**3GPP TSG-CT WG1 Meeting #133-bis-eC1-220239**

**E-meeting, 17-21 January 2022**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **24.501** | **CR** | **3882** | **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)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network |  | Core Network | **X** |

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|  |
| ***Title:***  | Rejection of Remote UE Report due to congestion |
|  |  |
| ***Source to WG:*** | Samsung |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5G\_ProSe |  | ***Date:*** | 2022-01-08 |
|  |  |  |  |  |
| ***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:*** | TS 23.304 specifies:“*The 5G ProSe UE-to-Network Relay may be subject to NAS level congestion control, as specified in clause 5.19.7 of TS 23.501 [4].*”Looking at section 5.19.7 of TS 23.501, it can be seen that one of the congestion control in that section is for 5GSM congestion. However there is currently no way for the SMF to reject the Remote UE Report when there is congestion.  |
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| ***Summary of change:*** | Define the Remote UE Report Reject message to include a 5GSM BO timer and 5GSM cause which can be sent during congestion. Introduce the appropriate sections for unsuccessful remote UE report. |
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| ***Consequences if not approved:*** | Not possible for SMF to apply congestion control during the remote UE report procedure which is not aligned with SA2 requirements. |
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| ***Clauses affected:*** | 6.6.2.3A (new), 6.6.2.3A.1 (new), 6.6.2.3A.2 (new), 8.3.X (new), 8.3.X.1 (new), 8.3.X.2 (new), 9.7 |
|  |  |
|  | **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:*** |  |

\*\*\*\*\*\* START CHANGES \*\*\*\*\*\*

#### 6.6.2.3A Remote UE report procedure not accepted by the network

Upon receipt of the REMOTE UE REPORT message, the SMF shall send a REMOTE UE REPORT REJECT message to the UE. The SMF shall include the PTI from the REMOTE UE REPORT message.

\*\*\*\*\*\* NEXT CHANGES \*\*\*\*\*\*

##### 6.6.2.3A.1 General

If the remote UE report procedure is rejected by the network, the SMF shall create a REMOTE UE REPORT REJECT message.

The SMF shall set the 5GSM cause IE of the REMOTE UE REPORT REJECT message to indicate the reason for rejecting the PDU session establishment.

The 5GSM cause IE typically indicates one of the following SM cause values:

#26 insufficient resources;

#67 insufficient resources for specific slice and DNN;

#69 insufficient resources for specific slice.

The network may include a Back-off timer value IE in the REMOTE UE REPORT REJECT message.

If the 5GSM cause value is #26"insufficient resources", #67 "insufficient resources for specific slice and DNN", or #69 "insufficient resources for specific slice" and the PDU SESSION MODIFICATION REQUEST message was received from a UE configured for high priority access in selected PLMN or the request type provided during the PDU session establishment is set to "initial emergency request" or "existing emergency PDU session", the network shall not include a Back-off timer value IE.

The SMF shall send the REMOTE UE REPORT REJECT message.

\*\*\*\*\*\* NEXT CHANGES \*\*\*\*\*\*

##### 6.6.2.3A.2 Handling of network rejection due to congestion control

If the 5GSM cause value #26 "insufficient resources" and the Back-off timer value IE are included in the REMOTE UE REPORT REJECT message, the UE shall take different actions depending on the timer value received for timer T3396 in the Back-off timer value IE (if the UE is a UE configured for high priority access in selected PLMN, exceptions are specified in subclause 6.2.7):

a) If the timer value indicates neither zero nor deactivated and a DNN was provided during the PDU session establishment, the UE shall stop timer T3396 associated with the corresponding DNN, if it is running. If the timer value indicates neither zero nor deactivated and no DNN was provided during the PDU session establishment and the request type was different from "initial emergency request" and different from "existing emergency PDU session", the UE shall stop timer T3396 associated with no DNN if it is running. The UE shall then start timer T3396 with the value provided in the Back-off timer value IE and:

1) shall not send another PDU SESSION ESTABLISHMENT REQUEST message, or PDU SESSION MODIFICATION REQUEST message with exception of those identified in subclause 6.4.2.1, or REMOTE UE REPORT message, for the same DNN that was sent by the UE, until timer T3396 expires or timer T3396 is stopped; and

2) shall not send another PDU SESSION ESTABLISHMENT REQUEST message without a DNN and with request type different from "initial emergency request" and different from "existing emergency PDU session", or another PDU SESSION MODIFICATION REQUEST message with exception of those identified in subclause 6.4.2.1, or REMOTE UE REPORT message, for a non-emergency PDU session established without a DNN provided by the UE, if no DNN was provided during the PDU session establishment and the request type was different from "initial emergency request" and different from "existing emergency PDU session", until timer T3396 expires or timer T3396 is stopped.

