**3GPP TSG-CT WG1 Meeting #133-eC1-21XXXX**

**E-meeting, 11-19 November 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.301** | **CR** | **3605** | **rev** | **3** | **Current version:** | **17.4.1** |  |
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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 | **X** |

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| ***Title:*** | Using Service-level AA container for C2 authorization | | | | | | | | | |
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| ***Source to WG:*** | Lenovo, Motorola Mobility, Ericsson, Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
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| ***Work item code:*** | ID\_UAS | | | | |  | ***Date:*** | | | 2021-11-11 |
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| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) ... Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
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| ***Reason for change:*** | | In CT1#131-e two options for containers, C2 aviation container and service-level-AA container, were introduced for C2 authorization. One of them needs to be chosen according to the editor's note in the context.  The UE shall include what is provided from upper layer when performing perform C2 authorization. | | | | | | | | |
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| ***Summary of change:*** | | 1. Does not change any text from what it is spec when it comes to the length of PCO container. 2. uses Service-level AA container IE and removes C2 aviation container IE as we agreed 2-3 meetings ago. 3. Thereby removes the related EN about choosing C2 aviation container vs. service-level-AA container 4. Modified text that the UE shall include parameters due to their availability since this is what the UE must do and upper layers provides the UE the parameters. 5. Removed EN about the identification information of UAV-C to pair, since it is mandated for the UE due to availability from upper layer. 6. Removes flight authorization from service-level- AA container IE that the UE receives from the network, since it is not right. | | | | | | | | |
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| ***Consequences if not approved:*** | | Options for container for C2 authorization and editor's note remain. | | | | | | | | |
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| ***Clauses affected:*** | | 6.4.3.3, 6.5.4.2 | | | | | | | | |
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|  | | **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 ... | | |
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| ***Other comments:*** | |  | | | | | | | | |
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| ***This CR's revision history:*** | | Changes from CT1#132-e:  Both protocol configuration options and extended protocol configuration options can be used. If the protocol configuration options is used, then one or more of the parameters may be fit in the contents.  Changes from CT1#133-e   1. Using Service-level AA container IE and removal of C2 aviation container IE. In addition, removal of the related EN. 2. Modified text that the UE shall include parameters due to their availability provided by the upper layers. Removal of EN whether the identification information of UAV-C to pair is mandated or not, since it is up to upper layer to make that decision. 3. Removal of flight authorization from service-level- AA container IE that the UE receives from the network. | | | | | | | | |

>>>>>>>>>> Next change <<<<<<<<<<

#### 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.

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.

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

>>>>>>>>>> Next change <<<<<<<<<<

#### 6.5.4.2 UE requested bearer resource modification procedure initiation

In order to request the modification of bearer resources for one traffic flow aggregate, the UE shall send a BEARER RESOURCE MODIFICATION REQUEST message to the MME, start timer T3481 and enter the state PROCEDURE TRANSACTION PENDING (see example in figure 6.5.4.2.1).

The UE shall include the EPS bearer identity of the EPS bearer associated with the traffic flow aggregate in the EPS bearer identity for packet filter IE.

To request a change of the GBR without changing the packet filter(s), the UE shall set the TFT operation code in the Traffic flow aggregate IE to "no TFT operation" and include the packet filter identifier(s) to which the change of the GBR applies in the Packet filter identifier parameter in the parameters list. The UE shall indicate the new GBR requested for the EPS bearer context in the Required traffic flow QoS IE.

To request a modification of a traffic flow aggregate, the UE shall set the TFT operation code in the Traffic flow aggregate IE to "Replace packet filters in existing TFT" or "Add packet filters to existing TFT". If the TFT operation code is set to "Add packet filters to existing TFT", the UE shall include in the parameter list one existing packet filter identifier to which the newly added packet filter(s) is linked. If the EPS bearer is a GBR bearer and the UE also wishes to request a change of GBR, the UE shall indicate the new GBR requested for the EPS bearer context in the Required traffic flow QoS IE.

