**3GPP TSG-RAN WG3 Meeting #117-e *R3-22oooo***

**E-meeting, 15 – 24 August 2022**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **1710** | **rev** | **2** | **Current version:** |  |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network |  |

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|  | | | | | | | | | | |
| ***Title:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, Nokia, Nokia Shanghai Bell, ZTE, Ericsson, Intel Corporation,CATT | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | LTE\_NR\_DC\_enh2-Core | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | At RAN2 #119e, it was agreed that the UE releases all conditional reconfigurations upon reconfiguration with sync of the SCG if CPC/CPA is configured. Since Rel-16, it is possible that both, the MN and the SN initiate conditional reconfiguration (e.g. CHO from the MN or intra-SN CPC from the SN). When the CHO is executed, the SN is informed via signalling from the source MN (SN Release). However, when the intra-SN CPC or SCG reconfiguration using SRB3 is executed, and any possible CHO is released, the MN currently is not informed. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | In order to let the MN know about execution of an intra-SN CPC or SCG reconfiguration using SRB3, and resulting release of possible CHO in the UE, a flag is added in the SN-initiated modification procedure. Also, it is clarified that the SCG configuration, if included in the modification, refers to the new SCG configuration already applied in the UE (it is not necessary for the MN to forward the SCG configuration to the UE).  Impact assessment towards the previous version of the specification (same release):  The impact can be considered isolated becausethe change only extends usage of one procedure. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | If the MN is not aware of the release of CHO, the CHO will be kept prepared in the target node(s) thus wasting resources there. Also, since the MN is not aware that the CHO is not active, it will not prepare a new one and thus UE’s mobility may result in an RLF. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 8.7.7.2, 9.1.4.8, 9.3.4, 9.3.5, 9.3.7 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 38.423 CR0854 | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev1: Updated during RAN3#117-e  Rev2: Updated during the post-RAN3#117-e email discussion | | | | | | | | |

***----------Start of the First Change---------***

### 8.7.7 SgNB initiated SgNB Modification

#### 8.7.7.1 General

This procedure is used by the en-gNB to modify the UE context in the en-gNB.

The procedure uses UE-associated signalling.

#### 8.7.7.2 Successful Operation



Figure 8.7.7.2-1: SgNB initiated SgNB Modification, successful operation.

The en-gNB initiates the procedure by sending the SGNB MODIFICATION REQUIRED message to the MeNB. When the en-gNB sends the SGNB MODIFICATION REQUIRED message, it shall start the timer TDCoverall.

The SGNB MODIFICATION REQUIRED message may contain

- the *PDCP Change Indication* IE;

- the *SgNB to MeNB Container* IE.

- E-RABs to be modified within the *E-RABs To Be Modified Item* IE;

- E-RABs to be released within the *E-RABs To Be Released Item* IE;

- the *SgNB Resource Coordination Information* IE.

For the SN terminated split bearers, the en-gNB may include in the SGNB MODIFICATION REQUIRED message the *UL Configuration* IE to indicate that the MCG UL configuration of the UE has changed.

The en-gNB may include for each bearer in the *E-RABs to Be Modified* *List* IE in the SGNB MODIFICATION REQUIRED message the *New DRB ID Request* IE to request the MeNB to assign a new DRB ID for that bearer.

If the MeNB is able to perform the change requested by the en-gNB, the MeNB shall send the SGNB MODIFICATION CONFIRM message to the en-gNB. The SGNB MODIFICATION CONFIRM message may contain the *MeNB to SgNB Container* IE.

If the SGNB MODIFICATION REQUIRED message contains the *SgNB Resource Coordination Information* IE, the MeNB may use it for the purpose of resource coordination with the en-gNB. The MeNB shall consider the received *UL Coordination Information* IE value valid until reception of a new update of the IE for the same UE. The MeNB shall consider the received *DL Coordination Information* IE value valid until reception of a new update of the IE for the same UE. If the *SgNB Coordination Assistance Information* IE is contained in the *SgNB Resource Coordination Information* IE, the MeNB shall, if supported, use the information to determine further coordination of resource utilisation between the en-gNB and the MeNB.

If the en-gNB applied a full configuration or delta configuration, e.g. as part of a mobility procedure involving a change of DU, the en-gNB shall inform the MeNB by including the *RRC config indication* IE in the SGNB MODIFICATION REQUIRED message.

For each E-RAB successfully modified as requested by the en-gNB, the MeNB shall inform the en-gNB, in the SGNB MODIFICATION CONFIRM message, the same value in the *EN-DC Resource Configuration* IE as received in the SGNB MODIFICATION REQUIRED message.

