3GPP TSG-RAN WG2 #118-e Tdoc R2-220XXXX

Electronic meeting, 9th - 20th May 2022

Agenda Item: 6.12.2.2

Source: Ericsson (Rapporteur)

Title: Report from [AT118-e][102][RedCap] RRC CR (Ericsson)

Document for: Discussion, Decision

# 1 Introduction

This is the report from the offline discussion below:

**[AT118-e][102][RedCap] RRC CR (Ericsson)**

Initial scope: continue the discussion on the RedCap WI-specific RILs, also considering the submitted contributions

Initial intended outcome: Summary of the offline discussion with e.g.:

·         List of resolved RILs

·         List of RILs for online discussion

·         List of RILs for further offline discussion

Deadline (for companies' feedback): Wednesday 2022-05-11 2000 UTC

Deadline (for rapporteur's summary in R2-2206192): Wednesday 2022-05-11 2200 UTC

Companies should consider the following Tdocs and the discussions therein in mind when providing feedback to the offline discussion:

[R2-2206021](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2206021.zip) Miscellaneous corrections for RedCap WI Ericsson CR Rel-17 38.331

[R2-2206022](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2206022.zip) RedCap WI ASN1 RIL list Ericsson discussion Rel-17

[R2-2204725](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2204725.zip) [O374] correction on RedCap UE’s cell barring OPPO draftCR 38.331

[R2-2204736](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2204736.zip) [O372] Discussion on prohibit timer for UAI for RRM relaxation fulfilment indication OPPO

[R2-2204737](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2204737.zip) [O377] Correction to 38.331 on UAI for RRM relaxation fulfilment indication OPPO draftCR 38.331

[R2-2204813](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2204813.zip) [V166] Including RedCap Capability in the UERadioPagingInformation Inter-Node Message vivo, Guangdong Genius discussion

[R2-2204814](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2204814.zip) [V170] Discussion on Inter-RAT Mobility from LTE to NR for RedCap vivo, Guangdong Genius discussion

[R2-2204929](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2204929.zip) RRC open issues on Rel17 RedCap WI Intel Corporation

[R2-2206059](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2206059.zip) [X115]38.331 Corrections on UE's behaviour of getting SIB1 for Redcap Xiaomi Communications draftCR 38.331

[R2-2206060](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2206060.zip) [X119][X114] Discussion on PDCCH-ConfigCommon for Redcap Xiaomi Communications

[R2-2206061](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2206061.zip) [X119][X114] 38.331 Corrections on PDCCH-ConfigCommon for Redcap Xiaomi Communications draftCR 38.331

[R2-2206062](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2206062.zip) [X120] 38.331 Corrections on Need code of RedCap-specific initial DL BWP for handover Xiaomi Communications draftCR 38.331

[R2-2204541](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2204541.zip) [S953] SI Request for RedCap UEs Samsung Electronics Co., Ltd

[R2-2204936](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2204936.zip) I051 support of RedCap based on intraFreqReselectionRedCap Intel Corporation

[R2-2204979](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2204979.zip) Cell reselection priority for RedCap (RIL#: S952) Samsung

[R2-2205523](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2205523.zip) SIB validity with eDRX MediaTek Inc.

[R2-2205783](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2205783.zip) Miscellaneous RedCap corrections Nokia, Nokia Shanghai Bell CR 38.331

[R2-2205785](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2205785.zip) HD-FDD RedCap support in system information Nokia, Nokia Shanghai Bell

[R2-2206080](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2206080.zip) [H507] Corrections on cell re-selection measurements during RRC setup/resume Huawei, HiSilicon CR 38.331

[R2-2206081](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2206081.zip) [H511] Corrections on redcapAccessRejected Huawei, HiSilicon CR 38.331

[R2-2206082](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2206082.zip) [H513 H516 H520 H524 H525 H526 H527] Corrections on RedCap initial BWP Huawei, HiSilicon CR 38.331

[R2-2204819](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2204819.zip) UE Capability and System Information for eDRX vivo, Guangdong Genius

In this document, we continue the discussion based on the agreements above and the list of Tdocs provided above with the intention to formulate a list of proposals that are agreeable and a list of proposals that require further discussion during the related online session.

# Contact Information

Please fill in the following table for contact information:

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| --- | --- |
| Company | Contact person - [email@address.com](mailto:email@address.com) |
| Ericsson | Emre A. Yavuz – emre.yavuz@ericsson.com |
| Intel | Yi.guo@intel.com |
| Samsung | s90.jeong@samsung.com |
| Xiaomi | Liyanhua1@xiaomi.com |
| Huawei, HiSilicon | Yulong (shiyulong5@huawei.com) |
| ZTE | LiuJing (liu.jing30@zte.com.cn) |
| OPPO | Haitao Li (lihaitao@oppo.com) |
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# 2 Discussion on RILs and open issues

## 2.1 RILs marked with “PropAgree”

**Q 2.1** The following is a list of RILs which are marked as “PropAgree” in the latest version of the Excel document that contains RILs, i.e., R2-2206022:

