**3GPP TSG-RAN3 Meeting # 115-e *R3-222409***

**21st February – 3rd March 2022**

**Agenda Item: 11.3**

**Source: Moderator: Ericsson**

**Title: CB # RedCap3\_eDRX**

**Document for: Other**

1 Introduction

**CB: # RedCap3\_eDRX**

**- Whether to introduce separate IEs or one common IE for Paging eDRX Cycle over F1AP?**

**- Whether UE specific paging DRX and/or RAN paging DRX are needed over F1AP?**

**- Other clean up if needed**

**- Capture agreements and provide stage2/3 TPs if agreeable**

2 To the chair’s notes (Draft)

*[To be updated based on the outcome of the offline discussion*]

3 Discussion

## 3.1 Support of Paging eDRX Cycle over F1AP

The final outstanding issue regarding eDRX support for NR/RedCap UEs is whether RAN3 should introduce separate IEs or a common IE for the eDRX Paging Cycle over F1AP.

After checking the latest updates of RAN2 regarding their running CR of TS 38.304, several companies - such as [5], [7], [8] and [10] - acknowledge that two eDRX IEs for RRC\_IDLE and RRC\_INACTIVE are needed over F1, so that we correctly capture the scenario of how T is calculated outside the CN PTW, when the IDLE eDRX cycle is greater than 10.24s and the Inactive eDRX cycle is no longer than 10.24s.

On the other hand, only one company [4] proposes to have a common IE for IDLE and INACTIVE eDRX on F1. Given the clarification provided by other companies and the fact that some companies that previously proposed to have a common IE now recognise the need for two separate IEs during F1 Paging, the moderator hopes that we can converge on the majority’s view.

3.1.2 TS 38.473 impacts

**Q1:** Do companies agree to introduce two IEs "*NR Paging eDRX Information*" and "*NR Paging eDRX Information for RRC INACTIVE"* over F1AP Paging message?

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| --- | --- | --- |
| **Company** | **Yes/No** | **Comment** |
| Ericsson | Yes | For the *NR Paging eDRX information* IE, it should be mentioned in the tabular description that is it for RRC\_IDLE eDRX, if companies prefer to not have such mention in the IE’s name.  Then some alignment is needed with CT1’s spec. This is checked further below. |
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In addition, it is declared necessary, to take into account the scenario where T is calculated outside the CN PTW, to also add the RAN UE Paging DRX, as motivated in [5] and [7]. Or the UE Specific DRX as mentioned in [10]. Both definitions seem to be the same, with the addition of the following semantics from [10]:

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| --- | --- | --- | --- | --- | --- | --- |
| UE specific DRX | O |  | 9.3.1.40 | This IE indicates the UE specific paging cycle as defined in 38.304 [24].  If this IE is present, the Paging DRX IE indicates RAN paging cycle defined in 38.304 [24]. | YES | ignore |

**Q2:** Do companies agree to introduce a new IE "*RAN UE Paging DRX"* [5] or "*UE specific DRX*" [10] encoded as the RAN Paging DRX over F1 Paging message? Any views on the procedural text or semantics to add/update?

**Moderator proposes to take [5] as baseline for comments on the procedural text, with possible merge from other TPs in [7], [8] [10] for agreement, since TP [5] captures the correct values of NR eDRX and NR PTW as aligned with TS 24.008 definition.**

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| **Company** | **Yes/No** | **Comment** |
| Ericsson | Yes | Prefer to not impact legacy Rel-15 text. So, we prefer the procedural text in [5]. |
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3.1.2 TS 38.470 impacts

To align stage 2 with stage 3 agreements, some updates to TS 38.470 BL CR are needed for NR eDRX transmission during F1 Paging and calculation at gNB-DU. Three TPs have been provided for agreements:

* TP in [4] which mentions one common IE, thus it will not be considered
* TP in [6] adding the following line in section 5.2.5: “The gNB-DU may also calculate the PH, PTW\_start and PTW\_end with the paging information provided by gNB-CU for paging a RedCap UE.”
* TP in [9] adding abbreviation definitions and updating the existing text in 5.2.5 as follows: “The gNB-CU provides paging information to enable the gNB-DU to calculate the exact PH, if the eDRX is configured, and PO and PF. The gNB-CU determines the PA. The gNB-DU consolidates all the paging records for a particular PH, PO, PF and PA, and encodes the final RRC message and broadcasts the paging message on the respective PH, PO, PF in the PA.”

**Q3:** Companies are invited to provide their views to their preferred stage 2 F1 TP and proposed rewording, if needed?

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| **Company** | **[6] or [9]** | **Comment** |
| Ericsson | [9] | Both are fine, but [9] makes clever re-use of existing text in 5.2.5 and adds abbreviations, which is nice. |
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## 3.2 Other clean-ups

3.2.1 XnAP clean-up

The contribution in [1] proposes the following clean-up of the XnAP BL CR:

1. Delete the EN on possible need for revising the *RedCap Broadcast Information* IE to align with RAN2.
2. Replace mentions of TeDRX by either TeDRX, CN or TeDRX, RAN when referring to TS 38.304 for respectively idle and inactive extended paging cycles.
3. Align values of eDRX cycle and PTW (for NR idle mode eDRX) with those defined in TS 24.008.

**Q4:** Can the XnAP TP in [1], reflecting the three points above, be agreed?

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| **Company** | **Yes/No** | **Comment** |
| Ericsson | Yes |  |
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3.2.2 NG-AP clean-up

The contribution in [2] proposes the changes to NGAP baseline CR mirroring the changes proposed in [1], minus the EN related to RedCap Broadcast info that is not relevant for NG BL CR.

**Q5:** Can the NGAP TP in [2] be agreed?

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| **Company** | **Yes/No** | **Comment** |
| Ericsson | Yes |  |
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3.2.3 TS 38.300 clean-up

The contribution in [3] proposes a clean-up to TS 38.300 BL CR by removing the existing EN and updating the text with the information sent during Xn PAGING message

**Q5:** Can the TP to TS 38.300 BL CR in [3] be agreed?

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| **Company** | **Yes/No** | **Comment** |
| Ericsson | Yes |  |
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4. Conclusions (if needed)

*To be updated.*

5. References

1. R3-221744, (TP for XnAP BL CR on RedCap) Proposed updates to the XnAP BL CR (Qualcomm Incorporated, Huawei, Ericsson)
2. R3-221803, (TP for NGAP BL CR on RedCap) Proposed updates to the NGAP BL CR (Ericsson, Qualcomm Inc., Huawei)
3. R3-221805, TP to RedCap TS 38.300 BL CR: Addition of Inactive eDRX (Ericsson, Qualcomm Inc.)
4. R3-221810, (TP for TS 38.473 and 38.470) Support of eDRX for Redcap UEs (Nokia, Nokia Shanghai Bell)
5. R3-221919, Supporting Redcap UEs over F1 interface (Huawei, Qualcomm Incorporated, Ericsson)
6. R3-221920, (TP to BL CR 38.470) Paging for RedCap UEs (Huawei)
7. R3-222256, (TP for TS 38.473) Extended DRX Enhancement for RedCap Ues (CMCC)
8. R3-222317, (TP to BL CR of TS38.473) Discussion on the remaining issues of Rel-17 RedCap (Samsung)
9. R3-222486, (TP for RedCap BL CR 38.470) RedCap Paging (ZTE, Ericsson)
10. R3-222360, (TP for RedCap BL CR 38.473) RedCap Paging (ZTE)