3GPP TSG-RAN WG3 Meeting #128 R3-

**Malta, MT, 19 – 23 May, 2025**

Title: (TP for LTM BLCR for TS38.473): Further discussion on inter-CU LTM procedure

Agenda Item: 13.2

Source: Huawei

Document for: Other

# 1 Introduction

This contribution contains a TP for LTM BLCR for TS38.473.

# 2 Annex – Text Proposal for LTM BLCR for TS 38.473

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Start of changes\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

#### 8.3.1.1 General

The purpose of the UE Context Setup procedure is to establish the UE Context including, among others, SRB, DRB, BH RLC channel, Uu Relay RLC channel, PC5 Relay RLC channel, and SL DRB configuration. The procedure uses UE-associated signalling.

#### 8.3.1.2 Successful Operation



Figure 8.3.1.2-1: UE Context Setup Request procedure: Successful Operation

<skip unchanged part>

If the *DL LBT Failure Information Request* IE is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, consider that the gNB- CU requests collection of DL LBT failure information for the analysis of the MRO events of the UE specified in TS 38.300 [6], and act as specified in TS 38.401 [4].

If the *Ranging and Sidelink Positioning Service Information* IE is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, take it into account for the UE’s Ranging and Sidelink Positioning service.

If the *Request for CSI-RS Resource Configuration L1 measurement* IE is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, include the *CSI-RS Resource Configuration* IE in the UE CONTEXT SETUP RESPONSE message.

If the *Request for CSI-RS Resource Configuration* *CSI Acquisition* IE is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, include the *CSI-RS Resource Configuration* IE in the UE CONTEXT SETUP RESPONSE message.

**Interaction with UE Inactivity Notification procedure**

If the *SDT Volume Threshold* IE is contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use the information during an SDT transaction to inform the gNB-CU via the UE INACTIVITY NOTIFICATION message as specified in TS 38.401 [4].

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

### 8.3.4 UE Context Modification (gNB-CU initiated)

#### 8.3.4.1 General

The purpose of the UE Context Modification procedure is to modify the established UE Context, e.g., establishing, modifying and releasing radio resources or sidelink resources. This procedure is also used to command the gNB-DU to stop data transmission for the UE for mobility (see TS 38.401 [4]). The procedure uses UE-associated signalling.

#### 8.3.4.2 Successful Operation



Figure 8.3.4.2-1: UE Context Modification procedure. Successful operation

The UE CONTEXT MODIFICATION REQUEST message is initiated by the gNB-CU.

<skip unchanged part>

If the *Ranging and Sidelink Positioning Service Information* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, update its service information for the UE accordingly. If the *Ranging and Sidelink Positioning Authorized* IE within the *Ranging and Sidelink Positioning Service Information* IE is set to "not authorized", the gNB-DU shall, if supported, initiate actions to ensure that the UE is no longer accessing the Ranging and Sidelink Positioning service.

If the *LTM Security Information* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, store it and take it into account for supporting the UE’s AS security continuation during an inter-CU LTM cell switch and act as specified in TS 38.401 [4] and TS 38.321 [16].

If the *Request for CSI-RS Resource Configuration L1 measurement* IE is contained in the UE CONTEXT MODIFICATION message, the gNB-DU shall, if supported, include the *CSI-RS Resource Configuration* IE in the UE CONTEXT MODIFICATION RESPONSE message.

If the *Request for CSI-RS Resource Configuration CSI Acquisition* IE is contained in the UE CONTEXT MODIFICATION message, the gNB-DU shall, if supported, include the *CSI-RS Resource Configuration* IE in the UE CONTEXT MODIFICATION RESPONSE message.

**Interaction with UE Inactivity Notification procedure**

If the *SDT Volume Threshold* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, use the information during an SDT transaction to inform the gNB-CU via the UE INACTIVITY NOTIFICATION message as specified in TS 38.401 [4].

**Interaction with UE Context Setup or UE Context Modification (gNB-CU initiated) procedures**

If the UE CONTEXT MODIFICATION REQUEST message is sent for a UE context set up for S-CPAC and contains the *Transmission Action Indicator* IE set to "stop", the gNB-DU shall, if supported, reset the UE context for the included *SpCell ID* IE, prepare for subsequent CPAC. The gNB-DU shall include the *SpCell ID* IE as the *Requested Target Cell ID* IE in the UE CONTEXT MODIFICATION RESPONSE message.

