**3GPP TSG-CT WG1 Meeting #133e-bisC1-22XXXX**

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

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  | **24.301** | **CR** | **3636** | **rev** | **2** | **Current version:** | **17.5.0** |  |
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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 | **X** |

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| ***Title:***  | UUAA and C2 pairing authorization at attach – UE procedure on receiving side |
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| ***Source to WG:*** | Lenovo, Motorola Mobility |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | ID\_UAS |  | ***Date:*** | 2022-01-17 |
|  |  |  |  |  |
| ***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 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:*** | According to TS 23.256 for EPS, the UUAA-SM occurs at the time of attach procedure and C2 pairing authorization may occur at the same time too. |
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| ***Summary of change:*** | Changes are proposed for the UE procedures on receiving side for when establishing PDN connection at the time of attach for UUAA-SM and possible C2 pairing authorization. The procedure uses ePCO IE. |
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| ***Consequences if not approved:*** | Stage 3 of a feature is not implemented |
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| ***Clauses affected:*** | 6.4.1.3, 6.4.3.3 |
|  |  |
|  | **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:*** |  |

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

#### 6.4.1.3 Default EPS bearer context activation accepted by the UE

Upon receipt of the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message, if the UE provided an APN for the establishment of the PDN connection, the UE shall stop timer T3396 if it is running for the APN provided by the UE. If the UE did not provide an APN for the establishment of the PDN connection and the request type was different from "emergency" and from "handover of emergency bearer services", the UE shall stop the timer T3396 associated with no APN if it is running. If the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message was received in response to a request for an emergency PDN connection, the UE shall not stop the timer T3396 associated with no APN if it is running. For any case, the UE shall then send an ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT message and enter the state BEARER CONTEXT ACTIVE. When the default bearer is activated as part of the attach procedure, the UE shall send the ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT message together with ATTACH COMPLETE message. When the default bearer is activated as the response to the stand-alone PDN CONNECTIVITY REQUEST message, the UE shall send the ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT message alone.

If a WLAN offload indication information element is included in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message, the UE shall store the WLAN offload acceptability values for this PDN connection and use the E-UTRAN offload acceptability value to determine whether this PDN connection is offloadable to WLAN or not.

The UE checks the PTI in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message to identify the UE requested PDN connectivity procedure to which the default bearer context activation is related (see clause 6.5.1).

If the UE receives a serving PLMN rate control IE in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message, the UE shall store the serving PLMN rate control IE value and use the stored serving PLMN rate control value as the maximum allowed limit of uplink User data container IEs included in ESM DATA TRANSPORT messages for the corresponding PDN connection in accordance with 3GPP TS 23.401 [10].

If the UE receives an APN rate control parameters container in the protocol configuration options IE or extended protocol configuration options IE in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message, the UE shall store the APN rate control parameters value and use the stored APN rate control parameters value as the maximum allowed limit of uplink user data related to the APN indicated in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message in accordance with 3GPP TS 23.401 [10]. If the UE has a previously stored APN rate control parameters value for this APN, the UE shall replace the stored APN rate control parameters value for this APN with the received APN rate control parameters value.

If the UE receives an additional APN rate control parameters for exception data container in the protocol configuration options IE or extended protocol configuration options IE in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message, the UE shall store the additional APN rate control parameters for exception data value and use the stored additional APN rate control parameters for exception data value as the maximum allowed limit of uplink exception data related to the APN indicated in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message in accordance with 3GPP TS 23.401 [10]. If the UE has a previously stored additional APN rate control parameters for exception data value for this APN, the UE shall replace the stored additional APN rate control parameters for exception data value for this APN with the received additional APN rate control parameters for exception data value.

If the UE receives a small data rate control parameters container in the protocol configuration options IE or the extended protocol configuration options IE in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST 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 corresponding PDU session that becomes transferred after inter-system change from S1 mode to N1 mode in accordance with 3GPP TS 23.501 [58].

If the UE receives an additional small data rate control parameters for exception data container in the protocol configuration options IE or the extended protocol configuration options IE in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST 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 corresponding PDU session that becomes transferred after inter-system change from S1 mode to N1 mode in accordance with 3GPP TS 23.501 [58].

If the UE receives non-IP Link MTU parameter, Ethernet Frame Payload MTU parameter, IPv4 Link MTU parameter, or Unstructured Link MTU parameter of the protocol configuration options IE or of the extended protocol configuration options IE in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message, the UE shall pass the received Non-IP Link MTU size, Ethernet Frame Payload MTU size, or IPv4 Link MTU size, or Unstructured Link MTU size to the upper layer.

NOTE 1: The Non-IP Link MTU and the IPv4 Link MTU size correspond to the maximum length of user data that can be sent either in the user data container in the ESM DATA TRANSPORT message or via S1-U interface.

NOTE 2: The Ethernet frame payload MTU size corresponds to the maximum length of a payload of an Ethernet frame that can be sent either in the user data container in the ESM DATA TRANSPORT message or via S1-U interface.

