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

**Electronic, 25th Jan. – 5th Feb. 2021**

**Source: vivo**

**Title:** **Summary of offline discussion #508**

**Agenda Item:** **6.9.3**

**Document for:** **Discussion and Decision**

1. Introduction

The document is to report the summary of the following email discussion:

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|  **[AT113-e][508][R16-PowSav] CR R2-2100456 on 38.331  (Vivo)**  Scope:    Discuss submitted CR R2-2100456, agree on which corrections are acceptable and update CR with acceptable changes only.        Intended outcome:    Agreeable CRs for email approval        Deadline for providing comments:    Companies comments/text suggestions and on need/criticality of the CRs– Jan. 28th    Updated CRs (the ones agreed to be pursued) from responsible companies Jan. 29nd |

1. Discussion

## 1st change

The contribution [1] indicates that the description of *combineRelaxedMeasCondition* is not correctly captured in TS38.331.

In current field description of *combineRelaxedMeasCondition*, this parameter configures the UE to fulfil both criteria in order to relax measurement requirements for cell reselection. But in fact, when both criteria are fulfilled, UE could perform relaxed measurement regardless of whether *combineRelaxedMeasCondition* is configured or not, which is captured in TS 38.304 and TS 38.133.

Thus, it was proposed to fix the issue as below [1]:

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| ***combineRelaxedMeasCondition***  When both *lowMobilityEvalutation* and *cellEdgeEvalutation* criteria are present in SIB2, this parameter indicates when the UE needs to fulfil both low mobility criterion and not at cell edge criterion to determine whether to relax measurement requirements. If the field is absent, the UE is allowed to relax measurement requirements for cell reselection when either or both of the criteria are met. (See TS 38.304 [20], clause 5.2.4.9.0) |

**Q1: Companies are invited to provide their views whether they agree with the above issues 1 and the corresponding change.**

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| **Company** | **Yes/No** | **Comments, if any** |
| Ericsson | No | We understand that vivo proposes to use exactly the same wording as used to define the parameter in 38.304:  ***combineRelaxedMeasCondition***  *This indicates when the UE needs to fulfil both low mobility criterion and not-at-cell-edge criterion to determine whether to relax measurement requirements.*  But we do not understand what is the problem with the current wording in 38.331. It is our understanding that the semantics description in 38.331 does not specify in every detail the requirements, i.e. only a high level description is provided. For the details you need to read 38.304. |
| Qualcomm | Neutral | The proposed change does seem to be a rewording, not a technical correction, of the existing text, which is sufficient for a field description. But we understand the proposed change would better align the description of the parameter in 38.331 and 38.304. Therefore, we are fine either way and can support what the majority support. |
| vivo | Yes with comment | In our understanding, the original wording could be misunderstood as “the UE needs to fulfil both criteria in order to relax measurement requiremeents for cell reselection **only when the parameter *combineRelaxedMeasCondition* is configured**”. Thus, we have proposal to update the wording.  If the proposed wording still cannot solve the problem, we are fine to provide another updated wording, e.g.“…, this parameter indicates the UE cannot base on one of low mobility criterion and not at cell edge criterion to determine whether to relax measurement requirements.”  If majority companies think there is no technique issue or there is no room for any misunderstanding, we are fine to follow the majority. |
| Huawei, HiSilicon | Neutral | It’s not an essential change, but if we are anyway going to have a CR then fine to clarify. The change could be done in a much simpler way rather than reword the entire thing e.g.  ***combineRelaxedMeasCondition***  When both *lowMobilityEvalutation* and *cellEdgeEvalutation* criteria are present in SIB2, this parameter configures how the UE should use both criteria in order to relax measurement requirements for cell reselection. If the field is absent, the UE is allowed to relax measurement requirements for cell reselection when either or both of the criteria are met. (See TS 38.304 [20], clause 5.2.4.9.0) |
| Nokia, Nokia Shanghai Bell | Neutral | Nothing is broken |
| OPPO | Neutral | No strong view.  We think the current field description would not make any confusion since it is already stated in the field description that “If the field is absent, the UE is allowed to relax measurement requirements for cell reselection when either or both of the criteria are met.”  But we understanding the proposed change could better reflect the intention of the parameter*combineRelaxedMeasCondition*.  So either is ok for us. |
| MediaTek | No about the issue,  Neutral about the change | The first line in the field description covers the case when *combineRelaxedMeasCondition* is present: UE can relax measurements when both criteria are met (with the reference to 38.304, which has the expected behaviour specified).  The second line in the field description explicitly covers the case when *combineRelaxedMeasCondition* is absent: UE can relax measurements also when both criteria are met (*If the field is absent, the UE is allowed to relax measurement requirements for cell reselection when either* ***or both*** *of the criteria are met*).  We do not see an issue with the current text. Having said that, the proposed text is also correct. |
| CATT | No | There is no critical issue with the field description text which anyways refers to the exact behavior in 38.304. |
| Apple | Neutral | The current wording of this parameter from 38.331 v16.2.0, is as follows  *combineRelaxedMeasCondition*  *When both lowMobilityEvalutation and cellEdgeEvalutation criteria are present in SIB2, this parameter configures the UE to fulfil both criteria in order to relax measurement*  *requirements for cell reselection. If the field is absent, the UE is allowed to relax measurement requirements for cell reselection when either or both of the criteria are met. (See TS 38.304 [20], clause 5.2.4.9.0)*  In our opinion, this wording is clear and conveys the intended interpretation of this parameter. But if the proposed change is in more to align the wording with 38.304, we are fine. One question though, should the “when” be replaced with “if” ?  ***combineRelaxedMeasCondition***  When both *lowMobilityEvalutation* and *cellEdgeEvalutation* criteria are present in SIB2, this parameter indicates ~~when~~ if the UE needs to fulfil both low mobility criterion and not at cell edge criterion to determine whether to relax measurement requirements. If the field is absent, the UE is allowed to relax measurement requirements for cell reselection when either or both of the criteria are met. (See TS 38.304 [20], clause 5.2.4.9.0) |
| Intel | Neutral | We don’t have strong view on whether a change is needed or not.  If we want to align the field description with TS 38.304 clause 5.2.4.7.0, one editorial suggestion is to change “not at cell edge criterion” to “not-at-cell-edge criterion”. |
| LG | No | We think the current field description is already clear– if configured, the UE should fulfil both criteria to relax the measurement. If not configured, UE can relax the measurement if UE fulfils single or both criteria. We do not think it may bring misunderstanding as Vivo commented. |
| Futurewei | Neutral | We interpret the current text in the same way as most other companies have commented. |

