**3GPP TSG-RAN WG3 Meeting #110-e *R3-207103***

**E-meeting, 2 – 12 Nov 2020**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.413** | **CR** | **0512** | **rev** | **1** | **Current version:** | 16.3.0 |  |
|  | | | | | | | | |
| *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 | **X** |

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|  | | | | | | | | | | |
| ***Title:*** | Introducing UE radio capability ID in Connection Establishment Indication | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, CATT, Samsung, Nokia, Nokia Shanghai Bell, Qualcomm | | | | | | | | | |
| ***Source to TSG:*** | RAN3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | RACS-RAN | | | | |  | ***Date:*** | | | 2020-10-22 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In Rel-16, the Connection Establishment Indication message is used for CP CIoT 5GS optimimizaiton to establish the UE-associated logical NG-connection, or to trigger to obtain UE radio capability. This message can be used not limited to NB-IoT UEs.  And the UE radio capability ID is signalled to the NG-RAN avoiding to include the full set of UE capability over related interfaces, in the RACS Rel-16 topic.  Hence there is a need to include the UE radio capability ID in Connection Establishment Indication message, except to NB-IoT UEs. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Introduce the UE radio capability ID in Connection Establishment Indication message, except for NB-IoT UEs.    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 only impacts on the Connection Establishment Indication procedure.  The impact can be considered isolated. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The RACS feature is not supported for some UEs using Connection Establishment Indication procedure. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 8.3.6, 9.2.2.11, 9.4.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS36.413 CR1796 | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | V0: R3-206469 | | | | | | | | |

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| **Change begins** |

### 8.3.6 Connection Establishment Indication

#### 8.3.6.1 General

The purpose of the Connection Establishment Indication procedure is to enable the AMF to complete the establishment of the UE-associated logical NG-connection. The procedure uses UE-associated signalling. This procedure applies only if the NG-RAN node is an ng-eNB.

#### 8.3.6.2 Successful Operation



Figure 8.3.6.2-1: Connection Establishment Indication procedure. Successful operation.

The AMF initiates the procedure by sending a CONNECTION ESTABLISHMENT INDICATION message to the NG-RAN node.

If the UE-associated logical NG-connection is not established, the AMF shall allocate a unique AMF UE NGAP ID to be used for the UE and include it in the CONNECTION ESTABLISHMENT INDICATION message.

If the *UE Radio Capability* IE is included in the CONNECTION ESTABLISHMENT INDICATION message, the NG-RAN node shall store this information in the UE context, and use it as defined in TS 38.300 [8].

If the *End Indication* IE is included in the CONNECTION ESTABLISHMENT INDICATION message and set to "no further data", the NG-RAN node shall consider that there are no further NAS PDUs to be transmitted for this UE.

If the *S-NSSAI* IE is contained in the CONNECTION ESTABLISHMENT INDICATION message, the NG-RAN node shall store this information in the UE context, and use it as specified in TS 23.501 [9].

If the *Allowed NSSAI* IE is contained in the CONNECTION ESTABLISHMENT INDICATION message, the NG-RAN node shall store this information in the UE context, and use it as specified in TS 23.501 [9].

If the *UE Differentiation Information* IE is included in the CONNECTION ESTABLISHMENT INDICATION message, the NG-RAN node shall, if supported, store this information in the UE context for further use according to TS 23.501 [9].

If the *DL CP Security Information* IE is included in the CONNECTION ESTABLISHMENT INDICATION message, the NG-RAN node shall forward this information to the UE as described in TS 36.300 [14].

If the NB-IoT UE PriorityIE is contained in the CONNECTION ESTABLISHMENT INDICATION message, the NG-RAN node shall, if supported, store this information in the UE context, and use it as specified in TS 23.501 [9].

If the *UE Radio Capability ID* IE is contained in the CONNECTION ESTABLISHMENT INDICATION message, the NG-RAN node shall, if supported, use it as specified in TS 23.501 [9] and TS 23.502 [10].

<Unchanged Text Omitted>

#### 9.2.2.11 CONNECTION ESTABLISHMENT INDICATION

This message is sent by the AMF to complete the establishment of the UE-associated logical NG-connection.

Direction: AMF → NG-RAN node

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.3.1.1 |  | YES | reject |
| AMF UE NGAP ID | M |  | 9.3.3.1 |  | YES | ignore |
| RAN UE NGAP ID | M |  | 9.3.3.2 |  | YES | ignore |
| UE Radio Capability | O |  | 9.3.1.74 |  | YES | ignore |
| End Indication | O |  | 9.3.3.32 |  | YES | ignore |
| S-NSSAI | O |  | 9.3.1.24 |  | YES | ignore |
| Allowed NSSAI | O |  | 9.3.1.31 | Indicates the S-NSSAIs permitted by the network | YES | ignore |
| UE Differentiation Information | O |  | 9.3.1.144 |  | YES | ignore |
| DL CP Security Information | O |  | 9.3.3.49 |  | YES | ignore |
| NB-IoT UE Priority | O |  | 9.3.1.145 |  | YES | Ignore |
| UE Radio Capability ID | O |  | 9.3.1.142 |  | YES | reject |

<Unchanged Text Omitted>

### 9.4.4 PDU Definitions

-- ASN1START

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

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-- PDU definitions for NGAP.

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

<Unchanged Text Omitted>

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

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-- Connection Establishment Indication

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

ConnectionEstablishmentIndication::= SEQUENCE {

protocolIEs ProtocolIE-Container { {ConnectionEstablishmentIndicationIEs} },

...

}

ConnectionEstablishmentIndicationIEs NGAP-PROTOCOL-IES ::= {

{ ID id-AMF-UE-NGAP-ID CRITICALITY reject TYPE AMF-UE-NGAP-ID PRESENCE mandatory }|

{ ID id-RAN-UE-NGAP-ID CRITICALITY reject TYPE RAN-UE-NGAP-ID PRESENCE mandatory }|

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

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

{ ID id-S-NSSAI CRITICALITY ignore TYPE S-NSSAI PRESENCE optional }|

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

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

{ ID id-DL-CP-SecurityInformation CRITICALITY ignore TYPE DL-CP-SecurityInformation PRESENCE optional }|

{ ID id-NB-IoT-UEPriority CRITICALITY ignore TYPE NB-IoT-UEPriority PRESENCE optional }|

{ ID id-UERadioCapabilityID CRITICALITY reject TYPE UERadioCapabilityID PRESENCE optional },

...

}

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| **Change ends** |