**3GPP TSG-RAN2 Meeting #117-e *R2-220xxxx***

**Online, 21st Feb 2022 - 3rd Mar 2022**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **37.324** | **CR** | **0022** | **rev** | **1** | **Current version:** | **16.3.0** |  |
|  | | | | | | | | |
| *For* ***HE******LP*** *on using this form: comprehensive instructions can be found at  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 NR MBS | | | | | | | | | |
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| ***Source to WG:*** | Samsung | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_MBS-Core | | | | |  | ***Date:*** | | | 2022-03-04 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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. | | | | | | | | *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:*** | | Introduction of MBS support in NR. This version captures the following SDAP related RAN2 meeting agreements:  **RAN2#115-e**   * Reflective QoS is not supported for MBS. * No SDAP header is needed for MBS. * There is no SDAP configuration provided to the UE for neither broadcast nor multicast.   **RAN2#114-e**   * Multiple MBS QoS flows corresponding to the same MBS session can be mapped to one or more than one MBS radio bearers.   **RAN2#112-e**   * The function of mapping from QoS flows to MBS RBs in SDAP is needed for NR MBS. TBD whether any SDAP header is needed. * (Working assumption) no SDAP functions other than “mapping from QoS flows to radio bearers” and “transfer of user plane data” are supported for MBS. FFS whether to support QoS flows to radio bearers remapping. | | | | | | | | |
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| ***Summary of change:*** | | * Section 4.2.1: Description on SDAP structure for MBS is added. * Section 4.2.2: SDAP entities for MBS are specified. * Section 4.4: "Mapping between an MBS QoS flow and an MRB for DL" is added as an SDAP function for MBS. * Section 5.2.2: Reception of SDAP data PDU from an MRB is specified. | | | | | | | | |
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| ***Consequences if not approved:*** | | NR MBS is not supported in Rel-17. | | | | | | | | |
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| ***Clauses affected:*** | | 4.2.1, 4.2.2, 4.4, 5.2.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 38.331 CR 2949 r1  TS/TR ... CR ...  TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**<<<<< Start of Modification >>>>>**

### 4.2.1 SDAP structure

Figure 4.2.1-1 illustrates one possible structure for the SDAP sublayer; it should not restrict implementation. The figure is based on the radio interface protocol architecture defined in TS 38.300 [2].



Figure 4.2.1-1: SDAP sublayer, structure view

The SDAP sublayer is configured for DRBs by RRC (TS 38.331 [3]). The SDAP sublayer maps QoS flows to DRBs. One or more QoS flows may be mapped onto one DRB. One QoS flow is mapped onto only one DRB at a time in the UL.

The SDAP sublayer is configured for MRBs by RRC (TS 38.331 [3]). The SDAP sublayer maps MBS QoS flows to MRBs. One or more MBS QoS flows may be mapped onto one MRB.

In NR sidelink communication, the SDAP sublayer maps PC5 QoS flows to SL-DRBs. One or more PC5 QoS flows may be mapped onto one SL-DRB. One PC5 QoS flow is mapped onto only one SL-DRB at a time in the NR sidelink for transmission.

### 4.2.2 SDAP entities

The SDAP entities are located in the SDAP sublayer. Several SDAP entities may be defined for a UE. There is an SDAP entity configured for each individual PDU session or MBS session for NR Uu. For NR sidelink, SDAP entity is configured per Destination Layer-2 ID and cast type in the UE.

An SDAP entity receives/delivers SDAP SDUs from/to upper layers and submits/receives SDAP data PDUs to/from its peer SDAP entity via lower layers.

- At the transmitting side, when an SDAP entity receives an SDAP SDU from upper layers, it constructs the corresponding SDAP data PDU and submits it to lower layers;

- At the receiving side, when an SDAP entity receives an SDAP data PDU from lower layers, it retrieves the corresponding SDAP SDU and delivers it to upper layers.

Figure 4.2.2-1 illustrates the functional view of the SDAP entity for the SDAP sublayer; it should not restrict implementation. The figure is based on the radio interface protocol architecture defined in TS 38.300 [2].



Figure 4.2.2-1: SDAP layer, functional view

Reflective QoS flow to DRB mapping is performed at UE, as specified in the clause 5.3.2, if DL SDAP header is configured.

Reflective QoS flow to MRB mapping is not supported. There is no SDAP header for MRB.

For NR sidelink communication, reflective PC5 QoS flow to SL-DRB mapping is not supported.

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## 4.4 Functions

The SDAP sublayer supports the following functions:

- transfer of user plane data;

- mapping between a QoS flow and a DRB for both DL and UL;

- mapping between an MBS QoS flow and an MRB for DL;

- mapping between a PC5 QoS flow and a SL-DRB for NR sidelink communication;

- marking QoS flow ID in both DL and UL packets;

- marking PC5 QoS flow ID in unicast of NR sidelink communication packets;

- reflective QoS flow to DRB mapping for the UL SDAP data PDUs.

**<<<<< End of Modification >>>>>**

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### 5.2.2 Downlink

At the reception of an SDAP data PDU from lower layers for a QoS flow, the receiving SDAP entity shall:

- if this SDAP data PDU is received from an MRB:

- retrieve the SDAP SDU from the DL SDAP data PDU as specified in the clause 6.2.2.1.

- if the DRB from which this SDAP data PDU is received is configured by RRC (TS 38.331 [3]) with the presence of SDAP header:

- perform reflective QoS flow to DRB mapping as specified in the clause 5.3.2;

- perform RQI handling as specified in the clause 5.4;

- retrieve the SDAP SDU from the DL SDAP data PDU as specified in the clause 6.2.2.2.

- else:

- retrieve the SDAP SDU from the DL SDAP data PDU as specified in the clause 6.2.2.1;

- deliver the retrieved SDAP SDU to the upper layer.

**<<<<< End of Modification >>>>>**