**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-02**

**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-02] Email discussion/approval on Correction on cyclic shift for eMTC PUR ([R1-2107688](file:///C%3A%5CUsers%5CDocs%5CR1-2107688.zip)) – Yubo (Huawei)

* Issue 3: Correction on cyclic shift for eMTC PUR
* Discussion and decision by August 18, CR by August 20, final check by August 24

# Discussion

In [1], a correction on cyclic shift for eMTC PUR is proposed due to the following reason:

|  |  |
| --- | --- |
| ***Reason for change:*** | The parameter *pusch-CyclicShift* in higher layer parameter *PUR-PUSCH-Config* is intended to be used in PUSCH corresponding to preconfigured uplink resource. However, in the current spec, it is not limited to PUR PUSCH. |
|  |  |
| ***Summary of change:*** | It is clarified that the parameter *pusch-CyclicShift* in higher layer parameter *PUR-PUSCH-Config* is for PUSCH corresponding to preconfigured uplink resource. |
|  |  |
| ***Consequences if not approved:*** | The parameter *pusch-CyclicShift* in higher layer parameter *PUR-PUSCH-Config* will also be used in non-PUR PUSCH mistakenly, such as msg3 etc. |

The proposed change is as following:

=======================Change to TS 36.211=====================================

**<Unchanged parts are omitted>**

5.5.2.1.1 Reference signal sequence

**<Unchanged parts are omitted>**

The cyclic shift  in a slot  is given as if the ul-V-SPS-RNTI-r14 was used to transmit the most recent uplink-related DCI for the transport block associated with the corresponding PUSCH transmission. For PUSCH transmissions not using sub-PRB allocations, if *pusch-CyclicShift* in higher layer parameter *PUR-PUSCH-Config* is configured it provides the value of $n\_{cs,λ}$ and the cyclic shift  in a slot  is given as for PUSCH (re)transmission corresponding to preconfigured uplink resource.

**<Unchanged parts are omitted>**

======================End of change to TS 36.211=================================

Please input your comment on the motivation and CR above:

|  |  |
| --- | --- |
| Companies | Comments |
| Ericsson | If this CR is to be agreed for clarification purposes, we suggest using the same wording order we agreed for a similar issue (i.e., R1-2106196) in RAN1# 105-e, that is:

|  |
| --- |
| **<Unchanged parts are omitted>**5.5.2.1.1 Reference signal sequence**<Unchanged parts are omitted>**The cyclic shift  in a slot  is given as if the ul-V-SPS-RNTI-r14 was used to transmit the most recent uplink-related DCI for the transport block associated with the corresponding PUSCH transmission. For PUSCH transmissions not using sub-PRB allocations, if *pusch-CyclicShift* in higher layer parameter *PUR-PUSCH-Config* is configured for PUSCH (re)transmission corresponding to preconfigured uplink resource it provides the value of $n\_{cs,λ}$, and the cyclic shift  in a slot  is given as .**<Unchanged parts are omitted>** |

Moreover, in the revision above a “comma” was added after “$n\_{cs,λ}$”. Otherwise, it seems to say that the higher layer parameter provides both “$n\_{cs,λ}$” and “”, however in my understanding it only provides “$n\_{cs,λ}$” as to calculate “”. |
| Nokia, NSB | We support this clarification CR.No strong view on where to insert the clarification text. We are fine with both Huawei’s and Ericsson’s proposal. |
| Lenovo, MotoM | We support the clarification and also OK for the update from E///. |
| Qualcomm | Although the change looks editorial (we don’t think there is a possible misinterpretation of the spec), we are OK with it if the majority agrees. Either Huawei or Ericsson text are fine for us. |
| ZTE, Sanechips | Both the original TP and updated TP from Ericsson are fine with us and we slightly prefer the original TP.If modified part is added after the description of value $n\_{cs,λ}$, it looks like we are emphasizing the value of $n\_{cs,λ}$ only can be used for PUSCH (re)transmission corresponding to preconfigured uplink resource. |
| Huawei, HiSilicon | Regarding the comments from Ericsson and ZTE/Sanechips, maybe we can have a modification as below to make it clearer.

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| --- |
| **<Unchanged parts are omitted>**5.5.2.1.1 Reference signal sequence**<Unchanged parts are omitted>**The cyclic shift  in a slot  is given as if the ul-V-SPS-RNTI-r14 was used to transmit the most recent uplink-related DCI for the transport block associated with the corresponding PUSCH transmission. For PUSCH transmissions not using sub-PRB allocations, if *pusch-CyclicShift* in higher layer parameter *PUR-PUSCH-Config* is configured, then for PUSCH (re)transmission corresponding to preconfigured uplink resource it provides the value of $n\_{cs,λ}$, and the cyclic shift  in a slot  is given as .**<Unchanged parts are omitted>** |

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| Lenovo, MotoM | We are fine with the updated CR from moderator. |
| Ericsson v009 | We are Ok with the updated CR. |
| ZTE, Sanechips | We are fine with the updated CR |
| Nokia, NSB | We are fine with the updated CR. |

# Summary

Based on the comments, the following is proposed:

**Proposal: endorse the following text proposal to TS 36.211:**

**<Unchanged parts are omitted>**

5.5.2.1.1 Reference signal sequence

**<Unchanged parts are omitted>**

The cyclic shift  in a slot  is given as if the ul-V-SPS-RNTI-r14 was used to transmit the most recent uplink-related DCI for the transport block associated with the corresponding PUSCH transmission. For PUSCH transmissions not using sub-PRB allocations, if *pusch-CyclicShift* in higher layer parameter *PUR-PUSCH-Config* is configured, then for PUSCH (re)transmission corresponding to preconfigured uplink resource it provides the value of $n\_{cs,λ}$, and the cyclic shift  in a slot  is given as .

**<Unchanged parts are omitted>**

# References

1. R1-2107688 Correction on cyclic shift for eMTC PUR Huawei, HiSilicon