**3GPP TSG-CT WG1 Meeting #134eC1-221649**

**E-meeting, 17-25 February 2022**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **27.007** | **CR** | **771** | **rev** | **-** | **Current version:** | **17.4.0** |  |
|  |
| *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 updation for MINT in manual selection mode. |
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| ***Source to WG:*** | Huawei, HiSilicon |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | MINT |  | ***Date:*** | 2022-02-10 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***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 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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | According to 23.122, if the UE supports MINT and only if forbidden PLMNs are available to select in manual mode, and some of those PLMNs support disaster roaming, then the UE may send an indication to upper layers to show that those PLMNs support disaster roaming. To send this indication, the AT command needs to be update. In current 27.007, the option is missing. Based on this new indication to the TE, the TE selects whether to perform disaster roaming registration. |
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| ***Summary of change:*** | Added an indication in +COPS AT command to indicate if the PLMN is forbidden and support disater roaming. Further the TE or user can indicate if he wants to register for disaster roaming. |
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| ***Consequences if not approved:*** | Feature not supported |
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| ***Clauses affected:*** | 7.3 |
|  |  |
|  | **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:*** |  |

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

## 7.3 PLMN selection +COPS

Table 36: +COPS parameter command syntax

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| --- | --- |
| Command | Possible response(s) |
| +COPS=[<mode>[,<format>[,<oper>[,<AcT>[,<regtype>]]]]] | *+CME ERROR: <err>* |
| +COPS? | +COPS: <mode>[,<format>,<oper>[,<AcT>]]*+CME ERROR: <err>* |
| +COPS=? | +COPS: [list of supported (<stat>,long alphanumeric <oper>,short alphanumeric <oper>,numeric <oper>[,<AcT>])s][,,(list of supported <mode>s),(list of supported <format>s)]*+CME ERROR: <err>* |

**Description**

Set command forces an attempt to select and register to the GSM/UMTS/EPS/5GS network operator using the SIM/USIM card installed in the currently selected card slot. <mode> is used to select whether the selection is done automatically by the MT or is forced by this command to operator <oper> (it shall be given in format <format>) to a certain access technology, indicated in <AcT>. <regtype> indicates if the registration procedure shall be performed for disaster roaming service (see 3GPP TS 24.501 [161]). If <regtype> parameter is not included then UE performs normal registration i.e. registration not for disaster roaming service (see 3GPP TS 24.501 [161]). If the selected operator is not available, no other operator shall be selected (except <mode>=4). If the selected access technology is not available, then the same operator shall be selected in other access technology. The selected operator name format shall apply to further read commands (+COPS?) also. <mode>=2 forces an attempt to deregister from the network. The selected mode affects to all further network registration (e.g. after <mode>=2, MT shall be unregistered until <mode>=0 or 1 is selected). Refer clause 9.2 for possible <err> values. This command should be abortable when registration/deregistration attempt is made.

Read command returns the current mode, the currently selected operator and the current Access Technology. If no operator is selected, <format>, <oper> and <AcT> are omitted.

Test command returns a set of five parameters, each representing an operator present in the network. A set consists of an integer indicating the availability of the operator <stat>, long and short alphanumeric format of the name of the operator, numeric format representation of the operator and access technology. Any of the formats may be unavailable and should then be an empty field. The list of operators shall be in order: home network, networks referenced in SIM or active application in the UICC (GSM or USIM) in the following order: HPLMN selector, User controlled PLMN selector, Operator controlled PLMN selector and PLMN selector (in the SIM or GSM application), and other networks.

It is recommended (although optional) that after the operator list TA returns lists of supported <mode>s and <format>s. These lists shall be delimited from the operator list by two commas.

The access technology selected parameters, <AcT>, should only be used in terminals capable to register to more than one access technology. Selection of <AcT> does not limit the capability to cell reselections, even though an attempt is made to select an access technology, the phone may still re-select a cell in another access technology.

**Defined values**

<mode>: integer type

0 automatic (<oper> field is ignored)

1 manual (<oper> field shall be present, and <AcT> optionally)

2 deregister from network

3 set only <format> (for read command +COPS?), do not attempt registration/deregistration (<oper> and <AcT> fields are ignored); this value is not applicable in read command response

4 manual/automatic (<oper> field shall be present); if manual selection fails, automatic mode (<mode>=0) is entered

<format>: integer type

0 long format alphanumeric <oper>

1 short format alphanumeric <oper>

2 numeric <oper>

<regtype>: integer type

0 register not for disaster roaming service.

1 register for disaster roaming service.

<oper>: string type; <format> indicates if the format is alphanumeric or numeric; long alphanumeric format can be upto 16 characters long and short format up to 8 characters (refer GSM MoU SE.13 [9]); numeric format is the Location Area Identification number (refer 3GPP TS 24.008 [8] clause 10.5.1.3) which consists of a three BCD digit country code coded as in ITU‑T Recommendation E.212 [10] Annex A, plus a two BCD digit network code, which is administration specific; returned <oper> shall not be in BCD format, but in IRA characters converted from BCD; hence the number has structure: (country code digit 3)(country code digit 2)(country code digit 1)(network code digit 3)(network code digit 2)(network code digit 1)

<stat>: integer type

0 unknown

1 available

2 current

3 forbidden

4 forbidden and supports disaster roaming

<AcT>: integer type; access technology selected

0 GSM

1 GSM Compact

2 UTRAN

3 GSM w/EGPRS (see NOTE 1)

4 UTRAN w/HSDPA (see NOTE 2)

5 UTRAN w/HSUPA (see NOTE 2)

6 UTRAN w/HSDPA and HSUPA (see NOTE 2)

7 E-UTRAN

8 EC-GSM-IoT (A/Gb mode) (see NOTE 3)

9 E-UTRAN (NB-S1 mode) (see NOTE 4)

10 E-UTRA connected to a 5GCN (see NOTE 5)

11 NR connected to a 5GCN (see NOTE 5)

12 NG-RAN

13 E-UTRA-NR dual connectivity (see NOTE 6)

NOTE 1: 3GPP TS 44.018 [156] specifies the System Information messages which give the information about whether the serving cell supports EGPRS.

NOTE 2: 3GPP TS 25.331 [74] specifies the System Information blocks which give the information about whether the serving cell supports HSDPA or HSUPA.

NOTE 3: 3GPP TS 44.018 [156] specifies the EC-SCH INFORMATION message which, if present, indicates that the serving cell supports EC-GSM-IoT.

NOTE 4: 3GPP TS 36.331 [86] specifies the System Information blocks which give the information about whether the serving cell supports NB-IoT, which corresponds to E-UTRAN (NB-S1 mode).

NOTE 5: 3GPP TS 38.331 [160] specifies the information which, if present, indicates that the serving cell is connected to a 5G CN. This value is not applicable in set command.

NOTE 6: 3GPP TS 38.331 [160] specifies the information which, if present, indicates that the serving cell is supporting dual connectivity of E-UTRA with NR and is connected to an EPS core.

**Implementation**

Optional.

\* \* \* next Change \* \* \* \*

\* \* \* next Change \* \* \* \*

\* \* \* next Change \* \* \* \*

\* \* \* End of Change \* \* \* \*