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

Online, 01 – 11 November 2021

**Agenda item: 19.2.3**

**Source: Ericsson**

**Title:** **(TP for NR\_pos\_enh BL CR for TS 38.473) Further details for on-demand PRS**

**Document for: Discussion and Decision**

# 1 Introduction

This F1AP TP captures the agreements from CB # 1903\_Pos\_OnDemandPRS.

# A Appendix: Text Proposal for TS 38.473 BL CR

*Start of Text Proposal for TS 38.473 BL CR*

8.13.x PRS Configuration Exchange

8.13.x.1 General

The PRS Configuration Exchange procedure is initiated by the gNB-CU to request the gNB-DU to configure the PRS transmissions.

The procedure uses non-UE-associated signalling.

8.13.x.2 Successful Operation



**Figure 8.13.X.2-1: PRS Configuration Exchange procedure, successful operation**

The gNB-CU initiates the procedure by sending a PRS CONFIGURATION REQUEST message to the gNB-DU node, indicating in the *PRS TRP List* IE the TRP(s) for which DL-PRS transmission is requested. The gNB-DU 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 gNB-DU shall responds with the PRS CONFIGURATION RESPONSE message.

[FFS]

8.13.x.3 Unsuccessful Operation



**Figure 8.13.X.2-1: PRS Configuration Exhcange procedure, unsuccessful operation**

If the gNB-DU 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.

8.13.X.4 Abnormal Conditions

Void.

*Next Change*

9.2.12.x PRS CONFIGURATION REQUEST

This message is sent by a gNB-CU to request a gNB-DU to configure PRS transmissions.

Direction: gNB-CU → gNB-DU.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| Message Type | M |  | 9.3.1.1 |  | YES | reject |
| Transaction ID | M |  | 9.3.1.23 |  | YES | reject |
| **PRS TRP List** |  | *1* |  |  | YES | ignore |
| **>PRS TRP Item** |  | *1 .. <maxnoofTRPs>* |  |  | EACH | ignore |
| >>TRP ID | M |  | 9.3.1.197 |  | - |  |
| >>Requested PRS Transmission Characteristics [FFS] | [FFS] |  | 9.3.1.a |  |  |  |

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoofTRPs | Maximum no. of TRPs in a gNB-DU Value is 65535 |

9.2.12.y PRS CONFIGURATION RESPONSE

This message is sent by a gNB-DU to ackknowledge the PRS transmissions.

Direction: gNB-DU → gNB-CU.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| Message Type | M |  | 9.3.1.1 |  | YES | reject |
| Transaction ID | M |  | 9.3.1.23 |  | YES | reject |
| **PRS Transmission TRP List** |  | *1* |  |  | YES | ignore |
| **>PRS Transmission TRP Item** |  | *1 .. <maxnoofTRPs>* |  |  | EACH | ignore |
| >>TRP ID | M |  | 9.3.1.197 |  | - |  |
| >>On-demand PRS information [FFS] | [FFS] |  | 9.3.1.b |  |  |  |

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoofTRPs | Maximum no. of TRPs in a gNB-DU Value is 65535. |

*Next Change*

9.3.1.a Requested PRS Transmission Characteristics [FFS]

This IE contains the requested PRS configuration for transmission by the gNB-CU.

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| **PRS Resource Set List** |  | *1..<maxnoofPRSresourceSet>* |  |  |
| >PRS Resource Set ID | M |  | INTEGER(0..7) |  |
| >PRS bandwidth | M |  | INTEGER(1..63) | 24,28,…,272 PRBs |
| >Resource Set Periodicity | M |  | ENUMERATED(4,5,8,10,16,20,32,40,64,80,160,320,640,1280,2560,5120,10240,20480,40960,81920,…) |  |
| **>PRS Resource List** | M | *1..<maxnoofPRSresources>* |  | *NR-DL-PRS-Resource-r16* as defined in TS 37.355 [14] |
| >>PRS Resource ID | M |  | INTEGER(0..63) |  |
| >> CHOICE *QCL Info* | O |  |  |  |
| >>>*SSB* |  |  |  |  |
| >>>>NR PCI | M |  | INTEGER(0..1007) |  |
| >>>> SSB Index | O |  | INTEGER(0..63) |  |
| >>>*DL-PRS* |  |  |  |  |
| >>>>QCL Source PRS Resource Set ID | M |  | INTEGER(0..7) |  |
| >>>>QCL Source PRS Resource ID | O |  | INTEGER(0..63) | If it is absent, the QCL source PRS resource ID is the same as the PRS resource ID |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofPRSresourceSet | Maximum no of PRS resources set. Value is 8. |
| maxnoofPRSresource | Maximum no of PRS resources per PRS resource set. Value is 64. |

9.3.1.b On-demand PRS information [FFS]

This IE contains the updated PRS configuration.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** |
| FFS |  |  |  |  |
| PRS Configuration [FFS] | FFS |  | 9.3.1.177 |  |

*Next Change*

ASN.1 to be provided later

*End of Text Proposal for TS 38.473 BL CR*