**3GPP TSG-CT WG1 Meeting #130-eC1-21XXXX**

**Electronic meeting, 20-28 May 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **27.007** | **CR** | **0726** | **rev** | **1** | **Current version:** | **17.1.0** |  |
|  | | | | | | | | |
| *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:*** | Clarification on NSSAI related AT commands | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Mediatek Inc., Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GProtoc17 | | | | |  | ***Date:*** | | | 2021/05/24 |
|  |  | | | |  | |  | | |  |
| ***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 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:*** | | Currently the determination (on the MT side) about the NSSAI related length field (<xxxx\_nssai\_xxxx\_length>) is not well defiend.  For example, an Allowed NSSAI IE in REGISTRATION ACCEPT received from PLMN ID 001.01 of a test case is: 0x15 0x06 0x01 0x01 0x01 0x02 0x01 0x03    Per 10.1.63, the +C5GNSSAIRDP is used to query the allowed NSSAI    Per 10.1.63, The <allowed\_nssai\_3gpp> is coded as a list of <S-NSSAI>s separated by colons. Refer parameter <S-NSSAI> in subclause 10.1.1.  Per 10.1.1, The <S-NSSAI> has one of the forms:    The <allowed\_nssai\_3gpp\_length> is defined as: integer type; indicates the length in octets of the allowed NSSAI associated with 3GPP access stored at the MT for the PLMN identified by <plmn\_id>  According to the example Allowed NSSAI IE mentioned above (0x15 0x06 0x01 0x01 0x01 0x02 0x01 0x03), the AT commands flow can be:  AT+C5GNSSAIRDP=3,"00101"  +C5GNSSAIRDP:  +C5GNSSAIRDP: "00101",???,"02:03",???,"01:02:03",0,""  It is not clear what is the correct value of the ???:   * Option 1) the ??? can be 6, which is the value of the “Legnth of NSSAI contents” in the NSSAI IE in REGISTRATION ACCEPT OTA message, but this value is meaningless to TE because the TE does not need to know the OTA encoded length. * Option 2) the ??? can be 3, which represents for how many S-NSSAIs are includeded in the <allowed\_nssai\_3gpp> (in the example log, 3 S-SNSSAIs are included), but this value meaningless to TE because the TE can correctly parse 3 S-NSSAIs by using the delimeter : in "01:02:03". * Option 3) the ??? can be 8, which represents for the string\_length("01:02:03"), but this value is meaningless to TE because the TE can judge the boundry correctly by parsing the begin " and the end ".   We propose to indicate that determination of the value of the <xxx\_nssai\_xxx\_length> is up to implementation. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Clarify that determination of the value of the <xxxx\_nssai\_xxxx\_length> is up to implementation | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | <xxxx\_nssai\_xxxx\_length> fields interpretation is not precisely defined | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 10.1.47, 10.1.62, 10.1.63, 10.1.64 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

\*\*\* change \*\*\*

### 10.1.47 5GS network registration status +C5GREG

Table 10.1.47-1: +C5GREG parameter command syntax

|  |  |
| --- | --- |
| Command | Possible response(s) |
| +C5GREG=[<n>] | *+CME ERROR: <err>* |
| +C5GREG? | **when <n>=0, 1, 2, 3, 4 or 5 and command successful:**  +C5GREG: <n>,<stat>[,[<tac>],[<ci>],[<AcT>],[<Allowed\_NSSAI\_length>],[<Allowed\_NSSAI>][,<cause\_type>,<reject\_cause>]][,<cag\_stat>][,<caginfo>] |
| +C5GREG=? | +C5GREG: (list of supported <n>s) |

**Description**

The set command controls the presentation of an unsolicited result code +C5GREG: <stat> when <n>=1 and there is a change in the MT's network registration status in 5GS, or unsolicited result code +C5GREG: <stat>[,[<tac>],[<ci>],[<AcT>],[<Allowed\_NSSAI\_length>],[<Allowed\_NSSAI>]] when <n>=2 and there is a change of the network cell in 5GS or the network provided an Allowed NSSAI. The parameters <AcT>, <tac>, <ci>, <Allowed\_NSSAI\_length> and <Allowed\_NSSAI> are provided only if available. The value <n>=3 further extends the unsolicited result code with [,<cause\_type>,<reject\_cause>], when available, when the value of <stat> changes. The value <n>=4 extends the unsolicited result code with [,<cag\_stat>] when the value of <cag\_stat> changes. The value <n>=5 extends the unsolicited result code with [,<caginfo>] when UE camps on a CAG cell. <caginfo> is displayed only when <cag\_stat> is 1.

