**3GPP TSG RAN WG1 Meeting #109e R1-22xxxxx**

**e-Meeting, May 9th – 20th, 2022**

**Agenda Item: 5**

**Source: Moderator (Huawei)**

**Title: Draft Summary of email discussion [109-e-AI5-LSs-04] on UE capability of cross PUCCH-group CSI reporting**

**Document for: Discussion and Decision**

# Introduction

In the previous meeting, companies had discussions on the remaining questions in the LS [1] and achieved a reply LS [2]. In the reply LS, companies have achieved agreements on detailed design for the new UE capability. A table of UE capability that reflects all the agreements can be found in Appendix.

One remaining issue is the candidate values {val#1, val#2, val#3} of additional number of symbols required in addition to existing Z and Z’ for aperiodic CSI report for cross-PUCCH group CSI reporting when relaxed CSI computation time is indicated.

As per chair’s guidance, the discussion is arranged as below and is expected to complete by **May 13**.

[109-e-AI5-LSs-04] Email discussion for incoming LS on Remaining issues on beam information of PUCCH SCell in PUCCH SCell activation procedure ([R1-2203101](../../Documents/3GPP%20documents/RAN1/TSGR1_109-e/Docs/R1-2203101.zip)) by May 13 – Frank (Huawei)

# Discussions

## Issue 1: Candidate values {val#1, val#2, val#3} of additional number of symbols required in addition to existing Z and Z’ for aperiodic CSI report

To reduce the complexity of terminal processing and ensure the integrity of the slot, the candidate values are proposed as below.

*“****Proposal:*** *For FG 22-13, candidate values of additional number of symbols required are {14, 28, 56} when relaxed CSI computation time is indicated.”[3]*

After a consensus on the exact values, a LS to RAN2 and RAN4 for it is expected.

Companies’ views are very welcome.

|  |  |
| --- | --- |
| *Company* | *View* |
| Apple | We are fine with the proposal |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

# Conclusions

TBD

# References

1. R1-2108704, “LS on beam information of PUCCH SCell in PUCCH SCell activation procedure”, TSG RAN WG1 #106bis-e, October 11th – 19th, 2021.
2. R1-2202778, “Reply LS on beam information of PUCCH SCell in PUCCH SCell activation procedure”, TSG RAN WG1 Meeting #108-e, February 21 – March 3, 2022.
3. R1-2203101, “Remaining issues on beam information of PUCCH SCell in PUCCH SCell activation procedure”, Huawei, TSG RAN WG1 Meeting #109-e, May 9 – 20, 2022.

# Appendix

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Features | Index | Feature group | Components | Prerequisite feature groups | Need for the gNB to know if the feature is supported | Applicable to the capability signalling exchange between UEs (Sidelink WI only)”. | Consequence if the feature is not supported by the UE | Type(the ‘type’ definition from UE features should be based on the granularity of 1) Per UE or 2) Per Band or 3) Per BC or 4) Per FS or 5) Per FSPC) | Need of FDD/TDD differentiation | Need of FR1/FR2 differentiation | Capability interpretation for mixture of FDD/TDD and/or FR1/FR2 | **Note** | Mandatory/Optional |
| Further RRM enhancement for NR and MR-DC | 22-13 | CSI reporting cross PUCCH group | * Support reporting CSI of an SCell belonging to secondary PUCCH group by PUSCH or PUCCH of active serving cells belonging to primary PUCCH group, for both during and after SCell activation procedure.
* Support reporting CSI of an SCell belonging to primary PUCCH group by PUSCH or PUCCH of active serving cells belonging to secondary PUCCH group, for both during and after SCell activation procedure.
* Support for P-CSI and A-CSI for cross-PUCCH group CSI reporting
	+ Indication for UE CSI computation time for A-CSI report = {same as no-cross-PUCCH-group, relaxed}
* Additional indication for support/not of SP-CSI on PUCCH for cross-PUCCH group CSI reporting
* Additional indication for support/not of SP-CSI on PUSCH for cross-PUCCH group CSI reporting
* UE indicates one or multiple supported carrier type pairs(s), each carrier type pair is {carrier type in a PUCCH-group in which CSI measurement is performed, carrier type in the other PUCCH-group in which CSI report is performed}, where a carrier type is one of {FR1 licensed TDD, FR1 unlicensed TDD, FR1 licensed FDD, FR2}
* Note: The UE capability is introduced from Rel-16.
 | FG 2-35 and either FG 6-7 or FG 22-7 | Yes | N/A | Cross-PUCCH group CSI report may not be supported | per BC if the capability is introduced from Rel-16, otherwise per UE. | [No] | [No] | N/A | **Note: RAN1 didn’t discuss the potential conflicts with the definition of PUCCH group that was discussed in RAN2****Component 3: if “relaxed” is reported, then indicate additional number of symbols required in addition to existing Z and Z’ for aperiodic CSI report for cross-PUCCH group CSI reporting, which is per SCS (the same SCS set definition as in S5.4 of TS 38.214) reported and has candidate values {val#1, val#2, val#3}.****Note: the candidate value {val#1, val#2, val#3} is with range from 14 to 56 symbols only, their exact values are FFS.** | Optional with capability signaling |