**3GPP TSG-CT WG1 Meeting #125-eC1-205521**

**Electronic meeting, 20-28 August 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.501** | **CR** | **2574** | **rev** | **2** | **Current version:** | **16.5.1** |  |
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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:*** | Multiple payloads via CPSR | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GProtoc17, 5G\_CIoT | | | | |  | ***Date:*** | | | 2020-07-30 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **C** |  | | | | | ***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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Crrently CPSR message only supports to send the single type of data, e.g. only CIoT CP data, SMS or LCS message.  It could happen that for a UE in the idle mode, received more than one type of uplink data needs to be sent to the network at the same time. In this case, currently it is unspecified on how the UE will preceed them well. Hence, from implementatin perspective, the UE has to proceed them in sequence even they are received from the upper layers at the same time. Then NAS signalling exchanges are needed for each type of pending uplink data.  In the case of the transported data is more than 254 octets or there is other optional IEs to be sent, the data will be transported using Payload container type IE and Payload container type IE. Which is very aligned with using the UL NAS transport for delivering such data in the connected mode.  As per current UL NAS transport, it has already supported to transport the multiple payloads with different payload types in the single NAS message. This indeed saves unnecessary NAS signalling exchanges when the UE needs to send more than one type of uplink data at the same time.  Hence, it is also beneficial for the CPSR message to support multiple payloads with different payload types when the UE using CIoT CP optimization needs to send more than one type of uplink data at the same time from the idle mode.  Also, when multiple payloads are used, some option IEs associated with per data are not needed which will be included in the single Payload container IE. This needs to be clarified for some IEs for UL NAS transport message as well.  Finally, it could happen that the UE has more than one uplink data with the same type to be sent at the same time, e.g. the UE may have more than one 5GSM messages to be sent in the connected mode via the UL NAS transport message. Hence, it is better to add a NOTE to capture this in the Payload container IE coding. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | It proposes to enhance the CPSR message to support multiple payloads with different payload types when the UE using CIoT CP optimization needs to send more than one type of uplink data at the same time from the idle mode.  It clarified for some option IEs associated with per data are not needed when multiple payloads are used.  It proposes to add a NOTE in the Payload container IE coding to capture that for the payload container type "Multiple payloads", the payload container type field of different payload container entries can have the same payload container type value. | | | | | | | | |
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| ***Consequences if not approved:*** | | It is unspecified on how the UE using CIoT CP optimization to proceed when there are more than one type of uplink data needs to be sent at the same time from the idle mode. To proceed it in sequence is not an efficient way.  Some option IEs’ inclusion are not fully correct. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.6.1.2.2, 5.6.1.4.2, 8.2.10.4, 8.2.10.8, 8.2.10.9, 8.2.30.2, 8.2.30.7, 9.11.3.39 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\* \* \* First Change \* \* \* \*

5.6.1.2.2 UE is using 5GS services with control plane CIoT 5GS optimization

The UE shall send a CONTROL PLANE SERVICE REQUEST message, start T3517 and enter the state 5GMM-SERVICE-REQUEST-INITIATED.

For case a in subclause 5.6.1.1, the Control plane service type of the CONTROL PLANE SERVICE REQUEST message shall indicate "mobile terminating request". If the UE only has uplink CIoT user data or SMS to be sent, the UE shall:

a) if the data size is not more than 254 octets and there is no other optional IE to be included in the message:

1) for sending CIoT user data, set the Data type field to "control plane user data", include the PDU session ID, data, and Downlink data expected (DDX) (if available), in the CIoT small data container IE; and

2) for sending SMS, set the Data type field to "SMS", include SMS in the CIoT small data container IE; and

b) otherwise if the data size is more than 254 octets or there are other optional IEs to be included in the message:

1) for sending CIoT user data, set the Payload container type IE to "CIoT user data container", include data in the Payload container IE as described in subclause 5.4.5.2.2; and

2) for sending SMS, set the Payload container type IE to "SMS" and include data in the Payload container IE as described in subclause 5.4.5.2.2.