To request a release of bearer resources, the UE shall set the TFT operation code in the Traffic flow aggregate IE to "Delete packet filters from existing TFT". If the EPS bearer is a GBR bearer and the UE does not request the release of all bearer resources, the UE shall indicate the new GBR requested for the EPS bearer context in the Required traffic flow QoS IE.

To request re-negotiation of header compression configuration associated to an EPS bearer context, the UE shall include the Header compression configuration IE in the BEARER RESOURCE MODIFICATION REQUEST message if the network indicated "Control plane CIoT EPS optimization supported" and "Header compression for control plane CIoT EPS optimization supported" in the EPS network feature support IE.

After an inter-system change from N1 mode to S1 mode, if:

a) the UE is operating in single-registration mode and has received the interworking without N26 interface indicator set to "interworking without N26 interface not supported" from the network;

b) the PDN type value of the PDN type IE is set to "IPv4", "IPv6" or "IPv4v6";

c) the UE indicates "Control plane CIoT EPS optimization supported" and "Header compression for control plane CIoT EPS optimization supported" in the UE network capability IE of the TRACKING AREA UPDATE REQUEST message; and

d) the network indicates "Control plane CIoT EPS optimization supported" and "Header compression for control plane CIoT EPS optimization supported" in the EPS network feature support IE of the TRACKING AREA UPDATE ACCEPT message;

the UE shall send a BEARER RESOURCE MODIFICATION REQUEST message to the MME and include the Header compression configuration IE to negotiate the header compression configuration.

To indicate a change of 3GPP PS data off UE status associated to a PDN connection, the UE shall include the protocol configuration options IE in the BEARER RESOURCE MODIFICATION REQUEST message and set the 3GPP PS data off UE status only if:

- the network included the 3GPP PS data off support indication in the protocol configuration options IE in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message when the PDN connection was established; or

- the PDU session was established when in N1 mode.

The UE behaves as described in clause 6.3.10.

If the UE requests the modification of a traffic flow aggregate, which is assigned to a dedicated EPS bearer context, it shall ensure that at least one packet filter applicable for the uplink direction remains among the packet filters created on request from the UE in that TFT, or no own packet filters.

NOTE: If the UE requests the release of all bearer resources of a GBR bearer and includes a Required traffic flow QoS IE in the BEARER RESOURCE MODIFICATION REQUEST message, the network ignores the Required traffic flow QoS IE.

If the UE includes the Required traffic flow QoS IE, the UE shall set the QCI to the current QCI value of the EPS bearer context.

If the UE requests the release of bearer resources, the ESM cause value typically indicates one of the following:

#36: regular deactivation.

To perform authorization for the C2 communication when a PDN connection is already established for the USS communication, the UE shall include the extended protocol configuration options IE in the BEARER RESOURCE MODIFICATION REQUEST message containing 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:

a) CAA-level UAV ID of the UE;

b) if available, the identification information of UAV-C to pair; and

c) if available, the flight authorization information.

NOTE: The CAA-Level UAV ID, pairing information and flight authorization information are coded as described in 3GPP TS 24.501 [54].



Figure 6.5.4.2.1: UE requested bearer resource modification procedure

For the NBIFOM procedures as defined in 3GPP TS 24.161 [36], the UE may send a BEARER RESOURCE MODIFICATION REQUEST message to the MME.

It is possible that the traffic flow aggregate IE is not needed in the following procedures:

- re-negotiation of header compression configuration associated to an EPS bearer context;

- indicating a change of 3GPP PS data off UE status associated to a PDN connection; or

- NBIFOM procedures.

If the traffic flow aggregate IE is not needed, the UE shall set:

- the length indicator of the Traffic flow aggregate IE to the value 1;

- the TFT operation code to "000";

- the E bit to zero; and

- the number of packet filters to zero.

>>>>>>>>>> End of changes <<<<<<<<<<