**3GPP TSG RAN WG1 #105-e R1-** **210xxxx**

**e-Meeting, May 10th – 27th, 2021**

**Agenda Item:** 7.1

**Source:** Moderator (Samsung)

**Title:** Summary on editorial spec changes of [105-e-NR-7.1CRs-14]

**Document for:** Discussion and Decision

# Introduction

Base on Mr. Chairman’s guidance, the corresponding editorial CRs are handled under in this email thread.

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| **Issue#1, Issue#4, Issue#8, Issue#13, Issue#21, Issue#27**  [R1-2104317](file:///C:\Users\wanshic\OneDrive%20-%20Qualcomm\Documents\Standards\3GPP%20Standards\Meeting%20Documents\TSGR1_105\Docs\R1-2104317.zip) Correction on multi-slot PUSCH transmission ZTE  [R1-2104810](file:///C:\Users\wanshic\OneDrive%20-%20Qualcomm\Documents\Standards\3GPP%20Standards\Meeting%20Documents\TSGR1_105\Docs\R1-2104810.zip) Draft CR on PUCCH repetition OPPO  [R1-2105284](file:///C:\Users\wanshic\OneDrive%20-%20Qualcomm\Documents\Standards\3GPP%20Standards\Meeting%20Documents\TSGR1_105\Docs\R1-2105284.zip) Correction on power control for TS 38.213 Samsung  [R1-2105455](file:///C:\Users\wanshic\OneDrive%20-%20Qualcomm\Documents\Standards\3GPP%20Standards\Meeting%20Documents\TSGR1_105\Docs\R1-2105455.zip) Draft 38.214 CR on reference correction for PDSCH EPRE to CSIRS EPRE assumption vivo  [R1-2105926](file:///C:\Users\wanshic\OneDrive%20-%20Qualcomm\Documents\Standards\3GPP%20Standards\Meeting%20Documents\TSGR1_105\Docs\R1-2105926.zip) Correction on the MR-DC Uplink Power Control in 38.213 Huawei, HiSilicon  [R1-2104645](file:///C:\Users\wanshic\OneDrive%20-%20Qualcomm\Documents\Standards\3GPP%20Standards\Meeting%20Documents\TSGR1_105\Docs\R1-2104645.zip) Draft CR on Type-1 HARQ-ACK for PDSCH repetition with different DL and UL SCSs Qualcomm Incorporated  [105-e-NR-7.1CRs-14] Discussion on editorial spec changes for recommendation to the editors (Issues #1, #4, #8, #13, #21, #27) – Sungjin (Samsung) by May 21 |

This document is to collect companies’ inputs and draw potential TP(s) as recommendations for the editors (no CRs) for the issue being agreeable in RAN1 group (including potential Rel-16 shadow CR/TP for some issues).

# Discussion

## Issue#1 (Rel-15): R1-2104317, Correction on multi-slot PUSCH transmission, ZTE [1]

### Background & Proposed TP for TS 38.214

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| ***Reason for change:*** | For multi-slot PUSCH transmission, one PUSCH transmission in a slot should be omitted in the following cases.   * The PUSCH overlaps in one or more slots with PUCCH repetition. This is specified in Clause 9.2.6 in TS38.213. * The PUSCH collides with symbols that are not valid for PUSCH transmission as specified in Clause 11.1 in TS38.213.   However, only the conditions in Clause 11.1 of TS38.213 is referred for multi-slot PUSCH transmission in TS38.214. |
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| ***Summary of change:*** | Add Clause 9.2.6 for the conditions of omitting one PUSCH in a slot of a multi-slot PUSCH transmission. |
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| ***Consequences if not approved:*** | Unclear UE behavior for multi-slot PUSCH transmission. |

