**3GPP TSG-CT WG1 Meeting #130-eC1-21xxxx**

**Electronic meeting, 20–28 May 2021 Revision of C1-213091**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.501** | **CR** | **214** | **rev** | **1** | **Current version:** | **17.2.1** |  |
|  | | | | | | | | |
| *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 | **X** |

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| ***Title:*** | Adding requirements to NAS Transport procedures for satellite access | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | China Mobile | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GSAT\_ARCH-CT | | | | |  | ***Date:*** | | | 2021-05-12 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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 can be 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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | After SA2#144e meeting, verifying whether the PLMN is not allowed to operate at present UE location for satellite access is specified in the TS 23.502 for UE Requested PDU Session Establishment procedure, by TS 23.502 CR#2623 (S2-2103553).  Therefore, it is suggested to add requirement to 5GMM NAS Transport procedures for satellite access in TS 24.501 to be aligned with stage 2. | | | | | | | | |
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| ***Summary of change:*** | | Add requirement to 5GMM NAS Transport procedures for satellite access in TS 24.501 to be aligned with stage 2. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The rejection by AMF for satellite access due to the PLMN is not allowed to operate at present UE location during UE Requested PDU Session Establishment procedure cannot be supported in stage 3. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.4.5.2.4, 5.4.5.3.1, 5.4.5.3.2, 5.5.2.3.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | 1. Add the requirement to Network-initiated de-registration procedure for this scenario. 2. Add an EN for the consideration of an abnormal case on the UE side. 3. Correct the style in 5.4.5.3.2. | | | | | | | | |

\*\*\* First change \*\*\*

5.4.5.2.4 UE-initiated NAS transport of messages not accepted by the network

Upon reception of an UL NAS TRANSPORT message, if the Payload container type IE is set to "N1 SM information" and the UE is not configured for high priority access in selected PLMN, and:

a) if the Request type IE is set to "initial request", "existing PDU session" or "MA PDU request";

1) DNN based congestion control is activated for the DNN included in the UL NAS TRANSPORT message, or DNN based congestion control is activated for the selected DNN in case of no DNN included in the UL NAS TRANSPORT message, e.g. configured by operation and maintenance, the AMF shall send back to the UE the 5GSM message which was not forwarded, a back-off timer value and 5GMM cause #22 "congestion" as specified in subclause 5.4.5.3.1 case f);

2) S-NSSAI and DNN based congestion control is activated for the S-NSSAI and DNN included in the UL NAS TRANSPORT message, or S-NSSAI and DNN based congestion control is activated for the S-NSSAI included in the UL NAS TRANSPORT message and the selected DNN in case of no DNN included in the UL NAS TRANSPORT message, or S-NSSAI and DNN based congestion control is activated for the selected S-NSSAI in case of no S-NSSAI included in the UL NAS TRANSPORT message and the DNN included in the UL NAS TRANSPORT message, or S-NSSAI and DNN based congestion control is activated for the selected S-NSSAI and the selected DNN in case of no S-NSSAI and no DNN included in the UL NAS TRANSPORT message, e.g. configured by operation and maintenance, the AMF shall send back to the UE the 5GSM message which was not forwarded, a back-off timer value and 5GMM cause #67 "insufficient resources for specific slice and DNN" as specified in subclause 5.4.5.3.1 case f);

3) S-NSSAI only based congestion control is activated for the S-NSSAI included in the UL NAS TRANSPORT message, or S-NSSAI based congestion control is activated for the selected S-NSSAI in case of no S-NSSAI included in the UL NAS TRANSPORT message, e.g. configured by operation and maintenance, the AMF shall send back to the UE the 5GSM message which was not forwarded, a back-off timer value and 5GMM cause #69 "insufficient resources for specific slice" as specified in subclause 5.4.5.3.1 case f);

b) void;

c) if the Request type IE is set to "modification request" and the PDU session is not an emergency PDU session;

1) DNN based congestion control is activated for the stored DNN, e.g. configured by operation and maintenance, the AMF shall send back to the UE the 5GSM message which was not forwarded, a back-off timer value and 5GMM cause #22 "congestion" as specified in subclause 5.4.5.3.1 case f);

