**3GPP TSG-CT WG1 Meeting #136-eC1-223384**

**E-Meeting, 12th – 20th May 2022**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **555** | **CR** |  | **rev** | **-** | **Current version:** | **.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:*** | Encoding of UE policies for 5G ProSe usage reporting | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | CATT | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_ProSe | | | | |  | ***Date:*** | | | 2022-05-05 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***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 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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Encoding of UE policies for 5G ProSe usage information reporting needs to be specified, based on clause 5.1.2.3 and 5.1.2.4 of TS 32.277. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add encoding of UE policies for 5G ProSe usage information reporting. Some parameters (i.e. collection period and reporting window) are encoded aligning with the definition in TS 24.333 for backforward compatibility.  Change "UE policies for 5G ProSe usage information reporting configuration and rules" to "UE policies for 5G ProSe usage information reporting". | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | UE policies for 5G ProSe usage information reporting is not supported, without definition of the encoding. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2, 4.1, 4.x (new), 5.2, 5.7, 5.7.1 (new), 5.7.2(new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 24.554 CR 0073 | | |
| ***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 23.304: "Proximity based Services (ProSe) in the 5G System (5GS); Stage 2".

[3] 3GPP TS 24.554: " Proximity-services (ProSe) in 5G System (5GS) protocol aspects; Stage 3".

[4] 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3".

[5] ITU-T Recommendation E.212: "The international identification plan for public networks and subscriptions", 2016-09-23.

[6] 3GPP TS 23.032: "Universal Geographical Area Description (GAD)".

[7] 3GPP TS 38.331: "NR; Radio Resource Control (RRC) protocol specification".

[8] 3GPP TS 38.101-1: "NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone".

[9] 3GPP TS 38.101-2: "NR; User Equipment (UE) radio transmission and reception; Part 2: Range 2 Standalone".

[10] 3GPP TS 23.003: "Numbering, addressing and identification".

[11] 3GPP TS 24.526: "User Equipment (UE) policies for 5G System (5GS); Stage 3".

[12] IETF RFC 4122: "A Universally Unique IDentifier (UUID) URN Namespace".

[r32277] 3GPP TS 32.277: " Proximity-based Services (ProSe) charging".

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

## 4.1 Overview

The ProSe policy in 5GS includes:

a) UE policies for 5G ProSe direct discovery (see clause 4.2);

b) UE policies for 5G ProSe direct communications (see clause 4.3); and

c) UE policies for 5G ProSe UE-to-network relay (see clause 4.4); and

d) UE policies for 5G ProSe usage information reporting (see clause 4.5).

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

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

## 4.x UE policies for 5G ProSe usage information reporting

The UE policies for 5G ProSe usage information reporting are defined in clause 5.2.x of 3GPP TS 24.554 [3]. The generic description of the UE policies for 5G ProSe usage information reporting is specified in 3GPP TS 32.277 [r32277].

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

## 5.2 Encoding of 5G ProSe policy UE policy part

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

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| UE policy part contents length | | | | | | | | octet 1  octet 2 |
| 0 | 0 | 0 | 0 | UE policy part type={ProSeP} | | | | octet 3 |
| Spare | | | |
| UE policy part contents={ProSeP contents} | | | | | | | | octet 4  octet x |

Figure 5.2.1: UE policy part when UE policy part type = {ProSeP}

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| ProSeP info #1 | | | | | | | | octet 4  octet a |
| ProSeP info #2 | | | | | | | | octet (a+1)\*  octet b\* |
| … | | | | | | | | octet (b+1)\*  octet w\* |
| ProSeP info #n | | | | | | | | octet (w+1)\*  octet x\* |

Figure 5.2.2: ProSeP contents

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| 0 | 0 | 0 | 0 | ProSeP info type | | | | octet k |
| Spare | | | |
| Length of ProSeP info contents | | | | | | | | octet k+1  octet k+2 |
| ProSeP info contents | | | | | | | | octet k+3  octet l |

Figure 5.2.3: ProSeP info

Table 5.2.1: ProSeP information format

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

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

## 5.7 Encoding of UE policies for 5G ProSe usage information reporting

### 5.7.1 General

The UE policies for 5G ProSe usage information reporting are coded as shown in figure 5.7.2.1 and table 5.7.2.1.

