3GPP TSG RAN WG3 Meeting #128 R3-25xxxx

Malta, ML, 19 – 23 May, 2025

**Agenda Item: 19.2**

**Source: Huawei**

Title: (TP to BL CR for 38.423) introduction of Evolution of NR duplex operation Sub-band full duplex (SBFD)

Document for: Discussions & Approval

# Introduction

This TP tries to capture the proposals based on the SoD in [1], listed as follows:

* **Change the procedure name as ‘CLI INDICATION’**
* **Remove ‘requested’ in section 9.2.y.1 of F1 and in section 9.1.3.y in Xn.**
* **Add abbreviation for CLI**

# References

[1] R3-253812 Further discussion on remaining open issues, Huawei, China Telecom, China Unicom

# 3 Annex: TP to 38.423

**=============================Start of change==============================**

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

5QI 5G QoS Identifier

AI Artificial Intelligence

AMF Access and Mobility Management Function

A2X Aircraft-to-Everything

BH Backhaul

CAG Closed Access Group

CGI Cell Global Identifier

CHO Conditional Handover

CLI Cross Link Interference

CP Control Plane

CPA Conditional PSCell Addition

CPAC Conditional PSCell Addition or Change

CPC Conditional PSCell Change

DAPS Dual Active Protocol Stack

DL Downlink

EN-DC E-UTRA-NR Dual Connectivity

**=============================Next change==============================**

## 8.1 Elementary procedures

In the following tables, all EPs are divided into Class 1 and Class 2 EPs.

Table 8.1-1: Class 1 Elementary Procedures

| Elementary Procedure | Initiating Message | Successful Outcome | Unsuccessful Outcome |
| --- | --- | --- | --- |
| Response message | Response message |
| Handover Preparation | HANDOVER REQUEST | HANDOVER REQUEST ACKNOWLEDGE | HANDOVER PREPARATION FAILURE |
| Retrieve UE Context | RETRIEVE UE CONTEXT REQUEST | RETRIEVE UE CONTEXT RESPONSE | RETRIEVE UE CONTEXT FAILURE |
| S-NG-RAN node Addition Preparation | S-NODE ADDITION REQUEST | S-NODE ADDITION REQUEST ACKNOWLEDGE | S-NODE ADDITION REQUEST REJECT |
| M-NG-RAN node initiated S-NG-RAN node Modification Preparation | S-NODE MODIFICATION REQUEST | S-NODE MODIFICATION REQUEST ACKNOWLEDGE | S-NODE MODIFICATION REQUEST REJECT |
| S-NG-RAN node initiated S-NG-RAN node Modification | S-NODE MODIFICATION REQUIRED | S-NODE MODIFICATION CONFIRM | S-NODE MODIFICATION REFUSE |
| S-NG-RAN node initiated S-NG-RAN node CHANGE | S-NODE CHANGE REQUIRED | S-NODE CHANGE CONFIRM | S-NODE CHANGE REFUSE |
| M-NG-RAN node initiated S-NG-RAN node Release | S-NODE RELEASE REQUEST | S-NODE RELEASE REQUEST ACKNOWLEDGE | S-NODE RELEASE REJECT |
| S-NG-RAN node initiated S-NG-RAN node Release | S-NODE RELEASE REQUIRED | S-NODE RELEASE CONFIRM |  |
| Xn Setup | XN SETUP REQUEST | XN SETUP RESPONSE | XN SETUP FAILURE |
| NG-RAN node Configuration Update | NG-RAN NODE CONFIGURATION UPDATE | NG-RAN NODE CONFIGURATION UPDATE ACKNOWLEDGE | NG-RAN NODE CONFIGURATION UPDATE FAILURE |
| Cell Activation | CELL ACTIVATION REQUEST | CELL ACTIVATION RESPONSE | CELL ACTIVATION FAILURE |
| Reset | RESET REQUEST | RESET RESPONSE |  |
| Xn Removal | XN REMOVAL REQUEST | XN REMOVAL RESPONSE | XN REMOVAL FAILURE |
| E-UTRA - NR Cell Resource Coordination | E-UTRA - NR CELL RESOURCE COORDINATION REQUEST | E-UTRA - NR CELL RESOURCE COORDINATION RESPONSE |  |
| Resource Status Reporting Initiation | RESOURCE STATUS REQUEST | RESOURCE STATUS RESPONSE | RESOURCE STATUS FAILURE |
| Mobility Settings Change | MOBILITY CHANGE REQUEST | MOBILITY CHANGE ACKNOWLEDGE | MOBILITY CHANGE FAILURE |
| IAB Transport Migration Management | IAB TRANSPORT MIGRATION MANAGEMENT REQUEST | IAB TRANSPORT MIGRATION MANAGEMENT RESPONSE | IAB TRANSPORT MIGRATION MANAGEMENT REJECT |
| IAB Transport Migration Modification | IAB TRANSPORT MIGRATION MODIFICATION REQUEST | IAB TRANSPORT MIGRATION MODIFICATION RESPONSE |  |
| IAB Resource Coordination | IAB RESOURCE COORDINATION REQUEST | IAB RESOURCE COORDINATION RESPONSE |  |
| Partial UE Context Transfer | PARTIAL UE CONTEXT TRANSFER | PARTIAL UE CONTEXT TRANSFER ACKNOWLEDGE | PARTIAL UE CONTEXT TRANSFER FAILURE |
| Data Collection Reporting Initiation | DATA COLLECTION REQUEST | DATA COLLECTION RESPONSE | DATA COLLECTION FAILURE |

