**3GPP TSG-CT WG1 Meeting #127-eC1-207566**

**Electronic meeting, 13-20 November 2020 *was C1-207545***

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **24.301** | **CR** | **3480** | **rev** | **1** | **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 | **x** | Radio Access Network |  | Core Network |  |

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| ***Title:***  | Miss local detach procedure before entering EMM-DEREGISTERED state |
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| ***Source to WG:*** | Huawei, HiSilicon |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | TEI17 |  | ***Date:*** | 2020-11-19 |
|  |  |  |  |  |
| ***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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)* |
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| ***Reason for change:*** | In the description on abnormal cases of detach procedure, if the detach procedure was initiated due to UE switched off or USIM removal, UE shall abort the detach procedure, and enter the EMM-DEREGISTERED. See below text quoted from sub-clause 5.5.2.2.4 of TS 24.301.*If the detach procedure was initiated due to removal of the USIM or the UE is to be switched off, the UE shall abort the detach procedure and enter the state EMM-DEREGISTERED.*In fact before entering EMM-DEREGISTERED, UE needs to perform local detach procedure (in order to write info to non-volatile memory, clear temporary storage, etc.), which is missed in current description. |
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| ***Summary of change:*** | Add missed description on UE performs local detach procedure |
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| ***Consequences if not approved:*** | UE does not perform local detach procedure |
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| ***Clauses affected:*** | 5.5.2.2.4 |
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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:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

\*\*\*\*\* start of change\*\*\*\*\*

##### 5.5.2.2.4 Abnormal cases in the UE

The following abnormal cases can be identified:

a) Access barred because of access class barring, EAB or NAS signalling connection establishment rejected by the network

 In WB-S1 mode, if access is barred for "originating signalling" (see 3GPP TS 36.331 [22]), the detach signalling procedure shall not be started. The UE stays in the current serving cell and applies the normal cell reselection process. The detach signalling procedure is started as soon as possible and if still necessary, i.e. when access for "originating signalling" is granted on the current cell or when the UE moves to a cell where access for "originating signalling" is granted. The UE may perform a local detach either immediately or after an implementation dependent time.

 In NB-S1 mode, if access is barred for "originating signalling" (see 3GPP TS 36.331 [22]), the detach signalling procedure shall not be started. The UE stays in the current serving cell and applies the normal cell reselection process. Further UE behaviour is implementation specific, e.g. the detach signalling procedure is started again after an implementation dependent time.

NOTE 1: In NB-S1 mode, the EMM layer cannot receive the access barring alleviation indication from the lower layers (see 3GPP TS 36.331 [22]).

b) Lower layer failure or release of the NAS signalling connection before reception of DETACH ACCEPT message

 The detach procedure shall be aborted and the UE proceeds as follows:

- if the detach procedure was performed due to disabling of EPS services, the UE shall enter the EMM-NULL state;

- if "EPS detach" was requested for reasons other than disabling of EPS services, the UE shall enter the EMM-DEREGISTERED state;

- if "IMSI detach" was requested, the UE shall enter the EMM-REGISTERED.NORMAL-SERVICE state and the MM-NULL state; or

- if "combined EPS/IMSI detach" was requested, the UE shall enter the EMM-DEREGISTERED state and the MM-NULL state.

c) T3421 timeout

 On the first four expiries of the timer, the UE shall retransmit the DETACH REQUEST message and shall reset and restart timer T3421. On the fifth expiry of timer T3421, the detach procedure shall be aborted and the UE proceeds as follows:

- if the detach procedure was performed due to disabling of EPS services, the UE shall enter the EMM-NULL state;

- if "EPS detach" was requested for reasons other than disabling of EPS services, the UE shall enter the EMM-DEREGISTERED state;

- if "IMSI detach" was requested, the UE shall enter the EMM-REGISTERED.NORMAL-SERVICE state and the MM-NULL state; or

- if "combined EPS/IMSI detach" was requested, the UE shall enter the EMM-DEREGISTERED state and the MM-NULL state.

d) Detach procedure collision

 Detach containing cause "switch off" within the Detach type IE:

- If the UE receives a DETACH REQUEST message before the UE initiated detach procedure has been completed, this message shall be ignored and the UE initiated detach procedure shall continue.