**TP 1: {38.214: 6.1.2.1 Resource allocation in time domain} for Rel-15**

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| 6.1.2.1 Resource allocation in time domain  When the UE is scheduled to transmit a transport block and no CSI report, or the UE is scheduled to transmit a transport block and a CSI report(s) on PUSCH by a DCI, the *Time domain resource assignment* field value *m* of the DCI provides a row index *m* + 1to an allocated table. The determination of the used resource allocation table is defined in Clause 6.1.2.1.1. The indexed row defines the slot offset *K2*, the start and length indicator *SLIV*, or directly the start symbol *S* and the allocation length *L*, and the PUSCH mapping type to be applied in the PUSCH transmission.  When the UE is scheduled to transmit a PUSCH with no transport block and with a CSI report(s) by a *CSI request* field on a DCI, the *Time domain resource assignment* field value *m* of the DCI provides a row index *m* + 1to an allocated table which is defined by the higher layer configured *pusch-TimeDomainAllocationList* in *pusch-Config*. The indexed row defines the start and length indicator SLIV, and the PUSCH mapping type to be applied in the PUSCH transmission and the *K2* value is determined as , where  are the corresponding list entries of the higher layer parameter *reportSlotOffsetList* in *CSI-ReportConfig* for the  triggered CSI Reporting Settings and  is the *(m+1)*th entry of .  - The slot where the UE shall transmit the PUSCH is determined by *K2* as  where *n* is the slot with the scheduling DCI, K*2* is based on the numerology of PUSCH, and  and  are the subcarrier spacing configurations for PUSCH and PDCCH, respectively, and  - The starting symbol *S* relative to the start of the slot, and the number of consecutive symbols *L* counting from the symbol *S* allocated for the PUSCH are determined from the start and length indicator *SLIV* of the indexed row:  if  then    else    where, and  - The PUSCH mapping type is set to Type A or Type B as defined in Clause 6.4.1.1.3 of [4, TS 38.211] as given by the indexed row.  The UE shall consider the *S* and *L* combinations defined in table 6.1.2.1-1 as valid PUSCH allocations  Table 6.1.2.1-1: Valid *S* and *L* combinations   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | PUSCH mapping type | Normal cyclic prefix | | | Extended cyclic prefix | | | | *S* | *L* | *S+L* | *S* | *L* | *S+L* | | Type A | 0 | {4,…,14} | {4,…,14} | 0 | {4,…,12} | {4,…,12} | | Type B | {0,…,13} | {1,…,14} | {1,…,14} | {0,…, 11} | {1,…,12} | {1,…,12} |   When transmitting PUSCH scheduled by DCI format 0\_1 in PDCCH with CRC scrambled with C-RNTI, MCS-C-RNTI, or CS-RNTI with NDI=1, if the UE is configured with *pusch-AggregationFactor*, the same symbol allocation is applied across the *pusch-AggregationFactor* consecutive slots and the PUSCH is limited to a single transmission layer. The UE shall repeat the TB across the *pusch-AggregationFactor* consecutive slots applying the same symbol allocation in each slot. The redundancy version to be applied on the *n*th transmission occasion of the TB, where n = 0, 1, …*pusch-AggregationFactor* -1, is determined according to table 6.1.2.1-2.  Table 6.1.2.1-2: Redundancy version when *pusch-AggregationFactor* is present   |  |  |  |  |  | | --- | --- | --- | --- | --- | | *rvid* indicated by the DCI scheduling the PUSCH | *rvid* to be applied to *n*th transmission occasion | | | | | *n* mod 4 = 0 | *n* mod 4 = 1 | *n* mod 4 = 2 | *n* mod 4 = 3 | | 0 | 0 | 2 | 3 | 1 | | 2 | 2 | 3 | 1 | 0 | | 3 | 3 | 1 | 0 | 2 | | 1 | 1 | 0 | 2 | 3 |   A PUSCH transmission in a slot of a multi-slot PUSCH transmission is omitted according to the conditions in Clause 9.2.6 and Clause 11.1 of [6, TS38.213]. |

### Companies’ input

Please kindly provide your views about the proposed TP of Issue#1 in the table below.

