**3GPP TSG RAN WG1 #100b R1-2xxxxxx**

**e-Meeting, April 20th – 30th, 2020**

Agenda Item: 7.2.6.3

Source: Moderator (Apple)

Title: Draft TP on Email Thread [100b-e-NR-eMIMO-MB2-03]

Document for: Discussion/Decision

# Introduction

In this contribution, we provide draft TP for email thread [100b-e-NR-eMIMO-MB2-03].

# Text Proposal

## Alignment between 38.213 and 38.321

Reason for changes

In TS 38.321, one bit field is included in SCell BFR MAC CE, i.e., candidate beam availability indication (AC), to indicate whether is available or not for a corresponding failed SCell, which is different from PCell and PSCell BFR. However, current specification TS 38.213 missed such information.

Summary of changes

Align SCell BFR MAC CE description in TS 38.213 with TS 38.321. Add candidate beam availability indication information provided by the PHY layer.

Consequences if not approved

PHY layer may not provide candidate beam availability indication information to MAC layer.

### **TP 2.1 for 38.213**

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| < Start of text proposal on TS 38.213 v16.1.0 Section 6>  < Unchanged parts are omitted >  For the PCell or the PSCell, upon request from higher layers, the UE provides to higher layers the periodic CSI-RS configuration indexes and/or SS/PBCH block indexes from the set  and the corresponding L1-RSRP measurements that are larger than or equal to the Qin,LR threshold.  For the SCell, upon request from higher layers, the UE provides to higher layers whether there is at least one periodic CSI-RS configuration index and/or SS/PBCH block index from the set  with corresponding L1-RSRP measurements that are larger than or equal to the Qin,LR threshold, and the periodic CSI-RS configuration indexes and/or SS/PBCH block indexes from the set  and the corresponding L1-RSRP measurements that are larger than or equal to the Qin,LR threshold, if any. Otherwise, the UE provides to higher layers that no CSI-RS configuration indexes and/or SS/PBCH block indexes are found from the set , where corresponding L1-RSRP measurements are larger than or equal to the Qin,LR threshold.  < Unchanged parts are omitted >  A UE can be provided, by *schedulingRequestIDForBFR*, a configuration for PUCCH transmission with a link recovery request (LRR) as described in Clause 9.2.4. The UE can transmit in a first PUSCH one MAC CE providing index(es) for at least one corresponding SCell(s) with radio link quality worse than Qout,LR, candidate beam availability indication for corresponding SCell(s), and index(es) for a periodic CSI-RS configuration or for a SS/PBCH block provided by higher layers, as described in [11, TS 38.321], if any, for corresponding SCell.  < Unchanged parts are omitted >  < End of text proposal on TS 38.213 v16.1.0 Section 6> |

**Companies view and comments**

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| Company | Comments |
| MediaTek | Support |
| Nokia/NSB | Support in principle |
| Convida Wireless | Support in principle. The sentence “Otherwise, …” in the second paragraph can be refined.  Proposal:  “Otherwise, the UE provides to higher layers an indication that there is no CSI-RS configuration index~~es~~ ~~and/~~or SS/PBCH block index~~es~~ ~~are found from~~ in the set ~~, where~~with corresponding L1-RSRP measurement~~s~~ ~~are~~ larger than or equal to the Qin,LR threshold.” |
| ZTE | The change of “Otherwise, the UE provides to higher layers that no CSI-RS configuration indexes and/or SS/PBCH block indexes are found from the set , where corresponding L1-RSRP measurements are larger than or equal to the Qin,LR threshold. ” is redundant. The others are fine. |
| Sony | Support in principle. Agree with ZTE that the part “Otherwise, the UE provides to higher layers that no CSI-RS configuration indexes and/or SS/PBCH block indexes are found from the set , where corresponding L1-RSRP measurements are larger than or equal to the Qin,LR threshold. ” sounds like redundant, since the UE already indicates to higher layer whether there is such qualified RS or not.  In addition, for the 2nd paragraph, we first need to decide to specify either for each SCell or SCell(s). |
| OPPO | 1. Similar view as ZTE and Convida, The part of “Otherwise, the UE provides to higher layers that no CSI-RS configuration indexes and/or SS/PBCH block indexes are found from the set , where corresponding L1-RSRP measurements are larger than or equal to the Qin,LR threshold” is redundant. 2. Wording change suggestion: indication of presence of candidate beam ~~availability indication~~ for corresponding SCell(s), |
| LGE | Support. Further refinement from Convida or ZTE is also fine. |
| DOCOMO | For first paragraph, agree that the part “Otherwise, the UE provides to higher layers that no CSI-RS configuration indexes and/or SS/PBCH block indexes are found from the set , where corresponding L1-RSRP measurements are larger than or equal to the Qin,LR threshold. ” is redundant and can be deleted.  For second paragraph, wording change suggestion: if any, for corresponding SCell(s). |
| Ericsson | Support first change.  Agree with ZTE that “Otherwise, the UE provides to higher layers that no CSI-RS configuration indexes and/or SS/PBCH block indexes are found from the set , where corresponding L1-RSRP measurements are larger than or equal to the Qin,LR threshold” is redundant. |
| CATT | We think most of the changes are clear in RAN2 spec. However we are not against clarification in RAN1 spec if majority of companies are for it. And share other comment that the sentence “Otherwise …” seems redundant. |
| Qualcomm | Support in principle. “Otherwise, …” seems redundant. |
| vivo | For the following change, we prefer to refine as  “For the activated SCell, upon request from higher layers,……” |
| Huawei, HiSilicon | Support in principle, but “Otherwise, …” is redundant. |

## Editorial changes for abbreviation

Reason for changes

Abbreviation NDI is not defined in 38.213

Summary of changes

Clarify abbreviation NDI

Consequences if not approved

The indication of NDI in 38.213 is unclear.