 The UE shall not stop timer T3396 upon a PLMN change or inter-system change.

b) if the timer value indicates that this timer is deactivated and a DNN was provided during the PDU session establishment, the UE shall stop timer T3396 associated with the corresponding DNN, if it is running. If the timer value indicates that this timer is deactivated and no DNN was provided during the PDU session establishment and the request type was different from "initial emergency request" and different from "existing emergency PDU session", the UE shall stop timer T3396 associated with no DNN if it is running. The UE:

1) shall not send another PDU SESSION ESTABLISHMENT REQUEST message or PDU SESSION MODIFICATION REQUEST with exception of those identified in subclause 6.4.2.1, or REMOTE UE REPORT message, for the same DNN until the UE is switched off, the USIM is removed, the entry in the "list of subscriber data" for the current SNPN is updated, or the UE receives a PDU SESSION MODIFICATION COMMAND message for the same DNN from the network, or a PDU SESSION AUTHENTICATION COMMAND message for the same DNN from the network, or a PDU SESSION RELEASE COMMAND message without the Back-off timer value IE for the same DNN from the network; and

2) shall not send another PDU SESSION ESTABLISHMENT REQUEST message without a DNN and with request type different from "initial emergency request" and different from "existing emergency PDU session", or another PDU SESSION MODIFICATION REQUEST message with exception of those identified in subclause 6.4.2.1, or REMOTE UE REPORT message, for a non-emergency PDU session established without a DNN provided by the UE, if no DNN was provided during the PDU session establishment and the request type was different from "initial emergency request" and different from "existing emergency PDU session", until the UE is switched off, the USIM is removed, the entry in the "list of subscriber data" for the current SNPN is updated, or the UE receives a PDU SESSION MODIFICATION COMMAND message for a non-emergency PDU session established without a DNN provided by the UE, a PDU SESSION AUTHENTICATION COMMAND message for a non-emergency PDU session established without a DNN provided by the UE, or a PDU SESSION RELEASE COMMAND message without the Back-off timer value IE for a non-emergency PDU session established without a DNN provided by the UE.

 The timer T3396 remains deactivated upon a PLMN change or inter-system change.

c) if the timer value indicates zero, the UE:

1) shall stop timer T3396 associated with the corresponding DNN, if running, and may send another PDU SESSION ESTABLISHMENT REQUEST message or PDU SESSION MODIFICATION REQUEST message, or REMOTE UE REPORT message, for the same DNN; and

2) if no DNN was provided during the PDU session establishment and the request type was different from "initial emergency request" and different from "existing emergency PDU session", the UE shall stop timer T3396 associated with no DNN, if running, and may send another PDU SESSION ESTABLISHMENT REQUEST message without a DNN, or another PDU SESSION MODIFICATION REQUEST message without a DNN provided by the UE, or another REMOTE UE REPORT message without a DNN provided by the UE.

If the timer T3396 is running when the UE enters state 5GMM-DEREGISTERED, the UE remains switched on, and the USIM in the UE (if any) remains the same and the entry in the "list of subscriber data" for the SNPN to which timer T3396 is associated (if any) is not updated, then timer T3396 is kept running until it expires or it is stopped

When the timer T3396 is running or the timer is deactivated, the UE is allowed to initiate a PDU session establishment procedure for emergency services.

If the UE is switched off when the timer T3396 is running, and if the USIM in the UE (if any) remains the same and the entry in the "list of subscriber data" for the SNPN to which timer T3396 is associated (if any) is not updated when the UE is switched on, the UE shall behave as follows:

- let t1 be the time remaining for T3396 timeout at switch off and let t be the time elapsed between switch off and switch on. If t1 is greater than t, then the timer shall be restarted with the value t1 – t. If t1 is equal to or less than t, then the timer need not be restarted. If the UE is not capable of determining t, then the UE shall restart the timer with the value t1.

