**3GPP TSG-CT WG1 Meeting #127-eC1-207xxx**

**Electronic meeting, 13-20 November 2020 (revision of C1-207042)**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **24.501** | **CR** | 2824 | **rev** | **1** | **Current version:** | **17.0.0** |  |
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| *For* ***[HE](http://www.3gpp.org/3G_Specs/CRs.htm%22%20%5Cl%20%22_blank)******[LP](http://www.3gpp.org/3G_Specs/CRs.htm%22%20%5Cl%20%22_blank)*** *on using this form: comprehensive instructions can be found at <http://www.3gpp.org/Change-Requests>.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:***  | Clarification on default configured NSSAI update will initiate a registration procedure by UE when "re-registration requested" indicated |
|  |  |
| ***Source to WG:*** | China Telecom |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | eNS, 5GProtoc17 |  | ***Date:*** | 2020-10-29 |
|  |  |  |  |  |
| ***Category:*** | **A** |  | ***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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)* |
|  |  |
| ***Reason for change:*** | 1. In TS 23.502 subclause 4.20 , the UDM will update a new default configured NSSAI with a "re-registration requested" indication via UE Parameters Update via UDM Control Plane Procedure,quote as follows

*The UDM Update Data that the UDM delivers to the UE may contain:**- one or more UE parameters including:**- the updated Default Configured NSSAI (final consumer of the parameter is the ME).**- the updated Routing Indicator Data (final consumer of the parameter is the USIM).**- a "UE acknowledgement requested" indication.**- a "re-registration requested" indication.*In TS 24.501 5.4.5.3.3, it specified that if the UE received a new default configured NSSAI in DL NAS TRANSPORT message via UE Parameters Update via UDM Control Plane Procedure in TS 23.502 4.20, the UE shall initiate a registration procedure for mobility and periodic registration update after it enters 5GMM-IDLE mode.However, the current TS 24.501 missing the condition that if the DL NAS TRANSPORT message indicating "re-registration requested" in the Re-registration (REG) value bit of the UE parameters update header in the payload container IE, the UE shall initiate a registration procedure for mobility and periodic registration update. So to align with TS 23.502 subclause 4.20, this condition needs to be clarified.Correcting a typo on "re-registrationt not requested" (yellow ‘t’ should be removed) in Table 9.11.3.53A.1. |
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| ***Summary of change:*** | 1. Clarification on if the DL NAS TRANSPORT message indicating "re-registration requested" in the Re-registration (REG) value bit of the UE parameters update header in the payload container IE, the UE shall initiate a registration procedure for mobility and periodic registration update after it enters 5GMM-IDLE mode.
2. Correcting a typo on "re-registrationt not requested" (yellow ‘t’ should be removed) in Table 9.11.3.53A.1.
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| ***Consequences if not approved:*** | The UE may not initiate a registration procedure for mobility and periodic registration update when the Re-registration (REG) value bit of the UE parameters update header in the payload container IE indicated “re-registration requested”, which will lead to misunderstanding and incorrect implementation. |
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| ***Clauses affected:*** | 5.4.5.3.3, 9.11.3.53A |
|  |  |
|  | **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 \* \* \* \*

5.4.5.3.3 Network-initiated NAS transport of messages

Upon reception of a DL NAS TRANSPORT message, the UE shall stop the timer T3346 if running.

Upon reception of a DL NAS TRANSPORT message, if the Payload container type IE is set to:

a) "N1 SM information" and the 5GMM cause IE is not included in the DL NAS TRANSPORT message, the 5GSM message in the Payload container IE and the PDU session ID are handled in the 5GSM procedures specified in clause 6;

b) "SMS", the UE shall forward the content of the Payload container IE to the SMS stack entity;

c) "LTE Positioning Protocol (LPP) message container", the UE shall forward the payload container type, the content of the Payload container IE and the routing information included in the Additional information IE to the upper layer location services application;

d) "SOR transparent container" and if the Payload container IE:

1) successfully passes the integrity check (see 3GPP TS 33.501 [24]), indicates a list of preferred PLMN/access technology combinations is provided and the list type indicates:

i) "PLMN ID and access technology list", then the ME shall replace the highest priority entries in the "Operator Controlled PLMN Selector with Access Technology" list stored in the ME and shall proceed with the behaviour as specified in 3GPP TS 23.122 [5] annex C; or

ii) "secured packet", then the ME shall behave as if a SMS is received with protocol identifier set to SIM data download, data coding scheme set to class 2 message and SMS payload as secured packet contents of SOR transparent container IE. The SMS payload is forwarded to UICC as specified in 3GPP TS 23.040 [4A] and the ME shall proceed with the behaviour as specified in 3GPP TS 23.122 [5] annex C; or

