**3GPP TSG-RAN WG3 Meeting #119bis** **R3-231968**

**Online, 17th – 26th April 2023**

**Title:** (TP for BLCR for 38.413): Inter-gNB mobility

**Source:** China Telecom

**Agenda item:** 16.3

**Document Type:** other

1. Introduction

As guidance in CB: # SLRelay1\_ServiceContinuity, this contribution is to provide a TP to TS 38.413 for inter-gNB mobility of L2 U2N relay.

2. Text proposal

<<<<<<<<<<<<<<<<<<<< Change Begins >>>>>>>>>>>>>>>>>>>>

8.4.1 Handover Preparation

8.4.1.1 General

The purpose of the Handover Preparation procedure is to request the preparation of resources at the target side via the 5GC. There is only one Handover Preparation procedure ongoing at the same time for a certain UE. The procedure uses UE-associated signalling.

8.4.1.2 Successful Operation

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**Figure 8.4.1.2-1: Handover preparation: successful operation**

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If the *Candidate Relay UE* *Information List* IE is included in the *Source NG-RAN Node to Target NG-RAN Node Transparent Container* IE within the HANDOVER REQUIRED message, the target NG-RAN node shall, if supported, use it to configure the path switch to indirect path as specified in TS 38.300 [8].

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9.3.1.29 Source NG-RAN Node to Target NG-RAN Node Transparent Container

This IE is produced by the source NG-RAN node and is transmitted to the target NG-RAN node. For inter-system handovers to 5G, the IE is transmitted from the external handover source to the target NG-RAN node.

This IE is transparent to the 5GC.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| RRC Container | M |  | OCTET STRING | Includes the RRC *HandoverPreparationInformation* message as defined in TS 38.331 [18] if the target is a gNB.  Includes the RRC *HandoverPreparationInformation* message as defined in TS 36.331 [21] if the target is an ng-eNB. | - |  |
| **PDU Session Resource Information List** |  | *0..1* |  | For intra-system handovers in NG-RAN. | - |  |
| **>PDU Session Resource Information Item** |  | *1..<maxnoofPDUSessions>* |  |  | - |  |
| >>PDU Session ID | M |  | 9.3.1.50 |  | - |  |
| **>>QoS Flow Information List** |  | *1* |  |  | - |  |
| **>>>QoS Flow Information Item** |  | *1..<maxnoofQoSFlows>* |  |  | - |  |
| >>>>QoS Flow Identifier | M |  | 9.3.1.51 |  | - |  |
| >>>>DL Forwarding | O |  | 9.3.1.33 |  | - |  |
| >>>>UL Forwarding | O |  | 9.3.1.118 |  | YES | ignore |
| >>>>Source Transport Layer Address | O |  | Transport Layer Address  9.3.2.4 | Identifies the TNL address used by the sending node for direct data forwarding  towards the target NG-RAN node | YES | ignore |
| >>>>Source Node Transport Layer Address | O |  | Transport Layer Address  9.3.2.4 | Identifies the TNL address used by the source SN node for direct data forwarding  towards the target NG-RAN node | YES | ignore |
| >>DRBs to QoS Flows Mapping List | O |  | 9.3.1.34 |  | - |  |
| **E-RAB Information List** |  | *0..1* |  | For inter-system handovers to 5G. | - |  |
| **>E-RAB Information Item** |  | *1..<maxnoofE-RABs>* |  |  | - |  |
| >>E-RAB ID | M |  | 9.3.2.3 |  | - |  |
| >>DL Forwarding | O |  | 9.3.1.33 |  | - |  |
| >>Source Transport Layer Address | O |  | Transport Layer Address  9.3.2.4 | Identifies the TNL address used by the sending node for direct data forwarding  towards the target NG-RAN node | YES | ignore |
| >>Source Node Transport Layer Address | O |  | Transport Layer Address  9.3.2.4 | Identifies the TNL address used by the source SN node for direct data forwarding  towards the target NG-RAN node | YES | ignore |
| Target Cell ID | M |  | NG-RAN CGI  9.3.1.73 |  | - |  |
| Index to RAT/Frequency Selection Priority | O |  | 9.3.1.61 |  | - |  |
| UE History Information | M |  | 9.3.1.95 |  | - |  |
| SgNB UE X2AP ID | O |  | 9.3.1.127 | Allocated at the Source en-gNB | - |  |
| UE History Information from UE | O |  | 9.3.1.166 |  | YES | ignore |
| Source Node ID | O |  | 9.3.1.195 | Source SN ID | YES | ignore |
| UE Context Reference at Source | O |  | RAN UE NGAP ID  9.3.3.2 |  | YES | ignore |
| **MBS Active Session Information Source to Target List** |  | *0..1* |  |  | YES | ignore |
| **>MBS Active Session Information Source to Target Item** |  | *1..<maxnoofMBSSessionsofUE>* |  |  | - |  |
| >>MBS Session ID | M |  | 9.3.1.206 |  | - |  |
| >>MBS Area Session ID | O |  | 9.3.1.207 | If included, this IE indicates the MBS Area Session ID of the UE at the NG-RAN node from which the UE context is transferred | - |  |
| >>MBS Service Area | O |  | 9.3.1.208 | Included if available in source NG-RAN node. | - |  |
| >>MBS QoS Flows To Be Setup List | M |  | 9.3.1.236 |  | - |  |
| **>>MBS Mapping and Data Forwarding Request List** |  | *0..1* |  |  | - |  |
| **>>>MBS Mapping and Data Forwarding Request Item** |  | *1..<maxnoofMRBs>* |  |  | - |  |
| >>>>MRB ID | M |  | 9.3.1.218 | Contains the MRB ID value allocated at the source NG-RAN node. | - |  |
| **>>>>MBS QoS Flow List** |  | *1..<maxnoofMBSQoSflows>* |  |  | - |  |
| >>>>>MBS QoS Flow Identifier | M |  | QoS Flow Identifier  9.3.1.51 |  | - |  |
| >>>>MRB Progress Information | O |  | 9.3.1.219 | The SN information of the last packet which has already been delivered for the MRB. | - |  |
| QMC Configuration Information | O |  | 9.3.1.223 | Used for passing the QoE measurement information from the source NG-RAN node to the target NG-RAN node. | YES | ignore |
| **NGAP IE Support Information Request List** |  | *0..1* |  |  | YES | ignore |
| **>NGAP IE Support Information Request Item** |  | *1..<maxnoofIESupportInfo>* |  |  | - |  |
| >>NGAP Protocol IE-Id | M |  | 9.3.1.239 |  | - |  |
| **Candidate Relay UE Information List** |  | *0..1* |  |  | YES | ignore |
| **>** **Candidate Relay UE Information Item** |  | *1*..<*maxnoofCandidateRelayUEs*> |  |  | – |  |
| >> Candidate Relay UE ID | M |  | BIT STRING (SIZE(24)) | The IE contains the *SL-SourceIdentity* for the target relay UE as defined in TS 38.331 [18]. | – |  |