If the 5GSM cause value #67 "insufficient resources for specific slice and DNN" and the Back-off timer value IE are included in the REMOTE UE REPORT REJECT message; the UE shall take different actions depending on the timer value received for timer T3584 in the Back-off timer value IE (if the UE is a UE configured for high priority access in selected PLMN, exceptions are specified in subclause 6.2.8):

a) If the timer value indicates neither zero nor deactivated, and both an S-NSSAI and a DNN were provided by the UE during the PDU session establishment, the UE shall stop timer T3584 associated with the [S-NSSAI of the PDU session, DNN] combination, if it is running. If the timer value indicates neither zero nor deactivated, an S-NSSAI and no DNN was provided during the PDU session establishment and the request type was different from "initial emergency request" and different from "existing emergency PDU session", the UE shall stop timer T3584 associated with [S-NSSAI of the PDU session, no DNN] combination, if it is running. If the timer value indicates neither zero nor deactivated, no S-NSSAI and a DNN was provided during the PDU session establishment, the UE shall stop timer T3584 associated with the [no S-NSSAI, DNN] combination, if it is running. If the timer value indicates neither zero nor deactivated and neither S-NSSAI nor DNN was provided during the PDU session establishment and the request type was different from "initial emergency request" and different from "existing emergency PDU session", the UE shall stop timer T3584 associated with the [no S-NSSAI, no DNN] combination, if it is running. The timer T3584 to be stopped includes the timer T3584 applied for all the PLMNs, if running, and the timer T3584 applied for the registered PLMN, if running. The UE shall then start timer T3584 with the value provided in the Back-off timer value IE and:

1) shall not send another PDU SESSION ESTABLISHMENT REQUEST message or PDU SESSION MODIFICATION REQUEST message with the exception of those identified in subclause 6.4.2.1, for the [S-NSSAI, DNN] combination, or REMOTE UE REPORT message, until timer T3584 expires or timer T3584 is stopped;

2) shall not send another PDU SESSION ESTABLISHMENT REQUEST message with request type different from "initial emergency request" and different from "existing emergency PDU session", or another PDU SESSION MODIFICATION REQUEST message with the exception of those identified in subclause 6.4.2.1, for the [S-NSSAI of the PDU session, no DNN] combination, or another REMOTE UE REPORT message, if no DNN was provided during the PDU session establishment, until timer T3584 expires or timer T3584 is stopped;

3) shall not send another PDU SESSION ESTABLISHMENT REQUEST message, or another PDU SESSION MODIFICATION REQUEST message with the exception of those identified in subclause 6.4.2.1, or another REMOTE UE REPORT message, for the [no S-NSSAI, DNN] combination, if no S-NSSAI was provided during the PDU session establishment, until timer T3584 expires or timer T3584 is stopped; and

4) shall not send another PDU SESSION ESTABLISHMENT REQUEST message with request type different from "initial emergency request" and different from "existing emergency PDU session", or another PDU SESSION MODIFICATION REQUEST message with the exception of those identified in subclause 6.4.2.1, for the [no S-NSSAI, no DNN] combination, or another REMOTE UE REPORT message, if neither S-NSSAI nor DNN was provided during the PDU session establishment, until timer T3584 expires or timer T3584 is stopped.

 The UE shall not stop timer T3584 upon a PLMN change or inter-system change;

b) if the timer value indicates that this timer is deactivated:

1) if both S-NSSAI and DNN were provided by the UE during the PDU session establishment, the UE shall stop timer T3584 associated with the [S-NSSAI of the PDU session, DNN] combination (including the timer T3584 applied for all the PLMNs, if running, and the timer T3584 applied for the registered PLMN, if running), if it is running. The UE shall not send another PDU SESSION ESTABLISHMENT REQUEST message or PDU SESSION MODIFICATION REQUEST message with exception of those identified in subclause 6.4.2.1, for the [S-NSSAI of the PDU session, DNN] combination that was sent by the UE, until the UE is switched off, the USIM is removed, the entry in the "list of subscriber data" for the current SNPN is updated, or the UE receives a PDU SESSION MODIFICATION COMMAND message for the [S-NSSAI of the PDU session, DNN] combination from the network, or a PDU SESSION AUTHENTICATION COMMAND message for the [S-NSSAI of the PDU session, DNN] combination from the network, or a PDU SESSION RELEASE COMMAND message without the Back-off timer value IE for the [S-NSSAI of the PDU session, DNN] combination from the network;

