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

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

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  | **24.501** | **CR** | **3183** | **rev** | **1** | **Current version:** | **17.2.1** |  |
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| *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 of reactivation requested in PDU SESSION MODIFICATION COMMAND for an MA PDU session |
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| ***Source to WG:*** | Mediatek Inc. |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5GProtoc17 |  | ***Date:*** | 2021/05/26 |
|  |  |  |  |  |
| ***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:*** | It is not specified how to properly handle the #39 "reactivation requested" received in PDU SESSION MODIFICATION COMMAND for MA PDU sessions. …This can happen, for example, during SSC mode 3 PDU session anchor change:In the 6.3.2.2 *… If the selected SSC mode of the PDU session is "SSC mode 3" and the SMF requests the relocation of SSC mode 3 PDU session anchor with multiple PDU sessions as specified in 3GPP TS 23.502 [9], the SMF shall include 5GSM cause #39 "reactivation requested" , in the PDU SESSION MODIFICATION COMMAND message, and may include the PDU session address lifetime in a PDU session address lifetime PCO parameter in the Extended protocol configuration options IE of the PDU SESSION MODIFICATION COMMAND message..*In the 23.502 4.3.5.2 *Change of SSC mode 3 PDU Session Anchor with multiple PDU Sessions**The following procedure is triggered by SMF in order to change the PDU Session Anchor serving a PDU Session of SSC mode 3 for a UE. This procedure releases the existing PDU Session associated with an old PDU Session Anchor (i.e. UPF1 in figure 4.3.5.2-1) after having established a new PDU Session to the same DN with a new PDU Session Anchor (i.e. UPF2 in figure 4.3.5.2-1), which is controlled by the same SMF. The SMF may determine that a new SMF needs to be reallocated.* *Figure 4.3.5.2-1: Change of SSC mode 3 PDU Session Anchor with multiple PDU Sessions**…**2. …* *The SMF invokes the Namf\_Communication\_N1N2MessageTransfer (PDU Session ID, SMF Reallocation requested indication, N1 SM container (PDU Session Modification Command (Cause, PCO (PDU Session Address Lifetime value)))) where PDU Session ID indicates the existing PDU Session to be relocated and Cause indicates that a PDU Session re-establishment to the same DN is required.**…*The handling is proposed:When UE receives a PDU SESSION MODIFICATION COMMAND message includes 5GSM cause #39 "reactivation requested":* If the PDU is a MA PDU with 2 legs
	+ 3GPP and Non-3GPP registered to same PLMN
		- UE choose one access (3GPP or Non-3GPP) to re-activate the MA PDU session with 2 legs
	+ 3GPP and Non-3GPP registered to different PLMNs
		- UE choose an access to re-activate the MA PDU session and frist leg
		- then, over another access the UE re-activates second leg
* If the PDU is a MA PDU with 1 leg
	+ UE re-activate the MA PDU session over the access of the existing leg
* If the PDU is a single access PDU
	+ associated with 3GPP access
		- UE re-activates the PDU over 3GPP access
	+ associated with Non-3GPP access
		- UE re-activates the PDU over Non-3GPP access
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| ***Summary of change:*** | Specify handling of the #39 "reactivation requested" received in PDU SESSION MODIFICATION COMMAND for MA PDU sessions |
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| ***Consequences if not approved:*** | Handling of the #39 "reactivation requested" received in PDU SESSION MODIFICATION COMMAND for MA PDU sessions is not specified |
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| ***Clauses affected:*** | 6.3.2.3 |
|  |  |
|  | **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:*** |  |

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

#### 6.3.2.3 Network-requested PDU session modification procedure accepted by the UE

Upon receipt of the PDU SESSION MODIFICATION COMMAND message, if the UE provided a DNN during the PDU session establishment, the UE shall stop timer T3396, if it is running for the DNN provided by the UE. If the UE did not provide a DNN 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 the timer T3396 associated with no DNN if it is running. If the PDU SESSION MODIFICATION COMMAND message was received for an emergency PDU session, the UE shall not stop the timer T3396 associated with no DNN if it is running.

