3GPP TSG-RAN WG3 Meeting #114-e R3-21xxxx

Online, 01 – 11 November 2021

**Agenda item: 19.2.3**

**Source: Nokia, Nokia Shanghai Bell**

**Title:** **(TP for NR\_pos\_enh BL CR for TS 38.455) Further details for on-demand PRS**

**Document for: Discussion and Decision**

# 1 Introduction

This NRPPa TP captures the agreements from CB # 1903\_Pos\_OnDemandPRS.

# A Appendix: Text Proposal for TS 38.455 BL CR

*Start of Text Proposal for TS 38.455 BL CR*

8.2.X PRS Configuration Exchange

8.2.X.1 General

The PRS Configuration Exchange procedure is initiated by the LMF to request the NG-RAN node to configure PRS transmission. This procedure applies only if the NG-RAN node is a gNB.

8.2.X.2 Successful Operation



**Figure 8.2.X.2-1: PRS Configuration Exchange procedure, successful operation**

The LMF initiates the procedure by sending a PRS CONFIGURATION REQUEST message to the NG-RAN node, indicating in the *PRS TRP List* IE the TRP(s) for which DL-PRS transmission is requested. The NG-RAN node should use the information in the *Requested DL PRS Transmission Characteristics* IE to configure DL-PRS transmission by the indicated TRP(s).

If DL-PRS transmission is successfully configured for at least one of the TRPs, the NG-RAN node shall respond with a PRS CONFIGURATION RESPONSE message.

8.2.X.3 Unsuccessful Operation



**Figure 8.2.X.3-1: PRS Configuration Exchange procedure, unsuccessful operation**

If the NG-RAN node cannot configure DL-PRS transmission for any of the TRPs in the *PRS TRP List* IE of the PRS CONFIGURATION REQUEST message, it shall respond with a PRS CONFIGURATION FAILURE message with an appropriate cause value.

8.2.X.4 Abnormal Conditions

Void.

*Next Change*

9.1.1.a1 PRS CONFIGURATION REQUEST

This message is sent by LMF to request NG-RAN node configuring the PRS transmission.

Direction: LMF → NG-RAN node.

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| --- | --- | --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| Message Type | M |  | 9.2.3 |  | YES | reject |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| **PRS TRP List** |  | *1* |  |  | YES | ignore |
| **>PRS TRP Item** |  | *1 .. <maxnoTRPs>* |  |  | EACH | ignore |
| >>TRP ID | M |  | 9.2.24 |  | - |  |
| >>Requested DL PRS Transmission Characteristics | [FFS] |  | 9.2.x1 |  | YES | ignore |

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| **Range bound** | **Explanation** |
| maxnoTRPs | Maximum no. of TRPs in a NG-RAN node. Value is 65535 |

9.1.1.a2 PRS CONFIGURATION RESPONSE

This message is sent by NG-RAN node to acknowledge updating the PRS transmission.

Direction: NG-RAN node → LMF.

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| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| Message Type | M |  | 9.2.3 |  | YES | reject |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| **PRS Transmission TRP List** |  | *1* |  |  | YES | ignore |
| **>PRS Transmission TRP Item** |  | *1 .. <maxnoTRPs>* |  |  | EACH | ignore |
| >>TRP ID | M |  | 9.2.24 |  | - |  |
| >>On-demand PRS information | [FFS] |  | 9.2.x2 |  | YES | ignore |

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| **Range bound** | **Explanation** |
| maxnoTRPs | Maximum no. of TRPs in a NG-RAN node. Value is 65535 |

*Next Change*

### 9.2.x1 Requested DL PRS Transmission Characteristics [FFS]

This IE contains the requested PRS configuration for transmission by the LMF.

Editor’s Note: All details of this IE are FFS

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| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
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### 9.2.x2 On-demand PRS information [FFS]

This IE contains the updated PRS configuration.

Editor’s Note: All details of this IE are FFS

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| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
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*Next Change*

*Next Change*

*End of Text Proposal for TS 38.455 BL CR*