2) if an S-NSSAI was provided but a DNN was not provided by the UE during the PDU session establishment, the UE shall stop timer T3584 associated with the [S-NSSAI of the PDU session, no DNN] combination (including the timer T3584 applied for all the PLMNs, if running, and the timer T3584 applied for the registered PLMN, if running), if it is running. The UE shall not send a PDU SESSION ESTABLISHMENT REQUEST message with request type different from "initial emergency request" and different from "existing emergency PDU session", or a PDU SESSION MODIFICATION REQUEST message with exception of those identified in subclause 6.4.2.1, for the [S-NSSAI of the PDU session, no DNN] combination, if no DNN was provided during the PDU session establishment, until the UE is switched off, the USIM is removed, the entry in the "list of subscriber data" for the current SNPN is updated, or the UE receives a PDU SESSION MODIFICATION COMMAND message for a non-emergency PDU session established for the [S-NSSAI of the PDU session, no DNN] combination from the network, or a PDU SESSION AUTHENTICATION COMMAND message for a non-emergency PDU session established for the [S-NSSAI of the PDU session, no DNN] combination from the network, or a PDU SESSION RELEASE COMMAND message without the Back-off timer value IE for a non-emergency PDU session established for the [S-NSSAI of the PDU session, no DNN] combination from the network;

3) if an S-NSSAI was not provided but a DNN was provided by the UE during the PDU session establishment, the UE shall stop timer T3584 associated with the [no S-NSSAI, DNN] combination (including the timer T3584 applied for all the PLMNs, if running, and the timer T3584 applied for the registered PLMN, if running), if it is running. The UE shall not send a PDU SESSION ESTABLISHMENT REQUEST message, or a PDU SESSION MODIFICATION REQUEST message with exception of those identified in subclause 6.4.2.1, for the [no S-NSSAI, DNN] combination, if no S-NSSAI was provided during the PDU session establishment, until the UE is switched off, the USIM is removed, the entry in the "list of subscriber data" for the current SNPN is updated, or the UE receives a PDU SESSION MODIFICATION COMMAND message for the [no S-NSSAI, DNN] combination from the network, or a PDU SESSION AUTHENTICATION COMMAND message for the [no S-NSSAI, DNN] combination from the network, or a PDU SESSION RELEASE COMMAND message without the Back-off timer value IE for the [no S-NSSAI, DNN] combination from the network; and

4) if neither S-NSSAI nor DNN were provided by the UE during the PDU session establishment, the UE shall stop timer T3584 associated with the [no S-NSSAI, no DNN] combination (including the timer T3584 applied for all the PLMNs, if running, and the timer T3584 applied for the registered PLMN, if running), if it is running. The UE shall not send a PDU SESSION ESTABLISHMENT REQUEST message with request type different from "initial emergency request" and different from "existing emergency PDU session", or a PDU SESSION MODIFICATION REQUEST message with exception of those identified in subclause 6.4.2.1, for the [no S-NSSAI, no DNN] combination, if neither S-NSSAI nor DNN was provided during the PDU session establishment, until the UE is switched off, the USIM is removed, the entry in the "list of subscriber data" for the current SNPN is updated, or the UE receives a PDU SESSION MODIFICATION COMMAND message for a non-emergency PDU session established for the [no S-NSSAI, no DNN] combination from the network, or a PDU SESSION AUTHENTICATION COMMAND message for a non-emergency PDU session established for the [no S-NSSAI, no DNN] combination from the network, or a PDU SESSION RELEASE COMMAND message without the Back-off timer value IE for a non-emergency PDU session established for the [no S-NSSAI, no DNN] combination from the network.

 The timer T3584 remains deactivated upon a PLMN change or inter-system change; and

c) if the timer value indicates zero:

1) if both S-NSSAI and DNN were provided by the UE during the PDU session establishment, the UE shall stop timer T3584 associated with the [S-NSSAI of the PDU session, DNN] combination (including the timer T3584 applied for all the PLMNs, if running, and the timer T3584 applied for the registered PLMN, if running), if it is running. The UE may send another PDU SESSION ESTABLISHMENT REQUEST message or PDU SESSION MODIFICATION REQUEST message or REMOTE UE REPORT message for the [S-NSSAI of the PDU session, DNN] combination;

