**3GPP TSG RAN WG1 #102-e R1-200xxxx**

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

**Agenda item:** 7.2.2.2.3

**Source:** Moderator (Huawei)

**Title:** TP for NR-U maintenance email thread 102-e-NR-unlic-NRU-HARQ-02

**Document for:** Discussion and Decision

1. Analysis

|  |  |
| --- | --- |
| Reasons for change | There is ambiguity on the TDRA table for DCI format 0\_1 when multiple PUSCH scheduling is configured to the UE.  |
| Summary of changes | Correction to include *pusch-TimeDomainAllocationListForMultiPUSCH* in the applicable PUSCH time domain resource allocation for DCI format 0\_1 in UE specific search space, and clarification of the TDRA field in DCI format 0\_1. |
| Specs/Sections impacted | TS38.214 v16.2.0 section 6.1.2.1.1, TS38.212 v16.2.0 section 7.3.1.1.2. |
| Consequences if not approved | The UE applies an incorrect TDRA table when it is configured with *pusch-TimeDomainAllocationListForMultiPUSCH* |

1. Text proposal

================== Start of text proposal for TS 38.212 v16.2.0 ===================

**7.3.1.1.2 Format 0\_1**

<Unchanged parts are omitted>

- Time domain resource assignment – 0, 1, 2, 3, 4, 5, or 6 bits

- If the higher layer parameter *PUSCH-TimeDomainResourceAllocationList-ForDCIformat0\_1* is not configured and if the higher layer parameter *pusch-TimeDomainAllocationListForMultiPUSCH* is not configuredand if the higher layer parameter *pusch-TimeDomainAllocationList* is configured, 0, 1, 2, 3, or 4 bits as defined in Clause 6.1.2.1 of [6, TS38.214]. The bitwidth for this field is determined as bits, where *I* is the number of entries in the higher layer parameter *pusch-TimeDomainAllocationList*;

- If the higher layer parameter *PUSCH-TimeDomainResourceAllocationList-ForDCIformat0\_1* is configured or if the higher layer parameter *pusch-TimeDomainAllocationListForMultiPUSCH is configured*, 0, 1, 2, 3, 4, 5 or 6 bits as defined in Clause 6.1.2.1 of [6, TS38.214]. The bitwidth for this field is determined as $\left⌈log\_{2}(I)\right⌉ $bits, where *I* is the number of entries in the higher layer parameter *PUSCH-TimeDomainResourceAllocationList-ForDCIformat0\_1* or *pusch-TimeDomainAllocationListForMultiPUSCH*;

- otherwise the bitwidth for this field is determined as $\left⌈log\_{2}(I)\right⌉ $bits, where *I* is the number of entries in the default table*.*

- Frequency hopping flag – 0 or 1 bit:

- 0 bit if only resource allocation type 0 is configured, or if the higher layer parameter *frequencyHopping* is not configured and the higher layer parameter pusch-RepTypeIndicatorForDCI-Format0-1 is not configured to *pusch-RepTypeB*, or if the higher layer parameter frequencyHoppingForDCI-Format0-1 is not configured and pusch-RepTypeIndicatorForDCI-Format0-1 is configured to *pusch-RepTypeB*, or if only resource allocation type 2 is configured;

- 1 bit according to Table 7.3.1.1.1-3 otherwise, only applicable to resource allocation type 1, as defined in Clause 6.3 of [6, TS 38.214].

- Modulation and coding scheme – 5 bits as defined in Clause 6.1.4.1 of [6, TS 38.214]

- New data indicator – 1 bit if the number of scheduled PUSCH indicated by the Time domain resource assignment field is 1; otherwise 2, 3, 4, 5, 6, 7 or 8 bits determined based on the maximum number of schedulable PUSCH among all entries in the higher layer parameter *PUSCH-TimeDomainResourceAllocationList-ForDCIformat0\_1* or *pusch-TimeDomainAllocationListForMultiPUSCH*, where each bit corresponds to one scheduled PUSCH as defined in clause 6.1.4 in [6, TS 38.214].

- Redundancy version – – number of bits determined by the following:

- 2 bits as defined in Table 7.3.1.1.1-2 if the number of scheduled PUSCH indicated by the Time domain resource assignment field is 1;

- otherwise 2, 3, 4, 5, 6, 7 or 8 bits determined by the maximum number of schedulable PUSCHs among all entries in the higher layer parameter *PUSCH-TimeDomainResourceAllocationList-ForDCIformat0\_1* or *pusch-TimeDomainAllocationListForMultiPUSCH*, where each bit corresponds to one scheduled PUSCH as defined in clause 6.1.4 in [6, TS 38.214] and redundancy version is determined according to Table 7.3.1.1.2-34.

<Unchanged parts are omitted>

================== End of text proposal for TS 38.212 v16.2.0 ===================

================== Start of text proposal for TS 38.214 v16.2.0 ===================

**6.1.2.1.1 Determination of the resource allocation table to be used for PUSCH**

<Unchanged parts are omitted>

**Table 6.1.2.1.1-1A: Applicable PUSCH time domain resource allocation for DCI format 0\_1 in UE specific search space scrambled with C-RNTI, MCS-C-RNTI, CS-RNTI or SP-CSI-RNTI**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***pusch-ConfigCommon* includes *pusch-TimeDomainAllocationList*** | ***pusch-Config* includes *pusch-TimeDomainAllocationList*** | ***pusch-Config* includes *pusch-TimeDomainAllocationList* *-ForDCIformat0\_1*** | ***pusch-Config* includes *pusch-TimeDomainAllocationListForMultiPUSCH*** | **PUSCH time domain resource allocation to apply** |
| No | No | No | No | Default A |
| Yes | No | No | No | *pusch-TimeDomainAllocationList* provided in *pusch-ConfigCommon*  |
| No/Yes | Yes | No | No | *pusch-TimeDomainAllocationList* provided in *pusch-Config* |
| No/Yes | No/Yes | Yes | No | *pusch-TimeDomainAllocationList-ForDCIformat0\_1* provided in *pusch-Config* |
| No/Yes | No/Yes | No | Yes | *pusch-TimeDomainAllocationListForMultiPUSCH* provided in *pusch-Config* |

<Unchanged parts are omitted>

================== End of text proposal for TS 38.214 v16.2.0 ===================