**Summary:**

Based on companies’ inputs, almost all companies think there is no critical issue with the current field description in TS 38.331. Majority companies think either the original text or the proposed change is fine.

In this way, rapporteur suggests not to make any change as there is no essential problem.

**Proposal 1: The first change in R2-2100456 is not needed.**

## 2nd change

The contribution [1] indicates that the description of *highPriorityMeasRelax* is not correctly captured in TS38.331.

In current field description of*highPriorityMeasRelax*, it is mentioned: If the field is absent, the UE shall not relax measurements on high priority frequencies beyond “Thigher\_priority\_search”

But in fact, when both criteria are fulfilled, UE could perform relaxed measurement up to 1hour for high priority frequencies, which is beyond “Thigher\_priority\_search” regardless of whether *highPriorityMeasRelax* is configured or not, according to TS 38.133 or TS 38.304.

Thus, it was proposed to fix the issue as below [1]:

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| ***highPriorityMeasRelax***  Indicates whether measurements can be relaxed on high priority frequencies (see TS 38.304 [20], clause 5.2.4.9.0). “” |

**Q2: Companies are invited to provide their views whether they agree with the above issues 2 and the corresponding change.**

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| **Company** | **Yes/No** | **Comments, if any** |
| Ericsson | TBD | In 38.331 we need to specify the UE ehaviour when an optional IE is absent, i.e. we cannot just delete that part. We tend to agree with the comment from vivo, i.e. the *higPriorityMeasRelax* has successfully been watered down, i.e. only applicable when only lowmobility trigger is configured only and fulfilled. We propose to find an alternative wording for the case the IE is absent, and to refer to 38.304 for further details. |
| Qualcomm | See comment | We have similar view with Ericsson, i.e. field description should include a clause specifying what UE behavior is when an optional IE is absent. We could change the existing text as follows:  Indicates whether measurements can be relaxed on high priority frequencies (see TS 38.304 [20], clause 5.2.4.9.0). If the field is absent, the UE shall not relax measurements on high priority frequencies beyond “Thigher\_priority\_search” unless both low mobiity and not-at-cell-edge criteria are fullfilled (see TS 38.133 [14], clause 4.2.2.7). |
| vivo | Yes with comment | We are fine with the comments from Ericsson and Qualcomm. Regarding the suggestion from Qualcomm, we have some more update as below:  Indicates whether measurements can be relaxed on high priority frequencies (see TS 38.304 [20], clause 5.2.4.9.0). If the field is absent, the UE shall not relax measurements on high priority frequencies beyond “Thigher\_priority\_search” unless both low mobiity and not at cell edge criteria are fullfilled (see TS 38.133 [14], clause 4.2.2.7 and TS 38.304 [20], clause 5.2.4.9.0). |
| Huawei, HiSilicon | Yes | Agree with above comments. |
| Nokia, Nokia Shanghai Bell |  | We agree with above comments that we should not remove the description about the case where the field is absent. |
| OPPO |  | We agree with the above comments, and we are fine with the field description revised by vivo. |
| MediaTek | Yes, with comment | Agree with others that the description should not be removed. We are fine with the revision from Qualcomm and vivo. |