H506, V163, H509, V168, V169, H514, H704, Z033, H515, M608, H517, V161, Z034, H522

The rapporteur has implemented those RILs in the 38.331 CR provided in R2-2206021, which is to be updated once RILs marked with “PropModifyAgree”, “PropDiscMeeting” or “PropReject” are concluded. The rapporteur proposes the following:

**Proposal The following RILs are agreed: H506, V163, H509, V168, V169, H514, H704, Z033, H515, M608, H517, V161, Z034, H522 (as captured in R2.2206021).**

Do you agree with the proposal above? Please elaborate your reply, especially if you do not, and provide a resolution/text proposal that addresses your concerns considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | Yes | V168/V169 are related to the discussion on whether FD-FDD is mandatory or not. But it is ok for us for the changes.  We did not find H704, is it typo?  H509: We don’t agree to H509. We don’t see a benefit to move from field description to condition. In general, conditions should be used if the conditions is related to something in the same message and not something that was configured previously (though this may not be strictly followed).  [Huawei]: “The field is only included when the UE is configured with eDRX in RRC\_IDLE, see TS 24.401 [23]” The legacy text explains the condition when the filed should be configured.So, it is actually the Cond. |
| Samsung | Yes, except for V168, V169 | V168/V169 can be discussed after having conclusion from FD-FDD discussion.  H704, which is missing in R2-2206021, is to clarify 'If configured, the RedCap UE operating in this BWP uses…' from the field description of nonCellDefiningSSB-r17, and we are fine with the change.  For H517, we are fine with the change itself, but want to clarify the comment from Huawei in their RIL: we understand that the RedCap specific initial DL BWP can be used for paging and OSI if the BWP includes CD-SSB and contains the entire CORESET#0.  [Huawei]: Yes, but the mentioned spec wording is only about the case not containing CORSET#0, “*Otherwise, i.e., if the locationAndBandwidth of this BWP does not contain the entire CORESET#0, the UE uses this BWP also for receiving DL messages during initial access (Msg2, Msg4, ...) and after initial access* .” |
| Xiaomi | Yes except for V168 | H509:   1. Change ”Need R” to “Cond RAN-Paging” 2. Add Cond “RAN-Paging This field is optionally present, Need R, if the UE is configured with DILE eDRX, see TS 24.401 [23]; otherwise the field is not present.”   It is better to change to “Cond IDLEeDRX”. Because the condition is the idle mode eDRX is used.  V168 is about the HD-FDD flag while the FFS is about the eDRX flag. |
| Huawei, HiSilicon | Yes, but the rapp CR should be allowed to further check before agreed. | Z034 is actually not essential/accurate: *NonCellDefiningSSB* is only configured in dedicated signaling. So, even in the RedCap specific BWP#0 with dedicated signaling configuarion (BWP#0 option1), it is still called “dedicated BWP“. There seems nothing wrong in the current text. But, we are open to go with majority view. |
| ZTE | Yes, except for H704 | For H704, there is contribution (R2-2205512) related to this issue. The proposal 2 is shown below:  Proposal 2: We do not currently see any reason to restrict the NCD SSBs to the RedCap UEs only, but the benefits to allow it to use for all customers and would like to consider this feature for Rel 17.  We can come back to this RIL after RAN2 discuss above contribution.  Reply to HW’s comment on Z034, according Annex in TS38.331, when the RedCap specific initial BWP is configured with dedicated part, it is called “an RRC-configured BWP”, but it is still initial BWP with BWP-ID=0, it is not “dedicated BWP”. |
| OPPO | Yes, except H704 | Based on H704 R2-2206022, the status for H704 has been changed from "PropAgree" to "PropDiscMeeting".  Should remove H704 from this proposal. |
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**Summary – Q 2.1**

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Based on the observations above, the rapporteur proposes the following:

1. ???

## 2.2 RILs marked with “PropModifyAgree”

**Q 2.2** The following is a list of RILs which are marked as “PropModifyAgree” in the latest version of the Excel document that contains RILs, i.e., R2-2206022:

H520, H705

The rapporteur has implemented those RILs in the 38.331 CR provided in R2-2206021 with a modification on the text proposed by the source company. The rapporteur proposes the following:

**Proposal The following RILs are agreed: H520, H705 (as captured in R2.2206021).**

Do you agree with the proposal above? Please elaborate your reply, especially if you do not, and provide a resolution/text proposal that addresses your concerns considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | Comments | H520, is related to the discussion in Atmeeting 105,  **Proposal 9: Clarify in the RRC field description that the paging search space is configured in an initial BWP only if that BWP includes the CD-SSB.**  Would be good to wait a bit. |
| Samsung | Yes | We support the changes in the RILs. |
| Xiaomi |  | H520, the issue is relates to whether Redcap UE need to read the SS for paging, SI from PDCCH-ConfigCommon configuration from legacy initial BWP in case RedCap-specific initial DL BWP NOT contains CORESET#0.  We have a paper R2-2206060. Can be discussed with X119-2.  Or wait for AT105.  H705, do not see the problem. |
| Huawei, HiSilicon | Yes | Fine to wait a little bit on H520 |
| ZTE | See comments | For H520, we agree with the sentence captured in R2-2206021, and we disagree to add the following sentence: This field should be configured with the same value as the one in *initialDownlinkBWP*, if included in the RedCap specific initial DL BWP and it includes CD-SSB and the entire CORESET#0.  We think it is up to NW implementation to ensure RedCap UE and non-RedCap UE share the same SI/paging physical transmission resources, the UE just need to following the configuration.  More important, use “same value” is incorrect, even if the physical resources are the same, the configuration value may be different because the BWP boundary can be different, and most physical resources (e.g. CORESET) are configured according to the boundary of BWP. |
| OPPO | Comments | The issue from H520 is being discussed in offline#105. We should wait for the conclusion. |
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**Summary – Q 2.2**

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Based on the observations above, the rapporteur proposes the following:

1. ???