Upon receipt of the PDU SESSION MODIFICATION COMMAND message, if the UE provided an S-NSSAI and a DNN during the PDU session establishment, the UE shall stop timer T3584, if it is running for the [S-NSSAI of the PDU session, DNN] combination provided by the UE. If the UE provided a DNN and did not provide an S-NSSAI during the PDU session establishment, the UE shall stop timer T3584, if it is running for the same [no S-NSSAI, DNN] combination provided by the UE. If the UE provided an S-NSSAI and did not provide a DNN during the PDU session establishment, the UE shall stop timer T3584, if it is running for the same [S-NSSAI, no DNN] combination provided by the UE. If the UE provided neither a DNN nor an S-NSSAI during the PDU session establishment, the UE shall stop timer T3584, if it is running for the same [no S-NSSAI, no DNN] combination provided by the UE. 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.

Upon receipt of the PDU SESSION MODIFICATION COMMAND message, if the UE provided an S-NSSAI during the PDU session establishment, the UE shall stop timer T3585, if it is running for the S-NSSAI of the PDU session. If the UE did not provide an S-NSSAI 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 the 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. If the PDU SESSION MODIFICATION COMMAND message was received for an emergency PDU session, the UE shall not stop the timer T3585 associated with no S-NSSAI if it is running.

NOTE 1: Upon receipt of the PDU SESSION MODIFICATION COMMAND message for a PDU session, if the UE provided a DNN (or no DNN) and an S-NSSAI (or no S-NSSAI) when the PDU session is established, timer T3396 associated with the DNN (or no DNN, if no DNN was provided by the UE) is running, and timer T3584 associated with the DNN (or no DNN, if no DNN was provided by the UE) and the S-NSSAI of the PDU session (or no S-NSSAI, if no S-NSSAI was provided by the UE) is running, then the UE stops both the timer T3396 and the timer T3584.

NOTE 2: Upon receipt of the PDU SESSION MODIFICATION COMMAND message for a PDU session, if the UE provided a DNN (or no DNN) and an S-NSSAI (or no S-NSSAI) when the PDU session is established, timer T3585 associated with the S-NSSAI of the PDU session (or no S-NSSAI, if no S-NSSAI was provided by the UE) is running, and timer T3584 associated with the DNN (or no DNN, if no DNN was provided by the UE) and the S-NSSAI of the PDU session (or no S-NSSAI, if no S-NSSAI was provided by the UE) is running, then the UE stops both the timer T3585 and the timer T3584.

If the PDU SESSION MODIFICATION COMMAND message includes the Authorized QoS rules IE, the UE shall process the QoS rules sequentially starting with the first QoS rule.

If the PDU SESSION MODIFICATION COMMAND message includes the Mapped EPS bearer contexts IE, the UE shall process the mapped EPS bearer contexts sequentially starting with the first mapped EPS bearer context.

If the PDU SESSION MODIFICATION COMMAND message includes the Authorized QoS flow descriptions IE, the UE shall process the QoS flow descriptions sequentially starting with the first QoS flow description.

The UE shall replace the stored authorized QoS rules, authorized QoS flow descriptions and session-AMBR of the PDU session with the received value(s), if any, in the PDU SESSION MODIFICATION COMMAND message.

If the PDU SESSION MODIFICATION COMMAND message includes a Mapped EPS bearer contexts IE, the UE shall check each mapped EPS bearer context for different types of errors as follows:

NOTE 3: An error detected in a mapped EPS bearer context does not cause the UE to discard the Authorized QoS rules IE and Authorized QoS flow descriptions IE included in the PDU SESSION MODICATION COMMAND message, if any.

a) Semantic error in the mapped EPS bearer operation:

1) operation code = "Create new EPS bearer" and there is already an existing mapped EPS bearer context with the same EPS bearer identity associated with any PDU session.

