**3GPP TSG-RAN WG2 Meeting #109bis electronic R2-200xxxx**

**20th – 24th April, 2020**

**Agenda item:**5.4.1.2

**Source:** Nokia, Nokia Shanghai Bell, Huawei, HiSilicon

**Title:** Summary of [AT109bis-e][010][NR15] Measurements (Huawei, Nokia)

**Document for:**  Discussion and Decision

1. Introduction

This is a summary of offline discussion for the following documents:

* [AT109bis-e][010][NR15] Measurements (Huawei, Nokia)

Scope: Treat all docs under AI 5.4.1.2

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC (chair comment: expect [R2-2002692](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2002692.zip) and 2693 to be easy agreements as we already have agreed them).

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

**All CRs under AI 5.4.1.2 are covered: R2-2002692, R2-2002693, R2-2003701, R2-2003702, R2-2003734, R2-2003735**

2. Discussion

## 2.1 R2-2002692 and R2-2002693 Clarification for SSB-ToMeasure

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| ***Reason for change:*** *The way UE should use the IE SSB-ToMeasure is not clear in the RRC specification. A clarification to this was agreed during RAN2108 but is not reflected in the specifications. During RAN2109e the principle of this CR was also deemed agreeable as per* ***R2-2002155*** *but a revision to the original CR was never submitted to RAN2109e due to mistake.* |

**Q) Do companies agree with the changes in the CR** **R2-2002692 (Rel-15) and R2-2002693 (Rel-16)?**

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| **Company** | **Yes/No** | **Comments (if any)** |
| Nokia | Yes | Proponent |
| Qualcomm | No | In RAN2#108, this issue has been discussed. And the conclusion is that it is common understanding to use absolute SSB index which doesn’t have any ambiguity, and thereby CR is not required (Chair has concluded “not pursued”). We should respect previous conclusion.    [R2-1915425](file:///D:\Documents\3GPP\tsg_ran\WG2\RAN2\Docs\R2-1915425.zip)            CR to 36.331 on SSB-ToMeasure clarifications   Ericsson           CR        Rel-15   36.331   15.7.0   4147     -           F          NR\_newRAT-Core  DISCUSSION  -     Huawei think CR is not needed.  -     MTK think we can agree P1 but think CR is not needed. QC can also agree P1 but think the CRs are not correct.  -     QC think that “within SMTC duration” is R1 text and is ok because if SMTC is not configured, the UE will anyway have a default assumption.   * RAN2 confirms that the SSB-ToMeasure is based on the absolute SSBIndexes. * Not pursued |
| ZTE | prefer Yes | The intention is correct, and the wording from CR is correct. We understand this was discussed before, but to avoid continuously clarification from companies in the future, maybe it is ok to capture it clearly in spec. |
| Ericsson | May be | In principle, we support the CR from Nokia as we had similar proposal on the same topic in RAN2#!08 meeting but at the same time it is strange that the same changes that were discussed and agreed to be captured in the chairman notes instead of specification has again been brought up to be included in the specification. In any case, if we agree to introduce this in the specification, then we should also make the same changes in 36.331. |
| Samsung | No | We see no need to revisit the issue already concluded at RAN2#108 |
| LGE | Yes | Same view as ZTE. |
| MediaTek | Yes | Although we don’t have strong view. This is basically agreeable from last meeting and we are fine with change. |
| NTT DOCOMO | Maybe | Although it is a strange procedure as Ericsson highlighted… |

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| There seems to be a misunderstanding with respect to **R2-2002692 and R2-2002693** Clarification for SSB-ToMeasure.   * Companies have quoted RAN2#108 but in RAN2#109e there is a decision to pursue the topic.   + See attachment from previous meeting * Hence I propose to go ahead and ignore the comments from companies saying “NO” for this topic. |

