**3GPP TSG RAN WG1 #110bis-e R1-220xxxx**

**e-Meeting, October 10th – 19th, 2022**

**Source: Moderator (Intel Corporation)**

**Title: Moderator Summary for Rel. 17 NR FeMIMO –**

**Maintenance on HST-SFN (Round 1)**

**Agenda item: 8.1**

**Document for: Discussion and Decision**

# Introduction

A moderator summary of maintenance issues related to Rel-17 FeMIMO HST-SFN based on contributions submitted to RAN1#110bis-e is provided. Based on the discussions in Round 0 which is summarized in R1-2210401, Issues 2,3 and 4 were identified for further discussion and the following email thread was assigned to discuss the issues in this summary:

[110bis-e-R17-MIMO-08] Email discussion on remaining maintenance issues on HST-SFN by October 17 – Avik (Inlte)

* Issue 2: Default QCL Assumption (R1-2208760)
* For alignment CRs: SFN Dynamic Switching Terminology in 38.214 (R1-2210076) and Default UL beam setup for SFN PDCCH (R1-2210077)

The three issues are provided below with FL recommendations for Round 1 discussion.

# Maintenance Issues

* 1. Issue 2: Default QCL Assumption

One company, ZTE, has provided a draft CR on default QCL assumptions for prioritizing PDCCH reception when associated CORESET overlaps with SFN-PDSCH [3] regardless of whether one or two TCI states are configured for CORESET. The summary of proposed changes is provided below.

Table 2: Summary of Issue 2

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| **Issue (summary of CR proposal)** | **Company inputs (if any)** |
| Draft CR for TS 38.214 Section 5.1.5 provided in [3]:**Summary of change**: In the case of SFN based transmission is configured for PDCCH and not configured for PDSCH, the reception of PDCCH should have higher priority, regardless of ‘with single active TCI state’ or not. Then, one editorial typo is corrected. | * **Discuss (14):** Samsung, Nokia/NSB, Spreadtrum, vivo, LG, Lenovo, OPPO, ZTE, Ericsson, Google, QC, Apple, CATT
* **Not Discuss (1):** DOCOMO
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* + 1. Round 1 Discussion

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| **Company Name** | **Company inputs (if any)** |
| Mod | This issue needs further discussion. Companies are encouraged to provide their views on the CR in [3] and especially, respond to the following comment from NTT DOCOMO in Round 0:

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| Not essential. We made an agreement in RAN1#110, and “with single active TCI state” was a compromised solution from Qualcomm. To our understanding, the reason of “with single active TCI state” is that in case of two active TCI state on the overlapped CORESET, “prioritize the reception of PDCCH with two active TCI states” is unclear on which condition the overlapped PDSCH with one active TCI state can be received. The proposed CR does not solve this issue. |

 Based on first round of comments, FL proposal for Issue 2 will be provided. |
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* 1. Issue 3: SFN Dynamic Switching Terminology in 38.214

A joint draft CR from Ericsson and Qualcomm has been submitted to align terminology of TS 38.214 with UE capability parameters in TS 38.306 [4]. The summary of proposed changes is provided below.

Table 3: Summary of Issue 3

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| **Issue (summary of CR proposal)** | **Company inputs (if any)** |
| Draft CR for TS 38.214 Section 5.1.5 provided in [4]:**Summary of change**: Change 1: Replace undefined terminology and acronym “SFN PDSCH and non-SFN PDSCH” with correct UE capability parameters from 38.306.Change 2: Replace undefined UE capability “[dynamicSFN]” with correct UE capability parameters from 38.306.Change 3: Add UE capability parameter sfn-DefaultDL-BeamSetup-r17 before “DCI scheduling without TCI field” to clarify the related UE capability. | * **Discuss (15):** Samsung, Nokia/NSB, Spreadtrum, vivo, LG, Lenovo, OPPO, ZTE, Ericsson, Google, QC, Apple, DOCOMO, CATT
* **Not Discuss:**
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* + 1. Round 1 Discussion

**Offline Proposal 3:**

The text proposal in R1-2210076 is accepted for alignment CR for TS 38.214 Section 5.1.5

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| **Company Name** | **Company inputs (if any)** |
| Mod | Based on comments from Round 0, Offline proposal 3 is provided for Issue 3. Companies are requested to provide their comments on the proposal |
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* 1. Issue 4: Default UL beam setup for SFN PDCCH

One company, Ericsson, has submitted a draft CR on default UL beam setup for SFN-PDCCH in [5]. The summary of changes is provided in Table 4.

Table 4: Summary of Issue 4

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| **Issue (summary of CR proposal)** | **Company inputs (if any)** |
| Draft CR for TS 38.214 Sections 6.1 and 6.2.1 provided in [5]:**Summary of change**: Change 1: Replace undefined UE capability “[*DefaultBeamPL-ForPUSCH-SfnPdcch*]” with related UE capability parameter from 38.306.Change 2: Replace undefined UE capability “[*DefaultBeamPL-ForSRS-SfnPdcch*]” with correct UE capability parameter from 38.306. | * **Discuss (15):** Samsung, Nokia/NSB, Spreadtrum, vivo, LG, Lenovo, OPPO, ZTE, Ericsson, Google, QC, Apple, DOCOMO, CATT
* **Not Discuss:**
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* + 1. Round 1 Discussion

**Offline Proposal 4:**

The text proposal in R1-2210077 is accepted for alignment CR for TS 38.214 Sections 6.1 and 6.2.1

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| **Company Name** | **Company inputs (if any)** |
| Mod | Based on comments from Round 0, Offline proposal 4 is provided for Issue 4. Companies are requested to provide their comments on the proposal. |
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# References

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|  | R1-2208890 | Draft CR on Type0/0A/2 PDCCH CSS for HST-SFN | LG Electronics |
|  | R1-2208755 | Draft CR on not activating two TCI states for CORESET#0 associated with SS#0 for Type 0/0A/2 CSS to TS38.213 | Lenovo |
|  | R1-2208760 | Draft CR on default QCL assumption in HST-SFN in TS 38.214 | ZTE |
|  | R1-2210076 | Draft CR on SFN dynamic switching | Ericsson, Qualcomm |
|  | R1-2210077 | Draft CR on default UL beam setup for SFN PDCCH | Ericsson |