**3GPP TSG-RAN WG2** **Meeting #116-e *R2-21xxxxx***

**Electronic, 1st - 12th November 2021**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **36.306** | **CR** | **1834** | **rev** | **1** | **Current version:** | **16.6.0** |  |
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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 | **X** | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | Correction on PO determination for UE in inactive state | | | | | | | | | |
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| ***Source to WG:*** | ZTE corporation, Ericsson, vivo, CMCC, China Telecom, China Unicom, Sanechips | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI-17 | | | | |  | ***Date:*** | | | 2021-11-11 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
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| ***Reason for change:*** | | The PF and PO for paging are determined by the following formulae:  PF is given by following equation:  SFN mod T= (T div N)\*(UE\_ID mod N)  Index i\_s pointing to PO from subframe pattern will be derived from following calculation:  i\_s = floor(UE\_ID/N) mod Ns  - T: DRX cycle of the UE. Except for NB-IoT, if a UE specific extended DRX value of 512 radio frames is configured by upper layers according to 7.3, T =512. Otherwise, T is determined by the shortest of the UE specific DRX value, if allocated by upper layers, and a default DRX value broadcast in system information. If UE specific DRX is not configured by upper layers, the default value is applied. UE specific DRX is not applicable for NB-IoT. In RRC\_INACTIVE state, T is determined by the shortest of the RAN paging cycle, the UE specific paging cycle, and the default paging cycle, if allocated by upper layers.  - nB: 4T, 2T, T, T/2, T/4, T/8, T/16, T/32, T/64, T/128, and T/256, and for NB-IoT also T/512, and T/1024.  - N: min(T,nB)  For a UE, it is possible that the T used in inactive state is different from the T used in idle mode as NW is allowed to configure a RAN paging cycle different from the UE specific paging cycle configured by upper layer or the default value in system information while the N used in calculation is still the one broadcast in candidate value T, T/2, T/4, T/8, T/16, T/32, T/64, T/128, or T/256.  As a result, the index of the PO (i.e. the i\_s) would be different for inactive state and idle state as the N is a value related to the T while the T has different value in idle and inactive state, which deviates from the intention that the POs of a UE for CN-initiated and RAN-initiated paging should be overlapped.  To solve this PO mismatch for CN paging and RAN paging, the UE in inactive mode shall use the same i\_s as in idle mode. And a UE capability should be introduced to show UE support for such behavior. | | | | | | | | |
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| ***Summary of change:*** | | Introduce a UE capability to indicate support for UE in inactive mode to use the same i\_s in PO determination as in idle mode. | | | | | | | | |
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| ***Consequences if not approved:*** | | NW is not aware of whether a UE supports to use the same i\_s in both inactive and idle mode to determine the index of PO. | | | | | | | | |
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| ***Clauses affected:*** | | 4.3.36 | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **x** |  | Other core specifications | | | | TS/TR36.331 CR 4749  TS/TR36.304 CR 0836 | | |
| ***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:*** | |  | | | | | | | | |

Start of change

4.3.36 E-UTRA/5GC Parameters

4.3.36.1 *eutra-5GC-r15*

This field indicates whether the UE supports E-UTRA/5GC.

4.3.36.2 *eutra-EPC-HO-EUTRA-5GC-r15*

This field indicates whether the UE supports handover between E-UTRA/EPC and E-UTRA/5GC. It is mandatory for UEs of this release of the specification if the UE supports the associated core networks.

4.3.36.3 Void

4.3.36.4 *ho-EUTRA-5GC-FDD-TDD-r15*

This field indicates whether the UE supports handover between E-UTRA/5GC FDD and E-UTRA/5GC TDD. It is mandatory for UEs of this release of the specification if the UE supports *eutra-5GC-r15* and the associated RATs.

4.3.36.5 *ho-InterfreqEUTRA-5GC-r15*

This field indicates whether the UE supports inter frequency handover within E-UTRA/5GC. It is mandatory for UEs of this release of the specification.

4.3.36.6 *IMS-VoiceOverMCG-BearerEUTRA-5GC-r15*

This field indicates whether the UE supports IMS voice over NR PDCP for MCG bearer for E-UTRA/5GC. It is mandated to the IMS voice capable UE if the UE supports *eutra-5GC-r15*.

4.3.36.7 *inactiveState-r15*

This field indicates whether the UE supports RRC\_INACTIVE. It is mandatory for UEs of this release of the specification if the UE supports *eutra-5GC-r15*.

4.3.36.8 *reflectiveQoS-r15*

This field indicates whether the UE supports AS reflective QoS.

4.3.36.X *inactiveStatePO-Determination-r17*

This field indicates whether the UE supports to use the same i\_s in RRC\_INACTIVE as in RRC\_IDLE for PO determination as specified in TS 36.304 [14]. A UE indicating support of *inactiveStatePO-Determination-r17* shall also indicate support of *inactiveState-r15*.

End of change