Table 8.1-2: Class 2 Elementary Procedures

| Elementary Procedure | Initiating Message |
| --- | --- |
| Handover Cancel | HANDOVER CANCEL |
| SN Status Transfer | SN STATUS TRANSFER |
| RAN Paging | RAN PAGING |
| Xn-U Address Indication | XN-U ADDRESS INDICATION |
| S-NG-RAN node Reconfiguration Completion | S-NODE RECONFIGURATION COMPLETE |
| S-NG-RAN node Counter Check | S-NODE COUNTER CHECK REQUEST |
| UE Context Release | UE CONTEXT RELEASE |
| RRC Transfer | RRC TRANSFER |
| Error Indication | ERROR INDICATION |
| Notification Control Indication | NOTIFICATION CONTROL INDICATION |
| Activity Notification | ACTIVITY NOTIFICATION |
| Secondary RAT Data Usage Report | SECONDARY RAT DATA USAGE REPORT |
| Trace Start | TRACE START |
| Deactivate Trace | DEACTIVATE TRACE |
| Handover Success | HANDOVER SUCCESS |
| Conditional Handover Cancel | CONDITIONAL HANDOVER CANCEL |
| Early Status Transfer | EARLY STATUS TRANSFER |
| Failure Indication | FAILURE INDICATION |
| Handover Report | HANDOVER REPORT |
| Resource Status Reporting | RESOURCE STATUS UPDATE |
| Access And Mobility Indication | ACCESS AND MOBILITY INDICATION |
| Cell Traffic Trace | CELL TRAFFIC TRACE |
| RAN Multicast Group Paging | RAN MULTICAST GROUP PAGING |
| SCG Failure Information Report | SCG FAILURE INFORMATION REPORT |
| SCG Failure Transfer | SCG FAILURE TRANSFER |
| F1-C Traffic Transfer | F1-C TRAFFIC TRANSFER |
| Retrieve UE Context Confirm | RETRIEVE UE CONTEXT CONFIRM |
| Conditional PSCell Change Cancel | CONDITIONAL PSCELL CHANGE CANCEL |
| RACH Indication | RACH INDICATION |
| Data Collection Reporting | DATA COLLECTION UPDATE |
| CLI Indication | CLI INDICATION |

**=============================Next change==============================**

### 8.4.y CLI Indication

#### 8.4.y.1 General

The purpose of the CLI Indication procedure is to transfer CLI related information between NG-RAN nodes.

The procedure uses non UE-associated signalling.

#### 8.4.y.2 Successful Operation



Figure 8.4.y.2-1: CLI Indication, successful operation

NG-RAN node1 initiates the procedure by sending the CLI INDICATION message toNG-RAN node2.

**=============================Next change==============================**

#### 9.1.3.y CLI INDICATION

This message is sent by NG-RAN node2 to NG-RAN node1 to report the results of the CLI measurements.

Direction: NG-RAN node1 → NG-RAN node2.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| --- | --- | --- | --- | --- | --- | --- |
| Message Type | M |  | 9.2.3.1 |  | YES | ignore |
| **CLI Measurement Result** |  | *1* |  |  | YES | ignore |
| **>CLI Measurement Result Item** |  | *1 .. < maxnoofCellsinNG-RANnode >* |  |  | YES | ignore |
| >>Cell ID | M |  | Global NG-RAN Cell Identity  9.2.2.27 |  | – |  |
| >>SSB index | O |  | INTEGER (0..63) | Strongest DL SSB beam information | – |  |
| >>NZP CSI-RS Resource Indication | O |  | INTEGER (1..64) | Strongest DL NZP CSI-RS beam information. | – |  |
| >>CLI Mitigation Indication | O |  | ENUMERATED (true, …) | Indicates to request CLI mitigation | – |  |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofCellsinNG-RANnode | Maximum no. cells that can be served by a NG-RAN node. Value is 16384. |