If the *SCG resources* IE in the *EN-DC Resource Configuration* IE in the SGNB MODIFICATION REQUIRED message for all the E-RABs of the UE are set to “not present”, the MeNB shall, if supported, deduce that the SCG resources are removed.

Upon reception of the SGNB MODIFICATION CONFIRM message the en-gNB shall stop the timer TDCoverall.

If the SGNB MODIFICATION CONFIRM message contains the *MeNB Resource Coordination Information* IE, the en-gNB should forward it to lower layers and it may use it for the purpose of resource coordination with the MeNB, or to coordinate with sidelink resources used in the MeNB. The en-gNB shall consider the received *UL Coordination Information* IE value valid until reception of a new update of the IE for the same UE. The en-gNB shall consider the received *DL Coordination Information* IE value valid until reception of a new update of the IE for the same UE. If the *MeNB Coordination Assistance Information* IE is contained in the *MeNB Resource Coordination Information* IE, the en-gNB shall, if supported, use the information to determine further coordination of resource utilisation between the en-gNB and the MeNB.

If the MeNB receives for an E-RAB for which the PDCP entiy is allocated at the MeNB the *Secondary SgNB DL GTP Tunnel Endpoint at SCG* IE in the SGNB MODIFICATION REQUIRED message, it shall provide the *Secondary MeNB UL GTP Tunnel Endpoint at PDCP* IE to the en-gNB in the SGNB MODIFICATION CONFIRM message. If the *LCID* IE is included in the SGNB MODIFICATION REQUIRED message, the MeNB should take it into account.

If the SGNB MODIFICATION REQUIRED message contains the *RLC Status* IE, the MeNB shall assume that RLC has been reestablished at the en-gNB and may trigger PDCP data recovery.

If the *RLC Mode* IE is included for an E-RAB within the *E-RABs To Be Released List* IE (for E-RABs hosted at the en-gNB) in the SGNB MODIFICATION REQUIRED message, it indicates the mode that the en-gNB used for the E-RAB when it was hosted at the en-gNB.

The MeNB shall include only E-RABs with the following IE in *E-RABs Admitted To Be Modified List* IE:

- the *Secondary MeNB UL GTP Tunnel Endpoint at PDCP* IE.

If the *Location Information* *at SgNB* IE is included in the SGNB MODIFICATION REQUIRED, the MeNB shall store the included information so that it may be transferred towards the MME.

For each requested E-RAB configured as MN-terminated split bearer/SCG bearer, if the *QoS Mapping Information* IE is included in the *GTP Tunnel Endpoint* IE in the SGNB MODIFICATION REQUIRED message, the MeNB shall, if supported, use it to set DSCP and/or flow label fields for the downlink IP packets which are transmitted from MeNB to SgNB through the GTP tunnels indicated by the *GTP Tunnel Endpoint* IE.

If the *SCG UE History Information* IE is included in the SGNB MODIFICATION REQUIRED message, the MeNB node shall, if supported, use this information as specified in TS 37.340 [32]

If the *SCG Activation Request* IE is included in the SGNB MODIFICATION REQUIRED message, the MeNB shall, if supported, consider that the en-gNB node is about to reconfigure the SCG resources as specified in TS 37.340 [32].

If the *CPAC Information Required* IE is included in the SGNB MODIFICATION REQUIRED message, the MeNB shall, if supported, consider that the request provides the configuration update for the list of PSCells prepared at the target en-gNB, as described in TS 37.340 [32].

If the *CG-CandidateList* is included in the *SgNB to MeNB Container* IE in the SGNB MODIFICATION REQUIRED message, the MeNB shall, if supported, use it for the purpose of CPAC.

If the *SCG Reconfiguration* *Notification* IE is included in the SGNB MODIFICATION REQUIRED message and set to 'executed', the MeNB shall, if supported, consider that a prepared SN-initiated intra-SN CPC procedure or an SCG reconfiguration using SRB3 has been executed, as specificed in TS 37.340 [32]. If the *SgNB to MeNB Container* IE is also included in the SGNB MODIFICATION REQUIRED message, the MeNB shall, if supported, consider that the new SCG configuration has already been applied in the UE and should not be forwarded to the UE.

**Interaction with the MeNB initiated SgNB Modification Preparation procedure:**

If applicable, as specified in TS 37.340 [32], the en-gNB may receive, after having initiated the SgNB initiated SgNB Modification procedure, the SGNB MODIFICATION REQUEST message including the *DL Forwarding GTP Tunnel Endpoint* IE and the *UL Forwarding GTP Tunnel Endpoint* IE within the *E-RABs To Be Released List* IE.