Refer subclause 9.2 for possible <err> values.

NOTE 1: If the 5G MT in GERAN/UTRAN/E-UTRAN also supports one or more of the circuit mode services, GPRS services or EPS services, the +CREG command and +CREG: result codes, the +CGREG command and +CGREG: result codes and the +CEREG command and +CEREG: result codes apply to the registration status and location information for those services.

The read command returns the status of result code presentation and an integer <stat> which shows whether the network has currently indicated the registration of the MT. Location information elements <tac>, <ci> and <AcT>, and parameters <Allowed\_NSSAI\_length>, <Allowed\_NSSAI>, if available, are returned only when <n>=2 and MT is registered in the network. The parameters [,<cause\_type>,<reject\_cause>], if available, are returned when <n>=3.

Test command returns values supported as a compound value. The parameter [,<cag\_stat>], if available, is returned when <n>=4. The parameter [,<caginfo>], if available, is returned when <n>=5.

**Defined values**

<n>: integer type

0 disable network registration unsolicited result code

1 enable network registration unsolicited result code +C5GREG: <stat>

2 enable network registration and location information unsolicited result code +C5GREG: <stat>[,[<tac>],[<ci>],[<AcT>],[<Allowed\_NSSAI\_length>],[<Allowed\_NSSAI>]]

3 enable network registration, location information and 5GMM cause value information unsolicited result code +C5GREG: <stat>[,[<tac>],[<ci>],[<AcT>],[<Allowed\_NSSAI\_length>],[<Allowed\_NSSAI>][,<cause\_type>,<reject\_cause>]]

4 enable network registration, location information, cause value information, CAG cell status information unsolicited result code +C5GREG: <stat>[,[<lac>],[<ci>],[<AcT>],[<Allowed\_NSSAI\_length>],[<Allowed\_NSSAI>][,<cause\_type>,<reject\_cause>]][,<cag\_stat>]

5 enable network registration, location information, cause value information, CAG cell status information and CAG cell information unsolicited result code +C5GREG: <stat>[,[<lac>],[<ci>],[<AcT>],[<Allowed\_NSSAI\_length>],[<Allowed\_NSSAI>][,<cause\_type>,<reject\_cause>]][,<cag\_stat>][,<caginfo>]

<stat>: integer type; indicates the NR registration status.

0 not registered, MT is not currently searching an operator to register to

1 registered, home network

2 not registered, but MT is currently trying to attach or searching an operator to register to

3 registration denied

4 unknown (e.g. out of NR coverage)

5 registered, roaming

6 registered for "SMS only", home network (not applicable)

7 registered for "SMS only", roaming (not applicable)

8 registered for emergency services only (See NOTE 2)

9 registered for "CSFB not preferred", home network (not applicable)

10 registered for "CSFB not preferred", roaming (not applicable)

11 attached for access to RLOS (See NOTE 2a) (not applicable)

NOTE 2: 3GPP TS 24.501 [161] specifies the condition when the MT is considered as registered for emergency services.

NOTE 2a: 3GPP TS 24.301 [83] specifies the condition when the MT is considered as attached for access to RLOS.

<tac>: string type; three byte tracking area code in hexadecimal format (e.g. "0000C3" equals 195 in decimal).

<ci>: string type; five byte NR cell ID in hexadecimal format.

<Allowed\_NSSAI\_length>: integer type; the Terminal Adaptor (TA) can determine the value by parsing the <Allowed\_NSSAI> parameter.

