**3GPP TSG-RAN2 Meeting #109e *rev02 of R2-2000422***

**Online, 24 November-6 March 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.300** | **CR** | **0187** | **rev** | **1** | **Current version:** | **16.0.0** |  |
|  | | | | | | | | |
| *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 | **X** | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | Introduction of RACS and DL RRC segmentation | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | MediaTek Inc., Ericsson | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | RACS-RAN-Core, TEI16 | | | | |  | ***Date:*** | | | 2020-02-28 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
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| ***Reason for change:*** | | Agreements related to NR portions of the RACS work item need to be captured is TS 38.300:   * Possibility to indicate a UE capability ID in NAS signalling; * RRC segmentation in uplink direction for the UE capabilities.   Segmentation agreements from TEI16 need to be captured:   * RRC segmentation in downlink direction for *RRCReconfiguration* and *RRCResume* messages. | | | | | | | | |
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| ***Summary of change:*** | | * Option to signal the UE capability ID introduced into the capability framework section * Described the option to segment the capability information message * Described that the ID may be assigned either by the manufacturer or the PLMN * Captured that the manufacturer-assigned ID corresponds to a pre-provisioned set of capabilities * Captured that the PLMN-assigned ID is assigned in NAS signalling * Clarified that the ID is carried in NAS signalling * Captured that the ID represents the capabilities for one or more RATs * Changes migrated to version 16.0.0 * Captured changes to make the description of segmentation generic for UL and DL * Included description of downlink segmentation in the new section 7.x | | | | | | | | |
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| ***Consequences if not approved:*** | | Stage 2 description of RACS and DL RRC segmentation is missing. | | | | | | | | |
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| ***Clauses affected:*** | | 7.5, 7.x (new), 14 | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 38.306 CR 0243 [TEI16]  TS 38.331 CR 1441 [RACS]  TS 38.331 CR 1465 [TEI16] | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

## 7.5 UE Capability Retrieval framework

The UE reports its UE radio access capabilities which are static at least when the network requests. The gNB can request what capabilities for the UE to report based on band information. The UE capability can be represented by a capability ID, which may be exchanged in NAS signalling over the air and in network signalling instead of the UE capability structure.

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## 7.x Segmentation of RRC messages

An RRC message may be segmented in case the size of the encoded RRC message PDU exceeds the maximum PDCP SDU size. Segmentation is performed in the RRC layer using a separate RRC PDU to carry each segment. The receiver reassembles the segments to form the complete RRC message. All segments of an RRC message are transmitted before sending another RRC message. Segmentation is supported in both uplink and downlink.

In this version of the specification, segmentation applies only to the *UECapabilityInformation*, *RRCReconfiguration*, and *RRCResume* messages.

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# 14 UE Capabilities

The UE capabilities in NR do not rely on UE categories: UE categories associated to fixed peak data rates are only defined for marketing purposes and not signalled to the network. Instead, the network determines the UL and DL data rate supported by a UE from the supported band combinations and from the baseband capabilities (modulation scheme, MIMO layers, …).

To limit signalling overhead, the gNB can request the UE to provide NR capabilities for a restricted set of bands. When responding, the UE can skip a subset of the requested band combinations when the corresponding UE capabilities are the same.

If supported by the UE and the network, the UE may provide an ID in NAS signalling that represents its radio capabilities for one or more RATs in order to reduce signalling overhead. The ID may be assigned either by the manufacturer or by the serving PLMN. The manufacturer-assigned ID corresponds to a pre-provisioned set of capabilities. In the case of the PLMN-assigned ID, assignment takes place in NAS signalling.