**3GPP TSG RAN WG1 #102-e R1-2006984**

**e-Meeting, August 17th – 28th, 2020**

**Agenda item:** 7.2.6

**Source:** Moderator (Samsung)

**Title:** Text proposal on MU.1 issue for Rel.16 NR\_eMIMO MU CSI

**Document for:** Discussion and Decision

1. Analysis

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| --- | --- |
| Reasons for change | Current version of TS 38.214 V16.2.0: 1. Sec 5.2.2.2.5: ambiguity in the term ‘number of subbands’
2. Sec 5.2.3: basis indicator $i\_{1,6,l}$ may not be reported, but the description doesn’t indicate so
3. Table 5.2.2.2.5-4: Typo on a combinatorial coefficient value
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| Summary of changes | TS 38.214 V16.2.0:1. Sec 5.2.2.2.5: added “configured” on ‘number of subbands’
2. Sec 5.2.3: added “if reported” after the basis indicator $i\_{1,6,l}$
3. Table 5.2.2.2.5-4: Change C(14,6) = 4004 to 3003
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| Specs/Sections impacted | TS 38.214 V16.1.0, section 5.2.2.2.5 and 5.2.3 |
| Consequences if not approved | The spec is either ambiguous or erroneous (incorrect implementation)  |

1. Text proposal

TP for TS 38.214 V16.2.0

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| < Start TP for TS 38.214 V16.2.0>5.2.2.2.5 Enhanced Type II Codebook< Unchanged parts are omitted >* The parameter $R$ is configured with the higher-layer parameter *numberOfPMI-SubbandsPerCQI-Subband-r16*. This parameter controls the total number of precoding matrices $N\_{3}$ indicated by the PMI as a function of the number of configured subbands in *csi-ReportingBand,* the subband size configured by the higher-level parameter *subbandSize* and of the total number of PRBs in the bandwidth part according to Table 5.2.1.4-2, as follows:

< Unchanged parts are omitted >Table 5.2.2.2.5-4: Combinatorial coefficients $C\left(x,y\right)$

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 4 | 6 | 4 | 1 | 0 | 0 | 0 | 0 | 0 |
| 5 | 5 | 10 | 10 | 5 | 1 | 0 | 0 | 0 | 0 |
| 6 | 6 | 15 | 20 | 15 | 6 | 1 | 0 | 0 | 0 |
| 7 | 7 | 21 | 35 | 35 | 21 | 7 | 1 | 0 | 0 |
| 8 | 8 | 28 | 56 | 70 | 56 | 28 | 8 | 1 | 0 |
| 9 | 9 | 36 | 84 | 126 | 126 | 84 | 36 | 9 | 1 |
| 10 | 10 | 45 | 120 | 210 | 252 | 210 | 120 | 45 | 10 |
| 11 | 11 | 55 | 165 | 330 | 462 | 462 | 330 | 165 | 55 |
| 12 | 12 | 66 | 220 | 495 | 792 | 924 | 792 | 495 | 220 |
| 13 | 13 | 78 | 286 | 715 | 1287 | 1716 | 1716 | 1287 | 715 |
| 14 | 14 | 91 | 364 | 1001 | 2002 | 3003 | 3432 | 3003 | 2002 |
| 15 | 15 | 105 | 455 | 1365 | 3003 | 5005 | 6435 | 6435 | 5005 |
| 16 | 16 | 120 | 560 | 1820 | 4368 | 8008 | 11440 | 12870 | 11440 |
| 17 | 17 | 136 | 680 | 2380 | 6188 | 12376 | 19448 | 24310 | 24310 |
| 18 | 18 | 153 | 816 | 3060 | 8568 | 18564 | 31824 | 43758 | 48620 |

< Unchanged parts are omitted >5.2.3 CSI reporting using PUSCH< Unchanged parts are omitted >- Group 1 includes indices $i\_{1,5}$ (if reported), $i\_{1,6,l}$ (if reported), the $υ2LM\_{υ}-\left⌊K^{NZ}/2\right⌋$ highest priority elements of $i\_{1,7,l}$, $i\_{2,3,l}$, the $\left⌈K^{NZ}/2\right⌉-υ$ highest priority elements of $i\_{2,4,l}$ and the $\left⌈K^{NZ}/2\right⌉-υ$ highest priority elements of $i\_{2,5,l}$ ($l=1,…,υ$).< End TP for TS 38.214 V16.2.0> |