3GPP TSG RAN WG2 Meeting #116b-e R2-220xxxx

**Electronic meeting, 1st -12th November 2021**

**Agenda item:** 8.12.1

**Source:** Intel Corporation

**Title:** Report of email discussion [Post116bis-e][105][RedCap] 38.306 running CR and list of open issues (Intel)

**Document for:**  Discussion and decision

# Introduction

This is the report of following offline discussion:

**[Post116bis-e][105][RedCap] 38.306 running CR and list of open issues (Intel)**

Scope: Update the 38.306 running CR and define the list of open issues regarding UE capabilities

Intended outcome: Endorsed 38.306 running CR and list of open issues regarding UE capabilities

Deadline (for companies' feedback): Friday 2022-01-28 0800 UTC

Deadline (for updated running CR and list of open issues): Friday 2022-01-28 1600 UTC

Rapporteur would suggest to split the discussion into two phases:

**Phase 1: Deadline Wednesday 2022-01-26 08:00 UTC**

**CR review**: Companies provide comments/suggestions in this documents; Please do not add your comments/suggestions in the running CRs directly;

**Open issue list**: Companies check Rapporteur’s list and provide comments/suggestion if any;

Note: The open issue list may be updated based on the comments on running CRs;

**Phase 2: Deadline Friday 2022-01-28 08:00 UTC**

**CR review**: Rapporteur will update CRs, and provide feedback in this documents; Please do not add your comments/suggestions in the running CRs directly; Companies are invited to provide comments/suggestions on updated CRs in this documents.

**Open issue list**: Rapporteur will provide the updated open issues; Companies are invited to check and provide comments/suggestion if any;

# Annex: companies’ point of contact

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| --- | --- | --- |
| **Company** | **Point of contact** | **Email address** |
| Intel Corporation | Yi Guo | Yi.guo@intel.com |
| Huawei, HiSilicon | Yulong | Shiyulong5@huawei.com |
| Futurewei | Yunsong Yang | yyang1@futurewei.com |
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# Discussion

## 3.1 Phase 1 discussion

### 3.1.1 Review of capability TS38.331 running CR

**Discussion point 3.1.1-1: Companies are invited to provide view on capability TS38.331 running CR ?**

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| --- | --- | --- | --- |
| **Company’s name** | **Section/Field/IE** | **Identified issues** | **Change suggestion** |
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### 3.1.2 Review of capability TS38.306 running CR

**Discussion point 3.1.2-1: Companies are invited to provide view on capability TS38.306 running CR ?**

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| --- | --- | --- | --- |
| **Company’s name** | **Section/Field/IE** | **Identified issues** | **Change suggestion** |
| Huawei, HiSilicon | For FR1 RedCap UE, the bit which indicates 20MHz shall be set to 1 unless the 20Mhz channel bandwidth is not supported for the operating band as specified in TS38.101 [2]. For FR2 RedCap UE, the bit which indicates 100MHz shall be set to 1. | We don’t think the added wording is needed.Even if there is one band not supporting 20Mhz, RedCap UE will not consider that band as supported band. Then, RedCap UE will not report the filed at all, e.g. channelBWs-DL and others. If the field is not included for that band, there is no need to clarify “unless xxx”.[Rapp] We did not agree that the RedCap UE cannot support the band if 20Mhz is not available on that band. Therefore we still need to address the FFS. Editor's Note: FFS on how to handle the case that the UE cannot support 20MHz BW as specified in TS38.101. Any good suggestions on this? |  |
| Huawei, HiSilicon | reportAddNeighMeasForPeriodic-r16 | This seems R16 feature, it should be optional already in R16. Is the “Yes” in M column is one R16 error?[Rapp] Yes, this is a R16 feature. The M was there. If any issue is identified, that should be discussed in Rel-16.  |  |
| Huawei, HiSilicon | ***supportOf16DRB-r17*** | Maybe it should be put into the “4.2.xx.2 PDCP parameters”[Rapp] DRB is considered above PDCP instead of PDCP functionality. Therefore it should be put as general part.  |  |
| Huawei, HiSilicon | ***supportOfRedCap-r17*** | “indicates that the UE is a RedCap UE with comprised of at least the following functional components:”“A RedCap UE shall always indicate the capability.”We’d better to say “A RedCap UE shall always set to “1”.”[Rapp] Updated in v01.  |  |
| Huawei, HiSilicon | Annex TP for TS38.822 | RedCap is a special R17 feature. It is a new type of UE. So, it is not clear whether we should capture in 38.822 with all the capability, regardless optional or mandatory.I guess, based on the R1 feature list given, we are now only listing the new R17 optional features in 38.822. No strong view. Just for clarification.[Rapp] We only indicate new added capability as what RAN1 did in RAN2 feature lists.  |  |
| Futurewei | 4.2.4 PDCP Parameters***shortSN***Indicates whether the UE supports 12 bit length of PDCP sequence number. RedCap UE should always report "1". | Understood that the RAN2 agreement uses the word “should”, but “shall” may be the right word for stage-3.[Rapp] Updated in v01.  | Change “should” to “shall”. |
| Futurewei | 4.2.5 RLC parameters***am-WithShortSN***Indicates whether the UE supports AM DRB with 12 bit length of RLC sequence number. RedCap UE should always report "1". | Understood that the RAN2 agreement uses the word “should”, but “shall” may be the right word for stage-3.[Rapp] Updated in v01.  | Change “should” to “shall”. |