2) if an S-NSSAI was provided but a DNN was not provided by the UE during the PDU session establishment, the UE shall stop timer T3584 associated with the [S-NSSAI of the PDU session, no DNN] combination (including the timer T3584 applied for all the PLMNs, if running, and the timer T3584 applied for the registered PLMN, if running), if it is running. The UE may send another PDU SESSION ESTABLISHMENT REQUEST message, or PDU SESSION MODIFICATION REQUEST message, or REMOTE UE REPORT message, for the [S-NSSAI of the PDU session, no DNN] combination if the request type was different from "initial emergency request" and different from "existing emergency PDU session";

3) if an S-NSSAI was not provided but a DNN was provided by the UE during the PDU session establishment, the UE shall stop timer T3584 associated with the [no S-NSSAI, DNN] combination (including the timer T3584 applied for all the PLMNs, if running, and the timer T3584 applied for the registered PLMN, if running), if it is running. The UE may send another PDU SESSION ESTABLISHMENT REQUEST message, or PDU SESSION MODIFICATION REQUEST message, or REMOTE UE REPORT message, for the [no S-NSSAI, DNN] combination; and

4) if neither S-NSSAI nor DNN were provided by the UE during the PDU session establishment, the UE shall stop timer T3584 associated with the [no S-NSSAI, no DNN] combination (including the timer T3584 applied for all the PLMNs, if running, and the timer T3584 applied for the registered PLMN, if running), if it is running. The UE may send another PDU SESSION ESTABLISHMENT REQUEST message, or PDU SESSION MODIFICATION REQUEST message, or REMOTE UE REPORT message for the [no S-NSSAI, no DNN] combination and the request type was different from "initial emergency request" and different from "existing emergency PDU session".

If the Back-off timer value IE is not included, then the UE may send another PDU SESSION ESTABLISHMENT REQUEST message, or PDU SESSION MODIFICATION REQUEST message, or REMOTE UE REPORT message, for the same [S-NSSAI, DNN] combination, or for the same [S-NSSAI, no DNN] combination, or for the same [no S-NSSAI, DNN] combination, or for the same [no S-NSSAI, no DNN] combination.

When the timer T3584 is running or the timer is deactivated, the UE is allowed to initiate a PDU session establishment procedure for emergency services.

If the timer T3584 is running when the UE enters state 5GMM-DEREGISTERED, the UE remains switched on, and the USIM in the UE (if any) remains the same and the entry in the "list of subscriber data" for the SNPN to which timer T3584 is associated (if any) is not updated, then timer T3584 is kept running until it expires or it is stopped.

If the UE is switched off when the timer T3584 is running, and if the USIM in the UE (if any) remains the same and the entry in the "list of subscriber data" for the SNPN to which timer T3584 is associated (if any) is not updated when the UE is switched on, the UE shall behave as follows:

- let t1 be the time remaining for T3584 timeout at switch off and let t be the time elapsed between switch off and switch on. If t1 is greater than t, then the timer shall be restarted with the value t1 – t. If t1 is equal to or less than t, then the timer need not be restarted. If the UE is not capable of determining t, then the UE shall restart the timer with the value t1.

If the UE is a UE operating in single-registration mode in a network supporting N26 interface and the PDU SESSION MODIFICATION REQUEST message was sent for a PDN connection established when in S1 mode after an inter-system change from S1 mode to N1 mode and timer T3584 associated with the corresponding [no S-NSSAI, DNN] combination or [no S-NSSAI, no DNN] combination is running, then the UE shall re-initiate the UE-requested PDU session modification procedure after expiry of timer T3584.

If the 5GSM cause value #69 "insufficient resources for specific slice" and the Back-off timer value IE are included in the REMOTE UE REPORT REJECT message and:

a) If the timer value indicates neither zero nor deactivated and an S-NSSAI was provided during the PDU session establishment and the request type was different from "initial emergency request" and different from "existing emergency PDU session", the UE shall stop timer T3585 associated with the S-NSSAI of the PDU session, if it is running. If the timer value indicates neither zero nor deactivated and no S-NSSAI was provided during the PDU session establishment and the request type was different from "initial emergency request" and different from "existing emergency PDU session", the UE shall stop timer T3585 associated with no S-NSSAI if it is running. The timer T3585 to be stopped includes the timer T3585 applied for all the PLMNs, if running, and the timer T3585 applied for the registered PLMN, if running. The UE shall then start timer T3585 with the value provided in the Back-off timer value IE:

1) if an S-NSSAI was provided by the UE during the PDU session establishment, the UE shall not send another PDU SESSION ESTABLISHMENT REQUEST message with request type different from "initial emergency request" and different from "existing emergency PDU session", or another PDU SESSION MODIFICATION REQUEST message with exception of those identified in subclause 6.4.2.1, or another REMOTE UE REPORT message, for a non-emergency PDU session for the S-NSSAI of the PDU session, until timer T3585 expires or timer T3585 is stopped; and

2) if the request type was different from "initial emergency request" and from "existing emergency PDU session", and an S-NSSAI was not provided by the UE during the PDU session establishment, the UE shall not send another PDU SESSION ESTABLISHMENT REQUEST message without an S-NSSAI and with request type different from "initial emergency request" and different from "existing emergency PDU session", or another PDU SESSION MODIFICATION REQUEST message with exception of those identified in subclause 6.4.2.1, or another REMOTE UE REPORT message, for a non-emergency PDU session established without an S-NSSAI provided by the UE, , until timer T3585 expires or timer T3585 is stopped.

 The UE shall not stop timer T3585 upon a PLMN change or inter-system change;

b) if the timer value indicates that this timer is deactivated and an S-NSSAI was provided during the PDU session establishment and the request type was different from "initial emergency request" and different from "existing emergency PDU session", the UE shall stop timer T3585 associated with the S-NSSAI of the PDU session, if it is running. If the timer value indicates that this timer is deactivated and no S-NSSAI was provided during the PDU session establishment and the request type was different from "initial emergency request" and different from "existing emergency PDU session", the UE shall stop timer T3585 associated with no S-NSSAI if it is running. The timer T3585 to be stopped includes the timer T3585 applied for all the PLMNs, if running, and the timer T3585 applied for the registered PLMN, if running. In addition:

1) if an S-NSSAI was provided by the UE during the PDU session establishment, the UE shall not send another PDU SESSION ESTABLISHMENT REQUEST message with request type different from "initial emergency request" and different from "existing emergency PDU session", or another PDU SESSION MODIFICATION REQUEST with exception of those identified in subclause 6.4.2.1, or another REMOTE UE REPORT message, for a non-emergency PDU session for the S-NSSAI of the PDU session until the UE is switched off, the USIM is removed, the entry in the "list of subscriber data" for the current SNPN is updated, or the UE receives a PDU SESSION MODIFICATION COMMAND message for a non-emergency PDU session for the S-NSSAI of the PDU session from the network, or a PDU SESSION AUTHENTICATION COMMAND message for a non-emergency PDU session for the S-NSSAI of the PDU session from the network, or a PDU SESSION RELEASE COMMAND message without the Back-off timer value IE for the S-NSSAI of the PDU session from the network; and

2) if the request type was different from "initial emergency request" and from "existing emergency PDU session", and an S-NSSAI was not provided by the UE during the PDU session establishment, the UE shall not send another PDU SESSION ESTABLISHMENT REQUEST message without an S-NSSAI and with request type different from "initial emergency request" and different from "existing emergency PDU session", or another PDU SESSION MODIFICATION REQUEST message with exception of those identified in subclause 6.4.2.1, or another REMOTE UE REPORT message, for a non-emergency PDU session established without an S-NSSAI provided by the UE, until the UE is switched off, the USIM is removed, the entry in the "list of subscriber data" for the current SNPN is updated, or the UE receives a PDU SESSION MODIFICATION COMMAND message for a non-emergency PDU session established without an S-NSSAI provided by the UE, or a PDU SESSION AUTHENTICATION COMMAND message for a non-emergency PDU session established without an S-NSSAI provided by the UE, or a PDU SESSION RELEASE COMMAND message without the Back-off timer value IE for a non-emergency PDU session established without an S-NSSAI provided by the UE.

 The timer T3585 remains deactivated upon a PLMN change or inter-system change; and

c) if the timer value indicates zero:

1) if an S-NSSAI was provided by the UE during the PDU session establishment, the UE shall stop timer T3585 associated with the S-NSSAI of the PDU session (including the timer T3585 applied for all the PLMNs, if running, and the timer T3585 applied for the registered PLMN, if running), if running, and may send another PDU SESSION ESTABLISHMENT REQUEST message or PDU SESSION MODIFICATION REQUEST message, or REMOTE UE REPORT message, for the S-NSSAI of the PDU session; and

2) if no S-NSSAI was provided during the PDU session establishment and the request type was different from "initial emergency request " and different from "existing emergency PDU session", the UE shall stop timer T3585 associated with no S-NSSAI (including the timer T3585 applied for all the PLMNs, if running, and the timer T3585 applied for the registered PLMN, if running), if running, and may send another PDU SESSION ESTABLISHMENT REQUEST message without an S-NSSAI, or another PDU SESSION MODIFICATION REQUEST message without an S-NSSAI, or another REMOTE UE REPORT message without an S-NSSAI, provided by the UE.