## 2.3 RILs marked with “PropReject”

**Q 2.3** The following is a list of RILs which are marked as “PropReject” in the latest version of the Excel document that contains RILs, i.e., R2-2206022:

X115, X110, X111, X112, V165, H525, H526

The rapporteur has indicated that there is no need to implement those RILs as argued in R2-2206022. The rapporteur proposes the following:

**Proposal The following RILs are not pursued: X115, X110, X111, X112, V165, H525, H526.**

Do you agree with the proposal above? Please elaborate your reply, especially if you do not, and provide a resolution/text proposal that addresses your concerns considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | Yes |  |
| Samsung | Yes | V165 can be superseded by H705 as rapporteur suggested.  H525/526 seems obvious, so we are fine with rapporteur's suggestion. |
| Xiaomi | - | X115: we want to add:  “To add:  6> if the UE is unable to acquire the SIB1:  7> perform the actions as specified in clause 5.2.2.5;  6> else:  7> upon acquiring SIB1, perform the actions specified in clause 5.2.2.4.2.  ”  If people think it is already clear in the spec, we can follow the majority view.  X110,and X111:  “apply a supported uplink channel bandwidth with a maximum transmission bandwidth which is wider than or equal to the bandwidth of the initial BWP for the uplink“ then the qestion is which initial BWP, the one for Redcap or for eMBB UE? We would rather to reconsider this.  X112, OK to withdraw it.  H525/526, to“ Add “This parameter shall always be present if the initial UL BWP for non-RedCap UEs exceeds the RedCap UE maximum bandwidth.” We think that is already caputured in 38.213. |
| Huawei, HiSilicon | Yes, except for the ones in comments | X100: If we understand the RIL correctly, it seems quite straight forward. Rapp may need to clarify why this is not needed.  4> apply a supported uplink channel bandwidth with a maximum transmission bandwidth which  - is contained within the *carrierBandwidth* indicated in *uplinkConfigCommon* for the SCS of the initial uplink BWP or, for RedCap UEs, initial uplink BWP for RedCap, if configured, and which  - is wider than or equal to the bandwidth of the initial BWP or, for RedCap UEs, initial BWP for RedCap, for the uplink;  We want to flag H525, H526:  The wording is included in the R1 LS on RRC parameterer. Is there any reason RAN2 spec does not follow R1 LS for this R1 related parameter?  “This parameter shall always be present if the initial UL BWP for non-RedCap UEs exceeds the RedCap UE maximum bandwidth.” |
| ZTE | Yes |  |
| OPPO | Yes |  |
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**Summary – Q 2.3**

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Based on the observations above, the rapporteur proposes the following:

1. ???

## 2.4 RILs marked with “PropDiscMeeting”

The discussion in this section is on a selection of RILs from the following list which are marked as “PropDiscMeeting”:

I051, O374, V162, X116, H507, V170, H508, N016, H510, FW001, S952, H511, C271, H512, Z035, Z036, N107, X119, V164, H513, H516, H518, X114, H523, S953, H524

**Q 2.4.1** This question is regarding RILs I051 and N016, which are related.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | Yes | As proponent. It would be good to follow legacy way, i.e. the UE only needs to check cell barring information, it can also save 1 bit in system information. |
| Samsung | Yes | Agree with N016. |
| Xiaomi | - | Can be discussed.  The proposed change seems to treat *cellBarredRedCap1Rx or cellBarredRedCap2Rx as optional which is conflict with what we have agreed:*  “For the cell barring in SIB1, RAN2 agree to use two mandatory sub-IEs with {barred, notBarred} values included in one optional parent IE cellBarredRedCap-r17.“ |
| Huawei, HiSilicon | No | Please note the RAN2 ASN.1 review adhoc meeting agreement is “Group the RedCap-related fields in SIB1 under the same SEQUENCE and remove optionality bits from ENUMERATED whose other value is equal to field behaviour on absence, **with the intention NOT to change functionality.**”  This change reverts the RAN2 agreement/functionality: “ If RedCap-specific IFRI is absent from broadcast SI, the UE considers the cell does not support RedCap.”  The presence of RedCap specific IFRI is used to determine the supporting of RedCap. With the proposed RIL, we may need to update the procedure and field description. The impact is relatively huge, compared to saving just 1bit in SIB1. |
| ZTE | No | I051 and N016 basically revert previous RAN2 agreement:  “using presence/absence of RedCap-specific IFRI to indicate the support of RedCap”.  Regarding whether it can always save 1 bit, based on current text procedure in section 5.2.2.4.2, if a cell supports RedCap and the cell is not barred for 1Rx and 2Rx, it seems allowed to only configure IFRI without providing entire *cellBarredRedCap-r17* structure. But for N016, the network needs to signal all the three fields. |
| OPPO | Yes | Agree with N016. |
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**Summary – Q 2.4.1**

