**3GPP TSG-CT WG1 Meeting #133-eC1-216656**

**E-meeting, 11-19 November 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **27.007** | **CR** | **0753** | **rev** | **1** | **Current version:** | **17.3.0** |  |
|  | | | | | | | | |
| *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:*** | AT Command for MUSIM Paging Restrictions | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Apple | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | MUSIM | | | | |  | ***Date:*** | | | 2021/10/17 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | A MUSIM capable UE can set paging restrictions. There needs to be an AT command so that the TE can indicate these paging restrictions to the MT. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Define a new AT command +CPAGRES to enable the TE to indicate the paging restrictions to the MT. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Missing stage-3 functionality to enable the TE to indicate the paging restrictions to the MT. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 10.1.X (New Clause), Annex B | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | The reference to clause 9.9.3.Y in this CR refers to clause corresponding to Paging restriction decision IE defined in CR #3646 for TS 24.301. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\*\*\* Next change \*\*\*

### 10.1.X Paging restrictions +CPAGRES

Table 10.1.X-1: +CPAGRES parameter command syntax

|  |  |
| --- | --- |
| Command | Possible response(s) |
| +CPAGRES=<n>[,<paging\_restrictions>[,<number\_of\_restricted\_cid>[,<cid>[,<cid>[,<cid>[,<cid>[,…]]]]]]] | *+CME ERROR: <err>* |
| +CPAGRES? | +CPAGRES: <n>,<paging\_restrictions>[, <number\_of\_restricted\_cid>[,<cid>[,<cid>[,<cid>[,<cid>[,…]]]]]] |
| +CPAGRES=? | +CPAGRES: (list of supported <n>s),(list of supported <paging\_restrictions>s), (list of supported <number\_of\_restricted\_cid>s),(list of supported <cid>s) |

**Description**

The set command controls the presentation of unsolicited result code +CPAGRES: <paging\_restrict\_result> when <n>=1 reporting that the paging restriction preferences specified by the MUSIM capable UE have been accepted by the network or not. When <n>=2, a special form of the set command enables the MUSIM capable UE to specify the paging restriction preferences to the network for 3GPP access in EPS (see 3GPP TS 24.301 [83], clause 5.5.3.2 and clause 5.6.1) and 5GS (see 3GPP TS 24.501 [161], clause 5.5.1 and clause 5.6.1). The paging restriction preferences can be set or removed.

Refer clause 9.2 for possible <err> values.

The read command returns the current settings of <n> and paging restrictions.

The test command returns values supported as a compound value.

**Defined values**

<n>: integer type

0 Disable presentation of unsolicited result code +CPAGRES: <paging\_restrict\_result>

1 Enable presentation of unsolicited result code +CPAGRES: <paging\_restrict\_result>

2 Reject paging request from the network. There will be no change in the current setting of <n>, enabling or disabling of unsolicited result code +CPAGRES: <paging\_restrict\_result>

<paging\_restrict\_result>: integer type; indicates whether the requested paging restriction preferences of the UE are accepted or not, see 3GPP TS 24.301 [83], clause 9.9.3.Y.

0 indicates that paging restriction is rejected

1 indicates that paging restriction is accepted

<paging\_restrictions>: integer type; indicates the paging restriction preferences of the UE, see 3GPP TS 24.301 [83], clause 9.9.3.66, and 3GPP TS 24.501 [161], clause 9.11.3.77.

0 indicates that paging is not restricted

1 indicates that all paging is restricted

2 indicates that all paging is restricted except for voice service

3 indicates that all paging is restricted except for specified PDN connection(s) in EPS or PDU session(s) in 5GS

4 indicates that all paging is restricted except for voice service and specified PDN connection(s) in EPS or PDU session(s) in 5GS

<number\_of\_restricted\_cid>: integer type; indicates the number of <cid>s for which paging is restricted

<cid>: integer type; A numeric parameter which specifies a particular EPS bearer context or a 5GS QoS flow. The <cid> parameter is local to the TE-MT interface and identifies only EPS bearer contexts or 5GS QoS flows which have been setup via AT command (see the +CGDCONT and +CGDSCONT commands).

**Implementation**

Optional.