If the 5GSM congestion re-attempt indicator IE set to "The back-off timer is applied in all PLMNs" is included in the PDU SESSION MODIFICATION REJECT message with the 5GSM cause value #69 "insufficient resources for specific slice", then the UE shall apply the timer T3585 for all the PLMNs. Otherwise, the UE shall apply the timer T3585 for the registered PLMN.

If the Back-off timer value IE is not included then the UE may send another PDU SESSION ESTABLISHMENT REQUEST message or PDU SESSION MODIFICATION REQUEST message or REMOTE UE REPORT message for the same S-NSSAI or without an S-NSSAI.

When the timer T3585 is running or the timer is deactivated, the UE is allowed to initiate a PDU session establishment procedure for emergency services.

If the timer T3585 is running when the UE enters state 5GMM-DEREGISTERED, the UE remains switched on, and the USIM in the UE (if any) remains the same and the entry in the "list of subscriber data" for the SNPN to which timer T3585 is associated (if any) is not updated, then timer T3585 is kept running until it expires or it is stopped.

If the UE is switched off when the timer T3585 is running, and if the USIM in the UE (if any) remains the same and the entry in the "list of subscriber data" for the SNPN to which timer T3585 is associated (if any) is not updated when the UE is switched on, the UE shall behave as follows:

- let t1 be the time remaining for T3585 timeout at switch off and let t be the time elapsed between switch off and switch on. If t1 is greater than t, then the timer shall be restarted with the value t1 – t. If t1 is equal to or less than t, then the timer need not be restarted. If the UE is not capable of determining t, then the UE shall restart the timer with the value t1.

If the UE is a UE operating in single-registration mode in a network supporting N26 interface and the PDU SESSION MODIFICATION REQUEST message was sent for a PDN connection established when in S1 mode after an inter-system change from S1 mode to N1 mode and timer T3585 associated with no S-NSSAI is running, then the UE shall re-initiate the UE-requested PDU session modification procedure after expiry of timer T3585.

NOTE 3: As described in this subclause, upon PLMN change or inter-system change, the UE does not stop the timer T3584 or T3585. This means the timer T3584 or T3585 can still be running or be deactivated for the given 5GSM procedure, the PLMN, the S-NSSAI and optionally the DNN combination when the UE returns to the PLMN or when it performs inter-system change back from S1 mode to N1 mode. Thus the UE can still be prevented from sending another PDU SESSION ESTABLISHMENT REQUEST or PDU SESSION MODIFICATION REQUEST message or another REMOTE UE REPORT message in the PLMN for the same S-NSSAI and optionally the same DNN.

Upon PLMN change, if T3584 is running or is deactivated for an S-NSSAI, a DNN, and old PLMN, but T3584 is not running and is not deactivated for the S-NSSAI, the DNN, and new PLMN, then the UE is allowed to send a PDU SESSION ESTABLISHMENT REQUEST message for the same S-NSSAI and the same DNN in the new PLMN.

Upon PLMN change, if T3585 is running or is deactivated for an S-NSSAI and old PLMN, but T3585 is not running and is not deactivated for the S-NSSAI and new PLMN, then the UE is allowed to send a PDU SESSION ESTABLISHMENT REQUEST message for the same S-NSSAI in the new PLMN.

\*\*\*\*\*\* NEXT CHANGES \*\*\*\*\*\*

### 8.3.X Remote UE report reject

#### 8.3.X.1 Message definition

The REMOTE UE REPORT REJECT message is sent by the network to the UE in response to REMOTE UE REPORT message and indicates unsuccessful remote UE report procedure. See table 8.3.X.1.

