3GPP TSG-RAN WG2 Meeting #113bis Electronic R2-210xxxx

Online, 12 April – 20 April 2021

**Agenda item: 6.1.2**

**Source: Xiaomi (Rapporteur)**

**Title: Offline 014 on Stage 2 Corrections**

**WID/SID: NR\_newRAT-Core - Release 16**

**Document for: Discussion and Decision**

# 1 Introduction

This document is the report of the following email discussion:

* [AT113bis-e][014][NR16] Stage-2 (Xiaomi)

 Scope: Treat R2-2102609, R2-2103640, R2-2104218, R2-2104219, R2-2103048, R2-2103880, R2-2104172, R2-2104208, R2-2104209, R2-2104252, R2-2103557, R2-2104015

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

 Intended outcome: Report and Agreed-in-principle CRs, Approved LS out if applicable

 Deadline: Schedule A

**Schedule A** (a schedule for main session for many offline dicussion):

A first round with **Deadline for comments Wednesday April 14 1000 UTC** to settle scope what is agreeable etc (phase 1)

A pre-final round with **Deadline for any functional and/or scope comments Monday April 19 1800 UTC.** At this point all non-agreeable parts shall be removed/excluded. (phase 2)

A final round (last 24h) for checking and smaller simplification / removal comments only including agreeable parts, with Deadline **EOM** (at this point all outcome documents need to be available in inbox with tdoc numbers).

Additional check-points etc if needed are defined by the Rapporteur. Offline discussion rapporteur must notify chairman / session chair if on-line comeback discussion is needed, if discussion doesn’t converge etc.

# 2 RAN1 modification on TRP description

The CR [R2-2103640](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113bis-e%5CDocs%5CR2-2103640.zip) on TRP description is to capture with the TRP description modification as suggested by the RAN1 LS [R2-2102609](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113bis-e%5CDocs%5CR2-2102609.zip).

**Question 1**: Do you agree on the CR [R2-2103640](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113bis-e%5CDocs%5CR2-2103640.zip)?

Rapporteur’s Note: Company who does not agree or partially agrees with the CR can provide the suggested changes in the “Technical Arguments & Possible Changes” column.

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| Answers to Question 1 |
| Company | Yes/No | Technical Arguments & Possible Changes |
| Lenovo | Yes but | What about RAN1’s suggestion to make the Multiple Transmit/Receive Point Operation a subclause of “5 Physical layer” instead of a subclause of “6? |
| OPPO | Yes |  |
| Nokia (rapporteur) | Yes | To Lenovo's question: The RAN1 suggestion doesn't change much so we think that's not the most essential part. This way we also don't need to void any sections, keeping the specification cleaner. |
| Qualcomm Incorporated | Yes |  |
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**Summary 1**: TBD.

**Proposal 1**: TBD.

# 3 TRP definitions for MIMO and positioning

The CRs on TRP definitions for MIMO and positioning were submitted in [R2-2104218](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113bis-e%5CDocs%5CR2-2104218.zip) (for 38.300) and [R2-2104219](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113bis-e%5CDocs%5CR2-2104219.zip) (for 38.331). The CRs argue that there are two TRP definitions, i.e. one for the co-located antennas for the positioning purpose as provided in 37.355 and one for either co-located or non-collocated antennas for MIMO as provided in 38.300. Some clarifications should be given on differentiating the two different TRP definitions. The definition of TRP in 37.355 is quoted as follows:

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| 37.355:**Transmission Point (TP):** A set of geographically co-located transmit antennas (e.g. antenna array (with one or more antenna elements)) for one cell, part of one cell or one PRS-only TP. Transmission Points can include base station (eNodeB) antennas, remote radio heads, a remote antenna of a base station, an antenna of a PRS-only TP, etc. One cell can be formed by one or multiple transmission points. For a homogeneous deployment, each transmission point may correspond to one cell. |

The 38.300 CR [R2-2104218](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113bis-e%5CDocs%5CR2-2104218.zip) argues that the TRP definition in 38.300 should be clearly defined as for either co-located or non-collocated antennas.

**Question 2A**: Do you agree with the intention of the CR?

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| Answers to Question 2A |
| Company | Yes/No | Technical Arguments |
| Lenovo | Yes but | We should align the definition of TRP in 37.355/38.305 and 38.300 as well. Otherwise, it looks bit odd why the definitions are different between the specs.TRP definition in 37.355 and 38.305:*Transmission-Reception Point (TRP): A set of geographically co-located antennas (e.g. antenna array (with one or more antenna elements)) supporting TP and/or RP functionality.*TRP definition in 38.300:*Transmit/Receive Point: Part of the gNB transmitting and receiving radio signals to/from UE according to physical layer properties and parameters inherent to that element.* |
| OPPO | Yes | Proponents |
| Nokia (rapporteur) | No | This was already discussed when the multi-TRP section was created: We have not even defined what co-located or non-collocated means, so using those is not is helpful. Furthermore NOT having the monikers there automatically means both cases are allowed (if network can do those). We also do not mention antennas since that was also controversial, and the TRP acronym is different to ensure it's understood to be different from the 37.355. And this was all discussed already at the time the original Stage-2 description was created!Finally, if we start doing this, there could be lot of other similar "small clarifications" that do not add much of value to Stage-2 but make it longer. We don't see anything wrong with the existing definition.  |
| Qualcomm Incorporated | Yes |  |
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**Summary 2A**: TBD.