NOTE 1: The term DDX used in the present document corresponds to the term NAS RAI used in 3GPP TS 23.502 [9].

For case c, and case d in subclause 5.6.1.1, if the UE has pending CIoT user data that is to be sent via the control plane in subclause 5.6.1.1, the UE shall set the Control plane service type of the CONTROL PLANE SERVICE REQUEST message to "mobile originating request". If the UE has only uplink CIoT user data, SMS or location services message to be sent, the UE shall:

a) if the data size is not more than 254 octets, there is no other optional IE to be included in the CONTROL PLANE SERVICE REQUEST message, and the data being sent is:

1) CIoT user data, set the Data type field to "control plane user data", include the PDU session ID, data, and Downlink data expected (DDX) (if available), in the CIoT small data container IE;

2) location services message, set the Data type field to "Location services message container" and Downlink data expected (DDX), if available, in the CIoT small data container IE, and:

i) if routing information is provided by upper layers:

A) set the length of additional information field in the CIoT small data container IE to the length of routing information provided by upper layer location services application (see subclause 9.11.3.67), and set the additional information field in the CIoT small data container IE to the routing information provided by upper layer location services application (see subclause 9.11.3.67); or

B) otherwise set the length of additional information field in the CIoT small data container IE to zero. In this case the Additional information field of the CIoT small data container IE shall not be included; and

ii) set the Data contents field of the CIoT small data container IE to the location services message payload; or

3) SMS, set the Data type field to "SMS", include SMS in the CIoT small data container IE; or

b) otherwise if the data size is more than 254 octets or there are other optional IEs to be included in the CONTROL PLANE SERVICE REQUEST message, and the data being sent is:

1) CIoT user data, set the Payload container type IE to "CIoT user data container", include data in the Payload container IE as described in subclause 5.4.5.2.2;

2) location services message, set the Payload container type IE to "Location services message container", include data in the Payload container IE as described in subclause 5.4.5.2.2. If the upper layer location services application provides the routing information set the Additional information IE to the routing information as described in subclause 5.4.5.2.2; or

3) SMS, set the Payload container type IE to "SMS" and include data in the Payload container IE as described in subclause 5.4.5.2.2.

For case a, case c, and case d in subclause 5.6.1.1, if the UE has more than one of uplink CIoT user data, SMS and location services message to be sent at the same time, the UE shall:

a) set the Payload container type IE to "Multiple payloads"; and

b) set each payload container entry of the Payload container IE (see subclause 9.11.3.39), as follows:

1) for CIoT user data:

i) set the payload container type field of the payload container entry to "CIoT user data container" as described in subclause 5.4.5.2.2;

ii) set the payload container entry contents field of the payload container entry to the user data container as described in subclause 5.4.5.2.2, and

iii) set the optional IE fields of the payload container entry, to the PDU session ID, and Release assistance indication (if available) as described in subclause 5.4.5.2.2;

2) for SMS:

i) set the payload container type field of the payload container entry to "SMS" as described in subclause 5.4.5.2.2; and

ii) set the payload container entry contents field of the payload container entry to the SMS payload as described in subclause 5.4.5.2.2; and

3) for location services message:

i) set the payload container type field of the payload container entry to "Location services message container" as described in subclause 5.4.5.2.2;

ii) set the payload container entry contents field of the payload container entry to the Location services message payload as described in subclause 5.4.5.2.2; and

iii) set the optional IE fields of the payload container entry, to the routing information, if provided by the upper layer location services application as described in subclause 5.4.5.2.2.

For case a, if the UE has pending user data that is to be sent via the user plane in subclause 5.6.1.1, the UE shall set the Control plane service type of the CONTROL PLANE SERVICE REQUEST message to "mobile terminating request". The UE shall include the Uplink data status IE in the CONTROL PLANE SERVICE REQUEST message to indicate which PDU session(s) have pending user data to be sent via user-plane resources.

