maximum flow bit rate in units defined by the unit of the maximum flow bit rate. |
|  |
| Per-link aggregate maximum bit rate (o98 to o98+2):The per-link aggregate maximum bit rate field indicates per-link aggregate maximum bit rate for both sending and receiving and contains one octet indicating the unit of the per-link aggregate maximum bit rate followed by two octets containing the value of the per-link aggregate maximum bit rate.Unit of the per-link aggregate maximum bit rate:Bits**8 7 6 5 4 3 2 1**0 0 0 0 0 0 0 0 value is not used0 0 0 0 0 0 0 1 value is incremented in multiples of 1 Kbps0 0 0 0 0 0 1 0 value is incremented in multiples of 4 Kbps0 0 0 0 0 0 1 1 value is incremented in multiples of 16 Kbps0 0 0 0 0 1 0 0 value is incremented in multiples of 64 Kbps0 0 0 0 0 1 0 1 value is incremented in multiples of 256 Kbps0 0 0 0 0 1 1 0 value is incremented in multiples of 1 Mbps0 0 0 0 0 1 1 1 value is incremented in multiples of 4 Mbps0 0 0 0 1 0 0 0 value is incremented in multiples of 16 Mbps0 0 0 0 1 0 0 1 value is incremented in multiples of 64 Mbps0 0 0 0 1 0 1 0 value is incremented in multiples of 256 Mbps0 0 0 0 1 0 1 1 value is incremented in multiples of 1 Gbps0 0 0 0 1 1 0 0 value is incremented in multiples of 4 Gbps0 0 0 0 1 1 0 1 value is incremented in multiples of 16 Gbps0 0 0 0 1 1 1 0 value is incremented in multiples of 64 Gbps0 0 0 0 1 1 1 1 value is incremented in multiples of 256 Gbps0 0 0 1 0 0 0 0 value is incremented in multiples of 1 Tbps0 0 0 1 0 0 0 1 value is incremented in multiples of 4 Tbps0 0 0 1 0 0 1 0 value is incremented in multiples of 16 Tbps0 0 0 1 0 0 1 1 value is incremented in multiples of 64 Tbps0 0 0 1 0 1 0 0 value is incremented in multiples of 256 Tbps0 0 0 1 0 1 0 1 value is incremented in multiples of 1 Pbps0 0 0 1 0 1 1 0 value is incremented in multiples of 4 Pbps0 0 0 1 0 1 1 1 value is incremented in multiples of 16 Pbps0 0 0 1 1 0 0 0 value is incremented in multiples of 64 Pbps0 0 0 1 1 0 0 1 value is incremented in multiples of 256 PbpsOther 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 (o99 to o99+1):The range field indicates a binary encoded value of the range in meters. |
|  |
| Priority level (octet o100 bit 1 to 3):The priority level field contains a ProSe per-packet priority value.Bits**3 2 1**0 0 0 PPPP value 10 0 1 PPPP value 20 1 0 PPPP value 30 1 1 PPPP value 41 0 0 PPPP value 51 0 1 PPPP value 61 1 0 PPPP value 71 1 1 PPPP value 8 |
|  |
| Averaging window (o101 to o101+1):The averaging window field indicates a binary representation of the averaging window for both sending and receiving in milliseconds. |
|  |
| Maximum data burst volume (o102 to o78):The maximum data burst volume field indicates a binary representation of the maximum data burst volume for both sending and receiving in octets. |
|  |
| If the length of PC5 QoS profile contents field is bigger than indicated in figure 5.4.2.33, receiving entity shall ignore any superfluous octets located at the end of the PC5 QoS profile contents. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of NR-PC5 unicast security policies contents | octet o93octet o93+1 |
| NR-PC5 unicast security policy 1 | octet (o93+2)\*octet o86\* |
| NR-PC5 unicast security policy 2 | octet (o86+1)\*octet o87\* |
| ... | octet (o87+1)\*octet o88\* |
| NR-PC5 unicast security policy n | octet (o88+1)\*octet o84\* |

Figure 5.4.2.34: NR-PC5 unicast security policies

Table 5.4.2.34: NR-PC5 unicast security policies

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of NR-PC5 unicast security policy contents | octet o86+1octet o86+2 |
| ProSe identifiers | octet o86+3octet o89 |
| Security policy | octet o89+1octet o89+2 |
| Geographical areas | octet o89+3octet o87 |

Figure 5.4.2.35: NR-PC5 unicast security policy

Table 5.4.2.35: NR-PC5 unicast security policy

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| 0spare | Signalling ciphering policy | 0spare | Signalling integrity protection policy | octet o89+1 |
| 0spare | User plane ciphering policy | 0spare | User plane integrity protection policy | octet o89+2 |

Figure 5.4.2.36: Security policy

Table 5.4.2.36: Security policy

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifier to default mode of communication mapping rules contents | octet o84+1octet o84+2 |
| ProSe identifier to default mode of communication mapping rule 1 | octet (o84+3)\*octet o90\* |
| ProSe identifier to default mode of communication mapping rule 2 | octet (o90+1)\*octet o91\* |
| ... | octet (o91+1)\*octet o92\* |
| ProSe identifier to default mode of communication mapping rule n | octet (o92+1)\*octet o85\* |

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

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

|  |
| --- |
| ProSe identifier to default mode of communication mapping rule:The ProSe identifier to default mode of communication mapping rule field is coded according to figure 5.4.2.38 and table 5.4.2.38. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifier to default mode of communication mapping rule contents | octet o90+1octet o90+2 |
| ProSe identifiers | octet o90+3octet o91-1 |
| 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | DMC | octet o91 |