**=============================Next change==============================**

#### 9.2.2.11 Served Cell Information NR

This IE contains cell configuration information of an NR cell that a neighbouring NG-RAN node may need for the Xn AP interface.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| --- | --- | --- | --- | --- | --- | --- |
| NR-PCI | M |  | INTEGER (0..1007, …) | NR Physical Cell ID | – |  |
| NR CGI | M |  | 9.2.2.7 |  | – |  |
| TAC | M |  | 9.2.2.5 | Tracking Area Code | – |  |
| RANAC | O |  | RAN Area Code  9.2.2.6 |  | – |  |
| **Broadcast PLMNs** |  | *1..<maxnoofBPLMNs>* |  | Broadcast PLMNs contained in the *SIB1* message as specified in TS 38.331[10], associated to the NR Cell Identity in the *NR CGI* IE. | – |  |
| >PLMN Identity | M |  | 9.2.2.4 |  | – |  |
| CHOICE *NR-Mode-Info* | M |  |  |  | – |  |
| >*FDD* |  |  |  |  |  |  |
| >>**FDD Info** |  | *1* |  |  | – |  |
| >>>UL NR Frequency Info | M |  | NR Frequency Info  9.2.2.19 | This IE is ignored for NR operating bands for which uplink range of NREF is not defined in section 5.4.2.3 of TS 38.104 [24]. | – |  |
| >>>DL NR Frequency Info | M |  | NR Frequency Info  9.2.2.19 |  | – |  |
| >>>UL Transmission Bandwidth | M |  | NR Transmission Bandwidth  9.2.2.20 | This IE is ignored for NR operating bands for which uplink range of NREF is not defined in section 5.4.2.3 of TS 38.104 [24]. | – |  |
| >>>DL Transmission Bandwidth | M |  | NR Transmission Bandwidth  9.2.2.20 |  | – |  |
| >>>UL Carrier List | O |  | NR Carrier List  9.2.2.63 | If included, the *UL Transmission Bandwidth* IE shall be ignored. | YES | ignore |
| >>>DL Carrier List | O |  | NR Carrier List  9.2.2.63 | If included, the *DL Transmission Bandwidth* IE shall be ignored. | YES | ignore |
| >>>gNB-DU Cell Resource Configuration-FDD-UL | O |  | gNB-DU Cell Resource Configuration  9.2.2.95 | Contains FDD UL resource configuration of gNB-DU’s cell. Only applicable if the gNB-DU is an IAB-DU or an IAB-donor-DU. | YES | ignore |
| >>>gNB-DU Cell Resource Configuration-FDD-DL | O |  | gNB-DU Cell Resource Configuration  9.2.2.95 | Contains FDD UL resource configuration of gNB-DU’s cell. Only applicable if the gNB-DU is an IAB-DU or an IAB-donor-DU. | YES | ignore |
| >*TDD* |  |  |  |  |  |  |
| >>**TDD Info** |  | *1* |  |  | – |  |
| >>>Frequency Info | M |  | NR Frequency Info  9.2.2.19 |  | – |  |
| >>>Transmission Bandwidth | M |  | NR Transmission Bandwidth  9.2.2.20 | This IE is ignored if the *Transmission Bandwidth asymmetric* IE is present. | – |  |
| >>>Intended TDD DL-UL Configuration NR | O |  | 9.2.2.40 |  | YES | ignore |
| >>>TDD UL-DL Configuration Common NR | O |  | OCTET STRING | Includes the *tdd-UL-DL-ConfigurationCommon* contained in the *SIB1* message as defined in TS 38.331 [10] | YES | ignore |
| >>>Carrier List | O |  | NR Carrier List  9.2.2.63 | If included, the *Transmission Bandwidth* IE shall be ignored. | YES | ignore |
| >>>gNB-DU Cell Resource Configuration-TDD | O |  | gNB-DU Cell Resource Configuration  9.2.2.95 | Contains FDD UL resource configuration of gNB-DU’s cell. Only applicable if the gNB-DU is an IAB-DU or an IAB-donor-DU. | YES | ignore |
| **>>>Transmission Bandwidth asymmetric** |  | *0..1* |  | Indicates the asymmetric UL and DL transmission bandwidth. | YES | ignore |
| >>>>UL Transmission Bandwidth | M |  | NR Transmission Bandwidth  9.2.2.20 |  | – |  |
| >>>>DL Transmission Bandwidth | M |  | NR Transmission Bandwidth  9.2.2.20 |  | – |  |
| >>>SBFD Configuration | O |  | FFS (pending on RAN2 progress) |  | YES | ignore |
| Measurement Timing Configuration | M |  | OCTET STRING | Includes the *MeasurementTimingConfiguration* inter-node message for the served cell, as defined in TS 38.331 [10]. | – |  |
| Connectivity Support | M |  | 9.2.2.28 |  | – |  |
| **Broadcast PLMN Identity Info List NR** |  | *0..<maxnoofBPLMNs>* |  | This IE corresponds to information provided in the *PLMN-IdentityInfoList* IE and the *NPN-IdentityInfoList* IE (if available) in *SIB1* as specified in TS 38.331 [10]. All PLMN Identities and associated information contained in the *PLMN-IdentityInfoList* IE and NPN identities and associated information contained in the *NPN-IdentityInfoList* IE (if available) are included and provided in the same order as broadcast in the *SIB1* message.  NOTE: In case of NPN-only cell, the PLMN Identities and associated information contained in the *PLMN-IdentityInfoList* IE are not included. | YES | ignore |
| **>****Broadcast PLMNs** |  | *1..<maxnoofBPLMNs>* |  | Broadcast PLMNs in the *SIB1* message, associated to the *NR Cell Identity* IE. | – |  |
| >>PLMN Identity | M |  | 9.2.2.4 |  | – |  |
| >TAC | M |  | 9.2.2.5 |  | – |  |
| >NR Cell Identity | M |  | BIT STRING (SIZE(36)) |  | – |  |
| >RANAC | O |  | RAN Area Code  9.2.2.6 |  | – |  |
| >Configured TAC Indication | O |  | 9.2.2.39a | NOTE: This IE is associated with the TAC in the *Broadcast PLMN Identity Info List NR* IE | YES | ignore |
| >NPN Broadcast Information | O |  | 9.2.2.71 | If this IE is included the content of the *Broadcast PLMNs* IE in the *Broadcast PLMN Identity Info List NR* IE is ignored. | YES | reject |
| Configured TAC Indication | O |  | 9.2.2.39a | NOTE: This IE is associated with the TAC on top-level of the *Served Cell Information NR* IE | YES | ignore |
