3GPP TSG-RAN WG2 #112-e draftR2-20xxxxx

Electronic meeting, 2nd – 13th November, 2020

Agenda Item: 8.12.1

Source: Rapporteur (Ericsson)

Title: Comments for [POST112-e][111][REDCAP] TP drafting for the TR (Ericsson)

Document for: Discussion, Decision

# Introduction

This is the document for capturing comments, suggestions and text proposals for the TR update:

* [POST112-e][111][REDCAP] TP drafting for the TR (Ericsson)

 Scope: draft a TP based on meeting agreements

 Intended outcome: Endorsed TP in R2-2011165

 Deadline: Friday 2020-11-20

Companies are asked to provide their comments, suggestions and text proposals for the provided draft TR in this document.

It is expected the draft TR will be updated few times during the discussion until the deadline. Draft TR updates will be announced on the RAN2 reflector.

This document currently contains the “Phase 2” section of the RAN2#112-e offline discussion [111].

# Delegate contact information

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| --- | --- |
| Company | Delegate contact |
| COMPANY\_NAME | NAME (email@address.com) |
| Rapporteur (Ericsson) | tuomas.tirronen@ericsson.com |
| Xiaomi | Liyanhua1@xiaomi.com |
| vivo | Cheli (Chenli5g@vivo.com) |
| OPPO | Haitao Li (lihaitao@oppo.com) |

# Comments for draft TR

The following analysis was missed in the beginning of Phase 1 of [AT112][111] thus companies are asked to provide their views on this analysis:

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| **Company** | OK to include analysis from [R2-2009087](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2009087.zip) (vivo) (on RRM) in the TR? | Suggestions on which parts/details to capture or concerns with the analysis. Please elaborate if you think the analysis should not be captured. |
| vivo | OK | We are fine to capture the analysis in the TR. |
| MediaTek | No | We find this analysis incomplete to be captured in the TR. The suggestion made in this analysis is that serving cell monitoring can be applied to high SINR UEs, for which SSBs only need to be monitored once per 5.12s. However, if the SINR is only measured every 5.12s, how does one know that the UE remains in high SINR over this duration?For example, over a period of 5.12s the UE can move:1. 500kmph (High Speed): 711m2. 120kmph (Rural): 170m3. 30kmph (dense urban, urban macro): 42m4. 3kmph (Indoor hotspot, dense urban): 4.2mThe missing aspect in this analysis is the impact of blockage and fading due to this level of movement, and if the UE can be still considered as remaining in high SINR over such a long interval.[Chenli to clarify]: I would like to further clarify our simulation assumption: we only evaluate the stationary UEs. We are OK to further clarify this assumption in the TR with the simulation results. About “5.12s” in the paper: actually, in our simulation model, the DRX cycle is 1.28s (the evidence could be found in our RAN1 paper R1-2007672.). After 4 times of RRM relaxation, SSB reception period will be 5.12s (4\*1.28s), which is the meaning of 5.12s in our contribution. We perform some calculation to proof that SSB reception period of 5.12s after RRM relaxation will still maintaining good time synchronization in Table 2. Whether to capture this part is up to Rapporteur. Our intention is to provide the power saving gain with the corresponding impacts. |
| Rapporteur | v2  | Analysis not yet included – waiting for more comments |
| OPPO |  | No strong view, but we have concerns here. If stationary/low mobility is still evaluated based on serving cell measurement, then serving cell RRM measurement relaxation may have impact on the evaluation accuracy. Does this also need to be evaluated? |
| Rapporteur | v3  | There seem to be some concerns so suggestion is for vivo to update the analysis based on concerns and submit it as text proposal to be included to the next meeting.  |

Companies are asked to provide comments and Text Proposals for draft TR 38.875 per section based on the POST-112 version of the draft TR:

(Current version is -v3)

**Section 8.3 “Extended DRX for RRC Inactive and/or Idle”**

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| **Company** | **Subsection** | **Comment / text proposal** |
| Xiaomi | 8.3 | We agree with the current TP. |
| vivo | 8.3.1 | I assume the following part should be updated based on the latest agreements:“For RedCap UEs in RRC\_IDLE or RRC\_INACTIVE, if the eDRX cycle is less than 10.24 s, paging monitoring does not use PTW and PH, if any. “[Rapp v2] This should be still correct, or do you refer to the intention on exactly 10.24 s cycle? This is captured in current version. |
| Rapporteur | v2 available, editorial changes made in section |
| OPPO | 8.3.2 | Based on the agreement in RAN2#112e, the power consumption analysis given in 8.3.2 currently should be moved to the Annex of the TR. |
| Rapporteur | v3 | The full results and analysis are captured in the Annex. 8.3.2 is just a reference to the results without any RAN2 concludions or recommendation.  |

**Section 8.4 “RRM relaxation for stationary devices”**

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| **Company** | **Subsection** | **Comment / text proposal** |
| Xiaomi | 8.4 | The TP says” The study includes objective on RRM relaxation for stationary RedCap devices. Considering the mobility status of the target RedCap UE, the stationarity property is not limited to a strictly fixed UE, but such UE can also have low mobility even during periods of time it is “stationary”. ”I got a little bit confused as the meeting minutes captured:1. The target REDCAP UE, considering mobility, is not limited to a fixed UE, but can also experience some low mobility, and this, during some “stationary” periods of time.

