**3GPP TSG-CT WG1 Meeting #136-eC1-223561**

**E-Meeting, 12th – 20th May 2022**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **27.007** | **CR** | **0776** | **rev** | **-** | **Current version:** | **17.5.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network |  | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | 5GSM congestion re-attempt indicator with ABO bit and CATBO bit | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | ZTE | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GProtoc17 | | | | |  | ***Date:*** | | | 2022-05-05 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | In TS 24.501 subclause 9.11.4.21, the 5GSM congestion re-attempt indicator IE is defined with ABO bit and CATBO bit. The ABO bit indicates whether the back-off timer is applied in the registered PLMN or all PLMNs. The CATBO bit indicates whether the back-off timer is applied in the current access type or both 3GPP access type and non-3GPP access type.  However, current TS 27.007 only defines the 5GSM congestion re-attempt indicator IE with ABO bit. The definition of 5GSM congestion re-attempt indicator IE with CATBO bit is missing. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add definition of 5GSM congestion re-attempt indicator IE with CATBO bit. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The back-off timer cannot be applied considering access type. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 10.1.55, 10.1.56, 10.1.57, 10.1.58 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \* \* \* \*

### 10.1.55 S-NSSAI based back-off timer status reporting +CSBTSR

Table 10.1.55-1: +CSBTSR parameter command syntax

|  |  |
| --- | --- |
| Command | Possible response(s) |
| +CSBTSR=[<n>] | *+CME ERROR: <err>* |
| +CSBTSR? | +CSBTSR: <n> |
| +CSBTSR=? | +CSBTSR: (list of supported <n>s) |

**Description**

Set command controls the presentation of unsolicited result code +CSBTSRI: <S-NSSAI>,<event\_type>[,<S-NSSAI\_backoff\_time>,<5GSM\_congestion\_re-attempt\_abo\_indicator>,<5GSM\_congestion\_re-attempt\_catbo\_indicator>[,<procedure>]] reporting the S-NSSAI based back-off timer parameter values from MT to TE if the back-off timer is started, stopped, deactivated or expires. Refer clause 9.2 for possible <err> values.

Read command returns the current S-NSSAI based back-off timer unsolicited result code settings in the MT.

Test command returns values supported as a compound value.

**Defined values**

<n>: integer type.

0 Disable presentation of the unsolicited result code +CSBTSRI.

1 Enable presentation of the unsolicited result code +CSBTSRI.

<S-NSSAI>: string type in hexadecimal format. Dependent of the form, the string can be separated by dot(s) and semicolon(s). The S-NSSAI is associated with the back-off timer for identifying a network slice in 5GS, see 3GPP TS 23.501 [165] and 3GPP TS 24.501 [161]. Refer parameter <S-NSSAI> in clause 10.1.1. This parameter shall not be subject to conventional character conversion as per +CSCS.

<event\_type>: integer type. Indicates the event happened to the back-off timer.

0 The back-off timer is started.

1 The back-off timer is stopped.

2 The back-off timer is expired.

3 The back-off timer is deactivated.

<S-NSSAI\_backoff\_time>: integer type; indicates the remaining back-off time associated with the <S-NSSAI> in seconds. When the back-off timer is deactivated, the parameter <S-NSSAI\_backoff\_time> is omitted. When the back-off timer is stopped or expired, 0 is indicated.

<5GSM\_congestion\_re-attempt\_abo\_indicator>: integer type. Indicates whether the back-off timer is applied in the registered PLMN or all PLMNs.

0 The back-off timer is applied in the registered PLMN.

1 The back-off timer is applied in all PLMNs.

<5GSM\_congestion\_re-attempt\_catbo\_indicator>: integer type. Indicates whether the back-off timer is applied in the current access type or both 3GPP access type and non-3GPP access type.

0 The back-off timer is applied in both 3GPP access type and non-3GPP access type.

1 The back-off timer is applied in the current access type.

<procedure>: integer type. Indicates the procedure(s) for which the back-off timer applies. When <procedure>=0 the information returned is associated with timer T3585. When the parameter <procedure> is omitted, the back-off timer is deactivated.

0 All procedures.

**Implementation**

Optional.

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

### 10.1.56 S-NSSAI based back-off timer read dynamic parameters +CSBTRDP

Table 10.1.56-1: +CSBTRDP action command syntax

|  |  |
| --- | --- |
| Command | Possible response(s) |
| +CSBTRDP[=<S-NSSAI>] | [+CSBTRDP: <S-NSSAI>[,<S-NSSAI\_backoff\_time>][,<5GSM\_congestion\_re-attempt\_abo\_indicator>,<5GSM\_congestion\_re-attempt\_catbo\_indicator>][,<procedure>]  [<CR><LF>+CSBTRDP: <S-NSSAI>[,<S-NSSAI\_backoff\_time>][,<5GSM\_congestion\_re-attempt\_abo\_indicator>,<5GSM\_congestion\_re-attempt\_catbo\_indicator>][,<procedure>]  [...]]] |
| +CSBTRDP=? |  |

**Description**

The execution command returns the relevant information in the MT for the S-NSSAI based back-off timer parameter value <S-NSSAI\_backoff\_time>, <5GSM\_congestion\_re-attempt\_abo\_indicator>, <5GSM\_congestion\_re-attempt\_catbo\_indicator> and <procedure> for an <S-NSSAI> if the back-off timer is running.