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

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

|  |
| --- |
| ProSe identifiers (o90+3 to o91-1):The ProSe application identifiers field is coded according to figure 5.4.2.14 and table 5.4.2.14. |
|  |
| Default mode of communication (DMC) (octet o91 bit 1 to 2):The DMC field indicates the default mode of communication.Bits**2 1**0 0 unicast0 1 groupcast1 0 broadcast1 1 spareIf the DMC field is set to a spare value, the receiving entity shall ignore the ProSe application identifier to default mode of communication mapping rule. |
|  |
| If the length of ProSe identifier to default mode of communication mapping rule contents field is bigger than indicated in figure 5.4.2.37, receiving entity shall ignore any superfluous octets located at the end of the ProSe identifier to default mode of communication mapping rule contents. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe application to path preference mapping rules contents | octet o5+1octet o5+2 |
| ProSe application to path preference mapping rule 1 | octet (o5+3)\*octet o150\* |
| ProSe application to path preference mapping rule 2 | octet (o150+1)\*octet o151\* |
| ... | octet (o151+1)\*octet o152\* |
| ProSe application to path preference mapping rule n | octet (o152+1)\*octet l\* |

Figure 5.4.2.39: ProSe application to path preference mapping rules

Table 5.4.2.39: ProSe application to path preference mapping rules

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe application to path preference mapping rule contents | octet o150+1octet o150+2 |
| 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | SI | PP | octet o151 |
| ProSe identifiers | octet o152\*octet o18\* |

Figure 5.4.2.40: ProSe application to path preference mapping rule

Table 5.4.2.40: ProSe application to path preference mapping rule

|  |
| --- |
| ProSe identifiers (o152 to o18):If the service indication field is set to value 1 "For all ProSe service", the ProSe identifiers field shall not be included in ProSe application to path preference mapping rule field. If the service indication field is set to value 0 "Not for all ProSe service", the ProSe identifiers field is coded according to figure 5.4.2.14 and table 5.4.2.14. |
|  |
| Path preference (PP) (octet o151 bit 1 to 2):The PP field indicates the path preference.Bits**2 1**0 0 No preference0 1 PC5 preferred1 0 Uu preferred1 1 spareIf the PP field is set to a spare value, the receiving entity shall interpret as "00". |
|  |
| Service indication (SI) (octet o151 bit 3):The SI field indicates whether the path preference is for all ProSe service or not.Bits**3**1 For all ProSe service0 Not for all ProSe service |
| If the length of ProSe application to path preference mapping rule contents field is bigger than indicated in figure 5.4.2.40, receiving entity shall ignore any superfluous octets located at the end of the ProSe application to path preference mapping rule contents. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rules contents | octet o10+1octet o10+2 |
| ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rule 1 | octet (o10+3)\*octet o103\* |
| ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rule 2 | octet (o103+1)\*octet o104\* |
| ... | octet (o104+1)\*octet o105\* |
| ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rule n | octet (o105+1)\*octet l\* |

Figure 5.4.2.41: ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rules

Table 5.4.2.41: ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rules

|  |
| --- |
| ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rule:The ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rule field is coded according to figure 5.4.2.42 and table 5.4.2.42. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rule contents | octet o103+1octet o103+2 |
| ProSe identifiers | octet o103+3octet o1030 |
| NR Tx profile | octet o1030+1=o104 |

Figure 5.4.2.42: ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rule

Table 5.4.2.42: ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rule

|  |
| --- |
| ProSe identifiers:The ProSe identifiers field is coded according to figure 5.4.2.14 and table 5.4.2.14. |
|  |
| NR Tx profile: |
| The NR Tx profile field is coded as *SL-TxProfile-r17* in clause 9.3 of 3GPP TS 38.331 [7]. |
|  |

\* \* \* Next Change \* \* \* \*

### 5.5.2 Information elements coding

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| 0 | 0 | 0 | 0 | ProSeP info type = {UE policies for 5G ProSe UE-to-network relay UE} | octet k |
| Spare |
| Length of ProSeP info contents | octet k+1octet k+2 |
| Validity timer | octet k+3octet k+7 |
| Served by NG-RAN | octet k+8octet o1 |
| Not served by NG-RAN | octet o1+1octet o2 |
| Default destination layer-2 IDs for sending the discovery signalling for announcement and additional information and for receiving the discovery signalling for solicitation | octet o2+1octet o3 |
| User info ID for discovery | octet o3+1octet o3+6 |
| RSC info list | octet o3+7octet o4 |
| 5QI to PC5 QoS parameters mapping rules | octet o4+1octet o5 |
| ProSe identifier to ProSe application server address mapping rules | octet o5+1octet l-2 |
| Privacy timer | octet l-1octet l |

