**3GPP TSG-RAN WG3 Meeting #121R3-234524**

**Toulouse , FR, 21 – 25 Aug, 2023**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.423** | **CR** | 1072 | **rev** | **1** | **Current version:** | **17.5.0** |  |
|  | | | | | | | | |
| *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:*** | Correction on the local NG-RAN Node Identifier on Xn[RRCInactive] | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, Nokia, Nokia shanghai Bell, ZTE, Ericsson | | | | | | | | | |
| ***Source to TSG:*** | R3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI17 | | | | |  | ***Date:*** | | | 2023-08-01 |
|  |  | | | |  | |  | | |  |
| ***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 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:*** | | In order to assist the NG-RAN node to identify the correct last serving NG-RAN node from a I-RNTI for an inactive UE, RAN3 has agreed to assign two Local NG-RAN node identifiers for each local NG-RAN node and encode them into the full I-RNTI and short I-RNTI when sending the UE to inactive state. The local NG-RAN node identifiers are also exchanged between neighbour nodes via Xn.  When receiving a RRC resume request from an inactive UE, the NG-RAN node extracts the local NG-RAN node identifier from the I-RNTI, and determine the global node ID of the UE’s last serving NG-RAN node by comparing the local NG-RAN node identifier in the I-RNTI and the local NG-RAN node identifier receiving from neighbour nodes.  The stage 2 about the usage of the local NG-RAN node identifier and the structure of the I-RNTI is captured in the Annex F in TS38.300.  According to TS 38.331, both the full I-RNTI and the short I-RNTI are configured to the UE during RRCRelease message. And it is up to the new serving cell to decide which one should be used in RRCResumeReqeust by the useFullResumeID indicator in SIB1.  SuspendConfig ::= SEQUENCE {  fullI-RNTI I-RNTI-Value,  shortI-RNTI ShortI-RNTI-Value,  ran-PagingCycle PagingCycle,  ran-NotificationAreaInfo RAN-NotificationAreaInfo OPTIONAL, -- Need M  t380 PeriodicRNAU-TimerValue OPTIONAL, -- Need R  nextHopChainingCount NextHopChainingCount,  ...,  }  SIB1 ::= SEQUENCE {  **<remove unrelevent part>**  useFullResumeID ENUMERATED {true} OPTIONAL, -- Need R  }  However, the *Local NG-RAN Node Identifier* IE exchanged over Xn is designed to a CHOICE type for full I-RNTI and short I-RNTI, which implies that only one local NG-RAN node identifier could be exchanged.  The NG-RAN node will not be able to identify the correct last serving node when the local NG-RAN node identifier in the I-RNTI is mismatched with the ones receiving from neighbor nodes.  In fact, it should be flexible whether the Local NG-RAN Node ID feature is used in a network for “full I-RNTI”, “short I-RNTI” or both “full and short I-RNTI”. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Correct the *Local NG-RAN Node Identifier* IE to exchange the local NG-RAN node identifiers for either one or both full I-RNTI and short I-RNTI.  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)  This CR has an impact under protocol & functional point of view.  The impact can be considered isolated because the change affects one system function.  There is no RRC spec impact. | | | | | | | | |
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| ***Consequences if not approved:*** | | The inactive UEs will resume failed. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 9.2.2.101, ASN.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **x** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **x** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

<<<<<< START OF CHANGE >>>>>>

#### 9.2.2.101 Local NG-RAN Node Identifier

This IE is used to resolve a Global NG-RAN Node ID from an I-RNTI and obtain a reference to an UE context at RRC Resume.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| --- | --- | --- | --- | --- | --- | --- |
| CHOICE *Local NG-RAN Node Identifier* | M |  |  |  |  |  |
| *>Full I-RNTI profile* |  |  |  |  |  |  |
| >>CHOICE *Full I-RNTI Profile* | M |  |  |  | – |  |
| *>>>Full I-RNTI profile 0* |  |  |  |  |  |  |
| >>>> Local NG-RAN Node Identifier Full I-RNTI profile 0 | M |  | BIT STRING (SIZE(21)) |  | – |  |
| *>>>Full I-RNTI profile 1* |  |  |  |  |  |  |
| >>>>Local NG-RAN Node Identifier Full I-RNTI profile 1 | M |  | BIT STRING (SIZE(18)) |  | – |  |
| *>>>Full I-RNTI profile 2* |  |  |  |  |  |  |
| >>>>Local NG-RAN Node Identifier Full I-RNTI profile 2 | M |  | BIT STRING (SIZE(15)) |  | – |  |
| *>>>Full I-RNTI profile 3* |  |  |  |  |  |  |
| >>>>Local NG-RAN Node Identifier Full I-RNTI profile 3 | M |  | BIT STRING (SIZE(12)) |  | – |  |
| > *Short I-RNTI Profile* |  |  |  |  |  |  |
| >>CHOICE *Short I-RNTI profile* | M |  |  |  | – |  |
| *>>>Short I-RNTI profile 0* |  |  |  |  |  |  |
| >>>>Local NG-RAN Node Identifier Short I-RNTI profile 0 | M |  | BIT STRING (SIZE(8)) |  | – |  |
| *>>>Short I-RNTI profile 1* |  |  |  |  |  |  |
| >>>>Local NG-RAN Node Identifier Short I-RNTI profile 1 | M |  | BIT STRING (SIZE(6)) |  | – |  |
| *>Full and Short I-RNTI profiles* |  |  |  |  | YES | ignore |
| >>Full I-RNTI profile | M |  |  |  |  |  |
| >>>CHOICE *Full I-RNTI Profile* | M |  |  |  |  |  |
| *>>>>Full I-RNTI profile 0* |  |  |  |  |  |  |
| >>>>> Local NG-RAN Node Identifier Full I-RNTI profile 0 | M |  | BIT STRING (SIZE(21)) |  |  |  |
| *>>>>Full I-RNTI profile 1* |  |  |  |  |  |  |
| >>>>>Local NG-RAN Node Identifier Full I-RNTI profile 1 | M |  | BIT STRING (SIZE(18)) |  |  |  |
| *>>>>Full I-RNTI profile 2* |  |  |  |  |  |  |
| >>>>>Local NG-RAN Node Identifier Full I-RNTI profile 2 | M |  | BIT STRING (SIZE(15)) |  |  |  |
| *>>>>Full I-RNTI profile 3* |  |  |  |  |  |  |
| >>>>>Local NG-RAN Node Identifier Full I-RNTI profile 3 | M |  | BIT STRING (SIZE(12)) |  |  |  |
| >>Short I-RNTI Profile | M |  |  |  |  |  |
| >>>CHOICE *Short I-RNTI profile* | M |  |  |  |  |  |
| *>>>>Short I-RNTI profile 0* |  |  |  |  |  |  |
| >>>>>Local NG-RAN Node Identifier Short I-RNTI profile 0 | M |  | BIT STRING (SIZE(8)) |  |  |  |
| *>>>>Short I-RNTI profile 1* |  |  |  |  |  |  |
| >>>>>Local NG-RAN Node Identifier Short I-RNTI profile 1 | M |  | BIT STRING (SIZE(6)) |  |  |  |