| NPN Broadcast Information | O |  | 9.2.2.71 | If this IE is included the content of the *Broadcast PLMNs* IE in the top *Served Cell Information NR* IE is ignored. | YES | reject |
| SSB Positions In Burst | O |  | 9.2.2.64 |  | YES | ignore |
| NR Cell PRACH Configuration | O |  | OCTET STRING | Includes the *NR Cell PRACH Configuration* IE as defined in section 9.3.1.139 in TS 38.473 [41]. | YES | ignore |
| CSI-RS Transmission Indication | O |  | ENUMERATED (activated, deactivated, ...) | This IE indicates the CSI-RS transmission status of the given cell.  If the *Additional Measurement Timing Configuration List* IE is present, this IE is ignored. | YES | ignore |
| SFN Offset | O |  | 9.2.2.75 |  | YES | ignore |
| **Supported MBS FSA ID List** |  | *0..<maxnoofMBSFSAs>* |  | Shall contain all MBS Frequency Selection Area Identities associated to the NR Cell Identity in the *NR CGI* IE. | YES | ignore |
| >MBS Frequency Selection Area Identity | M |  | OCTET STRING(3) | Corresponds to information provided in the *MBS-FSAI* IE as defined in TS 38.331 [10]. | – |  |
| **NR-U Channel Info List** |  | *0..1* |  |  | YES | ignore |
| **>NR-U Channel Info Item** |  | *1..<maxnoofNR-UChannelIDs>* |  |  | – |  |
| >>NR-U Channel ID | M |  | INTEGER (1.. maxnoofNR-UChannelIDs, …) | Index to uniquely identify the part of the NR-U Channel Bandwidth consisting of a contiguous set of resource blocks (RBs) on which a channel access procedure is performed in shared spectrum.  Value 1 represents the first part of the NR-U Channel Bandwidth on which a channel access procedure is performed. Value 2 represents the second part of the NR-U Channel Bandwidth on which a channel access procedure is performed, and so on. | – |  |
| >>NR ARFCN | M |  | INTEGER (0.. maxNRARFCN) | It represents the centre frequency of the NR-U Channel Bandwidth for NR bands restricted to operation with shared spectrum channel access, as defined in TS 37.213 [51]. Allowed values are specified in 38.101-1 [52] in Table 5.4.2.3-2, Table 5.4.2.3-3 and Table 5.4.2.3-4. | – |  |
| >>Bandwidth | M |  | ENUMERATED (10MHz, 20MHz, 40MHz, 60MHz, 80MHz, …,100MHz) |  | – |  |
| **Additional Measurement Timing Configuration List** | O | *1 .. <maxnoofMTCItems>* |  |  | YES | ignore |
| >Measurement Timing Configuration Index | M |  | INTEGER (0..16) | “0” refers to the configuration contained in the Measurement Timing Configuration IE.  Any value between “1” and “16” refers to a configuration within the *Additional Measurement Timing Configuration List* IE. | – |  |
| >**CSI- RS MTC Configuration List** | M | *1 .. <maxnoofCSIRSconfigurations*> |  | This list explicitly expresses the CSI-RS configurations contained in the MTC | – |  |
| >>CSI-RS Index | M |  | INTEGER (0..95) | Index of CSI-RS as in MTC | – |  |
| >>CSI-RS Status | M |  | ENUMERATED (activated, deactivated, …) | This IE indicates the CSI-RS transmission status of the configuration. | – |  |
| >>**CSI-RS Neighbour List** | O | *1 .. <maxnoofCSIRSneighbourCells>* |  | This list expresses the cells and CSI-RSs neighbouring the CSI-RS in the *CSI-RS Index* IE. | – |  |
| >>>NR CGI | M |  | 9.2.2.7 |  | – |  |
| >>>**CSI-RS MTC Neighbour List** | O | *1 .. < maxnoofCSIRSneighbourCellsInMT*C> |  | This list expresses the CSI-RSs served by the NR CGI, which are neighbouring the CSI-RS of the served cell and contained in the MTC indicated by the neighbouring NR cell. | – |  |
| >>>>CSI-RS Index | M |  | INTEGER (0..95) |  | – |  |
| RedCap Broadcast Information | O |  | BIT STRING (SIZE(8)) | The presence of this IE indicates that the *intraFreqReselectionRedC*ap is broadcast in the *SIB1* message of the corresponding cell, see TS 38.331 [10].  Each position in the bitmap indicates which RedCap UEs are allowed access, according to the setting of RedCap barring indicators in the *SIB1* message, see TS 38.331 [10].  First bit = 1Rx,  second bit = 2Rx,  third bit = halfDuplex,  other bits reserved for future use. Value '1' indicates 'access allowed'. Value '0' indicates 'access not allowed”. | YES | ignore |
| eRedCap Broadcast Information | O |  | BIT STRING (SIZE(8)) | The presence of this IE indicates that the *intraFreqReselection-eRedCap* IE is broadcast in SIB1 of the corresponding cell, see TS 38.331 [10].  Each position in the bitmap indicates which eRedCap UEs are allowed access, according to the setting of the barring indicators in SIB1, see TS 38.331 [10].  First bit = 1Rx,  second bit = 2Rx,  third bit = half-duplex,  other bits reserved for future use. Value '1' indicates 'access allowed'. Value '0' indicates 'access not allowed'. | YES | ignore |
| Mobile IAB Cell | O |  | 9.2.2.106 |  | YES | ignore |
| XR Broadcast Information | O |  | ENUMERATED (true, …) | Corresponds to information provided in the *cellBarred2RxXR* contained in the *SIB1* message as defined in TS 38.331 [10]. | YES | ignore |
| Barring Exemption for Emergency Call Information | O |  | ENUMERATED (true, ...) | Corresponds to information provided in the *barringExemptEmergencyCall* contained in the *SIB1* message as defined in 38.331 [10]. | YES | ignore |
| NZP CSI-RS Resources Configuration | O |  | 9.2.2.x2 |  | YES | ignore |

