**3GPP TSG RAN WG1 Meeting #106-e R1-21xxxxx**

**E-Meeting, August 16th – August 27th, 2021**

**Agenda Item: 6**

**Source: Moderator (Huawei)**

**Title: Feature lead summary on 106-e-LTE-6CRs-04**

**Document for: Discussion and Decision**

# Introduction

This documents provides the summary of discussions on the corresponding email discussion, regarding the proposed CR in [1].

[106-e-LTE-6CRs-04] Email discussion/approval on distinguishing between PUR and SPS PUSCH for eMTC ([R1-2108194](../../Docs/R1-2108194.zip)) – Yubo (Huawei)

* Issue 5: distinguishing between PUR and SPS PUSCH for eMTC
* Discussion and decision by August 18, CR by August 20, final check by August 24

# Discussion

In [1], a correction to distinguish between PUSCH in PUR and SPS PUSCH for eMTC is proposed, with following motivation.

*When PUR was introduced, the term “PUSCH transmission using a preconfigured uplink resource” is used to refer to a PUR PUSCH. However, as there is no corresponding MPDCCH for a PUR PUSCH either, the term “PUSCH without a corresponding MPDCCH” also covers the PUR PUSCH. As a result, there is ambiguity between PUR PUSCH and SPS PUSCH in the spec.*

A TP is proposed:

=========================**Text proposal to TS 36.213**==============================

8.0 UE procedure for transmitting the physical uplink shared channel

<Unchanged part omitted>

For BL/CE UEs, the set of BL/CE UL subframes is indicated as follows

- If UL resource reservation is enabled for the UE as specified in [11],

- for PUSCH transmission associated with C-RNTI or SPS C-RNTI using UE-specific MPDCCH search space including PUSCH transmission without a corresponding MPDCCH or preconfigured uplink resource,

- if the Resource reservation field in the DCI is set to 0, then the set of BL/CE UL subframes corresponds to all uplink subframes during the PUSCH transmission;

- if the Resource reservation field in the DCI is set to 1, then the set of BL/CE UL subframes corresponds to all uplink subframes that are not fully reserved according to higher layer parameters (a subframe is considered fully reserved if and only if all SC-FDMA symbols of the PUSCH transmission are reserved in the subframe);

- for PUCCH transmission associated with C-RNTI or SPS C-RNTI using UE-specific MPDCCH search space including PUSCH transmission without a corresponding MPDCCH,

- the set of BL/CE UL subframes corresponds to all uplink subframes that are not fully reserved according to higher layer parameters (a subframe is considered fully reserved if and only if all SC-FDMA symbols of the PUCCH transmission are reserved in the subframe).

<Unchanged part omitted>

For BL/CE UEs, and for a PUSCH transmission starting in subframe *n+ k0* without a corresponding MPDCCH or preconfigured uplink resource, the UE shall adjust the PUSCH transmission in subframe(s) *n+ki* with *i = 0, 1, …, N-1,* where

*- 0≤k0<k1<…,kN-1* and the value of  is determined by the *repetition number* field in the activation DCI, where are given in Table 8-2b and Table 8-2c; and

- if the UE is configured with higher layer parameter *ce-PUSCH-SubPRB-Config-r15*, and the PUSCH resource assignment in the activation DCI is using uplink resource allocation type 5,  where  is defined in [3] and  is determined according to procedure in clause 8.1.6,  otherwise

- in case *N>1*, subframe(s) *n+ki* with *i=0,1,…,N-1* are *N* consecutive BL/CE UL subframe(s), and in case *N=1*, *k0=0*;

<Unchanged part omitted>

If a UE is configured by higher layers to decode MPDCCHs with the CRC scrambled by the SPS C-RNTI, the UE shall decode the MPDCCH according to the combination defined in Table 8-5B and transmit the corresponding PUSCH if a transport block corresponding to the HARQ process of the PUSCH transmission is generated as described in [8].   
The scrambling initialization of this PUSCH corresponding to these MPDCCHs and PUSCH retransmission for the same transport block is by SPS C-RNTI. The scrambling initialization of initial transmission of this PUSCH without a corresponding MPDCCH or preconfigured uplink resource and the PUSCH retransmission for the same transport block is by SPS C-RNTI.

======================**End of Text proposal to TS 36.213**===========================

Please input your comment on the motivation and TP above:

|  |  |
| --- | --- |
| Companies | Comments |
| Nokia, NSB | We are OK in principle with the changes. Suggest changing the wording to “or using preconfigured uplink resource”. |
|  |  |
|  |  |

# Summary

# References

1. R1-2108194 Discussion on distinguishing between PUR and SPS PUSCH for eMTC Huawei, HiSilicon