### **TP 2.2 for 38.213**

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| For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in [1, TR 21.905].  <Unchanged part omitted>  GSCN Global synchronization channel number  HARQ-ACK Hybrid automatic repeat request acknowledgement  MCG Master cell group  MCS Modulation and coding scheme  NDI New data indicator  NE-DC E-UTRA NR dual connectivity with MCG using NR and SCG using E-UTRA  NR-DC NR NR dual connectivity  PBCH Physical broadcast channel  PCell Primary cell  <Unchanged part omitted> |

**Companies view and comments**

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| Company | Comments |
| MediaTek | Support |
| Nokia/NSB | Support |
| Convida Wireless | Support |
| ZTE | Support |
| Sony | Support |
| OPPO | Support |
| LGE | Support |
| DOCOMO | Support |
| Ericsson | Support |
| CATT | Support |
| vivo | ok |
| Huawei, HiSilicon | Support |

## BFD/CBD RS in activated SCell

Reason for changes

In TS38.213 section 6, for SCell BFR procedure, the UE assesses the radio link quality according to BFD RS, e.g. periodic CSI-RS resource or SSB. When beam failure is declared, the UE measures and determines the new beam according to candidate beam RS. It needs to be clarified that the BFD RS and candidate beam RS measurement behavior are for the activated SCell.

Summary of changes

Clarify BFD RS and CBD RS should be in PCell or PSCell or activated SCell

Consequences if not approved

It is unclear whether BFD RS and CBD RS could be in inactive SCell or not as well as relavant UE behavior for BFD/CBD RS in inactive SCells.

### **TP 2.3 for 38.213**

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| **TS38.214** 6 Link recovery procedures < Unchanged parts are omitted >  The physical layer in the UE assesses the radio link quality according to the set  of resource configurations against the threshold Qout,LR. For the set , the UE assesses the radio link quality on the PCell or the PSCell or the activated SCell(s) only according to periodic CSI-RS resource configurations, or SS/PBCH blocks on the PCell or the PSCell, that are quasi co-located, as described in [6, TS 38.214], with the DM-RS of PDCCH receptions monitored by the UE. The UE applies the Qin,LR threshold to the L1-RSRP measurement obtained from a SS/PBCH block. The UE applies the Qin,LR threshold to the L1-RSRP measurement obtained for a CSI-RS resource after scaling a respective CSI-RS reception power with a value provided by *powerControlOffsetSS*.  In non-DRX mode operation, the physical layer in the UE provides an indication to higher layers when the radio link quality for all corresponding resource configurations in the set  that the UE uses to assess the radio link quality is worse than the threshold Qout,LR. The physical layer informs the higher layers when the radio link quality on the PCell or the PSCell or the activated SCell(s) is worse than the threshold Qout,LR with a periodicity determined by the maximum between the shortest periodicity among the periodic CSI-RS configurations, and/or SS/PBCH blocks on the PCell or the PSCell, in the set  that the UE uses to assess the radio link quality and 2 msec. In DRX mode operation, the physical layer provides an indication to higher layers when the radio link quality is worse than the threshold Qout,LR with a periodicity determined as described in [10, TS 38.133].  Upon request from higher layers, the UE provides to higher layers the periodic CSI-RS configuration indexes and/or SS/PBCH block indexes from the set  on the PCell or the PScell or the activated SCell(s) and the corresponding L1-RSRP measurements that are larger than or equal to the Qin,LR threshold.  < Unchanged parts are omitted > |

**Companies view and comments**

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| Company | Comments |
| MediaTek | Not support. We think this is not necessary. |
| Nokia/NSB | Not support. Good for further clarification, but would not be necessary |
| Convida Wireless | Not necessary. The activation/deactivation of BFD/BFR on an SCell that is activated/deactivated/dormant can be described by RAN2 in 38.321 (e.g. section 5.9). |
| ZTE | We share the same views with MTK, Nokia and Convida Wireless. |
| Sony | Not support. Agree with Convida that it should be in RAN2’s Spec, if the status of SCell is to be mentioned. |
| OPPO | Seems not necessary |
| LGE | No strong view on changing the spec is necessary. But it is good for clarification as this is related to the LS with regard to dormant BWP. |
| DOCOMO | Not necessary. RAN2 spec. can describe the status of SCell (activated/deactivated/dormant) for BFD and BFR. |
| Ericsson | Not necessary |
| CATT | Not necessary. |
| vivo | We prefer to at least clarify as a conclusion if there is common understanding. |
| Huawei, HiSilicon | Similar view as LGE. |