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 9.2.2.1 UE CONTEXT SETUP REQUEST

This message is sent by the gNB-CU to request the setup of a UE context.

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 |
| gNB-CU UE F1AP ID | M  |  | 9.3.1.4 |  | YES | reject |
| gNB-DU UE F1AP ID  | O |  | 9.3.1.5 |  | YES | ignore |
| SpCell ID | M |  | NR CGI 9.3.1.12 | Special Cell as defined in TS 38.321 [16]. For handover case, this IE is considered as target cell. | YES | reject |
| ServCellIndex | M |  | INTEGER (0..31,...) |  | YES | reject |
| <skip unchanged part> |
| **LTM InformationSetup** |  | *0..1* |  |  | YES | reject |
| >LTM Indicator | M |  | ENUMERATED (true, …) |  | - |  |
| >LTM Configuration ID | M |  | INTEGER (1..8) | Corresponds to the *LTM-CandidateId* IE, as defined in TS 38.331 [8]. | - |  |
| >Reference Configuration | O |  | 9.3.1.292 |  | - |  |
| >CSI Resource Configuration | O |  | 9.3.1.330 |  | - |  |
| Request for CSI-RS Resource Configuration L1 measurement | O |  | ENUMERATED (true, …) |  | - |  |
| Request for CSI-RS Resource Configuration CSI acquisition | O |  | ENUMERATED (true, …) |  | - |  |
| LTM Configuration ID Mapping List | O |  | 9.3.1.294 |  | YES | reject |
| **Early Sync Information Request** |  | *0..1* |  |  | YES | ignore |
| >Request for RACH Configuration | O |  | ENUMERATED (true, …) |  | - |  |
| **>LTM gNB-DUs List** |  | *0..1* |  | This IE contains the IDs of the source gNB-DU and candidate gNB-DU(s). | YES | reject |
| **>>LTM gNB-DUs Item IEs** |  | *1..< maxnoofLTMgNBDUs>* |  |  |  |  |
| >>>LTM gNB-DU ID | M |  | gNB-DU ID 9.3.1.9 |  |  |  |
| >>>LTM gNB ID | O |  | Global gNB ID 9.3.1.305 |  | - |  |
| Path Addition Information | O |  | 9.3.1.296 | This IE contains either the *Indirect Path Addition* IE or the *N3C Indirect Path Addition* IE. | YES | reject |
| NR A2X Services Authorized | O |  | 9.3.1.323 |  | YES | ignore |
| LTE A2X Services Authorized | O |  | 9.3.1.324 |  | YES | ignore |
| NR UE Sidelink Aggregate Maximum Bit Rate for A2X | O |  | NR UE Sidelink Aggregate Maximum Bit Rate9.3.1.119 | This IE applies only if the UE is authorized for NR A2X services. | YES | ignore |
| LTE UE Sidelink Aggregate Maximum Bit Rate for A2X | O |  | LTE UE Sidelink Aggregate Maximum Bit Rate9.3.1.118 | This IE applies only if the UE is authorized for LTE A2X services. | YES | ignore |
| DL LBT Failure Information Request | O |  | ENUMERATED (inquiry, …) |  | YES | ignore |
| Ranging and Sidelink Positioning Service Information | O |  | 9.3.1.331 | This IE applies only if the UE is authorized for NR V2X services and/or 5G ProSe services. | YES | ignore |

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

#### 9.2.2.2 UE CONTEXT SETUP RESPONSE

This message is sent by the gNB-DU to confirm the setup of a UE context.