2) S-NSSAI and DNN based congestion control is activated for the stored S-NSSAI and DNN, e.g. configured by operation and maintenance, the AMF shall send back to the UE the 5GSM message which was not forwarded, a back-off timer value and 5GMM cause #67 "insufficient resources for specific slice and DNN" as specified in subclause 5.4.5.3.1 case f);

3) S-NSSAI only based congestion control is activated for the stored S-NSSAI, e.g. configured by operation and maintenance, the AMF shall send back to the UE the 5GSM message which was not forwarded, a back-off timer value and 5GMM cause #69 "insufficient resources for specific slice" as specified in subclause 5.4.5.3.1 case f); or

d) the timer T3447 is running and the UE does not support service gap control:

1) the Request type IE:

i) is set to "initial request";

ii) is set to "existing PDU session"; or

iii) is set to "modification request" and the PDU session being modified is a non-emergency PDU session;

2) the current NAS signalling connection was not triggered by paging; and

3) mobile terminated signalling has not been sent or no user-plane resources have been established for any PDU session after the establishment of the current NAS signalling connection,

the AMF shall send back to the UE the message which was not forwarded, send the 5GMM cause #22 "Congestion", and may include a back-off timer set to the remaining time of the timer T3447 as specified in subclause 5.4.5.3.1 case f).

Upon reception of a UL NAS TRANSPORT message, if the Payload container type IE is set to "N1 SM information", the Request type IE is set to "initial request", "existing PDU session" or "MA PDU request", and the AMF determines that the PLMN's maximum number of PDU sessions has already been reached for the UE, the AMF shall send back to the UE the 5GSM message which was not forwarded and 5GMM cause #65 "maximum number of PDU sessions reached" as specified in subclause 5.4.5.3.1 case h).

Upon reception of a UL NAS TRANSPORT message, if the Payload container type IE is set to "N1 SM information", the Request type IE is set to "initial request", and

a) the UE is in NB-N1 mode;

b) the UE has indicated preference for user plane CIoT 5GS optimization;

c) the network accepted the use of user plane CIoT 5GS optimization; and

d) the AMF determines that there are user-plane resources established for a number of PDU sessions that is equal to the UE' s maximum number of supported user-plane resources (see 3GPP TS 23.501 [8]),

the AMF shall either:

a) send back to the UE the message which was not forwarded as specified in in subclause 5.4.5.3.1 case h1); or

b) proceed with the PDU session establishment and include the Control Plane CIoT 5GS Optimisation indication or Control Plane Only indicator to the SMF.

Upon reception of an UL NAS TRANSPORT message, if the Payload container type IE is set to "CIoT user data container", the UE is not configured for high priority access in selected PLMN, and:

a) the timer T3447 is running and the UE does not support service gap control;

b) the current NAS signalling connection was not triggered by paging; and

c) mobile terminated signalling has not been sent or no user-plane resources have been established for any PDU session after the establishment of the current NAS signalling connection;

the AMF shall send back to the UE the CIoT user data which was not forwarded, send the 5GMM cause #22 "Congestion", and include a back-off timer set to the remaining time of the timer T3447 as specified in subclause 5.4.5.3.1 case l2).

Upon reception of a UL NAS TRANSPORT message, if the Payload container type IE is set to "N1 SM information", the Request type IE is set to "existing PDU session", and

a) the UE is in NB-N1 mode;

b) the UE has indicated preference for user plane CIoT 5GS optimization;

c) the network accepted the use of user plane CIoT 5GS optimization; and

d) the AMF determines that there are user-plane resources established for a number of PDU sessions that equals to the UE's maximum number of supported user-plane resources (see 3GPP TS 23.501 [8]),

the AMF shall send back to the UE the message which was not forwarded as specified in subclause 5.4.5.3.1 case h1).