### 3.1.3 Open issue lists for capability discussion

As indicated by Johan: "Open Issues should be defined for aspects that need to be closed, important to make already agreed functionality work in a reasonable way. Not yet agreed optimizations that may not be needed shall not be listed as Open Issues." Rapporteur considered following issues need to be closed for capability discussion:

**Table: open issue lists for capability discussion**

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| --- | --- | --- |
| **Topic** | **Open issues****Note:** Open Issues should be defined for aspects that need to be closed, important to make already agreed functionality work in a reasonable way. Not yet agreed optimizations that may not be needed shall not be listed as Open Issues. | **Remark**  |
| RAN1 led feature | To capture “introduce capability bit on Half-duplex FDD operation type A for RedCap UEs; ” | To be captured in Mega CR. (need to check latest RAN1 feature list after Jan meeting) |
| To capture “introduce explicit bit to indicate the support of RedCap; ;” | RAN2 WA is per UE capability. (need to check latest RAN1 feature list after Jan meeting) |
| Support of NCD-SSB, it is unclear what capabilities are needed, e.g.[R2-2201753] *Proposal 15 Discuss whether a RedCap UE, which does not support CSI-RS, should be able to report “Not need NCD-SSB” as an optional UE capability.**Proposal 17 Discuss whether a non-RedCap UE should be able to use NCD-SSB instead of CD-SSB with an optional capability in this meeting.* | Wait for RAN1 and RAN4. P15/P17 may still be discussed in RAN2 |
| Handover UE to non-RedCap cell | For the LTE to NR handover, in case the target NR cell is a legacy cell, the RedCap UE should trigger RRC re-establishment procedure. FFS any specification impact or purely leave to implementation | Need to be resolved in RAN2;Note: Companies’ view and potential solutions can be found in R2-2201750. |
| RRM relaxation  | Is it applied for non-RedCap UE or not? | Need to be resolved in RAN2;Note: Companies’ view can be found in R2-2201752.*Proposal 5. [Discussion] (16/20) Rel-17 RRM relaxation can apply to any Rel-17 UE.* |
| For IDLE/INACTIVE:* whether to capture it as optional without capability feature?
* To add additional descriptions in section 5.6 *Relaxed measurement or new section?*
 | Need to be resolved in RAN2; |
|  | For RRC\_CONNECTED, * Is single bit sufficient?
* Granularity of RRM capability, e.g. per UE?
* FDD/TDD diff?
* FR1/FR2 diff?
* Any others?
 | Need to be resolved in RAN2; |
| eDRX | For RRC\_INACTIVE, * What additional eDRX capability for RRC\_INACTIVE? E.g. long DRX cycle?
* Granularity of eDRX capability, .e.g.per UE? (legacy is per UE)
* FDD/TDD diff? (legacy yes)
* FR1/FR2 diff? (Legacy no)
* Any others?
 | Need to be resolved in RAN2;Note: RAN2 agreements:1. eDRX feature can be supported by non RedCap UEs.2. A UE in idle mode requests eDRX configuration via NAS signalling. FFS if capability signalling in RAN, as part of the UE capability message, is also needed.3. eDRX support is optional for the RedCap UE. |
| For RRC\_IDLE:* A UE in idle mode requests eDRX configuration via NAS signalling. FFS if capability signalling in RAN, as part of the UE capability message, is also needed.
 | Need to be resolved in RAN2;Whether to capture it as optional features without UE capability under section 5 or capability signalling in RAN or nothing? |

**Discussion point 3.1.3-1: Companies are invited to provide view on open issue lists summarized in table 1 ?**

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| **Company’s name** | **Comments, if any** |
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**Discussion point 3.1.3-2: Companies are invited to provide view on whether any open issue is missing in table 1 ? Note: only essential issues need to be listed;**

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| **Company’s name** | **Comments, if any** |
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## 3.2 Phase 2 discussion

### 3.2.1 Review of capability TS38.331 running CR

### 3.2.2 Review of capability TS38.306 running CR

### 3.2.3 Open issue lists for capability discussion

# Summary report and proposals

# References

[1] R2-2201737 [offline-105] RedCap capabilities Intel

[2] R2-2201750 [offline-105] RedCap capabilities - second round Intel

[3] R2-2201732 [Pre116bis-e][103][RedCap] Summary of NCD-SSB / Initial BWP aspects Ericsson

[4] R2-2201738 [offline-106] NCD-SSB and Initial BWP aspects Ericsson

[5] R2-2201753 [offline-106] NCD-SSB and Initial BWP aspects - second round Ericsson

[6] R2-2201734 [offline-103] identification and access restriction aspects Huawei

[7] R2-2201751 [offline-103] identification and access restriction aspects - second round Huawei

[8] R2-2201735 [offline-104] RRM relaxations Samsung

[9] R2-2201752 [offline-104] RRM relaxations - second round Samsung