**Proposal 2A**: TBD.

**Question 2B**: If you agree with the intention, are you happy with the wording or would you like to enhance it?

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| Answers to Question 2B |
| Company | Yes/No | Technical Arguments & Possible Changes |
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**Summary 2B**: TBD.

**Proposal 2B**: TBD.

The 38.331 CR [R2-2104219](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113bis-e%5CDocs%5CR2-2104219.zip) argues that the term of TRP (or mult-TRP) is used in several different places. The TRP description used in the field ***dl-PRS-ID*** and ***dl-PRS-ResourceId*** should be used only for the co-located antenna for the positioning purpose as defined in 37.355, and the TRP description used in other places should be for either co-located or non-collocated antenna as defined in 38.300.

**Question 2C**: Do you agree with the intention of the CR?

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| Answers to Question 2C |
| Company | Yes/No | Technical Arguments |
| Lenovo | Partly | * The 1st change is not needed as the TRP definition is not that critical to be added in general requirements and instead, can be clarified if needed in the concerned field description.
* The 2nd change is ok.
 |
| OPPO | Yes | Proponent |
| Nokia, Nokia Shanghai Bell | Partly | We are fine to clarify the dl-PRS-ID field description but not the procedural part: We NEVER add such statements to RRC procedural text and it doesn't seem needed here, either. So the first change is not agreeable to us. |
| Qualcomm Incorporated | Yes, but | We think the reference to TR should be avoided and a TS should be used instead. |
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**Summary 2C**: TBD.

**Proposal 2C**: TBD.

**Question 2D**: If you agree with the intention, are you happy with the wording or would you like to enhance it?

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| Answers to Question 2D |
| Company | Yes/No | Technical Arguments & Possible Changes |
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**Summary 2D**: TBD.

**Proposal 2D**: TBD.

# 3 SRVCC

A CR on the handover with SRVCC operation to UTRAN was submitted in [R2-2103048](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113bis-e%5CDocs%5CR2-2103048.zip). The CR argues that the interface for handover to 3G has size limitation up to 2560 octets, which was captured in 36.300 for E-UTRA to UTRAN SRVCC. Then the corresponding Note missing in 38.300 should be added.

**Question 3A**: Do you agree with the intention of the CR?

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| Answers to Question 2A |
| Company | Yes/No | Technical Arguments |
| Lenovo | Yes but | The proposed note looks out of context as the size limit is related to the interfaces involved in the handover. So some further improvements are needed. |
| OPPO | Yes | We are ok on the clarification added by Lenovo below which is clearer than the proposed CR. |
| Nokia (rapporteur) | Yes | We have indicated co-signing of the CR offline but this has not been captured, so would like to revise CR so that the co-signing is added.  |
| Qualcomm Incorporated | Yes |  |
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**Summary 3A**: TBD.

**Proposal 3A**: TBD.

**Question 3B**: If you agree with the intention, are you happy with the wording or would you like to enhance it?

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| Answers to Question 2B |
| Company | Yes/No | Technical Arguments & Possible Changes |
| Lenovo |  | The proposed note should be moved up to the bullet point below. Furthermore, a further subbullet point highlighted in color should be added:*The source NR node initiates the handover preparation only for the ongoing IMS voice and provides the indication to AMF that the handover is towards UTRAN together with the target UTRAN Node ID. The source NR node also provides an indication to the target UTRAN that the incoming handover originates from 5G. The SRVCC proceeds as specified in TS 23.216 [34];** The source NR node shall ensure that the size of the Source to Target Transparent Container does not exceed the limits that can be handled by interfaces involved in the handover.

NOTE: For SRVCC handover, the size limit is 2560 octets (see AN-APDU in TS 29.002 [44]). |
| Nokia |  | Regarding Lenovo’s suggestion, for consistency with the rest of the subclause (where things can also go wrong if the network does not behave as it should), we would prefer just stating that “the source NR ensures that the size…” |
| Qualcomm Incorporated |  | The proposed text is unclear what the size limitation is for. |
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**Summary 3B**: TBD.