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

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

|  |
| --- |
| ProSeP info type (bit 1 to 4 of octet k) shall be set to "0011" (UE policies for 5G ProSe UE-to-network relay UE) |
|  |
| Length of ProSeP info contents (octets k+1 to k+2) indicates the length of ProSeP info contents. |
|  |
| Validity timer (octet k+3 to k+7):The validity timer field provides the expiration time of validity of the UE policies for 5G ProSe UE-to-network relay UE. The validity timer field is a binary coded representation of a UTC time, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). |
|  |
| Served by NG-RAN (octet k+8 to o1):The served by NG-RAN field is coded according to figure 5.5.2.2 and table 5.5.2.2, and contains configuration parameters for 5G ProSe UE-to-network relay UE when the UE is served by NG-RAN. |
|  |
| Not served by NG-RAN (octet o1+1 to o2):The not served by NG-RAN field is coded according to figure 5.5.2.5 and table 5.5.2.5, and contains configuration parameters for 5G ProSe UE-to-network relay discovery and communication when the UE is not served by NG-RAN. |
|  |
| Default destination layer-2 IDs for sending the discovery signalling for announcement and additional information and for receiving the discovery signalling for solicitation (octet o2+1 to o3):The default destination layer-2 IDs for sending the discovery signalling for announcement and additional information and for receiving the discovery signalling for solicitation is coded according to figure 5.5.2.11a and table 5.5.2.11a and contains a list of the default destination layer-2 IDs for the initial UE-to-network relay discovery signalling. |
|  |
| User info ID for discovery (octet o3+1 to o3+6):The value of the User info ID parameter is a 48-bit long bit string. The format of the User info ID parameter is out of scope of this specification. |
|  |
| RSC info list (octet o3+7 to o4):The RSC info list field is coded according to figure 5.5.2.12 and table 5.5.2.12 and contains the RSCs related paramters. |
|  |
| 5QI to PC5 QoS parameters mapping rules (octet o4+1 to o5):The 5QI to PC5 QoS parameters mapping rules field is coded according to figure 5.5.2.17 and table 5.5.2.17 and contains the 5QI to PC5 QoS parameters mapping rules. |
|  |
| ProSe identifier to ProSe application server address mapping rules (octet o5+1 to l-2):The ProSe identifier to ProSe application server address mapping rules field is coded according to figure 5.5.2.19 and table 5.5.2.19 and contains the ProSe identifier to ProSe application server address mapping rules. |
|  |
| Privacy timer (octet l-1 to l):The privacy timer field contains binary encoded duration, in units of seconds, after which the UE shall change the source layer-2 ID self-assigned by the UE while performing transmission of 5G ProSe direct communication. |
|  |
| If the length of ProSeP info contents field is bigger than indicated in figure 5.5.2.1, receiving entity shall ignore any superfluous octets located at the end of the ProSeP info contents. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of served by NG-RAN contents | octet k+8octet k+9 |
| Authorizated PLMN list for layer-3 relay UE | octet (k+10)\*octet o50\* |
| Authorizated PLMN list for layer-2 relay UE | octet (o50+1)\*octet o1\* |

Figure 5.5.2.2: Served by NG-RAN

Table 5.5.2.2: Served by NG-RAN

|  |
| --- |
| Authorizated PLMN list for layer-3 relay UE:The authorizated PLMN list for layer-3 relay UE field is coded according to figure 5.5.2.3 and table 5.5.2.3. |
|  |
| Authorizated PLMN list for layer-2 relay UE:The authorizated PLMN list for layer-2 relay UE field is coded according to figure 5.5.2.3 and table 5.5.2.3. |

|  |  |
| --- | --- |
| Length of authorized PLMN list contents | octet k+10octet k+11 |
| Authorized PLMN 1 | octet (k+12)\*octet (k+14)\* |
| Authorized PLMN 2 | octet (k+15)\*octet (k+17)\* |
| ... | octet (k+18)\*octet (o50-3)\* |
| Authorized PLMN n | octet (o50-2)\*octet o50\* |

Figure 5.5.2.3: Authorized PLMN list

Table 5.5.2.3: Authorized PLMN list

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

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

Figure 5.5.2.4: PLMN ID

Table 5.5.2.4: PLMN ID

|  |
| --- |
| Mobile country code (MCC) (octet k+15, octet k+16 bit 1 to 4):The MCC field is coded as in ITU-T Recommendation E.212 [5], annex A. |
|  |
| Mobile network code (MNC) (octet k+16 bit 5 to 8, octet k+17):The coding of MNC field is the responsibility of each administration but BCD coding shall be used. The MNC shall consist of 2 or 3 digits. If a network operator decides to use only two digits in the MNC, MNC digit 3 shall be coded as "1111". |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of not served by NG-RAN contents | octet o1+1octet o1+2 |
| NR radio parameters per geographical area list for UE-to-network relay discovery | octet o1+3octet o51 |
| NR radio parameters per geographical area list for UE-to-network relay communication | octet o51+1octet o10 |
| Default PC5 DRX configuration for layer-3 UE-to-network relay discovery | octet o10+1octet o2 |

Figure 5.5.2.5: Not served by NG-RAN

Table 5.5.2.5: Not served by NG-RAN

|  |
| --- |
| NR radio parameters per geographical area list for UE-to-network relay discovery (octet o1+3 to o51):The NR radio parameters per geographical area list for UE-to-network relay discovery field is coded according to figure 5.5.2.6 and table 5.5.2.6. |
|  |
| NR radio parameters per geographical area list for UE-to-network relay communication (octet o51+1 to o10):The NR radio parameters per geographical area list for UE-to-network relay communication field is coded according to figure 5.5.2.7 and table 5.5.2.7. |
| Default PC5 DRX configuration for layer-3 UE-to-network relay discovery (octet o10+1 to o2):The default PC5 DRX configuration for layer-3 UE-to-network relay discovery field is coded according to figure 5.5.2.11a and table 5.5.2.11a. |
|  |
| If the length of not served by NG-RAN contents field is bigger than indicated in figure 5.5.2.5, receiving entity shall ignore any superfluous octets located at the end of the not served by NG-RAN contents. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of NR radio parameters per geographical area list for UE-to-network relay discovery contents | octet o1+3octet o1+4 |
| Radio parameters per geographical area info 1 | octet o1+5octet o510 |
| Radio parameters per geographical area info 2 | octet (o510+1)\*octet o511\* |
| ... | octet (o511+1)\*octet o512\* |
| Radio parameters per geographical area info n | octet (o512+1)\*octet o51\* |

