**3GPP TSG-WG SA4 Meeting #90-e**S4-200886

20th May – 3rd June 2020 *revision of S4-200878*

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | 26.512 | **CR** |  | **rev** | **3** | **Current version:** | 1.1.0 |  |
|  | | | | | | | | |
| *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 |  | Core Network | **x** |

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| ***Title:*** | Provisioning Interface Updates | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Qualcomm Inc. | | | | | | | | | |
| ***Source to TSG:*** | S4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GMS3 | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | |  |
|  | *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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The stage 3 specification for the RAN-based network assistance is provided. The usage of bitrate recommendation has already been specified as part of MTSI in 26.114. The usage of AT commands is added as a note.  We can at the same time, liaise with CT1 for the definition of more specific commands. | | | | | | | | |
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| ***Summary of change:*** | | This CR specifies the RAN-based Network Assistance in 5GMS3. | | | | | | | | |
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| ***Consequences if not approved:*** | | The network assistance functionality will lack support for the RAN-based solution. | | | | | | | | |
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| ***Clauses affected:*** | | 2, New 11.6.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR … CR … | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR … CR … | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR … CR … | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR’s revision history:*** | |  | | | | | | | | |

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| First Change |

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.501: "System architecture for the 5G System (5GS)".

[X] 3GPP TS 38.321, "NR; Medium Access Control (MAC) protocol specification".

[Y] 3GPP TS 36.321, "Evolved Universal Terrestrial Radio Access (E-UTRA); Medium Access Control (MAC) protocol specification".

[Z] 3GPP TS 27.007, "AT Command set for User Equipment (UE) – (Release 16)".

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| Second Change |

### 11.6.3 RAN Signaling-based Network Assistance

If RAN Signaling-based Network Assistance is supported, the Media Session Handler uses an interface to the RAN Modem (specifically, the UE MAC entity in the modem) to send and receive bit rate recommendation messages. The interface to the modem may be based on AT commands.

Furthermore, messaging across that interface corresponds to the logical translations of the *Bit Rate Recommendation* and/or *Bit Rate Recommendation Query* messages, carried by the Recommended bit rate MAC CE, exchanged between the RAN Modem and the RAN, as specified in [X] for 5G NR and [Y] for LTE. The association between the LCID for which the recommendation applies and the actual flow (including the intermediate RLC channel) is performed by the modem. The input parameters used by the Media Session Handler to send and receive bit rate recommendation messages are FFS.

Editor’s note: The internal interface to the modem may be based on AT commands. The AT command +CGEQREQ as defined in [Y] may be used for the exchange of bit rate recommendations between the Media Session Handler and the RAN Modem. CT1 has been requested to define appropriate AT commands for bit rate recommendation. Upon definition of the appropriate AT commands for bit rate recommendation messaging, this clause will be updated to reflect that.

When used for requesting a bit rate boost, the query shall not request a bit rate that may exceed the MFBR for the corresponding QoS Flow. Failure to ensure this may result in unexpected congestion-induced packet delays and dropping.

The *Bit Rate Recommendation Query* shall indicate the bit rate desired by the application, as described by [X] and [Y]. This request may be used by the 5GMSd Media Session Handler to request for a temporary increase in bit rate for the corresponding flow (bit rate boost). The RAN responds with a Bit Rate Recommendation message that confirms the recommended bitrate after the boost grant. Once the bit rate drops again after a boost grant, the network shall inform the Media Session Handler about the new recommended bit rate by means of an ANBR message.

Whenever the Media Session Handler receives a message from the RAN Modem, corresponding to the logical translation of the *Bit Rate Recommendation* message for the associated RAN uplink or downlink, it shall indicate the associated bit rate recommendation to either the Media Player (via M7d, in the case of downlink streaming) or Media Streamer (via M7u, in the case of uplink streaming) function of an affiliated PDU session. Furthermore, whenever the Media Session Handler receives a request for a bit rate boost from either the Media Player (via M6d in the case of downlink streaming) or the Media Streamer (via M6u, in the case of uplink streaming) function of an affiliated PDU session, it may send a bit rate boost message to the RAN Modem. That bit rate boost request is logically translated by the modem to *the Bit Rate Recommendation Query* message which is then sent to the RAN on the associated RAN uplink or downlink.

It is left to the implementer of the media player to decide how to best use the bit rate recommendation and the bit rate recommendation query information for the media streaming sessions.