| Range bound | Explanation |
| --- | --- |
| maxnoofBPLMNs | Maximum no. of broadcast PLMNs by a cell. Value is 12. |
| maxnoofMBSFSAs | Maximum no. of MBS FSAs by one gNB. Value is 256. |
| maxnoofNR-UChannelIDs | Maximum no. NR-U channel IDs in a cell. Value is 16. |
| maxnoofMTCItems | Maximum no. of measurement timing configurations associated with the neighbour cell. Value is 16. |
| maxnoofCSIRSconfigurations | Maximum number of CSI RS configurations reported in the MTC. Value is 96 |
| maxnoofCSIRSneighbourCells | Maximum number of cells neighbouring a CSI-RS coverage area. Value is 16 |
| maxnoofCSIRSneighbourCellsInMTC | Maximum number of CSI-RS coverage areas neighbouring a specific CSI-RS coverage area. Value is 16 |

**=============================Next change==============================**

#### 9.2.2.x2 NZP CSI-RS Resources Configuration

This IE contains the NZP CSI-RS resources configuration of an NR cell.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| NZP-CSI-RS-ResourceSet | M |  | OCTET STRING | Includes the *NZP-CSI-RS-ResourceSet* IE, as defined in TS 38.331 [10]. |
| **NZP-CSI-RS-Resource List** |  | *1* |  |  |
| **>NZP-CSI-RS-Resource Item** |  | *1..<maxnoofNZP-CSI-RS-ResourcesPerSet>* |  |  |
| >>NZP-CSI-RS-Resource | M |  | OCTET STRING | Includes the *NZP-CSI-RS-Resource* IE, as defined in TS 38.331 [10]. |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofNZP-CSI-RS-ResourcesPerSet | Maximum no. of NZP CSI-RS resources per resource set. Value is 64. |

**=============================Next change==============================**

### 9.3.3 Elementary Procedure Definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Elementary Procedure definitions

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

XnAP-PDU-Descriptions {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

ngran-access (22) modules (3) xnap (2) version1 (1) xnap-PDU-Descriptions (0) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- IE parameter types from other modules.

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

IMPORTS

Criticality,

ProcedureCode

FROM XnAP-CommonDataTypes

HandoverRequest,

HandoverRequestAcknowledge,

////Skip Unchanged Part

PartialUEContextTransferAcknowledge,

PartialUEContextTransferFailure,

RachIndication,

DataCollectionRequest,

DataCollectionResponse,

DataCollectionFailure,

DataCollectionUpdate,

CLI-Indication

////Skip Unchanged Part

id-iABResourceCoordination,

id-retrieveUEContextConfirm,

id-cPCCancel,

id-partialUEContextTransfer,

id-rachIndication,

id-dataCollectionReportingInitiation,

id-dataCollectionReporting,

id-cLI-Indication

////Skip Unchanged Part

f1CTrafficTransfer |

retrieveUEContextConfirm |

cPCCancel |

rachIndication |

dataCollectionReporting |

cLI-Indication,

...

