**3GPP TSG-CT1 Meeting #127-e *C1-207263***

**Online, , 13th Nov 2020 - 20th Nov 2020**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  | **24.501** | **CR** | **2779** | **rev** | **3** | **Current version:** | **17.0.0** |  |
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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 |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:***  | Handling of radio link failure during NSSAA procedure |
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| ***Source to WG:*** | NEC Corporation |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5GProtoc17 |  | ***Date:*** | 2020-11-06 |
|  |  |  |  |  |
| ***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)* |
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| ***Reason for change:*** | According to the current specification when an AMF detects radio link failure and generic UE configuration update procedure is ongoing then it will abort the UE configuration update procedure. *5.4.4.6 Abnormal cases on the network side**b) Lower layer failure.**2) if the CONFIGURATION UPDATE COMMAND message does not include the 5G-GUTI IE, the network shall abort the procedure.*For the following scenario if the UE configuration procedure is aborted then the UE NSSAA procedure will not be completed and the S-NSSAI will remain in the pending NSSAI list and the UE can’t use the pending S-NSSAI(s). 1. A UE is configured with mIoT slice and is subject to slice authentication.
2. A UE send Registration Request containing Requested NSSAI = mIoT.
3. The network sends Registration accept message with pending S-NSSAI = mIoT and initiates NSSAA procedure for mIoT.
4. After NSSAA procedure is completed, the AMF initiates the generic UE configuration update procedure.
5. The AMF detects RLF and the generic UE configuration update procedure is aborted. The CONFIGURATION UPDATE COMMAND message is lost.
6. The UE doesn’t receive CONFIGURATION UPDATE COMMAND.
7. The UE has no uplink signaling and data to send. The UE can only respond when the UE is doing periodic registration update procedure till then the mIoT will remain in pending list and hence no service is available to the UE till periodic registration procedure which is quite long more than an hour in most of the cases.
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| ***Summary of change:*** | Specify that the network shall not abort the generic UE configuration update procedure when the network detects UE RLF and UE CONFIGURATION UPDATE message contains Allowed NSSAI. |
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| ***Consequences if not approved:*** | The the S-NSSAI subject to the NSSAA will remain in pending S-NSSAI list and the user can not get services related to the S-NSSAI. |
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| ***Clauses affected:*** | 5.4.4.6 |
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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 ...  |
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| ***Other comments:*** |  |
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| ***This CR's revision history:*** |  |

#### 5.4.4.6 Abnormal cases on the network side

The following abnormal cases can be identified:

a) Expiry of timer T3555.

 The network shall, on the first expiry of the timer T3555, retransmit the CONFIGURATION UPDATE COMMAND message and shall reset and start timer T3555. This retransmission is repeated four times, i.e. on the fifth expiry of timer T3555, the procedure shall be aborted. In addition, if the CONFIGURATION UPDATE COMMAND message includes the 5G-GUTI IE, the network shall behave as described in case b)-1) below.

b) Lower layer failure.

 If a lower layer failure is detected before the CONFIGURATION UPDATE COMPLETE message is received and:

1) if the CONFIGURATION UPDATE COMMAND message includes the 5G-GUTI IE, the old and the new 5G-GUTI shall be considered as valid until the old 5G-GUTI can be considered as invalid by the AMF. If a new TAI list was provided in the CONFIGURATION UPDATE COMMAND message, the old and new TAI list shall also be considered as valid until the old TAI list can be considered as invalid by the AMF.

 During this period the AMF:

i) may first use the old 5G-S-TMSI from the old 5G-GUTI for paging within the area defined by the old TAI list for an implementation dependent number of paging attempts for network originated transactions. If a new TAI list was provided in the CONFIGURATION UPDATE COMMAND message, the new TAI list should also be used for paging. Upon response from the UE, the AMF may re-initiate the CONFIGURATION UPDATE COMMAND. If the response is received from a tracking area within the old and new TAI list, the network shall re-initiate the CONFIGURATION UPDATE COMMAND message. If no response is received to the paging attempts, the network may use the new 5G-S-TMSI from the new 5G-GUTI for paging for an implementation dependent number of paging attempts. In this case, if a new TAI list was provided with new 5G-GUTI in the CONFIGURATION UPDATE COMMAND message, the new TAI list shall be used instead of the old TAI list. Upon response from the UE the AMF shall consider the new 5G-GUTI as valid and the old 5G-GUTI as invalid.

ii) shall consider the new 5G-GUTI as valid if it is used by the UE and, additionally, the new TAI list as valid if it was provided with this 5G-GUTI in the CONFIGURATION UPDATE COMMAND message; and

iii) may use the identification procedure followed by a new generic UE configuration update procedure if the UE uses the old 5G-GUTI; or

2) if the CONFIGURATION UPDATE COMMAND message does not include the 5G-GUTI IE, the network shall abort the procedure except in case the CONFIGURATION UPDATE COMMAND message contains the Allowed NSSAI IE or Pending NSSAI IE or Rejected NSSSAI IE the network may retransmit CONFIGURATION UPDATE COMMAND message on expiry of the timer T3555.

c) Generic UE configuration update and UE initiated de-registration procedure collision.

 If the network receives a DEREGISTRATION REQUEST message before the ongoing generic UE configuration update procedure has been completed, the network shall abort the generic UE configuration update procedure and shall progress the de-registration procedure.

d) Generic UE configuration update and registration procedure for mobility and periodic registration update collision

 If the network receives a REGISTRATION REQUEST message before the ongoing generic UE configuration update procedure has been completed, the network shall abort the generic UE configuration update procedure and shall progress the registration procedure for mobility and periodic registration update procedure.

e) Generic UE configuration update and service request procedure collision

 If the network receives a SERVICE REQUEST message before the ongoing generic UE configuration update procedure has been completed, both the procedures shall be progressed.