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 |
| gNB-CU UE F1AP ID | M |  | 9.3.1.4 |  | YES | reject |
| gNB-DU UE F1AP ID | M |  | 9.3.1.5 |  | YES | reject |
| DU To CU RRC Information | M |  | 9.3.1.26 |  | YES | reject |
| <skip unchanged part> |
| **Early Sync Information** |  | *0..1* |  |  | YES | ignore |
| >TCI States Configurations List | M |  | OCTET STRING | Includes the *LTM-TCI-Info*IE, as defined in TS 38.331 [8]. | - |  |
| >Early UL Sync Configuration | O |  | 9.3.1.328 |  | - |  |
| >Early UL Sync Configuration for SUL | O |  | Early UL Sync Configuration9.3.1.328 | This IE applies for SUL carrier. | - |  |
| **LTM Configuration** |  | *0..1* |  |  | YES | ignore |
| **>**SSB Information | M |  | 9.3.1.202 | Includes the SSB Information for the requested target cell. | - |  |
| >Reference Configuration Information | O |  | OCTET STRING | Includes the *CellGroupConfig* IE, as defined in TS 38.331 [8]. | - |  |
| >Complete Candidate Configuration Indicator | O |  | ENUMERATED (complete, ...) |  | - |  |
| >LTM CFRA Resource Configuration | O |  | OCTET STRING | Includes the *RACH-ConfigDedicated* IE, as defined in TS 38.331 [8]. | - |  |
| >LTM CFRA Resource Configuration for SUL | O |  | OCTET STRING | Includes the *RACH-ConfigDedicated* IE, as defined in TS 38.331 [8]. This IE applies for SUL carrier. | - |  |
| >L1 Execution Condition List | O |  | 9.3.1.XXX | The detailed definition of this IE is FFS. | - |  |
| >CSI-RS Resource Configuration L1 measurement | O |  | 9.3.1.x1 |  | - |  |
| >CSI-RS Resource Configuration CSI acquisition | O |  | 9.3.1.x1 |  | - |  |
| **S-CPAC Configuration** |  | *0..1* |  |  | YES | ignore |
| >Reference Configuration Information | O |  | OCTET STRING | Includes the *CellGroupConfig* IE, as defined in TS 38.331 [8]. | - |  |
| >Complete Candidate Configuration Indicator | O |  | ENUMERATED (complete, ...) |  | - |  |

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

#### 9.2.2.7 UE CONTEXT MODIFICATION REQUEST

This message is sent by the gNB-CU to provide UE Context information changes to the gNB-DU.

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 |
| gNB-CU UE F1AP ID | M |  | 9.3.1.4 |  | YES | reject |
| gNB-DU UE F1AP ID | M |  | 9.3.1.5 |  | YES | reject |
| SpCell ID | O |  | NR CGI 9.3.1.12 | Special Cell as defined in TS 38.321 [16]. For handover case, this IE is considered as target cell. | YES | ignore |
| <skip unchanged part> |
| **LTM Information Modify** |  | *0..1* |  |  | YES | reject |
| >LTM Indicator | M |  | ENUMERATED (true, …) |  | - |  |
| >Reference Configuration | O |  | 9.3.1.292 |  | - |  |
| >CSI Resource Configuration | O |  | 9.3.1.330 |  | - |  |
| Request for CSI Resource Configuration L1 measurement | O |  | ENUMERATED (true, …) |  | - |  |
| Request for CSI Resource Configuration CSI acquisition | O |  | ENUMERATED (true, …) |  | - |  |
| **LTM CFRA Resource Config List** |  | *0..1* |  |  | YES | ignore |
| **>LTM CFRA Resource Config Item IEs** |  | *1 .. <maxnoofLTMCells>* |  |  | EACH | ignore |
| >>Cell ID | M |  | NR CGI9.3.1.12 |  | - |  |
| >>LTM CFRA Resource Configuration | O |  | OCTET STRING | Includes the *RACH-ConfigDedicated* IE, as defined in TS 38.331 [8]. | - |  |
| >>LTM CFRA Resource Configuration for SUL | O |  | OCTET STRING | Includes the *RACH-ConfigDedicated* IE, as defined in TS 38.331 [8]. This IE applies for SUL carrier. | - |  |
| LTM Configuration ID Mapping List | O |  | 9.3.1.294 |  | YES | reject |
| **Early Sync Information Request** |  | *0..1* |  |  | YES | ignore |
| >Request for RACH Configuration | M |  | ENUMERATED (true, …) |  | - |  |
| **>LTM gNB-DUs ID List** |  | *1* |  | This IE contains the IDs of the source gNB-DU and candidate gNB-DU(s). | YES | reject |
| **>>LTM gNB-DUs Item IEs** |  | *1..< maxnoofLTMgNBDUs>* |  |  | - |  |
| >>>LTM gNB-DU ID | M |  | gNB-DU ID9.3.1.9 |  | - |  |
| >>>LTM gNB ID | O |  | Global gNB ID 9.3.1.305 |  | - |  |
| **Early Sync Candidate Cell Information List** |  | *0..1* |  |  | YES | ignore |
| **>Early Sync Candidate Cell Information Item IEs** |  | *1 .. <maxnoofLTMCells>* |  |  | EACH | ignore |
| >>Cell ID | M |  | NR CGI9.3.1.12 |  | - |  |
| >>TCI States Configurations List | O |  | OCTET STRING | Includes the *LTM-TCI-Info*IE, as defined in TS 38.331 [8]. | - |  |
| >>Early UL Sync Configuration | O |  | 9.3.1.328 |  | - |  |
| >>Early UL Sync Configuration for SUL | O |  | Early UL Sync Configuration9.3.1.328 | This IE applies for SUL carrier. | - |  |
| >>TA Assistance Information | O |  | ENUMERATED (zero, …) | The value "zero" corresponds to TA value of the cell being equal to zero. | - |  |
| >>UE Based TA Measurement Configuration | O |  | OCTET STRING | Includes the *ltm-UE-MeasuredTA-ID* contained in the *LTM-Candidate* IE, as defined in TS 38.331 [8], for the LTM candidate cell identified by the *Cell ID* IE.  | - |  |
| >>SSB Positions In Burst | C-ifEarlyUL |  | 9.3.1.138 | This IE applies to early TA acquisition. | YES | ignore |
| **Early Sync Serving Cell Information** |  | *0..1* |  |  | YES | ignore |
| >UE Based TA Measurement Configuration | O |  | OCTET STRING | Includes the *ltm-ServingCellUE-MeasuredTA-ID* contained in the *LTM-Config* IE, as defined in TS 38.331 [8], for the current serving cell.  | - |  |
| LTM Cells To Be Released List | O |  | 9.3.1.291 |  | YES | reject |
| Path Addition Information | O |  | 9.3.1.296 |  | YES | reject |
| NR A2X Services Authorized | O |  | 9.3.1.323 |  | YES | ignore |
| LTE A2X Services Authorized | O |  | 9.3.1.324 |  | YES | ignore |
| NR UE Sidelink Aggregate Maximum Bit Rate for A2X | O |  | NR UE Sidelink Aggregate Maximum Bit Rate9.3.1.119 | This IE applies only if the UE is authorized for NR A2X services. | YES | ignore |
| LTE UE Sidelink Aggregate Maximum Bit Rate for A2X | O |  | LTE UE Sidelink Aggregate Maximum Bit Rate9.3.1.118 | This IE applies only if the UE is authorized for LTE A2X services. | YES | ignore |
| DL LBT Failure Information Request | O |  | ENUMERATED (inquiry, …) |  | YES | ignore |
| Ranging and Sidelink Positioning Service Information | O |  | 9.3.1.331 | This IE applies only if the UE is authorized for NR V2X services and/or 5G ProSe services. | YES | ignore |
| Non-Integer DRX Cycle | O |  | 9.3.1.344 |  | YES | ignore |
| LTM Reset Information | O |  | 9.3.1.346 |  | YES | ignore |
| LTM Security Information | O |  | 9.3.1.XX |  | YES | reject |

