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Presentation of Technical Specification to TSG SA

Presentation to:	**TSG SA Meeting #21**
Document for presentation:	**TS 32.270, Version 1.0.0**
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Abstract of document:

Work done against the WIDs contained in SP-030047 (Charging Management: Work Item ID: CH) and in SP-030050 (Charging Management for Service Charging: Work Item ID: CH-SC).

This TS on the Multimedia Messaging (MMS) charging specifies the MMS offline and online charging functions based on the functional stage 2 description of the MMS in TS 23.140.
This TS includes the MMS-specific charging architecture and scenarios. It specifies the structure and content of the CDRs for offline charging as well as the charging events for online charging.

Changes since last presentation to TSG-SA:

- New

Outstanding Issues:

The online MMS charging description is not completed yet. The expected completion date is 03/2004.

Contentious Issues:

- None.

3GPP TS 32.270 V1.0.0 (2003-09)

Technical Specification

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Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

1 Scope

The present document is part of a series of documents that specify charging functionality and charging management in GSM/UMTS networks. The GSM/UMTS core network charging architecture and principles are specified in document TS 32.240 [1], which provides an umbrella for other charging management documents that specify:

- the content of the CDRs per domain and subsystem (offline charging);
- the content of real-time charging messages per domain / subsystem (online charging);
- the functionality of online and offline charging for those domains and subsystems;
- the interfaces that are used in the charging framework to transfer the charging information (i.e. CDRs or charging events).

The complete document structure for these TSs is defined in TS 32.240 [1].

The present document specifies the MMS offline and online charging functions based on the functional stage 2 descriptions of the MMS in TS 23.140 [61]. This charging description includes the MMS specific charging architecture and scenarios. It specifies the structure and content of the CDRs for offline charging as well as the charging events for online charging. The parameters, abstract syntax and encoding rules for the MMS-CDR types used for MMS offline charging are specified in TS 32.298 [41]. The 3GPP Diameter application that is used for MMS online charging is specified in TS 32.299 [40]. The mechanisms used to transfer the CDRs from the generating service node (i.e. the MMS R/S) to the operator's billing domain (e.g. the billing system or a mediation device) are specified in TS 32.297 [42].

All references, abbreviations, definitions, descriptions, principles and requirements, used in the present document, that are common across 3GPP TSs, are defined in the 3GPP Vocabulary, TR 21.905 [50]. Those that are common across charging management in GSM/UMTS domains or subsystems are provided in the umbrella document TS 32.240 [1] and are copied into clause 3 of the present document for ease of reading. Finally, those items that are specific to the present document are defined exclusively in the present document.

2 References

The following documents contain provisions, which through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document.*

a) **The 3GPP charging specifications**

[1] 3GPP TS 32.240: "Telecommunication management; Charging management; Charging Architecture and Principles".

[2]-[39] Void.

[40] 3GPP TS 32.299: "Telecommunication management; Charging management; Diameter charging application".

[41] 3GPP TS 32.298: "Telecommunication management; Charging management; Charging Data Record (CDR) parameter description".

[42] 3GPP TS 32.297: "Telecommunication management; Charging management; Charging Data Records (CDR) file format and transfer".

[43]-[49] Void.

b) **Common 3GPP specifications**

[50] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[51]-[59] Void.

c) **other Domain and Service specific 3GPP / ETSI specifications**

[60] 3GPP TS 22.140: "Service aspects; Stage 1; Multimedia Messaging Service".

[61] 3GPP TS 23.140: "Multimedia Messaging Service (MMS); Functional description; Stage 2".

3 Definitions, abbreviations and symbols

3.1 Definitions

For the purposes of the present document, the following terms and definitions given in 3GPP TR 21.905 [50], 3GPP TS 32.240 [1] and 3GPP TS 22.140 [60] and the following apply:

delivery report: feedback information provided to an originator MMS User Agent by an MMS Relay/Server about the status of the delivery of an MM

forwarded MM: MM originally sent from a sender to an intended recipient which is then forwarded to other recipient(s) and to which a delivery report and/or read-reply report may refer and which may be subject to further forwarding

forwarding MMS user agent: MMS user agent that is the intended recipient of an MM and that requests forwarding of the MM for delivery to other recipient(s) without having to first download the MM

message ID: unique identifier for an MM

MMSE: collection of MMS-specific elements under the control of a single administration

MMS Relay/Server: MMS-specific network entity/application that is under the control of an MMS service provider. An MMS relay/server transfers messages, provides operations of the MMS that are specific to or required by the mobile environment and provides (temporary and/or persistent) storage services to the MMS

MMS user agent: application residing on a user equipment, a mobile station or an external device that performs MMS-specific operations on a user's behalf. An MMS user agent is not considered part of an MMSE

original MM: (initial) MM sent from a sender to a recipient and to which a delivery report and/or a read-reply report and/or a reply-MM may refer and/or which may be subject to being forwarded

originator MMS user agent: an MMS user agent associated with the sender of an MM

read-reply report: feedback information to an originator MMS user agent by a recipient MMS User Agent about the status of handling/rendering of an original MM in a recipient MMS user agent

recipient MMS user agent: MMS user agent associated with the recipient of an MM

reply-MM: In case of reply-charging the first reply accepted by the recipient MMS Relay/Server (after checking the reply charging limitations, such as the latest time of submission) is called a reply-MM.