**Question 1-1: Do you agree the proposed TP of Issue#1?**

* **If no, please provide the reasons and your suggestions, if any.**

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**Question 1-2: Do you think that proposed TP of Issue#1 can be Rel-16 shadow TP?**

* **If no, please provide the reasons and your suggestions, if any.**

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## Issue#4 (Rel-15): R1-2104810, Draft CR on PUCCH repetition, OPPO [2]

### Background & Proposed TP for TS 38.213

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| ***Reason for change:*** | This draft CR is submitted for discussion per decision in RAN1 #104b-e.  In the current 38.213, a UE operating in unpaired spectrum determines the resources for PUCCH repetition based on “UL symbol, as described in Clause 11.1” and “flexible symbols”. Although “UL symbol, as described in Clause 11.1” refers to the symbol that is semi-statically configured as UL, “flexible symbol” can ambiguously mean either the symbol that is semi-statically configured as flexible or the symbol left as flexible after the dynamic SFI indication is taken into account.  This CR intends to solve this ambiguity by clarifying that the “flexible symbol” refers to symbol that is semi-statically configured as flexible, due to following reasons:  1). If “flexible symbol” in the concerned spec text is interpreted as the one based on dynamic SFI, the spec text may unreasonably exclude the symbol that is semi-statically configured as flexible and later dynamically assigned to UL symbol by SFI.  2). There was a RAN1 AH\_1801 agreement as following.  Agreement:   * The ‘unknown’ symbols in semi-static DL/UL assignment can be used for long PUCCH transmission over multiple slots when a UE receives a grant to transmit the long PUCCH |
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| ***Summary of change:*** | Clarify the “flexible symbol” in PUCCH resource determination for PUCCH repetition is based on semi-static configuration. |
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| ***Consequences if not approved:*** | There is an ambiguity in specification as well as a potential mismatch between UE implementation and gNB implementation. |

**TP 2: {38.213: 9.2.6 PUCCH repetition procedure} for Rel-15**

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| <Unchanged part omitted>  9.2.6 PUCCH repetition procedure  <Unchanged part omitted>  For unpaired spectrum, the UE determines the  slots for a PUCCH transmission starting from a slot indicated to the UE as described in Clause 9.2.3 and having  - an UL symbol, as described in Clause 11.1, or flexible symbol, as described in Clause 11.1, that is not SS/PBCH block symbol provided by *startingSymbolIndex* in *PUCCH-format1*, or in *PUCCH-format3*, or in *PUCCH-format4* as a first symbol, and  - consecutive UL symbols,as described in Clause 11.1, or flexible symbols, as described in Clause 11.1, that are not SS/PBCH block symbols, starting from the first symbol, equal to or larger than a number of symbols provided by *nrofsymbols* in *PUCCH-format1*, or in *PUCCH-format3*, or in *PUCCH-format4*  <Unchanged part omitted> |

### Companies’ input

Please kindly provide your views about the proposed TP of Issue#4 in the table below.

**Question 2-1: Do you agree the proposed TP of Issue#4?**

* **If no, please provide the reasons and your suggestions, if any.**

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**Question 2-2: Do you think that proposed TP of Issue#4 can be Rel-16 shadow TP?**

* **If no, please provide the reasons and your suggestions, if any.**

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## Issue#8 (Rel-15): R1-2105284, Correction on power control for TS 38.213, Samsung [3]

### Background & Proposed TP for TS 38.213

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| ***Reason for change:*** | Reference to the DL BWP for the pathloss calculation is inconsistent in Clauses 7.1.1, 7.2.1, and 7.3.1. While in Clauses 7.1.1 and 7.3.1, there is no reference to the DL BWP index, such reference is included in Clause 7.2.1. Even though due to the UL/DL BWP pairing the reference is not incorrect, the discrepancy can be confusing and the descriptions should be consistent. |
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| ***Summary of change:*** | Remove the notation of ‘b’ for the DL BWP in Clause 7.2.1 as it is only used for the UL BWP throughout Clauses 7.1.1, 7.2.1, and 7.3.1. |
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| ***Consequences if not approved:*** | Inconsistent descriptions for a same operation which may cause ambiguity. |