| CATT | Yes | We are fine with the revised wording from vivo. |
| Apple | See Comment | The current wording of this parameter from 38.331 v16.2.0, is as follows  *highPriorityMeasRelax*  *Indicates whether measurements can be relaxed on high priority frequencies (see TS 38.304 [20], clause 5.2.4.9.0). If the field is absent, the UE shall not relax measurements*  *on high priority frequencies beyond "Thigher\_priority\_search" (see TS 38.133 [14], clause 4.2.2.7).*  The current description does not consider the case when both criteria are fulfilled and to that effect we agree to the wording from Qualcomm. |
| Intel | Yes | We are fine with the wording from Qualcomm and vivo. |
| LG |  | We agree with the preceding comments, and fine with the updated field description by Vivo. |
| Futurewei | Yes | We are OK with the wording suggested by Qualcomm and Vivo, except the typo in “fullfilled”. |

**Summary:**

Based on companies’ inputs, all companies agree with the issue. Companies think we should not just remove the description about the case where the field is absent. Further updated wording from Qualcomm and vivo are acceptable for everyone.

Thus, rapporteur suggests to have the second change with the updated wording from Qualcomm and vivo.

**Proposal 2: The second change in R2-2100456 is revised as: “…the UE shall not relax measurements on high priority frequencies beyond “Thigher\_priority\_search” unless both low mobility and not at cell edge criteria are fulfilled (see TS 38.133 [14], clause 4.2.2.7 and TS 38.304 [20], clause 5.2.4.9.0)”.**

## 3rd change

The contribution [1] indicates that: in current field description of*ps-WakeUp*, the reference is TS 38.213. But this parameter is actually used in TS 38.321. Thus, the reference spec should be updated.

Thus, it was proposed to fix the issue as below [1]:

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| ***ps-WakeUp***  Indicates the UE to wake-up if DCI format 2-6 is not detected outside active time (see TS 38.321 [3], clause 5.7). If the field is absent, the UE does not wake-up if DCI format 2-6 is not detected outside active time. |

**Q3: Companies are invited to provide their views whether they agree with the above issues 3 and the corresponding change.**

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| **Company** | **Yes/No** | **Comments, if any** |
| Ericsson | Yes |  |
| Qualcomm | Yes | Agree with change |
| vivo | Yes |  |
| Huawei, HiSilicon | Yes |  |
| Nokia, Nokia Shanghai Bell | Yes |  |
| OPPO | Yes |  |
| MediaTek | Yes |  |
| CATT | Yes |  |
| Apple | Yes |  |
| Intel | Yes |  |
| LG | Yes |  |
| Futurewei | Yes |  |

**Summary:**

Based on companies’ inputs, all companies agree with the issue and the change.

Thus, rapporteur suggests to have the third change.

**Proposal 3: The third change in R2-2100456 is agreed.**

1. Conclusions

Based on companies’ inputs, we could have the following conclusions:

**=> The first change in R2-2100456 is not needed.**

**=> The second change in R2-2100456 is revised as: “…the UE shall not relax measurements on high priority frequencies beyond “Thigher\_priority\_search” unless both low mobility and not at cell edge criteria are fulfilled (see TS 38.133 [14], clause 4.2.2.7 and TS 38.304 [20], clause 5.2.4.9.0)”.**

**=> The third change in R2-2100456 is agreed.**

**=> The CR is revised in R2-210xxxx.**

1. Reference
2. R2-2100456, CR on 38.331 for power saving vivo CR Rel-16 38.331 16.3.1 2325 - F NR\_UE\_pow\_sav-Core