3.2 Abbreviations

For the purposes of the present document, the abbreviations defined in 3GPP TR 21.905 [50], 3GPP TS 23.140 [61], 3GPP TS 32.240 [1] and the following apply:

BD	Billing Domain
CDR	Charging Data Record
CGF	Charging Gateway Function
EM	Element Manager
MIME	Multipurpose Internet Mail Extensions
MM	Multimedia Message
MMS	Multimedia Messaging Service
MMSE	Multimedia Messaging Service Element
MMSO	Multimedia Messaging Service Originator
MMSR	Multimedia Messaging Service Recipient
MMSR/S	Multimedia Messaging Relay/Server
VAS	Value Added Service
VASP	Value Added Service Provider

3.3 Symbols

For the purposes of the present document, the following symbols apply:

i	Charging Trigger in combined MMS Relay/Server
Ai	Charging Trigger in Originator MMS Relay/Server
Bi	Charging Trigger in Recipient MMS Relay/Server
Bm	Reference point for the CDR file transfer for MMS to the BD, i.e. between the MMS Relay/Server and a BD

4 Architecture considerations

The architecture for MMS charging is the same as for the CS domain. The usage of the file based interface employed to transfer the MMS-CDR files from the CDR generating node to a post-processing system residing in the operator's billing domain are defined in TS 32.297 [42].

The MMS R/S has an integrated CDGF and CGF. Figure 4.1 shows the offline charging architecture mapping for MMS and other SN that incorporate a CDGF/CGF with the external Charging Gateway with CGF.

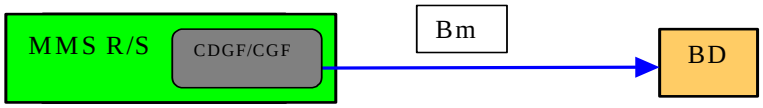

Figure 4.1 MMS Charging architecture

Editors Note: Specific descriptions of the MM Service including MMBox and VASP are also needed.

5 MMS charging principles and scenarios

Editor's note: Include a brief introduction statement saying that this clause contains the CDR and charging event types and their trigger conditions.

5.1 MMS charging principles

The MMS Relay/Server collects charging information for each MM transaction that crosses the relevant reference points defined in 3GPP TS 22.140 [60]. The triggers for the collection of charging information and the applicable reference points are specified in subclause 5.2 for offline charging and in subclause 5.3 for online charging.

In line with the requirements laid down in TS 22.140 [60] and TS 23.140 [61] the MMS R/S collects charging information such as:

- the destination and source addresses used by the UA;
- identification of the MMS R/S(s) involved in the MM transaction;
- the amount and type of user data transmitted in MO and MT directions for the transfer of MM, i.e. the size of the MM and its components;
- storage duration, i.e. the time interval when a MM is saved on a non-volatile memory media;
- identification of the bearer resources used for the transport of the MM, i.e. the identity of the network and the network nodes;
- in scenarios involving a VASP, the charging information describes the identification of the VASP and the amount of user data sent and received between the MMS R/S and the VASP.

The information listed above is captured for use cases in relation to:

- MM submission;
- MM retrieval;
- MM forwarding;
- transaction involving the MMbox;
- transactions involving a VASP.

5.2 MMS offline charging scenarios

MMS offline charging implies the generation of various CDRs by the involved MMS R/S(s). This subclause contains the scenarios that illustrate the conditions for the generation of the various types of records based on an MM crossing the reference points identified in TS 32.240 [1]. The labels in the message flows identify the CDR generation trigger in relation to the particular reference point. The events that trigger the CDR generation are events at the MM1, MM4 and MM7 reference points.

5.2.1 Combined originator and recipient MMS relay server

This scenario covers the case where the Originator MMS R/S and the Recipient MMS R/S are identical, which implies that that particular MMS R/S handles both MM submission and MM retrieval.