For cases d and k, if the UE has pending user data that is to be sent via the user plane in subclause 5.6.1.1, the UE shall set the Control plane service type of the CONTROL PLANE SERVICE REQUEST message to "mobile originating request". The UE shall include the Uplink data status IE in the CONTROL PLANE SERVICE REQUEST message to indicate which PDU session(s) have pending user data to be sent via user-plane resources.

NOTE 2: For a UE in NB-N1 mode, the Uplink data status IE cannot be used to request the establishment of user-plane resources such that there will be user-plane resources established for a number of PDU sessions that exceeds the UE's maximum number of supported user-plane resources.

For case i) in subclause 5.6.1.1, the Control plane service type of the CONTROL PLANE SERVICE REQUEST message shall indicate "mobile originating request". If the pending message is an UL NAS TRANSPORT message with the Payload container type IE set to:

a) "SMS", "Location services message container", or "CIoT user data container", the UE shall send the CONTROL PLANE SERVICE REQUEST and include the SMS, location services message, or CIoT user data as described in this subclause; or

b) otherwise, the UE shall send the CONTROL PLANE SERVICE REQUEST:

1) without including the the CIoT small data container IE and without including the NAS message container IE if the UE has no other optional IE to be sent; or

2) with the NAS message container IE if the UE has an optional IE to be sent as described in this subclause.

For case j) in subclause 5.6.1.1, the Control plane service type of the CONTROL PLANE SERVICE REQUEST message shall indicate "mobile originating request". The UE shall include the Uplink data status IE in the CONTROL PLANE SERVICE REQUEST message indicating the PDU session(s) for which user-plane resources were active prior to receiving the fallback indication, if any.

The UE may include the PDU session status IE in the CONTROL PLANE SERVICE REQUEST message to indicate which PDU session(s) associated with the access type the CONTROL PLANE SERVICE REQUEST message is sent over are active in the UE.

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

##### 5.6.1.4.2 UE is using 5GS services with control plane CIoT 5GS optimization

For case a in subclause 5.6.1.1, upon receipt of the CONTROL PLANE SERVICE REQUEST message with Control plane service type indicating "mobile terminating request", after completion of the 5GMM common procedures (if initiated) according to subclause 5.6.1.3, the AMF shall send a SERVICE ACCEPT message.

For case c and d in subclause 5.6.1.1, upon receipt of the CONTROL PLANE SERVICE REQUEST message with Control plane service type indicating "mobile originating request", after completion of the 5GMM common procedures (if initiated) according to subclause 5.6.1.3, the AMF shall send a SERVICE ACCEPT message, except for case d when the DDX field of the Release assistance indication IE or the DDX field of the CIoT small data container IE indicates "No further uplink and no further downlink data transmission subsequent to the uplink data transmission is expected".

For case a, c and d:

a) if the CIoT small data container IE is included in the message, the AMF shall decipher the value part of the CIoT small data container IE and:

1) if the Data type field indicates "control plane user data", extract the PDU session ID and data content from the CIoT small data container IE, look up a PDU session routing context for the UE and the PDU session ID, and forward the content of the CIoT small data container IE to the SMF associated with the UE;

2) if the Data type field indicates "SMS", forward the content of the CIoT small data container IE to the SMSF associated with the UE; or

3) if the Data type field indicates "Location services message container", and if

i) length of additional information field in the CIoT small data container IE is zero, forward the value of Data type field and the content of the CIoT small data container IE to the to the location services application; or

ii) otherwise forward the value of Data type field and the content of the CIoT small data container IE to the LMF associated with the routing information that is included in the additional information field of the CIoT small data container IE; or

b) otherwise, the AMF shall decipher the value part of NAS message container IE and:

1) if the Payload container IE is included in the CONTROL PLANE SERVICE REQUEST message and if the Payload container type IE is set to "CIoT user data container", the AMF shall look up a PDU session routing context for the UE and the PDU session ID, and forward the content of the Payload container IE to the SMF associated with the UE;