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

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

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of NR radio parameters per geographical area list for UE-to-network relay communication contents | octet o51+1octet o51+2 |
| Radio parameters per geographical area info 1 | octet o51+3octet o513 |
| Radio parameters per geographical area info 2 | octet (o513+1)\*octet o514\* |
| ... | octet (o514+1)\*octet o515\* |
| Radio parameters per geographical area info n | octet (o515+1)\*octet o10\* |

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

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

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of radio parameters per geographical area contents | octet o510+1octet o510+2 |
| Geographical area | octet o510+3octet o5100 |
| Radio parameters | octet o5100+1octet o511-1 |
| MI | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | octet o511 |

Figure 5.5.2.8: Radio parameters per geographical area info

Table 5.5.2.8: Radio parameters per geographical area info

|  |
| --- |
| Geographical area (octet o510+3 to o5100):The geographical area field is coded according to figure 5.5.2.9 and table 5.5.2.9. |
|  |
| Radio parameters (octet o5100+1 to o511-1):The radio parameters field is coded according to figure 5.3.2.11 and table 5.3.2.11, applicable in the geographical area indicated by the geographical area field when not served by NG-RAN. |
|  |
| Managed indicator (MI) (octet o511 bit 8):The managed indicator indicates how the radio parameters indicated in the radio parameters field in the geographical area indicated by the geographical area field are managed.Bit**8**0 Non-operator managed1 Operator managed |
|  |
| If the length of radio parameters per geographical area contents field is bigger than indicated in figure 5.5.2.8, receiving entity shall ignore any superfluous octets located at the end of the radio parameters per geographical area contents. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of geographical area contents | octet o510+3octet o510+4 |
| Coordinate 1 | octet (o510+5)\*octet (o510+10)\* |
| Coordinate 2 | octet (o510+11)\*octet (o510+16)\* |
| ... | octet (o510+17)\*octet (o510-2+6\*n)\* |
| Coordinate n | octet (o510-1+6\*n)\*octet (o510+4+6\*n)\* = octet o5100\* |

Figure 5.5.2.9: Geographical area

Table 5.5.2.9: Geographical area

|  |
| --- |
| Coordinate:The coordinate field is coded according to figure 5.5.2.10 and table 5.5.2.10. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Latitude | octet o510+11octet o510+13 |
| Longitude | octet o510+14octet o510+17 |

Figure 5.5.2.10: Coordinate area

Table 5.5.2.10: Coordinate area

|  |
| --- |
| Latitude (octet o510+11 to o510+13):The latitude field is coded according to clause 6.1 of 3GPP TS 23.032 [6]. |
|  |
| Longitude (octet o510+14 to o510+17):The longitude field is coded according to clause 6.1 of 3GPP TS 23.032 [6]. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of radio parameters contents | octet o5100+1octet o5100+2 |
| Radio parameters contents | octet o5100+3octet o511-1 |

Figure 5.5.2.11: Radio parameters

Table 5.5.2.11: Radio parameters

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of default PC5 DRX configuration for layer-3 UE-to-network relay discovery contents | octet o10+1octet o10+2 |
| Default PC5 DRX configuration for layer-3 UE-to-network relay discovery contents | octet o10+3octet o2 |

Figure 5.5.2.11a: Default PC5 DRX configuration for layer-3 UE-to-network relay discovery

Table 5.5.2.11a: Default PC5 DRX configuration for layer-3 UE-to-network relay discovery

|  |
| --- |
| Default PC5 DRX configuration contents for layer-3 UE-to-network relay discovery:Default PC5 DRX configuration for layer-3 UE-to-network relay discovery field is coded as *sl-DefaultDRX-GC-BC-r17* in clause 6.3.5 of 3GPP TS 38.331 [7]. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of default destination layer-2 IDs for sending the discovery signalling for announcement and additional information and for receiving the discovery signalling for solicitation contents | octet o2+1octet o2+2 |
| Default destination layer-2 ID 1 | octet o2+3octet o2+5 |
| Default destination layer-2 ID 2 | octet (o2+6)\*octet (o2+8)\* |
| ... | octet (o2+9)\*octet (o3-3)\* |
| Default destination layer-2 ID n | octet (o3-2)\*octet o3\* |

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

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

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of RSC info list contents | octet o3+7octet o3+8 |
| RSC info 1 | octet o3+9octet o52 |
| RSC info 2 | octet (o52+1)\*octet (o53)\* |
| ... | octet (o53+1)\*octet (o54)\* |
| RSC info n | octet (o54+1)\*octet o4\* |

Figure 5.5.2.12: RSC info list

Table 5.5.2.12: RSC info list

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of RSC info contents | octet o52+1octet o52+2 |
| RSC list | octet o52+3octet o520 |
| Security related parameters for discovery | octet o520+1octet o511 |
| 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | Layer indication | octet o511+1 |
| PDU session parameters for layer-3 relay UE | octet (o511+2)octet o530 |
| NR-PC5 UE-to-network relay security policies | octet (o530+1)octet o53 |

Figure 5.5.2.13: RSC info

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

Table 5.5.2.13: RSC info

|  |
| --- |
| RSC list (octet o52+3 to o520):The RSC list field is coded according to figure 5.5.2.14 and table 5.5.2.14. |
|  |
| Security related parameters for discovery (octet o520+1 to o511):The security related parameters for discovery field is coded according to figure 5.5.2.15 and table 5.5.2.15. |
|  |
| Layer indication (octet o511+1):Bits2 10 1 Layer 31 0 Layer 2The other values are reserved. |
|  |
| PDU session parameters for layer-3 relay UE (octet o511+2 to o53):The PDU session parameters for layer-3 relay UE field is coded according to figure 5.5.2.16 and table 5.5.2.16. |
|  |
| NR-PC5 UE-to-network relay security policies (octet o530+1 to octet o53)The NR-PC5 UE-to-network relay security policies is coded as the NR-PC5 unicast security policies defined in figure 5.4.2.34 and table 5.4.2.34. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of RSC list contents | octet o52+3octet o52+4 |
| RSC 1 | octet o52+5octet o52+7 |
| RSC 2 | octet (o52+8)\*octet (o52+10)\* |
| … | octet (o52+11)\*octet (o520-3)\* |
| RSC n | octet (o520-2)\*octet o520\* |