**TP 3: {38.213: 7.2.1 UE behaviour} for Rel-15**

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| < Unchanged part is omitted >  7.2.1 UE behaviour  If a UE transmits a PUCCH on active UL BWP  of carrier  in the primary cell  using PUCCH power control adjustment state with index , the UE determines the PUCCH transmission power  in PUCCH transmission occasion  as  [dBm]  where  < Unchanged part is omitted >  - is a downlink pathloss estimate in dB calculated by the UE using RS resource index  as described in Clause 7.1.1 for the active DL BWP of carrier  of the primary cell  as described in Clause 12  - If the UE is not provided *pathlossReferenceRSs* or before the UE is provided dedicated higher layer parameters, the UE calculates  using a RS resource obtained from the SS/PBCH block that the UE uses to obtain *MIB*  < Unchanged part is omitted > |

### Companies’ input

Please kindly provide your views about the proposed TP of Issue#8 in the table below.

**Question 3-1: Do you agree the proposed TP of Issue#8?**

* **If no, please provide the reasons and your suggestions, if any.**

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**Question 3-2: Do you think that proposed TP of Issue#8 can be Rel-16 shadow TP?**

* **If no, please provide the reasons and your suggestions, if any.**

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## Issue#13 (Rel-15): R1-2105455, Draft 38.214 CR on reference correction for PDSCH EPRE to CSIRS EPRE assumption, vivo [4]

### Background & Proposed TP for TS 38.214

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| ***Reason for change:*** | The UE shall assume the ratio of PDSCH EPRE to CSI-RS EPRE for the purpose of deriving the CQI index based on RRC parameter *powerControlOffset*, and if also configured, for deriving PMI and RI. However, current description in 38.214 section 5.2.2.5 refers to 38.214 section 4.1, which does not provide the description of the ratio betweeen PDSCH EPRE to CSI-RS EPRE, but rather provide the ratio between CSI-RS EPRE and SSB EPRE based on RRC parameter *powerControlOffsetSS*. Such description in 38.214 may cause unnecessary mis-interpretation.  This has already been corrected in Rel-16 specifcaiton but not corrected in Rel-15 specifcation. |
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| ***Summary of change:*** | The referred section for assumed EPRE ratio is corrected to section 5.2.2.3.1. |
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| ***Consequences if not approved:*** | UE behavior is unnecessarily mis-interpreted. |

