**3GPP TSG-SA5 Meeting #145-e *S5-225291***

**e-meeting, 15 - 24 August 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **32.270** | **CR** | **0034** | **rev** | **-** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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|  | | | | | | | | | | |
| ***Title:*** | Addition of converged charging information | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson LM | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | MMS\_CH\_SBI | | | | |  | ***Date:*** | | | 2022-07-26 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Support of converged charging architecture for MMS | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Addition of converged charging information | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | MMS won’t be able to support converged charging | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.2a (new), 6.5 (new), 6.6 (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

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| **First change** |

## 6.2a Data description for MMS converged charging

### 6.2a.1 Message contents

#### 6.2a.1.1 General

The Charging Data Request and Charging Data Response are specified in TS 32.290 [2] and include charging information. The Charging Data Request can be of type [Event, Initial, Termination].

Table 6.2a.1.1.1 describes the use of these messages for converged charging.

Table 6.2a.1.1.1: Converged charging messages reference table

|  |  |  |
| --- | --- | --- |
| **Message** | **Source** | **Destination** |
| Charging Data Request | MMS Node | CHF |
| Charging Data Response | CHF | MMS Node |

The following clauses describe the different fields used in the Charging Data messages and the category in the tables is used according to the charging data configuration defined in clause 5.4 of TS 32.240 [1].

#### 6.2a.1.2 Structure for the converged charging message formats

##### 6.2a.1.2.1 Charging Data Request message

Table 6.2a.1.2.1.1 illustrates the basic structure of a Charging Data Request message as used for MMS converged charging.

Table 6.2a.1.2.1.1: Charging Data Request message contents

| **Information Element** | **Category** | **Description** |
| --- | --- | --- |
| Session Identifier | OC | Described in TS 32.290 [2] |
| Subscriber Identifier | OM | Described in TS 32.290 [2] |
| NF Consumer Identification | M | Described in TS 32.290 [2] |
| Charging Identifier | OM | Described in TS 32.290 [2] |
| Invocation Timestamp | M | Described in TS 32.290 [2] |
| Invocation Sequence Number | M | Described in TS 32.290 [2] |
| Retransmission Indicator | - | This field is not applicable. |
| One-time Event | OC | Described in TS 32.290 [2] |
| One-time Event Type | OC | Described in TS 32.290 [2] |
| Notify URI | - | This field is not applicable. |
| Supported Features | OC | Described in TS 32.290 [2] |
| Service Specification Information | OC | Described in TS 32.290 [2] |
| Triggers | - | This field is not applicable. |
| Multiple Unit Usage | OC | This field is present when the number of units is beyond one (i.e., more than one MMS) |
| Rating Group | M | Described in TS 32.290 [2] |
| Requested Unit | OC | Described in TS 32.290 [2] |
| Time | - | This field is not applicable. |
| Total Volume | - | This field is not applicable. |
| Uplink Volume | - | This field is not applicable. |
| Downlink Volume | - | This field is not applicable. |
| Service Specific Units | OC | This field is present when the number of units is beyond one (i.e., more than one MMS) |
| Used Unit Container | OC | This field holds MMS charging information when more than one MMS. It may have multiple occurrences. |
| Service Identifier | OC | Described in TS 32.290 [2] |
| Quota management Indicator | OC | Described in TS 32.290 [2] |
| Triggers | - | This field is not applicable. |
| Trigger Timestamp | - | This field is not applicable. |
| Time | - | This field is not applicable. |
| Total Volume | OC | Described in TS 32.290 [2] |
| Uplink Volume | - | This field is not applicable. |
| Downlink Volume | - | This field is not applicable. |
| Service Specific Unit | OC | Described in TS 32.290 [2] |
| Event Time Stamps | OC | Described in TS 32.290 [2] |
| Local Sequence Number | OM | Described in TS 32.290 [2] |
| MMS Charging Information | OM | This field holds the MMS specific information described in clause 6.5.2 |

##### 6.2a.1.2.2 Charging Data Response message

Table 6.2a.1.2.2.1 illustrates the basic structure of a Charging Data Response message as used for MMS converged charging.

