3GPP TSG-RAN Meeting #92-eRP-21xxxx

Electronic Meeting, 14-18 June 2021

Agenda Item: 9.7.1.7

Source: Email discussion moderator (Intel)

Title: Report from Email Discussion [92-e-14-RedCap-WI]

Document for: Discussion and decision

# 1 Introduction

This document reports on the following email discussion during RAN#92-e:

**[92-e-14-RedCap-WI]**

Input contributions covered: RP-211038, RP-211070, RP-211153, RP-211219, RP-211360--> RP-211492

## 2 Proposed WID revisions

RP-211038 is a WID revision from the rapporteur. RP-211153, RP-211219 are discussion documents from Vivo and Nokia respectively that also propose updates to the wording of the objectives. In summary, the following WID updates are proposed:

1. RRM measurement relaxation updated to reflect recent RAN2 agreements (proposed by all 3 documents)
2. Update to the objective on early indication to reflect that indication in both Msg1 and Msg3 will be specified (proposed by RP-211219)
3. Update to the objective on camping restrictions to add "frequencies/PLMN" (proposed by RP-211219)
4. Update to the objective on eDRX to state that CN configures eDRX for Idle and RAN configures eDRX for RRC\_Inactive (proposed by RP-211219)

### 2.1 Initial Round

In the initial round of discussion companies are invited to provide feedback on each of the 4 proposed updates to the objectives. The initial focus should be on the necessity of the updates and the detailed wording can be refined in later stages of discussion.

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| **1/ Companies are invited to provide any comments related to the updates to RRM measurement relaxation objective:** | |
| **Company** | **Comments** |
| Ericsson | We appreciate other companies for looking in to how to update this objective. We believe that our proposal RP-211038 accurately captures the RAN2 status to a sufficient level of detail.  Some comments on the other proposals:  RP-211153: This proposal, while not going beyond any RAN2 agreements, misses some relevant agreements in RAN2 which we think deserved being captured correctly such as that Rel-16 is baseline. And what happens when the criteria are fulfilled in IDLE vs. CONNECTED.  RP-211219: Some RAN2 progress is not captured clearly in the proposal (e.g. that RAN2 has agreed to use Rel-16 as baseline). Also this proposal goes beyond RAN2 agreements w.r.t. beam measurements. That has not been agreed yet. There was a working-assumption in RAN2 for how it would be added, if added. But no agreement has been made so far w.r.t. whether it will be added or not:   1. Working Assumption: If beam-level criterion is adopted for Rel-17 stationary criterion in RRC\_IDLE/INACTIVE, it is configured separately with Rel-16 low mobility criterion reused |
| LG | In general, we agree that updates to RRM measurement relaxation objective is necessary. RP-211038 is a good baseline because it captures RAN2 progress properly and sufficiently. Detailed wording can be discussed at the next round. |
| NordicSemi | We support an update. |
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| **2/ Companies are invited to provide any comments related to the updates to the objective on early indication:** | |
| **Company** | **Comments** |
| Ericsson | We agree to the change. |
| LG | We do not agree to the change. The removal of “or” from ‘Msg1 and/or Msg3’ is against RAN2#114 agreement that “either” Msg1 and/or Msg3 early identification will be supported. |
| NordicSemi | We see benefit from supporting early identification in both MSG1 and MSG3, but early indication shall not be in both MSG1 and MSG3 at the same time. This should be clarified in objectives. In addition, gNB may have option not to configure early identification in any of those. |
| FUTUREWEI | We do not agree to the change. There is no need to support Msg 3, as evidenced by the working assumption in RAN1: “for 4-step RACH, support the early indication of RedCap UEs at least in Msg1”. Either we remove Msg 3, or let the WGs continue their work without update of the WID. |
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| **3/ Companies are invited to provide any comments related to the update to the objective on camping restrictions to add "frequencies/PLMN":** | |
| **Company** | **Comments** |
| Ericsson | We do not understand why "frequencies" is added and what it implies.  About adding "PLMN", would be reverting the following RAN2 agreement:  The cell barring for RedCap UE is per cell (not per PLMN).    Hence we do not agree with these changes. |
| LG | Agree with Ericsson. |
| NordicSemi | Same opinion as Ericsson |
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| **4/ Companies are invited to provide any comments related to the update to the objective on eDRX:** | |
| **Company** | **Comments** |
| Ericsson | This is in-line with RAN2 agreements and is fine. |
| LG | The change properly captures RAN2 agreement. However, it seems true that current objective has no problem, i.e. no strong need to update WID on this aspect. |
| NordicSemi | We do not see that RAN2 agreements are against current objectives. No need for any update. |
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## 3 RP-211070

