**3GPP TSG-RAN WG3 #114bis-e R3-22xxxx**

**17-26 Jan 2022 Online**

**Title:** **(TP for RA-SDT BLCR to TS 38.463) Support of SDT in E1 interface**

**Source: China telecom, ZTE, CATT, Intel Corporation**

**Agenda item: 24.4**

**Document for:** **Discussion and Decision**

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## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 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 TR 21.905 [1].

5GC 5G Core Network

5QI 5G QoS Identifier

CAG Closed Access Group

CGI Cell Global Identifier

CHO Conditional Handover

CN Core Network

CP Control Plane

CPC Conditional PSCell Change

DAPS Dual Active Protocol Stack

DL Downlink

EHC Ethernet Header Compression

EN-DC E-UTRA-NR Dual Connectivity

EPC Evolved Packet Core

IAB Integrated Access and Backhaul

MCG Master Cell Group

NID Network Identifier

NPN Non-Public Network

PNI-NPN Public Network Integrated Non-Public Network

NSSAI Network Slice Selection Assistance Information

RANAC RAN Area Code

SCG Secondary Cell Group

SDAP Service Data Adaptation Protocol

SDT Small Data Transmisson

SNPN Stand-alone Non-Public Network

S-NSSAI Single Network Slice Selection Assistance Information

TNLA Transport Network Layer Association

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

8.3.1 Bearer Context Setup

8.3.1.1 General

The purpose of the Bearer Context Setup procedure is to allow the gNB-CU-CP to establish a bearer context in the gNB-CU-UP. The procedure uses UE-associated signalling.

8.3.1.2 Successful Operation

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**Figure 8.3.1.2-1: Bearer Context Setup procedure: Successful Operation.**

The gNB-CU-CP initiates the procedure by sending the BEARER CONTEXT SETUP REQUEST message to the gNB-CU-UP. If the gNB-CU-UP succeeds to establish the requested resources, it replies to the gNB-CU-CP with the BEARER CONTEXT SETUP RESPONSE message.

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

If the *Bearer Context Status Change* IE is contained in the BEARER CONTEXT SETUP REQUEST message, the gNB-CU-UP shall consider the UE RRC state and act as specified in TS 38.401 [2]. If the *Bearer Context Status Change* IE is set to "ResumeforSDT", the gNB-CU-UP shall consider that the UE activity is resumed only for DRBs configured with SDT.

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

8.3.2 Bearer Context Modification (gNB-CU-CP initiated)

8.3.2.1 General

The purpose of the Bearer Context Modification procedure is to allow the gNB-CU-CP to modify a bearer context in the gNB-CU-UP. The procedure uses UE-associated signalling.

8.3.2.2 Successful Operation

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**Figure 8.3.2.2-1: Bearer Context Modification procedure: Successful Operation.**

The gNB-CU-CP initiates the procedure by sending the BEARER CONTEXT MODIFICATION REQUEST message to the gNB-CU-UP. If the gNB-CU-UP succeeds to modify the bearer context, it replies to the gNB-CU-CP with the BEARER CONTEXT MODIFICATION RESPONSE message.

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

If the *Bearer Context Status Change* IE is contained in the BEARER CONTEXT MODIFICATION REQUEST message, the gNB-CU-UP shall consider the UE RRC state and act as specified in TS 38.401 [2]. If the *Bearer Context Status Change* IE is set to "ResumeforSDT", the gNB-CU-UP shall consider that the UE activity is resumed only for DRBs configured with SDT.

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#### 9.2.2.1 BEARER CONTEXT SETUP REQUEST

This message is sent by the gNB-CU-CP to request the gNB-CU-UP to setup a bearer context.

Direction: gNB-CU-CP → gNB-CU-UP

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **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-CP UE E1AP ID | M |  | 9.3.1.4 |  | YES | reject |
| Security Information | M |  | 9.3.1.10 |  | YES | reject |
| UE DL Aggregate Maximum Bit Rate | M |  | Bit Rate 9.3.1.20 |  | YES | reject |
| UE DL Maximum Integrity Protected Data Rate | O |  | Bit Rate 9.3.1.20 | The Bit Rate is a portion of the UE’s Maximum Integrity Protected Data Rate, and is enforced by the gNB-CU-UP node. | YES | reject |
| Serving PLMN | M |  | PLMN Identity 9.3.1.7 |  | YES | ignore |
| Activity Notification Level | M |  | 9.3.1.67 |  | YES | reject |
| UE Inactivity Timer | O |  | Inactivity Timer 9.3.1.54 | Included if the Activity Notification Level is set to UE.  | - | - |
| Bearer Context Status Change | O |  | ENUMERATED (Suspend, Resume, …, ResumeforSDT) | Indicates the status of the Bearer Context | YES | reject |
| CHOICE *System* | M |  |  |  | YES | reject |
| *>E-UTRAN* |  |  |  |  |  |  |
| >>DRB To Setup List | M |  | DRB To Setup List E-UTRAN 9.3.3.1 |  | YES | reject |
| >>Subscriber Profile ID for RAT/Frequency priority | O |  | 9.3.1.69 |  | YES | ignore |
| >>Additional RRM Policy Index | O |  | 9.3.1.70 |  | YES | Ignore |
| *>NG-RAN* |  |  |  |  |  |  |
| >>PDU Session Resource To Setup List | M |  | 9.3.3.2 |  | YES | reject |
| RAN UE ID | O |  | OCTET STRING (SIZE(8)) |  | YES | ignore |
| gNB-DU ID | O |  | 9.3.1.65 | Included whenever it is known by the gNB-CU-CP  | YES | ignore |
| Trace Activation | O |  | 9.3.1.68 |  | YES | ignore |
| NPN Context Information | O |  | 9.3.1.84 |  | YES | reject |
| Management Based MDT PLMN List | O |  | MDT PLMN List9.3.1.89 |  | YES | ignore |
| CHO Initiation | O |  | ENUMERATED (True, …) |  | YES | reject |
| Additional Handover Information | O |  | ENUMERATED(Discard PDCP SN, …) | If set to “Discard PDCP SN”, indicates that the forwarded PDCP SNs have to be removed | YES | ignore |
| Direct Forwarding Path Availability | O |  | 9.3.1.98 |  | YES | ignore |
| gNB-CU-UP UE E1AP ID | O |  | 9.3.1.5 |  | YES | ignore |