Table 6.2a.1.2.2.1: Charging Data Response Message Contents

| **Information Element** | **Category** | **Description** |
| --- | --- | --- |
| Session Identifier | OC | Described in TS 32.290 [2] |
| Invocation Timestamp | M | Described in TS 32.290 [2] |
| Invocation Result | OC | Described in TS 32.290 [2] |
| Invocation Sequence Number | M | Described in TS 32.290 [2] |
| Session Failover | OC | Described in TS 32.290 [2] |
| Supported Features | OC | Described in TS 32.290 [2] |
| Triggers | - | This field is not applicable. |
| Multiple Unit information | OC | This field is applicable for ECUR. |
| Result Code | OC | Described in TS 32.290 [2] |
| Rating Group | OM | Described in TS 32.290 [2] |
| Granted Unit | OC | Described in TS 32.290 [2] |
| Tariff Time Change | - | This field is not applicable. |
| Time | - | This field is not applicable. |
| Total Volume | - | This field is not applicable. |
| Uplink Volume | - | This field is not applicable. |
| Downlink Volume | - | This field is not applicable. |
| Service Specific Units | OC | This field is present when the number of units is beyond one (i.e., more than one MMS) |
| Validity Time | OC | Described in TS 32.290 [2] |
| Final Unit Indication | - | This field is not applicable. |
| Time Quota Threshold | - | This field is not applicable. |
| Volume Quota Threshold | - | This field is not applicable. |
| Unit Quota Threshold | - | This field is not applicable. |
| Quota Holding Time | - | This field is not applicable. |
| Triggers | - | This field is not applicable. |

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| **Second change** |

## 6.5 Definition of the MMS converged charging information

### 6.5.1 General

The Charging Information parameter used for MMS converged charging is provided in the following clauses.

### 6.5.2 Definition of MMS charging information

MMS specific charging information used for MMS converged charging is provided within the MMS charging Information.

Table 6.5.2.1: Structure of MMS Charging information

|  |  |  |
| --- | --- | --- |
| Information Element | Category | Description |
| Originator Info | OM | This field is a grouped field and holds information on originator of the MMS |
| Originator SUPI | OM | This field holds the SUPI of the originator of the MMS. This field is present if different from subscriber identifier field. |
| Originator GPSI | O**C** | This field holds the GPSI of the originator of the MMS. |
| Originator Other Address | OM | This field holds the address of the originator of the MMS, when different from SUPI and GPSI e.g., email, short code.  This field may have multiple occurrences. |
| Recipient Info | OC | This field holds recipient information for the MMS. It occurs at most one time in the MMS delivery case. |
| Recipient SUPI | OM | This field holds the SUPI of the recipient of the MMS. This field is present if different from subscriber identifier field. |
| Recipient GPSI | O**C** | This field holds the GPSI of the recipient of the MMS. |
| Recipient Other Address | OC | This field holds the address of the recipient of the MMS, when different from SUPI and GPSI, if available e.g., email, short code.  This field may have multiple occurrences |
| User Location Info | OC | This field holds the information about the location of the subscriber during the MMS transaction. |
| UE Time Zone | OC | This field indicates the offset between universal time and local time in steps of 15 minutes of where the UE currently resides. |
| RAT Type | OC | This field holds information about the radio access technology used for the MMS transaction. |
| Submission Time | OC | The time at which the MM was submitted or forwarded as specified in the corresponding MM1 message. |
| MM Content Type | OC | The content type of the MM content. |
| Priority | OC | The priority (importance) of the message if specified by the originator MMS User Agent. |
| Message ID | OC | This field holds the MM identification provided by the Originator MMS Node. |
| Message Type | OC | This field holds the type of the message according to the MMS transactions e.g., submission, delivery. |
| Message Size | OC | This field holds the total size of the MMS. |
| Message Class | OC | The class of the MM (e.g., personal, advertisement, information service) if specified by the originator MMS User Agent. |
| Delivery Report Requested | OC | This field indicates whether a delivery report has been requested by the originator MMS User Agent or not. |
| Read Reply Report Requested | OC | A request for read-reply report as specified in the MM1 message. |
| Applic ID | OC | This field holds the identification of the destination application that the underlying MMS abstract message was addressed to. |
| Reply Applic ID | OC | This field holds the identifier of a “reply path” i.e., the identifier of the application to which delivery reports, read-reply reports and reply-MMs are addressed. |
| Aux Applic Info | OC | This field holds additional application/implementation specific control information. |
| Content Class | OC | This field classifies the content of the MM to the smallest content class to which the MM belongs |
| DRM Content | OC | This field indicates if the MM contains DRM-protected content. |
| Adaptations | OC | This field indicates if the Originator allows adaptation of the content (default True). |
| VAS Identifier | OC | This field indicates the VAS that originated the MM. Only present in MM1 Retrieval and if the MM was received over an MM7 interface. |
| VASP Identifier | OC | This field indicates the VASP that originated the MM. Only present in MM1 Retrieval and if the MM was received over an MM7 interface. |

Editor’s Note: The content of the table is FFS.