Figure 5.5.2.14: RSC list

Table 5.5.2.14: RSC list

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of PDU session parameters for layer-3 relay UE contents | octet o511+2octet o511+3 |
| Spare | PATP | PSSCM | PSNSSAI | PDNN | PDU session type | octet o511+4 |
| DNN | octet (o511+5)\*octet o512\* |
| S-NSSAI | octet (o512+1)\*octet (o53-1)\* |
| Spare | Access type preference | SSC mode | octet o53\* |

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

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

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of 5QI to PC5 QoS parameters mapping rules contents | octet o4+1octet o4+2 |
| 5QI to PC5 QoS parameters mapping rule 1 | octet o4+3octet o55 |
| 5QI to PC5 QoS parameters mapping rule 2 | octet (o55+1)\*octet o56\* |
| … | octet (o56+1)\*octet o57\* |
| 5QI to PC5 QoS parameters mapping rule n | octet (o57+1)\*octet o5\* |

Figure 5.5.2.17: 5QI to PC5 QoS parameters mapping rules

Table 5.5.2.17: 5QI to PC5 QoS parameters mapping rules

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of 5QI to PC5 QoS parameters mapping rule contents | octet o55+1octet o55+2 |
| 5QI | octet o55+3 |
| PQI | octet o55+4 |
| PDB adjustment factor | octet o55+5 |
| RSC list | octet (o55+6)\*octet o56\* |

Figure 5.5.2.18: 5QI to PC5 QoS parameters mapping rule

Table 5.5.2.18: 5QI to PC5 QoS parameters mapping rule

|  |
| --- |
| 5QI (octet o55+3):Bits**8 7 6 5 4 3 2 1**0 0 0 0 0 0 0 0 Reserved0 0 0 0 0 0 0 1 5QI 10 0 0 0 0 0 1 0 5QI 20 0 0 0 0 0 1 1 5QI 30 0 0 0 0 1 0 0 5QI 40 0 0 0 0 1 0 1 5QI 50 0 0 0 0 1 1 0 5QI 60 0 0 0 0 1 1 1 5QI 70 0 0 0 1 0 0 0 5QI 80 0 0 0 1 0 0 1 5QI 90 0 0 0 1 0 1 0 5QI 100 0 0 0 1 0 1 1 to Spare0 1 0 0 0 0 0 00 1 0 0 0 0 0 1 5QI 650 1 0 0 0 0 1 0 5QI 660 1 0 0 0 0 1 1 5QI 670 1 0 0 0 1 0 0 Spare0 1 0 0 0 1 0 1 5QI 690 1 0 0 0 1 1 0 5QI 700 1 0 0 0 1 1 1 5QI 710 1 0 0 1 0 0 0 5QI 720 1 0 0 1 0 0 1 5QI 730 1 0 0 1 0 1 0 5QI 740 1 0 0 1 0 1 1 5QI 750 1 0 0 1 1 0 0 5QI 760 1 0 0 1 1 0 1 to Spare0 1 0 0 1 1 1 00 1 0 0 1 1 1 1 5QI 790 1 0 1 0 0 0 0 5QI 800 1 0 1 0 0 0 1 Spare0 1 0 1 0 0 1 0 5QI 820 1 0 1 0 0 1 1 5QI 830 1 0 1 0 1 0 0 5QI 840 1 0 1 0 1 0 1 5QI 850 1 0 1 0 1 1 0 5QI 860 1 0 1 0 1 1 1 to Spare0 1 1 1 1 1 1 11 0 0 0 0 0 0 0 to Operator-specific 5QIs1 1 1 1 1 1 1 01 1 1 1 1 1 1 1 Reserved |
|  |
| PQI (octet o55+4):Bits**8 7 6 5 4 3 2 1**0 0 0 0 0 0 0 0 Reserved0 0 0 0 0 0 0 1 to Spare0 0 0 1 0 1 0 00 0 0 1 0 1 0 1 PQI 210 0 0 1 0 1 1 0 PQI 220 0 0 1 0 1 1 1 PQI 230 0 0 1 1 0 0 0 PQI 240 0 0 1 1 0 0 1 PQI 250 0 0 1 1 0 1 0 PQI 260 0 0 1 1 0 1 1 to Spare0 0 1 1 0 1 1 00 0 1 1 0 1 1 1 PQI 550 0 1 1 1 0 0 0 PQI 560 0 1 1 1 0 0 1 PQI 570 0 1 1 1 0 1 0 PQI 580 0 1 1 1 0 1 1 PQI 590 0 1 1 1 1 0 0 PQI 600 0 1 1 1 1 0 1 PQI 610 0 1 1 1 1 1 0 to Spare0 1 0 1 1 0 0 10 1 0 1 1 0 1 0 PQI 900 1 0 1 1 0 1 1 PQI 910 1 0 1 1 1 0 0 PQI 920 1 0 1 1 1 0 1 PQI 930 1 0 1 1 1 1 0 to Spare0 1 1 1 1 1 1 11 0 0 0 0 0 0 0 to Operator-specific PQIs1 1 1 1 1 1 1 01 1 1 1 1 1 1 1 Reserved |
|  |
| PDB adjustment factor (octet o55+5):The PDB adjustment factor field is a binary coded representation of a percentage of the standardized PDB identified by the PQI. |
|  |
| RSC list (octet o55+6 to o56):The RSC list field is coded according to figure 5.5.2.14 and table 5.5.2.14. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifier to ProSe application server address mapping rules contents | octet o5+1octet o5+2 |
| ProSe identifier to ProSe application server address mapping rule 1 | octet (o5+3)\*octet o150\* |
| ProSe identifier to ProSe application server address mapping rule 2 | octet (o150+1)\*octet o151\* |
| ... | octet (o151+1)\*octet o152\* |
| ProSe identifier to ProSe application server address mapping rule n | octet (o152+1)\*octet (l-2)\* |