2) does not successfully pass the integrity check (see 3GPP TS 33.501 [24]) then the UE shall proceed with the behaviour as specified in 3GPP TS 23.122 [5] annex C.

e) Void;

f) Void;

g) "N1 SM information" and:

1) the 5GMM cause IE is set to the 5GMM cause #22 "Congestion", the UE passes to the 5GSM sublayer an indication that the 5GSM message was not forwarded due to DNN based congestion control along with the 5GSM message from the Payload container IE of the DL NAS TRANSPORT message, and the time value from the Back-off timer value IE;

2) the 5GMM cause IE is set to the 5GMM cause #28 "Restricted service area", the UE passes to the 5GSM sublayer an indication that the 5GSM message was not forwarded due to service area restrictions along with the 5GSM message from the Payload container IE of the DL NAS TRANSPORT message, enters the state 5GMM-REGISTERED.NON-ALLOWED-SERVICE and, if the DL NAS TRANSPORT message is received over 3GPP access, performs the registration procedure for mobility and periodic registration update (see subclauses 5.3.5 and 5.5.1.3);

3) the 5GMM cause IE is set to the 5GMM cause #65 "maximum number of PDU sessions reached", the UE passes to the 5GSM sublayer an indication that the 5GSM message was not forwarded because the PLMN's maximum number of PDU sessions has been reached, along with the 5GSM message from the Payload container IE of the DL NAS TRANSPORT message;

4) the 5GMM cause IE is set to the 5GMM cause #67 "insufficient resources for specific slice and DNN", the UE passes to the 5GSM sublayer an indication that the 5GSM message was not forwarded due to S-NSSAI and DNN based congestion control along with the 5GSM message from the Payload container IE of the DL NAS TRANSPORT message, and the time value from the Back-off timer value IE;

5) the 5GMM cause IE is set to the 5GMM cause #69 "insufficient resources for specific slice", the UE passes to the 5GSM sublayer an indication that the 5GSM message was not forwarded due to S-NSSAI only based congestion control along with the 5GSM message from the Payload container IE of the DL NAS TRANSPORT message, and the time value from the Back-off timer value IE;

6) the 5GMM cause IE is set to the 5GMM cause #90 "payload was not forwarded", the UE passes to the 5GSM sublayer an indication that the 5GSM message was not forwarded due to routing failure along with the 5GSM message from the Payload container IE of the DL NAS TRANSPORT message;

7) the 5GMM cause IE is set to the 5GMM cause #91 "DNN not supported or not subscribed in the slice", the UE passes to the 5GSM sublayer an indication that the 5GSM message was not forwarded because the DNN is not supported or not subscribed in a slice along with the 5GSM message from the Payload container IE of the DL NAS TRANSPORT message;

8) the 5GMM cause IE is set to the 5GMM cause #92 "insufficient user-plane resources for the PDU session", the UE passes to the 5GSM sublayer an indication that the 5GSM message was not forwarded due to insufficient user-plane resources along with the 5GSM message from the Payload container IE of the DL NAS TRANSPORT message.

h) "UE policy container", the UE policy container in the Payload container IE is handled in the UE policy delivery procedures specified in Annex D;

i) "UE parameters update transparent container" and if the Payload container IE

1) successfully passes the integrity check (see 3GPP TS 33.501 [24]):

i) if the UE parameters update list includes a UE parameters update data set with UE parameters update data set type indicating "Routing indicator update data",

A) the ME shall behave as if an SMS is received with protocol identifier set to SIM data download, data coding scheme set to class 2 message and SMS payload as secured packet contents of UE parameters update transparent container IE. The SMS payload is forwarded to UICC as specified in 3GPP TS 23.040 [4A]; and

B) if the ACK bit of the UE parameters update header in the UE parameters update transparent container is set to "acknowledgment requested" and if the ME receives status bytes from the UICC indicating that the UICC has received the secured packet successfully, the ME shall send an acknowledgement in the Payload container IE of an UL NAS TRANSPORT message with Payload type IE set to "UE parameters update transparent container" as specified in subclause 5.4.5.2.2; and