2) if the Payload container IE is included in the CONTROL PLANE SERVICE REQUEST message and if the Payload container type IE is set to "SMS", the AMF shall forward the content of the Payload container IE to the SMSF associated with the UE;

3) if the PDU session status IE is included in the CONTROL PLANE SERVICE REQUEST message or the AMF needs to perform a PDU session status synchronization, the AMF shall include a PDU session status IE in the SERVICE ACCEPT message to indicate which PDU sessions associated with the access type the SERVICE ACCEPT message is sent over are active in the AMF;

4) if the Uplink data status IE is included in the CONTROL PLANE SERVICE REQUEST message and the UE is:

i) not in NB-N1 mode; or

ii) in NB-N1 mode and the UE does not indicate a request to have user-plane resources established for a number of PDU sessions that exceeds the UE's maximum number of supported user-plane resources;

the AMF shall:

i) indicate the SMF to re-establish the user-plane resources for the corresponding PDU sessions; and

ii) include the PDU session reactivation result IE in the SERVICE ACCEPT message to indicate the user-plane resources re-establishment result of the PDU sessions for which the UE requested to re-establish the user-plane resources;

5) if the Uplink data status IE is included in the CONTROL PLANE SERVICE REQUEST, the UE is in NB-N1 mode, and the UE indicates a request to have user-plane resources established for a number of PDU sessions that exceeds the UE's maximum number of supported user-plane resources, the AMF shall not indicate to the SMF to re-establish the user-plane resources for the corresponding PDU sessions;

6) if the Payload container IE is included in the message and if the Payload container type IE is set to "Location services message container", the AMF shall forward the Payload container type and the content of the Payload container IE to the LMF associated with the routing information included in the Additional information IE of the CONTROL PLANE SERVICE REQUEST message; or

7) otherwise, if the Payload container IE is included in the message and if the Payload container type IE is set to "Multiple payloads", the AMF shall:

i) decode the payload container type field;

ii) decode the optional IE fields and the payload container contents field in the payload container entry; and

iii) handle the content of each payload container entry the same as the content of the Payload container IE and the associated optional IEs as specified in bullets 1), 2) and 6) above according to the payload container type field.

If the DDX field in the CIoT small data container IE or the DDX field of the Release assistance indication IE indicates:

1) "No further uplink and no further downlink data transmission subsequent to the uplink data transmission is expected" and if there is no downlink signalling or downlink data for the UE; or

2) "Only a single downlink data transmission and no further uplink data transmission subsequent to the uplink data transmission is expected" and upon subsequent delivery of the next received downlink data transmission to the UE and if there is no additional downlink signalling or downlink data for the UE,

the AMF initiates the release of the N1 NAS signalling connection (see 3GPP TS 23.502 [9]).

Upon successful completion of the procedure, the UE shall reset the service request attempt counter, stop the timer T3517 and enter the state 5GMM-REGISTERED.

If the PDU session status information element is included in the CONTROL PLANE SERVICE REQUEST message, then the AMF:

a) shall perform a local release of all those PDU sessions which are active on the AMF side associated with the access type the CONTROL PLANE SERVICE REQUEST message is sent over, but are indicated by the UE as being inactive, and

b) request the SMF to perform a local release of all those PDU sessions.

If the PDU session status information element is included in the SERVICE ACCEPT message, then the UE shall perform a local release of all those PDU sessions which are active on the UE side associated with the 3GPP access but are indicated by the AMF as being inactive.