Upon reception of an UL NAS TRANSPORT message, if the Payload container type IE is set to "N1 SM information", the Request type IE is set to "initial request" or "modification request", the associated S-NSSAI that the AMF determined through the S-NSSAI IE or the PDU session ID IE is an S-NSSAI for which the AMF is performing NSSAA, and the AMF determines to not forward the 5GSM message to the SMF based on local policy, the AMF shall send back to the UE the 5GSM message which was not forwarded as specified in subclause 5.4.5.3.1 case h2).

Upon reception of an UL NAS TRANSPORT message via a satellite NR-RAN cell, if the Payload container type IE is set to "N1 SM information", the Request type IE is set to "initial request", and if the present UE location is considered by the network as in a location where the network is not allowed to operate, the AMF shall send back to the UE the 5GSM message which was not forwarded as specified in subclause 5.4.5.3.1 case h3).

Upon reception of an UL NAS TRANSPORT message, if the Payload container type IE is set to "SMS" or "LTE Positioning Protocol (LPP) message container", the UE is not configured for high priority access in selected PLMN, and:

a) the timer T3447 is running and the UE does not support service gap control;

b) the current NAS signalling connection was not triggered by paging; and

c) mobile terminated signalling has not been sent or no user-plane resources have been established for any PDU session after the establishment of the current NAS signalling connection;

the AMF shall abort the procedure.

NOTE: In this state the NAS signalling connection can be released by the network.

\*\*\* Next change \*\*\*

5.4.5.3.1 General

The purpose of the network-initiated NAS transport procedure is to provide a transport of:

a) a single 5GSM message;

b) SMS;

c) an LPP message;

d) an SOR transparent container;

e) a single uplink 5GSM message which was not forwarded due to routing failure;

f) a single uplink 5GSM message which was not forwarded due to congestion control;

g) a UE policy container;

h) a single uplink 5GSM message which was not forwarded, because the PLMN's maximum number of PDU sessions has been reached;

h1) a single uplink 5GSM message which was not forwarded, because the maximum number of PDU sessions with active user-plane resources has been reached;

h2) a single uplink 5GSM message which was not forwarded, because of ongoing network slice-specific authentication and authorization procedure for the S-NSSAI that is requested;

h3) a single uplink 5GSM message which was not forwarded, because the present location of the UE in satellite access is considered by the network as in a location where the network is not allowed to operate;

i) a single uplink 5GSM message which was not forwarded due to service area restrictions;

j) a UE parameters update transparent container;

k) a location services message;

l) a CIoT user data container;

l1) a single uplink CIoT user data container or control plane user data which was not forwarded due to routing failure;

l2) a single uplink CIoT user data container which was not forwarded due to congestion control; or

m) multiple of the above types.

from the AMF to the UE in a 5GMM message.

\*\*\* Next change \*\*\*

5.4.5.3.2 Network-initiated NAS transport procedure initiation

In 5GMM-CONNECTED mode, the AMF initiates the NAS transport procedure by sending the DL NAS TRANSPORT message, as shown in figure 5.4.5.3.2.1.

In case a) in subclause 5.4.5.3.1, i.e. upon reception from an SMF of a 5GSM message without an N1 SM delivery skip allowed indication for a UE or a 5GSM message with an N1 SM delivery skip allowed indication for a UE in the 5GMM-CONNECTED mode, the AMF shall:

a) include the PDU session information (PDU session ID) in the PDU session ID IE;

b) set the Payload container type IE to "N1 SM information"; and

c) set the Payload container IE to the 5GSM message.

In case b) in subclause 5.4.5.3.1, i.e. upon reception from an SMSF of an SMS payload, the AMF shall:

a) set the Payload container type IE to "SMS";

b) set the Payload container IE to the SMS payload; and

c) select the access type to deliver the DL NAS TRANSPORT message as follows in case the access type selection is required:

1) if the UE to receive the DL NAS TRANSPORT message is registered to the network via both 3GPP access and non-3GPP access, the 5GMM context of the UE indicates that SMS over NAS is allowed, the UE is in MICO mode, and the UE is in 5GMM-IDLE mode for 3GPP access and in 5GMM-CONNECTED mode for non-3GPP access, then the AMF selects non-3GPP access. Otherwise, the AMF selects either 3GPP access or non-3GPP access.