\*\*\* Next change \*\*\*

Annex B (normative):  
Summary of result codes

ITU‑T Recommendation V.250 [14] result codes which can be used in the present document and result codes defined in the present document:

Table B.1: Result codes

|  |  |  |  |
| --- | --- | --- | --- |
| Verbose result code  (V.250 command V1 set) | Numeric  (V0 set) | Type | Description |
| +C5GPDUAUTHU | as verbose | unsolicited | refer clause 10.1.74 |
| +C5GUSMS | as verbose | unsolicited | refer clause 10.1.59 |
| +CABTSRI | as verbose | unsolicited | refer clause 10.1.41 |
| +CACSP | as verbose | unsolicited | refer clause 11.1.7 |
| +CALV | as verbose | unsolicited | refer clause 8.16 |
| +CANCHEV | as verbose | unsolicited | refer clause 11.1.8 |
| +CAPPLEVMC | as verbose | unsolicited | refer clause 8.78 |
| +CAPTT | as verbose | unsolicited | refer clause 11.1.4 |
| +CAULEV | as verbose | unsolicited | refer clause 11.1.5 |
| +CBCAP | as verbose | unsolicited | refer clause 8.59 |
| +CBCHG | as verbose | unsolicited | refer clause 8.61 |
| +CBCON | as verbose | unsolicited | refer clause 8.60 |
| +CCCM | as verbose | unsolicited | refer clause 7.16 |
| +CCSFBU | as verbose | unsolicited | refer clause 8.76 |
| +CCSTATEREQU | as verbose | unsolicited | refer clause 10.1.72 |
| +CCWA | as verbose | unsolicited | refer clause 7.12 |
| +CCWV | as verbose | unsolicited | refer clause 8.28 |
| +CDEV | as verbose | unsolicited | refer clause 8.10 |
| +CDIP | as verbose | unsolicited | refer clause 7.9 |
| +CDUT | as verbose | intermediate | refer clause 13.2.1 |
| +CDUU | as verbose | unsolicited | refer clause 13.2.1 |
| +CECN | as verbose | unsolicited | refer clause 6.28 |
| +CEDRXSP | as verbose | unsolicited | refer clause 7.40 |
| +CEMBMSRI | as verbose | unsolicited | refer clause 14.2.2 |
| +CEMBMSSAII | as verbose | unsolicited | refer clause 14.2.6 |
| +CEMBMSSRVI | as verbose | unsolicited | refer clause 14.2.3 |
| +CEN1 | as verbose | intermediate  unsolicited | refer clause 8.67 |
| +CEN2 | as verbose | intermediate  unsolicited | refer clause 8.67 |
| +CEN3 | as verbose | intermediate  unsolicited | refer clause 8.67 |
| +CEN4 | as verbose | intermediate  unsolicited | refer clause 8.67 |
| +CEPTT | as verbose | unsolicited | refer clause 11.1.10 |
| +CEPSFBS | as verbose | unsolicited | refer clause 8.81 |
| +CEREG | as verbose | unsolicited | refer clause 10.1.22 |
| +CPBW | as verbose | intermediate | refer clause 8.14 |
| +CPNERU | as verbose | unsolicited | refer clause 8.70 |
| +CGBRRREP | as verbose | unsolicited | refer clause 10.1.69 |
| +CGDEL | as verbose | intermediate | refer clause 10.1.29 |
| +CGEV | as verbose | unsolicited | refer clause 10.1.19 |
| +CGREG | as verbose | unsolicited | refer clause 10.1.20 |
| +CHSR | as verbose | intermediate | refer clause 6.16 |
| +CIEV | as verbose | unsolicited | refer clause 8.10 |
| +CCIOTOPTI | as verbose | unsolicited | refer clause 7.42 |
| +CIREGU | as verbose | unsolicited | refer clause 8.71 |
| +CIREPH | as verbose | unsolicited | refer clause 8.64 |
| +CIREPI | as verbose | unsolicited | refer clause 8.64 |
| +CKEV | as verbose | unsolicited | refer clause 8.10 |
| +CLADNU | as verbose | unsolicited | refer clause 10.1.61 |
| +CLAV | as verbose | unsolicited | refer clause 8.31 |
| +CLIP | as verbose | unsolicited | refer clause 7.6 |
| +CMCCSI | as verbose | unsolicited | refer clause 8.73 |
| +CMCCSS<x> | as verbose | unsolicited | refer clause 8.73 |
| +CMCCSSEND | as verbose | unsolicited | refer clause 8.73 |
| +CME ERROR | as verbose | final | refer clause 9.2.0 |
| +CMICO | as verbose | unsolicited | refer clause 10.1.55 |
| +CMOLRE | as verbose | unsolicited | refer clause 9.3.1 |
| +CMOLRG | as verbose | unsolicited | refer clause 8.50 |
| +CMOLRN | as verbose | unsolicited | refer clause 8.50 |