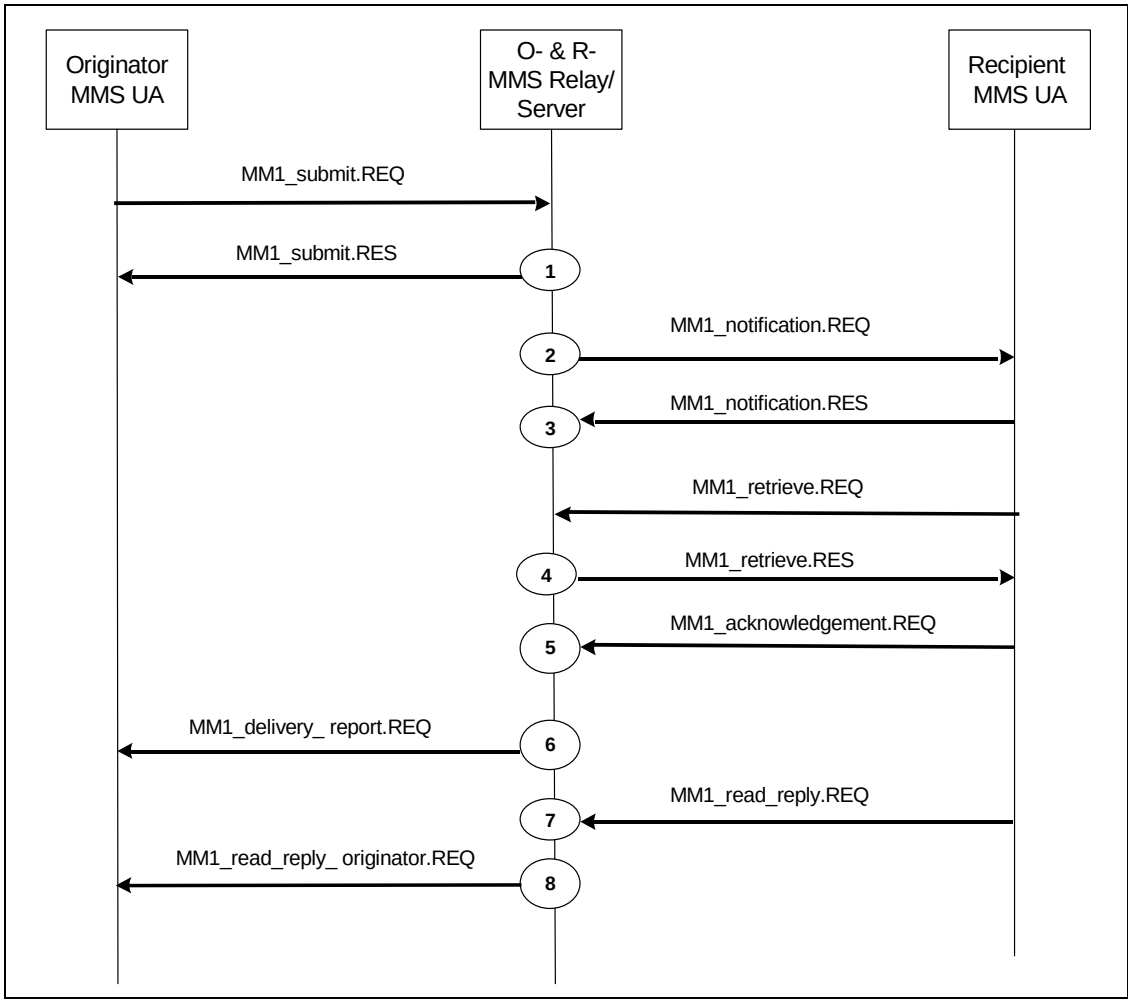

Figure 5.1: Record trigger overview for combined case

Table 5.1: Trigger point overview for combined MMS Relay/Server

Trigger point	Trigger name
1	Originator MM1 Submission
2	Recipient MM1 Notification Request
3	Recipient MM1 Notification Response
4	Recipient MM1 Retrieval
5	Recipient MM1 Acknowledgement
6	Originator MM1 Delivery report
7	Recipient MM1 Read reply Recipient
8	Originator MM4 Read reply originator
Any time between 1 to 8	Originator MM Deletion
NOTE: CDRs for MM submission and retrieval are triggered by the MMS R/S responding to MM1_submit.REQ and MM1_retrieve.REQ, rather than upon receiving those requests.	

Table 5.2: Record type overview for combined MMS Relay/Server

Record trigger	1	2	3	4	5	6	7	8	Any time between 1 .. 8
Record type	O1S	R1NRq	R1NRs	R1Rt	R1A	O1D	R1RR	O1R	OMD

5.2.2 Distributed originator and recipient MMS relay server

This scenario covers the case of the Originator MMS R/S and the Recipient MMS R/S being two different entities, where the Originator MMS R/S handles MM submission and the Recipient MMS R/S handles MM retrieval.

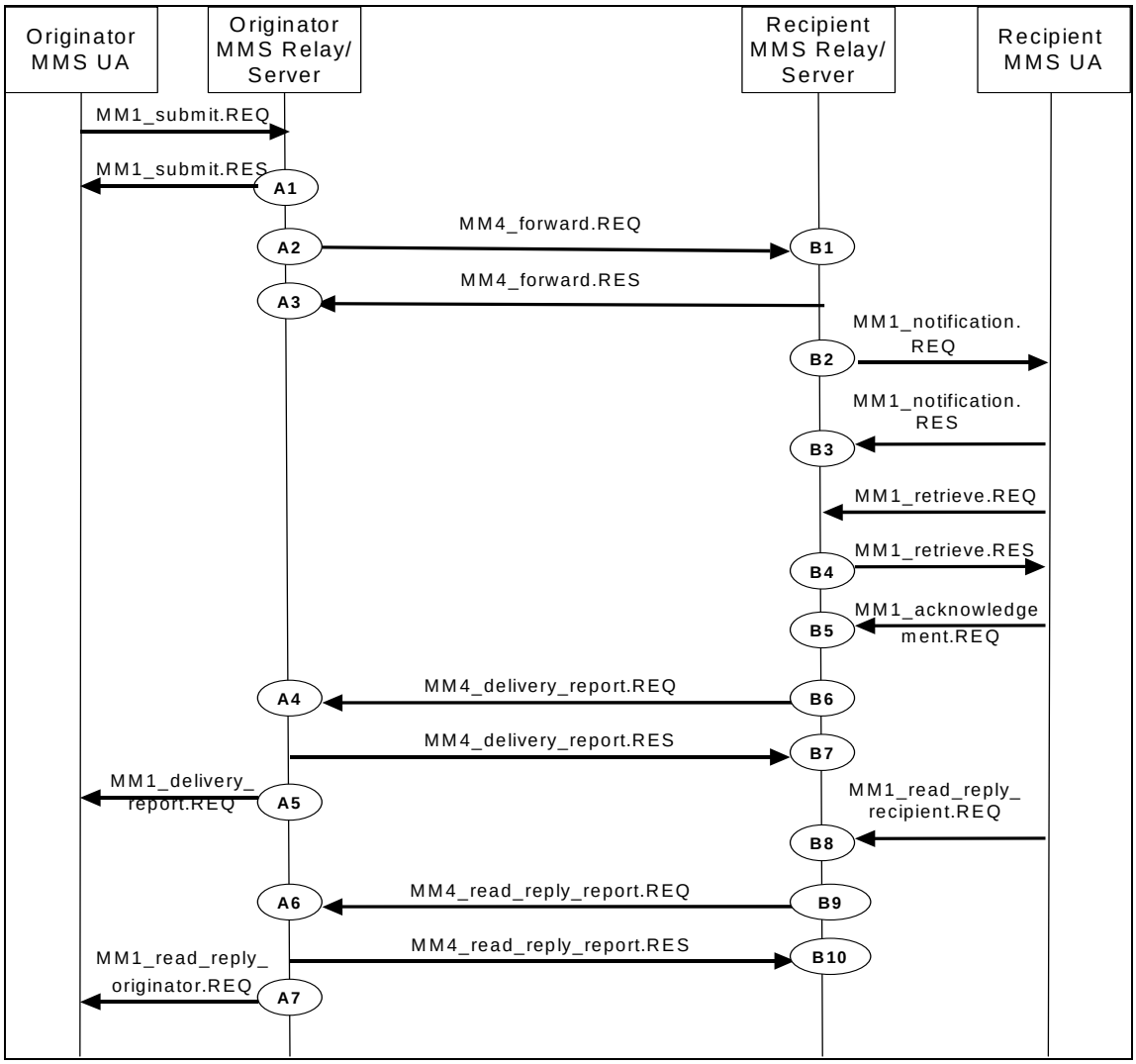

Figure 5.2: Record trigger overview for distributed case

Table 5.3a: Trigger type overview for the Originator MMS Relay/Server

Trigger point	Trigger name
A1	Originator MM1 Submission
A2	Originator MM4 Forward Request
A3	Originator MM4 Forward Response
A4	Originator MM4 Delivery report
A5	Originator MM1 Delivery report
A6	Originator MM4 Read reply report
A7	Originator MM1 Read reply originator
Any time between A1... A7	Originator MM Deletion
NOTE: CDRs for MM submission and retrieval are triggered by the MMS R/S responding to MM1_submit.REQ and MM1_retrieve.REQ, rather than upon receiving those requests.	

