**3GPP TSG-RAN3 Meeting # 115-e *R3-222964***

**21st February – 3rd March 2022**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **38.300** | **CR** | **<draft>** | **rev** |  | **Current version:** | **16.8.0** |  |
|  |
| *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:***  | Addition of PEI Paging Subgrouping Assistance Information |
|  |  |
| ***Source to WG:*** | Ericsson, Qualcomm Inc., Nokia, Nokia Shanghai Bell, Huawei, ZTE, Samsung, CATT |
| ***Source to TSG:*** | R3 |
|  |  |
| ***Work item code:*** | NR\_UE\_pow\_sav\_enh-Core |  | ***Date:*** | 2022-02-21 |
|  |  |  |  |  |
| ***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 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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | Paging Early Indication is being introduced for NR as part of Rel-17 UE power saving WID RP-212630. |
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| ***Summary of change:*** | Clarification on stage 2 behaviour related to the assistance data sent from 5GCN to NG-RAN for RRC INACTIVE configuration and during Xn RAN Paging message with Paging Early Indication for Paging with Subgrouping. |
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| ***Consequences if not approved:*** | Paging Subgrouping is not supported. |
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| ***Clauses affected:*** | 9.2.2.1 |
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|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS 38.473 CR 0855TS 38.413 CR 0725TS 38.423 CR 0732TS 38.410 CR 0037 |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Rev#3: Implementation of TP R3-222522Rev#2: Submission to RAN3#115-eRev#1: of R3-220286, addition of co-signers |

**<<<<<< START OF CHANGE >>>>>>**

### 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.

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 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, and the PEI with Paging Subgrouping assistance information. 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 XnAP RAN Paging to neighbour NG-RAN node(s), the PEI with Paging Subgrouping assistance information may be included.

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].

**<<<<<< END OF CHANGES >>>>>>**