<Allowed\_NSSAI>: string type in hexadecimal format. Dependent of the form, the string can be separated by dot(s), semicolon(s) and colon(s). This parameter indicates the list of allowed S-NSSAIs received from the network. The <Allowed\_NSSAI> is coded as a list of <S-NSSAI>s separated by colons. Refer parameter <S-NSSAI> in subclause 10.1.1. This parameter shall not be subject to conventional character conversion as per +CSCS.

<AcT>: integer type; indicates the access technology of the serving cell.

0 GSM (not applicable)

1 GSM Compact (not applicable)

2 UTRAN (not applicable)

3 GSM w/EGPRS (see NOTE 3) (not applicable)

4 UTRAN w/HSDPA (see NOTE 4) (not applicable)

5 UTRAN w/HSUPA (see NOTE 4) (not applicable)

6 UTRAN w/HSDPA and HSUPA (see NOTE 4) (not applicable)

7 E-UTRAN (not applicable)

8 EC-GSM-IoT (A/Gb mode) (see NOTE 5) (not applicable)

9 E-UTRAN (NB-S1 mode) (see NOTE 6) (not applicable)

10 E-UTRA connected to a 5GCN (see NOTE 7)

11 NR connected to a 5GCN (see NOTE 7)

12 NG-RAN (not applicable)

13 E-UTRA-NR dual connectivity (see NOTE 8) (not applicable)

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

NOTE 4: 3GPP TS 25.331 [74] specifies the System Information blocks which give the information about whether the serving cell supports HSDPA or HSUPA.

NOTE 5: 3GPP TS 44.018 [156] specifies the EC-SCH INFORMATION message which, if present, indicates that the serving cell supports EC-GSM-IoT.

NOTE 6: 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 7: 3GPP TS 38.331 [160] specifies the information which, if present, indicates that the serving cell is connected to a 5GCN.

NOTE 8: 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.

<cause\_type>: integer type; indicates the type of <reject\_cause>.

0 Indicates that <reject\_cause> contains an EMM cause value, see 3GPP TS 24.301 [83] Annex A.

1 Indicates that <reject\_cause> contains a manufacturer-specific cause.

<reject\_cause>: integer type; contains the cause of the failed registration. The value is of type as defined by <cause\_type>.

<cag\_stat>: integer type; indicates the camping status on a CAG cell

0 Indicates UE is not camped on CAG cell.

1 Indicates UE is currently camped on CAG cell.

<CAGinfo>: string type;

CAGinfo consists of HRNN, CAG ID and Associated PLMN MCC MNC each delimited by a comma and in this particular order only. If HRNN is unavailable, it shall be an empty field.

The display format is based on <format> value in +CCAGS command. In the alphanumeric format HRNN, CAG ID and Associated PLMN MCC MNC would be displayed while in numeric format only CAG ID and Associated PLMN MCC MNC would be displayed. See 3GPP TS 23.003 [7] for details of HRNN and CAG ID representation.

**Implementation**

Optional. This command is only applicable to UEs supporting 5GS.

\*\*\* change \*\*\*

### 10.1.62 5GS NSSAI setting +C5GNSSAI

Table 10.1.62-1: +C5GNSSAI parameter command syntax

| Command | Possible Response(s) |
| --- | --- |
| +C5GNSSAI=<default\_configured\_nssai\_length>,<default\_configured\_nssai> | *+CME ERROR: <err>* |
| +C5GNSSAI? | +C5GNSSAI: [<default\_configured\_nssai\_length>,<default\_configured\_nssai>] |
| +C5GNSSAI=? | +C5GNSSAI: (range of supported <default\_configured\_nssai\_length>s),(range of supported <default\_configured\_nssai>s) |

**Description**

The set command enables updating the default configured NSSAI stored at the MT (see 3GPP TS 24.501 [161] subclause 4.6.2.2). If <default\_configured\_nssai\_length> has a value of zero and <default\_configured\_nssai> consists of an empty string, the default configured NSSAI stored at the MT, if any, shall be deleted by the MT. If the MT has previously received a default configured NSSAI from the network via NAS signalling as specified in 3GPP TS 24.501 [161], the default configured NSSAI stored at the MT is not updated and an error message, +CME ERROR, is returned to TE. Refer subclause 9.2 for possible <err> values.

