**3GPP TSG RAN WG1 #110 R1- 220xxxx**

**Toulouse, France, August 22th – 26th, 2022**

**Agenda item: 8.5**

**Source: Moderator (ZTE)**

**Title: Summary on LS for reduced PRS samples capability**

**Document for: Discussion and Decision**

# Introduction

RAN2 sent an LS R1-2207812(R2-2208797) on DL-PRS measurements with reduced samples capability. Because RAN1 and RAN4 defined M-sample measurements with different granularities of UE capability signaling for RRC\_CONNECTED and RRC\_INACTIVE state respectively, RAN2 is asking whether RAN1 or RAN4 can revise the UE feature to achieve a unified design. Here is the details from RAN2:

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RAN2 observes that the UE capability of reduced samples of DL-PRS measurement has different granularities in different RRC states according to the RAN1 and RAN4 UE features list. To be specific, the RAN1’s UE feature 27-3-1: M-sample measurements in RRC\_CONNECTED is a per band capability:

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| 27-3-1 | M-sample measurements in RRC\_CONNECTED | The capability to support reporting a measurement based on measuring M=1 or 2 samples (instances) of a DL PRS resource set | If the UE does not provide the capability, the UE is assumed to support M=4 only | per band |

RAN4’s UE feature 14-2: PRS measurement for reduced sample in RRC\_INACTIVE state is a per UE capability:

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| --- | --- | --- | --- | --- | --- |
| 14-2 | PRS measurement for reduced sample in RRC\_inactive state | Capability of supporting reduced number of samples (M=1, 2) for PRS measurement in RRC\_inactive state | 27-17 | The reduced number of samples (M=1,2) for PRS measurement in RRC\_inactive state cannot be supported. The UE is assumed to support M=4 only. | Per UE |

Therefore, RAN2 requires a clarification on whether a unified design in terms of the granularity of the UE capability for reduced samples of PRS measurement in the UE feature 27-3-1 from RAN1 and the UE feature 14-2 from RAN4 is needed, i.e., whether to change the type of 27-3-1 to per UE (RAN1’s responsibility) or to change the type of 14-2 to per band (RAN4’s responsibility).

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# Round 1

RAN1 had thorough discussion on this UE feature before, and achieved agreements that FG 27-3-1 is per band considering flexible UE implementation. Hence, it is pursued not to change FG 27-3-1 from RAN1 perspective. To achieve unified design, RAN1 recommends RAN4 to revise the granularity to per band.

***Proposal 1: RAN1 is not willing to revise the FG 27-3-1. RAN1 thinks a unified design is desirable and recommends RAN4 to change FG 14-2 to per band.***

If Proposal 1 is agreeable, the following wording is suggested for the reply LS to RAN2 and RAN4:

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| RAN1 thanks RAN2 for the LS R1-2207812(R2-2208797) on DL-PRS measurements with reduced samples capability. RAN1 discussed the question in the LS and thinks a unified design is desirable. However, RAN1 technically thinks FG 27-3-1 should be reported per band considering UE implementation flexibility. So RAN1 recommends RAN4 to change FG 14-2 to per band. |

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| **Company** | **Comments for the proposal and wording in the box** |
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# Conclusion