}

////Skip Unchanged Part

dataCollectionReportingInitiation XNAP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE DataCollectionRequest

SUCCESSFUL OUTCOME DataCollectionResponse

UNSUCCESSFUL OUTCOME DataCollectionFailure

PROCEDURE CODE id-dataCollectionReportingInitiation

CRITICALITY reject

}

dataCollectionReporting XNAP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE DataCollectionUpdate

PROCEDURE CODE id-dataCollectionReporting

CRITICALITY ignore

}

cLI-Indication XNAP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE CLI-Indication

PROCEDURE CODE id-cLI-Indication

CRITICALITY ignore

}

END

-- ASN1STOP

**=============================Next change==============================**

### 9.3.4 PDU Definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- PDU definitions for XnAP.

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

CellMeasurementResultForDataCollection-List,

CellToReportForDataCollection-List,

CandidateRelayUEInfoList,

NRPagingLongeDRXInformationforRRCINACTIVE,

QMCCoordinationRequest,

QMCCoordinationResponse,

DirectForwardingPathAvailabilityWithSourceMN,

Conditional-Reconfig-List,

PDUSetbasedHandlingIndicator,

MobileIAB-AuthorizationStatus,

BAPAddress,

S-CPAC-Request,

SK-COUNTER,

RegistrationRequestForDataCollection,

ReportCharacteristicsForDataCollection,

ReportingPeriodicityForDataCollection,

NodeAssociatedInfoResult,

SLPositioning-Ranging-Services-Info,

PDUSessionsListToBeReleased-UPError,

UserPlaneFailureIndication,

SRSPositioningConfigOrActivationRequest,

NRPPaPositioningInformation,

CLI-MeasurementResult-List

////Skip Unchanged Part

id-QoE-Measurement-Results,

id-Src-SN-to-Tgt-SNQMCInfoInquiry,

id-DirectForwardingPathAvailabilityWithSourceMN,

id-accessed-PSCellID,

id-conditional-Reconfig-ToCancel-List,

id-PDUSetbasedHandlingIndicator,

id-MobileIAB-AuthorizationStatus,

id-MIAB-MT-BAP-Address,

id-S-CPAC-Request,

id-sk-Counter,

id-Source-M-NG-RANnodeID,

id-SourceSN-to-TargetSN-QMCInfo,

id-RegistrationRequestForDataCollection,

id-ReportCharacteristicsForDataCollection,

id-ReportingPeriodicityForDataCollection,

id-NodeAssociatedInfoResult,

id-SLPositioning-Ranging-Services-Info,

id-PDUSessionsListToBeReleased-UPError,

id-UserPlaneFailureIndication,

id-SRSPositioningConfigOrActivationRequest,

id-NRPPaPositioningInformation,

id-CLI-MeasurementResult-List,

////Skip Unchanged Part

DataCollectionUpdate-IEs XNAP-PROTOCOL-IES ::= {

{ ID id-NGRAN-Node1-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

{ ID id-NGRAN-Node2-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

{ ID id-CellMeasurementResultForDataCollection-List CRITICALITY ignore TYPE CellMeasurementResultForDataCollection-List PRESENCE optional }|

{ ID id-UEAssociatedInfoResult-List CRITICALITY ignore TYPE UEAssociatedInfoResult-List PRESENCE optional }|

{ ID id-NodeAssociatedInfoResult CRITICALITY ignore TYPE NodeAssociatedInfoResult PRESENCE optional },

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- CLI Indication

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

CLI-Indication ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{CLI-Indication-IEs}},

...

}

CLI-Indication-IEs XNAP-PROTOCOL-IES ::= {

{ ID id-CLI-MeasurementResult-List CRITICALITY ignore TYPE CLI-MeasurementResult-List PRESENCE mandatory },

...

}

END

-- ASN1STOP

**=============================Next change==============================**

### 9.3.5 Information Element definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Information Element Definitions

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

////Skip Unchanged Part

id-AssistanceInformationQoE-Meas,

id-QoERVQoEReportingPaths,

id-DirectForwardingPathAvailability,

id-CHO-CPAC-Info,

id-CHO-Maxnoof-CondReconfig,

id-PDUSetQoSParameters,

id-N6JitterInformation,

id-ECNMarkingorCongestionInformationReportingRequest,

id-TAISliceUnavailableCellList,

id-MobileIABCell,

id-XR-Bcast-Information,

id-MaximumDataBurstVolume,

id-CPAC-Preparation-Type,

id-MN-only-MDT-collection,

id-BarringExemptionforEmerCallInfo,

id-Transmission-Bandwidth-asymmetric,

id-NRPPaPositioningInformation,

id-SBFD-Configuration,

id-NZP-CSI-RS-Resources-Config,

maxEARFCN,

maxnoofAllowedAreas,

maxnoofAMFRegions,

maxnoofAoIs,

maxnoofBPLMNs,

maxnoofCAGs,

////Skip Unchanged Part

maxnoofUEReports,

maxnoofCandidateRelayUEs,

maxnoofCAGforMDT,

maxnoofMDTSNPNs,

maxnoofSecurityConfigurations,

maxnoofRSPPQoSFlows,

maxnoofNZP-CSI-RS-ResourcesPerSet

CellMeasurementInitiationResult-List ::= SEQUENCE (SIZE(1..maxnoofCellsinNG-RANnode)) OF CellMeasurementInitiationResult-Item

CellMeasurementInitiationResult-Item ::= SEQUENCE {

cellID GlobalNG-RANCell-ID,

cellMeasurementFailureCause-List CellMeasurementFailureCause-List OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { CellMeasurementInitiationResult-Item-ExtIEs} } OPTIONAL,

...

