**3GPP TSG-CT WG1 Meeting #141eC1-232082v1**

**Online 17– 21 April 2023**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **24.501** | **CR** | **5183** | **rev** | **1** | **Current version:** | **18.2.1** |  |
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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:***  | Send 5GMM cause #62 during NW-initiated de-registration procedure |
|  |  |
| ***Source to WG:*** | ZTE |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5GProtoc18 |  | ***Date:*** | 2023-04-07 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *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:*** | The 5GMM cause #62 can also be sent by the network when the network initiates de-registration procedure because all the S-NSSAIs included in the allowed NSSAI are rejected. Excerpt from TS 24.501 subclause 5.5.2.3.1: “*If the network de-registration is triggered due to network slice-specific authentication and authorization failure or revocation as specified in subclause 4.6.2.4, then the network shall set the 5GMM cause value to #62 "No network slices available" in the DEREGISTRATION REQUEST message.**…**If the UE supports extended rejected NSSAI and the network de-registration is triggered due to mobility management based network slice admission control as specified in subclause 4.6.2.5, then the network shall set the 5GMM cause value to #62 "No network slices available" in the DEREGISTRATION REQUEST message.*”However, in Annex A.3, the conditions of sending cause #62 only cover registration procedure while network-initiated de-registration procedure is missing:“*Cause #62 – No network slices available* *This 5GMM cause is sent by the network if none of the requested network slice(s) in the registration request are allowed and there are no default network slice(s) configured in the network.*” |
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| ***Summary of change:*** | Modify the condition when 5GMM cause #62 is sent by the network to make it generic enough to cover both registration procedure and de-registration procedure. |
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| ***Consequences if not approved:*** | Confusing specification for implementers that whether 5GMM cause #62 can be used in de-registration procedure. |
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| ***Clauses affected:*** | A.3 |
|  |  |
|  | **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 \* \* \* \*

# A.3 Causes related to PLMN or SNPN specific network failures and congestion/authentication failures

Cause #20 – MAC failure

 This 5GMM cause is sent to the network if the USIM detects that the MAC in the AUTHENTICATION REQUEST message is not fresh.

Cause #21 – Synch failure

 This 5GMM cause is sent to the network if the USIM detects that the SQN in the AUTHENTICATION REQUEST message is out of range.

Cause #22 – Congestion

 This 5GMM cause is sent to the UE because of congestion in the network (e.g. no channel, facility busy/congested etc.).

Cause #23 – UE security capabilities mismatch

 This 5GMM cause is sent to the network if the UE detects that the UE security capability does not match the one sent back by the network.

Cause #24 – Security mode rejected, unspecified

 This 5GMM cause is sent to the network if the security mode command is rejected by the UE for unspecified reasons.

Cause #26 – Non-5G authentication unacceptable

 This 5GMM cause is sent to the network in N1 mode if the "separation bit" in the AMF field of AUTN is set to 0 in the AUTHENTICATION REQUEST message (see 3GPP TS 33.501 [24]).

Cause #28 – Restricted service area

 This 5GMM cause is sent to the UE if it requests service in a tracking area of the 3GPP access or in an area of the wireline access, which is a part of the UE's non-allowed area or is not a part of the UE's allowed area.

Cause #43 – LADN not available

 This 5GMM cause is sent to the UE if the user-plane resources of the PDU session are not established when the UE is located outside the LADN service area.

Cause #62 – No network slices available

 This 5GMM cause is sent by the network if there are no available network slices allowed for use by the UE.

NOTE: Network does not send this cause in REGISTRATION REJECT message if the UE does not include a requested NSSAI in the REGISTRATION REQUEST message. In that case, if the UE is not registered for onboarding services in SNPN, the network uses other causes (e.g. #13, #15, etc.) based on the subscription.

Cause #65 – Maximum number of PDU sessions reached

 This 5GMM cause is used by the network to indicate that the procedure requested by the UE was rejected as the network has reached the maximum number of simultaneously active PDU sessions for the UE.

Cause #67 – Insufficient resources for specific slice and DNN

 This 5GMM cause is sent by the network to indicate that the requested service cannot be provided due to insufficient resources for specific slice and DNN.

Cause #69 – Insufficient resources for specific slice

 This 5GMM cause is sent by the network to indicate that the requested service cannot be provided due to insufficient resources for specific slice.

Cause #71 – ngKSI already in use

 This 5GMM cause is sent to the network in N1 mode if the ngKSI value received in the AUTHENTICATION REQUEST message is already associated with one of the 5G security contexts stored in the UE.

Cause #73 – Serving network not authorized

 This 5GMM cause is sent to the UE if the UE initiates registration towards a serving network and the serving network fails to be authorized by the UE's home network.

Cause #78 –PLMN not allowed to operate at the present UE location

 This 5GMM cause is sent to the UE to indicate that the PLMN is not allowed to operate at the present UE location.

NOTE: This cause is only applicable for satellite NG-RAN access.

Cause #90 – Payload was not forwarded

 This 5GMM cause is sent by the network to indicate that the requested service cannot be provided because payload could not be forwarded by AMF.

Cause #91 – DNN not supported or not subscribed in the slice

 This 5GMM cause is sent by the network to indicate that the requested service cannot be provided because payload could not be forwarded by AMF because the DNN is not supported or not subscribed in the slice selected by the network if the UE did not indicate a slice, or the DNN is not supported or not subscribed in the slice indicated by the UE.

Cause #92 – Insufficient user-plane resources for the PDU session

 This 5GMM cause is sent by the network to indicate that the requested service cannot be provided due to insufficient user-plane resources for the PDU session.

Cause #93 – Onboarding services terminated

 This 5GMM cause is sent by the network if the network initiates a de-registration procedure because the onboarding services are terminated.

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