<<<<<< NEXT CHANGE >>>>>>

### 9.3.5 Information Element definitions

-- ASN1START

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-- Information Element Definitions

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

<skip unchanged part>

id-BeamMeasurementsReportConfiguration,

id-CoverageModificationCause,

id-UERLFReportContainerLTEExtension,

id-ExcessPacketDelayThresholdConfiguration,

id-I-RNTI-Profile-List,

maxEARFCN,

maxnoofAllowedAreas,

maxnoofAMFRegions,

<skip unchanged part>

-- L

Local-NG-RAN-Node-Identifier ::= CHOICE {

full-I-RNTI-Profile-List Full-I-RNTI-Profile-List,

short-I-RNTI-Profile-List Short-I-RNTI-Profile-List,

choice-extension ProtocolIE-Single-Container { { Local-NG-RAN-Node-Identifier-ExtIEs} }

}

Local-NG-RAN-Node-Identifier-ExtIEs XNAP-PROTOCOL-IES ::= {

{ ID id-I-RNTI-Profile-List CRITICALITY ignore TYPE I-RNTI-Profile-List PRESENCE mandatory},

...

}

I-RNTI-Profile-List ::= SEQUENCE {

full-I-RNTI-Profile-List Full-I-RNTI-Profile-List,

short-I-RNTI-Profile-List Short-I-RNTI-Profile-List,

iE-Extensions ProtocolExtensionContainer { { I-RNTI-Profile-List-ExtIEs} } OPTIONAL,

...

}

I-RNTI-Profile-List-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

Full-I-RNTI-Profile-List ::= CHOICE {

full-I-RNTI-Profile-0 BIT STRING (SIZE (21)),

full-I-RNTI-Profile-1 BIT STRING (SIZE (18)),

full-I-RNTI-Profile-2 BIT STRING (SIZE (15)),

full-I-RNTI-Profile-3 BIT STRING (SIZE (12)),

choice-extension ProtocolIE-Single-Container { { Full-I-RNTI-Profile-List-ExtIEs} }

}

Full-I-RNTI-Profile-List-ExtIEs XNAP-PROTOCOL-IES ::= {

...

}

Short-I-RNTI-Profile-List ::= CHOICE {

short-I-RNTI-Profile-0 BIT STRING (SIZE (8)),

short-I-RNTI-Profile-1 BIT STRING (SIZE (6)),

choice-extension ProtocolIE-Single-Container { { Short-I-RNTI-Profile-List-ExtIEs} }

}

Short-I-RNTI-Profile-List-ExtIEs XNAP-PROTOCOL-IES ::= {

...

}

<skip unchanged part>

### 9.3.7 Constant definitions

-- ASN1START

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

--

-- Constant definitions

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

<skip unchanged part>

id-BeamMeasurementsReportConfiguration ProtocolIE-ID ::= 367

id-CoverageModificationCause ProtocolIE-ID ::= 368

id-AdditionalListofPDUSessionResourceChangeConfirmInfo-SNterminated ProtocolIE-ID ::= 369

id-UERLFReportContainerLTEExtension ProtocolIE-ID ::= 370

id-ExcessPacketDelayThresholdConfiguration ProtocolIE-ID ::= 371

id-HashedUEIdentityIndexValue ProtocolIE-ID ::= 372

id-I-RNTI-Profile-List ProtocolIE-ID ::= xxx

END

-- ASN1STOP

<<<<<< END OF CHANGE >>>>>>