}

CellMeasurementInitiationResult-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

CLI-MeasurementResult-List ::= SEQUENCE (SIZE(1..maxnoofCellsinNG-RANnode)) OF CLI-MeasurementResult-Item

CLI-MeasurementResult-Item ::= SEQUENCE {

cellID GlobalNG-RANCell-ID,

ssbIndex INTEGER(0..63,...) OPTIONAL,

nZP-CSI-RS-ResourceIndication INTEGER(1..64,...) OPTIONAL,

cLI-MitigationIndication CLI-MitigationIndication OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {CLI-MeasurementResult-Item-ExtIEs} } OPTIONAL,

...

}

CLI-MeasurementResult-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

CLI-MitigationIndication ::= ENUMERATED {true,...}

CellMeasurementResultForDataCollection-List ::= SEQUENCE (SIZE(1..maxnoofCellsinNG-RANnode)) OF CellInfoResultForDataCollection-Item

CellInfoResultForDataCollection-Item ::= SEQUENCE {

cellID GlobalNG-RANCell-ID,

predictedRadioResourceStatus RadioResourceStatus OPTIONAL,

predictedNumberofActiveUEs NumberofActiveUEs OPTIONAL,

predictedRRCConnections RRCConnections OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {CellInfoResultForDataCollection-Item-ExtIEs} } OPTIONAL,

...

}

CellInfoResultForDataCollection-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

////Skip Unchanged Part

NRModeInfoTDD ::= SEQUENCE {

nrFrequencyInfo NRFrequencyInfo,

nrTransmissonBandwidth NRTransmissionBandwidth,

iE-Extension ProtocolExtensionContainer { {NRModeInfoTDD-ExtIEs} } OPTIONAL,

...

}

NRModeInfoTDD-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

{ ID id-IntendedTDD-DL-ULConfiguration-NR CRITICALITY ignore EXTENSION IntendedTDD-DL-ULConfiguration-NR PRESENCE optional }|

{ ID id-TDDULDLConfigurationCommonNR CRITICALITY ignore EXTENSION TDDULDLConfigurationCommonNR PRESENCE optional }|

{ ID id-CarrierList CRITICALITY ignore EXTENSION NRCarrierList PRESENCE optional }|

{ ID id-tdd-GNB-DU-Cell-Resource-Configuration CRITICALITY ignore EXTENSION GNB-DU-Cell-Resource-Configuration PRESENCE optional }|

{ ID id-Transmission-Bandwidth-asymmetric CRITICALITY ignore EXTENSION Transmission-Bandwidth-asymmetric PRESENCE optional }|

{ ID id-SBFD-Configuration CRITICALITY ignore EXTENSION SBFD-Configuration PRESENCE optional }

,

...

}

////Skip Unchanged Part

NRUESidelinkAggregateMaximumBitRate-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

NSAG-ID ::= INTEGER (0..255, ...)

NZP-CSI-RS-Resources-Config ::= SEQUENCE {

nZP-CSI-RS-ResourceSet OCTET STRING,

nZP-CSI-RS-Resource-List NZP-CSI-RS-Resource-List,

iE-Extensions ProtocolExtensionContainer { {NZP-CSI-RS-Resources-Config-ExtIEs} } OPTIONAL,

...

}

NZP-CSI-RS-Resources-Config-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

NZP-CSI-RS-Resource-List ::= SEQUENCE (SIZE(1..maxnoofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-Resource-Item

NZP-CSI-RS-Resource-Item ::= SEQUENCE {

nZP-CSI-RS-Resource OCTET STRING,

iE-Extensions ProtocolExtensionContainer { {NZP-CSI-RS-Resource-Item-ExtIEs} } OPTIONAL,

...

}

NZP-CSI-RS-Resource-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

////Skip Unchanged Part

-- Served Cells NR IEs

ServedCellInformation-NR ::= SEQUENCE {

nrPCI NRPCI,

cellID NR-CGI,

tac TAC,

ranac RANAC OPTIONAL,

broadcastPLMN BroadcastPLMNs,

nrModeInfo NRModeInfo,

measurementTimingConfiguration OCTET STRING,

connectivitySupport Connectivity-Support,

iE-Extensions ProtocolExtensionContainer { {ServedCellInformation-NR-ExtIEs} } OPTIONAL,

...