**TP 4: {38.214: 5.2.2.5 CSI reference resource definition} for Rel-15**

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| 5.2.2.5 CSI reference resource definition  < Unchanged parts are omitted >  If configured to report CQI index, in the CSI reference resource, the UE shall assume the following for the purpose of deriving the CQI index, and if also configured, for deriving PMI and RI:  - The first 2 OFDM symbols are occupied by control signaling.  - The number of PDSCH and DM-RS symbols is equal to 12.  - The same bandwidth part subcarrier spacing configured as for the PDSCH reception  - The bandwidth as configured for the corresponding CQI report.  - The reference resource uses the CP length and subcarrier spacing configured for PDSCH reception  - No resource elements used by primary or secondary synchronization signals or PBCH.  - Redundancy Version 0.  - The ratio of PDSCH EPRE to CSI-RS EPRE is as given in Subclause 5.2.2.3.1.  - Assume no REs allocated for NZP CSI-RS and ZP CSI-RS.  - Assume the same number of front loaded DM-RS symbols as the maximum front-loaded symbols configured by the higher layer parameter *maxLength* in *DMRS-DownlinkConfig.*  - Assume the same number of additional DM-RS symbols as the additional symbols configured by the higher layer parameter *dmrs-AdditionalPosition*.  - Assume the PDSCH symbols are not containing DM-RS.  - Assume PRB bundling size of 2 PRBs.  - The PDSCH transmission scheme where the UE may assume that PDSCH transmission would be performed with up to 8 transmission layers as defined in Subclause 7.3.1.4 of [4, TS 38.211]. For CQI calculation, the UE should assume that PDSCH signals on antenna ports in the set [1000,…, 1000+ν-1] for ν layers would result in signals equivalent to corresponding symbols transmitted on antenna ports [3000,…, 3000+*P*-1], as given by    where  is a vector of PDSCH symbols from the layer mapping defined in Subclause 7.3.1.4 of [4, TS 38.211],  is the number of CSI-RS ports. If only one CSI-RS port is configured, *W(i)* is 1. If the higher layer parameter *reportQuantity* in *CSI-ReportConfig* for which the CQI is reported is set to either 'cri-RI-PMI-CQI' or 'cri-RI-LI-PMI-CQI', *W(i)* is the precoding matrix corresponding to the reported PMI applicable to *x(i)*. If the higher layer parameter *reportQuantity* in *CSI-ReportConfig* for which the CQI is reported is set to 'cri-RI-CQI', *W(i)* is the precoding matrix corresponding to the procedure described in Subclause 5.2.1.4.2. If the higher layer parameter *reportQuantity* in *CSI-ReportConfig* for which the CQI is reported is set to 'cri-RI-i1-CQI', *W(i)* is the precoding matrix corresponding to the reported i1 according to the procedure described in Subclause 5.2.1.4.2*.*The corresponding PDSCH signals transmitted on antenna ports [3000,…,3000 + *P* - 1] would have a ratio of EPRE to CSI-RS EPRE equal to the ratio given in Subclause 5.2.2.3.1.  < Unchanged parts are omitted > |

### Companies’ input

Please kindly provide your views about the proposed TP of Issue#13 in the table below.

**Question 4-1: Do you agree the proposed TP of Issue#13?**

* **If no, please provide the reasons and your suggestions, if any.**

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**Question 4-2: Do you think that proposed TP of Issue#13 can be Rel-16 shadow TP?**

* **If no, please provide the reasons and your suggestions, if any.**

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## Issue#21 (Rel-15): R1-2105926, Correction on the MR-DC Uplink Power Control in 38.213, Huawei, HiSilicon [5]

### Background & Proposed TP for TS 38.213

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| ***Reason for change:*** | In NE-DC, RRC parameter *tdm-PatternConfigNE-DC* was agreed to used as the TDM pattern RRC parameter in CR R2-2006349, while *tdm-PatternConfig* is referring to the Rel-15 TDM pattern of EN-DC, which is independent of the aforementioned RRC parameter for NE-DC.   |  | | --- | | ***tdm-PatternConfigNE-DC***  This field is used when power control or IMD issues require single UL transmission in NE-DC as specified in TS 38.101-3 [101] and TS 38.213 [88]. | | ***tdm-PatternConfig***  This field is used when power control or IMD issues require single UL transmission in (NG)EN-DC as specified in TS 38.101-3 [101] and TS 38.213 [88]. |   But in the latest version of TS 38.213, *tdm-PatternConfig-r15* is still used for NE-DC, which is clearly not in line with TS 36.331.   |  | | --- | | If a UE is configured with , where  is the linear value of ,  is the linear value of , and  is the linear value of a configured maximum transmission power for NE-DC operation as defined in [8-3, TS 38.101-3] for FR1, the UE determines a transmission power for the MCG as follows  - If the UE is configured with reference TDD configuration for E-UTRA (by *tdm-PatternConfig-r15* in [13, TS 36.213])  - If the UE does not indicate a capability for dynamic power sharing between E-UTRA and NR for NE-DC, the UE does not expect to transmit in a slot on the MCG in FR1 when a corresponding subframe on the SCG is an UL subframe in the reference TDD configuration.  - If the UE indicates a capability for dynamic power sharing between E-UTRA and NR for NE-DC and  - if the UE transmission(s) in slot  of the MCG in FR1 overlap in time with UE transmission(s) in subframe  of the SCG, and  - if  in any portion of slot  of the MCG,  the UE reduces transmission power in any portion of slot  of the MCG so that  in all portions of slot , where  and  are the linear values of the total UE transmission powers in slot  of the MCG in FR1 and in subframe  of the SCG, respectively.  - If the UE does not indicate a capability for dynamic power sharing between E-UTRA and NR for NE-DC, the UE expects to be configured with reference TDD configuration for E-UTRA (by *tdm-PatternConfig-r15* in [13, TS 36.213]). |   In the last RAN1 meeting, a Rel-16 CR (R1-2104019) including a fix to the above issue for Rel-16 has been agreed. The same fix should also be needed for Rel-15. |
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| ***Summary of change:*** | Correct the RRC parameter for TDM pattern used in uplink powr control of NE-DC |
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| ***Consequences if not approved:*** | Misalignment between the RRC configuration reference in the specification for NE-DC uplink power control. |