**Summary for R2-2002692 and R2-2002693: Continue discussion to get agreeable version on the CRs.**

## 2.2 R2-2003701 and R2-2003702 Correction to inter-RAT SFTD measurements

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| ***Reason for change:*** *"Reason for change: According to 38.331 SFTD measurement configured by NR PCell will be triggered as long as UE has a measId associated to a reportConfig with reportType set to reportSFTD:*  *TS 38.331 cl. 5.5.3.1*  *1 for each measId included in the measIdList within VarMeasConfig:*  *2 if the reportType for the associated reportConfig is set to reportSFTD:*  *3 if the reportSFTD-Meas is set to true:*  *5 perform SFTD measurements between the PCell and the NR PSCell;*  *However*  *Unlike LTE autonomous measId removal is not allowed in NR. So UE will perform SFTD measurements on and on even after UE already sends a measurement report. It is nessesary to clarify that UE only performs SFTD measurement when no measurement report is sent.*  *Similar to CGI measurement a timer (T322) is also used for DRX idle period based SFTD measurement. RAN2 has already agreed that CGI measurement is only performed when T321 is running. It shall be the same for SFTD measurement.*  *There is a typo in the description of IE reportRSRP. In current version of 38.331 it says:*  *reportRSRP*  *Indicates whether UE is required to include RSRP result of NR PSCell in SFTD measurement result derived based on SSB. If it is set to true the network should ensure that ssb-ConfigMobility is included in the measurement object for NR PSCell.*  *Since reportRSRP is also used when reportSFTD-NeighMeas TRUE (i.e. UE performs SFTD on neighbour cells rather than PSCell) the description shall be changed to include RSRP result of NR PSCell or neighbour cells in SFTD measurement result*  *...".* |

**Q) Do companies agree with the changes in the CR** **R2-2003701 (Rel-15) and R2-2003702 (Rel-16)?**

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| **Company** | **Yes/No** | **Comments (if any)** |
| Nokia | Yes | The CR is OK to clarify when the SFTD measurement should be performed. |
| Qualcomm | Yes | 1st change is good clarification that SFTD measurement is one-shot  2nd change is similar to CGI reporting. Thus, it is fine |
| ZTE | Yes | Seems we use different ways for SFTD and normal periodical measurement. For periodical measurement, the UE will autonomously remove the measID when *numberOfReportsSent* equals *reportAmount*. While for SFTD, the network has to explicitly release the corresponding measID. |
| Ericsson | Yes but not to all changes | In principle, we agree with the changes proposed. Some detailed comments on changes.     1. Agree with the first change 2. Second change is not required as the first change and the other procedural text in section 5.5.4.1 takes care of it, as quoted below. While the UE is performing measurements based on DRX based SFTD measurement, if the measurement becomes available, then the UE stops T322 and performs the measurement reporting procedure. Upon starting the reporting, the first change will ensure that the UE will not enter the section related to performing SFTD measurements again.   2> if the corresponding *reportConfig* includes a *reportType* is set to *reportSFTD*:  3> if the corresponding *measObject* concerns NR:  4> if the *drx-SFTD-NeighMeas* is included:  5> if the quantity to be reported becomes available for each requested pair of PCell and NR cell:  6> stop timer T322;  Also when the timer T322 expires, then the UE initiates the transmission of the measurement report as per the procedural text. Upon starting the reporting, the first change will ensure that the UE will not enter the section related to performing SFTD measurements again  2> upon the expiry of T322 for this *measId*:  3> initiate the measurement reporting procedure, as specified in 5.5.5;  Therefore the second change is not required.  3) Third change is editorial, agree. |
| Samsung | Yes | Although we agree with Ericsson that 2nd change seems not really needed, we acknowledge that CR clarifies there is no real need to perform the measurement. No strong view as change does not result in observable difference |
| LGE | Yes (except 2nd change) | Regarding 2nd change, we have same view as Ericsson. |
| MediaTek | Yes but not to all changes | Similar view as Ericsson. 1st and 3rd change are OK but 2nd change is incorrect and not needed. |
| NTT DOCOMO | Yes (except 2nd change) | Agree with Ericsson. |

**Summary for CR R2-2003701 (Rel-15) and R2-2003702 (Rel-16) Continue to agree on the CRs.**

## 2.3 R2-2003734 and R2-2003735 Correction to inter-RAT SFTD measurements

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| ***Reason for change:*** *"Reason for change: According to 36.133 inter-RAT SFTD measurement configured on neighbours cells shall be terminated upon NR PSCell is added.*  *TS 36.113 cl. 8.1.2.4.25*  *In case an NR PSCell is added the UE shall terminate the inter-RAT SFTD measurement.*  *However measId of inter-RAT SFTD measurement isnt autonumously removed after NR PSCell addition. As a result if an inter-RAT SFTD measurement doesnt trigger measurement reporting before PSCell addition the UE has to perform inter-RAT SFTD measurement after entering EN-DC since performing SFTD measurements is not relevent to PSCell addition. It conflicts with 38.133.*  *TS 36.331 cl. 5.5.3.1*  *4 if the reportSFTD-Meas is set to neighborCells in the associated reportConfig:*  *5 perform SFTD measurements between the PCell and NR cell(s) on the frequency indicated in the associated measObject;*  *So it is nessesary to autonumously remove measId of SFTD with reportSFTD-Meas set to neighborCells after NR PSCell addition."* |