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Based on the observations above, the rapporteur proposes the following:

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**Q 2.4.2** This question is regarding RIL O374.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | Yes | Ok to us. |
| Xiaomi | - | Can discuss whether UE to follow the IFRI in SIB1 or treat the IFRI as allowed  Seems the current spec is Ok. |
| Huawei, HiSilicon | No | Not essential.  There is still the case the halfDuplexRedCapAllowed is not present but intraFreqReselectionRedCap is present. Namely that the gNB supporting RedCap but not supporting HD-FFD only RedCap UE. The intraFreqReselectionRedCap is still usefull, since redcap-supporting gBN will have the knowledge of intra-frequency deployment for RedCap.  There is nothing wrong in the current spec, or even better than the proposed changes. |
| ZTE | No | We think this scenario should be treated the same as other cell baring cases, so we prefer the original wording, and it is unclear where proponent wants to move this sentence to. |
| OPPO | Yes |  |
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**Summary – Q 2.4.2**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.4.3** This question is regarding RIL V162.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | Yes |  |
| Samsung | Yes | To change to 'perform' would be fine. |
| Xiaomi | - | Can discuss.  We also noticed that in 331, for eMBB UE, we also used this way. |
| Huawei, HiSlicon | Yes, but | V162 gives two options to change. We are only fine with the option1 in V162, similar comment as Samsung. |
| ZTE | Partial | Agree with the first change:  4> ~~consider~~ perform cell re-selection to other cells on the same frequency as the barred cell as specified in TS 38.304 [20];  This change is aligned with the description in section 5.2.2.4.1.  On the second change: we think it is not needed, because the sentence refers to TS 38.304, and checking IFRI is specified in TS 38.304. |
| OPPO | Yes | Suggest to change as following:   |  | | --- | | 4> consider the cell as barred in accordance with TS 38.304 [20];  4> perform barring in accordance with *intraFreqReselectionRedCap* as specified in TS 38.304 [20] ; | |
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**Summary – Q 2.4.3**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.4.4** This question is regarding RIL X116.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | No | Do not see the problem to keep the sentence. |
| Samsung | No | To update the text like in MIB (as proposed by V162) would resolve the issue? |
| Xiaomi | - | The same issue with V162. |
| ZTE | No | Current description is similar to the description in 5.2.2.4.1 if *cellBarred* is indicated in MIB. |
| OPPO | No |  |
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**Summary – Q 2.4.4**

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Based on the observations above, the rapporteur proposes the following:

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**Q 2.4.5** This question is regarding RIL H507.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | Maybe | No strong opinion on whether the Note should be added. It would be good to capture something in RAN4 spec. |
| Xiaomi | - | No strong view. Maybe we can add it. |
| Huawei, HiSilicon | Yes | Proponent. We also have the Tdoc [R2-2206080](file:///C:\Data\3GPP\RAN2\Docs\R2-2206080.zip) [H507] Corrections on cell re-selection measurements during RRC setup/resume |
| ZTE | Yes | In case the RedCap UE’s RedCap specific DL initial BWP does not contain CD-SSB, the RedCap UE needs to retune to CD-SSB if it is required to perform cell re-selection related measurement. To avoid such retuning, we are fine to add the Note, leave it to UE implementation. |
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**Summary – Q 2.4.5**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.4.6** This question is regarding RIL H510.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | Maybe | No strong opinion on whether “dB2” should be added as minimum value for stationary evluation. |
| Xiaomi | Yes | Reasonable.  Is the value range decided by RAN4 or RAN2? |
| ZTE | No strong view |  |
| OPPO |  | No strong view on whether to add a value of 2dB. |
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**Summary – Q 2.4.6**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.4.7** This question is regarding RIL FW001.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided, e.g., R2-2204353.