Table 5.3b: Trigger type overview for the Recipient MMS Relay/Server

Trigger point	Trigger name
B1	Recipient MM4 Forward
B2	Recipient MM1 Notification Request
B3	Recipient MM1 Notification Response
B4	Recipient MM1 Retrieval
B5	Recipient MM1 Acknowledgement
B6	Recipient MM4 Delivery report Request
B7	Recipient MM4 Delivery report Response
B8	Recipient MM1 Read reply Recipient
B9	Recipient MM4 Read reply report Request
B10	Recipient MM4 Read reply report Response
Anytime after B1	Recipient MM Deletion

Table 5.4a: Record type overview for the Originator MMS Relay/Server

Record Trigger	A1	A2	A3	A4	A5	A6	A7	Any time between A1.. A7
Record Type	O1S	O4FRq	O4FRs	O4D	O1D	O4R	O1R	OMD

Table 5.4b: Record type overview for the Recipient MMS Relay/Server

Record trigger	B1	B2	B3	B4	B5
Record type	R4F	R1NRq	R1NRs	R1Rt	R1A

Table 5.4b (cont'd): Record type overview for the Recipient MMS Relay/Server

Record trigger	B6	B7	B8	B9	B10	Anytime after B1
Record type	R4DRq	R4DRs	R1RR	R4RRq	R4RRs	RMD

5.2.3 MMBox management

This scenario covers the MM transactions related to MMBox usage that trigger the generation of CDRs in the affected MMS R/S.

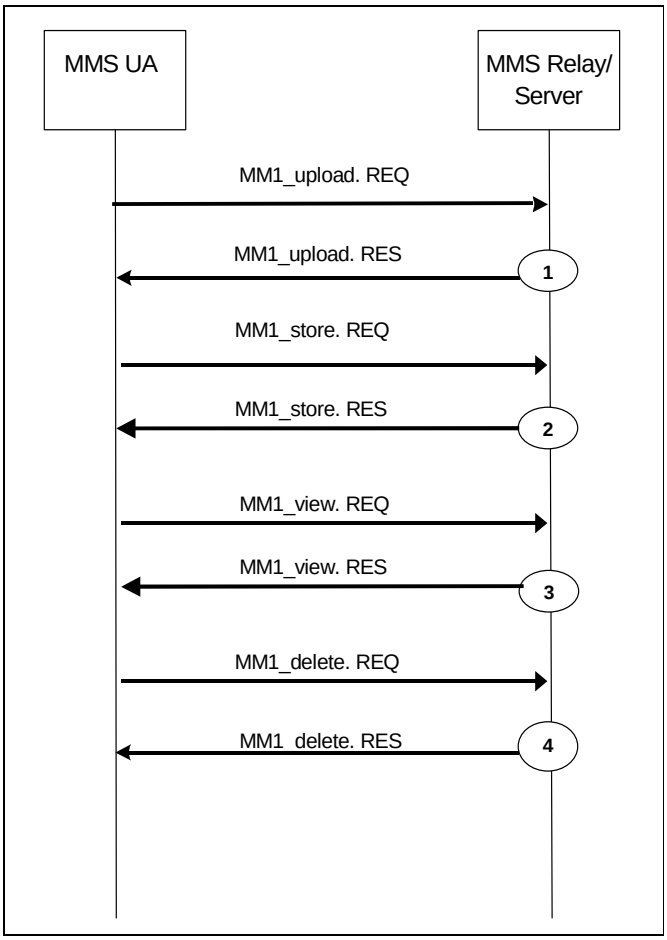

Figure 5.3: Record trigger overview for MMBox management

Table 5.5: Record type overview for MMBox management

Trigger point	Trigger name
1	MMBox MM1 Upload
2	MMBox MM1 Store
3	MMBox MM1 View
4	MMBox MM1 Delete
NOTE: CDRs for MM Upload, Store, View and Delete are triggered by the MMS R/S responding to these requests, rather than upon receiving them.	

5.2.4 VASP transactions

To be defined.

5.3 MMS Online charging scenarios

To be defined.

6 Definition of charging information

This clause provides Stage 3 specifications of the CDR type and content for MMS.

Editor's note: provide some additional introductory statement here

6.1 Data description for MSS offline charging

Dedicated types of CDRs can be generated in the service domain for MMS by the MMS Relay/Servers. The content of each CDR type is defined in one of the tables that are part of this subclause. For each CDR type the parameter definition includes the parameter name, description and category.

Equipment vendors shall be able to provide all of the parameters listed in the CDR content table in order to claim compliance with the present document. However, since CDR processing and transport consume network resources, operators may opt to eliminate some of the parameters that are not essential for their operation. This operator provisionable reduction is specified by the parameter category.

A parameter category can have one of two primary values:

M This parameter is **M**andatory and shall always be present in the CDR;

C This parameter shall be present in the CDR only when certain Conditions are met. These Conditions are specified as part of the parameter definition.

Some of these parameters are designated as Operator (**O**) provisionable. Using TMN management functions or specific tools provided by an equipment vendor, operators may choose, if they wish, to include or omit the parameter from the CDR. Once omitted, this parameter is not generated in a CDR. To avoid any potential ambiguity, a CDR generating element MUST be able to provide all these parameters. Only an operator can choose whether or not these parameters should be generated in its system.