The read command returns the current parameter values.

The test command returns the values supported as compound values.

**Defined values**

<default\_configured\_nssai\_length>: integer type; the Terminal Adaptor (TA) can determine the value by parsing the <default\_configured\_nssai> parameter.

<default\_configured\_nssai>: string type in hexadecimal format. Dependent of the form, the string can be separated by dot(s), semicolon(s) and colon(s). This parameter indicates the list of S-NSSAIs included in the default configured NSSAI to be stored by the MT. The <default\_configured\_nssai> is coded as a list of <S-NSSAI>s separated by colons. Refer parameter <S-NSSAI> in subclause 10.1.1. This parameter shall not be subject to conventional character conversion as per +CSCS.

If the value is an empty string (""), no default configured NSSAI is stored at the MT.

**Implementation**

Optional.

\*\*\* change \*\*\*

### 10.1.63 5GS NSSAI read dynamic parameters +C5GNSSAIRDP

Table 10.1.63-1: +C5GNSSAIRDP action command syntax

| Command | Possible Response(s) |
| --- | --- |
| +C5GNSSAIRDP[=<nssai\_type>[,<plmn\_id>]] | [+C5GNSSAIRDP: [<default\_configured\_nssai\_length>,<default\_configured\_nssai>[,<rejected\_nssai\_3gpp\_length>,<rejected\_nssai\_3gpp>[,<rejected\_nssai\_non3gpp\_length>,<rejected\_nssai\_non3gpp>]]]  [<CR><LF>+C5GNSSAIRDP: <plmn\_id>[,<configured\_nssai\_length>,<configured\_nssai>[,<allowed\_nssai\_3gpp\_length>,<allowed\_nssai\_3gpp>,<allowed\_nssai\_non3gpp\_length>,<allowed\_nssai\_non3gpp>]]  [<CR><LF>+C5GNSSAIRDP: <plmn\_id>[,<configured\_nssai\_length>,<configured\_nssai>[,<allowed\_nssai\_3gpp\_length>,<allowed\_nssai\_3gpp>,<allowed\_nssai\_non3gpp\_length>,<allowed\_nssai\_non3gpp>]]  [...]]]] |
| +C5GNSSAIRDP=? | +C5GNSSAIRDP: (list of supported <nssai\_type>s),(range of supported <plmn\_id>s) |

**Description**

The execution command returns the default configured NSSAI, rejected NSSAI for 3GPP access and rejected NSSAI for non-3GPP access stored at the MT, if any, as well as the configured NSSAI, allowed NSSAI for 3GPP access and allowed NSSAI for non-3GPP access stored at the MT, if any for the PLMN identified by <plmn\_id>.

If the parameter <plmn\_id> is omitted, the NSSAIs for all PLMNs for which the MT has stored NSSAI information are returned.

The test command returns the values supported as compound values.

**Defined values**

<nssai\_type>: integer type; specifies the type of NSSAI to be returned.

0 return stored default configured NSSAI only

1 return stored default configured NSSAI and rejected NSSAI(s)

2 return stored default configured NSSAI, rejected NSSAI(s) and configured NSSAI(s)

3 return stored default configured NSSAI, rejected NSSAI(s), configured NSSAI(s) and allowed NSSAI(s)

<plmn\_id>: string type; indicates the MCC and MNC of the PLMN to which the NSSAI information applies. For the format and the encoding of the MCC and MNC, see 3GPP TS 23.003 [7]. This parameter shall not be subject to conventional character conversion as per +CSCS.

<default\_configured\_nssai\_length>: integer type; the Terminal Adaptor (TA) can determine the value by parsing the <default\_configured\_nssai> parameter.