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| **Company** | **Yes/No** | **Comments** |
| Intel | No | Do not see the problem since TS38.304 is clear. |
| Xiaomi | No | Do not see the problem. |
| Huawei, HiSilicon | Yes | No strong view.  We may need to fix the typo anyway:5.2.4.9.Y->5.2.4.9.2 |
| ZTE | Yes | The change is correct. |
| OPPO | Yes | Agree with the proposed change in RIL FW001.  Separate fields (i.e. cellEdgeEvaluation and cellEdgeEvaluationWhileStationary  ) are defined for R16 NACE and R17 NACE. Should not refer cellEdgeEvaluation to clause 5.2.4.9.Y |
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**Summary – Q 2.4.7**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.4.8** This question is regarding RILs S952, H511, and C271.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | No | S952 cell reselection priority Cell level resele3ction priority for RedCap (1 rx, HDD)  It has been excluded in last meeting. |
| Samsung | Yes (Proponent) | Regardless of 1RX and HD-FDD issues, the legacy structure can be considered for the RedCap itself.  1RX and HD-FDD issues can be discussed together with SIB1 indication (considering FD-FDD capability). |
| Xiaomi | - | S952: we have excluded this.  H511,C271: OK |
| Huawei, HiSilicon | Yes to H511/C271 | S952 seems to introduce new feature rather than correction.  We provide the TP to implement this, See [R2-2206081](file:///C:\Data\3GPP\RAN2\Docs\R2-2206081.zip) [H511] Corrections on redcapAccessRejected  The intention is to keep the spec align with the R2 agreement. |
| ZTE | See comments | We agree with H511 and C271. We also provide contribution ([R2-2205770](C:/Program%20Files%20(x86)/zMail/app/zMail/WebContent/pcWeb/Scripts/MailControls/ReadPanelIframe/javascript:void(0);)) for this issue.  Per our understanding, current definition as redcapAccessRejected is not straightforward, and a bit different from RAN2 agreement:  System information can provide information on which frequencies accept RedCap UE access (e.g., by considering whether supporting RedCap)”.  Furthermore, by using “allowed” means the network needs to ensure this bit is set properly as long as neighbour sites are upgraded, otherwise, RedCap UE cannot move to that newly upgraded cell. On the contrary, using “rejected” means by default a frequency is “allowed” for RedCap UE unless it is explicitly indicated as “rejected”. From network perspective, to use “allowed” is a safer way compared with “rejected”. |
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**Summary – Q 2.4.8**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.4.9** This question is regarding RIL H512.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | Comments | It is related to At meeting discussion 105, should wait. |
| Xiaomi | - | Wait for AT105. |
| Huawei, HiSilicon | Wait | Yes, this can just wait for the NCD-SSB offline conclusion. |
| ZTE |  | Wait for offline 105. |
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**Summary – Q 2.4.9**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.4.10** This question is regarding RIL H512.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel |  | Duplicated with Q 2.4.9 |
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**Summary – Q 2.4.10**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.4.11** This question is regarding RIL Z035.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | Yes | Looks good to us. |
| Samsung | Yes | - |
| Xiaomi | Yes |  |
| Huawei, HiSilicon | See comment | It is valid issue to be discussed. We also think CD-SSB can be used even the RedCap BWP is not associated with any SSB. So, RedCap separate BWP can be configured with rach-ConfigCommon in any case (w/o NCD-SSB). Maybe the following is more accurate.  “The NW configures SSB-based RA (and hence *RACH-ConfigCommon*) only for UL BWPs if the linked DL BWPs (same *bwp-Id* as UL-BWP) are the initial DL BWPs or DL BWPs containing the SSB associated to the initial DL BWP, or for RedCap separate initial UL BWP.“ |
| ZTE | Yes | (Proponent)  Fine with rapporteur’s suggestion (shown below).  "The NW configures SSB-based RA (and hence RACH-ConfigCommon) only for UL BWPs if the linked DL BWPs (same bwp-Id as UL-BWP) are the initial DL BWPs or DL BWPs containing the SSB associated to the initial DL BWP or for RedCap UEs DL BWPs associated with *nonCellDefiningSSB*." |
| OPPO | Yes |  |
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**Summary – Q 2.4.11**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.4.12** This question is regarding RILs Z036, N107, and H523.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | Comments | H523, Need R should be correct since the field is put under extension and we need the way to delete it.  Z036, we agreed in last meeting delta signalling is not used. So do not understand why the need code should be changed to Need M?   1. For RedCap-specific BWP, both common and dedicated configurations are provided using full configuration, i.e., delta configuration is not supported.   N107, seems correct. |
| Xiaomi |  | Z036/ N107: can be discussed with X119-1 in **Q 2.4.13.** |
| Huawei, HiSilicon | See comments. | Z036 seems the better one. (We withdraw H523 somehow).  This is to address the case of HO where the target cell does not configure RedCap sepcific BWP anymore. So, it should be released.  But, we are open to on whether we have to use Setuprelease. Need R is also acceptable.  N107 (Need S) is not needed, this is not the default value, it is only to clarify UE fall back to use legacy BWP. |
| ZTE | Comments to Z036  No to N107 and H523 | Reply to Intel, the motivation of Z036 is not to support delta configuration between RedCap specific initial BWP and legacy initial BWP, but to allow delta configuration during handover procedure, if the target cell have the same configuration for RedCap sepecific initial BWP.  But after further consideration, we are fine even if Z036 is not agreed. Because the sub IEs within BWP-DownlinkCommon already support “setupRelease+Need M”, so it can also support delta configuration upon handover. The network just need to always signal *genericPararmeters* IE, but it is acceptable.  BWP-DownlinkCommon ::= SEQUENCE {  genericParameters BWP,  pdcch-ConfigCommon SetupRelease { PDCCH-ConfigCommon } OPTIONAL, -- Need M  pdsch-ConfigCommon SetupRelease { PDSCH-ConfigCommon } OPTIONAL, -- Need M  ...  We are open to hear other companies views on Z036.  We disagree with N107 and H523.  ASN.1 should allow the network to release the RedCap specific initial BWP configuration (e.g. when the UE moves to a cell which does not configure RedCap specific initial BWP), so using Need R is correct. Or we can use “setupRelease +Need M” as proposed in Z036. |
