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

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

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.306** | **CR** | **draft** | **rev** | **-** | **Current version:** | **16.5.0** |  |
|  | | | | | | | | |
| *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 | **X** | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | Correction on PO determination for UE in inactive state | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | ZTE corporation, Sanechips | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI17 | | | | |  | ***Date:*** | | | 2021-10-20 |
|  |  | | | |  | |  | | |  |
| ***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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The PF and PO for paging are determined by the following formulae:  SFN for the PF is determined by:  (SFN + PF\_offset) mod T = (T div N)\*(UE\_ID mod N)  Index (i\_s), indicating the index of the PO is determined by:  i\_s = floor (UE\_ID/N) mod Ns  T: DRX cycle of the UE (T is determined by the shortest of the UE specific DRX value(s), if configured by RRC and/or upper layers, and a default DRX value broadcast in system information. In RRC\_IDLE state, if UE specific DRX is not configured by upper layers, the default value is applied).  N: number of total paging frames in T (configured by nAndPagingFrameOffset with value T, T/2, T/4, T/8, or T/16)  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 SIB1 with value T, T/2, T/4, T/8, or T/16.  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, we suggest that UE in inactive mode use the same i\_s as in idle mode to determine the PO. And a UE capability should be introduced to show UE support for such behavior. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Introduce UE capability to indicate support for UE in inactive mode to use the same i\_s in PO determination as in idle mode.  **Impact Analysis**  Impacted 5G architecture options:  SA, NR-DC, EUTRA/5GC    Impacted functionality:  Paging    Inter-operability:  This CR can be implemented by earlier release UE.  If UE is implemented according to this CR while NW is not, NW would not be able to interpret the new capability.  If NW is implemented according to this CR while UE is not, UE would not report such capability to NW. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | NW is not aware whether a UE support to use the same i\_s in both inactive and idle mode to determine the index of PO. | | | | | | | | |
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| ***Clauses affected:*** | | 4.2.2 | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **x** |  | Other core specifications | | | | TS/TR38.331 CR 2376  TS/TR38.306 CR 0213 | | |
| ***affected:*** | |  | **x** | Test specifications | | | |  | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

# Alternative -1

Start of change

4.2.2 General parameters

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| --- | --- | --- | --- | --- |
| Definitions for parameters | Per | M | FDD-TDD DIFF | **FR1-FR2**  DIFF |
| ***accessStratumRelease***  Indicates the access stratum release the UE supports as specified in TS 38.331 [9]. | UE | Yes | No | No |
| ***delayBudgetReporting***  Indicates whether the UE supports delay budget reporting as specified in TS 38.331 [9]. | UE | No | No | No |
| ***dl-DedicatedMessageSegmentation-r16***  Indicates whether the UE supports reception of segmented DL RRC messages. | UE | No | No | No |
| ***drx-Preference-r16***  Indicates whether the UE supports providing its preference of a cell group on DRX parameters for power saving in RRC\_CONNECTED, as specified in TS 38.331 [9]. | UE | No | No | No |
| ***inactiveState***  Indicates whether the UE supports RRC\_INACTIVE as specified in TS 38.331 [9]. | UE | Yes | No | No |
| ***inactiveStatePODetermination-r17***  Indicates whether the UE supports to use the same i\_s to determine PO in RRC\_INACTIVE state as in RRC\_IDLE state. | UE | No | No | No |
| ***inDeviceCoexInd-r16***  Indicates whether the UE supports IDC (In-Device Coexistence) assistance information as specified in TS 38.331 [9]. | UE | No | No | No |
| ***maxBW-Preference-r16***  Indicates whether the UE supports providing its preference of a cell group on the maximum aggregated bandwidth for power saving in RRC\_CONNECTED, as specified in TS 38.331 [9]. | UE | No | No | Yes |

End of change

# Alternative -2

Start of change

4.2.2 General parameters

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| --- | --- | --- | --- | --- |
| Definitions for parameters | Per | M | FDD-TDD DIFF | **FR1-FR2**  DIFF |
| ***accessStratumRelease***  Indicates the access stratum release the UE supports as specified in TS 38.331 [9]. | UE | Yes | No | No |
| ***delayBudgetReporting***  Indicates whether the UE supports delay budget reporting as specified in TS 38.331 [9]. | UE | No | No | No |
| ***dl-DedicatedMessageSegmentation-r16***  Indicates whether the UE supports reception of segmented DL RRC messages. | UE | No | No | No |
| ***drx-Preference-r16***  Indicates whether the UE supports providing its preference of a cell group on DRX parameters for power saving in RRC\_CONNECTED, as specified in TS 38.331 [9]. | UE | No | No | No |
| ***inactiveState***  Indicates whether the UE supports RRC\_INACTIVE as specified in TS 38.331 [9]. | UE | Yes | No | No |
| ***InactiveStatePODetermination-r17***  Indicates whether the UE supports to use the shortest of the UE specific DRX values configured by upper layers and a default value broadcast in system information or the default value if UE specific DRX is not configured by upper layers for RRC\_INACTIVE state without considering the UE specific DRX value configured by RRC when determining the index of the PO. | UE | No | No | No |
| ***inDeviceCoexInd-r16***  Indicates whether the UE supports IDC (In-Device Coexistence) assistance information as specified in TS 38.331 [9]. | UE | No | No | No |
| ***maxBW-Preference-r16***  Indicates whether the UE supports providing its preference of a cell group on the maximum aggregated bandwidth for power saving in RRC\_CONNECTED, as specified in TS 38.331 [9]. | UE | No | No | Yes |

End of change