Is this meaning the UE can also have low mobility even during periods of time it is “stationary” or outside periods of time it is “stationary”?Maybe the rapporteur can help me to clarify this.[Rapp] My interpretation of the agreement is that a “stationary” UE can be truly stationary or experience low mobility.  |
| Rapporteur | v2 available with editorial updates in section, please check |
| OPPO | 8.4.18.4.2 | For 8.4.1, 1. we suggest to remove the following description since we haven’t reached agreement on the how to trigger RRM relaxation based on measurements.

“As a baseline, the RRM relaxation of RedCap UEs is triggered based on measurements. ~~The assumption is that a RedCap UE will base its determination of mobility with the same mechanisms as were specified in Rel-16 where the state of mobility of the UE is determined by comparing the difference between RSRP measurements and a reference RSRP with a threshold.~~”1. We think the agreement “Relaxation of neighbor cells RRM measurements in RRC\_CONNECTED will be studied in this SI/WI” should also be captured in the TR. We could further update the TR when we get more progress on it.

For 8.4.2, based on the agreement in RAN2#112e, the power consumption analysis given in 8.4.2 currently should be moved to the Annex of the TR. |
| Rapporteur | V3 | Thanks for the constructive comments. On 8.4.1 the text has been removed as suggested and added a sentence regading RRC\_CONNECTED – assuming this will be updated later (there was already EN considering all states but now this is more explicit). On 8.4.2, the full results and analysis are captured in the Annex. 8.3.2 is just a reference to the results without any RAN2 conclusions or recommendation.  |

**Section 10.1 “Definition of reduced capabilities”**

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| **Company** | **Subsection** | **Comment / text proposal** |
| Xiaomi | 10.1 | We agree with the current TP. |
| Rapporteur | v2 available with editorial updates in section |
| OPPO | 10.1 | We agree with the TP. |
| Rapporteur | v3 available with no new changes |

**Section 10.2 “Constraining of reduced capabilities”**

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| **Company** | **Subsection** | **Comment / text proposal** |
| Xiaomi | 10.2 | We agree with the current TP. |
| Rapporteur | v2 available with editorial updates in section and some suggestion on to clarify some options – especially proponent companies please check.  |
| OPPO | 10.2 | We agree with the TP. |
| Rapporteur | v3 available with no new changes |

**Section 11.1 “UE identification”**

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| **Company** | **Subsection** | **Comment / text proposal** |
| Xiaomi | 11.1 | We agree with the current TP. |
| vivo | 11.1 | According to the below agreement:1. Do not send a LS on RedCap UE identification to RAN1 and wait for more RAN1 process

I think one more clarification could be added, e.g. The feasibility of the different solutions on when such information should be available to the network depends on whether there is a need for network to have the information that the UE is a RedCap UE prior to scheduling a particular message, which is up to RAN1 discussion. [Rapp] I’m fine to clarify however I suggest to wait a bit until we have RAN1 TR and see if they have any suggestions. I’ll consider this for next update (comments welcome) |
| Rapporteur | v2 available. I suggest we take a look on RAN1 TR updates in this section and base further RAN2 work on that when available. There seems to be extensive analyses from RAN1 part on Options 1-3.  |
| OPPO | 11.1.1 | We think “or earlier” in the Analysis of Option 2 should be removed. |
| Rapporteur | v3 | “or earlier” has been removed per suggestion. However, it is expected this section will undergo major changes based on the RAN1 input.  |

# Comments for the analyses captured in draft TR

New in v2 of the draft TR

**Comments on results related to eDRX in RRC\_IDLE/RRC\_INACTIVE**

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| **Company** | **Subsection** | **Comment / text proposal** |
| OPPO | A.1 | Since this section is intended to include the simulation result and analysis for eDRX only, we suggest to remove the recommendation parts in A.1.1 and A.1.2, respectively.“From the evaluation above, it is clear that eDRX brings significant improvements to power consumption~~, and it is also clear that eDRX concepts and mechanisms such as PTW and extension of paging cycles to hyper-frames that were introduced for LTE/NB-IoT should be re-used in RedCap~~.”“In the SID use case with Industrial Wireless Sensor Network (IWSN), the UE battery is expected to last at least a few years. From our result, one can see that eDRX longer than 10.24s is required to have a UE battery life of “at least a few years” for both RRC\_IDLE and RRC\_INACTIVE cases. ~~Based on the results, we recommend RAN2 to extend the eDRX cycle for both RRC\_IDLE and RRC\_INACTIVE beyond 10.24 seconds.”~~ |
| Rapporteur | v3 | The included texts are pure copy-paste from company contributions and the intention is not to start to selectively edit such text, and we cannot change the source text in any case. These are pure company input on results and their analysis and not RAN2 recommendations or conclusions which should be clear. We have already done agreements which do not go hand-in-hand with the input text. I have added a EN in “conclusions” section to the TR to clarify RAN2 has not made final conclusions yet.  |
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**Comments on results related to RRM relaxation**

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| **Company** | **Subsection** | **Comment / text proposal** |
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# Summary

TBD