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**Summary – Q 2.4.12**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.4.13** This question is regarding RIL X119-1.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | Comments | May discuss based on Vivo R2-2204817 on the UE behavior if the RedCap-specific initial BWP is not configured. |
| Xiaomi | Yes | Can be disussed with Z036.  The purpose is to change the Need code of RedCap-specific initial DL BWP for handover.  We have provides a paper R2-2206062:  initialDownlinkBWP-RedCap-r17 BWP-DownlinkCommon OPTIONAL -- Cond ServCellAdd1  ServCellAdd1: For Redcap, this field is mandatory present upon handover from E-UTRA to NR. It is optionally present, Need M otherwise. |
| Huawei, HiSilicon | Yes, but | It is reasonable clarification. This is related to H525, H526, Z036.  In summary, we believe RedCap specific BWP is not mandatory in HO case. But it is mandatory if the legacy BWP exceeds the RedCap UE maximum bandwidth.  Then we can formulate the description similar to Cond *ServCellAdd*  This field is mandatory present upon serving cell addition for PSCell if the initial UL BWP for non-RedCap UEs exceeds the RedCap UE maximum bandwidth. It is optionally present, Need M otherwise. |
| ZTE | No | The IE initialDownlinkBWP-RedCap-r17 may not be configured in the target NR cell, e.g. when the bandwidth of legacy initial BWP fulfills UE capability, thus this IE should not be mandatory upon handover from E-UTRA to NR.  In addition, RedCap UE does not support DC and CA. So Cond *ServCellAdd* does not apply to this IE.  Current “Cond ServCellAdd” is copied as following for reference:   |  |  | | --- | --- | | *ServCellAdd* | This field is mandatory present upon serving cell addition (for PSCell and SCell) and upon handover from E-UTRA to NR. It is optionally present, Need M otherwise. | |
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**Summary – Q 2.4.13**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.4.14** This question is regarding RIL V164.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | No | Do not see the need to add every RAN1 details in RRC specification. |
| Samsung | Maybe no | We are not sure whether the referred RAN1 agreement is about this update. |
| Xiaomi | No | Do not see the problem. |
| Huawei, HiSilicon | No | R1 LS does not indicate to add this. |
| ZTE | No | Maybe RAN1 spec should make it clear on this point. If there is RAN2 impact, shouldn’t they inform us via LS? |
| OPPO | No | Same view with Intel. |
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**Summary – Q 2.4.14**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.4.15** This question is regarding RILs H513 and H516.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | No | Editorial change, do not see the problem. |
| Samsung | No | The current wording looks okay to us. |
| Xiaomi | No | Do not see the problem. |
| Huawei, HiSilicon | Yes | This is related to H513, H516, H524, H527. See Tdoc in [R2-2206082](file:///C:\Data\3GPP\RAN2\Docs\R2-2206082.zip) [H513 H516 H520 H524 H525 H526 H527] Corrections on RedCap initial BWP  The proposal is to align the desciption with legacy text. |
| ZTE | No | We think there is no room for misunderstanding. |
| OPPO | No | No need to change. |
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**Summary – Q 2.4.15**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.4.16** This question is regarding RIL H518.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | No | Do not see the problem, since we already mentioned “the UE uses this BWP also for receiving DL messages during initial access (Msg2, Msg4, ...) and after initial access .” |
| Samsung | No | Agree with Intel. |
| Xiaomi | - | No strong view. Can check with RAN1. |
| Huawei, HiSilicon | Yes | No strong view on this. But, please note the R1 LS does not include this ”after initial access”. |
| ZTE | No | See RAN1 LS(R2-2200075/R1-2112802), there is RAN1 agreement:   * For both FR1 and FR2, for a cell that allows a RedCap UE to access, network can configure a separate initial DL BWP for RedCap UEs in SIB. At least the case when the separate initial DL BWP includes CD-SSB and the entire CORESET#0 is supported   + It can be used in idle/inactive mode (including paging) and during and after initial access, when applicable   + It is no wider than the maximum RedCap UE bandwidth.   + This applies to both TDD and FDD (including FD FDD and HD FDD) cases. |
| OPPO | No | Agree with Intel. |
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**Summary – Q 2.4.16**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.4.17** This question is regarding RIL X119-2.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | No | We think from signalling pov, all signalling in PDCCH-CommonConfig should be in RedCap specific initial BWP. Then whether further UE needs to get it from the RedCap specific initial BWP or from the legacy initial BWP is for signalling optimisation. |
| Xiaomi | Yes | Can discuss with H520 in Q2.  The issue is relates to whether Redcap UE need to read the SS for paging, SI from PDCCH-ConfigCommon configuration from legacy initial BWP in case RedCap-specific initial DL BWP NOT contains CORESET#0.  We have a paper R2-2206060.  Or wait for AT105. |
| Huawei, HiSilicon | No, but | We need to clarify that UE should use the PDCCH-common provided in the legacy BWP, in case the separate BWP does not contain CORESET#0. |
| ZTE | No | If the RedCap specific initial DL BWP does not contain CD-SSB, i.e. for RACH only, the idle/inactive RedCap UE is assumed to perform SI reception and paging monitoring on the legacy initial DL BWP. Thus the RedCap UE will anyway acquire configuration of legacy initial DL BWP, including pdcch-configCommon and other related IE, e.g. pdsch-configCommon.  There is no need to include common CORSET configuration of the legacy initial DL BWP in the pdcch-configCommon of RedCap specific initial DL BWP.  In other words, it is up to the network to set the configuration in commonControlResourceSet, and the RAR search space can link to the common CORESET configured in specific initial BWP or CORESET#0. |
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**Summary – Q 2.4.17**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.4.18** This question is regarding RIL X114.