If the parameter <S-NSSAI> in the execution command is omitted, the relevant information for all S-NSSAIs associated with running back-off timers are returned.

**Defined values**

<S-NSSAI>: string type in hexadecimal format. Dependent of the form, the string can be separated by dot(s) and semicolon(s). The S-NSSAI is associated with the back-off timer for identifying a network slice in 5GS, see 3GPP TS 23.501 [165] and 3GPP TS 24.501 [161]. When <S-NSSAI> indicates an empty string (""), the following parameter is associated with no S-NSSAI as specified in 3GPP TS 24.501 [161]. Refer parameter <S-NSSAI> in clause 10.1.1. This parameter shall not be subject to conventional character conversion as per +CSCS.

<S-NSSAI\_backoff\_time>: integer type; indicates the remaining back-off time associated with the <S-NSSAI> in seconds. When the back-off timer is deactivated, the parameter <S-NSSAI\_backoff\_time> is omitted.

<5GSM\_congestion\_re-attempt\_abo\_indicator>: integer type. Indicates whether the back-off timer is applied in the registered PLMN or all PLMNs.

0 The back-off timer is applied in the registered PLMN.

1 The back-off timer is applied in all PLMNs.

<5GSM\_congestion\_re-attempt\_catbo\_indicator>: integer type. Indicates whether the back-off timer is applied in the current access type or both 3GPP access type and non-3GPP access type.

0 The back-off timer is applied in both 3GPP access type and non-3GPP access type.

1 The back-off timer is applied in the current access type.

<procedure>: integer type. Indicates the procedure(s) for which the back-off timer applies. When <procedure>=0 the information returned is associated with timer T3585. When the parameter <procedure> is omitted, the back-off timer is deactivated.

0 All procedures.

**Implementation**

Optional.

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

### 10.1.57 S-NSSAI and DNN based back-off timer status reporting +CSDBTSR

Table 10.1.57-1: +CSDBTSR parameter command syntax

|  |  |
| --- | --- |
| Command | Possible response(s) |
| +CSDBTSR=[<n>] | *+CME ERROR: <err>* |
| +CSDBTSR? | +CSDBTSR: <n> |
| +CSDBTSR=? | +CSDBTSR: (list of supported <n>s) |

**Description**

Set command controls the presentation of unsolicited result code +CSDBTSRI: <S-NSSAI>,<DNN>,<event\_type>[,<S-NSSAI\_DNN\_backoff\_time>, <5GSM\_congestion\_re-attempt\_abo\_indicator>,<5GSM\_congestion\_re-attempt\_catbo\_indicator>[,<procedure>]] reporting the S-NSSAI and DNN based back-off timer parameter values from MT to TE if the back-off timer is started, stopped, deactivated or expires. Refer clause 9.2 for possible <err> values.

Read command returns the current S-NSSAI and DNN based back-off timer unsolicited result code settings in the MT.

Test command returns values supported as a compound value.

**Defined values**

<n>: integer type.

0 Disable presentation of the unsolicited result code +CSDBTSRI.

1 Enable presentation of the unsolicited result code +CSDBTSRI.

<S-NSSAI>: string type in hexadecimal format. Dependent of the form, the string can be separated by dot(s) and semicolon(s). The S-NSSAI is associated with the back-off timer for identifying a network slice in 5GS, see 3GPP TS 23.501 [165] and 3GPP TS 24.501 [161]. Refer parameter <S-NSSAI> in clause 10.1.1. This parameter shall not be subject to conventional character conversion as per +CSCS.

<DNN>: string type; indicates the DNN associated with the back-off timer for identifying a data network in 5GS, see 3GPP TS 23.501 [165] and 3GPP TS 24.501 [161]. This parameter shall not be subject to conventional character conversion as per +CSCS.

<event\_type>: integer type. Indicates the event happened to the back-off timer.

0 The back-off timer is started.

1 The back-off timer is stopped.

2 The back-off timer is expired.

3 The back-off timer is deactivated.

<S-NSSAI\_DNN\_backoff\_time>: integer type; indicates the remaining back-off time associated with the <S-NSSAI> and <DNN> in seconds. When the back-off timer is deactivated, the parameter <S-NSSAI\_DNN\_backoff\_time> is omitted.

<5GSM\_congestion\_re-attempt\_abo\_indicator>: integer type. Indicates whether the back-off timer is applied in the registered PLMN or all PLMNs.

0 The back-off timer is applied in the registered PLMN.

1 The back-off timer is applied in all PLMNs.

<5GSM\_congestion\_re-attempt\_catbo\_indicator>: integer type. Indicates whether the back-off timer is applied in the current access type or both 3GPP access type and non-3GPP access type.

