**3GPP TSG-RAN2 Meeting #109-e *[DRAFT]* R2-2002178**

**Online, 24 Feb – 6 March, 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **1464** | **rev** | **1** | **Current version:** | **15.8.0** |  |
|  | | | | | | | | |
| *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:*** | Recommended Bit Rate/Query for FLUS and MTSI | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Qualcomm Incorporated | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | E\_FLUS | | | | |  | ***Date:*** | | | 2020-02-27 |
|  |  | | | |  | |  | | |  |
| ***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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | SA4 sent LS to RAN2 in R2-1911499/S4-191031. In the LS, SA4 explained about E\_FLUS work item as well as description of uplink streaming bitrate assistance using RAN signalling.  Currently defined maximum value for Recommended bit rate MAC CE is 8000 kbits/s for both LTE and NR which is insufficient for E\_FLUS where the targeted bitrates are as high as 300 Mbps and beyond. SA4 requested RAN2 to extend the data rate range that can be signalled using the existing Recommended bit rate MAC CE, for both LTE and NR.  RAN2#108 agreed “to extend the bitrate range of Recommended bitrate MAC CE for both NR and LTE in Rel-16”. RAN2 replied to SA4 with an LS indicating this agreement (R2-1916516). SA4 has already agreed on CR for TS 26.238 in S4-191280. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Introduce a multiplier in recommended bit rate MAC CE using a reserved bit based on configuration from the network. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Recommended bit rate MAC CE cannot signal the bit rate range as specified in SA4 specifications. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.1.3.13 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 36.306 CR 1743  TS 36.331 CR 4230  TS 26.238 CR 0014 | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

#### 6.1.3.13 Recommended bit rate MAC Control Element

The recommended bit rate MAC control element is identified by a MAC PDU subheader with LCID as specified in tables 6.2.1-1 and 6.2.1-2 for bit rate recommendation message from the eNB to the UE and bit rate recommendation query message from the UE to the eNB, respectively. It has a fixed size and consists of two octets defined as follows (figure 6.1.3.13-1):

- LCID: This field indicates the identity of the logical channel (as described in Table 6.1.3.13-2) for which the recommended bit rate or the recommended bit rate query is applicable. The length of the field is 4 bits;

- Uplink/Downlink (UL/DL): This field indicates whether the recommended bit rate or the recommended bit rate query applies to uplink or downlink. The length of the field is 1 bit. The UL/DL field set to "0" indicates downlink. The UL/DL field set to "1" indicates uplink;

- Bit Rate: This field indicates an index to Table 6.1.3.13-1. The length of the field is 6 bits. For bit rate recommendation the value indicates the recommended bit rate. For bit rate recommendation query the value indicates the desired bit rate;

- X: Bit rate multiplier. For UEs supporting recommended bit rate multiplier, when *bitRateMultiplier* is configured for the logical channel indicated by LCID field, X field set to "1" indicates the actual value of bit rate is the value corresponding to the index indicated by the Bit Rate field multiplied by *bitRateMultiplier* as specified in TS 36.331 [8].

- R: reserved bit, set to "0".



Figure 6.1.3.13-1: Recommended bit rate MAC control element

Table 6.1.3.13-1: Values (kbit/s) for Bit Rate field

|  |  |  |  |
| --- | --- | --- | --- |
| Index | Recommended Bit Rate value [kbit/s] | Index | Recommended Bit Rate value [kbit/s] |
| 0 | Note 1 | 32 | 700 |
| 1 | 0 | 33 | 800 |
| 2 | 8 | 34 | 900 |
| 3 | 10 | 35 | 1000 |
| 4 | 12 | 36 | 1100 |
| 5 | 16 | 37 | 1200 |
| 6 | 20 | 38 | 1300 |
| 7 | 24 | 39 | 1400 |
| 8 | 28 | 40 | 1500 |
| 9 | 32 | 41 | 1750 |
| 10 | 36 | 42 | 2000 |
| 11 | 40 | 43 | 2250 |
| 12 | 48 | 44 | 2500 |
| 13 | 56 | 45 | 2750 |
| 14 | 72 | 46 | 3000 |
| 15 | 88 | 47 | 3500 |
| 16 | 104 | 48 | 4000 |
| 17 | 120 | 49 | 4500 |
| 18 | 140 | 50 | 5000 |
| 19 | 160 | 51 | 5500 |
| 20 | 180 | 52 | 6000 |
| 21 | 200 | 53 | 6500 |
| 22 | 220 | 54 | 7000 |
| 23 | 240 | 55 | 7500 |
| 24 | 260 | 56 | 8000 |
| 25 | 280 | 57 | Reserved |
| 26 | 300 | 58 | Reserved |
| 27 | 350 | 59 | Reserved |
| 28 | 400 | 60 | Reserved |
| 29 | 450 | 61 | Reserved |
| 30 | 500 | 62 | Reserved |
| 31 | 600 | 63 | Reserved |
| Note1: For bit rate recommendation message this index is used for indicating that no recommendation on bit rate is given. | | | |

Table 6.1.3.13-2: Values of identity of the logical channel for LCID field

|  |  |
| --- | --- |
| Codepoint/Index | Identity of the logical channel (i.e. *logicalChannelIdentity* as specified in TS 36.331 [8]) |
| 0000 | Reserved |
| 0001 | 32 |
| 0010 | 33 |
| 0011-1010 | 3-10 |
| 1011 | 34 |
| 1100 | 35 |
| 1101 | 36 |
| 1110 | 37 |
| 1111 | 38 |