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

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

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of ProSe identifier to ProSe application server address mapping rule contents | octet o150+1octet o150+2 |
| ProSe identifiers | octet o150+3octet o1500 |
| 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | AT | octet o1500+1 |
| ProSe application server address | octet o1500+2octet l-2 |

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

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

|  |
| --- |
| ProSe identifiers (o150+3 to o1500):The ProSe identifiers field is coded according to figure 5.3.2.14 and table 5.3.2.14. |
|  |
| Address type (AT) (octet o1500+1 bit 1 to 3):The AT field indicates the ProSe application server address type.Bits**3 2 1**0 0 1 IPv40 1 0 IPv60 1 1 FQDNThe other values are reserved. |
|  |
| If the AT indicates IPv4, then the ProSe application server address field contains an IPv4 address in 4 octets. If the AT indicates IPv6, then the ProSe application server address field contains an IPv6 address in 16 octets.If the AT indicates FQDN, then the ProSe application server address field contains a sequence of one octet FQDN length field and a FQDN value of variable size. The FQDN value field shall be encoded as defined in subclause 28.3.2.1 in 3GPP TS 23.003 [10]. |
|  |
| If the length of ProSe identifier to ProSe application server address mapping rule contents field is bigger than indicated in figure 5.5.2.19, receiving entity shall ignore any superfluous octets located at the end of the ProSe identifier to ProSe application server address mapping rule contents. |
|  |

\* \* \* Next Change \* \* \* \*

### 5.6.2 Information elements coding

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| 0 | 0 | 0 | 0 | ProSeP info type = {UE policies for 5G ProSe remote UE} | octet k |
| Spare |
| Length of ProSeP info contents | octet k+1octet k+2 |
| Validity timer | octet k+3octet k+7 |
| Served by NG-RAN | octet k+8octet o1 |
| Not served by NG-RAN | octet o1+1octet o2 |
| Default destination layer-2 IDs for sending the discovery signalling for solicitation and for receiving the discovery signalling for announcement and additional information | octet o2+1octet o3 |
| User info ID for discovery | octet o3+1octet o3+6 |
| RSC info list | octet o3+7octet l |
| N3IWF selection information for 5G ProSe layer-3 remote UE | octet l+1octet m |
| Privacy timer | octet m+1octet m+2 |

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

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

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

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of served by NG-RAN contents | octet k+8octet k+9 |
| 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | L3RI | octet (k+10)\* |
| Authorized PLMN list for layer-2 remote UE | octet (k+11)\*octet o1\* |

Figure 5.6.2.2: Served by NG-RAN

Table 5.6.2.2: Served by NG-RAN

|  |
| --- |
| Layer-3 remote UE authorization indication (L3RI) (octet k+10, bit 1):The layer-3 remote UE authorization indication field indicates whether the UE is authorized to act as a layer-3 remote UE.Bits10 Not authorized to act as a layer-3 remote UE1 Authorized to act as a layer-3 remote UE |
|  |
| Authorized PLMN list for layer-2 remote UE (octet k+11 to o1):The authorized PLMN list for layer-2 remote UE field is coded according to figure 5.6.2.3 and table 5.6.2.3. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of authorized PLMN list contents | octet k+11octet k+12 |
| Authorized PLMN 1 | octet (k+13)\*octet (k+15)\* |
| Authorized PLMN 2 | octet (k+16)\*octet (k+18)\* |
| ... | octet (k+19)\*octet (o50-3)\* |
| Authorized PLMN n | octet (o50-2)\*octet o50\* |

Figure 5.6.2.3: Authorized PLMN list

Table 5.6.2.3: Authorized PLMN list

|  |
| --- |
| Authorized PLMN:The authorized PLMN field is coded according to figure 5.6.2.4 and table 5.6.2.4. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| MCC digit 2 | MCC digit 1 | octet k+16 |
| MNC digit 3 | MCC digit 3 | octet k+17 |
| MNC digit 2 | MNC digit 1 | octet k+18 |

Figure 5.6.2.4: PLMN ID

Table 5.6.2.4: PLMN ID

|  |
| --- |
| Mobile country code (MCC) (octet k+16, octet k+17 bit 1 to 4):The MCC field is coded as in ITU-T Recommendation E.212 [5], annex A. |
|  |
| Mobile network code (MNC) (octet k+17 bit 5 to 8, octet k+18):The coding of MNC field is the responsibility of each administration but BCD coding shall be used. The MNC shall consist of 2 or 3 digits. If a network operator decides to use only two digits in the MNC, MNC digit 3 shall be coded as "1111". |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of not served by NG-RAN contents | octet o1+1octet o1+2 |
| NR radio parameters per geographical area list for UE-to-network relay discovery | octet o1+3octet o51 |
| NR radio parameters per geographical area list for UE-to-network relay communication | octet o51+1octet o10 |
| Default PC5 DRX configuration for layer-3 UE-to-network relay discovery | octet o10+1octet o2 |

