**3GPP TSG-RAN WG3 #117-eR3-225230**

**Online, 15th - 24th August 2022 was R3-225166**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **37.483** | **CR** |  | **rev** | **1** | **Current version:** | **17.1.0** |  |
|  |
| *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)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network |  |

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| ***Title:***  | Corrections for the establishment of F1-U ptp retransmission tunnels |
|  |  |
| ***Source to WG:*** | Ericsson, Nokia, Nokia Shanghai Bell,Qualcomm, Verizon Wireless, AT&T, China Unicom, ZTE |
| ***Source to TSG:*** | R3 |
|  |  |
| ***Work item code:*** | NR\_MBS-Core |  | ***Date:*** | 2022-08-08 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | *Rel-17* |
|  | *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 canbe 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)* |
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| ***Reason for change:*** | The current definition of the MBS Multicast F1-U Context Descriptor IE is not suitable to be included into all Multicast Distribution messages, where a simple reference would be sufficient. Moreover, including a UE/cell specific reference would require such reference to be updated in case of intra-DU mobility, which causes unnecessary signalling. |
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| ***Summary of change:*** | Reducing the content of the MBS Multicast F1-U Context Descriptor IE to a 4-octet reference which may include in addition an MBS Area Session ID (to indicate which location dependent content needs to be provided) and an indication whether a ptp F1-U context needs to be established for ptm transmission or ptp transmission or ptp retransmission or ptp forwarding..Impact Analysis:Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification (same release) because it corrects missing functions regarding F1-U tunnel control for multicast MBS only.The impact can be considered isolated because the change affects only MBS functions functions regarding F1-U tunnel control.The correction of the MBS Multicast F1-U Context Descriptor IE has protocol and ASN.1 impact. |
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| ***Consequences if not approved:*** | Incomplete, contradicting and erroneous specification text will remain. |
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| ***Clauses affected:*** | 9.3.1.225, 9.3.1.226, 9.3.1.x (new), 9.4.5 |
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|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  |  |
| ***affected:*** |  | **X** |  Test specifications |  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications |  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

<<<<<<<<<<<<<<<<<<<< First Change >>>>>>>>>>>>>>>>>>>>

#### 9.3.1.125 MBS Multicast F1-U Context Descriptor

This IE contains a reference to a Multicast F1-U Context and may contain an MBS Area Session ID and an indication to setup a Multicast F1-U Context for ptp retransmissions.

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| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| Multicast F1-U Context ReferenceE1 | M |  | 9.3.1.x |  |
|  MC F1-U Context usage | M |  | ENUMERATED (ptm,ptp,ptp retransmission,ptp forwarding ...) | "ptm" indicates that the Multicast F1-U Context is setup for ptm transmissions; decided by the DU."ptp" indicates that the Multicast F1-U Context is setup for ptp transmissions; decided by the DU."ptp retransmission" indicates that the Multicast F1-U Context is setup for ptp retransmissions (based on PDCP Status Report); requested by the CU"ptp forwarding" indicates that the Multicast F1-U Context is setup for transmitting from a defined MBS Progress Information status onwards; requested by the CU. |
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| MBS Area Session ID | O |  | 9.3.1.111 | To support per MBS Area Session F1-U tunnels and being able to refer to it. |
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#### 9.3.1.126 Void

Void.

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#### 9.3.1.x Multicast F1-U Context ReferenceE1

This IE contains a reference to a Multicast F1-U Context used within an MBS-associated logical E1-connection.

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| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| Multicast F1-U Context ReferenceE1 | M |  | OCTET STRING (SIZE(4)) | This value is allocated to uniquely denote an Multicast F1-U Context within an MBS-associated logical E1-connection. |

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#### 9.3.3.34 MC Bearer Context To Modify

This IE contains MBS session resource related information used to request a modification of a multicast MC Bearer Context.

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| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| MC Bearer Context NG-U TNL Info at 5GC | O |  | 9.3.1.122 |  |
| MC Bearer Context NG-U TNL Info at NG-RAN Request | O |  | 9.3.1.123 | To request NG-U TNL information from the gNB-CU-UP, if not yet available at gNB-CU-CP |
| MBS Multicast F1-U Context Descriptor | C-ifSetupOrRemove |  | 9.3.1.125 |  |
| **MC MRB To Setup or Modify List** |  | *0..<maxnoofMRBs>* |  |  |
| >MRB ID | M |  | 9.3.1.16a |  |
| >MC Bearer Context F1-U TNL Info at DU | O |  | 9.3.1.124 |  |
| >SDAP Configuration | O |  | 9.3.1.39 |  |
| >MBS PDCP Configuration | O |  | PDCP Configuration9.3.1.38 |  |
| >MBS QoS Flows Information To Be Setup | O |  | QoS Flow QoS Parameters List9.3.1.25 |  |
| >MRB QoS | O |  | QoS Flow Level QoS Parameters9.3.1.26 | Indicates the MRB QoS when more than one QoS Flow is mapped to the MRB. |
| >MBS Initial HFN and Reference PDCP SN Request | O |  | ENUMERATED (true, ...) | Indicates the MBS initial HFN and reference PDCP SN is requested. |
|  |  |  |  |  |
| **MC MRB To Remove List** |  | *0..<maxnoofMRBs>* |  |  |
| >MRB ID  | M |  | 9.3.1.16a |  |

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| Range bound | Explanation |
| maxnoofMRBs | Maximum no. of MRBs for a UE. Value is 32. |