**TP 5: {38.213: 7.6.1A NE-DC} for Rel-15**

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| **<Unchanged parts are omitted>**  7.6.1A NE-DC  If a UE is configured with a MCG using NR radio access and with a SCG using E-UTRA radio access, the UE is configured a maximum power  for transmissions in FR1 on the MCG by *p-NR-FR1* and a maximum power  for transmissions on the SCG by *p-MaxEUTRA*.  The UE determines transmission power for the MCG in FR1 as described Clauses 7.1 through 7.5 using  as the maximum transmission power for . The UE determines transmission power for the MCG in FR2 as described Clauses 7.1 through 7.5.  If the UE is not provided *tdd-UL-DL-ConfigurationCommon* for the MCG, the UE determines a transmission power for the SCG as described in [13, TS 36.213] using  as the maximum transmission power.  If at least one symbol of slot  of the MCG that is indicated as uplink or flexible by *tdd-UL-DL-ConfigurationCommon* or *tdd*-*UL-DL-ConfigurationDedicated* overlaps with subframe  of the SCG  - for subframe , the UE determines a transmission power for the SCG as described in [13, TS 36.213] using  as the maximum transmission power  otherwise  - the UE determines a transmission power for the SCG as described in [13, TS 36.213] without considering  as the maximum transmission power  If a UE is configured with , where  is the linear value of ,  is the linear value of , and  is the linear value of a configured maximum transmission power for NE-DC operation as defined in [8-3, TS 38.101-3] for FR1, the UE determines a transmission power for the MCG as follows  - If the UE is configured with reference TDD configuration for E-UTRA (by *tdm-PatternConfigNE-DC-r15* in [13, TS 36.213])  - If the UE does not indicate a capability for dynamic power sharing between E-UTRA and NR for NE-DC, the UE does not expect to transmit in a slot on the MCG in FR1 when a corresponding subframe on the SCG is an UL subframe in the reference TDD configuration.  - If the UE indicates a capability for dynamic power sharing between E-UTRA and NR for NE-DC and  - if the UE transmission(s) in slot  of the MCG in FR1 overlap in time with UE transmission(s) in subframe  of the SCG, and  - if  in any portion of slot  of the MCG,  the UE reduces transmission power in any portion of slot  of the MCG so that  in all portions of slot , where  and  are the linear values of the total UE transmission powers in slot  of the MCG in FR1 and in subframe  of the SCG, respectively.  - If the UE does not indicate a capability for dynamic power sharing between E-UTRA and NR for NE-DC, the UE expects to be configured with reference TDD configuration for E-UTRA (by *tdm-PatternConfigNE-DC-r15* in [13, TS 36.213]).  **<Unchanged parts are omitted>** |

### Companies’ input

Please kindly provide your views about the proposed TP of Issue#21 in the table below.