NOTE 3: A PDN connection of non-IP PDN type can be transferred to a PDU session of "Unstructured" PDU session type, thus the UE can request the unstructured link MTU parameter in the default EPS bearer context activation procedure. The unstructured link MTU size correspond to the maximum length of user data packet that can be sent either via the control plane or via N3 interface for a PDU session of the "Unstructured" PDU session type as specified in 3GPP TS 24.501 [54].

If the UE receives the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message containing the Uplink data not allowed parameter in the extended protocol configuration options IE, then the UE shall not send any uplink user data over EPS bearer context(s) of the corresponding PDN connection.

Upon receiving the DNS server security information, the UE shall pass it to the upper layer. The UE shall use this information to send the DNS over (D)TLS (See 3GPP TS 33.501 [24]).

NOTE 4: Support of DNS over (D)TLS is based on the informative requirements as specified in 3GPP TS 33.501 [24].

Upon receipt of the ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT message, the MME shall enter the state BEARER CONTEXT ACTIVE and stop the timer T3485, if the timer is running. If the PDN CONNECTIVITY REQUEST message included a low priority indicator set to "MS is configured for NAS signalling low priority", the MME shall store the NAS signalling low priority indication within the default EPS bearer context.

The UE, supporting UAS services, is not required to transmit any additional information for the UUAA-SM procedure and possible C2 authorization procedure at the same time, than what was sent in the ATTACH REQUEST message, shall receive the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message, including an extended protocol configuration options IE containing the service-level-AA container with the length of two octets, to activate the default bearer.

Editor's note (ID\_UAS, CR#XXXX): If the C2 communication is requested at the time of UUAA-SM, it is FFS that any pending indication from SMF+PGW-C to the UE is needed on pending C2 authorization. If that is the case, definition of service-level-AA pending indication which is to be included in the service-level AA container IE, is FFS.

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#### 6.4.3.3 EPS bearer context modification accepted by the UE

Upon receipt of the MODIFY EPS BEARER CONTEXT REQUEST message, if the UE provided an APN for the establishment of the PDN connection, the UE shall stop timer T3396, if it is running for the APN provided by the UE. If the UE did not provide an APN for the establishment of the PDN connection and the request type was different from "emergency" and from "handover of emergency bearer services", the UE shall stop the timer T3396 associated with no APN if it is running. If the MODIFY EPS BEARER CONTEXT REQUEST message was received for an emergency PDN connection, the UE shall not stop the timer T3396 associated with no APN if it is running. For any case, the UE shall then check the received TFT before taking it into use and send a MODIFY EPS BEARER CONTEXT ACCEPT message to the MME.

If the MODIFY EPS BEARER CONTEXT REQUEST message contains a PTI value other than "no procedure transaction identity assigned" and "reserved" (see 3GPP TS 24.007 [12]), the UE uses the PTI to identify the UE requested bearer resource allocation procedure or the UE requested bearer resource modification procedure to which the EPS bearer context modification is related (see clause 6.5.3 and clause 6.5.4).

If the MODIFY EPS BEARER CONTEXT REQUEST message contains a PTI value other than "no procedure transaction identity assigned" and "reserved" (see 3GPP TS 24.007 [12]) and the PTI is associated to a UE requested bearer resource allocation procedure or a UE requested bearer resource modification procedure, the UE shall release the traffic flow aggregate description associated to the PTI value provided.

If the EPS bearer context that is modified is a GBR bearer and the MODIFY EPS BEARER CONTEXT REQUEST message does not contain the Guaranteed Bit Rate (GBR) and the Maximum Bit Rate (MBR) values for uplink and downlink, the UE shall continue to use the previously received values for the Guaranteed Bit Rate (GBR) and the Maximum Bit Rate (MBR) for the corresponding bearer.

The UE shall use the received TFT to apply mapping of uplink traffic flows to the radio bearer if the TFT contains packet filters for the uplink direction.

If a WLAN offload indication information element is included in the MODIFY EPS BEARER CONTEXT REQUEST message, the UE shall store the WLAN offload acceptability values for this PDN connection and use the E-UTRAN offload acceptability value to determine whether this PDN connection is offloadable to WLAN or not.

If the UE receives an APN rate control parameters container in the protocol configuration options IE or extended protocol configuration options IE in the MODIFY EPS BEARER CONTEXT REQUEST message, the UE shall store the APN rate control parameters value and use the stored APN rate control parameters value as the maximum allowed limit of uplink user data related to the corresponding APN in accordance with 3GPP TS 23.401 [10]. If the UE has a previously stored APN rate control parameters value for this APN, the UE shall replace the stored APN rate control parameters value for this APN with the received APN rate control parameters value.

