3GPP TSG-RAN WG2#113-e DocNumber

Electronic meeting, 25th Jan – 5th Feb 2021

Agenda Item: 5.4.1.2

Source: Ericsson

Title: Report of [Offline-006][NR15] Measurements Misc and System Info

Document for: Discussion, Decision

# 1 Introduction

This contribution is related to the following email discussion.

* [AT113-e][006][NR15] Measurements Misc and System Info (Ericsson)

 Scope: Treat R2-2100063, R2-2101834, R2-2101422, R2-2101423, R2-2100751, R2-2101285

 Phase 1, determine agreeable parts, Phase 2, for agreeable parts Work on CRs.

 Intended outcome: Report and Agreed CRs.

 Deadline: Schedule A

**Deadline:** Email discussions with Deadline ***Schedule A***:

A first round with **Deadline for comments Thursday Jan 28 1200 UTC** to settle scope what is agreeable etc

A Final round with **Final deadline Thursday Feb 4 1200 UTC.** to settle details / agree CRs etc. Additional check points etc if needed are defined by the Rapporteur. In case some parts of an email discussion need more time, doesn’t converge, need on-line treatment etc Rapporteur please contact chair.

# 2 Contact Information

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# 3 Discussion

## 3.1 RAN5 LS related

[R2-2100063](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113-e%5CDocs%5CR2-2100063.zip) LS on reporting of SINR measurements for serving cell (R5-206274; contact: Qualcomm) RAN5 LS in To:RAN2

[R2-2101834](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113-e%5CDocs%5CR2-2101834.zip) Discussion on reporting of SINR measurements for serving cell MediaTek Inc. discussion

RAN5 has sent an LS on the interpretation of the RRC specification when it comes to serving cell SINR inclusion in the measurement reports. They have listed two possible interpretations.

1. UEs supporting SINR measurements can include SINR metrics for serving cell based on reference 2 **unconditionally** (per UE implementation) in the measurement report, and reference 1 is just to mandate the UEs to derive SINR measurement if configured as a trigger quantity and/or reporting quantity.
2. The SINR metric **shall not** be reported for the serving cell if SINR is not configured as trigger quantity and/or reporting quantity irrespective if the UE supports capability ‘ss-SINR-meas’ or not.

wherein;

**Reference 1:** TS 38.331 clause 5.5.3.1 contains the following text:

1> for each serving cell for which *servingCellMO* is configured, if the *reportConfig* associated with at least one *measId* included in the *measIdList* within *VarMeasConfig* contains SINR as trigger quantity and/or reporting quantity:

2> if the *reportConfig* contains *rsType* set to *ssb* and *ssb-ConfigMobility* is configured in the *servingCellMO*:

3> if the *reportConfig*contains a *reportQuantityRS-Indexes* and *maxNrofRS-IndexesToReport*:

4> derive layer 3 filtered SINR per beam for the serving cell based on SS/PBCH block, as described in 5.5.3.3a;

3> derive serving cell SINR based on SS/PBCH block, as described in 5.5.3.3;

**Reference 2**: TS 38.331 clause 5.5.5.1 contains the following text:

For the *measId* for which the measurement reporting procedure was triggered, the UE shall set the *measResults* within the *MeasurementReport* message as follows:

1> set the *measId* to the measurement identity that triggered the measurement reporting;

1> for each serving cell configured with *servingCellMO*:

2> if the *reportConfig* associated with the *measId* that triggered the measurement reporting includes *rsType*:

3> if the serving cell measurements based on the *rsType* included in the *reportConfig* that triggered the measurement report are available:

4> set the *measResultServingCell* within *measResultServingMOList* to include RSRP, RSRQ and the available SINR of the serving cell, derived based on the *rsType* included in the *reportConfig* that triggered the measurement report;

In R2-2101834, MediaTek provides their views on the topic and mentions that whether to perform SINR measurement or not is a UE implementaiton choice even when the network has not configured the UE to perform SINR measurements and thus the UE is **not mandate** to report SINR but it is also **not forbidden** to report SINR. Thus, they propose the following.

Proposal 1: RAN2 confirms UEs supporting SINR measurements could include SINR metrics for serving cell(s) (per UE implementation) even if SINR result is not mandated (i.e. to adopt interpretation A in R5-206274).