Those parameters that the operator may configure to be present or absent are further qualified with the 'Operator provisionable' indicator as follows:

Mo This is a parameter that, if provisioned by the operator to be present, shall always be included in the CDRs. In other words, a Mo parameter that is provisioned to be present is a mandatory parameter;

Co This is a parameter that, if provisioned by the operator to be present, shall be included in the CDRs when the required conditions are met. In other words, a Co parameter that is configured to be present is a conditional parameter.

The MMS Relay/Server shall be able to provide the CDRs at the Billing System interface in the format and encoding described in the present document. Additional CDR formats and contents, generated by the MMS Relay/Server, may be available at the interface to the billing system to meet the requirements of the billing system, these are outside of the scope of 3GPP standardisation.

The following tables provide a brief description of each CDR parameter. Full definitions of the parameters, sorted by the parameter name in alphabetical order, are provided in TS 32.298 [41].

6.1.1 MMS records for originator MMS relay/server

The following subclauses specify CDRs created in the originator MMS Relay/Server based on messages flowing over the MM1 and MM4 reference points. The CDRs referring to MM4 messages (Originator MM4 *** CDR) are created only if the originator and recipient MMS Relay/Servers communicate over the MM4 interface (i.e. the originator MMS Relay/Server is not also the recipient MMS Relay/Server). The CDRs referring to MM1 messages (Originator MM1 *** CDR) are created regardless of whether the originator MMS Relay/Server is also the recipient MMS Relay/Server or not. Unless otherwise specified, the CDR parameters are copied from the corresponding MM1 or MM4 message parameters as applicable.

6.1.1.1 Originator MM1 Submission CDR (O1S-CDR)

If enabled, an Originator MM1 Submission Charging Data Record (O1S-CDR) shall be produced in the originator MMS Relay/Server for each MM submitted in an MM1_submit.REQ by an originator MMS User Agent to the originator MMS Relay/Server if and when the originator MMS Relay/Server responds with an MM1_submit.RES. The operator can configure whether this CDR, if enabled, shall only be created for MM1_submit.RES indicating acceptance of the submitted MM, or also for the unsuccessful submissions.

NOTE 1: This includes the case where the MM is a reply-MM to an original MM. In this case the MMS User Agent sending the reply-MM is called the originator MMS User Agent of this reply-MM and the MMS Relay/Server receiving the reply-MM in an MM1_submit.REQ is called the originator MMS Relay/Server for this reply-MM.

NOTE 2: The case of an MMS Relay/Server receiving an MM1_forward.REQ is treated in subclause 6.1.3.

Table 6.1: Originator MM1 Submission CDR (O1S-CDR)

Field	Category	Description
Record Type	M	Originator MM1 Submission record
Originator MMS Relay/Server Address	M	.IP address or domain name of originator MMS Relay/Server
Message ID	M	The MM identification provided by the originator MMS Relay/Server
Reply-Charging ID	C	This field is present in the CDR only if the MM is a reply-MM to an original MM. The Reply-Charging ID is the Message ID of the original MM
Originator address	M	The address of the originator MMS User Agent (i.e., of the MMS User Agent that has sent the MM1_submit.REQ)
Recipients address list	M	The address(es) of the recipient MMS User Agent(s) of the MM. Multiple addresses are possible if the MM is not a reply MM
Access Correlation	M_o	A unique identifier delivered by the used access network domain of the originator MMS User Agent
Content type	M	The content type of the MM content
MM component list	M_o	The list of media components with volume size
Message size	M	The total size of the MM content
Message class	C_o	The class selection such as personal, advertisement, information service if specified in the MM1_submit_REQ
Charge Information	M_o	The charged party indication and charge type
Submission Time	C_o	The time at which the MM was submitted from the originator MMS User Agent if specified in the MM1_submit_REQ
Time of Expiry	C_o	The desired date of expiry or duration of time prior to expiry for the MM if specified by the originator MMS User Agent
Earliest Time Of Delivery	C	This field contains either the earliest time to deliver the MM or the number of seconds to wait before delivering the MM as specified by the originator MMS User Agent
Duration Of Transmission	M_o	The time used for transmission of the MM between the User Agent and the MMS Relay/Server
Request Status Code	M_o	The status code of the MM as received in the MM1_submit_REQ
Delivery Report Requested	M_o	This field indicates whether a delivery report has been requested by the originator MMS User Agent or not
Reply Charging	C_o	A request for reply-charging if specified by the originator MMS User Agent
Reply Deadline	C_o	In case of reply-charging the latest time of submission of replies granted to the recipient(s) as specified by the originator MMS User Agent
Reply Charging Size	C_o	In case of reply-charging the maximum size for reply-MM(s) granted to the recipient(s) as specified by the originator MMS User Agent
Priority	C_o	The priority (importance) of the message if specified by the originator MMS User Agent
Sender visibility	M_o	A request to show or hide the sender's identity when the message is delivered to the recipient as specified by the originator MMS User Agent
Read reply requested	M_o	A request for read reply report as specified in the MM1_submit.REQ
Status Text	C_o	This field includes a more detailed technical status of the message at the point in time when the CDR is generated. This field is only present if the MM submission is rejected
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types

Field	Category	Description
MMBox Storage Information	C_o	A set of parameters related to the MMBox management. This parameter is only present if the MMBox feature is supported by the MMS Relay/Server and storage of the MM was requested by originator MMS User Agent (i.e., of the MMS User Agent that has sent the MM1_submit.REQ)
Serving network identity	M_o	SGSN PLMN Identifier (MCC and MNC) used during this record
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.1.2 Originator MM4 Forward Request CDR (O4FRq-CDR)

If enabled, an Originator MM4 Forward Request Charging Data Record (O4FRq-CDR) shall be produced in the originator MMS Relay/Server if and when the originator MMS Relay Server has sent an MM4_forward.REQ to the recipient MMS Relay/Server, regardless of whether or not an MM4_forward.RES is received from the recipient. That is, the CDR is created upon completion of transmission of the MM4_forward.REQ.