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoofPDUSessions | Maximum no. of PDU sessions allowed towards one UE. Value is 256. |
| maxnoofQoSFlows | Maximum no. of QoS flows allowed within one PDU session. Value is 64. |
| maxnoofE-RABs | Maximum no. of E-RABs allowed towards one UE. Value is 256. |
| maxnoofMBSSessions | Maximum no. of MBS sessions allowed within one PDU session. Value is 32. |
| maxnoofMBSSessionsofUE | Maximum no. of MBS sessions allowed towards one UE. Value is 256. |
| maxnoofMBSQoSflows | Maximum no. of MBS QoS flows allowed within one MBS session. Value is 64. |
| maxnoofMRBs | Maximum no. of MRBs. Value is 32. |
| maxnoofIESupportInfo | Maximum no. of IE Support Information. Value is 32. |
| maxnoofCandidateRelayUEs | Maximum no. of Candidate Relay UEs. Value is 32. |

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9.4.5 Information Element Definitions

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-- Information Element Definitions

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

NGAP-IEs {

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

ngran-Access (22) modules (3) ngap (1) version1 (1) ngap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

id-AdditionalDLForwardingUPTNLInformation,

id-AdditionalULForwardingUPTNLInformation,

id-AdditionalDLQosFlowPerTNLInformation,

id-AdditionalDLUPTNLInformationForHOList,

id-AdditionalNGU-UP-TNLInformation,

id-AdditionalRedundantDL-NGU-UP-TNLInformation,

id-AdditionalRedundantDLQosFlowPerTNLInformation,

id-AdditionalRedundantNGU-UP-TNLInformation,

id-AdditionalRedundantUL-NGU-UP-TNLInformation,

id-AdditionalUL-NGU-UP-TNLInformation,

id-AlternativeQoSParaSetList,

id-BurstArrivalTimeDownlink,

id-CandidateRelayUEInformationList,

id-Cause,

id-CNPacketDelayBudgetDL,

id-CNPacketDelayBudgetUL,

id-CNTypeRestrictionsForEquivalent,

id-CNTypeRestrictionsForServing,

id-CommonNetworkInstance,

id-ConfiguredTACIndication,

id-CurrentQoSParaSetIndex,

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maxnoofAllowedAreas,

maxnoofAllowedCAGsperPLMN,

maxnoofAllowedS-NSSAIs,

maxnoofBluetoothName,

maxnoofBPLMNs,

maxnoofCAGSperCell,

maxnoofCandidateCells,

maxnoofCandidateRelayUEs,

maxnoofCellIDforMDT,

maxnoofCellIDforQMC,

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CAG-ID ::= BIT STRING (SIZE(32))

