**3GPP TSG-RAN WG1 Meeting #110bis-e, R1-22xxxxx**

**online, Oct 10 – 19, 2022**

**Agenda item: 8.2**

**Source: Qualcomm Incorporated**

**Title: Preparation phase email discussion for 8.2**

**Document for: Discussion and Decision**

# Introduction

The document summarizes the preparation phase email discussion for maintenance of Rel.17 WI on extending NR to 52.6 – 71 GHz band

# Summary of CRs submitted

## Initial access aspect

Submitted papers are summarized in [1]

The following issue is identified:

* IA-1: No CD-SSB frequency indication using NCD-SSB

Do you believe issue IA-1 should be discussed

|  |  |
| --- | --- |
| Company | View |
| Fujitsu | No. It is not an essential issue. |
| LG Electronics | As a proponent, we think IA-1 needs to be discussed. |
| Intel | Not critical. |
|  |  |

## PDCCH aspect

Submitted papers are summarized in [2]

The following issues are identified

* PDCCH-1: multi-slot PDCCH monitoring for for Group (2) SSs
* PDCCH-2: multi-slot PDCCH monitoring in CA or NR-DC scenarios
* PDCCH-3: PDCCH multi-slot monitoring restriction for DCI format 2\_1
* PDCCH-4: SSSG switching with multiple cells and different Xs

Please provide your view if these issues should be discussed

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Company | PDCCH-1 | PDCCH-2 | PDCCH-3 | PDCCH-4 |
| LG Electronics | NoFG24-4 and FG24-5 already cover those aspects. | Yes | NoAgree with Moderator’s initial assessment | Yes |
| Intel | yes | yes | yes | yes |
|  |  |  |  |  |

Additional comments, if any

|  |  |
| --- | --- |
| Company | View |
|  |  |

## PUCCH aspect

Submitted papers are summarized in [3]

The following issue is identified:

* PUCCH-1: RRC parameter name alignment. It is recommended to be handled in editor alignment CR for 38.213

Do you believe issue PUCCH-1 should be handled in editor alignment CR for 38.213

|  |  |
| --- | --- |
| Company | View |
| Fujitsu  | Yes |
| LG Electronics | Yes |
| Intel | Yes |
| vivo | OK to be handled as alignment CR for 38.213. |
|  |  |

## RS and timeline aspect

Submitted papers are summarized in [4]

The following issues are identified:

* RS-1: Frequency resource for CSI-RS for tracking
* RS-2: UE PUSCH preparation procedure time
* RS-3: RRC parameter to disable FD-OCC

Please provide your view if these issues should be discussed

|  |  |  |  |
| --- | --- | --- | --- |
| Company | RS-1 | RS-2 | RS-3 |
| Fujitsu | Yes | Yes | Yes |
| LG Electronics | Yes | Yes | Yes |
| Intel | Yes | Yes | Yes |
| vivo | Yes | Yes | Yes |
|  |  |  |  |

Additional comments, if any

|  |  |
| --- | --- |
| Company | View |
| Fujitsu | **RS-3:**It can be handled in editor alignment CR. |
| Intel | Agree with Fujitsu, RS-3 can be handled as part of alignment CR |
|  |  |

## Scheduling and HARQ aspect

Submitted papers are summarized in [1]

The following issues are identified:

* HARQ-1-1: Type-1 HARQ CB generation
* HARQ-1-2: Type-1 HARQ CB when time bundling is configured
* HARQ-2: Maximum number of entries in TDRA table for multi-PDSCH scheduling
* HARQ-3: Indication of 32 HARQ processes in CG-DFI and CG-UCI
* HARQ-4: ZP CSI-RS rate-matching
* HARQ-5: Validity of PDSCH scheduled by multi-PDSCH scheduling DCI with mTRP operation
* HARQ-6: RRC parameter to configure multi-PXSCH scheduling
* HARQ-7: RRC parameter alignment (Editorial and can be treated in alignment CR)