The MM4_forward.REQ may be generated as a reaction to an incoming MM1_forward.REQ. In this case, the *Originator address* field specifies the address of the originator MMS User Agent of the original MM, whereas the address of the forwarding MMS User Agent is contained in the *Forwarding address* field.

Table 6.2: Originator MM4 Forward Request record (O4FRq-CDR)

Field	Category	Description
Record Type	M	Originator MM4 Forward Request record
Originator MMS Relay/Server Address	M	IP address or domain name of the originator MMS Relay/Server
Recipient MMS Relay/Server Address	M	IP address or domain name of the recipient MMS Relay/Server
Message ID	M	The MM identification provided by the originator MMS Relay/Server
3GPP MMS Version	M_o	The MMS version of the originator MMS Relay/Server
Originator address	M	The address of the originator MMS User Agent of the MM. (If the MM4_forward.REQ is generated as a reaction to an incoming MM1_forward.REQ, this is the address of the originator MMS User agent of the original MM
Recipients address list	M	The address(es) of the recipient MMS User Agent(s) of the MM as specified in the MM4_forward.REQ that triggered the CDR
Content type	M	The content type of the MM content
MM component list	M_o	The list of media components with volume size
Message size	M	The total size of the MM content
Message class	C	The class of the MM (e.g., personal, advertisement, information service) if specified by the originator MMS User Agent
Submission Time	M	The time at which the MM was submitted or forwarded as specified in the corresponding MM1_submit.REQ or MM1_forwarding.REQ
Time of Expiry	C	The desired date of expiry or duration of time prior to expiry for the MM if specified by the originator MMS User Agent
Delivery Report Requested	M	This field indicates whether a delivery report has been requested by the originator MMS User Agent or not
Priority	C	The priority (importance) of the message if specified by the originator MMS User Agent
Sender visibility	M	A request to show or hide the sender's identity when the message is delivered to the MM recipient if the originator MMS User Agent has requested her address to be hidden from the recipient
Read reply requested	M	A request for read reply report if the originator MMS User Agent has requested a read-reply report for the MM
Acknowledgement Request	M	Request for MM4_forward.RES
Forward counter	C	A counter indicating the number of times the particular MM was forwarded
Forwarding address	C	The address(es) of the forwarding MMS User Agent(s). Multiple addresses are possible. In the multiple address case this is a sequential list of the address(es) of the forwarding MMS User Agents who forwarded the same MM
Record Time Stamp	M	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Serving network identity	M_o	SGSN PLMN Identifier (MCC and MNC) used during this record
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.1.3 Originator MM4 Forward Response CDR (O4FRs-CDR)

If enabled, an Originator MM4 Forward Response Charging Data Record (O4FRs-CDR) shall be produced in the originator MMS Relay/Server if and when, after an MM has been forwarded with an MM4_forward.REQ to the recipient MMS Relay/Server, the originator MMS Relay/Server receives a corresponding MM4_forward.RES from the recipient MMS Relay/Server.

Table 6.3: Originator MM4 Forward Response record (O4FRs-CDR)

Field	Category	Description
Record Type	M	Originator MM4 Forward Response record
Originator MMS Relay/Server Address	M_o	IP address or domain name of the originator MMS Relay/Server
Recipient MMS Relay/Server Address	M	IP address or domain name of the recipient MMS Relay/Server
Message ID	M	The MM identification provided by the originator MMS Relay/Server
3GPP MMS Version	M_o	The MMS version of the recipient MMS Relay/Server
Request Status Code	M_o	The status code of the request to route forward the MM as received in the MM4_forward.RES
Status Text	C_o	This field includes the status text as received in the MM4_forward.RES corresponding to the Request Status Code. Present only if provided in the MM4_forward.RES
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.1.4 Originator MM4 Delivery report CDR (O4D-CDR)

If enabled, an Originator MM4 Delivery report Charging Data Record (O4D-CDR) shall be produced in the originator MMS Relay/Server if and when the originator MMS Relay/Server receives an MM4_delivery_report.REQ from the recipient MMS Relay/Server.

Table 6.4: Originator MM4 Delivery report record (O4D-CDR)

Field	Category	Description
Record Type	M	Originator MM4 Delivery report record
Recipient MMS Relay/Server Address	M_o	IP address or domain name of the recipient MMS Relay/Server
Originator MMS Relay/Server Address	M_o	IP address or domain name of the originator MMS Relay/Server
Message ID	M	The MM identification provided by the originator MMS Relay/Server
3GPP MMS Version	M_o	The MMS version of the recipient MMS Relay/Server
Originator address	M_o	The address of the originator MMS User Agent of the MM
Recipient address	M	The address of the MM recipient of the MM
MM Date and time	M	Date and time the MM was handled (retrieved, expired, rejected, etc.) as specified in the MM4_delivery_report
Acknowledgement Request	M	Request for MM4_delivery_report.RES
MM Status Code	M	The status code of the delivered MM as received in the MM4_delivery_report.REQ
Status Text	C_o	This field includes the status text as received in the MM4_delivery_report.REQ corresponding to the MM Status Code. Present only if provided in the MM4_delivery_report.REQ
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.1.5 Originator MM1 Delivery report CDR (O1D-CDR)

If enabled, an Originator MM1 Delivery report Charging Data Record (O1D-CDR) shall be produced in the originator MMS Relay/Server if and when the originator MMS Relay/Server sends an MM1_delivery_report.REQ to the originator MMS User Agent.