2) operation code = "Delete existing EPS bearer" and there is no existing mapped EPS bearer context with the same EPS bearer identity associated with the PDU session that is being modified.

3) operation code = "Modify existing EPS bearer" and there is no existing mapped EPS bearer context with the same EPS bearer identity associated with the PDU session that is being modified.

4) operation code = "Create new EPS bearer" or "Modify existing EPS bearer" and the resulting mapped EPS bearer context has invalid or missing mandatory parameters (e.g., mapped EPS QoS parameters or traffic flow template for a dedicated EPS bearer context).

 In case 1, if the existing mapped EPS bearer context is associated with the PDU session that is being modified, the UE shall not diagnose an error, further process the create request and, if it was process successfully, delete the old EPS bearer context.

 In case 2, the UE shall not diagnose an error, further process the delete request and, if it was processed successfully, consider the mapped EPS bearer context as successfully deleted.

 Otherwise, after sending the PDU SESSSION MODIFICATION COMPLETE for the ongoing PDU session modification procedure, the UE shall initiate a PDU session modification procedure by sending a PDU SESSION MODIFICATION REQUEST message to delete the mapped EPS bearer context with 5GSM cause #85 "Invalid mapped EPS bearer identity".

b) if the mapped EPS bearer context includes a traffic flow template, the UE shall check the traffic flow template for different types of TFT IE errors as follows:

2) Semantic errors in TFT operations:

i) TFT operation = "Create a new TFT" when there is already an existing TFT for the EPS bearer context.

ii) When the TFT operation is an operation other than "Create a new TFT" and there is no TFT for the EPS bearer context.

iii) TFT operation = "Delete packet filters from existing TFT" when it would render the TFT empty.

iv) TFT operation = "Delete existing TFT" for a dedicated EPS bearer context.

 In case iv, after sending the PDU SESSSION MODIFICATION COMPLETE for the ongoing PDU session modification procedure, the UE shall initiate a PDU session modification procedure by sending a PDU SESSION MODIFICATION REQUEST message to delete the mapped EPS bearer context with 5GSM cause #41 "semantic error in the TFT operation".

 In the other cases the UE shall not diagnose an error and perform the following actions to resolve the inconsistency:

 In case i, the UE shall further process the new activation request to create a new TFT and, if it was processed successfully, delete the old TFT.

 In case ii, the UE shall:

- process the new request and if the TFT operation is "Delete existing TFT" or "Delete packet filters from existing TFT", and if no error according to items b, c, and d was detected, consider the TFT as successfully deleted;

- process the new request as an activation request, if the TFT operation is "Add packet filters in existing TFT" or "Replace packet filters in existing TFT".

 In case iii, if the packet filters belong to a dedicated EPS bearer context, the UE shall process the new deletion request and, if no error according to items b, c, and d was detected, after sending the PDU SESSSION MODIFICATION COMPLETE for the ongoing PDU session modification procedure, the UE shall initiate a PDU session modification procedure by sending a PDU SESSION MODIFICATION REQUEST message to delete the mapped EPS bearer context with 5GSM cause #41 "semantic error in the TFT operation".

 In case iii, if the packet filters belong to the default EPS bearer context, the UE shall process the new deletion request and if no error according to items b, c, and d was detected then delete the existing TFT, this corresponds to using match-all packet filter for the default EPS bearer context.

2) Syntactical errors in TFT operations:

i) When the TFT operation = "Create a new TFT", "Add packet filters in existing TFT", "Replace packet filters in existing TFT" or "Delete packet filters from existing TFT" and the packet filter list in the TFT IE is empty.

ii) TFT operation = "Delete existing TFT" or "No TFT operation" with a non-empty packet filter list in the TFT IE.

iii) TFT operation = "Replace packet filters in existing TFT" when the packet filter to be replaced does not exist in the original TFT.

iv) TFT operation = "Delete packet filters from existing TFT" when the packet filter to be deleted does not exist in the original TFT.

v) Void.

vi) When there are other types of syntactical errors in the coding of the TFT IE, such as a mismatch between the number of packet filters subfield, and the number of packet filters in the packet filter list.