If the user-plane resources cannot be established for a PDU session, the AMF shall include the PDU session reactivation result IE in the SERVICE ACCEPT message indicating that user-plane resources for the corresponding PDU session cannot be re-established, and:

a) if the user-plane resources cannot be established because the SMF indicated to the AMF that the UE is located out of the LADN service area (see 3GPP TS 29.502 [20A]), the AMF shall include the PDU session reactivation result error cause IE with the 5GMM cause set to #43 "LADN not available";

b) if the user-plane resources cannot be established because the SMF indicated to the AMF that only prioritized services are allowed (see 3GPP TS 29.502 [20A]), the AMF shall include the PDU session reactivation result error cause IE with the 5GMM cause set to #28 "restricted service area"; or

c) if the user-plane resources cannot be established because:

1) the SMF indicated to the AMF that the resource is not available in the UPF (see 3GPP TS 29.502 [20A]); or

2) the UE is in NB-N1 mode and the result will lead to user-plane resources established for more than two PDU sessions (see 3GPP TS 23.502 [9])

the AMF shall include the PDU session reactivation result error cause IE with the 5GMM cause set to #92"insufficient user-plane resources for the PDU session":

NOTE: For a UE that is not in NB-N1 mode, it is up to UE implementation when to re-send a request for user-plane re-establishment for the associated PDU session after receiving a PDU session reactivation result error cause IE with a 5GMM cause set to #92 "insufficient user-plane resources for the PDU session".

For case d) in subclause 5.6.1.1, the UE shall also treat the indication from the lower layers that the RRC connection has been released as successful completion of the procedure. The UE shall reset the service request attempt counter, stop the timer T3517 and enter the state 5GMM-REGISTERED.

Editor's note: abnormal cases for the CONTROL PLANE SERVICE REQUEST on the UE and network side are FFS.

Upon receipt of the CONTROL PLANE SERVICE REQUEST message with uplink data:

- if the DDX field of the Release assistance indication IE or the DDX field of the CIoT small data container IE is set to "No further uplink and no further downlink data transmission subsequent to the uplink data transmission is expected" in the message;

- if the AMF decides to forward the uplink data piggybacked in the CONTROL PLANE SERVICE REQUEST message; and

- if the AMF decides to activate the congestion control for transport of user data via the control plane,

then the AMF shall send SERVICE ACCEPT message with the T3448 value IE included.

If the AMF decides to deactivate the congestion control for transport of user data via the control plane, then the AMF shall delete the stored control plane data back-off time for the UE and the AMF shall not include timer T3448 value IE in the SERVICE ACCEPT message.

If the T3448 value IE is present in the received SERVICE ACCEPT message and the value indicates that this timer is neither zero nor deactivated, the UE shall:

a) stop timer T3448 if it is running;

b) consider the transport of user data via the control plane as successful; and

c) start timer T3448 with the value provided in the T3448 value IE.

If the UE is using 5GS services with control plane CIoT 5GS optimization, the T3448 value IE is present in the SERVICE ACCEPT message and the value indicates that this timer is either zero or deactivated, the UE shall ignore the T3448 value IE and proceed as if the T3448 value IE was not present.

If the UE in 5GMM-IDLE mode initiated the service request procedure by sending a CONTROL PLANE SERVICE REQUEST message and the SERVICE ACCEPT message does not include the T3448 value IE and if timer T3448 is running, then the UE shall stop timer T3448.

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

#### 8.2.10.4 Request type

The UE shall include this IE when the PDU session ID IE is included, the Payload container IE contains the PDU SESSION ESTABLISHMENT REQUEST message or the PDU SESSION MODIFICATION REQUEST which is not initiated to indicate a change of 3GPP PS data off UE status associated to a PDU session, and the Payload container type IE is not set to "Multiple payloads".

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

#### 8.2.10.8 MA PDU session information

The UE may include this IE if the Request type IE is included and is not set to "initial emergency request " or "existing emergency PDU session" in the UL NAS TRANSPORT message and the Payload container type IE is not set to "Multiple payloads".

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

#### 8.2.10.9 Release assistance indication

The UE may include this IE when the Payload container type IE is not set to "Multiple payloads" to inform the network whether:

- no further uplink and no further downlink data transmission is expected; or

- only a single downlink data transmission (e.g. acknowledgement or response to uplink data) and no further uplink data transmission subsequent to the uplink data transmission is expected.