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

#### 9.2.2.8 UE CONTEXT MODIFICATION RESPONSE

This message is sent by the gNB-DU to confirm the modification of a UE context.

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 |
| gNB-CU UE F1AP ID | M |  | 9.3.1.4 |  | YES | reject |
| gNB-DU UE F1AP ID | M |  | 9.3.1.5 |  | YES | reject |
|  <skip unchanged part> |
| **Early Sync Information** |  | *0..1* |  |  | YES | ignore |
| >TCI States Configurations List | M |  | OCTET STRING | Includes the *LTM-TCI-Info*IE, as defined in TS 38.331 [8]. | - |  |
| >Early UL Sync Configuration | O |  | 9.3.1.328 |  | - |  |
| >Early UL Sync Configuration for SUL | O |  | Early UL Sync Configuration9.3.1.328 | This IE applies for SUL carrier. | - |  |
| **LTM Configuration** |  | *0..1* |  |  | YES | ignore |
| >SSB Information | M |  | 9.3.1.202 | Includes the SSB Information for the requested target cell | - |  |
| >Reference Configuration Information | O |  | OCTET STRING | Includes the *CellGroupConfig* IE, as defined in TS 38.331 [8].  | - |  |
| >Complete Candidate Configuration Indicator | O |  | ENUMERATED (complete, ...) |  | - |  |
| >LTM CFRA Resource Configuration | O |  | OCTET STRING | Includes the *RACH-ConfigDedicated* IE, as defined in TS 38.331 [8]. | - |  |
| >LTM CFRA Resource Configuration for SUL | O |  | OCTET STRING | Includes the *RACH-ConfigDedicated* IE, as defined in TS 38.331 [8]. This IE applies for SUL carrier. | - |  |
| >L1 Execution Condition List | O |  | 9.3.1.XXX | The detailed definition of this IE is FFS. | - |  |
| >CSI-RS Resource Configuration L1 measurement | O |  | 9.3.1.x1 |  | - |  |
| >CSI-RS Resource Configuration CSI acquisition | O |  | 9.3.1.x1 |  | - |  |
| **S-CPAC Configuration** |  | *0..1* |  |  | YES | ignore |
| >Reference Configuration Information | O |  | OCTET STRING | Includes the *CellGroupConfig* IE, as defined in TS 38.331 [8].  | - |  |
| >Complete Candidate Configuration Indicator | O |  | ENUMERATED (complete, ...) |  | - |  |