If the delivery of the DL NAS TRANSPORT message over 3GPP access has failed, the AMF may re-send the DL NAS TRANSPORT message over the non-3GPP access.

If the delivery of the DL NAS TRANSPORT message over non-3GPP access has failed, the AMF may re-send the DL NAS TRANSPORT message over the 3GPP access; and

2) otherwise, the AMF selects 3GPP access.

NOTE 1: The AMF selects an access type between 3GPP access and non-3GPP access based on operator policy.

In case c) in subclause 5.4.5.3.1 i.e. upon reception from an LMF of an LPP message payload, the AMF shall:

a) set the Payload container type IE to "LTE Positioning Protocol (LPP) message container";

b) set the Payload container IE to the LPP message payload received from the LMF;

c) set the Additional information IE to an LCS correlation identifier received from the LMF from which the LPP message was received.

NOTE 2: The LCS Correlation Identifier is assigned originally by the AMF except for LPP message transfer associated with event reporting for periodic or triggered location as described in subclause 6.3.1 of 3GPP TS 23.273 [6B], where the LMF assigns the correlation identifier. AMF and LMF assigned correlation identifiers can be distinguished by an implementation specific convention (e.g. use of a different number of octets) to enable an AMF to distinguish one from the other when received in the Additional Information IE in an UL NAS Transport message.

In case d) in subclause 5.4.5.3.1 i.e. upon reception of a steering of roaming information (see 3GPP TS 23.122 [5]) from the UDM to be forwarded to the UE, the AMF shall:

a) set the Payload container type IE to "SOR transparent container"; and

b) set the Payload container IE to the steering of roaming information (see 3GPP TS 23.122 [5]) received from the UDM.

In case e) in subclause 5.4.5.3.1, i.e. upon sending a single uplink 5GSM message which was not forwarded due to routing failure, the AMF shall:

a) include the PDU session ID in the PDU session ID IE;

b) set the Payload container type IE to "N1 SM information";

c) set the Payload container IE to the 5GSM message which was not forwarded; and

d) set the 5GMM cause IE to the 5GMM cause #90 "payload was not forwarded" or 5GMM cause #91 "DNN not supported or not subscribed in the slice".

The AMF sets the 5GMM cause IE to the 5GMM cause #91 "DNN not supported or not subscribed in the slice", if the 5GSM message could not be forwarded since SMF selection fails because:

1) the DNN is not supported in the slice identified by the S-NSSAI used by the AMF; or

2) neither the DNN provided by the UE nor the wildcard DNN are in the subscribed DNN list of the UE for the S-NSSAI used by the AMF.

Otherwise, the AMF sets the 5GMM cause IE to the 5GMM cause #90 "payload was not forwarded".

In case f) in subclause 5.4.5.3.1, i.e. upon sending a single uplink 5GSM message which was not forwarded due to congestion control, the AMF shall:

a) include the PDU session ID in the PDU session ID IE;

b) set the Payload container type IE to "N1 SM information";

c) set the Payload container IE to the 5GSM message which was not forwarded;

d) set the 5GMM cause IE to the 5GMM cause #22 "Congestion", the 5GMM cause #67 "insufficient resources for specific slice and DNN" or the 5GMM cause #69 "insufficient resources for specific slice"; and

e) include the Back-off timer value IE.

In case g) in subclause 5.4.5.3.1, i.e. upon reception of a UE policy container from the PCF to be forwarded to the UE, the AMF shall:

a) set the Payload container type IE to "UE policy container"; and

b) set the Payload container IE to the UE policy container received from the PCF.

In case h) in subclause 5.4.5.3.1, i.e. upon sending a single uplink 5GSM message which was not forwarded, because the PLMN's maximum number of PDU sessions has been reached, the AMF shall:

a) include the PDU session ID in the PDU session ID IE;

b) set the Payload container type IE to "N1 SM information";

c) set the Payload container IE to the 5GSM message which was not forwarded; and

d) set the 5GMM cause IE to the 5GMM cause #65 "maximum number of PDU sessions reached".