 Detach containing other causes than "switch off" within the Detach type IE:

- If the UE receives a DETACH REQUEST message before the UE initiated detach procedure has been completed, it shall treat the message as specified in subclause 5.5.2.3.2 with the following modifications:

- If the DETACH REQUEST message received by the UE contains detach type "re-attach required", and the UE initiated detach procedure is with detach type "EPS detach" or "combined EPS/IMSI detach", the UE need not initiate the attach or combined attach procedure.

- If the DETACH REQUEST message received by the UE contains detach type "IMSI detach", and the UE initiated detach procedure is with detach type "IMSI detach", the UE need not re-attach to non-EPS services.

- If the DETACH REQUEST message received by the UE contains detach type "IMSI detach", and the UE initiated detach procedure is with detach type "EPS detach" or "combined EPS/IMSI detach", the UE shall progress both procedures. The UE need not re-attach to non-EPS services.

e) Detach and EMM common procedure collision

 Detach containing cause "switch off":

- If the UE receives a message used in an EMM common procedure before the detach procedure has been completed, this message shall be ignored and the detach procedure shall continue.

 Detach containing other causes than "switch off" and containing detach type "IMSI detach":

- If the UE receives a message used in an EMM common procedure before the detach procedure has been completed, both the EMM common procedure and the detach procedure shall continue.

 Detach containing other causes than "switch off" and containing other detach types than "IMSI detach":

- If the UE receives a GUTI REALLOCATION COMMAND, an EMM STATUS or an EMM INFORMATION message before the detach procedure is completed, this message shall be ignored and the detach procedure shall continue.

- If the UE receives an AUTHENTICATION REQUEST, SECURITY MODE COMMAND or IDENTITY REQUEST message before the detach procedure has been completed, the UE shall respond to it as described in subclause 5.4.2, 5.4.3 and 5.4.4 respectively and the detach procedure shall continue.

f) Change of cell into a new tracking area

 If a cell change into a new tracking area that is not in the stored TAI list occurs before the UE initiated detach procedure is completed, the UE proceeds as follows:

1) If the detach procedure was initiated for reasons other than removal of the USIM or the UE is to be switched off, the detach procedure shall be aborted and re-initiated after successfully performing a tracking area updating procedure; or

2) If the detach procedure was initiated due to removal of the USIM or the UE is to be switched off, the UE shall abort the detach procedure, perform a local detach and enter the state EMM-DEREGISTERED.

g) Transmission failure of DETACH REQUEST message indication with TAI change from lower layers

 If the current TAI is not in the TAI list, the UE proceeds as follows:

1. If the detach procedure was initiated for reasons other than removal of the USIM or the UE is to be switched off, the detach procedure shall be aborted and re-initiated after successfully performing a tracking area updating procedure; or
2. If the detach procedure was initiated due to removal of the USIM or the UE is to be switched off, the UE shall abort the detach procedure, perform a local detach and enter the state EMM-DEREGISTERED.

 If the current TAI is still part of the TAI list, the UE shall restart the detach procedure.

h) Transmission failure of DETACH REQUEST message indication without TAI change from lower layers

 The UE shall restart the detach procedure.

i) Detach and paging procedure collision

 If the UE receives a CS SERVICE NOTIFICATION message before the UE initiated combined detach procedure with detach type "IMSI detach" or "combined EPS/IMSI detach" has been completed, then this message shall be ignored and the UE initiated combined detach procedure shall continue.

For the cases b, f and g:

- Timer T3421 shall be stopped if still running.

 \*\*\*\*\* start of change\*\*\*\*\*