 In case iii, the UE shall not diagnose an error, further process the replace request and, if no error according to items c and d was detected, include the packet filters received to the existing TFT.

 In case iv, the UE shall not diagnose an error, further process the deletion request and, if no error according to items c and d was detected, consider the respective packet filter as successfully deleted.

 Otherwise, after sending the PDU SESSSION MODIFICATION COMPLETE for the ongoing PDU session modification procedure, the UE shall initiate a PDU session modification procedure by sending a PDU SESSION MODIFICATION REQUEST message to delete the mapped EPS bearer context with 5GSM cause #42 "syntactical error in the TFT operation".

3) Semantic errors in packet filters:

i) When a packet filter consists of conflicting packet filter components which would render the packet filter ineffective, i.e. no IP packet will ever fit this packet filter. How the UE determines a semantic error in a packet filter is outside the scope of the present document.

ii) When the resulting TFT, which is assigned to a dedicated EPS bearer context, does not contain any packet filter applicable for the uplink direction among the packet filters created on request from the network.

 After sending the PDU SESSSION MODIFICATION COMPLETE for the ongoing PDU session modification procedure, the UE shall initiate a PDU session modification procedure by sending a PDU SESSION MODIFICATION REQUEST message to delete the mapped EPS bearer context with 5GSM cause #44 "semantic errors in packet filter(s)".

4) Syntactical errors in packet filters:

i) When the TFT operation = "Create a new TFT", "Add packet filters to existing TFT", or "Replace packet filters in existing TFT" and two or more packet filters in the resultant TFT would have identical packet filter identifiers.

ii) When the TFT operation = "Create a new TFT", "Add packet filters to existing TFT" or "Replace packet filters in existing TFT", and two or more packet filters among all TFTs associated with this PDN connection would have identical packet filter precedence values.

iii) When there are other types of syntactical errors in the coding of packet filters, such as the use of a reserved value for a packet filter component identifier.

 In case i, if two or more packet filters with identical packet filter identifiers are contained in the new request, after sending the PDU SESSSION MODIFICATION COMPLETE for the ongoing PDU session modification procedure, the UE shall initiate a PDU session modification procedure by sending a PDU SESSION MODIFICATION REQUEST message to delete the mapped EPS bearer context with 5GSM cause #45 "syntactical error in packet filter(s)". Otherwise, the UE shall not diagnose an error, further process the new request and, if it was processed successfully, delete the old packet filters which have the identical packet filter identifiers.

 In case ii, if the old packet filters do not belong to the default EPS bearer context, the UE shall not diagnose an error, shall further process the new request and, if it was processed successfully, shall delete the old packet filters which have identical filter precedence values.

 In case ii, if one or more old packet filters belong to the default EPS bearer context, after sending the PDU SESSSION MODIFICATION COMPLETE for the ongoing PDU session modification procedure, the UE shall initiate a PDU session modification procedure by sending a PDU SESSION MODIFICATION REQUEST message to delete the mapped EPS bearer context with 5GSM cause #45 "syntactical errors in packet filter(s)".

 Otherwise, after sending the PDU SESSSION MODIFICATION COMPLETE for the ongoing PDU session modification procedure, the UE shall initiate a PDU session modification procedure by sending a PDU SESSION MODIFICATION REQUEST message to delete the mapped EPS bearer context with 5GSM cause #45 "syntactical error in packet filter(s)".

