**3GPP TSG-RAN WG2 Meeting #113bis-e *R2-21xxxxx***

**Online, April 12 – 20, 2021**

**Title: [DRAFT]** LS to RAN3 to clarify paging DRX cycle

**Response to:** -

**Release:** Rel-15

**Work Item:** LTE\_5GCN\_connect-Core, LTE\_eMTC5-Core

**Source:** ZTE[To be TSG RAN WG2]

**To:** RAN3

**Cc:** -

**Contact Person:**

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**Send any reply LS to: 3GPP Liaisons Coordinator,** **mailto:3GPPLiaison@etsi.org**

**Attachments:** -

**1. Overall Description:**

RRC\_INACTIVE is supported for LTE from Rel-15 and further supported for eMTC UE from Rel-16. The paging resource determination for UE can be summarized as following:

* For UE in RRC\_IDLE, the paging resource determination only needs to consider idle mode DRX cycle (T) which is based on the DRX information in system information and optionally UE specific DRX parameters such as UE specific eDRX, UE specific DRX.
* For UE in RRC\_INACTIVE, besides idle mode DRX cycle (T), the paging resource determination also needs to consider both idle mode DRX cycle (T) and RRC\_INACTVIE mode DRX cycle (T). The RRC\_INACTVIE mode DRX cycle (T) is based on the DRX information in system information and optionally UE specific DRX parameters such as UE specific eDRX, UE specific DRX, RAN paging DRX. Moreover, it’s possible different DRX cycle (T) are used for different paging resources are different.

According to above paging resource determination specified in TS 36.304, RAN2 assumes the following requirements for the paging RANs:

* When sending CN paging to UE then paging RAN only needs to know the idle mode DRX cycle (T). In this case UE could be in RRC\_INACTIVE or RRC\_IDLE.
* When sending RAN paging to UE in RRC\_INACTIVE then paging RAN needs to know both the idle mode DRX cycle (T) and RRC\_INACTVIE mode DRX cycle (T) because in this case paging RAN would use the RRC\_INACTIVE mode DRX cycle (T) for PF calculation and RRC\_IDLE mode DRX cycle (T) for i\_s (eLTE & eMTC), PNB (eMTC) and wg (eMTC) calculation.

In a summary, in order to correctly determine DRX cycle (T) and calculate PF, i\_s, PNB, wg, paging RANs need the possible UE specific eDRX information, UE specific DRX cycle and RAN paging cycle information separately. If not, paging RANs cannot calculate the correct value for PF, i\_s, PNB, wg. The CN paging would be failed.

It’s obvious the anchor ng-eNB can acquire all the needed information. However, for other ng-eNB(s) (except the anchor ng-eNB), according to the current XnAP specification, only one DRX parameter (e.g. Paging DRX) is included in RAN PAGING message. RAN2 understands this Paging DRX parameter may be not enough to correctly determine paging resources (e.g., PF, i\_s, PNB, and wg) as above. RAN3 needs to clarify how to make the necessary information available in all the paging RANs.

**2. Actions:**

**To 3GPP RAN3**

**ACTION:** RAN2 respectfully asks RAN3 to take the above information into account and to see whether changes to specification is needed.

**3. Date of Next TSG-RAN WG2 Meetings:**

3GPP RAN2#114-e May 2021, Online

3GPP RAN2#115 August 2021, Toulouse, FR