C) if the ME receives a REFRESH command from the UICC as specified in 3GPP TS 31.111 [22A] and if the REG bit of the UE parameters update header in the UE parameters update transparent container IE is set to "re-registration requested", and:

C1) the UE is registered over 3GPP access, then the UE shall wait until it enters 5GMM-IDLE mode over 3GPP access or 5GMM-CONNECTED mode with RRC inactive indication, and then perform a de-registration procedure, delete its 5G-GUTI and initiate a registration procedure for initial registration as specified in subclause 5.5.1.2;

C2) the UE is registered over non-3GPP access and does not have emergency services ongoing over non-3GPP access, then the UE shall locally release the N1 NAS signalling connection and enter 5GMM-IDLE mode over non-3GPP access, perform a de-registration procedure, delete its 5G-GUTI if the UE is registered to different PLMN on 3GPP access or the UE is not registered over 3GPP access, and then initiate a registration procedure for initial registration as specified in subclause 5.5.1.2; and

C3) the UE is registered over non-3GPP access and has an emergency services ongoing over non-3GPP access, then the UE shall wait until the emergency services are completed before locally releasing the N1 NAS signalling connection and enter 5GMM-IDLE mode over non-3GPP access, perform a de-registration procedure, delete its 5G-GUTI if the UE is registered to different PLMN on 3GPP access or if the UE is not registered over 3GPP access, and then initiate a registration procedure for initial registration as specified in subclause 5.5.1.2.

ii) if the UE parameters update list includes a UE parameters update data set with UE parameters update data set type indicating "Default configured NSSAI update data",

A) if the ACK bit of the UE parameters update header in the UE parameters update transparent container is set to "acknowledgment requested" and if the UE parameters update list does not include a UE parameters update data set with UE parameters update data set type indicating "Routing indicator update data", the ME shall send an acknowledgement in the Payload container IE of an UL NAS TRANSPORT message with Payload type IE set to "UE parameters update transparent container" as specified in subclause 5.4.5.2.2

B) the ME shall replace the stored default configured NSSAI with the default configured NSSAI included in the default configured NSSAI update data; and

C) if the UE parameters update list does not include a UE parameters update data set with UE parameters update data set type indicating "Routing indicator update data", the UE used the old default configured NSSAI to create the requested NSSAI in a REGISTRATION REQUEST message, the UE does not have a configured NSSAI for the current PLMN and the UE has an allowed NSSAI for the current PLMN which contains one or more S-NSSAIs that are not included in the new default configured NSSAI, the UE shall wait until it enters 5GMM-IDLE mode and then the UE shall initiate a registration procedure for mobility and periodic registration update as specified in subclause 5.5.1.3;or

D) if the UE parameters update list does not include a UE parameters update data set with UE parameters update data set type indicating "Routing indicator update data" and UE parameters update header include a Re-registration (REG) value bit indicating "re-registration requested", the UE shall wait until it enters 5GMM-IDLE mode and then the UE shall initiate a registration procedure for mobility and periodic registration update as specified in subclause 5.5.1.3; and

2) does not successfully pass the integrity check (see 3GPP TS 33.501 [24]) then the UE shall discard the content of the payload container IE;

j) "Location services message container" and the 5GMM cause IE is not included in the DL NAS TRANSPORT message, the UE shall forward the payload container type, the content of the Payload container IE and the routing information in the Additional information IE if included to the upper layer location services application;

k) "CIoT user data container", the UE shall forward the content of the Payload container IE and the PDU session ID to the 5GSM sublayer; and

l) "CIoT user data container" and:

1) the 5GMM cause IE is set to the 5GMM cause #22 "Congestion", the UE passes to the 5GSM sublayer an indication that the CIoT user data was not forwarded due to DNN based congestion control along with the CIoT user data from the Payload container IE of the DL NAS TRANSPORT message, and the time value from the Back-off timer value IE.

2) the 5GMM cause IE is set to the 5GMM cause #90 "payload was not forwarded", the UE passes to the 5GSM sublayer an indication that the user data container was not forwarded due to routing failure along with the user data container from the Payload container IE and the PDU session ID from the PDU session ID IE of the DL NAS TRANSPORT message.

m) "Multiple payloads", the UE shall first decode the content of the Payload container IE (see subclause 9.11.3.39) to obtain the number of payload container entries and for each payload container entry, the UE shall:

1) decode the payload container type field;

2) decode the optional IE fields and the payload container contents field in the payload container entry; and

3) handle the content of each payload container entry the same as the content of the Payload container IE and the associated optional IEs as specified in bullets a) to l) above according to the payload container type field.