| +CMTLR | as verbose | unsolicited | refer clause 8.57 |
| +CRTDCP | as verbose | unsolicited | refer clause 10.1.44 |
| +CMWN | as verbose | unsolicited | refer clause 7.36 |
| +CNAP | as verbose | intermediate  unsolicited | refer clause 7.30 |
| +CNEC\_MM | as verbose | unsolicited | refer clause 9.1b |
| +CNEC\_GMM | as verbose | unsolicited | refer clause 9.1b |
| +CNEC\_GSM | as verbose | unsolicited | refer clause 9.1b |
| +CNEC\_EMM | as verbose | unsolicited | refer clause 9.1b |
| +CNEC\_ESM | as verbose | unsolicited | refer clause 9.1b |
| +CNEMIU | as verbose | unsolicited | refer clause 7.33 |
| +CNEMS1 | as verbose | unsolicited | refer clause 7.33 |
| +CNEM5G | as verbose | unsolicited | refer clause 7.33 |
| +CNRREG | as verbose | unsolicited | refer clause 10.1.47 |
| +COEV | as verbose | unsolicited | refer clause 8.10 |
| +COLP | as verbose | intermediate  unsolicited | refer clause 7.8 |
| +CPAGERES | as verbose | unsolicited | refer clause 10.1.X |
| +CPINR | as verbose | intermediate | refer clause 8.65 |
| +CPINRE | as verbose | intermediate | refer clause 8.65 |
| +CPOSR | as verbose | unsolicited | refer clause 8.56 |
| +CPNERU | as verbose | unsolicited | refer clause 8.70 |
| +CPNSTAT | as verbose | unsolicited | refer clause 7.28 |
| +CPSB | as verbose | unsolicited | refer clause 7.29 |
| +CR | as verbose | intermediate | refer clause 6.9 |
| +CREG | as verbose | unsolicited | refer clause 7.2 |
| +CRING | as verbose | unsolicited | refer clause 6.11 |
| +CRLOSPU | as verbose | unsolicited | refer clause 10.1.65 |
| +CRTDCP | as verbose | unsolicited | refer clause 10.1.44 |
| +CRUEPOLICYU | as verbose | unsolicited | refer clause 10.1.51 |
| +CSBTSRI | as verbose | unsolicited | refer clause 10.1.56 |
| +CSCON | as verbose | unsolicited | refer clause 10.1.30 |
| +CSDBTSRI | as verbose | unsolicited | refer clause 10.1.58 |
| +CSSI | as verbose | intermediate | refer clause 7.17 |
| +CSSU | as verbose | unsolicited | refer clause 7.17 |
| +CTEV | as verbose | unsolicited | refer clause 8.10 |
| +CTZE | as verbose | unsolicited | refer clause 8.41 |
| +CTZEU | as verbose | unsolicited | refer clause 8.41 |
| +CTZV | as verbose | unsolicited | refer clause 8.41 |
| +CUSATEND | as verbose | unsolicited | refer clause 12.2.4 |
| +CUSATP | as verbose | unsolicited | refer clause 12.2.4 |
| +CUSATS | as verbose | unsolicited | refer clause 12.2.3 |
| +CUSD | as verbose | unsolicited | refer clause 7.15 |
| +CUUS1I | as verbose | intermediate | refer clause 7.26 |
| +CUUS1U | as verbose | unsolicited | refer clause 7.26 |
| +CWLANOLADI | as verbose | unsolicited | refer clause 10.1.39 |
| +CWLANOLCMI | as verbose | unsolicited | refer clause 10.1.40 |
| +DR | as verbose | intermediate | refer clause 6.26 |
| +ILRR | as verbose | intermediate | refer clause 4.3 |
| BUSY | 7 | final | busy signal detected |
| CONNECT | 1 | intermediate | connection has been established |
| CONNECT <text> | manufacturer specific | intermediate | as CONNECT but manufacturer specific <text> gives additional information (e.g. connection data rate) |
| ERROR | 4 | final | command not accepted |
| NO ANSWER | 8 | final | connection completion timeout |
| NO CARRIER | 3 | final | connection terminated |
| NO DIALTONE | 6 | final | no dialtone detected |
| OK | 0 | final | acknowledges execution of a command line |
| RING | 2 | unsolicited | incoming call signal from network |
| NOTE: From v6.2.0 onwards, ATV0 numeric result codes 5, 6, 7 for NO DIALTONE, BUSY and NO ANSWER respectively, have been replaced by numeric result codes 6, 7, 8 respectively, to be aligned with the values listed in ITU-T Recommendation V.250 [14] (previously V.25ter). | | | |

NOTE: The table B.1 is as an overview of the result codes, hence the complete syntax of the result codes is not shown.

\*\*\* end of change \*\*\*