<default\_configured\_nssai>: string type in hexadecimal format. Dependent of the form, the string can be separated by dot(s), semicolon(s) and colon(s). This parameter indicates the list of S-NSSAIs included in the default configured NSSAI stored at the MT for the PLMN. The <default\_configured\_nssai> is coded as a list of <S-NSSAI>s separated by colons. Refer parameter <S-NSSAI> in subclause 10.1.1. This parameter shall not be subject to conventional character conversion as per +CSCS.

<rejected\_nssai\_3gpp\_length>: integer type; the Terminal Adaptor (TA) can determine the value by parsing the <rejected\_nssai\_3gpp> parameter.

<rejected\_nssai\_3gpp>: string type in hexadecimal format. Dependent of the form, the string can be separated by dot(s), colon(s) and hash(es). This parameter indicates the list of rejected S-NSSAIs associated with 3GPP access stored at the MT for the serving PLMN. The <rejected\_NSSAI\_3gpp> is coded as a list of rejected S-NSSAIs separated by colon. For the format and the encoding of S-NSSAI, see also 3GPP TS 23.003 [7]. This parameter shall not be subject to conventional character conversion as per +CSCS. The rejected S-NSSAI has one of the forms:   
  
sst#cause only slice/service type (SST) and reject cause are present   
sst.sd#cause SST and slice differentiator (SD) and reject cause are present

where cause is a cause value is according to 3GPP TS 24.501 [161] table 9.11.3.46.1.

<rejected\_nssai\_non3gpp\_length>: integer type; the Terminal Adaptor (TA) can determine the value by parsing the <rejected\_nssai\_non3gpp> parameter.

<rejected\_nssai\_non3gpp>: string type in hexadecimal format. Dependent of the form, the string can be separated by dot(s), colon(s) and hash(es). This parameter indicates the list of rejected S-NSSAIs associated with non-3GPP access stored at the MT for the serving PLMN. The <rejected\_NSSAI\_non3gpp> is coded as a list of rejected S-NSSAIs separated by colon. For the format and the encoding of S-NSSAI, see also 3GPP TS 23.003 [7]. This parameter shall not be subject to conventional character conversion as per +CSCS. The rejected S-NSSAI has one of the forms:   
  
sst#cause only slice/service type (SST) and reject cause are present   
sst.sd#cause SST and slice differentiator (SD) and reject cause are present

where cause is a cause value is according to 3GPP TS 24.501 [161] table 9.11.3.46.1.

<configured\_nssai\_length>: integer type; the Terminal Adaptor (TA) can determine the value by parsing the <configured\_nssai> parameter.

<configured\_nssai>: string type in hexadecimal format. Dependent of the form, the string can be separated by dot(s), semicolon(s) and colon(s). This parameter indicates the list of configured S-NSSAIs stored at the MT for the PLMN identified by <plmn\_id>. The <configured\_nssai> is coded as a list of <S-NSSAI>s separated by colons. Refer parameter <S-NSSAI> in subclause 10.1.1. This parameter shall not be subject to conventional character conversion as per +CSCS.

<allowed\_nssai\_3gpp\_length>: integer type; the Terminal Adaptor (TA) can determine the value by parsing the <allowed\_nssai\_3gpp> parameter.

<allowed\_nssai\_3gpp>: string type in hexadecimal format. Dependent of the form, the string can be separated by dot(s), semicolon(s) and colon(s). This parameter indicates the list of allowed S-NSSAIs associated with 3GPP access stored at the MT for the PLMN identified by <plmn\_id>. The <allowed\_nssai\_3gpp> is coded as a list of <S-NSSAI>s separated by colons. Refer parameter <S-NSSAI> in subclause 10.1.1. This parameter shall not be subject to conventional character conversion as per +CSCS.

<allowed\_nssai\_non3gpp\_length>: integer type; the Terminal Adaptor (TA) can determine the value by parsing the <allowed\_nssai\_non3gpp> parameter.