In case h1) in subclause 5.4.5.3.1, i.e. upon sending a single uplink 5GSM message which was not forwarded, because the maximum number of PDU sessions with active user-plane resources has been reached, the AMF shall:

a) include the PDU session ID in the PDU session ID IE;

b) set the Payload container type IE to "N1 SM information";

c) set the Payload container IE to the 5GSM message which was not forwarded; and

d) set the 5GMM cause IE to the 5GMM cause #92 "insufficient user-plane resources for the PDU session".

In case h2) in subclause 5.4.5.3.1, i.e. upon sending a single uplink 5GSM message which was not forwarded because the UE requested to establish a PDU session associated with an S-NSSAI or to modify a PDU session associated with an S-NSSAI for which:

a) the AMF is performing network slice-specific authentication and authorization and determined to reject the request based on local policy; or

b) the network slice-specific authentication and authorization has failed or the authorization has been revoked;

the AMF shall:

a) include the PDU session ID in the PDU session ID IE;

b) set the Payload container type IE to "N1 SM information";

c) set the Payload container IE to the 5GSM message which was not forwarded; and

d) set the 5GMM cause IE to the 5GMM cause #90 "payload was not forwarded".

In case h3) in subclause 5.4.5.3.1, i.e. upon sending a single uplink 5GSM message which was not forwarded because the present location of the UE in satellite access is considered by the network as in a location where the network is not allowed to operate, the AMF shall:

a) include the PDU session ID in the PDU session ID IE;

b) set the Payload container type IE to "N1 SM information";

c) set the Payload container IE to the 5GSM message which was not forwarded; and

d) set the 5GMM cause IE to the 5GMM cause #90 "payload was not forwarded".

In case i) in subclause 5.4.5.3.1, i.e. upon sending a single uplink 5GSM message which was not forwarded due to service area restrictions, the AMF shall:

a) include the PDU session ID in the PDU session ID IE;

b) set the Payload container type IE to "N1 SM information";

c) set the Payload container IE to the 5GSM message which was not forwarded; and

d) set the 5GMM cause IE to the 5GMM cause #28 "Restricted service area".

In case j) in subclause 5.4.5.3.1 i.e. upon reception of UE parameters update data (see 3GPP TS 23.502 [9]) from the UDM to be forwarded to the UE, the AMF shall:

a) set the Payload container type IE to "UE parameters update transparent container"; and

b) set the contents of the Payload container IE to the UE parameters update data (see 3GPP TS 23.502 [9]) received from the UDM.

For case k) in subclause 5.4.5.3.1 upon reception from a location services application of a Location services message payload, the AMF shall:

a) set the Payload container type IE to "Location services message container"; and

b) set the Payload container IE to the Location services message payload.

For case k) in subclause 5.4.5.3.1 upon reception from an LMF of a Location services message payload, the AMF shall:

a) set the Payload container type IE to "Location services message container";

b) set the Payload container IE to the Location services message payload; and

c) set the Additional information IE to routing information associated with the LMF from which the Location services message payload was received.

NOTE 3: Case k) in subclause 5.4.5.3.1 supports transport of a Location services message container between a UE and an AMF and between a UE and an LMF. For transport between a UE and an LMF, the Additional information IE is included and provides routing information for the LMF. For transport between a UE and an AMF, the Additional information IE is not included.

In case l) in subclause 5.4.5.3.1, i.e. upon reception from an SMF of a user data container payload, the AMF shall:

a) include the PDU session ID in the PDU session ID IE;

b) set the Payload container type IE to "CIoT user data container"; and

c) set the Payload container IE to the user data container.

For case l1) in subclause 5.4.5.3.1, i.e. upon sending a single uplink CIoT user data container or control plane user data which was not forwarded due to routing failure, the AMF shall:

a) include the PDU session ID in the PDU session ID IE;

b) set the Payload container type IE to " CIoT user data container";

c) set the Payload container IE to the CIoT user data container or control plane user data which was not forwarded; and

d) set the 5GMM cause IE to the 5GMM cause #90 "payload was not forwarded".