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

#### 8.2.30.2 CIoT small data container

This IE shall be included if the UE only needs to send uplink small user data, SMS or location services message that is not more than 254 bytes, and there is no other optional IE to be sent.

NOTE: When the UE determines to use the CIoT small data container IE to send uplink data in this message, there is no other optional IEs in this message.

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

#### 8.2.30.7 Release assistance indication

The UE may include this IE when the Payload container type IE is not set to "Multiple payloads" to inform the network whether:

- no further uplink and no further downlink data transmission is expected; or

- only a single downlink data transmission (e.g. acknowledgement or response to uplink data) and no further uplink data transmission subsequent to the uplink data transmission is expected.

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

#### 9.11.3.39 Payload container

The purpose of the Payload container information element is to transport one or multiple payloads. If multiple payloads are transported, the associated information of each payload are also transported together with the payload.

The Payload container information element is coded as shown in figure 9.11.3.39.1, figure 9.11.3.39.2, figure 9.11.3.39.3, figure 9.11.3.39.4 and table 9.11.3.39.1.

The Payload container is a type 6 information element with a minimum length of 4 octets and a maximum length of 65538 octets.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  | |
| Payload container IEI | | | | | | | | | | octet 1 |
| Length of payload container contents | | | | | | | | | | octet 2 |
|  | | | | | | | | | | octet 3 |
|  | | | | | | | | | | octet 4 |
| Payload container contents | | | | | | | | | |  |
|  | | | | | | | | | | octet n |

Figure 9.11.3.39.1: Payload container information element

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | |  | |
| Number of entries | | | | | | | | | octet 4 | |
| Payload container entry 1 | | | | | | | | | octet 5  octet x2 | |
| Payload container entry 2 | | | | | | | | | octet x2+1  octet x3 | |
| …… | | | | | | | | | … | |
| Payload container entry i | | | | | | | | | octet xi +1  octet n | |

Figure 9.11.3.39.2: Payload container contents with Payload container type "Multiple payloads"

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | | 4 | 3 | 2 | 1 | |  | |
| Length of Payload container entry | | | | | | | | | | octet xi +1  octet xi +2 | |
| Number of optional IEs | | | | | Payload container type | | | | | octet xi +3 | |
| Optional IE 1 | | | | | | | | | | octet xi +4  octet y2 | |
| Optional IE 2 | | | | | | | | | | octet y2+1  octet y3 | |
| … | | | | | | | | | |  | |
| Optional IE j | | | | | | | | | | octet yj+1  octet z | |
| Payload container entry contents | | | | | | | | | | octet z+1  octet n | |

Figure 9.11.3.39.3: Payload container entry

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | |  | |
| Type of optional IE | | | | | | | | | octet xi +4 | |
| Length of optional IE | | | | | | | | | octet xi +5 | |
| Value of optional IE | | | | | | | | | octet xi +6  octet y2 | |