If applicable, as specified in TS 37.340 [32], the en-gNB may receive, after having initiated the SgNB initiated SgNB Modification procedure, the SGNB MODIFICATION REQUEST message including the *SgNB Security Key* IE within the *UE Context Information* IE.

If applicable, as specified in TS 37.340 [32], the en-gNB may receive, after having initiated the SgNB initiated SgNB Modification procedure, the SGNB MODIFICATION REQUEST message including the *measGapConfig* IE as defined in TS 38.331 [31] within the *MeNB to SgNB Container* IE.

The en-gNB may receive, after having initiated the SgNB initiated SgNB modification procedure including the *New DRB ID Request* IE for an SN terminated bearer within the *E-RABs To Be Modified List* IE, the SGNB MODIFICATION REQUEST message to release and add the same bearer with a new DRB ID or with the same DRB ID but together with the *SgNB Security Key* IE within the *UE Context Information* IE.

The en-gNB may receive, after having initiated the SgNB initiated SgNB modification procedure, the SGNB MODIFICATION REQUEST message including the *SN triggered* IE.

***----------Start of the Next Change---------***

#### 9.1.4.8 SGNB MODIFICATION REQUIRED

This message is sent by the en-gNB to the MeNB to request the modification of en-gNB resources for a specific UE.

Direction: en-gNB → MeNB.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.13 |  | YES | reject |
| MeNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the MeNB. | YES | reject |
| SgNB UE X2AP ID | M |  | en-gNB UE X2AP ID  9.2.100 | Allocated at the en-gNB. | YES | reject |
| Cause | M |  | 9.2.6 |  | YES | ignore |
| PDCP Change Indication | O |  | 9.2.109 |  | YES | ignore |
| **E-RABs To Be Released List** |  | *0..1* |  |  | YES | ignore |
| **>E-RABs To Be Released Item** |  | *1 .. <maxnoofBearers>* |  |  | EACH | ignore |
| >>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>Cause | M |  | 9.2.6 |  | – |  |
| >>RLC Mode | O |  | RLC Mode  9.2.119 | Indicates the RLC mode at the en-gNB for PDCP transfer to MeNB. | YES | ignore |
| SgNB to MeNB Container | O |  | OCTET STRING | Includes the NR *CG-Config* message or the *CG-CandidateList* message, as defined in TS 38.331 [31]. | YES | ignore |
| MeNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the MeNB | YES | reject |
| **E-RABs To Be Modified List** |  | *0..1* |  |  | YES | ignore |
| **>E-RABs To Be Modified Item** |  | *1 .. <maxnoofBearers>* |  |  | EACH | ignore |
| >>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>EN-DC Resource Configuration | M |  | EN-DC Resource Configuration 9.2.108 | Indicates the PDCP and Lower Layer MCG/SCG configuration. | – |  |
| >>CHOICE *Resource Configuration* | M |  |  |  |  |  |
| >>>*PDCP present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "present". |  |  |
| >>>>Requested MCG E-RAB Level QoS Parameters | O |  | E-RAB Level QoS Parameters 9.2.9 | Includes E-RAB level QoS parameters requested to be provided by the MCG. | – |  |
| >>>>UL Configuration | O |  | 9.2.118 | Information about UL usage in the MeNB. | – |  |
| >>>>UL PDCP SN Length | O |  | PDCP SN Length  9.2.133 | Shall be ignored by the MeNB if received. | YES | ignore |
| >>>>DL PDCP SN Length | O |  | PDCP SN Length  9.2.133 | Shall be ignored by the MeNB if received. | YES | ignore |
| >>>>SgNB UL GTP Tunnel Endpoint at PDCP | O |  | GTP Tunnel Endpoint 9.2.1 | SgNB endpoint of the X2-U transport bearer at PDCP. For delivery of UL PDCP PDUs. | – |  |
| >>>>S1 DL GTP Tunnel Endpoint at the SgNB | O |  | GTP Tunnel Endpoint 9.2.1 | en-gNB endpoint of the S1 transport bearer. For delivery of DL PDUs. | – |  |
| >>>>New DRB ID Request | O |  | ENUMERATED (True, …) |  | YES | ignore |
| *>>>PDCP not present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "not present". |  |  |
| >>>>SgNB DL GTP Tunnel Endpoint at SCG | O |  | GTP Tunnel Endpoint 9.2.1 | SgNB endpoint of the X2-U transport bearer at the SCG. For delivery of DL PDCP PDUs. | – |  |
| >>>>Secondary SgNB DL GTP Tunnel Endpoint at SCG | O |  | GTP Tunnel Endpoint 9.2.1 | SgNB endpoint of the X2-U transport bearer at the SCG. For delivery of DL PDCP PDUs for PDCP duplication. | – |  |
| >>>>RLC Status | O |  | 9.2.131 | Indicates the RLC has been re-established.. |  |  |
| >>>>LCID | O |  | 9.2.138 | Indicate the LCID of the primary path in case of PDCP duplication | YES | ignore |
| SgNB Resource Coordination Information | O |  | 9.2.117 | Information used to coordinate resources utilisation between the en-gNB and the MeNB. | YES | ignore |
| RRC config indication | O |  | 9.2.132 | Indicates the type of RRC configuration used at the en-gNB. | YES | reject |
| Location Information at SgNB | O |  | 9.2.142 | Contains information to support localisation of the UE | YES | ignore |
| SCG UE History Information | O |  | 9.2.177 |  | YES | ignore |
| SCG Activation Request | O |  | 9.2.179 |  | YES | ignore |
| **CPAC Information Required** | O |  |  | This IE may be sent from the target en-gNB. | YES | ignore |
| **>Candidate PSCell List** |  | *1* |  | Indicates the full list of candidate PSCells prepared at the target en-gNB. | – |  |
| >>Candidate PSCell Item |  | *1 .. <maxnoofPSCellCandidate>* |  |  | – |  |
| >>>PSCell ID | M |  | NR CGI 9.2.111 |  | – |  |
| SCG Reconfiguration Notification | O |  | ENUMERATED (executed, ...) |  | YES | ignore |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofBearers | Maximum no. of E-RABs. Value is 256 |
| maxnoofPSCellCandidate | Maximum no. of PSCells for CPAC. Value is 8. |