### 5.7.2 Information elements coding

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| 0 | 0 | 0 | 0 | ProSeP info type = {UE policies for 5G ProSe usage information reporting} | | | | octet k |
| Spare | | | |
| Length of ProSeP info contents | | | | | | | | octet k+1  octet k+2 |
| Validity timer | | | | | | | | octet k+3  octet k+7 |
| Collection period | | | | | | | | octet k+8  octet k+10 |
| Reporting window | | | | | | | | octet k+11  octet k+13 |
| UIRI | GPRI | TIORI | TTRRI | DTRI | | DRRI | | octet k+14 |
| 0  Spare | 0  Spare | LRI | RPRI | QRI | AT | | | octet k+15 |
| 5G DDNMF CTF (ADF) address for uploading the usage information reports | | | | | | | | octet k+16  octet m |

Figure 5.7.2.1: ProSeP Info = {UE policies for 5G ProSe usage information reporting }

Table 5.7.2.1: ProSeP Info = {UE policies for 5G ProSe usage information reporting}

|  |
| --- |
| ProSeP info type (bit 1 to 4 of octet k) shall be set to "0101" (UE policies for 5G ProSe usage information reporting) |
|  |
| 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 usage information reporting. 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).  Collection period (octet k+8 to octet k+10):  The collection period field indicates the time interval, in unit of minutes, at which the UE shall generate the usage information reports. Setting the value of collection period to 0 disables generation of usage information reports at the UE.  Reporting window (octet k+11 to k+13):  The reporting window field indicates the time window, in units of minutes, during which the UE shall upload the usage information report. Setting the value of reporting window to 0 disables upload of the usage information reports by the UE.  UE identity reporting indicator (UIRI) (octet k+14 bit 8):  The UE identity reporting indicator field indicates whether or not the UE shall report the UE identity in the usage information report, in the case of unicast mode 5G ProSe direct communication.  Bit  **8**  0 Not to report  1 Report  Group parameters reporting indicator (GPRI) (octet k+14 bit 7):  The Group parameters reporting indicator field indicates whether or not the UE shall report the group parameters in the usage information report, in the case of groupcast mode 5G ProSe direct communication. |
| Bit  **7**  0 Not to report  1 Report  Time stamps in and out of NG-RAN coverage reporting indicator (TIORI) (octet k+14 bit 6):  The time stamps in and out of NG-RAN coverage reporting indicator field indicates whether or not the UE shall report the time stamps when it went in and out of NG-RAN coverage during the collection period in the usage information.  Bit  **6**  0 Not to report  1 Report  Time stamps of the first transmission/reception reporting indicator (TTRRI) (octet k+14 bit 5):  The time stamps of the first transmission/reception reporting indicator field indicates whether or not the UE shall report the time stamps of the first transmission/reception during the collection period in the usage information.  Bit  **5**  0 Not to report  1 Report  Data transmitted reporting indicator (DTRI) (octet k+14 bits 4 to 3):  The data transmitted reporting indicator field indicates whether or not the UE shall report the amount of data transmitted during the collection period in the usage information report, and whether with location information.  Bits  **4 3**  0 0 Not to report  0 1 Report with location information  1 0 Report without location information  1 1 reserved  Data received reporting indicator (DRRI) (octet k+14 bits 2 to 1):  The data received reporting indicator field indicates whether or not the UE shall report the amount of data received during the collection period in the usage information report, and whether with location information.  Bits  **2 1**  0 0 Not to report  0 1 Report with location information  1 0 Report without location information  1 1 reserved  Bits 8 to 7 of octet k+15 are spare and shall be encoded as zero.  UE locations reporting indicator (LRI) (octet k+15 bit 6):  The UE locations reporting indicator field indicates whether or not the UE shall report the list of locations of the UE when in NG-RAN coverage during the reporting period in the usage information.  Bit  **6**  0 Not to report  1 Report  Radio parameters reporting indicator (RPRI) (octet k+15 bit 5):  The radio parameters reporting indicator field indicates whether or not the UE shall report the radio parameters used for ProSe direct communication during the reporting period in the usage information.  Bit  **5**  0 Not to report  1 Report  QoS flow reporting indicator (QRI) (octet k+15 bit 4):  The QoS flow reporting indicator field indicates whether or not the UE shall report the QoS flow information during the reporting period in the usage information.  Bit  **4**  0 Not to report  1 Report |
| Address type (AT) (octet k+15 bits 3 to 1):  The AT field indicates the type of the 5G DDNMF CTF (ADF) address for uploading the usage information reports.  Bits  **3 2 1**  0 0 1 IPv4  0 1 0 IPv6  0 1 1 FQDN  The other values are reserved.  If the AT indicates IPv4, then the 5G DDNMF CTF (ADF) address for uploading the usage information reports field contains an IPv4 address in 4 octets.  If the AT indicates IPv6, then the 5G DDNMF CTF (ADF) address for uploading the usage information reports field contains an IPv6 address in 16 octets.  If the AT indicates FQDN, then the 5G DDNMF CTF (ADF) address for uploading the usage information reports field contains a sequence of one octet FQDN length field and a FQDN value of variable size. The FQDN value field shall be encoded as defined in clause 28.3.2.1 in 3GPP TS 23.003 [10].  5G DDNMF CTF (ADF) address for uploading the usage information reports (octet k+16 to octet m):  The 5G DDNMF CTF (ADF) address for uploading the usage information reports field indicates the address to which the UE shall upload the usage information reports.  If the length of ProSeP info contents field is bigger than indicated in figure 5.7.2.1, receiving entity shall ignore any superfluous octets located at the end of the ProSeP info contents. |

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