Figure 5.6.2.5: Not served by NG-RAN

Table 5.6.2.5: Not served by NG-RAN

|  |
| --- |
| NR radio parameters per geographical area list for UE-to-network relay discovery (octet o1+3 to o51):The NR radio parameters per geographical area list for UE-to-network relay discovery field is coded according to figure 5.6.2.6 and table 5.6.2.6. |
|  |
| NR radio parameters per geographical area list for UE-to-network relay communication (octet o51+1 to o10):The NR radio parameters per geographical area list for UE-to-network relay communication field is coded according to figure 5.6.2.7 and table 5.6.2.7. |
| Default PC5 DRX configuration for layer-3 UE-to-network relay discovery (octet o10+1 to o2):The default PC5 DRX configuration for layer-3 UE-to-network relay discovery field is coded according to figure 5.6.2.11a and table 5.6.2.11a. |
|  |
| If the length of not served by NG-RAN contents field is bigger than indicated in figure 5.6.2.5, receiving entity shall ignore any superfluous octets located at the end of the not served by NG-RAN contents. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of NR radio parameters per geographical area list for UE-to-network relay discovery contents | octet o1+3octet o1+4 |
| Radio parameters per geographical area info 1 | octet o1+5octet o510 |
| Radio parameters per geographical area info 2 | octet (o510+1)\*octet o511\* |
| ... | octet (o511+1)\*octet o512\* |
| Radio parameters per geographical area info n | octet (o512+1)\*octet o51\* |

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

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

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of NR radio parameters per geographical area list for UE-to-network relay communication contents | octet o51+1octet o51+2 |
| Radio parameters per geographical area info 1 | octet o51+3octet o513 |
| Radio parameters per geographical area info 2 | octet (o513+1)\*octet o514\* |
| ... | octet (o514+1)\*octet o515\* |
| Radio parameters per geographical area info n | octet (o515+1)\*octet o10\* |

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

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

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of radio parameters per geographical area contents | octet o510+1octet o510+2 |
| Geographical area | octet o510+3octet o5100 |
| Radio parameters | octet o5100+1octet o511-1 |
| MI | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | octet o511 |

Figure 5.6.2.8: Radio parameters per geographical area info

Table 5.6.2.8: Radio parameters per geographical area info

|  |
| --- |
| Geographical area (octet o510+3 to o5100):The geographical area field is coded according to figure 5.6.2.9 and table 5.6.2.9. |
|  |
| Radio parameters (octet o5100+1 to o511-1):The radio parameters field is coded according to figure 5.3.2.11 and table 5.3.2.11, applicable in the geographical area indicated by the geographical area field when not served by NG-RAN. |
|  |
| Managed indicator (MI) (octet o511 bit 8):The managed indicator indicates how the radio parameters indicated in the radio parameters field in the geographical area indicated by the geographical area field are managed.Bit**8**0 Non-operator managed1 Operator managed |
|  |
| If the length of radio parameters per geographical area contents field is bigger than indicated in figure 5.6.2.8, receiving entity shall ignore any superfluous octets located at the end of the radio parameters per geographical area contents. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of geographical area contents | octet o510+3octet o510+4 |
| Coordinate 1 | octet (o510+5)\*octet (o510+10)\* |
| Coordinate 2 | octet (o510+11)\*octet (o510+16)\* |
| ... | octet (o510+17)\*octet (o510-2+6\*n)\* |
| Coordinate n | octet (o510-1+6\*n)\*octet (o510+4+6\*n)\* = octet o5100\* |

Figure 5.6.2.9: Geographical area

Table 5.6.2.9: Geographical area

|  |
| --- |
| Coordinate:The coordinate field is coded according to figure 5.6.2.10 and table 5.6.2.10. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Latitude | octet o510+11octet o510+13 |
| Longitude | octet o510+14octet o510+17 |

Figure 5.6.2.10: Coordinate area

Table 5.6.2.10: Coordinate area

|  |
| --- |
| Latitude (octet o510+11 to o510+13):The latitude field is coded according to clause 6.1 of 3GPP TS 23.032 [6]. |
|  |
| Longitude (octet o510+14 to o510+17):The longitude field is coded according to clause 6.1 of 3GPP TS 23.032 [6]. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of radio parameters contents | octet o5100+1octet o5100+2 |
| Radio parameters contents | octet o5100+3octet o511-1 |

Figure 5.6.2.11: Radio parameters

Table 5.6.2.11: Radio parameters

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of default PC5 DRX configuration for layer-3 UE-to-network relay discovery contents | octet o10+1octet o10+2 |
| Default PC5 DRX configuration for layer-3 UE-to-network relay discovery contents | octet o10+3octet o2 |

Figure 5.6.2.11a: Default PC5 DRX configuration for layer-3 UE-to-network relay discovery

Table 5.6.2.11a: Default PC5 DRX configuration for layer-3 UE-to-network relay discovery

|  |
| --- |
| Default PC5 DRX configuration contents for layer-3 UE-to-network relay discovery:Default PC5 DRX configuration for layer-3 UE-to-network relay discovery field is coded as *sl-DefaultDRX-GC-BC-r17* in clause 6.3.5 of 3GPP TS 38.331 [7]. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of default destination layer-2 IDs for sending the discovery signalling for solicitation and for receiving the discovery signalling for announcement and additional information contents | octet o2+1octet o2+2 |
| Default destination layer-2 ID 1 | octet o2+3octet o2+5 |
| Default destination layer-2 ID 2 | octet (o2+6)\*octet (o2+8)\* |
| ... | octet (o2+9)\*octet (o3-3)\* |
| Default destination layer-2 ID n | octet (o3-2)\*octet o3\* |