0 The back-off timer is applied in both 3GPP access type and non-3GPP access type.

1 The back-off timer is applied in the current access type.

<procedure>: integer type. Indicates the procedure(s) for which the back-off timer applies. When <procedure>=0 the information returned is associated with timer T3584. For all other values of <procedure> the information returned is associated with the back-off timer as specified in 3GPP TS 24.501 [161] for the various session management procedures. When the parameter <procedure> is omitted, the back-off timer is deactivated.

0 All procedures.

1 PDU session establishment procedure (see 3GPP TS 24.501 [161], clause 6.4.1)

2 PDU session modification procedure (see 3GPP TS 24.501 [161], clause 6.4.2).

**Implementation**

Optional.

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

### 10.1.58 S-NSSAI and DNN based back-off timer read dynamic parameters +CSDBTRDP

Table 10.1.58-1: +CSDBTRDP action command syntax

|  |  |
| --- | --- |
| Command | Possible response(s) |
| +CSDBTRDP[=<S-NSSAI>,<DNN>] | [+CSDBTRDP: <S-NSSAI>,<DNN>[,<S-NSSAI\_DNN\_backoff\_time>][,<5GSM\_congestion\_re-attempt\_abo\_indicator>,<5GSM\_congestion\_re-attempt\_catbo\_indicator>[,<procedure>]]]  [<CR><LF>+CSDBTRDP: <S-NSSAI>,<DNN>[,<S-NSSAI\_DNN\_backoff\_time>][,<5GSM\_congestion\_re-attempt\_abo\_indicator>,<5GSM\_congestion\_re-attempt\_catbo\_indicator>[,<procedure>]]]  [...]]] |
| +CSDBTRDP=? |  |

**Description**

The execution command returns the relevant information in the MT for the S-NSSAI and DNN based back-off timer parameter value <S-NSSAI\_DNN\_backoff\_time>, <5GSM\_congestion\_re-attempt\_abo\_indicator>, <5GSM\_congestion\_re-attempt\_catbo\_indicator> and <procedure> for the <S-NSSAI> and <DNN> combination if the back-off timer is running.

If the parameter <S-NSSAI> in the execution command is omitted, the DNN specific information for all S-NSSAIs associated with running back-off timers are returned.

If the parameter <DNN> in the execution command is omitted, the S-NSSAI specific information for all DNNs associated with running back-off timers are returned.

If both the parameters <S-NSSAI> and <DNN> are omitted, the relevant information for all S-NSSAI and DNN combinations associated with running back-off timers are returned.

**Defined values**

<S-NSSAI>: string type in hexadecimal format. Dependent of the form, the string can be separated by dot(s) and semicolon(s). The S-NSSAI is associated with the back-off timer for identifying a network slice in 5GS, see 3GPP TS 23.501 [165] and 3GPP TS 24.501 [161]. When <S-NSSAI> indicates an empty string (""), the parameter <S-NSSAI\_DNN\_backoff\_time> in the response is associated with no S-NSSAI as specified in 3GPP TS 24.501 [161]. Refer parameter <S-NSSAI> in clause 10.1.1. This parameter shall not be subject to conventional character conversion as per +CSCS.

<DNN>: string type; indicates the DNN associated with the back-off timer for identifying a data network in 5GS, see 3GPP TS 23.501 [165] and 3GPP TS 24.501 [161]. When <DNN> indicates an empty string (""), the parameter <S-NSSAI\_DNN\_backoff\_time> in the response is associated with no DNN as specified in 3GPP TS 24.501 [161]. This parameter shall not be subject to conventional character conversion as per +CSCS.

<S-NSSAI\_DNN\_backoff\_time>: integer type; indicates the remaining back-off time associated with the <S-NSSAI> and <DNN> combination in seconds. When the back-off timer is deactivated, the parameter <S-NSSAI\_DNN\_backoff\_time> is omitted.

<5GSM\_congestion\_re-attempt\_abo\_indicator>: integer type. Indicates whether the back-off timer is applied in the registered PLMN or all PLMNs.

0 The back-off timer is applied in the registered PLMN.

1 The back-off timer is applied in all PLMNs.

<5GSM\_congestion\_re-attempt\_catbo\_indicator>: integer type. Indicates whether the back-off timer is applied in the current access type or both 3GPP access type and non-3GPP access type.

0 The back-off timer is applied in both 3GPP access type and non-3GPP access type.

1 The back-off timer is applied in the current access type.

<procedure>: integer type. Indicates the procedure(s) for which the back-off timer applies. When <procedure>=0 the information returned is associated with timer T3584. For all other values of <procedure> the information returned is associated with the back-off timer as specified in 3GPP TS 24.501 [161] for the various session management procedures. When the parameter <procedure> is omitted, the back-off timer is deactivated.

0 All procedures.

1 PDU session establishment procedure (see 3GPP TS 24.501 [161], clause 6.4.1)

2 PDU session modification procedure (see 3GPP TS 24.501 [161], clause 6.4.2).

**Implementation**

Optional.

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