NOTE 4: For case l1) in subclause 5.4.5.3.1, this is also applied for a single uplink CIoT user data container or control plane user data in the CONTRON PLANE SERVICE REQUEST message which was not forwarded due to routing failure.

For case l2) in subclause 5.4.5.3.1, i.e. upon sending a single uplink CIoT user data container which was not forwarded due to congestion control, the AMF shall:

a) include the PDU session ID in the PDU session ID IE;

b) set the Payload container type IE to " CIoT user data container";

c) set the Payload container IE to the CIoT user data container which was not forwarded;

d) set the 5GMM cause IE to the 5GMM cause #22 "Congestion" and include the Back-off timer value IE.

In case m) in subclause 5.4.5.3.1, the AMF shall:

a) set the Payload container type IE to "Multiple payloads";

b) set each payload container entry of the Payload container IE (see subclause 9.11.3.39) as follows:

i) set the payload container type field of the payload container entry to a payload container type value set in the Payload container type IE as specified for cases a) to l2) above;

ii) set the payload container entry contents field of the payload container entry to the payload container contents set in the Payload container IE as specified for cases a) to l2) above;

iii) set the optional IE fields, if any, to the optional associated information as specified for cases a) to l2) above.

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**Figure 5.4.5.3.2.1: Network-initiated NAS transport procedure**

\*\*\* Next change \*\*\*

5.5.2.3.1 Network-initiated de-registration procedure initiation

The network initiates the de-registration procedure by sending a DEREGISTRATION REQUEST message to the UE (see example in figure 5.5.2.3.1.1).

NOTE: If the AMF performs a local de-registration, it will inform the UE with a 5GMM messages (e.g. SERVICE REJECT message or REGISTRATION REJECT message) with 5GMM cause #10 "implicitly de-registered" only when the UE initiates a 5GMM procedure.

The network may include a 5GMM cause IE to specify the reason for the DEREGISTRATION REQUEST message. The network shall start timer T3522. The network shall indicate whether re-registration is needed or not in the De-registration type IE. The network shall also indicate via the access type whether the de-registration procedure is:

a) for 3GPP access only;

b) for non-3GPP access only; or

c) for 3GPP access, non-3GPP access or both when the UE is registered in the same PLMN for both accesses.

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. In addition, if the UE supports extended rejected NSSAI, the AMF shall include the Extended rejected NSSAI IE in the DEREGISTRATION REQUEST message; otherwise the AMF shall include the Rejected NSSAI IE in the DEREGISTRATION REQUEST message.

If the network de-registration is triggered for a UE supporting CAG due to CAG restrictions, the network shall set the 5GMM cause value to #76 "Not authorized for this CAG or authorized for CAG cells only" and should include the "CAG information list" in the CAG information list IE in the DEREGISTRATION REQUEST message.

If the network de-registration is triggered for a UE not supporting CAG due to CAG restrictions, the network shall operate as described in bullet g) of subclause 5.5.2.3.5.

If the AMF determines to not forward the 5GSM message due to the present location of the UE in satellite access is considered by the network as in a location where the network is not allowed to operate, after the Network-initiated NAS transport procedure, the AMF shall trigger the network de-registration for the UE and set the 5GMM cause value in the DEREGISTRATION REQUEST message to #78 "PLMN not allowed to operate at the present UE location".

Editor's note: Whether a MCC or MCC list is included in the DEREGISTRATION REQUEST message and how the UE handles it are FFS.

Editor's note: Whether there is an abnormal case on the UE side while handling the Network-initiated NAS transport procedure and the Network-initiated de-registration procedure are FFS.

The AMF shall trigger the SMF to release locally the PDU session(s) over the indicated access(es), if any, for the UE and enter state 5GMM-DEREGISTERED-INITIATED.

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**Figure 5.5.2.3.1.1: Network-initiated de-registration procedure**

\*\*\* End of changes \*\*\*