**3GPP TSG-CT WG1 Meeting #138-eC1-22XXXX**

**E-Meeting, 10th – 14th October 2022**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
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|  | **27.007** | **CR** | **0794** | **rev** | **1** | **Current version:** | **18.0.0** |  |
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| *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:***  | Corrections to NR QoE AT commands |
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| ***Source to WG:*** | Lenovo, Ericsson, Huawei, HiSilicon |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | TEI17, NR\_QoE-Core |  | ***Date:*** | 2022-10-10 |
|  |  |  |  |  |
| ***Category:*** | **A** |  | ***Release:*** | Rel-18 |
|  | *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 canbe 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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
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| ***Reason for change:*** | 1. +CAPPLEVMCNR: The definition of the codepoint <ran\_visible\_release\_only> is not aligned with the RAN3 agreements made wrt the release of encapsulated QoE and RVQoE measurement configurations. RAN3 agreed the following cases:

**Case 1:** If the gNB releases an encapsulated QoE measurement configuration, the associated RVQoE measurement configuration is released as well.**Case 2:** The gNB can release a list of RVQoE measurement configurations while not releasing the corresponding encapsulated QoE measurement configurations. Case 1 can be supported by +CAPPLEVMCNR by setting the codepoint <meas\_config\_app\_layer\_id> and the codepoint <start-stop\_measurement> to value “1”. Furthermore, by setting the codepoint <start-stop\_measurement> to value “1” and omitting the codepoint <meas\_config\_app\_layer\_id> all measurement configurations (incl. encapsulated QoE and RVQoE configurations) can be released at once.The codepoint <ran\_visible\_release\_only> is only applicable for Case 2. Therefore, the definition of this codepoint needs to corrected to make it clear that it is only used for releasing RAN visible application level measurements.1. +CAPPLEVMCNR: To be aligned with latest NR RRC specification in TS 38.331 the codepoint <report\_initial\_playout\_delay> needs to be corrected to <report\_playout\_delay\_for\_media\_startup>.
2. +CAPPLEVMRNR: In the definition of the codepoint <meas\_config\_app\_layer\_id> the part “*associated with the report in the <app-meas\_report> parameter*” can be removed. Reason: an application level measurement report may contain only the QoE measurement status (session start/end indication) or the RAN-visible measurements due to the fact that reporting of RAN-visible measurements can be configured by network with a periodicity different from the encapsulated QoE measurements. Therefore, the QoE measurement configuration identity does not need to be linked with the <app-meas\_report> parameter.
3. +CAPPLEVMRNR: The definition of the codepoint <playout\_delay\_for\_media\_startup> is not aligned with the codepoint, i.e. the part “*initial playout delay*” needs to be replaced by “playout delay for media startup”.
4. +CAPPLEVMRNR: In Table 8.85-1 the suffix “NR” is missing for the AT command name +CAPPLEVMR.
5. +CAPPLEVMRNR: In Table 8.85-1 the codepoint <meas\_config\_app\_layer\_id> should be separated from the group [<app-meas\_report\_length>,<app-meas\_report>], since <meas\_config\_app\_layer\_id> identifies the QoE measurement configuration even if there is not any <app-meas\_report>. Furthermore, the codepoint <meas\_config\_app\_layer\_id> should be defined as mandatory present to be aligned with ASN.1 signalling.
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| ***Summary of change:*** | 1. +CAPPLEVMCNR: The definition of the codepoint <ran\_visible\_release\_only> has been corrected to make it clear that it is only used for releasing RAN visible application level measurements indicated by the <meas\_config\_app\_layer\_id>.
2. +CAPPLEVMCNR: The codepoint <report\_initial\_playout\_delay> has been be corrected to <report\_playout\_delay\_for\_media\_startup>.
3. +CAPPLEVMRNR: In the definition of the codepoint <meas\_config\_app\_layer\_id> the part “*associated with the report in the <app-meas\_report> parameter*” has been removed.
4. +CAPPLEVMRNR: In the definition of the codepoint <playout\_delay\_for\_media\_startup> the part “*initial playout delay*” has been replaced by “*playout delay for media startup*”.
5. +CAPPLEVMRNR: In Table 8.85-1 the suffix “NR” has been added to the AT command name +CAPPLEVMR.
6. +CAPPLEVMRNR: In Table 8.85-1 the codepoint <meas\_config\_app\_layer\_id> has been separated from the group [<app-meas\_report\_length>,<app-meas\_report>] and defined as mandatory present.
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| ***Consequences if not approved:*** | The use of the codepoint <ran\_visible\_release\_only> remains misaligned with its original purpose.Inconsistences remain in the definition of the NR QoE AT commands. |
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| ***Clauses affected:*** | 8.84, 8.85 |
|  |  |
|  | **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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* NEXT 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\_playout\_delay\_for\_media\_startup>],[<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\_playout\_delay\_for\_media\_startup>: integer type. Contains an indication of whether report of playout delay for media startup is required.

0 Report of playout delay for media startup is not required

1 Report of playout delay for media startup is required

<ran\_visible\_release\_only>: integer type. Indicates the RAN visible application level measurements to be released.

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

**Implementation**

Optional.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* NEXT CHANGE \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

## 8.85 Application level measurement report for NR +CAPPLEVMRNR

Table 8.85-1: +CAPPLEVMRNR action command syntax

|  |  |
| --- | --- |
| Command | Possible response(s) |
| +CAPPLEVMRNR=(list of <CR><LF>,<meas\_config\_app\_layer\_id>,[<app-meas\_report\_length>,<app-meas\_report>],[<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>* |
| +CAPPLEVMRNR=? |  |

**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.

<playout\_delay\_for\_media\_startup>: integer type. Indicates the application layer playout delay for media startup 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 CHANGE \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***