**3GPP TSG-CT WG1 Meeting #141eC1-232685**

**Online 17 – 21 April 2023 (was C1-232510)**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.501** | **CR** |  | **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 | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Support of PRUs in NAS transport procedure | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Xiaomi, vivo | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_eLCS\_Ph3 | | | | |  | ***Date:*** | | | 2023-04-10 |
|  |  | | | |  | |  | | |  |
| ***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 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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | SA2 has agreed CR 0263 (S2-2303860) procedures applicable to a PRU in clause 6.17 of 23.273. NAS transport procedure in 24.501 can be used to support transporting location services messages.  For PRU association procedure, the routing information can be preconfigured in PRU or received in a previous PRU association procedure from AMF. For PRU Initiated PRU disassociation procedure, the routing information is the information received in the PRU association procedure from AMF. So in the UE-initiated NAS transport procedure of 24.501, both the preconfigured routing information and the routing information provided by AMF in previous procedure need to be supported. | | | | | | | | |
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| ***Summary of change:*** | | Added the preconfigured routing information and the routing information provided by AMF in previous procedure as two other ways of providing the routing information during the UE-initiated NAS transport procedure. | | | | | | | | |
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| ***Consequences if not approved:*** | | The AMF cannot obtain the routing information from PRU. | | | | | | | | |
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| ***Clauses affected:*** | | 5.4.5.2.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | Revision 1:  Add a NOTE to indicate AMF may configure the routing information to UE during the PRU association procedure and the PRU disassociation procedure. | | | | | | | | |

\*\*\*\* First Change \*\*\*\*

##### 5.4.5.2.2 UE-initiated NAS transport procedure initiation

In the connected mode, the UE initiates the NAS transport procedure by sending the UL NAS TRANSPORT message to the AMF, as shown in figure 5.4.5.2.2.1.

In case a) in subclause 5.4.5.2.1, the UE shall:

- include the PDU session information (PDU session ID, old PDU session ID, S-NSSAI, mapped S-NSSAI (if available in roaming scenarios), DNN, request type), if available;

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

- set the Payload container IE to the 5GSM message.

The UE shall set the PDU session ID IE to the PDU session ID. If an old PDU session ID is to be included, the UE shall set the Old PDU session ID IE to the old PDU session ID.

If an S-NSSAI is to be included, the UE shall set the S-NSSAI IE to the S-NSSAI selected for the PDU session from the allowed NSSAI for the current PLMN or SNPN, associated with the mapped S-NSSAI (if available in roaming scenarios).

If a DNN is to be included, the UE shall set the DNN IE to the DNN. 5GSM procedures specified in clause 6 describe conditions for inclusion of the S-NSSAI, mapped S-NSSAI (if available in roaming scenarios), and the DNN.

If a request type is to be included, the UE shall set the Request type IE to the request type. The request type is not provided along 5GSM messages other than the PDU SESSION ESTABLISHMENT REQUEST message and the PDU SESSION MODIFICATION REQUEST message.

If an MA PDU session information is to be included, the UE shall set the MA PDU session information IE to the MA PDU session information. The MA PDU session information is not provided along 5GSM messages other than the PDU SESSION ESTABLISHMENT REQUEST message and the PDU SESSION MODIFICATION REQUEST message as specified in 3GPP TS 24.193 [13B].

In case b) in subclause 5.4.5.2.1, the UE shall:

- set the Payload container type IE to "SMS"; and

- set the Payload container IE to the SMS payload.

Based on the UE preferences regarding access selection for mobile originated (MO) transmission of SMS over NAS as described in 3GPP TS 23.501 [8]:

- when SMS over NAS is preferred to be sent over 3GPP access: the UE attempts to deliver MO SMS over NAS via the 3GPP access if the UE is registered over both 3GPP access and non-3GPP access. If the delivery of SMS over NAS via the 3GPP access is not available, the UE attempts to deliver MO SMS over NAS via the non-3GPP access; and

- when SMS over NAS is preferred to be sent over non-3GPP access: the UE attempts to deliver MO SMS over NAS via the non-3GPP access if the UE is registered over both 3GPP access and non-3GPP access. If the delivery of SMS over NAS via the non-3GPP access is not available, the UE attempts to deliver MO SMS over NAS via the 3GPP access.

In case c) in subclause 5.4.5.2.1, the UE shall:

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

- set the Payload container IE to the LPP message payload; and

- set the Additional information IE to the routing information provided by the upper layer location services application.

In case d) in subclause 5.4.5.2.1, the UE shall:

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

- set the Payload container IE to the UE acknowledgement due to successful reception of steering of roaming information, and;

i) set the ME support of SOR-CMCI indicator to "SOR-CMCI supported by the ME" ;

ii) set the ME support of SOR-SNPN-SI indicator to "SOR-SNPN-SI supported by the ME"; and

iii) set the ME support of SOR-SNPN-SI-LS indicator to "SOR-SNPN-SI-LS supported by the ME",

- in the Payload container IE carrying the acknowledgement (see 3GPP TS 23.122 [5]).

In case e) in subclause 5.4.5.2.1, the UE shall:

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

- set the contents of the Payload container IE as specified in Annex D.

In case f) in subclause 5.4.5.2.1, the UE shall:

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

- set the contents of the Payload container IE to the UE acknowledgement due to successful reception of UE parameters update data (see 3GPP TS 23.502 [9]).

In case g) in subclause 5.4.5.2.1, the UE shall:

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

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

- set the Additional information IE to the routing information, if preconfigured or provided by AMF in a previous procedure or provided by the upper layer location services application.

NOTE: The AMF may configure the routing information to the UE during the PRU association procedure or the PRU disassociation procedure as specified in 3GPP TS 23.273 [6B].

In case h) in subclause 5.4.5.2.1, the UE shall:

- include the PDU session ID, and Release assistance indication (if available);

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

- set the Payload container IE to the user data container.

In case i) in subclause 5.4.5.2.1, the UE shall:

- set the Payload container type IE to "Service-level-AA container"; and

- set the Payload container IE to the Service-level-AA container.

In case j) in subclause 5.4.5.2.1, the UE shall:

- set the Payload container type IE to "Multiple payloads"; and

- 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 in cases a) to i) 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 in cases a) to i) above, and

iii) set the optional IE fields, if any, to the optional associated payload routing information as specified in cases a) to i) above.



Figure 5.4.5.2.2.1: UE-initiated NAS transport procedure

\*\*\*\* End of Changes \*\*\*\*