**3GPP TSG-RAN WG1 Meeting #104bis-e *R1-2103742***

**E-Meeting, April 12th - 20th, 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **DRAFT CHANGE REQUEST** | | | | | | | | |
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|  | **38.213** | **CR** | **-** | **rev** | **-** | **Current version:** | **15.13.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | Correction on PUSCH transmission power control corresponding to RAR UL grant in Rel-15 (alt2) | | | | | | | | | |
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| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | R1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_newRAT-Core | | | | |  | ***Date:*** | | | 06 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-15 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In case of PUSCH retransmission that corresponds to RAR UL grant and is scheduled by DCI format 0\_1 for contention free random access, two UE behaviours are specified to determine the value of . The first one is that the same  is applied as initial PUSCH transmission corresponding to RAR UL grant, which seemed introduced by CR R1-2007170 as below.   |  | | --- | | - If a UE is not provided *P0-PUSCH-AlphaSet* or for a PUSCH (re)transmission corresponding to a RAR UL grant as described in Clause 8.3, , , and |   The second one is that  is derived from SRI field in DCI format 0\_1 (if SRI field is included in the DCI format 0\_1), which had been specified before CR R1-2007170, as below.   |  | | --- | | If the UE is provided by *SRI-PUSCH-PowerControl* more than one values of *p0-PUSCH-AlphaSetId* and if DCI format 0\_1 includes a SRI field, the UE obtains a mapping from *sri-PUSCH-PowerControlId* in *SRI-PUSCH-PowerControl* between a set of values for the SRI field in DCI format 0\_1 [5, TS 38.212] and a set of indexes provided by *p0-PUSCH-AlphaSetId* that map to a set of *P0-PUSCH-AlphaSet* values. If the PUSCH transmission is scheduled by a DCI format 0\_1 that includes a SRI field, the UE determines the value of  from the *p0-PUSCH-AlphaSetId* value that is mapped to the SRI field value |   As a result, they can end up with different  values. Therefore, the UE behavior on determining  in this case is unclear and should be clarified. | | | | | | | | |
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| ***Summary of change:*** | | When a PUSCH is scheduled by DCI 0\_1 as a retransmission for an initial PUSCH transmission scheduled by RAR UL grant,  is determined in the same way as normal PUSCH transmission scheduled by DCI 0\_1. | | | | | | | | |
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| ***Consequences if not approved:*** | | Conflicting UE behaviors on determining the value of  in case of a PUSCH retransmission schedued by DCI 0\_1 for initial access procedure. | | | | | | | | |
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| ***Clauses affected:*** | | 7.1.1 | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | |  | | |
| ***affected:*** | |  | **X** | Test specifications | | | |  | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
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| ***Other comments:*** | | **Isolated impact analysis:**  This CR has isolated impact on the determination of  for PUSCH retransmission that corresponds to a RAR UL grant and is scheduled by DCI format 0\_1. If the UE is implemented in accordance to this CR and the gNB is not, or the gNB is implemented in accordance to this CR and the UE is not, there may be different understanding between UE and gNB on the value of . | | | | | | | | |
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| ***This CR's revision history:*** | | This is the first version for this CR. | | | | | | | | |

<Unchanged part omitted>

### 7.1.1 UE behaviour

If a UE transmits a PUSCH on active UL BWP  of carrier  of serving cell  using parameter set configuration with index  and PUSCH power control adjustment state with index , the UE determines the PUSCH transmission power  in PUSCH transmission occasion  as

 [dBm]

where,

- is the UE configured maximum output power defined in [8-1, TS 38.101-1], [8-2, TS38.101-2] and [8-3, TS38.101-3] for carrier  of serving cell  in PUSCH transmission occasion .

-  is a parameter composed of the sum of a component  and a component  where .