\* \* \* Second of Change \* \* \* \*

9.11.3.53A UE parameters update transparent container

The purpose of the UE parameters update transparent container when sent from the network to the UE is to provide UE parameters update data, optional acknowledgement request and optional re-registration request. The purpose of the UE parameters update transparent container when sent from the UE to the network is to indicate the UE acknowledgement of successful reception of the UE parameters update transparent container.

The UE parameters update transparent container information element is coded as shown in figure 9.11.3.53A.1, figure 9.11.3.53A.2, figure 9.11.3.53A.3, figure 9.11.3.53A.4, figure 9.11.3.53A.5, figure 9.11.3.53A.6, figure 9.11.3.53A.7 and table 9.11.3.53A.1.

The UE parameters update transparent container is a type 6 information element with a minimum length of 20 octets.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| UE parameters update transparent container IEI | octet 1 |
| Length of UE parameters update transparent container contents | octet 2octet 3 |
| UE parameters update header | octet 4 |
| UPU-MAC-IAUSF | octet 5-20  |
| CounterUPU | octet 21-22 |
| UE parameters update list | octet 23\* - n\* |

**Figure 9.11.3.53A.1: UE parameters update transparent container information element for UE parameters update data type with value "0"**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| 0Spare | 0Spare | 0Spare | 0Spare | UE parameters update data set 1 type | octet 23\* |
| Length of UE parameters update data set 1 | octet 24\*-25\* |
| UE parameters update data set 1 | octet 26\*-x\* |
| … |  |
| 0Spare | 0Spare | 0Spare | 0Spare | UE parameters update data set n type | octet y\* |
| Length of UE parameters update data set n | octet y+1\*-y+2\* |
| UE parameters update data set n | octet y+3\*-n\* |

**Figure 9.11.3.53A.2: UE parameters update list**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Secured packet | octet a\* - a+z\* |

**Figure 9.11.3.53A.3: UE parameters update data set for UE parameters update data set type with value "00000001"**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Default configured NSSAI | octet b\* - c\* |

**Figure 9.11.3.53A.4: UE parameters update data set for UE parameters update data set type with value "00000010"**

|  |  |
| --- | --- |
| UE parameters update transparent container IEI | octet 1 |
| Length of UE parameters update transparent container contents | octet 2octet 3 |
| UE parameters update header | octet 4 |
| UPU-MAC-IUE | octet 5 - 20 |

**Figure 9.11.3.53A.5: UE parameters update transparent container information element for UE parameters update data type with value "1"**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | REG | ACK | UPU data type | octet 4 |

**Figure 9.11.3.53A.6: UE parameters update header for UE parameters update data type with value "0"**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | 0Spare | UPU data type | octet 4 |

**Figure 9.11.3.53A.7: UE parameters update header for UE parameters update data type with value "1"**

**Table 9.11.3.53A.1: UE parameters update transparent container information element**

|  |
| --- |
| UPU-MAC-IAUSF, UPU-MAC-IUE and CounterUPU are coded as specified in 3GPP TS 33.501 [24] |
|  |
| UPU data type (octet 4, bit 1) |
| 0 | The UE parameters update transparent container carries a UE parameters update list |
| 1 | The UE parameters update transparent container carries an acknowledgement of successful reception of a UE parameters update list |
|  |
| Acknowledgement (ACK) value (octet 4, bit 2) |
| 0 | acknowledgement not requested |
| 1 | acknowledgement requested |
|  |
| Re-registration (REG) value (octet 4, bit 3) |
| 0 | re-registration not requested |
| 1 | re-registration requested |
|  |
| UE parameters update data set type |
| Bits4 3 2 1 |
| 0 0 0 1 Routing indicator update data |
| 0 0 1 0 Default configured NSSAI update data |
|  |
| All other values are reserved |
|  |
| The secured packet is coded as specified in 3GPP TS 31.115 [22B]. |
|  |
| The default configured NSSAI is encoded as the value part of the NSSAI IE (see subclause 9.11.3.37). |

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