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

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

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of RSC info list contents | octet o3+7octet o3+8 |
| RSC info 1 | octet o3+9octet o52 |
| RSC info 2 | octet (o52+1)\*octet o53\* |
| ... | octet (o53+1)\*octet o54\* |
| RSC info n | octet (o54+1)\*octet o4\* |

Figure 5.6.2.12: RSC info list

Table 5.6.2.12: RSC info list

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of RSC info contents | octet o52+1octet o52+2 |
| RSC list | octet o52+3octet o520 |
| Security related parameters for discovery | octet o520+1octet o511 |
| 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | NSI | LI | octet o511+1 |
| PDU session parameters for layer-3 remote UE | octet (o511+2)\*octet o516\* |
| Traffic descriptor | octet (o516+1)\*octet o53\* |

Figure 5.6.2.13: RSC info

Table 5.6.2.13: RSC info

|  |
| --- |
| RSC list (octet o52+3 to o520):The RSC list field is coded according to figure 5.6.2.14 and table 5.6.2.14. |
|  |
| Security related parameters for discovery (octet o520+1 to o511):The security related parameters for discovery field is coded according to figure 5.6.2.15 and table 5.6.2.15. |
|  |
| Layer indication (LI) (octet o511+1 bit 1 to 2):Bits2 10 1 Layer 31 0 Layer 2The other values are reserved. |
|  |
| N3IWF support indication (NSI) (octet o511+1 bit 3):Bit50 Using N3IWF access for the relayed traffic is not supported1 Using N3IWF access for the relayed traffic is supportedThe NSI is set to "Using N3IWF access for the relayed traffic is supported" only when the LI is set to "Layer 3". |
|  |
| PDU session parameters for layer-3 remote UE (octet o511+2 to o516):The PDU session parameters for layer-3 remote UE field is coded according to figure 5.6.2.16 and table 5.6.2.16. |
|  |
| Traffic descriptor (octet o516+1 to o53):The traffic descriptor field is coded according to figure 5.6.2.16a and table 5.6.2.16a. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of RSC list contents | octet o52+3octet o52+4 |
| RSC 1 | octet o52+5octet o52+7 |
| RSC 2 | octet (o52+8)\*octet (o52+10)\* |
| … | octet (o52+11)\*octet (o520-3)\* |
| RSC n | octet (o520-2)\*octet o520\* |

Figure 5.6.2.14: RSC list

Table 5.6.2.14: RSC list

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of PDU session parameters for layer-3 relay contents | octet o511+2octet o511+3 |
| Spare | PATP | PSSCM | PSNSSAI | PDNN | PDU session type | octet o511+4 |
| DNN | octet (o511+5)\*octet o512\* |
| S-NSSAI | octet (o512+1)\*octet (o53-1)\* |
| Spare | Access type preference | SSC mode | octet o53\* |

Figure 5.6.2.16: PDU session parameters for layer-3 relay

Table 5.6.2.16: PDU session parameters for layer-3 relay

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of traffic descriptor contents | octet o516+1octet o516+2 |
| Traffic descriptor | octet o516+3octet o53 |

Figure 5.6.2.16a: Traffic descriptor

Table 5.6.2.16a: Traffic descriptor

|  |
| --- |
| Traffic descriptor (octet o516+3 to o53):The traffic descriptor field is coded according to figure 5.2.2 and table 5.2.1 in clause 5.2 of 3GPP TS 24.526 [11]. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of N3IWF selection information for 5G ProSe layer-3 remote UE | octet l+1octet l+2 |
| N3IWF identifier configuration for 5G ProSe layer-3 remote UE | octet l+3\*octet l0\* |
| 5G ProSe layer-3 UE-to-network relays access node selection information | octet l0+1\*octet m |

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

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

|  |
| --- |
| N3IWF identifier configuration for 5G ProSe layer-3 remote UE (octet l+3\* to l0\*):The N3IWF identifier configuration for 5G ProSe layer-3 remote UE contains a list of home N3IWF identifier entries and is coded according to figure 5.6.2.18 and table 5.6.2.18.5G ProSe layer-3 UE-to-network relays access node selection information (octet l0+1\* to m): |
| The 5G ProSe layer-3 UE-to-network relays access node selection information contains a sequence of the N3AN node selection information entries and is coded according to figure 5.6.2.19 and table 5.6.2.19. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of N3IWF identifier configuration for 5G ProSe layer-3 remote UE | octet l+3\*octet l+4\* |
| Contents of N3IWF identifier configuration for 5G ProSe layer-3 remote UE | octet l+5\*octet l01\* |

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

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

|  |
| --- |
| Contents of N3IWF identifier configuration for 5G ProSe layer-3 remote UE (octet l+5\* to l01\*):The contents of N3IWF identifier configuration for 5G ProSe layer-3 remote UE shall be encoded as the encoding of home N3IWF identifier configuration defined in clause 5.3.3.3 of 3GPP TS 24.526 [11]. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of 5G ProSe layer-3 UE-to-network relays access node selection information | octet l0+1\*octet l0+2\* |
| Contents of 5G ProSe layer-3 UE-to-network relays access node selection information | octet l0+3\*octet m\* |

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

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

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| Contents of 5G ProSe layer-3 UE-to-network relays access node selection information (octet l0+3\* to m\*):The contents of 5G ProSe layer-3 UE-to-network relays access node selection information shall be encoded as the encoding of N3AN node selection information defined in clause 5.3.3.2 of 3GPP TS 24.526 [11]. |
| NOTE: In this release of specification, the "preference" bit (as shown in figure 5.3.3.2.2 of 3GPP TS 24.526 [11]) is always set to "0". |

\* \* \* End of Changes \* \* \* \*