3GPP TSG-RAN WG2 Meeting #109bis\_e R2-20xxxxx

Electronic meeting, 20th April to 24th April 2020

Agenda Item: x.x.x

Source: Ericsson (rapporteur)

Title: RRC Open issues for IAB

Document for: Discussion, Decision

# Introduction

This document captures the following email discussion:

* [Post109e#35][IAB] RRC Open Issues (Ericsson)

Scope: Progress RRC Open Issues. See also Open Issue list distributed by WI rapporteur. Removal of Editor’s Notes.

Intended outcome: Solutions, agreeable CR//TP.

 Intended outcome 2: Open Issues list with RRC impact (April 1)

# Known Open issues

Below the remaining editor’s notes in the endorsed IAB RRC CRs [1][2] are discussed. There were no editor’s notes in 36.331, so the discussion is only about 38.331.

## Issue #1

5.3.5.X BAP configuration

Editor’s note: It is FFS if other information should be included in the BAP configuration.

**Question 1: Companies are invited to comment on what additional information should be included in the BAP configuration**

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| Company | Suggested resolution/company comments |
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Issue #2

5.3.8.3 Reception of the *RRCRelease* by the UE

Editor’s note: It is FFS if IAB node supports INACTIVE mode and if so, if there is a need for the BAP entity to be released/suspended on transition to INACTIVE mode.

Though some IAB-MTs may support this feature while others might not, the rapporteur does not think there is a need to capture anything in the spec regarding the BAP entity, as there is no BAP suspend procedure to be applied (as compared to the PDCP case, where the sequence numbers have to be reset and buffered data has to be discarded or delivered).

**Question 2: Do companies agree with the proposed way forward that no specific handling of the BAP entity is required during the transition of an IAB-MT to INACTIVE state?**

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| Company | Comments |
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Issue #3

5.3.10.3 Detection of radio link failure

Editor’s note: FFS if the check for SRB2 activation and the setup of one DRB is applicable to IAB nodes.

This editor’s note also affects the following clauses where SRB2 activation/DRB setup are referenced.

5.3.1.1 RRC connection control

*A configuration with SRB2 without DRB or with DRB without SRB2 is not supported (i.e., SRB2 and at least one DRB must be configured in the same RRC Reconfiguration message, and it is not allowed to release all the DRBs without releasing the RRC Connection).*

5.3.5 RRC reconfiguration

*the reconfigurationWithSync is included in masterCellGroup only when AS security has been activated, and SRB2 with at least one DRB are setup and not suspended.*

5.3.7 RRC connection re-establishment

*If AS security has been activated, but SRB2 and at least one DRB are not setup, the UE does not initiate the procedure but instead moves to RRC\_IDLE directly, with release cause 'RRC connection failure'.*

5.3.8 RRC connection release

*The purpose of this procedure is:*

*- to release the RRC connection, which includes the release of the established radio bearers as well as all radio resources; or*

*- to suspend the RRC connection only if SRB2 and at least one DRB are setup, which includes the suspension of the established radio bearers.*

5.4.3 Mobility from NR

 *the procedure is initiated only when AS security has been activated, and SRB2 with at least one DRB are setup and not suspended.*

The rapporteur’s understanding is that there were diverging opinions during RAN2#109e whether an RRC connection must be setup/configured with at least one DRB or not. Some companies expressed the opinion that they wanted to configure DRBs. Some other companies expressed the opinion that they did not want to configure DRBs. Yet, RAN3 agreed that configuring a DRBs is optional and may only be needed for OAM purposes. Thus, both types of configurations shall be allowed.

The rapporteur suggests that the aforementioned clauses of the RRC spec are updated to allow an RRC connection with/without a DRB.

**Question 3: Do companies agree with the proposed way forward for allowing an RRC connection without configuring a DRB is valid?**

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| Company | Suggested resolution/company comments |
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Issue #4

6.3.2 Radio resource control information elements

*PDCCH-ServingCellConfig* information element

-- ASN1START

-- TAG-PDCCH-SERVINGCELLCONFIG-START

PDCCH-ServingCellConfig ::= SEQUENCE {

 slotFormatIndicator SetupRelease { SlotFormatIndicator } OPTIONAL, -- Need M

 ...,

[[

 availabilityIndicator-r16 SetupRelease {AvailabilityIndicator-r16} OPTIONAL, -- Need M

 commonSearchSpaceListIAB-r16 SEQUENCE (SIZE(1..maxNrofFFS)) OF SearchSpace OPTIONAL -- Need FFS (R)

 ]]

}

-- TAG-PDCCH-SERVINGCELLCONFIG-STOP

-- ASN1STOP

The length of the list for *commonSearchSpaceListIAB-r16* was not decided.

The rapporteur suggests having a list of 4 common search spaces similar as what it is for UEs.

**Question 4: Do companies agree with the proposed way forward for the *commonSearchSpaceListIAB-r16* list to have up to 4 elements?**

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| Company | company comments |
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Issue #5

6.4 RRC multiplicity and type constraint values

*maxLC-ID-Iab-r16 INTEGER ::= FFS*

RAN3 has agreed to limit the maximum number of logical channels to 16,384 (2^14). RAN2 could still use the full range of IDs 65,536 even if it can only address to 16,384 logical channels. It is unclear what is the purpose or use of having a larger range of IDs than the number of logical channels which can be configured. Note that this also affects the MAC.

The rapporteur proposes to set the maximum value to 16,384, aligning to what RAN3 has decided. In the MAC spec, the values from 16385 to 65,536 can be left as reserved.

*maxLC-ID-Iab-r16 INTEGER ::= 16384*

**Question 5: Do companies agree with limiting the maximum value for the BH LCIDs to be 16384 to align with RAN3 agreements?**

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| Company | Suggested resolution/company comments |
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# Other issues

Besides the issues discussed in previous sections, companies are invited to list other open issues related to the endorsed IAB RRC CRs [1][2].

**Question 6: Any other open issues related to the IAB RRC CRs?**

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| **Company**  | **Comments** |
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# Summary

# References

1. R2-2002357, CR for 38.331 for IAB, Ericsson (Rapporteur), RAN2#109-e, Electronic Meeting, Feb 24th – March 6th 2020
2. R2-2002358, CR for 36.331 for IAB, Ericsson (Rapporteur), RAN2#109-e, Electronic Meeting, Feb 24th – March 6th 2020