**Proposal 3B**: TBD.

# 4 NR-U

A CR on the NR-U deployment scenario was submitted in [R2-2103880](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113bis-e%5CDocs%5CR2-2103880.zip). The CR argues that the missing deployment scenario of carrier aggregation with NR in licensed spectrum as PSCell and NR in shared spectrum as SCell should be added in stage-2.

**Question 4A**: Do you agree with the intention of the CRs?

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| Answers to Question 3A |
| Company | Yes/No | Technical Arguments |
| OPPO | No | We normally do not specific DC operation in 38.300, instead it’s supposed to be captured in TS 37.340. |
| Nokia (rapporteur) | Maybe | We are fine with the intent but this was not checked with specification rapporteur beforehand. |
| Qualcomm Incorporated | Yes |  |
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**Summary 4A**: TBD.

**Proposal 4A**: TBD.

**Question 4B**: If you agree with the intention, are you happy with the wording or would you like to enhance it?

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| Answers to Question 3B |
| Company | Yes/No | Possible Changes |
| Nokia (rapporteur) | No | The coversheet should be improved and such minor changes could be combined into one general CR. |
| Qualcomm Incorporated | Yes |  |
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**Summary 4B**: TBD.

**Proposal 4B**: TBD.

# 5 IAB MT in SA mode

A CR on IAB MT in SA mode was submitted in [R2-2101478](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113-e/Docs/R2-2101478.zip). The CR argues that the DRB establishment for IAB MT in SA mode is optional, and should be reflected in QoS description section of stage-2.

**Question 5A**: Do you agree with the intention of the CRs?

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| Answers to Question 4A |
| Company | Yes/No | Technical Arguments |
| Nokia (rapporteur) | Yes |  |
| Qualcomm Incorporated | Yes |  |
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**Summary 5A**: TBD.

**Proposal 5A**: TBD.

**Question 5B**: If you agree with the intention, are you happy with the wording or would you like to enhance it?

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| Answers to Question 4B |
| Company | Yes/No | Technical Arguments & Possible Changes |
| Qualcomm Incorporated | Yes |  |
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**Summary 5B**: TBD.

**Proposal 5B**: TBD.

# 6 2-step release with redirect without anchor change

Iin the past two RAN2 meeting for 2-step release with redirection, RAN2 made the following agreements:

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| * *RAN2#112e Agreement:*
	+ *Will support release with redirection in response to a ResumeRequest for both with/without anchor change cases.*
	+ *For anchor change scenario, the current gNB is responsible for determining the redirection.*
* *RAN2#113e Agreement:*
	+ *Confirm the previous agreement to support the release with redirection in response to a ResumeRequest for both with/without anchor change cases.*
	+ *R2 assumes that the inter-node signaling and procedure impact can be up to NW implementation or left to RAN3 discussion.*
 |

The corresponding CRs capturing the above agreements are agreed in [R2-2102383](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113-e%5CDocs%5CR2-2102383.zip), [R2-2102384](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113-e%5CDocs%5CR2-2102384.zip) and [R2-2102385](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113-e%5CDocs%5CR2-2102385.zip). The tdoc [R2-2104208](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113bis-e%5CDocs%5CR2-2104208.zip) argues that in RNAU without anchor change procedure, the dedicated reselection priority in cellReselectionPriorities and the deprioritisation configuration in deprioritisationReq are configured by the anchor gNB and provided to UE via an encapsulated RRCRelease message. Thus the 2-step release with redirection without anchor change case can reuse the same procedure. The signalling procedures are as follows:



Figure 1: RNAU procedure without UE context relocation

**Question 6A**: Do you agree with the intention of the following proposal?

For the release with redirection in response to a ResumeRequest with anchor change case:

* the anchor gNB is responsible for determining the redirection configuration;
* the redirection configuration will be transmitted from the anchor gNB to the serving gNB in an encapsulated RRCRelease message in RETRIEVE UE CONTEXT FAILURE message and forwarded from the serving gNB to UE afterwards.

Rapporteur’s Note: Company who has concerns on the detailed wording of the proposal can provide the suggested changes in the “Technical Arguments & Possible Changes” column.

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| Answers to Question 5A |
| Company | Yes/No | Technical Arguments & Possible Changes |
| OPPO | Yes | We tend to share the similar view with the CR proponent, i.e., no motivation to handle redirection information other than decided by anchor gNB. |
| Nokia, Nokia Shanghai Bell | No | We are wondering what is the difference to existing Figure 9.2.2.5-2 - that seems to be same case as the one in the CR? |
| Qualcomm Incorporated | Yes |  |
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**Summary 6A**: TBD.

**Proposal 6A**: TBD.

The CR capturing the proposal provided in Question 6A was submitted in [R2-2104209](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113bis-e%5CDocs%5CR2-2104209.zip).

**Question 6B**: If you agree with the intention of the proposal provided in Question 6A, are you happy with the stage-2 CR provided in [R2-2104209](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113bis-e%5CDocs%5CR2-2104209.zip) or would you like to enhance it?