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoofDRBs | Maximum no. of DRBs for a UE. Value is 32. |
| maxnoofPDUSessionResource  | Maximum no. of PDU Sessions for a UE. Value is 256. |

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#### 9.2.2.4 BEARER CONTEXT MODIFICATION REQUEST

This message is sent by the gNB-CU-CP to request the gNB-CU-UP to modify a bearer context.

Direction: gNB-CU-CP → gNB-CU-UP

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **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-CP UE E1AP ID | M |  | 9.3.1.4 |  | YES | reject |
| gNB-CU-UP UE E1AP ID | M |  | 9.3.1.5 |  | YES | reject |
| Security Information | O |  | 9.3.1.10 |  | YES | reject |
| UE DL Aggregate Maximum Bit Rate | O |  | Bit Rate 9.3.1.20 |  | YES | reject |
| UE DL Maximum Integrity Protected Data Rate | O |  | Bit Rate 9.3.1.20 | The Bit Rate is a portion of the UE’s Maximum Integrity Protected Data Rate, and is enforced by the gNB-CU-UP node. | YES | reject |
| Bearer Context Status Change | O |  | ENUMERATED (Suspend, Resume, …, Resumefor SDT) | Indicates the status of the Bearer Context | YES | reject |
| New UL TNL Information Required | O |  | ENUMERATED (required, …) | Indicates that new UL TNL information has been requested to be provided. | YES | reject |
| UE Inactivity Timer | O |  | Inactivity Timer 9.3.1.54 | Included if the Activity Notification Level is set to UE. | - | - |
| Data Discard Required | O |  | ENUMERATED (required, …) | Indicate to discard the DL user data in case of RAN paging failure. | YES | ignore |
| CHOICE *System* | O |  |  |  | YES | reject |
| *>E-UTRAN* |  |  |  |  |  |  |
| >>DRB To Setup List | O |  | DRB To Setup Modification List E-UTRAN 9.3.3.7 |  | YES | reject |
| >>DRB To Modify List | O |  | DRB To Modify List E-UTRAN9.3.3.8 |  | YES | reject |
| >>DRB To Remove List | O |  | DRB To Remove List E-UTRAN 9.3.3.9 |  | YES | reject |
| >>Subscriber Profile ID for RAT/Frequency priority | O |  | 9.3.1.69 |  | YES | ignore |
| >>Additional RRM Policy Index | O |  | 9.3.1.70 |  | YES | ignore |
| *>NG-RAN* |  |  |  |  |  |  |
| >>PDU Session Resource To Setup List | O |  | PDU Session Resource To Setup Modification List9.3.3.10 |  | YES | reject |
| >>PDU Session Resource To Modify List | O |  | 9.3.3.11 |  | YES | reject |
| >>PDU Session Resource To Remove List | O |  | 9.3.3.12 |  | YES | reject |
| RAN UE ID | O |  | OCTET STRING (SIZE(8)) |  | YES | ignore |
| gNB-DU ID | O |  | 9.3.1.65 |  | YES | ignore |
| Activity Notification Level | O |  | 9.3.1.67 |  | YES | ignore |

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoofDRBs | Maximum no. of DRBs for a UE. Value is 32. |
| maxnoofPDUSessionResource  | Maximum no. of PDU Sessions for a UE. Value is 256. |

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### 9.4.5 Information Element Definitions

-- ASN1START

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-- Information Element Definitions

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

////////////////////////////////////////////////////////////////////////skip unchanged////////////////////////////////////////////////////////////////////////

-- B

BearerContextStatusChange ::= ENUMERATED {

 suspend,

 resume,

 ...,

 resumeforSDT

}

BitRate ::= INTEGER (0..4000000000000,...)

////////////////////////////////////////////////////////////////////////end of change////////////////////////////////////////////////////////////////////////