**Question-1: Which of the following option is RAN2 interpretation?**

**Option-A**: UEs supporting SINR measurements can include SINR metrics for serving cell based on reference 2 unconditionally (per UE implementation) in the measurement report, and reference 1 is just to mandate the UEs to derive SINR measurement if configured as a trigger quantity and/or reporting quantity

**Option-B**: The SINR metric shall not be reported for the serving cell if SINR is not configured as trigger quantity and/or reporting quantity irrespective if the UE supports capability ‘ss-SINR-meas’ or not.

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| **Company Name** | **Preferred option (Option-A or Option-B)** | **Comments** |
| Ericsson | Option-B | The measurement report size overhead cannot be underestimated as there could be many serving cells configured to the UE as part of the cell group. If the network is interested in SINR measurements, then it can explicitly include the SINR as one of the report quantity or as a trigger quantity.  |
| ZTE(LiuJing) | Option-A | In our view, it is always helpful if network can obtain more serving cell results from the UE. For serving cell, UE always perform RSRP/RSRQ measurements. While for SINR measurement, we linked it with “trigger quantity and/or report quantity“, because SINR measurement is considered as to be something that requires extra effort from UE. So we mandate UE to MUST perform SINR measurement if at least one measID is associated with SINR triggerQuantity or reportQuantity. Without that configuration, the UE is allowed to not perform SINR measurements. However, if UE already has available SINR results for serving cell, we see no benefit to prevent the UE from reporting the information to network. And we think the increase in message size is not a big concern compared to other part of measurement report.  |
| Huawei, HiSilicon | Option B | Option B is more in line with the agreements achieved in RAN2 #100:**Agreements**1    UE shall report SINR measurements for each configured serving cell if SINR measurements are available (**ie** if the SINR measurements on serving cell **are required according to a configured meas ID**.)Since the agreement uses the wording “ie” instead of “eg”, UE shall not report the SINR measurements when not configured. |
| Lenovo | Option-B | Our understanding is that the UE shall act on NW configuration in ReportConfigNR where BOOLEAN type is specified for each reporting quantity.MeasReportQuantity ::= SEQUENCE { rsrp BOOLEAN, rsrq BOOLEAN, sinr BOOLEAN} |

**Rapportuer summary**: To be added later

Further, if the companies think that the specification is not clear, rapporteur would like to ask if there is any need to change the RRC specification.

**Question-2: Is there a necessity to change the RRC specification procedural text to avoid confusion?**

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| **Company Name** | **Yes/No** | **Comments (If yes, the company is requested to provide suggested change)** |
| Ericsson | No | The specification is already clear that the UE is expected to perform serving cell SINR measurements only when the network configures SINR as a trigger quantity or as a report quantity in at least one measID. Therefore, we believe there is no need to change anything in the RRC specification. |
| ZTE(LiuJing) | No | No spec change is needed, because the spec already says the UE can report “the available SINR of the serving cell”. |
| Huawei, HiSilicon | No | Agree with Ericsson. |
| Lenovo | No |  |

**Rapportuer summary**: To be added later

## 3.2 On trigger quantity related clarification

[R2-2101422](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113-e%5CDocs%5CR2-2101422.zip) On trigger quantity related clarification Ericsson CR Rel-16 38.331 16.3.1 2410 - A NR\_newRAT-Core

[R2-2101423](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113-e%5CDocs%5CR2-2101423.zip) On trigger quantity related clarification Ericsson CR Rel-15 38.331 15.12.0 2411 - F NR\_newRAT-Core

Ericsson wants to clarify that the Ax threshold (*aN-ThresholdM*) and Ax offset (*a3-Offset*/*a6-Offset*) provides not only the threshold and offset values for the respective events but they also indicate the trigger quantity used for the event. The current procedural text is a copy-paste from LTE wherein there is an explicit parameter called triggerQuantity in RRM, to indicate what was used as triggerQuantity for measurements events. In NR, the signaling was designed so that this would not be needed. However, the field description associated to Ax offset and Ax thresholds still refer to the ‘selected trigger quantity’ which is not correct.

**Question-3: Do you think the change is necessary?**

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| **Company Name** | **Yes/No** | **Comments, if any** |
| Ericsson | Yes | The field description was a copy-paste from LTE and therefore, it was incomplete. |
| ZTE(LiuJing) | No | We understand the motivation is correct, but seems there is no room for misunderstanding even without clarification. And people can also know these are used for trigger quantity based on the IE definitions (see below).  eventA3 SEQUENCE { a3-Offset MeasTriggerQuantityOffset, reportOnLeave BOOLEAN, hysteresis Hysteresis, timeToTrigger TimeToTrigger, useWhiteCellList BOOLEAN }, eventA4 SEQUENCE { a4-Threshold MeasTriggerQuantity, reportOnLeave BOOLEAN, hysteresis Hysteresis, timeToTrigger TimeToTrigger, useWhiteCellList BOOLEAN }, |
| Huawei, HiSilicon | No | Same view with ZTE. There’re no real consequences if not approved.The corresponding IE to the fields *a3-Offset/a6-Offset/aN-ThresholdM* is *MeasTriggerQuantityOffset*, one can easily understand the trigger quantity by its name. |
| Lenovo | No | The current field descriptions properly reflect ASN.1. |

