**3GPP TSG-CT WG1 Meeting #137-eC1-224906-rev**

**E-Meeting, 18th – 26th August 2022**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **24.301** | **CR** | **3785** | **rev** |  **1** | **Current version:** | **17.7.0** |  |
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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:***  | Missing cases for receiving NAS messages from a location where the PLMN is not allowed to operate |
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| ***Source to WG:*** | Samsung |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | IoT\_SAT\_ARCH\_EPS |  | ***Date:*** | 2022-08-11 |
|  |  |  |  |  |
| ***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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
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| ***Reason for change:*** | In 24.501, the spec handles cases of the UE sending a 5GSM message for which the network sends cause #78 in the DL NAS TRANSPORT, i.e. the network does not permit the processing of the 5GSM message.However this is not defined in 24.301 which means that a UE sending any ESM message will be processed although the UE may be in a location where the PLMN is not allowed to operate. This needs to be addressed. |
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| ***Summary of change:*** | The AMF discards the UL NAS TRANPSORT, GENERIC UPLINK NAS TRANSPORT or any ESM message which is received from a UE that is in a location where the PLMN is not allowed to operate. |
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| ***Consequences if not approved:*** | The network continues to process these NAS messages although UE is in a location where the PLMN is not allowed to operate. |
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| ***Clauses affected:*** | 5.6.3.5, 5.6.4.5, 6.5.1.6, 6.5.2.6, 6.5.3.6, 6.5.4.6, 6.6.4.5 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  |  |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  |  |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  |  |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

\*\*\*\*\*\* START CHANGE \*\*\*\*\*\*

#### 5.6.3.5 Abnormal cases on the network side

The following abnormal case can be identified:

a) Lower layer indication of non-delivered NAS PDU

 If the DOWNLINK NAS TRANSPORT message is not delivered for any reason, the MME may discard the message.

b) UPLINK NAS TRANSPORT message received from a UE which is in a location where the PLMN is not allowed to operate

 If the MME determines that the UE is in a location where the PLMN is not allowed to operate, the MME discards the message.

\*\*\*\*\*\* NEXT CHANGE \*\*\*\*\*\*

#### 5.6.4.5 Abnormal cases on the network side

The following abnormal case can be identified:

a) Lower layer indication of non-delivered NAS PDU

 If the DOWNLINK GENERIC NAS TRANSPORT message is not delivered for any reason, the MME may discard the message.

b) UPLINK GENERIC NAS TRANSPORT message received from a UE which is in a location where the PLMN is not allowed to operate

 If the MME determines that the UE is in a location where the PLMN is not allowed to operate, the MME discards the message.

\*\*\*\*\*\* NEXT CHANGE \*\*\*\*\*\*

#### 6.5.1.6 Abnormal cases on the network side

The following abnormal cases can be identified:

a) UE initiated PDN connectivity request for an already existing PDN connection:

 If the network receives a PDN CONNECTIVITY REQUEST message with the same combination of APN and PDN type as an already existing PDN connection,

 If the information elements in the PDN CONNECTIVITY REQUEST message do not differ from the ones received within the previous PDN CONNECTIVITY REQUEST message, and the MME has not received the ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT message from UE, the network shall resend the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message and continue the previous procedure.

 If one or more information elements in the PDN CONNECTIVITY REQUEST message differ from the ones received within the previous PDN CONNECTIVITY REQUEST message, and multiple PDN connections for a given APN are not allowed, the network may deactivate the existing EPS bearer contexts for the PDN connection locally without notification to the UE and proceed with the requested PDN connectivity procedure or may reject this PDN connectivity procedure including the ESM cause #55 "multiple PDN connections for a given APN not allowed", in the PDN CONNECTIVITY REJECT message.

 If the network receives a PDN CONNECTIVITY REQUEST message with request type "emergency" and the MME has not received the ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT message from UE for the previous PDN connectivity request for emergency bearer services, the network shall resend the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message and continue the previous procedure. If there is already a PDN connection for emergency bearer services existing, the MME shall reject the request with ESM cause #55 "multiple PDN connections for a given APN not allowed" or deactivate the existing EPS bearer contexts for the PDN connection locally without notification to the UE and proceed with the requested PDN connectivity procedure.

b) UE initiated PDN connectivity request with request type "handover" for a PDN connection that does not exist:

 If the network receives a PDN CONNECTIVITY REQUEST message for either a default APN or a specific APN with request type set to "handover" and the MME does not have any information about that PDN connection, then MME shall reject the PDN connectivity request procedure including the ESM cause #54 "PDN connection does not exist", in the PDN CONNECTIVITY REJECT message.

c) ESM information not received:

 If the ESM information transfer flag in the PDN CONNECTIVITY REQUEST message has been set and the ESM information is not received before the final expiry of timer T3489 as described in clause 6.6.1.2.6, the MME shall reject the PDN connectivity request procedure including the ESM cause #53 "ESM information not received", in the PDN CONNECTIVITY REJECT message.

d) Additional UE initiated PDN connectivity request received from a UE that is attached for emergency bearer services:

 The MME shall reject the request with ESM cause #31 "request rejected, unspecified".

e) A PDN CONNECTIVITY REQUEST message with request type "handover of emergency bearer services" received from a UE and the MME does not have any information about a P-GW currently providing emergency bearer services for the UE or the MME is not configured with an address of a P-GW in the MME emergency configuration data:

 MME shall reject the PDN connectivity request procedure including the ESM cause #54 "PDN connection does not exist", in the PDN CONNECTIVITY REJECT message.

f) Additional UE initiated PDN connectivity request received from a UE that is attached for access to RLOS:

 The MME shall reject the request with ESM cause #31 "request rejected, unspecified".

g) PDN CONNECTIVITY REQUEST message received from a UE which is in a location where the PLMN is not allowed to operate

 If the MME determines that the UE is in a location where the PLMN is not allowed to operate, the MME discards the message.

\*\*\*\*\*\* NEXT CHANGE \*\*\*\*\*\*

#### 6.5.2.6 Abnormal cases on the network side

The following abnormal cases can be identified:

a) No PDN connection with the linked EPS bearer identity activated:

 If the linked EPS bearer identity included in the PDN DISCONNECT REQUEST message does not belong to the default EPS bearer context of an established PDN connection, the MME shall reply with a PDN DISCONNECT REJECT message with ESM cause #43 "invalid EPS bearer identity".

b) PDN DISCONNECT REQUEST message received from a UE which is in a location where the PLMN is not allowed to operate

 If the MME determines that the UE is in a location where the PLMN is not allowed to operate, the MME discards the message.

\*\*\*\*\*\* NEXT CHANGE \*\*\*\*\*\*

#### 6.5.3.6 Abnormal cases on the network side

The following abnormal case can be identified:

a) No PDN connection with the linked EPS bearer identity activated:

 If the linked EPS bearer identity included in the BEARER RESOURCE ALLOCATION REQUEST message does not belong to the default EPS bearer context of an established PDN connection, the MME shall reply with a BEARER RESOURCE ALLOCATION REJECT message with ESM cause #43 "invalid EPS bearer identity".

b) BEARER RESOURCE ALLOCATION REQUEST message received for a PDN connection established for emergency bearer services:

 The MME shall reply with a BEARER RESOURCE ALLOCATION REJECT message with ESM cause #31 "request rejected, unspecified".

b) BEARER RESOURCE ALLOCATION REQUEST message received from a UE which is in a location where the PLMN is not allowed to operate

 If the MME determines that the UE is in a location where the PLMN is not allowed to operate, the MME discards the message.

\*\*\*\*\*\* NEXT CHANGE \*\*\*\*\*\*

#### 6.5.4.6 Abnormal cases on the network side

The following abnormal cases can be identified:

a) Unknown EPS bearer context:

 If the EPS bearer identity provided in the EPS bearer identity for packet filter IE in the BEARER RESOURCE MODIFICATION REQUEST message indicates an EPS bearer identity value and this does not belong to any already activated EPS bearer context, the MME shall reply with a BEARER RESOURCE MODIFICATION REJECT message with ESM cause #43 "invalid EPS bearer identity".

b) BEARER RESOURCE MODIFICATION REQUEST message received for a PDN connection established for emergency bearer services:

 The MME shall reply with a BEARER RESOURCE MODIFICATION REJECT message with ESM cause #30 "request rejected by Serving GW or PDN GW".

c) Collision of UE requested bearer resource modification procedure and EPS bearer context modification procedure:

 The handling of the same abnormal case as described in clause 6.4.3.6 applies.

d) BEARER RESOURCE MODIFICATION REQUEST message received from a UE which is in a location where the PLMN is not allowed to operate:

 If the MME determines that the UE is in a location where the PLMN is not allowed to operate, the MME discards the message.

\*\*\*\*\*\* NEXT CHANGE \*\*\*\*\*\*

#### 6.6.4.5 Abnormal cases on the network side

a) ESM DATA TRANSPORT message received from a UE which is in a location where the PLMN is not allowed to operate

 If the MME determines that the UE is in a location where the PLMN is not allowed to operate, the MME discards the message.

\*\*\*\*\*\* END CHANGES \*\*\*\*\*\*