***----------Start of the Next Change---------***

### 9.3.4 PDU Definitions

-- ASN1START

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

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-- PDU definitions for X2AP.

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

X2AP-PDU-Contents {

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

eps-Access (21) modules (3) x2ap (2) version1 (1) x2ap-PDU-Contents (1) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

--

-- IE parameter types from other modules.

--

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

IMPORTS

ABSInformation,

ABS-Status,

AS-SecurityInformation,

BearerType,

Cause,

CompositeAvailableCapacityGroup,

Correlation-ID,

***//Skip the unchanged part***

CPAinformation-REQ-ACK,

CPAinformation-MOD,

CPAinformation-MOD-ACK,

CPACinformation-REQD,

CPCinformation-REQD,

CPCinformation-CONF,

CPCinformation-NOTIFY,

CPCupdate-MOD,

Additional-Measurement-Timing-Configuration-List,

ServedCellSpecificInfoReq-NR,

SecurityIndication,

SecurityResult,

TraceCollectionEntityIPAddress,

SCGreconfigNotification

FROM X2AP-IEs

PrivateIE-Container{},

ProtocolExtensionContainer{},

ProtocolIE-Container{},

ProtocolIE-ContainerList{},

ProtocolIE-ContainerPair{},

***//Skip the unchanged part***

id-CPAinformation-MOD,

id-CPAinformation-MOD-ACK,

id-CPACinformation-REQD,

id-CPCinformation-REQD,

id-CPCinformation-CONF,

id-CPCinformation-NOTIFY,

id-CPCupdate-MOD,

id-Additional-Measurement-Timing-Configuration-List,

id-ServedCellSpecificInfoReq-NR,

id-SecurityIndication,

id-SecurityResult,

id-SCGreconfigNotification,

maxCellineNB,

maxnoofBearers,

maxnoofPDCP-SN,

maxFailedMeasObjects,

maxnoofCellIDforMDT,

***//Skip the unchanged part***

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

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-- SGNB MODIFICATION REQUIRED

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

SgNBModificationRequired ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBModificationRequired-IEs}},

...

}

SgNBModificationRequired-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-PDCPChangeIndication CRITICALITY ignore TYPE PDCPChangeIndication PRESENCE optional}|

{ ID id-E-RABs-ToBeReleased-SgNBModReqdList CRITICALITY ignore TYPE E-RABs-ToBeReleased-SgNBModReqdList PRESENCE optional}|

{ ID id-SgNBtoMeNBContainer CRITICALITY ignore TYPE SgNBtoMeNBContainer PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-E-RABs-ToBeModified-SgNBModReqdList CRITICALITY ignore TYPE E-RABs-ToBeModified-SgNBModReqdList PRESENCE optional}|

{ ID id-SgNBResourceCoordinationInformation CRITICALITY ignore TYPE SgNBResourceCoordinationInformation PRESENCE optional}|

{ ID id-RRCConfigIndication CRITICALITY reject TYPE RRC-Config-Ind PRESENCE optional}|

{ ID id-LocationInformationSgNB CRITICALITY ignore TYPE LocationInformationSgNB PRESENCE optional}|

{ ID id-SCG-UE-HistoryInformation CRITICALITY ignore TYPE SCG-UE-HistoryInformation PRESENCE optional}|

{ ID id-SCGActivationRequest CRITICALITY ignore TYPE SCGActivationRequest PRESENCE optional}|

{ ID id-CPACinformation-REQD CRITICALITY ignore TYPE CPACinformation-REQD PRESENCE optional}|

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

...