And if a new EPS bearer identity parameter in Authorized QoS flow descriptions IE is received for a QoS flow which can be transferred to EPS, the UE shall update the association between the QoS flow and the mapped EPS bearer context, based on the new EPS bearer identity and the mapped EPS bearer contexts. If the "Delete existing EPS bearer" operation code in the Mapped EPS bearer contexts IE was received, the UE shall discard the association between the QoS flow and the corresponding mapped EPS bearer context.

If:

a) the UE detects different errors in the mapped EPS bearer contexts as described above which requires sending a PDU SESSION MODIFICATION REQUEST message to delete the erroneous mapped EPS bearer contexts; and

b) optionally, if the UE detects errors in QoS rules that require to delete at least one QoS rule as described in subclause 6.3.2.4 which requires sending a PDU SESSION MODIFICATION REQUEST message to delete the erroneous QoS rules;

the UE, after sending the PDU SESSSION MODIFICATION COMPLETE message for the ongoing PDU session modification procedure, may send a single PDU SESSION MODIFICATION REQUEST message to delete the erroneous mapped EPS bearer contexts, and optionally to delete the erroneous QoS rules. The UE shall include a 5GSM cause IE in the PDU SESSION MODIFICATION REQUEST message.

NOTE 4: The 5GSM cause to use cannot be different from #41 "semantic error in the TFT operation", #42 "syntactical error in the TFT operation", #44 "semantic error in packet filter(s)", #45 "syntactical errors in packet filter(s)", #83 "semantic error in the QoS operation", #84 "syntactical error in the QoS operation", or #85 "Invalid mapped EPS bearer identity". The selection of a 5GSM cause is up to UE implementation.

Upon receipt of a PDU SESSION MODIFICATION COMMAND message and a PDU session ID, using the NAS transport procedure as specified in subclause 5.4.5, if the UE accepts the PDU SESSION MODIFICATION COMMAND message, the UE considers the PDU session as modified and the UE shall create a PDU SESSION MODIFICATION COMPLETE message.

If the PDU SESSION MODIFICATION COMMAND message contains the PTI value allocated in the UE-requested PDU session modification procedure, the UE shall stop the timer T3581. The UE should ensure that the PTI value assigned to this procedure is not released immediately.

NOTE 5: The way to achieve this is implementation dependent. For example, the UE can ensure that the PTI value assigned to this procedure is not released during the time equal to or greater than the default value of timer T3591.

While the PTI value is not released, the UE regards any received PDU SESSION MODIFICATION COMMAND message with the same PTI value as a network retransmission (see subclause 7.3.1).

If the selected SSC mode of the PDU session is "SSC mode 3" and the PDU SESSION MODIFICATION COMMAND message includes 5GSM cause #39 "reactivation requested", the UE can provide to the upper layers the PDU session address lifetime if received in the PDU session address lifetime PCO parameter of the Extended protocol configuration options IE of the PDU SESSION MODIFICATION COMMAND message. After the completion of the network-requested PDU session modification procedure:

a) if the PDU session is an MA PDU session:

1) established over both 3GPP access and non-3GPP access, and:

- the UE is registered over both 3GPP access and non-3GPP access in the same PLMN:

- the UE should re-initiate the UE-requested PDU session establishment procedure as specified in subclause 6.4.1, over which access the UE re-initiates the UE-requested PDU session establishment procedure is UE implementation specific; or

- the UE is registered over both 3GPP access and non-3GPP access in different PLMNs:

- the UE should re-initiate the UE-requested PDU session establishment procedures as specified in subclause 6.4.1 over both accesses, over which access the UE re-initiates the UE-requested PDU session establishment procedure first is UE implementation specific; or

2) established over only single access:

- the UE should re-initiate the UE-requested PDU session establishment procedure as specified in subclause 6.4.1 over the access the user plane resources were established; or

b) if the PDU session is a single access PDU session:

- the UE should re-initiate the UE-requested PDU session establishment procedure as specified in subclause 6.4.1 over the access the PDU session was associated with;

for the re-initiated UE-requested PDU session establishment procedure(s) the UE should set a new PDU session ID different from the PDU session ID associated with the present PDU session and set:

a) the PDU session type to the PDU session type associated with the present PDU session;

b) the SSC mode to the SSC mode associated with the present PDU session;

c) the DNN to the DNN associated with the present PDU session; and

d) the S-NSSAI to the S-NSSAI associated with (if available in roaming scenarios) a mapped S-NSSAI if provided in the UE-requested PDU session establishment procedure of the present PDU session.