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

#### 9.3.1.294 LTM Configuration ID Mapping List

This IE indicates the list of LTM cells associated with its configuration IDs.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| **Configuration ID Mapping Item IEs** |  | *1..< maxnoofLTMCells>* |  |  | - |  |
| >LTM Cell ID | M |  | NR CGI 9.3.1.12 |  | - |  |
| >LTM Configuration ID | M |  | INTEGER (1..8) | Corresponds to the *LTM-CandidateId* IE, as defined in TS 38.331 [8]. | - |  |

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

#### 9.2.2.x1 DU-CU CSI-RS COORDINATION REQUEST

This message is sent by the gNB-DU to request the gNB-CU e.g. to activate/deactivate the SP CSI-RS transmissions from specific cells. (Detail is FFS)

Direction: gNB-DU → gNB-CU

| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| --- | --- | --- | --- | --- |
| Message Type | M |  | 9.3.1.1 |  |
| gNB-CU UE F1AP ID | M |  | 9.3.1.4 |  |
| gNB-DU UE F1AP ID | M |  | 9.3.1.5 |  |
|  |  |  |  |  |
| **CSI-RS to be Activated List** |  | *0..1* |  |  |
| **>CSI-RS to be Activatedtem IEs** |  | *1 .. <maxnoofCellList>* |  |  |
| >>Candidate Cell ID | M |  | NR CGI9.3.1.12 |  |
| >>SP CSI-RS Resource ID | M |  | FFS |  |
| **CSI-RS to be Deactivated List** |  | *0..1* |  |  |
| **>CSI-RS to be Deactivated Item IEs** |  | *1 .. <maxnoofCellList>* |  |  |
| >>Candidate Cell ID | M |  | NR CGI9.3.1.12 |  |
| >>SP CSI-RS Resource ID | M |  | FFS |  |

|  |  |
| --- | --- |
| Range bound | Explanation |
| *maxnoofCellList* | Maximum no. of Cells in which the SP CSI-RS is to be activated or deactivated, the maximum value is 8.  |

#### 9.2.2.x2 DU-CU CSI-RS COORDINATION RESPONSE

This message is sent by the gNB-CU e.g. to inform the gNB-DU about the SP CSI-RS transmissions activation/deactivation result.

Direction: gNB-CU → gNB-DU

| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| --- | --- | --- | --- | --- |
| Message Type | M |  | 9.3.1.1 |  |
| gNB-CU UE F1AP ID | M |  | 9.3.1.4 |  |
| gNB-DU UE F1AP ID | M |  | 9.3.1.5 |  |
|  |  |  |  |  |
| **CSI-RS Activation Result List** |  | *0..1* |  |  |
| **> CSI-RS Activation Result Item IEs** |  | *1 .. <maxnoofCellList>* |  |  |
| >>Candidate Cell ID | M |  | NR CGI9.3.1.12 |  |
| **CSI-RS Deactivation List** |  | *0..1* |  |  |
| **>CSI-RS Deactivation Result Item IEs** |  | *1 .. <maxnoofCellList>* |  |  |
| >>Candidate Cell ID | M |  | NR CGI9.3.1.12 |  |

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|  |  |
| --- | --- |
| Range bound | Explanation |
| *maxnoofCellList* | Maximum no. of Cells in which the SP CSI-RS is activated or deactivated, the maximum value is 8.  |

#### 9.2.2.y1 CU-DU CSI-RS COORDINATION REQUEST

This message is sent by the gNB-CU e.g. to request the gNB-DU to activate/deactivate the SP CSI-RS transmissions from specific cells. (Detail is FFS)