CandidateRelayUEInformationList ::= SEQUENCE (SIZE(1.. maxnoofCandidateRelayUEs)) OF CandidateRelayUEInformationItem

CandidateRelayUEInformationItem ::= SEQUENCE {

candidateRelayUE-Id CandidateRelayUE-ID,

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

...

}

CandidateRelayUEInformationItem-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

...

}

CandidateRelayUE-ID ::= BIT STRING (SIZE(24))

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SourceNGRANNode-ToTargetNGRANNode-TransparentContainer ::= SEQUENCE {

rRCContainer RRCContainer,

pDUSessionResourceInformationList PDUSessionResourceInformationList OPTIONAL,

e-RABInformationList E-RABInformationList OPTIONAL,

targetCell-ID NGRAN-CGI,

indexToRFSP IndexToRFSP OPTIONAL,

uEHistoryInformation UEHistoryInformation,

iE-Extensions ProtocolExtensionContainer { {SourceNGRANNode-ToTargetNGRANNode-TransparentContainer-ExtIEs} } OPTIONAL,

...

}

SourceNGRANNode-ToTargetNGRANNode-TransparentContainer-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

{ ID id-SgNB-UE-X2AP-ID CRITICALITY ignore EXTENSION SgNB-UE-X2AP-ID PRESENCE optional }|

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

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

{ ID id-UEContextReferenceAtSource CRITICALITY ignore EXTENSION RAN-UE-NGAP-ID PRESENCE optional }|

{ ID id-MBS-ActiveSessionInformation-SourcetoTargetList CRITICALITY ignore EXTENSION MBS-ActiveSessionInformation-SourcetoTargetList PRESENCE optional }|

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

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

{ ID id-CandidateRelayUEInformationList CRITICALITY ignore EXTENSION CandidateRelayUEInformationList PRESENCE optional },

...

}

SourceNodeID ::= CHOICE {

sourceengNB-ID GlobalGNB-ID,

choice-Extensions ProtocolIE-SingleContainer { { SourceNodeID-ExtIEs} }

}

SourceNodeID-ExtIEs NGAP-PROTOCOL-IES ::= {

...

}

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9.4.7 Constant Definitions

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--

-- Constant definitions

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

NGAP-Constants {

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

ngran-Access (22) modules (3) ngap (1) version1 (1) ngap-Constants (4) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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maxnoofAllowedAreas INTEGER ::= 16

maxnoofAllowedCAGsperPLMN INTEGER ::= 256

maxnoofAllowedS-NSSAIs INTEGER ::= 8

maxnoofBluetoothName INTEGER ::= 4

maxnoofBPLMNs INTEGER ::= 12

maxnoofCAGSperCell INTEGER ::= 64

maxnoofCandidateRelayUEs INTEGER ::= 32

maxnoofCellIDforMDT INTEGER ::= 32

maxnoofCellIDforWarning INTEGER ::= 65535

maxnoofCellinAoI INTEGER ::= 256

maxnoofCellinEAI INTEGER ::= 65535

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id-NGAPIESupportInformationRequestList ProtocolIE-ID ::= 355

id-NGAPIESupportInformationResponseList ProtocolIE-ID ::= 356

id-MBS-SessionFSAIDList ProtocolIE-ID ::= 357

id-MBSSessionReleaseResponseTransfer ProtocolIE-ID ::= 358

id-ManagementBasedMDTPLMNModificationList ProtocolIE-ID ::= 359

id-EarlyMeasurement ProtocolIE-ID ::= 360

id-BeamMeasurementsReportConfiguration ProtocolIE-ID ::= 361

id-HFCNode-ID-new ProtocolIE-ID ::= 362

id-GlobalCable-ID-new ProtocolIE-ID ::= 363

id-TargetHomeENB-ID ProtocolIE-ID ::= 364

id-CandidateRelayUEInformationList ProtocolIE-ID ::= aaa

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