RP-211070 discusses some of the WG discussions on RedCap and makes the following proposals:

* **Proposal 1**: WGs shall follow the approved WID and the related compromised discussion together with the approved WID. If necessary, it is recommended that all companies or Rapporteurs or Feature leaders should track the RAN discussion procedure and the implied meanings of WID to avoid unnecessary discussion in WGs.
* **Proposal 2**: If deemed necessary, a joint GTW or joint email discussion can be considered among different WGs in future to assist the standardization of R17 RedCap.

### 3.1 Initial Round

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| **Companies are invited to provide any comments related to the proposals in RP-211070** | |
| **Company** | **Comments** |
| Ericsson | P1: We already think it is established that WGs should follow the WIDs.  P2: We do not think a joint session between WGs will be fruitful. |
| LG | We agree with P1. On P2, We do not think a joint session between WGs is really necessary. |
| NordicSemi | We do not think joint sessions between WGs are of any benefit, it is typically difficult to find common language between WGs. However, RAN should discuss how to handle overlaps between WIDs, for example for Early identification of RedCap UE and Early identification of UE requiring coverage enhancements. |
| FUTUREWEI | P1. The WID directs the work, and RAN conclusions (if there are any) are followed along with the WID. Unclear what we need to agree to here, we are uncomfortable formalizing a new tracking procedure or including feature leads in the working procedures.  P2. We do not think a joint GTW / email discussion is necessary |
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## 4 RP-211492 (revision of RP-211360) - Early indication of number of Rx branches

RP-211492 (revision of RP-211360) discusses the need for early indication of number of Rx branches and makes the following proposals:

* **Proposal 1**: include the information on the number of Rx branches supported by a RedCap UE within the early indication during the initial access
* **Proposal 1b**: if Proposal 1 is agreed, RAN to send a LS to RAN1 and RAN2 to take the agreement into account for their normative work
* **Proposal 2**: if Proposal 1 is not agreed, RAN to task RAN1 to identify pros and cons of having the information on the number of Rx branches supported by a RedCap UE within the early indication during the initial access for the purpose of RACH procedure efficiency; RAN1 will then liaise with RAN2 so that RAN2 agreement from RAN2#104-e meeting can be revisited accordingly (if needed)

### 4.1 Initial Round

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| **Companies are invited to provide any comments related to the proposals in RP-211492** | |
| **Company** | **Comments** |
| Ericsson | For Msg1-indication: The issue with this proposal is that it will cause even more partitioning of the preambles. Already now RAN2 are discussing partitioning of preambles for: Coverage enhancements, RedCap vs. non-RedCap, Slicing, and SDT. To partition even further would cause twice as many partitions. It is perhaps not a feasible way forward to partition too much.  For Msg3-indication: perhaps it would be possible to indicate the nrof Rx branches. |
| LG | In RAN2#114, RAN2 concluded that there is no need to support Rx branch-specific early identification from RAN2 perceptive (final decision up to RAN1). In RAN1#105e (May), there was a RAN1 conclusion declaring no consensus to support early identification of the number of Rx branches in Msg1/Msg3/MsgA for Redcap UE in Rel-17.  So, from procedural point of view, we think RX branch-specific early indication is not well justified. |
| NordicSemi | We agree with Ericsson that there cannot be early identification for everything. Moreover, MSG2 repetitions could be bundled with MSG3 repetitions and could be discussed under CovEnh WID? |
| FUTUREWEI | Early identification is useful to address the resulting performance degradation due to a reduced number of Rx branches.  There is no critical problem with allowing the *possibility* of RX branches by configuration. The motivation should be clear from RAN discussion, where early identification was included as part of the discussion to allow 1RX. If an operator does not see the benefit then they won’t configure it.  Note: regardless of 1RX early identification, the WGs can design RSRP thresholds for ROs which could differently handle “poor” RedCap UEs. |
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## Annex: Contacts

Please provide a company contact that the email discussion moderator can contact if required.

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| **Company** | **Contact name and email** |
| Ericsson | Mattias Bergström (mattias.a.bergstrom@ericsson.com) |
| LG | Sunghoon Jung (Sunghoon.jung@lge.com) |
| NordicSemi | Karol Schober (karol.schober@nordicsemi.no) |
| FUTUREWEI | Brian Classon (brian@classonconsulting.com) |
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