}

ServedCellInformation-NR-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

{ ID id-BPLMN-ID-Info-NR CRITICALITY ignore EXTENSION BPLMN-ID-Info-NR PRESENCE optional }|

{ ID id-ConfiguredTACIndication CRITICALITY ignore EXTENSION ConfiguredTACIndication PRESENCE optional }|

{ ID id-SSB-PositionsInBurst CRITICALITY ignore EXTENSION SSB-PositionsInBurst PRESENCE optional }|

{ ID id-NRCellPRACHConfig CRITICALITY ignore EXTENSION NRCellPRACHConfig PRESENCE optional }|

{ ID id-NPN-Broadcast-Information CRITICALITY reject EXTENSION NPN-Broadcast-Information PRESENCE optional }|

{ ID id-CSI-RSTransmissionIndication CRITICALITY ignore EXTENSION CSI-RSTransmissionIndication PRESENCE optional }|

{ ID id-SFN-Offset CRITICALITY ignore EXTENSION SFN-Offset PRESENCE optional }|

{ ID id-Supported-MBS-FSA-ID-List CRITICALITY ignore EXTENSION Supported-MBS-FSA-ID-List PRESENCE optional }|

{ ID id-NR-U-ChannelInfo-List CRITICALITY ignore EXTENSION NR-U-ChannelInfo-List PRESENCE optional }|

{ ID id-Additional-Measurement-Timing-Configuration-List CRITICALITY ignore EXTENSION Additional-Measurement-Timing-Configuration-List PRESENCE optional }|

{ ID id-Redcap-Bcast-Information CRITICALITY ignore EXTENSION Redcap-Bcast-Information PRESENCE optional }|

{ ID id-eRedcap-Bcast-Information CRITICALITY ignore EXTENSION ERedcap-Bcast-Information PRESENCE optional }|

{ ID id-MobileIABCell CRITICALITY ignore EXTENSION MobileIABCell PRESENCE optional }|

{ ID id-XR-Bcast-Information CRITICALITY ignore EXTENSION XR-Bcast-Information PRESENCE optional }|

{ ID id-BarringExemptionforEmerCallInfo CRITICALITY ignore EXTENSION BarringExemptionforEmerCallInfo PRESENCE optional }|

{ ID id-NZP-CSI-RS-Resources-Config CRITICALITY ignore EXTENSION NZP-CSI-RS-Resources-Config PRESENCE optional }

,

...

}

**=============================Next change==============================**

### 9.3.7 Constant definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Constant definitions

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

////Skip Unchanged Part

id-ProcedureCode41-NotToBeUsed ProcedureCode ::= 41

id-scgFailureTransfer ProcedureCode ::= 42

id-f1CTrafficTransfer ProcedureCode ::= 43

id-iABTransportMigrationManagement ProcedureCode ::= 44

id-iABTransportMigrationModification ProcedureCode ::= 45

id-iABResourceCoordination ProcedureCode ::= 46

id-retrieveUEContextConfirm ProcedureCode ::= 47

id-cPCCancel ProcedureCode ::= 48

id-partialUEContextTransfer ProcedureCode ::= 49

id-rachIndication ProcedureCode ::= 50

id-dataCollectionReportingInitiation ProcedureCode ::= 51

id-dataCollectionReporting ProcedureCode ::= 52

id-cLI-MeasurementReporting ProcedureCode ::= FFS

////Skip Unchanged Part

maxnoofPSCellsinCPAC INTEGER ::= 8

maxnoofCPACexecutioncond INTEGER ::= 2

maxnoofLBTFailureInformation INTEGER ::= 64

maxnoofCellsTrajectoryPredict INTEGER ::= 16

maxnoofCellsTrajectory INTEGER ::= 16

maxFailedCellMeasObjects INTEGER ::= 124

maxFailedMeasPerNode INTEGER ::= 124

maxnoofUEReports INTEGER ::= 16

maxnoofCandidateRelayUEs INTEGER ::= 32

maxnoofCAGforMDT INTEGER ::= 256

maxnoofMDTSNPNs INTEGER ::= 16

maxnoofSecurityConfigurations INTEGER ::= 8

maxnoofRSPPQoSFlows INTEGER ::= 2048

maxnoofNZP-CSI-RS-ResourcesPerSet INTEGER ::= 64

////Skip Unchanged Part

id-SLPositioning-Ranging-Services-Info ProtocolIE-ID ::= 464

id-XR-Bcast-Information ProtocolIE-ID ::= 465

id-PDUSessionsListToBeReleased-UPError ProtocolIE-ID ::= 466

id-MaximumDataBurstVolume  ProtocolIE-ID ::= 467

id-CPAC-Preparation-Type ProtocolIE-ID ::= 468

id-UserPlaneFailureIndication ProtocolIE-ID ::= 469

id-MN-only-MDT-collection ProtocolIE-ID ::= 470

id-BarringExemptionforEmerCallInfo ProtocolIE-ID ::= 471

id-Transmission-Bandwidth-asymmetric ProtocolIE-ID ::= 472

id-SRSPositioningConfigOrActivationRequest ProtocolIE-ID ::= 473

id-NRPPaPositioningInformation ProtocolIE-ID ::= 474

id-CLI-MeasurementResult-List ProtocolIE-ID ::= FFS

id-SBFD-Configuration ProtocolIE-ID ::= FFS

id-NZP-CSI-RS-Resources-Config ProtocolIE-ID ::= FFS

END

-- ASN1STOP

<<<<<<<<<<<<<<<<<<<<< End of Change >>>>>>>>>>>>>>>>>>>>