3GPP TSG-RAN WG1 Meeting #101-e R1- 20xxxxx

e-Meeting, May 25th – June 5th, 2020

Agenda Item: 6.2.1.3

Source: Qualcomm Incorporated

Title: TP for SPS

Document for: Discussion/Decision

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| ***Reason for change:*** | The behaviour for simultaneous configuration of multi-TB and SPS is not specified. |
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| ***Summary of change:*** | Clarify that, when multi-TB is configured, a DCI scrambled with SPS C-RNTI shall schedule a single TB. |
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| ***Consequences if not approved:*** | HARQ-ACK bundling is not supported for multi-TB in TDD. |
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| ***Clauses affected:*** | 5.3.3.1.10 / 5.3.3.1.12 (TS 36.212) |

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| **--------------------------------------------Start of Text Proposal for 36.212-----------------------------------------** 5.3.3.1.10 Format 6-0A **<Unchanged parts are omitted>**  - Scheduling TBs for Unicast – 12 bits. This field is only present if *multi-TB-UL-config* is enabled and the DCI is mapped onto the UE-specific search space given by C-RNTI as defined in [3]. This field schedules one TB if the CRC of the DCI is scrambled by SPS C-RNTI.  - If one TB is scheduled  - 5 bits set to zero  - HARQ process number – 3 bits  - New data indicator – 1 bit  - Redundancy version – 2 bits  - Frequency hopping flag – 1 bit, where value 0 indicates frequency hopping is not enabled and value 1 indicates frequency hopping is enabled as defined in clause 5.3.4 of [2]. If frequency hopping is not enabled by higher layers, this field is set to 0.  - If two TBs are scheduled  - 2 bits set to zero  - HARQ index with offset – 6 bits provide the HARQ index + offset, with an offset of +8 and HARQ index as defined in 8.0 of [3]  - New data indicators – 2 bits, one for each scheduled TB in increasing order of HARQ process ID  - Redundancy version for TB 1 – 1 bit  - Redundancy version for TB 2 – 1 bit. If Repetition number is > 1 and frequency hopping is enabled by higher layers then this bit is a Frequency hopping flag for the TBs, and TB2 uses the redundancy version for TB1.  - If four TBs are scheduled  - 1 bit set to zero  - HARQ index with offset – 7 bits provide the HARQ index + offset, with an offset of +36 and HARQ index as defined in 8.0 of [3]  - New data indicators – 4 bits, one for each scheduled TB in increasing order of HARQ process ID  - If six TBs are scheduled  - HARQ index with offset – 6 bits provide the HARQ index + offset, with an offset of +27 and HARQ index as defined in 8.0 of [3]  - New data indicators – 6 bits, one for each scheduled TB in increasing order of HARQ process ID  - If eight TBs are scheduled  - 3 bits set to one  - New data indicators – 8 bits, one for each scheduled TB in increasing order of HARQ process ID  - Redundancy version for all TBs – 1 bit. If Repetition number is > 1 and frequency hopping is enabled by higher layers then this bit is a Frequency hopping flag for the TBs, and the redundancy version for all TBs starts at 0.  **<Unchanged parts are omitted>** 5.3.3.1.12 Format 6-1A **<Unchanged parts are omitted>**  - Scheduling TBs for Unicast – 12 bits. This field is only present if *multi-TB-DL-config* is enabled and the DCI is mapped onto the UE-specific search space given by C-RNTI as defined in [3]. This field schedules one TB if the CRC of the DCI is scrambled by SPS C-RNTI.  - If one TB is scheduled  - 5 bits set to zero  - HARQ process number – 3 bits  - New data indicator – 1 bit  - Redundancy version – 2 bits  - Frequency hopping flag – 1 bit, where value 0 indicates frequency hopping is not enabled and value 1 indicates frequency hopping is enabled as defined in clause 6.4.1 of [2]. If the UE is configured with 64QAM for PDSCH and the repetition number field indicates no PDSCH repetition, this field is the MSB bit of the extended Modulation and coding scheme field, as specified in Table 7.1.7.1-1 of [3]. If the UE is not configured with 64QAM for PDSCH and frequency hopping is not enabled by higher layers, this field is set to 0.  - If two TBs are scheduled  - 2 bits set to zero  - HARQ index with offset – 6 bits provide the HARQ index + offset, with an offset of +8 and HARQ index as defined in 7.1.7.2 of [3]  - New data indicators – 2 bits, one for each scheduled TB in increasing order of HARQ process ID  - Redundancy version for TB 1 – 1 bit  - Redundancy version for TB 2 – 1 bit. If the UE is configured with 64QAM for PDSCH and the repetition number field indicates no PDSCH repetition then this bit is the MSB bit of the extended Modulation and coding scheme field. If Repetition number is > 1 and frequency hopping is enabled by higher layers then this bit is a Frequency hopping flag for the TBs. In these cases TB2 uses the redundancy version for TB1.  - If four TBs are scheduled  - 1 bit set to zero  - HARQ index with offset – 7 bits provide the HARQ index + offset, with an offset of +36 and HARQ index as defined in 7.1.7.2 of [3]  - New data indicators – 4 bits, one for each scheduled TB in increasing order of HARQ process ID  - If six TBs are scheduled  - HARQ index with offset – 6 bits provide the HARQ index + offset, with an offset of +27 and HARQ index as defined in 7.1.7.2 of [3]  - New data indicators – 6 bits, one for each scheduled TB in increasing order of HARQ process ID  - If eight TBs are scheduled  - 3 bits set to one  - New data indicators – 8 bits, one for each scheduled TB in increasing order of HARQ process ID  - Redundancy version for all TBs – 1 bit. If the UE is configured with 64QAM for PDSCH and the repetition number field indicates no PDSCH repetition then this bit is the MSB bit of the extended Modulation and coding scheme field. If Repetition number is > 1 and frequency hopping is enabled by higher layers then this bit is a Frequency hopping flag for the TBs. In these cases the redundancy version for all TBs starts at 0.  **<Unchanged parts are omitted>**  **--------------------------------------------End of Text Proposal for 36.213-----------------------------------------** |