**Question 5-1: Do you agree the proposed TP of Issue#21?**

* **If no, please provide the reasons and your suggestions, if any.**

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**Question 5-2: Do you think that proposed TP of Issue#21 can be Rel-16 shadow TP?**

* **If no, please provide the reasons and your suggestions, if any.**

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## Issue#27 (Rel-16): R1-2104645, Draft CR on Type-1 HARQ-ACK for PDSCH repetition with different DL and UL SCSs, Qualcomm Incorporated [6]

### Background & Proposed TP for TS 38.213

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| ***Reason for change:*** | At the RAN1#104-e meeting, a Rel-16 CR (R1-2101927) on Type-1 HARQ-ACK for PDSCH repetition with different SCSs in DL and UL was approved (note: a corresponding Rel-15 CR was not approved). R1-2101927 includes following TP:   |  | | --- | | If the UE is provided pdsch-AggregationFactor-r16 in SPS-Config or pdsch-AggregationFactor in PDSCH-Config and no entry in pdsch-TimeDomainAllocationList and pdsch-TimeDomainAllocationListDCI-1-2 includes repetitionNumber in PDSCH-TimeDomainResourceAllocation-r16, is a maximum value of pdsch-AggregationFactor-r16 in SPS-Config or pdsch-AggregationFactor in PDSCH-Config; otherwise . The UE reports HARQ-ACK information for a PDSCH reception  - from DL slot to DL slot , if is provided by pdsch-AggregationFactor or pdsch-AggregationFactor-r16 [6, TS 38.214], or  - from DL slot to DL slot , if the time domain resource assignment field in the DCI format scheduling the PDSCH reception indicates an entry containing repetitionNumber, or  - in DL slot , otherwise  only in a HARQ-ACK codebook that the UE includes in a PUCCH or PUSCH transmission in slot , where is a UL slot overlapping with the end of the PDSCH reception in DL slot and is a number of slots indicated by the PDSCH-to-HARQ\_feedback timing indicator field in a corresponding DCI format or provided by dl-DataToUL-ACK if the PDSCH-to-HARQ\_feedback timing indicator field is not present in the DCI format. If the UE reports HARQ-ACK information for the PDSCH reception in a slot other than slot , the UE sets a value for each corresponding HARQ-ACK information bit to NACK. |   However, the current description of the corresponding part of TS38.213 Section 9.1.2 is following.   |  | | --- | | If the UE is provided pdsch-AggregationFactor-r16 in SPS-Config or pdsch-AggregationFactor in PDSCH-Config and no entry in pdsch-TimeDomainAllocationList and pdsch-TimeDomainAllocationListDCI-1-2 includes repetitionNumber in PDSCH-TimeDomainResourceAllocation-r16, is a maximum value of pdsch-AggregationFactor-r16 in SPS-Config or pdsch-AggregationFactor in PDSCH-Config; otherwise . The UE reports HARQ-ACK information for a PDSCH reception  - from DL slot to DL slot , if is provided by pdsch-AggregationFactor or pdsch-AggregationFactor-r16 [6, TS 38.214], or  - from DL slot to DL slot , if the time domain resource assignment field in the DCI format scheduling the PDSCH reception indicates an entry containing repetitionNumber, or  - in DL slot , otherwise  only in a HARQ-ACK codebook that the UE includes in a PUCCH or PUSCH transmission in slot , where is a UL slot overlapping with the end of the PDSCH reception in DL slot and is a number of slots indicated by the PDSCH-to-HARQ\_feedback timing indicator field in a corresponding DCI format or provided by dl-DataToUL-ACK if the PDSCH-to-HARQ\_feedback timing indicator field is not present in the DCI format. If the UE reports HARQ-ACK information for the PDSCH reception in a slot other than slot , the UE sets a value for each corresponding HARQ-ACK information bit to NACK. |   The above yellow part must be an error and should be corrected. |
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| ***Summary of change:*** | The redundant “+1” highlighted above, which must be an error, is removed. |
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| ***Consequences if not approved:*** | Type-1 HARQ codebook is not porperly constructed in case of PDSCH repetition on a carrier with different numberlogy than a carrier with PUCCH transmisisons carrying the corresponding HARQ-ACK. |