}

***----------Start of the Next Change---------***

### 9.3.5 Information Element definitions

-- ASN1START

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

--

-- Information Element Definitions

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

X2AP-IEs {

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

eps-Access (21) modules (3) x2ap (2) version1 (1) x2ap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

id-E-RAB-Item,

id-Number-of-Antennaports,

id-MBSFN-Subframe-Info,

id-PRACH-Configuration,

id-CSG-Id,

***//Skip the unchanged part***

-- S

S1TNLLoadIndicator ::= SEQUENCE {

dLS1TNLLoadIndicator LoadIndicator,

uLS1TNLLoadIndicator LoadIndicator,

iE-Extensions ProtocolExtensionContainer { {S1TNLLoadIndicator-ExtIEs} } OPTIONAL,

...

}

S1TNLLoadIndicator-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

SCGActivationStatus ::= ENUMERATED {scg-activated, scg-deactivated, ...}

SCGActivationRequest ::= ENUMERATED {activate-scg, deactivate-scg, ...}

SCGChangeIndication ::= ENUMERATED {pDCPCountWrapAround, pSCellChange, other, ...}

SCGreconfigNotification ::= ENUMERATED {executed, ...}

SCG-UE-HistoryInformation ::= SEQUENCE (SIZE(1.. maxnoofPSCellsPerSN)) OF LastVisitedPSCell-Item

SecondaryRATUsageReportList ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container {{SecondaryRATUsageReport-ItemIEs}}

SecondaryRATUsageReport-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-SecondaryRATUsageReport-Item CRITICALITY reject TYPE SecondaryRATUsageReport-Item PRESENCE mandatory},

...

}

SecondaryRATUsageReport-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

secondaryRATType ENUMERATED {nr, ..., nR-unlicensed },

e-RABUsageReportList E-RABUsageReportList,

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

...

}

SecondaryRATUsageReport-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

SecurityIndication ::= SEQUENCE {

integrityProtectionIndication IntegrityProtectionIndication,

iE-Extensions ProtocolExtensionContainer { { SecurityIndication-ExtIEs } } OPTIONAL,

...

}

SecurityIndication-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

***----------Start of the Next Change---------***

### 9.3.7 Constant definitions

-- ASN1START

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

--

-- Constant definitions

--

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

X2AP-Constants {

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

eps-Access (21) modules (3) x2ap (2) version1 (1) x2ap-Constants (4) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

ProcedureCode,

ProtocolIE-ID

FROM X2AP-CommonDataTypes;

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

--

-- Elementary Procedures

--

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

id-handoverPreparation ProcedureCode ::= 0

id-handoverCancel ProcedureCode ::= 1

***//Skip the unchanged part***

id-SCGActivationRequest ProtocolIE-ID ::= 423

id-CPAinformation-REQ ProtocolIE-ID ::= 424

id-CPAinformation-REQ-ACK ProtocolIE-ID ::= 425

id-CPAinformation-MOD ProtocolIE-ID ::= 426

id-CPAinformation-MOD-ACK ProtocolIE-ID ::= 427

id-CPACinformation-REQD ProtocolIE-ID ::= 428

id-CPCinformation-REQD ProtocolIE-ID ::= 429

id-CPCinformation-CONF ProtocolIE-ID ::= 430

id-CPCinformation-NOTIFY ProtocolIE-ID ::= 431

id-CPCupdate-MOD ProtocolIE-ID ::= 432

id-Additional-Measurement-Timing-Configuration-List ProtocolIE-ID ::= 433

id-ServedCellSpecificInfoReq-NR ProtocolIE-ID ::= 434

id-SecurityIndication ProtocolIE-ID ::= 435

id-SecurityResult ProtocolIE-ID ::= 436

id-RAT-Restrictions ProtocolIE-ID ::= 437

id-SCGreconfigNotification ProtocolIE-ID ::= xxx

END

-- ASN1STOP

***----------End of the Changes---------***