Table 6.5: Originator MM1 Delivery report record (O1D-CDR)

Field	Category	Description
Record Type	M	Originator MM1 Delivery report record
Recipient MMS Relay/Server Address	M_o	IP address or domain name of the recipient MMS Relay/Server
Originator MMS Relay/Server Address	M_o	IP address or domain name of the originator MMS Relay/Server
Access Correlation	M_o	A unique identifier delivered by the used access network domain of the originator MMS User Agent
Message ID	M	The MM identification provided by the originator MMS Relay/Server
3GPP MMS Version	M_o	The MMS version of the originator MMS Relay/Server
Originator address	M_o	The address of the originator MMS User Agent of the MM
Recipient address	M	The address of the MM recipient of the MM
MM Status Code	M_o	The status code of the MM as sent in the MM Status information element in the MM1_delivery_report.REQ
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Serving network identity	M_o	SGSN PLMN Identifier (MCC and MNC) used during this record
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.1.6 Originator MM4 Read reply report CDR (O4R-CDR)

If enabled, an Originator MM4 Read reply report Charging Data Record (O4R-CDR) shall be produced in the originator MMS Relay/Server if and when the originator MMS Relay/Server receives an MM4_read_reply_report.REQ from the recipient MMS Relay/Server.

Table 6.6: Originator MM4 Read reply report record (O4R-CDR)

Field	Category	Description
Record Type	M	Originator MM4 Read reply report record
Recipient MMS Relay/Server Address	M_o	IP address or domain name of the recipient MMS Relay/Server
Originator MMS Relay/Server Address	M_o	IP address or domain name of the originator MMS Relay/Server
Message ID	M	The MM identification provided by the originator MMS Relay/Server
3GPP MMS Version	M_o	The MMS version of the recipient MMS Relay/Server
Originator address	M_o	The address of the originator MMS User Agent of the MM
Recipient address	M_o	The address of the MM recipient of the MM
MM Date and time	M_o	Date and time the MM was handled (retrieved, expired, rejected, etc.)
Acknowledgement Request	M	Request for MM4_read_reply_report.RES
Read Status	M_o	The status of the MM as received in the MM4_read_reply_report.REQ
Status Text	C_o	This field includes the status text if received in the MM4_read_reply_report.REQ corresponding to the Read Status. Present only if provided in the MM4_read_reply_report.REQ
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.1.7 Originator MM1 Read reply originator CDR (O1R-CDR)

If enabled, an Originator MM1 Read reply originator Charging Data Record (O1R-CDR) shall be produced in the originator MMS Relay/Server if and when the originator MMS Relay/Server sends an MM1_read_reply_originator.REQ to the originator MMS User Agent.

Table 6.7: Originator MM1 Read reply originator record (O1D-CDR)

Field	Category	Description
Record Type	M	Originator MM1 Read reply originator record
Recipient MMS Relay/Server Address	M_o	IP address or domain name of the recipient MMS Relay/Server
Originator MMS Relay/Server Address	M_o	IP address or domain name of the originator MMS Relay/Server
Access Correlation	M_o	A unique identifier delivered by the used access network domain of the originator MMS User Agent.
Message ID	M	The MM identification provided by the originator MMS Relay/Server
3GPP MMS Version	M_o	The MMS version of the originator MMS Relay/Server
Originator address	M_o	The address of the originator MMS User Agent of the MM
Recipient address	M_o	The address of the MM recipient of the MM
Read Status	M_o	The status of the MM as sent in the MM1_read_reply originator.REQ
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Serving network identity	M_o	SGSN PLMN Identifier (MCC and MNC) used during this record
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.1.8 Originator MM Deletion CDR (OMD-CDR)

If enabled, an Originator MM Deletion Charging Data Record (OMD-CDR) shall be produced in the originator MMS Relay/Server, after sending an MM1_submit.RES to the originator MMS User Agent, if and when:

a) the originator MMS Relay/Server decides to abandon processing of the MM at any point after receiving the corresponding MM1_submit.REQ; or

b) the originator MMS Relay/Server decides to delete the MM because of expiry of storage time, which may either be indicated in the submit request or governed by operator procedure (e.g. after successful MM delivery).

Abandoning the processing of the MM, or deleting the MM, implies that there remains no knowledge of the MM in the originator MMS Relay/Server.

The status code indicates the precise reason for abandoning or deleting the MM with respect to the MMS transactions specified in 3GPP TS 23.140 [61].

This CDR is created regardless of whether the originator MMS Relay/Server is also the recipient MMS Relay/Server or not.

Table 6.8: Originator MM Deletion record (OMD-CDR)

Field	Category	Description
Record Type	M	Originator MM Deletion record
Originator MMS Relay/Server Address	M_o	IP address or domain name of the originator MMS Relay/Server
Recipient MMS Relay/Server Address	C	IP address or domain name of the recipient MMS Relay/Server. This field is present, if such an address is known
Message ID	M	The MM identification provided by the originator MMS Relay/Server
Message size	M_o	The total size of the MM content
MM Status Code	M_o	The status code of the MM at the time when the CDR is generated
Status Text	M_o	This field includes a more detailed technical status of the message at the point in time when the CDR is generated
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.2 MMS records for recipient MMS Relay/server

The following subcaluses specify CDRs created in the recipient MMS Relay/Server based on messages flowing over the MM1 and MM4 interfaces. The CDRs referring to MM4 messages (Recipient MM4 *** CDR) are created only if the originator and recipient MMS Relay Servers communicate over the MM4 interface (i.e. the recipient MMS Relay/Server is not also the originator MMS Relay/Server). The CDRs referring to MM1 messages (Recipient MM1 *** CDR) are created regardless of whether the recipient MMS Relay/Server is also the originator MMS Relay/Server or not. Unless otherwise specified the CDR parameters are copied from the corresponding MM1 or MM4 message parameters as applicable.

6.1.2.1 Recipient MM4 Forward CDR (R4F-CDR)

If enabled, a Recipient MM4 Forward CDR Charging Data Record (R4F-CDR) shall be produced in the recipient MMS Relay/Server if and when the recipient MMS Relay/Server receives an MM4_forward.REQ from the originator MMS Relay/Server.