Please provide your view if these issues should be discussed

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Company | HARQ-1-1 | HARQ-1-2 | HARQ-2 | HARQ-3 | HARQ-4 | HARQ-5 | HARQ-6 | HARQ-7 |
| Fujitsu | No | Yes | No | Yes | No | Yes | Yes | Yes |
| LG Electronics | YesBut only for the first issue | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Intel | Yes | No | Yes | Yes | No | Yes | Yes | Yes |
|  |  |  |  |  |  |  |  |  |

Additional comments, if any

|  |  |
| --- | --- |
| Company | View |
| Fujitsu | **HARQ-1-1:**This issue does not need to be discussed.For proposal 1, it is not an essential issue but just an enhancement to reduce redundancy for Type-1 HARQ-ACK codebook, so it should not be discussed at current stage. The relevant agreement (in RAN1#107) on pdsch-AggregationFactor for DCI format 1\_1 and 1\_2 has already been reflected in TS 38.214. For proposal 2, we share the same view with FL.**HARQ-1-2:**We believe this issue should be discussed and the specification needs to be changed. As per the discussion in RAN1#110 meeting, it is almost a common understanding that changes for “single valid PDSCH” case are needed and it should be based on Interpretation 2, so we think RAN1 does not need to repeat the discussion on whether the specification is clear or not and should focus on how to make the specification clear.**HARQ-2:**It can be deprioritized. Though there is a misalignment, it seems still workable.**HARQ-4:**It may not need to be discussed and can be deprioritized. It seems the description in TS 38.214 as below can cover the case of multi-PDSCH scheduling. That is, all scheduled PDSCHs should apply the triggered AP CSI-RS. Even without further clarification in spec., there should be no other interpretations.The REs indicated by sp-ZP-CSI-RS-ResourceSetsToAddModList and aperiodic-ZP-CSI-RS-ResourceSetsToAddModList are declared as not available for PDSCH when their triggering and activation are applied, respectively. |
|  |  |

## BM aspect

Submitted papers are summarized in [6]

The following issue is identified:

* BM-1: Minimum guard period between two SRS resources of an SRS resource set for antenna switching

Do you believe issue BM-1 should be discussed

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| --- | --- |
| Company | View |
| Fujitsu | Yes, it should be discussed. |
| LG Electronics | Yes, we think BM-1 needs to be discussed. |
| Intel | ok |
| vivo | Yes |

## Channel access aspect

Submitted papers are summarized in [7]

The following issues are identified:

Please provide your view if these issues should be discussed

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Company | CA-1 | CA-2 | CA-3 | CA-4 | CA-5 | CA-6 | CA-7 | CA-8 | CA-9 |
| LG Electronics | Yes | Yes | Yes | Yes | No, it will be discussed in another thread | Yes | No | No | No |
| Intel | Yes | Yes | No | Yes | As indicated by LG this will be discussed in another thread | Yes | No | No | No |
| vivo | Yes | Yes | Yes | Yes | Not in channel access | Yes | No | No | No |
|  |  |  |  |  |  |  |  |  |  |

Additional comments, if any

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| --- | --- |
| Company | View |
| vivo | There’re CA-10 and CA-11, we don’t think they’re necessary to discuss due to editorial nature. |
|  |  |

# References

1. R1-22xxxxx, Summary of issues on initial access aspect of NR extension up to 71 GHz, Intel
2. R1-22xxxxx, FL Summary for B52.6 GHz PDCCH monitoring enhancements, Lenovo
3. R1-22xxxxx, FL Summary for AI 8.2 – Enhancements for PUCCH Formats 0/1/4, Ericsson
4. R1-22xxxxx, FL summary #1 of PDSCH/PUSCH enhancement (RS and timeline), vivo
5. R1-22xxxxx, Summary #1 of PDSCH/PUSCH enhancements, LGE
6. R1-22xxxxx, Discussion Summary #1 of Beam Management for new SCSs, InterDigital
7. R1-22xxxxx, Discussion summary for channel access, Qualcomm