### 6.5.3 Detailed message format for converged charging

The following clause specifies per Operation Type the charging data that are sent by MMS Node for MMS converged charging.

The Operation Types are listed in the following order: I (Initial)/T (Termination)/E (Event). Therefore, when all Operation Types are possible it is marked as ITE. If only some Operation Types are allowed for a node, only the appropriate letters are used (i.e., IT or E) as indicated in the table heading. The omission of an Operation Type for a particular field is marked with "-" (i.e., I-E). Also, when an entire field is not allowed in a node the entire cell is marked as "-".

Table 6.5.3.1 defines the basic structure of the supported fields in the *Charging Data Request* message for MMS converged charging.

Table 6.5.3.1: Supported fields in *Charging Data Request* message

| Information Element | Node Type | MMS Node |
| --- | --- | --- |
| Supported Operation Types | ITE |
| Session Identifier | | ITE |
| Subscriber Identifier | | ITE |
| NF Consumer Identification | | ITE |
| Charging Identifier | | ITE |
| Invocation Timestamp | | ITE |
| Invocation Sequence Number | | ITE |
| Retransmission Indicator | | - |
| One-time Event | | --E |
| One-time Event Type | | --E |
| Notify URI | | - |
| Supported Features | | I-E |
| Service Specification Information | | ITE |
| Triggers | | - |
| Multiple Unit Usage | | ITE |
| MMS Charging Information | |  |
| Originator Info | | ITE |
| Recipient Info | | ITE |
| User Location Info | | ITE |
| UE Time Zone | | ITE |
| RAT Type | | ITE |
| Submission Time | | ITE |
| MM Content Type | | ITE |
| Priority | | ITE |
| Message ID | | ITE |
| Message Type | | ITE |
| Message Size | | ITE |
| Message Class | | ITE |
| Delivery Report Requested | | ITE |
| Read Reply Report Requested | | ITE |
| Applic ID | | ITE |
| Reply Applic ID | | ITE |
| Aux Applic Info | | ITE |
| Content Class | | ITE |
| DRM Content | | ITE |
| Adaptations | | ITE |
| VAS Identifier | | ITE |
| VASP Identifier | | ITE |

Table 6.5.3.2 defines the basic structure of the supported fields in the *Charging Data Response* message for MMS converged charging.

Table 6.5.3.2: Supported fields in *Charging Data Response* message

| Information Element | Node Type | MMS Node |
| --- | --- | --- |
| Supported Operation Types | ITE |
| Session Identifier | | ITE |
| Invocation Timestamp | | ITE |
| Invocation Result | | ITE |
| Invocation Sequence Number | | ITE |
| Session Failover | | I-- |
| Triggers | | - |
| Multiple Unit information | | I-E |
| Result Code | | I-- |
| Rating Group | | I-- |
| Granted Unit | | I-- |
| Validity Time | | I-- |
| Final Unit Indication | | - |
| Time Quota Threshold | | - |
| Volume Quota Threshold | | - |
| Unit Quota Threshold | | - |
| Quota Holding Time | | - |
| Triggers | | - |

### 6.5.4 Formal MMS converged charging parameter description

#### 6.5.4.1 MMS charging CHF CDR parameters

The detailed definitions, abstract syntax and encoding of the MMS charging CHF CDR parameters are specified in TS 32.298 [51].

#### 6.5.4.2 MMS charging resources attributes

The detailed definitions of resources attributes used for MMS charging are specified in TS 32.291 [3].

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| **Third change** |

## 6.6 Bindings for MMS converged charging

This mapping between the Information Elements, resource attributes and CHF CDR parameters for MMS converged charging is described in clause 7 of TS 32.291 [3].

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| **End of changes** |