Direction: gNB-CU → gNB-DU

| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| --- | --- | --- | --- | --- |
| Message Type | M |  | 9.3.1.1 |  |
| gNB-CU UE F1AP ID | M |  | 9.3.1.4 |  |
| gNB-DU UE F1AP ID | M |  | 9.3.1.5 |  |
|  |  |  |  |  |
| **CSI-RS to be Activated List** |  | *0..1* |  |  |
| **>CSI-RS to be Activatedtem IEs** |  | *1 .. <maxnoofCellList>* |  |  |
| >>Candidate Cell ID | M |  | NR CGI9.3.1.12 |  |
| >>SP CSI-RS Resource ID | M |  | FFS |  |
| **CSI-RS to be Deactivated List** |  | *0..1* |  |  |
| **>CSI-RS to be Deactivated Item IEs** |  | *1 .. <maxnoofCellList>* |  |  |
| >>Candidate Cell ID | M |  | NR CGI9.3.1.12 |  |
| >>SP CSI-RS Resource ID | M |  | FFS |  |

|  |  |
| --- | --- |
| Range bound | Explanation |
| *maxnoofCellList* | Maximum no. of Cells in which the SP CSI-RS is to be activated or deactivated, the maximum value is 8.  |

#### 9.2.2.y2 CU-DU CSI-RS COORDINATION RESPONSE

This message is sent by the gNB-DU e.g. to inform the gNB-CU about the SP CSI-RS transmissions activation/deactivation result. (Detail is FFS)

Direction: gNB-DU → gNB-CU

| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| --- | --- | --- | --- | --- |
| Message Type | M |  | 9.3.1.1 |  |
| gNB-CU UE F1AP ID | M |  | 9.3.1.4 |  |
| gNB-DU UE F1AP ID | M |  | 9.3.1.5 |  |
|  |  |  |  |  |
| **CSI-RS Activation Result List** |  | *0..1* |  |  |
| **> CSI-RS Activation Result Item IEs** |  | *1 .. <maxnoofCellList>* |  |  |
| >>Candidate Cell ID | M |  | NR CGI9.3.1.12 |  |
| **CSI-RS Deactivation List** |  | *0..1* |  |  |
| **>CSI-RS Deactivation Result Item IEs** |  | *1 .. <maxnoofCellList>* |  |  |
| >>Candidate Cell ID | M |  | NR CGI9.3.1.12 |  |

|  |  |
| --- | --- |
| Range bound | Explanation |
| *maxnoofCellList* | Maximum no. of Cells in which the SP CSI-RS is activated or deactivated, the maximum value is 8.  |

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

#### 9.3.1.x1 CSI-RS Resource Configuration

This IE contains the CSI-RS resource configuration used for LTM.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| CSI-RS Resource Configuration To AddModList | O |  | OCTET STRING | Contains the *ltm-NZP-CSI-RS-ResourceToAddModList* as defined in TS 38.331 [8]. |
| CSI-RS Resource Configuration To Release List | O |  | OCTET STRING | Includes the*ltm-NZP-CSI-RS-ResourceToReleaseList*contained in the *LTM-Config* IE as defined in TS 38.331 [8]. |

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

9.3.1.XX LTM Security Information

This IE contains the security related information for LTM candidate cell(s) to support the UE in generating the key material for AS security during an inter-CU LTM cell switch.

| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** |
| --- | --- | --- | --- | --- |
| Next Hop Chaining Count | M |  | INTEGER (0..7) | Next Hop Chaining Count (NCC) defined in TS 33.501 [Y] |
| **Security Change Serving Cell Configuration** | O |  | OCTET STRING | Includes the *ltm-NoSecurityChangeID* IE as defined in TS 38.331 [8], for the current serving cell. |
| **Security Change Candidate Cell Information List** |  | *0..1* |  |  |
| **>Security Change Candidate Cell Information Item** |  | *1.. <maxnoofLTMCells>* |  |  |
| >>Cell ID | M |  | NR CGI9.3.1.12 |  |
| >>Security Change Candidate Cell Configuration | M |  | OCTET STRING | Includes the *ltm-NoSecurityChangeID* IE as defined in TS 38.331 [8], for the LTM candidate cell identified by the *Cell ID* IE. |

| **Range bound** | **Explanation** |
| --- | --- |
| maxnoofLTMCells | Maximum no. of Cells configured for LTM allowed towards one UE, the maximum value is 8. |

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/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*End of changes\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/