3GPP TSG-RAN WG1 Meeting #101-e R1-200xxxx

e-Meeting, May 25th – June 5th, 2020

**Agenda Item:** **7.2.3.3**

**Source: Moderator (AT&T)**

**Title: Summary of [101-e-NR-IAB-04]: Email discussion on potential 38.213 and 38.331 editorial issues for IAB**

**Document for:** **Discussion/Approval**

# Introduction

This contribution provides a summary of [101-e-NR-IAB-04]: Email discussion on potential 38.213 and 38.331 editorial issues for IAB.

# Alignment of 38.331 and 38.213 parameters related to DCI Format 2\_5

**Source**: R1-2003732, R1-2004133, R1-2004582

**Background:** During RAN1#100bis-e the following agreements were reached:

Agreements: Confirm that from a RAN1 perspective all Rel-15 UE common search space types are also applicable to Rel-16 IAB nodes. Signaling details are left to RAN2.

Agreements: Confirm DCI Format 2\_0 and DCI Format 2\_5 can be monitored by an IAB-MT in at least a common search space. The same number of aggregation levels and candidates can be separately configured for both DCI Format 2\_0 and DCI Format 2\_5.

Agreements: DCI Format 2\_0 is not monitored by an IAB-MT in a UE(MT)-specific search space. DCI Format 2\_5 can be additionally monitored by an IAB-MT in a UE(MT)-specific search space. Signaling details (e.g. whether the configuration is in the existing UE-specific search space configuration or a new MT-specific search space configuration is left up to RAN2).

Based on these agreements there is a need to align RAN1 specifications with the RRC configurations for an IAB-MT related to DCI Format 2\_0 and 2\_5. Specifically for RAN1#101-e two issues were identified as potential editorial corrections to be handled by the 38.213 and 38.331 editors.

## Issue 1: Add reference SCSs for soft resource availability indication configuration in the RRC IE AvailabilityCombinationPerCell (R1-2003732)

Current, the reference SCS for a DCI Format 2\_5 availability indication can be derived from the IAB-DU resource configuration. However, when DCI Format 2\_5 is sent in the common search space instead of the UE(MT)-specific search space, if multiple IAB nodes are the intended recipients of the availability indication and some of the IAB-DUs have different reference SCS configurations, the time duration applicability of the availability indication will vary across the IAB nodes, which may not be the intended behavior.

One solution proposed in R1-2003732 is to align the DCI Format 2\_5 configuration with DCI Format 2\_0 and add reference SCSs for soft resource availability indication configuration in the RRC IE AvailabilityCombinationPerCell.

* For unpaired spectrum operation, a reference SCS configuration µ\_AI is provided by subcarrierSpacing-AI and, when a supplementary UL carrier is configured for the serving cell, a reference SCS configuration µ\_(AI,SUL) is provided by subcarrierSpacing2-AI for the supplementary UL carrier.
* For paired spectrum operation, a reference SCS configuration µ\_(AI,DL) for a DL BWP is provided by subcarrierSpacing-AI and a reference SCS configuration µ\_(AI,UL) is provided for an UL BWP by subcarrierSpacing2-AI.

**Discussion:**

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| **Company** | **Do you agree that the monitoring DCI Format 2\_5 in a common search space results in the issue described above? If so, is the solution proposed in R1-2003732 acceptable?** | **Comments** |
| ZTE, Sanechips | No. The concerned issue can be avoided. | As mentioned in our response in preparation phase, the table entry (set of slots holding availability indications) pointed by the index contained in DCI 2\_5 can be configured and interpreted on a per IAB-node basis. The combination of individual ref-SCS and individual table entry interpretation could reach the same time duration applicability of availability indication. This is even the mechanism supported by DCI 2\_0 as well.  The solution in the current spec does not need to change anything in 38.213 and 38.331. But the proposed solution needs to modify both specs. |

## Issue 2: positionInDCI-AI/dci-PayloadSize-AI used for USS (R1-2004133)

Based on RAN1#100bis-e agreements, DCI Format 2\_5 can be monitored in a CSS and additionally in a USS by an IAB-MT. It is not clear whether DCI Format 2\_5 can be monitored simultaneously by an IAB-MT in a CSS and USS. In case of simultaneous monitoring, R1-2004133 proposes that *positionInDCI-AI* and *dci-PayloadSize-AI* which may be based on the number of availability combinations configured should be separately configured for the CSS and USS:

In addition to dci-PayloadSize-AI and positionInDCI-AI used for CSS, introduce new RRC parameters dci-PayloadSize-AI-MSS and positionInDCI-AI-MSS used for the UE(MT)-specific search space.

A screenshot of a cell phone

Description automatically generated

**Figure 1**. **Location of availability indicator field for an IAB-node DU-cell in DCI format 2\_5 (R1-2004133)**

**Discussion:**

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| **Company** | **Do you agree that monitoring DCI Format 2\_5 in a CSS and USS is(should be) supported? If so, is the solution proposed in R1-2004133 necessary?** | **Comments** |
| ZTE, Sanechips | No | We do not see strong motivation to support simultaneous monitoring of DCI 2\_5 in both CSS and USS.  It seems RAN1 needs to Inform RAN2 of such, if agreed, by either an LS or a note in higher layer signaling spreadsheet. |

# Summary

TBD