**3GPP TSG-RAN WG3 Meeting #127-bis R3-25xxxx**

**Wuhan, China, 7-11 April, 2025**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.300** | **CR** |  | **rev** |  | **Current version:** | 18.5.0 |  |
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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 | **x** | Core Network | **X** |

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| ***Title:*** | Correction of PEI and emergency PDU session | | | | | | | | | |
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| ***Source to WG:*** | Huawei, Qualcomm, Ericsson, ZTE, China Telecom | | | | | | | | | |
| ***Source to TSG:*** | R3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_UE\_pow\_sav\_enh-Core, TEI19 | | | | |  | ***Date:*** | | | 2025-04-08 |
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| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-19 |
|  | *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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19) Rel-20 (Release 20)* | |
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| ***Reason for change:*** | | As per agreed in S2-2502428, the unnecessary restrictions for emergency PDU session for PEI are removed. Specifically, the following sentence was removed from 5.4.12.2 Core Network Assistance for PEIPS in TS 23.501.   * *When the UE has an active emergency PDU Session:*   + *The UE shall not signal Paging Subgrouping Support Indication in the Registration Request message.*   The main reason is that PSAP call back is delivered as normal call in IMS PDU session. This means that the PEIPS assistance information could be used when the UE is in the idle state, and it could be also used when the UE is in RRC inactive state.  However, the current texts said that for RRC inactive UE, the NG-RAN would not use the PEIPS for emergency PDU session, which should be corrected to align with SA2 changes. | | | | | | | | |
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| ***Summary of change:*** | | * Remove the PEIPS restrictions where the PEIPS cannot be used in case of emergency PDU session. | | | | | | | | |
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| ***Consequences if not approved:*** | | Not aligned with SA2 specifcation.  The PEIPS cannot be used in case of emergency PDU session call back. | | | | | | | | |
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| ***Clauses affected:*** | | 9.2.2 | | | | | | | | |
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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:*** | |  | | | | | | | | |
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| ***This CR's revision history:*** | | Initial version: R3-252111  Rev1: add co-sources. | | | | | | | | |

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| **Change Begins** |

### 9.2.2 Mobility in RRC\_INACTIVE

#### 9.2.2.1 Overview

RRC\_INACTIVE is a state where a UE remains in CM-CONNECTED and can move within an area configured by NG-RAN (the RNA) without notifying NG-RAN. In RRC\_INACTIVE, the last serving gNB node keeps the UE context and the UE-associated NG connection with the serving AMF and UPF.

For a UE in RRC\_INACTIVE with eDRX cycle longer than 10.24 seconds, the NG-RAN node may, based on implementation, send a request to the AMF to perform MT Communication Handling as described in TS 23.501 [3]. If the UE accesses a gNB other than the last serving gNB and upon successful UE context retrieval, the AMF considers that the UE is reachable (i.e., the MT Communicating Handling is deactivated) and triggers the MT DL data/signalling delivery upon receiving the NGAP Path Switch Request message.

If the last serving gNB receives DL data from the UPF or DL UE-associated signalling from the AMF (except the UE Context Release Command message) while the UE is in RRC\_INACTIVE, it pages in the cells corresponding to the RNA and may send XnAP RAN Paging to neighbour gNB(s) if the RNA includes cells of neighbour gNB(s).

Upon receiving the RAN Paging Request message from the AMF while the UE is in RRC\_INACTIVE with eDRX beyond 10.24 seconds, the last serving gNB may page in its cells comprised in the RNA and may send XnAP RAN Paging to neighbour gNB(s) if the RNA includes cells of neighbour gNB(s), in order to trigger the UE to resume connection in RRC\_CONNECTED state, or in RRC\_INACTIVE state for DL SDT, based on the DL data size if included in the NGAP RAN Paging Request message.

Upon receiving the UE Context Release Command message while the UE is in RRC\_INACTIVE, the last serving gNB may page in the cells corresponding to the RNA and may send XnAP RAN Paging to neighbour gNB(s) if the RNA includes cells of neighbour gNB(s), in order to release UE explicitly.

Upon receiving the NG RESET message while the UE is in RRC\_INACTIVE, the last serving gNB may page involved UEs in the cells corresponding to the RNA and may send XnAP RAN Paging to neighbour gNB(s) if the RNA includes cells of neighbour gNB(s) in order to explicitly release involved UEs.

Upon RAN paging failure, the gNB behaves according to TS 23.501 [3].