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Intel | No | Do not see the strong need on the suggested sentence. |
| Xiaomi | Yes | Need to discuss.  If the RedCap specific initial DL BWP does NOT contain the entire CORESET#0, then the additional common control resource set configured for Redcap is not contained in the bandwidth of CORESET#0.  The current spec says“ The network configures the *commonControlResourceSet* in *SIB1* so that it is contained in the bandwidth of CORESET#0.“ Obviously, it is not considering the BWP may not containing CORESET#0.  We suggest it to be clarified. |
| Huawei, HiSilicon |  | Related to X119-2 |
| ZTE | Yes | We think the issue is valid, but do we need to consult RAN1 on how to update the field description? We are afraid simply say “outside CORESET#0” is not enough. |
| OPPO | No | No need to change. |
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**Summary – Q 2.4.18**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.4.19** This question is regarding RIL S953 (Tdoc R2-2204541).

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
| Samsung | Yes (Proponent) | SI request configuration (for Msg1 based SI request) for the RedCap-specific initial UL BWP should be provided separately, as RedCap UEs have to use only the RedCap-specific initial UL BWP to perform RACH if configured.  Note that RedCap-specific initial UL BWP has its own RACH configuration (preambles/ROs). The preambles/ROs available for SI request on RedCap-specific initial UL BWP are not same as the preambles/ROs available for SI request on legacy initial UL BWP (i.e. non RedCap-specific initial UL BWP). So current SI request configuration cannot be applied for both RedCap-specific initial UL BWP and legacy initial UL BWP (i.e. non RedCap-specific initial UL BWP). |
| Xiaomi | - | Can be discussed.  The Redcap UE acquire the same SIB with eMBB UE, why the SI request configuration cannot be reused? |
| Huawei, HiSilicon | Should be concluded in this meeting | We also have a Todc on this [R2-2205040](file:///C:\Data\3GPP\Extracts\R2-2205040%20Discussion%20on%20MAC%20RACH%20related%20issues%20for%20RedCap%20UE.DOCX) Discussion on MAC RACH related issues for RedCap UE.  **Proposal 2: RedCap UEs always use the legacy initial UL BWP for Msg1 based SI request, if it does not exceed the RedCap UE maximum bandwidth. Otherwise, RedCap UEs use Msg3 based SI request.**  If companes are not willing to add ASN.1 signalling (as address in S953), our P2 should be agreed. |
| ZTE | No | For Msg3-based SI request, there is no need to change anything, the RedCap still performs RACH on RedCap specific initial BWP.  For Msg1-based SI request, we think the UE should use legacy initial UL BWP (irrespective of the bandwidth of legacy initial UL BWP), because SI transmission is common for RedCap and non-RedCap UEs, there is no need to take different actions for different UEs.  Note: Even if the bandwidth of legacy initial BWP is larger than 20Mhz, RAR reception is within the bandwidth of CORESET#0.  In summary, we think for Msg1-based SI request, the RedCap UE can act as a non-RedCap UE. And there is no need to introduce separate IEs. |
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**Summary – Q 2.4.19**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.4.20** This question is regarding RIL V166

Do you agree with the issue(s) indicated? Please elaborate your reply, regardless of whether you do or not and provide a resolution/text proposal that addresses your concerns, if you agree with the intention considering the feedback from companies, if provided.

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| **Company** | **Yes/No** | **Comments** |
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**Summary – Q 2.4.20**

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Based on the observations above, the rapporteur proposes the following:

1. ???

## 2.5 RRC related issues discussed separately

In this section, we discuss the open RRC related issues brought up in the contributions below:

[R2-2204929](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2204929.zip) RRC open issues on Rel17 RedCap WI Intel Corporation

[R2-2204819](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2204819.zip) UE Capability and System Information for eDRX vivo, Guangdong Genius

[R2-2205523](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2205523.zip) SIB validity with eDRX MediaTek Inc.

**Q 2.5.1** In R2-2204929, it is proposed that supported number of Rx for RedCap UEs is provided in *UERadioPagingInformation*.

Do you agree with the proposal? Please elaborate your reply, especially if you do not.