Figure 9.11.3.39.4: Optional IE

Table 9.11.3.39.1: Payload container information element

|  |  |  |
| --- | --- | --- |
| Payload container contents (octet 4 to octet n); max value of 65535 octets | | |
| If the payload container type is set to "SOR transparent container" and is included in the DL NAS TRANSPORT message, the payload container contents are coded the same way as the contents of the SOR transparent container IE (see subclause 9.11.3.51) for SOR data type is set to value "0" except that the first three octets are not included.  If the payload container type is set to "SOR transparent container" and is included in the UL NAS TRANSPORT message, the payload container contents are coded the same way as the contents of the SOR transparent container IE (see subclause 9.11.3.51) for SOR data type is set to value "1" except that the first three octets are not included.  If the payload container type is set to "UE parameters update transparent container" and is included in the DL NAS TRANSPORT message, the payload container contents are coded the same way as the contents of the UE parameters update transparent container IE (see subclause 9.11.3.53A) for UE parameters update data type is set to value "0" except that the first three octets are not included.  If the payload container type is set to "UE parameters update transparent container" and is included in the UL NAS TRANSPORT message, the payload container contents are coded the same way as the contents of the UE parameters update transparent container IE (see subclause 9.11.3.53A) for UE parameters update data type is set to value "1" except that the first three octets are not included.  If the payload container type is set to "SMS", the payload container contents contain an SMS message (i.e. CP-DATA, CP-ACK or CP-ERROR) as defined in subclause 7.2 in 3GPP TS 24.011 [13].  If the payload container type is set to "CIoT user data container" and is included in the UL NAS TRANSPORT, DL NAS TRANSPORT or CONTROL PLANE SERVICE REQUEST message, the payload container contents are coded the same way as the contents of the user data container IE (see subclause 9.9.4.24 in 3GPP TS 24.301 [15]) except that the first three octets are not included.  If the payload container type is set to "SMS" and is included in the CONTROL PLANE SERVICE REQUEST message, the payload container contents are coded the same way as the contents of the NAS message container IE (see subclause 9.9.3.22 in 3GPP TS 24.301 [15]) except that the first two octets are not included.  If the payload container type is set to "Location services message container" and is included in the UL NAS TRANSPORT, DL NAS TRANSPORT or CONTROL PLANE SERVICE REQUEST message, the payload container contents include location services message payload.  If the payload container type is set to "LTE Positioning Protocol (LPP) message container" and is included in the UL NAS TRANSPORT or DL NAS TRANSPORT message, the payload container contents include LPP message payload.  The coding of Payload container contents is dependent on the particular application.  If the payload container type is set to "Multiple payloads", the number of entries field represents the total number of payload container entries, and the payload container entry contents field is coded as a list of payload container entry according to figure 9.11.3.39.2, with each payload container entry is coded according to figure 9.11.3.39.3 and figure 9.11.3.39.4. | | |
| Payload container entry  For each payload container entry, the payload container type field represents the payload container type value as described in subclause 9.11.3.40, the coding of payload container contents field is dependent on the particular application, and the number of optional IEs field represents the total number of optional IEs associated with the payload container entry contents field in the payload container entry. The error handlings for optional IEs specified in subclauses 7.6.1, 7.6.3 and 7.7.1 shall apply to the optional IEs included in the payload container entry. | | |
| Optional IEs  Type of optional IE (octet xi +4)  This field contains the IEI of the optional IE.  Length of optional IE (octet xi+5)  This field indicates binary coded length of the value of the optional IE entry.  Value of optional IE (octet xi+6 to octet y2)  This field contains the value of the optional IE entry with the value part of the referred information element based on following optional IE reference. If the Request type is included, the value part of the Request type shall be encoded in the bits 1 to 4 and bits 5 to 8 shall be coded as zero. | | |
| IEI | Optional IE name | Optional IE reference |
| 12 | PDU session ID | PDU session identity 2 (see subclause 9.11.3.41) |
| 24 | Additional information | Additional information (see subclause 9.11.2.1) |
| 58 | 5GMM cause | 5GMM cause (see subclause 9.11.3.2) |
| 37 | Back-off timer value | GPRS timer 3 (see subclause 9.11.2.5) |
| 59 | Old PDU session ID | PDU session identity 2 (see subclause 9.11.3.41) |
| 80 | Request type | Request type (see subclause 9.11.3.47) |
| 22 | S-NSSAI | S-NSSAI (see subclause 9.11.2.8) |
| 25 | DNN | DNN (see subclause 9.11.2.1B) |
| F0 | Release assistance indication | Release assistance indication (see subclause 9.11.3.46A) |
| A0 | MA PDU session information | MA PDU session information (see subclause 9.11.3.31A) |
| NOTE: For the payload container type "Multiple payloads", the payload container type field of different payload container entries can have the same payload container type value, e.g. "N1 SM information", which means the UE has more than one 5GSM messages to be sent at the same time. | | |

\* \* \* End of Change \* \* \* \*