Message type: REMOTE UE REPORT REJECT

Significance: dual

Direction: network to UE

Table 8.3.X.1: REMOTE UE REPORT REJECT message content

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IEI | Information Element | Type/Reference | Presence | Format | Length |
|  | Extended protocol discriminator | Extended protocol discriminator9.2 | M | V | 1 |
|  | PDU session ID | PDU session identity9.4 | M | V | 1 |
|  | PTI | Procedure transaction identity9.6 | M | V | 1 |
|  | Remote UE report reject message identity | Message type9.7 | M | V | 1 |
|  | 5GSM cause | 5GSM cause9.11.4.2 | M | V | 1 |
| 37 | Back-off timer value | GPRS timer 39.11.2.5 | O | TLV | 3 |

#### 8.3.X.2 Back-off timer value

The network may include this IE if the 5GSM cause is #26 "insufficient resources", #67 "insufficient resources for specific slice and DNN", or #69 "insufficient resources for specific slice".

\*\*\*\*\*\* NEXT CHANGES \*\*\*\*\*\*

## 9.7 Message type

The Message type IE and its use are defined in 3GPP TS 24.007 [11]. Tables 9.7.1 and 9.7.2 define the value part of the message type IE used in the 5GS mobility management protocol and 5GS session management protocol.

Table 9.7.1: Message types for 5GS mobility management

|  |  |  |
| --- | --- | --- |
| Bits |  |  |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |  |
|  |  |  |  |  |  |  |  |  |  |
| 0 | 1 | - | - | - | - | - | - |  | 5GS mobility management messages |
|  |  |  |  |  |  |  |  |  |  |
| 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |  | Registration request |
| 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |  | Registration accept |
| 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |  | Registration complete |
| 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |  | Registration reject |
| 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 |  | Deregistration request (UE originating) |
| 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 |  | Deregistration accept (UE originating) |
| 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 |  | Deregistration request (UE terminated) |
| 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |  | Deregistration accept (UE terminated) |
|  |  |  |  |  |  |  |  |  |  |
| 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |  | Service request |
| 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 |  | Service reject |
| 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 |  | Service accept |
| 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 |  | Control plane service request |
|  |  |  |  |  |  |  |  |  |  |
| 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |  | Network slice-specific authentication command |
| 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |  | Network slice-specific authentication complete |
| 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |  | Network slice-specific authentication result |
| 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |  | Configuration update command |
| 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |  | Configuration update complete |
| 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |  | Authentication request |
| 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 |  | Authentication response |
| 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |  | Authentication reject |
| 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |  | Authentication failure |
| 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 |  | Authentication result |
| 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 |  | Identity request |
| 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |  | Identity response |
| 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 |  | Security mode command |
| 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 |  | Security mode complete |
| 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |  | Security mode reject |
|  |  |  |  |  |  |  |  |  |  |
| 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 |  | 5GMM status |
| 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |  | Notification |
| 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 |  | Notification response |
| 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |  | UL NAS transport |
| 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |  | DL NAS transport |
|  |  |  |  |  |  |  |  |  |  |

Table 9.7.2: Message types for 5GS session management

|  |  |  |
| --- | --- | --- |
| Bits |  |  |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |  |
|  |  |  |  |  |  |  |  |  |  |
| 1 | 1 | - | - | - | - | - | - |  | 5GS session management messages |
|  |  |  |  |  |  |  |  |  |  |
| 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |  | PDU session establishment request |
| 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |  | PDU session establishment accept |
| 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |  | PDU session establishment reject |
|  |  |  |  |  |  |  |  |  |  |
| 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 |  | PDU session authentication command |
| 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 |  | PDU session authentication complete |
| 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 |  | PDU session authentication result |
|  |  |  |  |  |  |  |  |  |  |
| 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 |  | PDU session modification request |
| 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |  | PDU session modification reject |
| 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 |  | PDU session modification command |
| 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |  | PDU session modification complete |
| 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 |  | PDU session modification command reject |
|  |  |  |  |  |  |  |  |  |  |
| 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |  | PDU session release request |
| 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |  | PDU session release reject |
| 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |  | PDU session release command |
| 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |  | PDU session release complete |
|  |  |  |  |  |  |  |  |  |  |
| 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |  | 5GSM status |
|  |  |  |  |  |  |  |  |  |  |
| 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |  | Service-level authentication command |
| 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |  | Service-level authentication complete |
|  |  |  |  |  |  |  |  |  |  |
| 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 |  | Remote UE report |
| 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |  | Remote UE report response |
| 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |  | Remote UE report reject message |
|  |  |  |  |  |  |  |  |  |  |

\*\*\*\*\*\* END CHANGES \*\*\*\*\*\*