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| **Company** | **Yes/No** | **Comments** |
| Intel | Yes |  |
| Xiaomi | - | No strong view.  The CN already can identify the Redcap UE from UE initial message. If the CN knows the gNB does not support Redcap, then the CN will not forward the paging to gNB.  And for RAN paging, according the Xn AP, gNB can know which cell supports Redcap or not. |
| Huawei, HiSilicon | Yes | We also propose this in R2-2205037. |
| ZTE | Yes | It is beneficial to avoid transmitting paging message in the cells on which the UE cannot camp. |
| OPPO | Yes |  |
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**Summary – Q 2.5.1**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.5.2** In R2-2204819 it is proposed that there should be two indications in SIB1, one that indicates whether IDLE eDRX is enabled in the serving cell, and one that indicates whether INACTIVE eDRX is enabled in the serving cell.

Do you agree with the proposal? Please elaborate your reply, especially if you do not.

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| **Company** | **Yes/No** | **Comments** |
| Intel | Comments | It depends on the discussion in 110 on whether we have separate capability for IDLE and INACTIVE UE or not. It would be good to wait a bit. |
| Xiaomi | - | Same view with intel. |
| Huawei, HiSilicon |  | Better to discuss in offline 110. |
| ZTE | No | From NW point of view, there is no reason to enable one eDRX but disable another. And this will bring additional complexity in T determination (e.g. if IDLE eDRX is disabled, while INACTIVE eDRX is enable, the T determination will be complicated and new rule are needed).  Further NW can simply choose not to configure RAN eDRX if it does not want to support it / or for IoT testing if needed.  In addition, separate bits for CN eDRX and RAN eDRX will increase IoT workload.  Ok to discuss in offline 110. |
| OPPO | Comments | Share the same view with Intel. |
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**Summary – Q 2.5.2**

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Based on the observations above, the rapporteur proposes the following:

1. ???

**Q 2.5.3** In R2-2205523 it is proposed that, by default, UEs configured with eDRX should consider stored system information to be invalid after 24 hours from the moment it was successfully confirmed as valid, which is currently specified as 3 hours, and suggested to introduce an optional parameter, i.e., *si-ValidityTime*, in case an operator prefers to configure it with 3 hours.

Do you agree with the proposal? Please elaborate your reply, especially if you do not.

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| **Company** | **Yes/No** | **Comments** |
| Intel | Maybe | The intention seems reasonable however it seems more logical if this kind of config is defined as UE-specific (i.e. provided in *RRCRelease*) as the storage requirement may be very different for a UE config with eDRX of 2.56sec vs very long values, In addition, the procedural text needs to check whether *eDRX-Allowed* is set by the network. |
| Xiaomi | - | Can be discussed.  Seems an optimization. Unlike in NB-Iot, the UEs may not be configured with such a large eDRX cycle( Note that we also have introduced eDRX of 2.56s) then seems 3 hrs in current spec is sufficient. |
| Huawei, HiSlicon | No | The 24hour was introduced in LTE, not due to eDRX. It is mainly for the service latency requirement, e.g. NB-IoT UE is allowed to not have the valid SI in a very long time.  The max eDRX is only 2.9hour, which means the latency requirement is only relaxed to 2.9h, rather than 24 hours. |
| ZTE | No | RedCap is different from eMTC and NB-IoT, for eMTC and NB-IoT, the SIBs are defined specifically, but for RedCap, the system information is shared by RedCap and non-RedCap UEs.  If the proposal is agreed, it means for a given SIB, RedCap UE may consider the valid period is 24h, but non-RedCap UE may consider the valid period is 3hours, we wonder if there is any impact when network updates the system information, e.g. to accomondate different UEs?  It seems only for UEs configured with largest eDRX cycle can be benefit from this proposal. But we wonder how much benefit it will bring to the UE which configured with smaller eDRX cycles.  Further, considering the limited time, we suggest not to consider this optimization in R17. |
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**Summary – Q 2.5.3**

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Based on the observations above, the rapporteur proposes the following:

1. ???

# 3 Conclusion

Based on the discussion above rapporteur suggests a discussion on the following proposals:

[Proposal 1 ???](#_Toc103161219)

[Proposal 2 ???](#_Toc103161220)

[Proposal 3 ???](#_Toc103161221)

[Proposal 4 ???](#_Toc103161222)

[Proposal 5 ???](#_Toc103161223)

[Proposal 6 ???](#_Toc103161224)

[Proposal 7 ???](#_Toc103161225)

[Proposal 8 ???](#_Toc103161226)

[Proposal 9 ???](#_Toc103161227)

[Proposal 10 ???](#_Toc103161228)

[Proposal 11 ???](#_Toc103161229)

[Proposal 12 ???](#_Toc103161230)

[Proposal 13 ???](#_Toc103161231)

[Proposal 14 ???](#_Toc103161232)

[Proposal 15 ???](#_Toc103161233)

[Proposal 16 ???](#_Toc103161234)

[Proposal 17 ???](#_Toc103161235)

[Proposal 18 ???](#_Toc103161236)

[Proposal 19 ???](#_Toc103161237)

[Proposal 20 ???](#_Toc103161238)

[Proposal 21 ???](#_Toc103161239)

[Proposal 22 ???](#_Toc103161240)

[Proposal 23 ???](#_Toc103161241)

[Proposal 24 ???](#_Toc103161242)

[Proposal 25 ???](#_Toc103161243)

[Proposal 26 ???](#_Toc103161244)

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