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| Condition | Explanation |
| ifSetupOrRemove | This IE shall be present if either the *MC MRB To Setup or Modify List* IE or the *MC MRB To Remove List* IE or both IEs are included. |
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### 9.4.5 Information Element Definitions

-- ASN1START

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-- Information Element Definitions

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

E1AP-IEs {

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

ngran-access (22) modules (3) e1ap (5) version1 (1) e1ap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

<<<<<<<<<<<<<<<<<<<< Unmodified Text Omitted >>>>>>>>>>>>>>>>>>>>

-- MCBearerContextToModify

MCBearerContextToModify ::= SEQUENCE {

 mcBearerContextNGUTNLInfoat5GC MCBearerContextNGUTNLInfoat5GC OPTIONAL,

 mcBearerContextNGUTnlInfoatNGRANRequest MCBearerContextNGUTnlInfoatNGRANRequest OPTIONAL,

 mbsMulticastF1UContextDescriptor MBSMulticastF1UContextDescriptor OPTIONAL,

-- This IE shall be present if either the *MC MRB To Setup or Modify List* IE or the *MC MRB To Remove List* IE or both IEs are included.

 mcMRBToSetupModifyList MCMRBSetupModifyConfiguration OPTIONAL,

 mcMRBToRemoveList MCMRBRemoveConfiguration OPTIONAL,

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

 ...

}

MCBearerContextToModify-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {

 ...

}

MCBearerContextNGUTNLInfoat5GC ::= SEQUENCE {

 mbsNGUInformationAt5GC MBSNGUInformationAt5GC,

 mbsAreaSession-ID MBSAreaSessionID OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { {MCBearerContextNGUTNLInfoat5GC-ExtIEs} } OPTIONAL,

 ...

}

MCBearerContextNGUTNLInfoat5GC-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {

 ...

}

MCBearerContextNGUTnlInfoatNGRANRequest ::= SEQUENCE {

 ngRANNGUTNLRequested ENUMERATED {requested, ...},

 mbsAreaSession-ID MBSAreaSessionID OPTIONAL,

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

 ...

}

MCBearerContextNGUTnlInfoatNGRANRequest-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {

 ...

}

MCMRBSetupModifyConfiguration ::= SEQUENCE {

 mrb-ID MRB-ID,

 f1uTNLatDU MCBearerContextF1UTNLInfoatDU OPTIONAL,

 sdap-config SDAP-Configuration OPTIONAL,

 mbs-pdcp-config PDCP-Configuration OPTIONAL,

 qoS-Flow-QoS-Parameter-List QoS-Flow-QoS-Parameter-List OPTIONAL,

 mrbQoS QoSFlowLevelQoSParameters OPTIONAL,

 mbsInitialHFNRefSNReq MBS-Initial-HFN-Ref-SN-Req OPTIONAL,

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

 ...

}

MCMRBSetupModifyConfiguration-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {

 ...

}

MCBearerContextF1UTNLInfoatDU ::= SEQUENCE {

 mbsF1UInfoatDU UP-TNL-Information,

 mbsMulticastF1UContextDescriptor MBSMulticastF1UContextDescriptor,

 iE-Extensions ProtocolExtensionContainer { {MCBearerContextF1UTNLInfoatDU-ExtIEs} } OPTIONAL,

 ...

}

MCBearerContextF1UTNLInfoatDU-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {

 ...

}

MBSMulticastF1UContextDescriptor ::= CHOICE {

 du NULL,

 mbsAreaSession MBSAreaSessionID,

 cell MCDUCellReference,

 ptp-retransmission MBSPTPUEReference,

 ptp-only-MRB MBSPTPUEReference,

 choice-extension ProtocolIE-SingleContainer {{MBSMulticastF1UContextDescriptor-ExtIEs}}

}

MBSMulticastF1UContextDescriptor-ExtIEs E1AP-PROTOCOL-IES ::= {

 ...

}

MCDUCellReference ::= SEQUENCE {

 du-CellIndex INTEGER (1..512),

 nr-CGI NR-CGI,

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

 ...

}

MCDUCellReference-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {

 ...

}

MBSPTPUEReference::= SEQUENCE {

 ueReferenceID INTEGER (0..65535, ...),

 du-CellIndex INTEGER (1..512),

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

 ...

}

MBSPTPUEReference-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {

 ...

}

MCMRBRemoveConfiguration ::= SEQUENCE (SIZE(1..maxnoofMRBs)) OF MRB-ID

MBS-Initial-HFN-Ref-SN-Req ::= ENUMERATED {true, ... }

<<<<<<<<<<<<<<<<<<<< Unmodified Text Omitted >>>>>>>>>>>>>>>>>>>>

MulticastF1UContextReferenceE1 ::= OCTET STRING (SIZE(4))

MBSMulticastF1UContextDescriptor ::= SEQUENCE {

 multicastF1UContextReferenceE1 MulticastF1UContextReferenceE1,

 mc-F1UCtxtusage ENUMERATED {ptp, ptp, ptp-retransmission, ptp-forwarding, ...},

 mbsAreaSession MBSAreaSessionID OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { MBSMulticastF1UContextDescriptor-ExtIEs } } OPTIONAL,

 ...

}

MBSMulticastF1UContextDescriptor-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {

 ...

}

<<<<<<<<<<<<<<<<<<<< End of Changes >>>>>>>>>>>>>>>>>>>>