If the UE receives an additional APN rate control parameters for exception data container in the protocol configuration options IE or extended protocol configuration options IE in the MODIFY EPS BEARER CONTEXT REQUEST message, the UE shall store the additional APN rate control parameters for exception data value and use the stored additional APN rate control parameters for exception data value as the maximum allowed limit of uplink exception data related to the corresponding APN in accordance with 3GPP TS 23.401 [10]. If the UE has a previously stored additional APN rate control parameters for exception data value for this APN, the UE shall replace the stored additional APN rate control parameters for exception data value for this APN with the received additional APN rate control parameters for exception data value.

If the UE receives a small data rate control parameters container in the protocol configuration options IE or the extended protocol configuration options IE in the MODIFY EPS BEARER CONTEXT REQUEST 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 corresponding PDU session that becomes transferred after inter-system change from S1 mode to N1 mode in accordance with 3GPP TS 23.501 [58]. If the UE has a previously stored small data rate control parameters value for this PDU session, the UE shall replace the stored small data rate control parameters value for this PDU Session with the received small data rate control parameters value.

If the UE receives an additional small data rate control parameters for exception data container in the protocol configuration options IE or the extended protocol configuration options IE in the MODIFY EPS BEARER CONTEXT REQUEST 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 corresponding PDU session that becomes transferred after inter-system change from S1 mode to N1 mode in accordance with 3GPP TS 23.501 [58]. If the UE has a previously stored additional small data rate control parameters for exception data value for this PDU session, the UE shall replace the stored additional small data rate control parameters for exception data value for this PDU session with the received additional small data rate control parameters for exception data value.

Upon receipt of the MODIFY EPS BEARER CONTEXT REQUEST message with a session-AMBR and QoS rule(s) in the protocol configuration options IE or the extended protocol configuration options IE, the UE stores the session-AMBR and QoS rule(s) for use during inter-system change from S1 mode to N1 mode.

If the UE receives the MODIFY EPS BEARER CONTEXT REQUEST message containing the Uplink data allowed parameter in the extended protocol configuration options IE, then the UE may start transmitting uplink user data over EPS bearer context(s) of the corresponding PDN connection.The MODIFY EPS BEARER CONTEXT REQUEST message as a part of authorization procedure for the C2 communication, can include an extended protocol configuration options IE containing the service-level-AA container with the length of two octets. The service-level-AA container with the length of two octets:

a) contains the C2 authorization result;

b) can contain C2 session security information; and

b) can contain the service-level device ID with the value set to a new CAA-level UAV ID.

Upon receipt of the MODIFY EPS BEARER CONTEXT REQUEST message, if the service-level-AA container with the length of two octets contains a CAA-level UAV ID and C2 authorization result, the UE supporting UAS services, shall replace its currently stored CAA-level UAV ID with the new CAA-level UAV ID.

If the EPS bearer context being modified is associated with a PDN connection for UAS services, the MODIFY EPS BEARER CONTEXT REQUEST message includes the extended protocol configuration options IE containing the service-level-AA container with the length of two octets containing the service-level-AA response parameter indicating "Service level authentication and authorization was successful", the UE supporting UAS services:

a) shall consider the UUAA procedure as successfully completed;

b) if the service-level-AA container with the length of two octets contains the service-level device ID parameter carrying a new CAA-level UAV ID, shall replace its currently stored CAA-level UAV ID with the new CAA-level UAV ID; and

c) if the service-level-AA container with the length of two octets contains the service-level-AA payload type parameter:

1) with the value "UUAA payload" and the service-level-AA payload parameter carrying the UUAA authorization payload, shall provide the UUAA authorization payload to upper layers; or

2) with the value "C2 authorization payload" and the service-level-AA payload parameter carrying the C2 authorization payload which:

- shall contain C2authorization result; and

- may contain the flight authorization information,

shall provide the C2 authorization payload to upper layers.

Editor's note (ID\_UAS, CR#XXXX): If the C2 communication is requested at the time of UUAA-SM, it is FFS that any pending indication from SMF+PGW-C to the UE is needed on pending C2 authorization. If that is the case, definition of service-level-AA pending indication which is to be included in the service-level AA container IE, is FFS.

If the EPS bearer context being modified is associated with a PDN connection for UAS services, the MODIFY EPS BEARER CONTEXT REQUEST message includes the extended protocol configuration options IE containing the service-level-AA container with the length of two octets which:

- contains the service-level-AA payload parameter; and

- does not contain the service-level-AA response parameter;

then the UE supporting UAS services shall provide the service-level-AA payload to the upper layers. Upon reception of a service-level-AA payload from the upper layers, the UE supporting UAS services shall include the extended protocol configuration options IE in the MODIFY EPS BEARER CONTEXT ACCEPT message. In the extended protocol configuration options IE, the UE shall include the service-level-AA container with the length of two octets. In the service-level-AA container with the length of two octets, the UE shall include the service-level-AA payload parameter set to the service-level-AA payload received from the upper layers.

Upon receipt of the MODIFY EPS BEARER CONTEXT ACCEPT message, the MME shall stop the timer T3486 and enter the state BEARER CONTEXT ACTIVE.

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