**3GPP TSG-CT WG1 Meeting #136-eC1-224036**

**E-Meeting, 12th – 20th May 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **27.007** | **CR** | **0781** | **rev** | **1** | **Current version:** | **17.5.0** |  |
|  | | | | | | | | |
| *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 |  |

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|  | | | | | | | | | | |
| ***Title:*** | Support of RV QoE | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson, Huawei, HiSilicon, Apple | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI17, NR\_QoE-Core | | | | |  | ***Date:*** | | | 2022-04-29 |
|  |  | | | |  | |  | | |  |
| ***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](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:*** | | As indicated in LS in C1-223311, RAN2 has specified further requirements for RAN Visible QoE measurements. This requires the recently specified AT commands CAPPLEVMCNR and CAPPLEVMRNR to be extended with parameters as explained in the LS.  <app-meas\_service\_type> was added to the description of CAPPLEVMCNR, but not in the description of the unsolicited result code. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Added configuration and reporting related parameters as requested in the LS.  <app-meas\_service\_type> added to CAPPLEVMCNR, in the description of the unsolicited result code.  <meas\_config\_app\_layer\_id> is made mandatory in CAPPLEVMRNR | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | RAN Visible QoE measurement will not be usable as the last link in the chain of the information flow is missing. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 8.84, 8.85 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev-1:  Added number of entries in lists  Moved <meas\_config\_app\_layer\_id>  changed format of buffer level entries to be a list  introduced number of elements in the lists  editorial improvements | | | | | | | | |

**\*\*\*\*\*\*\***

\* \* \* First Change \* \* \* \*

## 8.84 Application level measurement configuration for NR +CAPPLEVMCNR

Table 8.84-1: +CAPPLEVMCNR parameter command syntax

|  |  |
| --- | --- |
| Command | Possible response(s) |
| +CAPPLEVMCNR=[<n>] | *+CME ERROR: <err>* |
| +CAPPLEVMCNR? | +CAPPLEVMCNR: <n> |
| +CAPPLEVMCNR=? | +CAPPLEVMCNR: (list of supported <n>s) |

**Description**

This command allows control of the application level measurement configuration according to 3GPP TS 38.331 [160]. The set command controls the presentation of the unsolicited result code +CAPPLEVMCNR: (list of [<CR><LF>,<meas\_config\_app\_layer\_id>,[<start-stop\_measurement>,[<ran\_visible\_release\_only>]],[<app-meas\_config\_file\_length>,<app-meas\_config-file>],[<transmission\_of\_session\_start-end>],[<ran\_visible\_periodicity>],[<number\_of\_buffer\_level\_entries>],[<report\_initial\_playout\_delay>],[<app-meas\_service\_type>]]s) providing data for the configuration. Refer clause 9.2 for possible <err> values.

Read command returns the current value of <n>.

Test command returns values supported as a compound value.

**Defined values**

<n>: integer type. Disable and enable presentation of the unsolicited result code +CAPPLEVMCNR to the TE.

0 Disable presentation of the unsolicited result code

1 Enable presentation of the unsolicited result code

<app-meas\_service\_type>: integer type. Contains the indication of what application that is target for the application level measurement configuration.

1 QoE measurement collection for streaming services

2 QoE measurement collection for MTSI services

3 QoE measurement collection for VR services

<start-stop\_measurement>: integer type. Indicates the start and stop of the application level measurement reporting for the application indicated by the <app-meas\_service\_type>.

0 start the application level measurement

1 stop the application level measurement and release the application level measurement configuration

<app-meas\_config\_file\_length>: integer type. Indicates the number of octets of the <app-meas\_config-file> parameter.

<app-meas\_config-file>: string of octets. Contains the application level measurement configuration file for the application indicated by the <app-meas\_service\_type>. The parameter shall not be subject to conventional character conversion as per +CSCS.

<meas\_config\_app\_layer\_id>: integer type. At QoE measurement configuration the <meas\_config\_app\_layer\_id> indicates an identity for the QoE measurement configuration received in the <app-meas\_config-file>. At QoE measurement configuration release, the <meas\_config\_app\_layer\_id> indicates the measurement to be released. The absence of this parameter indicates that all measurement configurations are released.

<transmission\_of\_session\_start-end>: integer type. Contains an indication of whether session start-end is required.

0 Not required

1 Required

<ran\_visible\_periodicity>: integer type.

0 120 ms

1 240 ms

2 480 ms

3 640 ms

4 1024 ms

<number\_of\_buffer\_level\_entries>: integer type. Contains the number of buffer level entries.

1-8

<report\_initial\_playout\_delay>: integer type. Contains an indication of whether report of initial playout delay is required.

0 Report of initial playout delay is not required

1 Report of initial playout delay is required

<ran\_visible\_release\_only>: integer type. Contains an indication of whether all application level measurements for this <meas\_config\_app\_layer\_id> should be released or if only the RAN visible application level measurements should be released.

0 Release the RAN visible application level measurements for this <meas\_config\_app\_layer\_id>

1 Release all application level measurements for this <meas\_config\_app\_layer\_id>

**Implementation**

Optional.

## 8.85 Application level measurement report for NR +CAPPLEVMRNR

Table 8.85-1: +CAPPLEVMR action command syntax

|  |  |
| --- | --- |
| Command | Possible response(s) |
| +CAPPLEVMR=(list of [<CR><LF><app-meas\_report\_length>,<app-meas\_report>,<meas\_config\_app\_layer\_id>],[<number-of-pdu-session\_id-entries>,(list of <pdu-session\_id>s)],[<number\_of\_buffer\_level\_entries>,(list of <application\_layer\_buffer-level>s)],[<qoe\_measurement\_status>],[<playout\_delay\_for\_media\_startup>]s) | *+CME ERROR: <err>* |
| +CAPPLEVMR=? |  |

**Description**

This command allows the MT to provide a list of application level measurement reports according to 3GPP TS 38.331 [160]. Refer clause 9.2 for possible <err> values.

**Defined values**

<qoe\_measurement\_status>: Indicates whether a session has started or ended.

0 started

1 ended

<app-meas\_report\_length>: integer type. Indicates the number of octets of the <app-meas\_report> parameter.

<app-meas\_report>: string of octets. Contains the application level measurement report for the application indicated by the <app-meas\_service\_type>. The parameter shall not be subject to conventional character conversion as per +CSCS.

<meas\_config\_app\_layer\_id>: integer type. Identifies the QoE measurement configuration associated with the report in the <app-meas\_report> parameter.

<playout\_delay\_for\_media\_startup>: integer type. Indicates the application layer initial playout delay in ms.

0-30000

<number\_of\_buffer\_level\_entries>: integer type. Contains the number of <application\_layer\_buffer-level> entries.

1-8

<application\_layer\_buffer-level>: integer type. Indicates the application layer buffer level in ms in steps of 10 ms.

0-30000

<number-of-pdu-session\_id-entries>: integer type: Indicates the number of entries in the list of <pdu-session\_id>

<pdu-session\_id>: integer type. Identifies a PDU session ID.

0-255

**Implementation**

Optional.

\* \* \* End of Changes \* \* \* \*