**3GPP TSG-CT WG1 Meeting #123-eC1-20xxxx**

**Electronic meeting, 16-24 April 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.587** | **CR** | **0037** | **rev** | **1** | **Current version:** | **16.0.0** |  |
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| *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 |  |

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| ***Title:*** | Packet filter for PC5 QoS flows | | | | | | | | | |
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| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eV2XARC | | | | |  | ***Date:*** | | | 2020-03-28 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **C** |  | | | | | ***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:*** | | The specification contains one editor’s notes on the content of the set of packet filters under subclause 6.1.3.2.1.2, quote:  *d) if in the context for the destination layer-2 ID, there is no existing PC5 QoS flow context, which corresponds to the V2X service identifier and the PC5 QoS parameters, then:*  *1) self-assign a new PFI;*  *2) build a new PC5 QoS flow context and include the V2X service identifier and the PC5 QoS parameters;*  *3) set up a new PC5 QoS rule, the PC5 QoS rule contains:*  *i) a PC5 QoS rule identifier;*  *ii) the PFI;*  *iii) a set of packet filters; and*  *Editor’s notes: The exact content of the set of packet filters is for further study.*  *iv) a precedence value.*  The undefined content of the set of packet filters originates from 3GPP TS 23.287 subaclause 5.4.1.1.4, quote:  *The V2X Packet Filter Set shall support Packet Filters based on at least any combination of:*  *- V2X Service type (e.g. PSID or ITS-AID);*  *- Source/Destination Layer-2 ID;*  *- Application Layer ID (e.g. Station ID);*  *- Extension parameters.*  *Editor's note: Stage 3 can determine the Extension parameters to support, for example, input parameters from upper layer protocols or extension header fields (e.g. the TC field of GeoNetworking Common header, WAVE Information Element Extension, etc.).*  Thus the key part remaining to be solved is the Extension parameters. In ETSI EN 302 636-4-1 v1.4.1, the TC field of GeoNetworking Common header is short for Traffic Class field, which represents Facility-layer requirements on packet transport. And in ETSI TS 103 613 V1.1.1 Annex B, ITS has defined the mapping relations between Traffic Class (TC) and PPPP. It is clear that the TC filed represents the V2X application requirements for the V2X service, and adding TC field as a basic element for V2X packet filter is needed.  Besides, some minor changes need to be applied to the wording. | | | | | | | | |
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| ***Summary of change:*** | | 1. The exact content of the set of packet filters when setting up a PC5 QoS rule; 2. Some wording corrections. | | | | | | | | |
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| ***Consequences if not approved:*** | | The exact content of the set of packet filters when setting up a PC5 QoS rule is missing. | | | | | | | | |
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| ***Clauses affected:*** | | 6.1.3.2.1.2 | | | | | | | | |
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|  | | **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 \* \* \* \*

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document in the same Release as the present document.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.122: "Non-Access-Stratum (NAS) functions related to Mobile Station (MS) in idle mode".

[3] 3GPP TS 23.287: "Architecture enhancements for 5G System (5GS) to support Vehicle-to-Everything (V2X) services".

[4] 3GPP TS 23.502: "Procedures for the 5G System (5GS); Stage 2".

[5] 3GPP TS 24.386 "User Equipment (UE) to V2X control function; protocol aspects; Stage 3".

[6] 3GPP TS 24.501: "Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3".

[7] 3GPP TS 24.588: "Vehicle-to-Everything (V2X) services in 5G System (5GS); User Equipment (UE) policies; Stage 3".

[8] 3GPP TS 38.300: "NR; NR and NG-RAN Overall Description; Stage 2".

[9] 3GPP TS 38.304: "User Equipment (UE) procedures in Idle mode and RRC Inactive state".

[10] 3GPP TS 38.323: "NR; Packet Data Convergence Protocol (PDCP) specification".

[11] 3GPP TS 38.331: "NR; Radio Resource Control (RRC) protocol specification".

[12] ETSI EN 302 636-3 v1.2.1: "Intelligent Transport Systems (ITS); Vehicular Communications; GeoNetworking; Part 3: Network Architecture".

[13] IEEE 1609.3 2016: "IEEE Standard for Wireless Access in Vehicular Environments (WAVE) -- Networking Services".

[14] IETF RFC 768: "User Datagram Protocol".

[15] IETF RFC 4291: "IP Version 6 Addressing Architecture".

[16] IETF RFC 4862: "Neighbor Discovery for IP version 6 (IPv6)".

[17] ISO 29281-1 2013: "Intelligent transport systems -- Communication access for land mobiles (CALM) -- Non-IP networking -- Part 1: Fast networking & transport layer protocol (FNTP)".

[18] ISO TS 17419 ITS-AID AssignedNumbers: <http://standards.iso.org/iso/ts/17419/TS17419%20Assigned%20Numbers/TS17419_ITS-AID_AssignedNumbers.pdf>

[X] 3GPP TS 23.501: "System architecture for the 5G System (5GS); Stage 2".

[X] ETSI EN 302 636-4-1 v1.4.1: "Intelligent Transport Systems (ITS); Vehicular Communications; GeoNetworking; Part 3: Geographical addressing and forwarding for point-to-point and point-to-multipoint communications; Sub-part 1: Media-Independent Functionality".

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

6.1.3.2.1.2 PC5 QoS flow match and establishment

When determining if any existing PC5 QoS flow match the request from upper layers, UE shall proceeds as follows:

a) according to the PC5 QoS mapping rules specified in clause 5.2.3, the UE shall use the PC5 QoS parameters corresponding to the V2X service identifier and optionally V2X application requirements;

b) according to the V2X service identifier to destination layer-2 ID for broadcast mapping rules specified in clause 5.2.3, the UE shall use the destination layer-2 ID corresponding to the V2X service identifier;

c) if there is no existing context for the destination layer-2 ID, then:

1) build a new context for the destination layer-2 ID;

2) self-assign a new source layer-2 ID; and

3) pass the source layer-2 ID and the destiantion layer-2 ID to lower layers.

d) if in the context for the destination layer-2 ID, there is no existing PC5 QoS flow context, which corresponds to the V2X service identifier and the PC5 QoS parameters, then:

1) self-assign a new PFI;

2) build a new PC5 QoS flow context and include the V2X service identifier and the PC5 QoS parameters;

3) set up a new PC5 QoS rule, the PC5 QoS rule contains:

i) a PC5 QoS rule identifier;

ii) the PQFI;

iii) a set of packet filters; and

iv) a precedence value.

4) pass the following parameters to lower layers:

i) the PQFI;

ii) the PC5 QoS parameters; and

iii) the source layer-2 ID and the destination layer-2 ID. and

e) perform transmission of V2X communication over PC5 as specified in clause 6.1.3.2.2.

Two types of packet filters are supported for V2X communication over PC5, i.e. the IP packet filter set and the V2X packet filter set. A PC5 QoS Rule contains either the IP packet filter set or the V2X packet filter set.

The IP packet filter set is defined as content of the packet filter contents field specified in 3GPP TS 24.501 [6] figure 9.11.4.13.4 and table 9.11.4.13.1.

The V2X packet filter set shall support packet filters based on at least any combination of:

- V2X Service type (e.g. PSID or ITS-AID);

- the source layer-2 ID and the destination layer-2 ID;

- Application Layer ID (e.g. Station ID); and

- TC field of GeoNetworking Common header as specified in ETSI EN 302 636-4-1 v1.4.1 [X], the TC field contains TC ID which represents V2X application requirements for the V2X service.

\* \* \* End of Change \* \* \* \*