**Q) Do companies agree with the changes in the CR** **R2-2003734 (Rel-15) and R2-2003735 (Rel-16)?**

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| **Company** | **Yes/No** | **Comments (if any)** |
| Nokia | Yes | The CR is OK to clarify when the SFTD measurement should be performed. |
| Qualcomm | Yes with comments | Basically, we think this CR is fine. But NOTE 1 seems to also need to be corrected accordingly:  "NOTE 1: The above UE autonomous removal of measId's applies only for measurement events A1, A2, A6, and also applies for events A3 and A5 if configured for PSCell and W2 and W3 and V1 and V2 ~~and event involving reportSFTD-Meas set to pSCell~~, if configured.” |
| ZTE | Yes with comments | We are fine to use “autonomous measId removal” in this case, just curious whether it causes NBC problem? It assumes all UEs have already implemented like this, so network does not need to explicitly release the measIDs during SN addition. |
| Ericsson | Yes with comments | Regarding the NBC issue, we also have the same question as ZTE.    Two specific changes on the CR.  1) One small change in the coversheet. The RAN4 spec to be referenced in 36.133 instead of 36.113.  2) The NOTE1 needs to be updated. – add the highlighted text.  NOTE 1: The above UE autonomous removal of measId's applies only for measurement events A1, A2, A6, and also applies for events A3 and A5 if configured for PSCell and W2 and W3 and V1 and V2 and event involving reportSFTD-Meas set to pSCell or neighborCells, if configured. |
| Samsung | Not needed | We assume network cannot assume all UEs behave as specified by the CR and hence will anyhow have to explicitly release, which seems no problem |
| LGE | Not needed | There is no reason network cannot remove the SFTD measurement explicitly during PSCell addition. |
| MediaTek | Yes, but | We are fine with the CR and agree the additional comment from Ericsson.  Regarding to NBC, I guess NW still have to do explicit release to avoid any potential issue.  So, an alternative is to say something like the NW will explicitly release measurement ID of SFTD while PSCell is added. |
| NTT DOCOMO | Yes but | Similar to ZTE, Ericsson, potential NBC is a valid concern. |

**Summary for CR R2-2003734 and R2-2003735: Continue to agree on the CRs.**

# Conclusion

There is support from companies to develop the CRs further.

Rapporteur proposes to continue discussions to agree the following CRs:

* R2-2002692, R2-2002693, R2-2003701, R2-2003702, R2-2003734, R2-2003735

# References

**SSB-ToMeasure**

[1] [R2-2002692](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2002692.zip) Clarification for SSB-ToMeasure Nokia, Nokia Shanghai Bell CR Rel-15 38.331 15.9.0 1457 1 F NR\_newRAT-Core R2-2000859

[2] [R2-2002693](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2002693.zip) Clarification of SSB-ToMeasure Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.0.0 1516 - A NR\_newRAT-Core

**Inter-RAT SFTD**

[3] [R2-2003734](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2003734.zip) Correction to inter-RAT SFTD measurements Huawei, HiSilicon CR Rel-15 36.331 15.9.0 4285 - F NR\_newRAT-Core

[4] [R2-2003735](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2003735.zip) Correction to inter-RAT SFTD measurements Huawei, HiSilicon CR Rel-16 36.331 16.0.0 4286 - A NR\_newRAT-Core

[5] [R2-2003701](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2003701.zip) Correction to inter-RAT SFTD measurements Huawei, HiSilicon CR Rel-15 38.331 15.9.0 1578 - F NR\_newRAT-Core

[6] [R2-2003702](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2003702.zip) Correction to inter-RAT SFTD measurements Huawei, HiSilicon CR Rel-16 38.331 16.0.0 1579 - A NR\_newRAT-Core