**3GPP TSG-CT WG1 Meeting #137-eC1-22xxxx**

**E-Meeting, 18th – 26th August 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **27.007** | **CR** | **0790** | **rev** | **1** | **Current version:** | **v17.6.0** |  |
|  | | | | | | | | |
| *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 5GS network attach over non-3GPP access | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Google | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GProtoc18 | | | | |  | ***Date:*** | | | 2022-08-23 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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 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:*** | | In 5GS the UE can register to the network over both 3GPP access and non-3GPP access. The existing +CGATT is mainly for attaching over 3GPP access thus a new AT command for attaching over non-3GPP access is needed. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Introduce a new AT command,+C5GATTN3, to register/deregister the MT to 5GS network over non-3GPP access | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | AT command for registering to 5GS network over non-3GPP access is not supported. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 10.1.00, 10.1.x (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \* \* \* \*

### 10.1.00 General remark about 5GS PDU sessions and EPS PDN connections

According to 3GPP TS 23.501 [165] and 3GPP TS 24.501 [161] there exists a one to one mapping between a 5GS PDU session and an EPS PDN connection. A 5GS PDU session is a set of QoS flows consisting of one QoS flow of the default QoS rule and optionally one or more QoS flows of non-default QoS rule. A PDN connection is set of EPS bearer contexts and consists of at least one default EPS bearer context and optionally one or more dedicated EPS bearer contexts. A PDU session can be mapped to one default EPS bearer context and zero or more dedicated bearer EPS bearer contexts. An EPS bearer context can be mapped to one or more QoS flows. The mapping between a QoS flow and an EPS bearer context is not always one to one.

Table 10.1.00-1: AT commands/results applicable for 5GS PDU session   
(equivalence between PDU Session / PDN Connection)

|  |  |
| --- | --- |
| AT commands | Comments |
| +CGDCONT | Used to define a 5GS PDU session |
| +CGACT | Used to activate a 5GS PDU session. |
| +CCSTATEREQ | Used to change the state of a PDU session |
| +CGCMOD | Used to modify a 5GS PDU session |
| +CGCONTRDP | Used to show dynamically allocated 5GS PDU session parameters. |
| +CGEV: xxx ... | Used to indicate 5GS PDU session operations status. |

Table 10.1.00-2: AT commands/results applicable for 5GS QoS flow   
(equivalence between QoS flow / EPS bearer resources)

|  |  |
| --- | --- |
| AT commands | Comments |
| +CGDSCONT | Used to define a 5GS QoS flow |
| +CGSCONTRDP | Used to show dynamically allocated 5GS QoS flow parameters |
| +CGTFT | Used to define QoS rules for a 5GS QoS flow |
| +CGTFTRDP | Used to show the network assigned QoS rules for a 5GS QoS flow |
| +C5GQOS | Used to define QoS flows of a 5GS PDU session |
| +C5GQOSRDP | Used to show the dynamically allocated QoS flows corresponding to a 5GS PDU session. |
| +C5GPDUAUTHS | Used to define 5G PDU Session Authentication settings. |
| +C5GPDUAUTHR | Used to indicate 5G PDU Session Authentication Response. |

Table 10.1.00-3: AT commands applicable for 5GS

|  |  |
| --- | --- |
| AT commands | Comments |
| +CGATT | Used to attach/detach the MT from the packet domain service. |
| +C5GREG | Indicates 5GS network registration status |
| +C5GATTN3GPP | Used to register the MT to, or deregister the MT from, 5GS network over non-3GPP access |

NOTE: The above is not a complete list of AT commands for 5GS but only those applicable to 5GS PDU sessions and 5GS QoS flows.

\* \* \* Next Change \* \* \* \*

### 10.1.x 5GS network attach or detach over non-3GPP access +C5GATTN3GPP

Table 10.1.x-1: +C5GATTN3GPP parameter command syntax

|  |  |
| --- | --- |
| Command | Possible Response(s) |
| +C5GATTN3GPP=<state> | *+CME ERROR: <err>* |
| +C5GATTN3GPP? | +C5GATTN3GPP: <state> |
| +C5GATTN3GPP=? | +C5GATTN3GPP: (list of supported <state>s) |

**Description**

The execution command is used to register the MT to, or deregister the MT from, 5GS network over non-3GPP access. If the MT is already in the requested state, the command is ignored and the OK response is returned. If the requested state cannot be achieved, an ERROR or +CME ERROR response is returned. Extended error responses are enabled by the +CMEE command. Refer clause 9.2 for possible <err> values.

Any active PDP contexts will be automatically deactivated when the attachment state changes to deregistered.

The read command returns the current 5GS attachment state over non-3GPP access.

The test command is used for requesting information on the supported 5GS attachment states over non-3GPP access.

**Defined values**

<state>: integer type; indicates the state of 5GS attachment over non-3GPP access

0 deregistered

1 registered

**Implementation**

Optional.

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