**TP 6: {38.213: 9.1.2 Type-1 HARQ-ACK codebook determination} for Rel-16**

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| 9.1.2 Type-1 HARQ-ACK codebook determination  This Clause applies if the UE is configured with *pdsch-HARQ-ACK-Codebook = semi-static*.  A UE reports HARQ-ACK information for a corresponding PDSCH reception or SPS PDSCH release only in a HARQ-ACK codebook that the UE transmits in a slot indicated by a value of a PDSCH-to-HARQ\_feedback timing indicator field in a corresponding DCI format. The UE reports NACK value(s) for HARQ-ACK information bit(s) in a HARQ-ACK codebook that the UE transmits in a slot not indicated by a value of a PDSCH-to-HARQ\_feedback timing indicator field in a corresponding DCI format.  If a UE is not provided *pdsch-HARQ-ACK-OneShotFeedback*, the UE does not expect to receive a PDSCH scheduled by a DCI format that the UE detects in any PDCCH monitoring occasion and includes a PDSCH-to-HARQ\_feedback timing indicator field providing an inapplicable value from *dl-DataToUL-ACK-r16*.  If the UE is provided *pdsch-AggregationFactor-r16* in *SPS-Config* or *pdsch-AggregationFactor* in *PDSCH-Config* and no entry in *pdsch-TimeDomainAllocationList* and *pdsch-TimeDomainAllocationListDCI-1-2* includes *repetitionNumber* in *PDSCH-TimeDomainResourceAllocation-r16*, is a maximum value of *pdsch-AggregationFactor-r16* in *SPS-Config* or *pdsch-AggregationFactor* in *PDSCH-Config*; otherwise . The UE reports HARQ-ACK information for a PDSCH reception  - from DL slot to DL slot , if is provided by *pdsch-AggregationFactor* or *pdsch-AggregationFactor-r16* [6, TS 38.214], or  - from DL slot to DL slot , if the time domain resource assignment field in the DCI format scheduling the PDSCH reception indicates an entry containing *repetitionNumber,* or  - in DL slot , otherwise  only in a HARQ-ACK codebook that the UE includes in a PUCCH or PUSCH transmission in slot , where is a UL slot overlapping with the end of the PDSCH reception in DL slot and is a number of slots indicated by the PDSCH-to-HARQ\_feedback timing indicator field in a corresponding DCI format or provided by *dl-DataToUL-ACK* if the PDSCH-to-HARQ\_feedback timing indicator field is not present in the DCI format. If the UE reports HARQ-ACK information for the PDSCH reception in a slot other than slot , the UE sets a value for each corresponding HARQ-ACK information bit to NACK.  <unchanged text omitted> |

### Companies’ input

Please kindly provide your views about the proposed TP of Issue#27 in the table below.

**Question 6-1: Do you agree the proposed TP of Issue#27?**

* **If no, please provide the reasons and your suggestions, if any.**

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| --- | --- |
| Company | Comment |
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# Summary

TBD

# Appendix

[1] R1-2104317, Correction on multi-slot PUSCH transmission, ZTE

[2] R1-2104810, Draft CR on PUCCH repetition, OPPO

[3] R1-2105284, Correction on power control for TS 38.213, Samsung

[4] R1-2105455, Draft 38.214 CR on reference correction for PDSCH EPRE to CSIRS EPRE assumption, vivo

[5] R1-2105926, Correction on the MR-DC Uplink Power Control in 38.213, Huawei, HiSilicon

[6] R1-2104645, Draft CR on Type-1 HARQ-ACK for PDSCH repetition with different DL and UL SCSs, Qualcomm Incorporated