3GPP TSG-RAN WG2 Meeting#113-e R2-210xxxx

Online, January 25th - February 5th 2021

Agenda Item: 8.12.2.2

Source: Huawei

Title: Summary of offline 107 - [REDCAP] L2 capabilities and UE types - PHASE 2

Document for: Discussion and Decision

# Introduction

This document is to continue the discussion on P5 and P6 from R2-2102017:

* [AT113-e][107][REDCAP] L2 capabilities and UE types (Huawei)

Scope: based on the proposals in [R2-2101255](file:///C:/Data/3GPP/Extracts/R2-2101255%20Higher%20layer%20capabilities%20and%20procedural%20impacts%20of%20RedCap%20UE.doc), [R2-2100310](file:///C:/Data/3GPP/Extracts/R2-2100310_Definition%20of%20RedCap%20UEs.docx) and [R2-2100460](file:///C:/Data/3GPP/Extracts/R2-2100460_UE%20type%20definition%20and%20constraining%20for%20RedCap%20UEs.doc), discuss:

1. which "reduced L2 capabilities" can be listed as possible enhancements in the TR
2. which impacts on procedures for RedCap UEs can be described in the TR
3. which pros and cons to have only one vs multiple RedCap UE types can be listed in the TR

For all the aspects (and namely for 3), the intention of this offline is to describe options and implications in the TR, not to down-select any alternatives

Initial intended outcome: Summary of the offline discussion with:

* + - List of proposals for agreement
    - List of proposals that require online discussions
    - Corresponding TP for the TR

Initial deadline (for companies' feedback): Monday 2021-02-01 11:00 UTC

Initial deadline (for rapporteur's summary in R2-2102017): Monday 2021-02-01 17:00 UTC

Updated scope: continue the discussion on p5 and p6 from R2-2102017, also attempt to draft a recommendation from RAN2 perspective that a single RedCap UE type is preferred

Updated intended outcome: Summary of the offline discussion with:

* + - List of proposals for agreement
    - Corresponding TP for the TR

Initial deadline (for companies' feedback): Wednesday 2021-02-03 11:00 UTC

Initial deadline (for rapporteur's summary in R2-2102037): Wednesday 2021-02-03 13:00 UTC

# Discussion

The following proposal was discussed online:

**Proposal 5: Capture in the TR that paging false alarm is not a specific issue for RedCap UEs. The paging enhancements discussed in R17 Power saving are applicable to RedCap also.**

It is agreeable according to the online discussion. One company wants to improve the wording of the TP. The TP is updated as below:

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| 8 UE power saving features  8.1 Introduction to UE power saving features  The following UE power saving techniques have been studied:  - Reduced PDCCH monitoring by smaller numbers of blind decodes and CCE limits  - Extended DRX for RRC Inactive and/or Idle  - RRM relaxation for stationary devices  - Paging false alarm  The outcomes of the studies of these techniques are captured in clauses 8.2 through 8.5, respectively, and summarized in clause 13.  ================================================================================  8.4 Paging false alarm  8.4.1 Description of feature  The power consumption of RedCap UEs may be impacted because of paging false alarm and unnecessary SIB1 reading. Paging false alarm and unnecessary SIB1 reading are not specific to RedCap UEs and are discussed in R17 power saving WI. Enhancements introduced by R17power saving WI should also made applicable to RedCap UEs. |

**Question 1. Companies who do not agree with the updated TP are invited to provide their concerns.**

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| --- | --- |
| ***Company name*** | ***Concerns if any*** |
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The pros/cons to have only one device type v.s. multiple device types was discussed online and the following comment was received online:

* We have not discussed the need on different access control for different RedCap UEs. This can be discussed in WI phase.

Based on above comments, the TP is updated as blew:

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| From RAN2 perspective, the pros and cons to define only one device type or multiple device types are:  **Only one RedCap UE type:**  **Pros:**  - No market fragmentation of “types”  - Simpler specification, e.g. on early identification, access control, etc.  **Cons:**  - Cannot provide independent access control for different UE types, if this was deemed necessary  **Multiple RedCap UE types:**  **Pros:**  - Flexible access control is possible if necessary, e.g. independent access control for different UE types  **Cons:**  - Potential market fragmentation of “types”  - More specification complexity/effort, e.g. on early identification, access control, etc.  - May lead to non-technical discussion outside 3GPP’s scope, e.g. product management  The need on independent access control for different RedCap UE types can be discussed in WI phase. |

**Question 2. Companies who do not agree with the updated TP are invited to provide their concerns.**

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| ***Company name*** | ***Concerns if any*** |
| T-Mobile USA | Under Multiple RedCap UE types:  Cons: 3GPP abandoned UE categories for NR simply because of the great difficulty and the politics surrounding the determination of LTE categories. There’s very little difference between LTE UE categories and RedCap UE Types. |
| Intel | *“The need on independent access control for different RedCap UE types can be discussed in WI phase.”*  It implies that we will continue the discussion on multiple UE types in WI phase. But we assume that is not the intention. Therefore we can simply update this part as  “The need on independent access control for different RedCap UE types is not ~~can be~~ discussed in SI ~~WI~~ phase.” |
| OPPO | We can remove the part on “The need on independent access control for different RedCap UE types can be discussed in WI phase.” since “Flexible access control is possible if necessary, e.g. independent access control for different UE types” has well addressed this as open issue. |
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During online discussion, it was agreed to try to achieve the following recommendation from RAN2 perspective:

**It is recommended that from RAN2 perspective only one RedCap UE type is preferred**

**Question 3. Companies who do not agree with above recommendation are invited to provide their concerns from RAN2 perspective.**

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| ***Company name*** | ***Concerns if any*** |
| Qualcomm | We support this proposal. We have only a minor suggestion to add “per FR” to the proposal as follow:  **It is recommended that from RAN2 perspective only one RedCap UE type per FR is preferred** |
| OPPO | With above pros and cons analysis, we don’t think RAN2 is ready to make recommendation and it would be sufficient to just list those pros and cons in the TR. Note that RAN1 is also discussing this. What if RAN1 comes up with different recommendation than this? |
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# Conclusion

This offline discussion is to continue the discussion on p5 and p6 from R2-2102017, also attempt to draft a recommendation from RAN2 perspective that a single RedCap UE type is preferred:

TBD

# Contact delegates

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| --- | --- | --- |
| **Delegate** | **Company name** | **Email** |
| Baokun Shan | Huawei, HiSilicon | baokun.shan@huawei.com |
| Linhai He | Qualcomm | linhaihe@qti.qualcomm.com |
| John Humbert | T-Mobile USA | John.Humbert2@T-Mobile.com |
| Yi Guo | Intel | Yi.guo@intel.com |
| Haitao Li | OPPO | lihaitao@oppo.com |
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