The AMF provides to the NG-RAN node the Core Network Assistance Information to assist the NG-RAN node's decision whether the UE can be sent to RRC\_INACTIVE, and to assist UE configuration and paging in RRC\_INACTIVE. The Core Network Assistance Information includes the registration area configured for the UE, the Periodic Registration Update timer, and the UE Identity Index value, and may include the UE specific DRX, an indication if the UE is configured with Mobile Initiated Connection Only (MICO) mode by the AMF, the Expected UE Behaviour, the UE Radio Capability for Paging, the PEI with Paging Subgrouping assistance information, the NR Paging eDRX Information, the Paging Cause Indication for Voice Service, the Hashed UE Identity Index Value and the CN support indication for MT Communication Handling. The UE registration area is taken into account by the NG-RAN node when configuring the RNA. The UE specific DRX and UE Identity Index value are used by the NG-RAN node for RAN paging. The Periodic Registration Update timer is taken into account by the NG-RAN node to configure Periodic RNA Update timer. The NG-RAN node takes into account the Expected UE Behaviour to assist the UE RRC state transition decision. The NG-RAN node may use the UE Radio Capability for Paging during RAN Paging. The NG-RAN node takes into account the PEI with Paging Subgrouping assistance information for subgroup paging in RRC\_INACTIVE. When sending the XnAP RAN Paging to neighbour NG-RAN node(s), the PEI with Paging Subgrouping assistance information may be included. The NG-RAN node takes into account the NR Paging eDRX Information to configure the RAN Paging when the NR UE is in RRC\_INACTIVE. When sending XnAP RAN Paging to neighbour NG-RAN node(s), the NR Paging eDRX Information for RRC\_IDLE and for RRC\_INACTIVE may be included. The NG-RAN node takes into consideration the Paging Cause Indication for Voice Service to include the Paging Cause in RAN Paging for a UE in RRC\_INACTIVE state. When sending XnAP RAN Paging to neighbour NG-RAN node(s), the Paging Cause may be included. When sending XnAP RAN Paging to neighbour NG-RAN node(s), the Hashed UE Identity Index Value may be included to determine the start point of PTW. The NG-RAN takes into account the CN support indication for MT Communication Handling when deciding to request the AMF for MT Communication Handling for a UE in RRC\_INACTIVE state with long eDRX beyond 10.24 seconds as described in TS 23.501 [3].

At transition to RRC\_INACTIVE the NG-RAN node may configure the UE with a periodic RNA Update timer value. At periodic RNA Update timer expiry without notification from the UE, the gNB behaves as specified in TS 23.501 [3].

If the UE accesses a gNB other than the last serving gNB, the receiving gNB triggers the XnAP Retrieve UE Context procedure to get the UE context from the last serving gNB and may also trigger an Xn-U Address Indication procedure including tunnel information for potential recovery of data from the last serving gNB. Upon successful UE context retrieval, the receiving gNB shall perform the slice-aware admission control in case of receiving slice information and becomes the serving gNB and it further triggers the NGAP Path Switch Request and applicable RRC procedures. After the path switch procedure, the serving gNB triggers release of the UE context at the last serving gNB by means of the XnAP UE Context Release procedure.

In case the UE is not reachable at the last serving gNB, the gNB shall fail any AMF initiated UE-associated class 1 procedure which allows the signalling of unsuccessful operation in the respective response message. It may trigger the NAS Non Delivery Indication procedure to report the non-delivery of any non PDU Session related NAS PDU received from the AMF as specified in TS 38.413 [26].

If the UE accesses a gNB other than the last serving gNB and the receiving gNB does not find a valid UE Context, the receiving gNB can perform establishment of a new RRC connection instead of resumption of the previous RRC connection. UE context retrieval will also fail and hence a new RRC connection needs to be established if the serving AMF changes.

A UE in the RRC\_INACTIVE state is required to initiate RNA update procedure when it moves out of the configured RNA. When receiving RNA update request from the UE, the receiving gNB triggers the XnAP Retrieve UE Context procedure to get the UE context from the last serving gNB and may decide to send the UE back to RRC\_INACTIVE state, move the UE into RRC\_CONNECTED state, or send the UE to RRC\_IDLE. In case of periodic RNA update, if the last serving gNB decides not to relocate the UE context, it fails the Retrieve UE Context procedure and sends the UE back to RRC\_INACTIVE, or to RRC\_IDLE directly by an encapsulated *RRCRelease* message.

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| **Change Ends** |