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| Answers to Question 6B |
| Company | Yes/No | Technical Arguments & Possible Changes |
| Qualcomm Incorporated | Yes |  |
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**Summary 6B**: TBD.

**Proposal 6B**: TBD.

The LS to RAN3 capturing the proposal provided in Question 6A was submitted in [R2-2104252](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113bis-e%5CDocs%5CR2-2104252.zip).

**Question 6C**: Do you think the LS to inform RAN3 of the above RAN2 agreement on Question 6A is needed?

Rapporteur’s Note: Company who agrees on sending a LS to RAN3 can provide the suggested changes in the “Technical Arguments & Possible Changes” column.

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| Answers to Question 6C |
| Company | Yes/No | Technical Arguments & Possible Changes |
| Nokia, Nokia Shanghai Bell | No |  see response to 6A |
| Qualcomm Incorporated | Yes |  |
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**Summary 6C**: TBD.

**Proposal 6C**: TBD.

# 7 IP packet for IAB F1-C

A CR on IP packet for IAB F1-C was submitted in [R2-2103557](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113bis-e%5CDocs%5CR2-2103557.zip). The CR argues that including the IP packets (without SCTP) to protect the traffic on the F1-C interface (e.g. IPSec and IKEv2 IP packets) as agreed in [R3-207068](http://3gpp.org/ftp/tsg_ran/WG3_Iu/TSGR3_110-e/Docs/R3-207068.zip) in RAN3#110-e is not reflected in the current TS37.340.

**Question 7A**: Do you agree with the intention of the CRs?

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| Answers to Question 4A |
| Company | Yes/No | Technical Arguments |
| Nokia, Nokia Shanghai Bell | Yes | Proponent. Currently, in RAN2 specifications there is no support for the IP packets used to protect traffic on the F1-C |
| Qualcomm Incorporated | Yes |  |
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**Summary 7A**: TBD.

**Proposal 7A**: TBD.

**Question 7B**: If you agree with the intention, are you happy with the wording or would you like to enhance it?

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| Answers to Question 4B |
| Company | Yes/No | Technical Arguments & Possible Changes |
| Nokia, Nokia Shanghai Bell | Yes | Proponent. Alternative way is to list explicitly the IP packets protecting the traffic on the F1-C interface (e.g. IPSec and IKEv2 IP packets) |
| Qualcomm Incorporated | Yes |  |
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**Summary 7B**: TBD.

**Proposal 7B**: TBD.

# 8 Miscellaneous corrections for 37.340

A CR on some miscellaneous corrections for 37.340 was submitted in [R2-2104015](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113bis-e%5CDocs%5CR2-2104015.zip). The CR is to:

1. Add missing Rel-16 features of two-step RACH and intra-UE multiplexing.
2. Clarify that SCG failure information procedure can be supported for both SN change failure and SN addition failure cases.
3. Add some editorial changes.

**Question 8**: Do you agree on the CR [R2-2104015](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_113bis-e%5CDocs%5CR2-2104015.zip)?

Rapporteur’s Note: Company who does not agree or partially agrees with the CR can provide the suggested changes in the “Technical Arguments & Possible Changes” column.

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| Answers to Question 8 |
| Company | Yes/No | Technical Arguments & Possible Changes |
| OPPO | Yes but | There is typo (an extra space after MN) on the following change:In MR-DC, the UE may be configured with LCH based prioritization on MN , if the MN is a gNB (i.e. for NE-DC and NR-DC) and on SN, if the SN is a gNB (i.e. for EN-DC, NGEN-DC and NR-DC). |
| Nokia, Nokia Shanghai Bell | Partly |  Some comments per proposed change: * C1: OK but the BH definition is already in 38.300, so not needed.
* C2/C3: OK
* C4: Intent is OK but there is an error in RRC message name (should be *MCGFailureInformation* if we refer to the exact name - the same error is already there in the existing text.)
* C5: Not needed as the text preamble already makes it clear this is an example so need not be complete in all details.
 |
| Qualcomm Incorporated | Yes, but | Not sure if the "LCH based prioritization" (the last change in section 6.1) is sufficiently clear if read in one year from now. |
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**Summary 8**: TBD.

**Proposal 8**: TBD.

# 9 Conclusion

TBD

# Annex – Contact Points

Respondents to the email discussion are kindly asked to fill in the following table.

|  |  |  |
| --- | --- | --- |
| Company | Name | Email Address |
| Xiaomi (Rapporteur) | Yumin Wu | wuyumin@xiaomi.com |
| Lenovo | Hyung-Nam Choi | hchoi5@lenovo.com |
| Nokia (includes also 38.300 rapporteur where indicated) | Tero Henttonen | tero.henttonen@nokia.com |
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