If the UE has indicated support for CIoT 5GS optimizations and receives a small data rate control parameters container in the Extended protocol configuration options IE in the PDU SESSION MODIFICATION COMMAND message, the UE shall store the small data rate control parameters value and use the stored small data rate control parameters value as the maximum allowed limit of uplink user data for the PDU session in accordance with 3GPP TS 23.501 [8]. If the UE has a previously stored small data rate control parameter value for the PDU session, the UE shall replace the stored small data rate control parameters value for the PDU session with the received small data rate control parameters value in the Extended protocol configuration options IE in the PDU SESSION MODIFICATION COMMAND message.

If the UE has indicated support for CIoT 5GS optimizations and receives an additional small data rate control parameters for exception data container in the Extended protocol configuration options IE in the PDU SESSION MODIFICATION COMMAND message, the UE shall store the additional small data rate control parameters for exception data value and use the stored additional small data rate control parameters for exception data value as the maximum allowed limit of uplink exception data for the PDU session in accordance with 3GPP TS 23.501 [8]. If the UE has a previously stored additional small data rate control parameters for exception data value for the PDU session, the UE shall replace the stored additional small data rate control parameters for exception data value for the PDU session with the received additional small data rate control parameters for exception data value in the Extended protocol configuration options IE in the PDU SESSION MODIFICATION COMMAND message.

The UE shall include the PDU session ID of the old PDU session which is about to get released in the old PDU session ID IE of the UL NAS TRANSPORT message that transports the PDU SESSION ESTABLISHMENT REQUEST message.

NOTE 6: The UE is expected to maintain the PDU session for which the PDU SESSION MODIFICATION COMMAND message including 5GSM cause #39 "reactivation requested" is received during the time indicated by the PDU session address lifetime value or until receiving an indication from upper layers (e.g. that the old PDU session is no more needed).

If the selected PDU session type of the PDU session is "Unstructured", the UE supports inter-system change from N1 mode to S1 mode, the UE does not support establishment of a PDN connection for the PDN type set to "non-IP" in S1 mode, and the parameters list field of one or more authorized QoS flow descriptions received in the Authorized QoS flow descriptions IE of the PDU SESSION MODIFICATION COMMAND message contains an EPS bearer identity (EBI), then the UE shall locally remove the EPS bearer identity (EBI) from the parameters list field of such one or more authorized QoS flow descriptions. After sending the PDU SESSION MODIFICATION COMPLETE message for the ongoing PDU session modification procedure, the UE shall initiate a PDU session modification procedure by sending a PDU SESSION MODIFICATION REQUEST message to delete the mapped EPS bearer context with 5GSM cause #85 "Invalid mapped EPS bearer identity".

If the selected PDU session type of the PDU session is "Ethernet", the UE supports inter-system change from N1 mode to S1 mode, the UE does not support establishment of a PDN connection for the PDN type set to "non-IP" in S1 mode, the UE, the network or both of them do not support Ethernet PDN type in S1 mode, and the parameters list field of one or more authorized QoS flow descriptions received in the Authorized QoS flow descriptions IE of the PDU SESSION MODIFICATION COMMAND message contains an EPS bearer identity (EBI), the UE shall locally remove the EPS bearer identity (EBI) from the parameters list field of such one or more authorized QoS flow descriptions. After sending the PDU SESSION MODIFICATION COMPLETE message for the ongoing PDU session modification procedure, the UE shall initiate a PDU session modification procedure by sending a PDU SESSION MODIFICATION REQUEST message to delete the mapped EPS bearer context with 5GSM cause #85 "Invalid mapped EPS bearer identity".