- If a UE is not provided *P0-PUSCH-AlphaSet* or for a PUSCH (re)transmission corresponding to a RAR UL grant as described in Clause 8.3, , , and , where the parameter *preambleReceivedTargetPower* [11, TS 38.321] (for ) and *msg3-DeltaPreamble* (for ) are provided by higher layers, or  dB if *msg3-DeltaPreamble* is not provided, for carrier  of serving cell 

- For a PUSCH (re)transmission configured by *ConfiguredGrantConfig*, ,  is provided by *p0-NominalWithoutGrant*, or  if *p0-NominalWithoutGrant* is not provided, and  is provided by *p0* obtained from *p0-PUSCH-Alpha* in *ConfiguredGrantConfig* that provides an index *P0-PUSCH-AlphaSetId* to a set of *P0-PUSCH-AlphaSet* for active UL BWP  of carrier  of serving cell 

- For , a  value, applicable for all , is provided by *p0-NominalWithGrant,* or  if *p0-NominalWithGrant* is not provided, for each carrier  of serving cell  and a set of values are provided by a set of *p0* in *P0-PUSCH-AlphaSet* indicated by a respective set of *p0-PUSCH-AlphaSetId* for active UL BWP  of carrier  of serving cell 

- If the UE is provided by *SRI-PUSCH-PowerControl* more than one values of *p0-PUSCH-AlphaSetId* and if DCI format 0\_1 includes a SRI field, the UE obtains a mapping from *sri-PUSCH-PowerControlId* in *SRI-PUSCH-PowerControl* between a set of values for the SRI field in DCI format 0\_1 [5, TS 38.212] and a set of indexes provided by *p0-PUSCH-AlphaSetId* that map to a set of *P0-PUSCH-AlphaSet* values. If the PUSCH transmission except for the PUSCH retransmission corresponding to a RAR UL grant is scheduled by a DCI format 0\_1 that includes a SRI field, the UE determines the value of  from the *p0-PUSCH-AlphaSetId* value that is mapped to the SRI field value

- If the PUSCH transmission except for the PUSCH retransmission corresponding to a RAR UL grant is scheduled by a DCI format 0\_0 or by a DCI format 0\_1 that does not include a SRI field, or if *SRI-PUSCHPowerControl* is not provided to the UE, , and the UE determines  from the value of the first *P0-PUSCH-AlphaSet* in *p0-AlphaSets*

- For 

- For ,  is a value of *msg3-Alpha*, when provided; otherwise, 

- For ,  is provided by *alpha* obtained from *p0-PUSCH-Alpha* in *ConfiguredGrantConfig* providing an index *P0-PUSCH-AlphaSetId* to a set of *P0-PUSCH-AlphaSet* for active UL BWP  of carrier  of serving cell 

- For , a set of  values are provided by a set of *alpha* in *P0-PUSCH-AlphaSet* indicated by a respective set of *p0-PUSCH-AlphaSetId* for active UL BWP  of carrier  of serving cell 

- If the UE is provided *SRI-PUSCH-PowerControl* and more than one values of *p0-PUSCH-AlphaSetId*, and if DCI format 0\_1 includes a SRI field, the UE obtains a mapping from *sri-PUSCH-PowerControlId* in *SRI-PUSCH-PowerControl* between a set of values for the SRI field in DCI format 0\_1 [5, TS 38.212] and a set of indexes provided by *p0-PUSCH-AlphaSetId* that map to a set of *P0-PUSCH-AlphaSet* values. If the PUSCH transmission is scheduled by a DCI format 0\_1 that includes a SRI field, the UE determines the values of  from the *p0-PUSCH-AlphaSetId* value that is mapped to the SRI field value

- If the PUSCH transmission except for the PUSCH retransmission corresponding to a RAR UL grant is scheduled by a DCI format 0\_0 or by a DCI format 0\_1 that does not include a SRI field, or if *SRI-PUSCH-PowerControl* is not provided to the UE, , and the UE determines  from the value of the first *P0-PUSCH-AlphaSet* in *p0-AlphaSets*

<Unchanged part omitted>