<allowed\_nssai\_non3gpp>: string type in hexadecimal format. Dependent of the form, the string can be separated by dot(s), semicolon(s) and colon(s). This parameter indicates the list of allowed S-NSSAIs associated with non-3GPP access stored at the MT for the PLMN identified by <plmn\_id>. The <allowed\_nssai\_non3gpp> is coded as a list of <S-NSSAI>s separated by colons. Refer parameter <S-NSSAI> in subclause 10.1.1. This parameter shall not be subject to conventional character conversion as per +CSCS.

**Implementation**

Optional.

\*\*\* change \*\*\*

### 10.1.64 5GS Preferred NSSAI +C5GPNSSAI

Table 10.1.64-1: +C5GPNSSAI parameter command syntax

|  |  |
| --- | --- |
| Command | Possible Response(s) |
| +C5GPNSSAI=[<Preferred\_NSSAI\_3gpp\_length>,[<Preferred\_NSSAI\_3gpp>]],[<Preferred\_NSSAI\_non3gpp\_length>,[<Preferred\_NSSAI\_non3gpp>]] | *+CME ERROR: <err>* |
| +C5GPNSSAI? | +C5GPNSSAI: <Preferred\_NSSAI\_3gpp\_length>,<Preferred\_NSSAI\_3gpp>,<Preferred\_NSSAI\_non3gpp\_length>,<Preferred\_NSSAI\_non3gpp> |
| +C5GPNSSAI=? | +C5GPNSSAI: (range of supported <Preferred\_NSSAI\_3gpp\_length>s),(range of supported <Preferred\_NSSAI\_non3gpp\_length>s) |

**Description**

The set command specifies the preferred NSSAI as a list of S-NSSAIs matching the preference of the TE. The preferred NSSAI is coded as a list of HPLMN values of S-NSSAIs. Its content is independent of the selected or registered PLMNs. MT takes the preferred NSSAI into account when selecting the requested NSSAI.

NOTE: It is the MT responsibility to ensure that the Requested NSSAI IE sent to the network during 5GS registration is set according to the rules in 3GPP TS 24.501 [161]. MT takes into account the configured NSSAI for the current PLMN, the allowed NSSAI for the current PLMN and access type, and the rejected NSSAI for the current PLMN or rejected NSSAI for the current PLMN and registration area combination.

Refer to subclause 9.2 for possible <err> values.

A special form of the set command can be given as +C5GPNSSAI= without any parameters. In this form, no preferred NSSAI for 3GPP access and no preferred NSSAI for non-3GPP access are stored in the MT.

The read command returns the current values.

The test command returns the values supported as compound values.

**Defined values**

<Preferred\_NSSAI\_3gpp\_length>: integer type; the Terminal Adaptor (TA) can determine the value by parsing the <Preferred\_NSSAI\_3gpp> parameter.

<Preferred\_NSSAI\_3gpp>: string type in hexadecimal format. Dependent of the form, the string can be separated by dot(s), semicolon(s) and colon(s). This parameter indicates the list of preferred S-NSSAIs for 3GPP access. The <Preferred\_NSSAI\_3gpp> is coded as a list of S-NSSAIs separated by colons. The TE includes the HPLMN values of the S-NSSAIs; therefore, no mapped S-NSSAIs are included. Refer parameter <S-NSSAI> in subclause 10.1.1. This parameter shall not be subject to conventional character conversion as per +CSCS.

If the value is an empty string (""), no preferred NSSAI for 3GPP access is stored in the MT.

<Preferred\_NSSAI\_non3gpp\_length>: integer type; the Terminal Adaptor (TA) can determine the value by parsing the <Preferred\_NSSAI\_non3gpp> parameter.

<Preferred\_NSSAI\_non3gpp>: string type in hexadecimal format. Dependent of the form, the string can be separated by dot(s), semicolon(s) and colon(s). This parameter indicates the list of preferred S-NSSAIs for non-3GPP access. The <Preferred\_NSSAI\_non3gpp> is coded as a list of S-NSSAIs separated by colons. The TE includes the HPLMN values of the S-NSSAIs; therefore, no mapped S-NSSAIs are included. Refer parameter <S-NSSAI> in subclause 10.1.1. This parameter shall not be subject to conventional character conversion as per +CSCS.

**Implementation**

Optional.

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