If the Always-on PDU session indication IE is included in the PDU SESSION MODIFICATION COMMAND message and:

a) the value of the IE is set to "Always-on PDU session required", the UE shall consider the established PDU session as an always-on PDU session; or

b) the value of the IE is set to "Always-on PDU session not allowed", the UE shall not consider the established PDU session as an always-on PDU session.

If the UE does not receive the Always-on PDU session indication IE in the PDU SESSION MODIFICATION COMMAND message:

a) if the network-requested PDU session modification procedure is triggered by a UE-requested PDU session modification procedure upon the first inter-system change from S1 mode to N1 mode for a PDN connection established when in S1 mode, the UE shall not consider the modified PDU session as an always-on PDU session; or

b) otherwise:

1) if the UE has received the Always-on PDU session indication IE with the value set to "Always-on PDU session required" for this PDU session, the UE shall consider the PDU session as an always-on PDU session; or

2) otherwise the UE shall not consider the PDU session as an always-on PDU session.

If the PDU SESSION MODIFICATION COMMAND message contains a Port management information container IE, the UE shall forward the contents of the Port management information container IE to the DS-TT (see 3GPP TS 23.501 [8] and 3GPP TS 23.502 [9]).

If the UE receives a Serving PLMN rate control IE in the PDU SESSION MODIFICATION COMMAND message, the UE shall store the Serving PLMN rate control IE value, replacing any existing value, and use the stored serving PLMN rate control value as the maximum allowed limit of uplink control plane user data for the corresponding PDU session in accordance with 3GPP TS 23.501 [8].

The UE shall transport the PDU SESSION MODIFICATION COMPLETE message and the PDU session ID, using the NAS transport procedure as specified in subclause 5.4.5.

After sending the PDU SESSION MODIFICATION COMPLETE message, if the "Create new EPS bearer" operation code in the Mapped EPS bearer contexts IE was received in the PDU SESSION MODIFICATION COMMAND message and there is neither a corresponding Authorized QoS flow descriptions IE in the PDU SESSION MODIFICATION COMMAND message nor an existing QoS flow description corresponding to the EPS bearer identity included in the mapped EPS bearer context, the UE shall send a PDU SESSION MODIFICATION REQUEST message including a Mapped EPS bearer contexts IE to delete the mapped EPS bearer context.

After sending the PDU SESSION MODIFICATION COMPLETE message, if for the PDU session being modified, there are mapped EPS bearer context(s) which do not include a mapped EPS bearer associated with the default QoS rule, the UE shall locally delete the mapped EPS bearer context(s) and shall locally delete the stored EPS bearer identity (EBI) in all the QoS flow descriptions of the PDU session, if any.

If a port management information container needs to be delivered (see 3GPP TS 23.501 [8] and 3GPP TS 23.502 [9]), the UE shall include a Port management information container IE in the PDU SESSION MODIFICATION COMPLETE message.

Upon receipt of a PDU SESSION MODIFICATION COMPLETE message, the SMF shall stop timer T3591 and shall consider the PDU session as modified. If the selected SSC mode of the PDU session is "SSC mode 3" and the PDU SESSION MODIFICATION COMMAND message included 5GSM cause #39 "reactivation requested", the SMF shall start timer T3593. If the PDU Session Address Lifetime value is sent to the UE in the PDU SESSION MODIFICATION COMMAND message then timer T3593 shall be started with the same value, otherwise it shall use a default value. If the PDU SESSION MODIFICATION COMPLETE message contains a Port management information container IE, the SMF shall handle the contents of the Port management information container IE as specified in 3GPP TS 23.501 [8] and 3GPP TS 23.502 [9].

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