**3GPP TSG-CT WG1 Meeting #123-eC1-202xxx**

**Electronic meeting, 16-24 April 2020 (was C1-202105)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.587** | **CR** | **0003** | **rev** | **1** | **Current version:** | **16.0.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | NR PC5 unicast security policy provisioning | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Qualcomm Incorporated, Ericsson | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eV2XARC | | | | |  | ***Date:*** | | | 2020-04-20 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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 can be 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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | At SA3#98e, SA3 agreed S3-200507 to TS 33.536 which specifies that for NR PC5 unicast the UE shall be provisioned with the list of V2X services, e.g. PSIDs or ITS-AIDs of the V2X applications, with Geographical Area(s) and their security policy which indicates the following:  - Signalling integrity protection: REQUIRED/PREFERRED/OFF  - Signalling confidentiality protection: REQUIRED/PREFERRED/OFF  - User plane integrity protection: REQUIRED/PREFERRED/OFF  - User plane confidentiality protection: REQUIRED/PREFERRED/OFF  At SA3#98bis-e, SA3 further agreed S3-200690 which changed the “OFF” setting to “NOT NEEDED”.  TS 24.587 needs to be updated accordingly. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | The security policy was added to the configuration parameters for V2X commmunication over PC5. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Provisioning of the security policy for NR PC5 unicast will not be supported. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.2.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

\*\*\* First change \*\*\*

### 5.2.3 Configuration parameters for V2X communication over PC5

The configuration parameters for V2X communication over PC5 consist of:

a) a validity timer for the validity of the configuration parameters for V2X communication over PC5;

b) a list of PLMNs and RATs in which the UE is authorized to use V2X communication over PC5 when the UE is served by E-UTRA or served by NR. Each entry of the list contains a PLMN ID and RATs in which the UE is authorized to use V2X communication over PC5;

c) an indication of whether the UE is authorized to use V2X communication over PC5 when the UE is not served by E-UTRA and not served by NR;

d) list of RATs in which the UE is authorized to use V2X communication over PC5 when the UE is not served by E-UTRA and not served by NR;

e) per geographical area:

1) radio parameters for V2X communication over PC5 applicable when the UE is not served by E-UTRA, not served by NR and is located in the geographical area, with an indication of whether these radio parameters are "operator managed" or "non-operator managed";

f) optionally, a list of V2X service identifier to Tx profiles mapping rules. Each mapping rule contains one or more V2X service identifiers and a Tx profile;

g) configuration parameters for privacy support, consisting of:

1) a list of V2X services requiring privacy. Each entry of the list contains one or more V2X service identifiers and one or more geographical areas where the privacy is required; and

2) a privacy timer value;

Editor’s note: The encoding of the Privacy timer is FFS.

h) configuration parameters for a V2X communication over PC5 in E-UTRA, consisting of:

1) a list of V2X service identifier to destination layer-2 ID mapping rules. Each mapping rule contains one or more V2X service identifiers and the destination layer-2 ID;

2) optionally, a default destination layer-2 ID;

3) a list of PPPP to PDB mapping rules. Each mapping rule contains a ProSe Per-Packet Priority (PPPP) and a Packet Delay Budget (PDB);

4) optionally, list of V2X service identifier to V2X E-UTRA frequency mapping rules. Each mapping rule contains one or more V2X service identifiers and the V2X E-UTRA frequencies with associated geographical areas; and

5) optionally, a list of the V2X services authorized for ProSe Per-Packet Reliability (PPPR). Each entry of the list contains one or more V2X service identifiers and a ProSe Per-Packet Reliability (PPPR) value; and

i) configuration parameters for a V2X communication over PC5 in NR, consisting of:

1) optionally, a list of V2X service identifier to V2X NR frequency mapping rules. Each mapping rule contains one or more V2X service identifiers and the V2X NR frequencies with associated geographical areas;

2) a list of V2X service identifier to destination layer-2 ID for broadcast mapping rules. Each mapping rule contains one or more V2X service identifiers and the destination layer-2 ID for broadcast;

3) optionally, a default destination layer-2 ID for broadcast;

4) a list of V2X service identifier to destination layer-2 ID for groupcast mapping rules. Each mapping rule contains one or more V2X service identifiers and the destination layer-2 ID for groupcast;

5) a list of V2X service identifier to default destination layer-2 ID for unicast initial signaling mapping rules. Each mapping rule contains one or more V2X service identifiers and the default destination layer-2 ID for initial signalling to establish unicast connection;

6) a PC5 QoS mapping configuration which is a list of PC5 QoS mapping rules. Each PC5 QoS mapping rule contains a input consisting of one or more V2X service identifiers and optionally V2X application requirements for the V2X service, and an output consisting of PC5 QoS parameters as specified in clause 5.4.2 of 3GPP TS 23.287 [3]. Specification of the V2X application requirements for the V2X service is out of scope of the present specification;

7) an SLRB configurations which is a list of SLRB mapping rules applicable when the UE is not served by E-UTRA and is not served by NR. Each SLRB mapping rule contains a PC5 QoS profile and an SLRB. The PC5 QoS profile contains the following parameters:

i) the PC5 QoS profile contains a PQI;

ii) if the PQI of the PC5 QoS profile identifies a GBR QoS, the PC5 QoS profile contains a PC5 flow bit rates consisting of a guaranteed flow bit rate (GFBR) and a maximum flow bit rate (MFBR);

iii) if the PQI of the PC5 QoS profile does not identify a GBR QoS, the PC5 QoS profile contains the PC5 link aggregated bit rate consisting of a per link aggregate maximum bit rate (PC5 LINK-AMBR);

iv) the PC5 QoS profile contains a range; and

v) the PC5 QoS profile can contain the priority level, the averaging window, and the maximum data burst volume. If one or more of the priority level, the averaging window or the maximum data burst volume are not contained in the PC5 QoS profile, their default values apply; and

x) a list of NR-PC5 unicast security policies. Each entry in the list contains:

i) one or more V2X service identifiers;

ii) the signalling integrity protection policy for the V2X service identifier(s);

iii) the signalling ciphering policy for the V2X service identifier(s);

iv) the user plane integrity protection policy for the V2X service identifier(s);

v) the user plane ciphering policy for the V2X service identifier(s); and

vi) one or more geographical areas where the NR-PC5 unicast security policy applies.

\*\*\* End of changes \*\*\*