**Rapportuer summary**: To be added later

## 3.3 On stored SIB validity related clarification

[R2-2100751](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_113-e/Docs/R2-2100751.zip) The validity of a stored SIB if SI Area ID is absent Fujitsu discussion Rel-15 NR\_newRAT-Core

Fujistu brings up an issue related to the valididty of the SI version stored by the UE and the version broadcasted by the cell. The issue is for the scenario when the *systemInformationAreaID* is not available in the stored version of the SI and also when *systemInformationAreaID* is not available in the SIB1 broadcasted by the serving cell as observed in the contribution.

**Question-4: Is there any ambiguity related to the validity of the stored SIB when the *systemInformationAreaID* is not available in the stored version of the SIB and/or when *systemInformationAreaID* is not available in the SIB1 broadcasted?**

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| **Company Name** | **Yes/No** | **Comments, if any** |
| Ericsson | No | In our view it is obvious that there is only a match when there is a stored *systeminformationAreaID* and a broadcasted *systeminformationAreaID* and they are the same. Otherwise there is not a match.  |
| Huawei | No | If the network wants to use area specific SIB, there’s no reason not to include SIAID. The case is not valid. |
| ZTE(Yuan) | No | We understand in an appropriate NW implementation, the areaScope and systemInformationAreaID will be configured together and the issue raised in this paper will not appear. |
| Lenovo | No | The presence of areaScope is condition to the presence of systemInformationAreaID. This should be clear from the sentence below in the field description of systemInformationAreaID.*“Any SIB with areaScope within the SI is considered to belong to this systemInformationAreaID.”*Therefore, the condition below already implies that systemInformationAreaID is present in SIB1 from the serving cell.2> if the *areaScope* is associated and its value for the stored version of the SIB is the same as the value received in the *si-SchedulingInfo* for that SIB from the serving cell: |

**Rapportuer summary**: To be added later

If the answer to the previous question is YES, then is there any need to change the specification.

**Question-5: Is there any need to clarify the specification about the validity of the stored SIB when the *systemInformationAreaID* is not available in the stored version of the SIB and also when *systemInformationAreaID* is not available in the SIB1 broadcasted?**

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| **Company Name** | **Yes/No** | **Comments, (if YES, please provide your preferred clarification)** |
| Ericsson | No | PS: we also think the text would become very awkward if we would try to clarify this further.  |
| Huawei | No | Same as Question-4. |
| ZTE(Yuan) | No |  |
| Lenovo | No | The current specification is clear. |

## 3.3 Other changes

[R2-2101285](file:///D%3A/Documents/3GPP/tsg_ran/WG2/RAN2/2101_R2_113e/Docs/R2-2101285.zip) Miscellaneous non-controversial corrections Set IX Ericsson CR Rel-15 38.331 15.12.0 2399 - F NR\_newRAT-Core

Couple of non-controversial corrections are provided in R2-2101285 by the RRC rapporteur.

1. IE MIMO-ParametersPerBand

Re-arranged explanation of Conditional Presence *RBTermChange* to use the same layout as *RBTermChange1.* An “and” was deleted that could cause confusion. (Rel-15 change)

1. 5.3.7.2 Initiation (RRC connection re-establishment)

Deleted erroneous reference to clause 5.2.6 (Selection of cell at transition to RRC\_IDLE or RRC\_INACTIVE state) in TS 38.304, since at re-establishment UE is in RRC\_Connected.
With this change, TS 38.331 is aligned with corresponding text in TS 36.331. (Rel-15 change)

**Question-6: Are the changes in R2-2101285 agreeable?**

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|  **Company Name** | **Yes/No** | **Comments, (if YES, please provide your preferred clarification)** |
| Ericsson | Yes |  |
| Huawei, HiSilicon | No | The changes are not essential. Nothing is broken in the current text. |
| ZTE(Yuan) | Acceptable to us |  |
| Lenovo | Yes | The intention of rapporteur CRs is to fix minor issues. |

# 3 Conclusion

To be added later