Table 6.9: Recipient MM4 Forward record (R4F-CDR)

Field	Category	Description
Record Type	M	Recipient MM4 Forward record
Recipient MMS Relay/Server Address	M	IP address or domain name of the recipient MMS Relay/Server
Originator MMS Relay/Server Address	M	IP address or domain name of the originator MMS Relay/Server
Message ID	M	The MM identification provided by the originator MMS Relay/Server
3GPP MMS Version	M_o	The MMS version of the originator MMS Relay/Server
Originator address	M	The address of the originator MMS User Agent of the MM
Recipients address list	M	The address(es) of the recipient MMS User Agent(s) of the -MM
Content type	M	The content type of the MM content
MM component list	M_o	The list of media components with volume size
Message size	M	The total size of the MM content
Message class	C	The class selection such as personal, advertisement, information service
Submission Time	M	The time at which the MM was submitted or forwarded as specified in the MM4_forward.REQ
Time of Expiry	C	The desired date of expiry or duration of time prior to expiry for the MM if specified by the originator MMS User Agent
Delivery Report Requested	M	This field indicates whether a delivery report has been requested by the originator MMS User Agent or not
Priority	C	The priority (importance) of the message if specified by the originator MMS User Agent
Sender visibility	M	A request to show or hide the sender's identity when the message is delivered to the MM recipient if the originator MMS User Agent has requested her address to be hidden from the recipient
Read reply Requested	M	A request for read reply report if the originator MMS User Agent has requested a read-reply report for the MM
Request status code	M	The status of the request to route forward the MM. If the MM4_forward.REQ is responded by an MM4_forward.RES, this shall be the same information as specified in the Request Status Code information element in the MM4_forward.RES
Status Text	C	This field includes a more detailed technical status of the message at the point in time when the CDR is generated. If the MM4_forward.REQ is responded by an MM4_forward.RES, this shall be the same information as specified in the Status Text information element in the MM4_forward.RES corresponding to the Request Status Code
Acknowledgement Request	M	Request for MM4_forward.RES
Forward_counter	C	A counter indicating the number of times the particular MM was forwarded
Forwarding address	C	The address(es) of the forwarding MMS User Agent(s). Multiple addresses are possible. In the multiple address case this is a Sequential list of the address(es) of the forwarding MMS User Agents who forwarded the same MM
Record Time stamp	M	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.2.2 Recipient MM1 Notification Request CDR (R1NRq-CDR)

If enabled, a Recipient MM1 Notification Request Charging Data Record (R1NRq-CDR) shall be produced in the recipient MMS Relay/Server if and when the recipient MMS Relay/Server sends an MM1_notification.REQ to the recipient MMS User Agent.

Table 6.10: Recipient MM1 Notification Request record (R1NRq -CDR)

Field	Category	Description
Record Type	M	Recipient MM1 Notification Request record
Recipient MMS Relay/Server Address	M	IP address or domain name of the recipient MMS Relay/Server
Message ID	M	The MM identification provided by the originator MMS Relay/Server
Reply Charging ID	C	This field is present in the CDR only if the MM is a reply-MM to an original MM. The Reply-Charging ID is the Message ID of the original MM
Sender address	M	The address of the MMS User Agent as used in the MM1_notification_REQ. This parameter is present in the CDR regardless of address hiding
Recipient address	M	The address of the MM recipient of the MM
Access Correlation	M_o	A unique identifier delivered by the used access network domain of the recipient MMS User Agent
Message class	M	The class selection such as personal, advertisement, information service; default = personal
MM component list	Mo	The list of media components with volume size
Message size	M_o	The total size of the MM content
Time of Expiry	M_o	The date of expiry or duration of time prior to expiry for the MM
Message Reference	M	A reference, e.g., URI, for the MM
Delivery Report Requested	M_O	This field indicates whether a delivery report is requested or not as specified in the MM1_notification.REQ
Reply Charging	C_o	Information that a reply to this particular original MM is free of charge as specified in the MM1_notification.REQ
Reply Deadline	C_o	In case of reply-charging the latest time of submission of a reply granted to the recipient as specified in the MM1_notification.REQ
Reply Charging-Size	C_o	In case of reply-charging the maximum size of a reply-MM granted to the recipient as specified in the MM1_notification.REQ
MM Status Code	M_o	The status code of the MM at the time when the CDR is generated
Status Text	M_o	This field includes a more detailed technical status of the message at the point in time when the CDR is generated.
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Serving network identity	M_o	SGSN PLMN Identifier (MCC and MNC) used during this record
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.2.3 Recipient MM1 Notification Response CDR (R1NRs-CDR)

If enabled, a Recipient MM1 Notification Response Charging Data Record (R1NRs-CDR) shall be produced in the recipient MMS Relay/Server if and when the recipient MMS Relay/Server receives an MM1_notification.RES from the recipient MMS User Agent.

Table 6.11: Recipient MM1 Notification Response record (R1NRs-CDR)

Field	Category	Description
Record Type	M	Recipient MM1 Notification Response record
Recipient MMS Relay/Server Address	M	IP address or domain name of the recipient MMS Relay/Server
Message ID	M	The MM identification provided by the originator MMS Relay/Server
Recipient address	M	The address of the MM recipient of the MM
Access Correlation	M_o	A unique identifier delivered by the used access network domain of the recipient MMS User Agent
Report allowed	C	Request to allow or disallow the sending of a delivery report to the MM originator if specified in the MM1_notification_RES
MM Status Code	M_o	The status code of the MM at the time when the CDR is generated
Status Text	M_o	This field includes a more detailed technical status of the message at the point in time when the CDR is generated
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Serving network identity	M_o	SGSN PLMN Identifier (MCC and MNC) used during this record
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.2.4 Recipient MM1 Retrieve CDR (R1Rt-CDR)

If enabled, a Recipient MM1 Retrieve Response Charging Data Record (R1Rt-CDR) shall be produced in the recipient MMS Relay/Server if and when the recipient MMS Relay/Server has sent an MM1_retrieve.RES to the recipient MMS User Agent. That is, the CDR is created upon completion of transmission of the MM1_retrieve.RES.

Table 6.12: Recipient MM1 Retrieve Response record (R1Rt-CDR)

Field	Category	Description
Record Type	M	Recipient MM1 Retrieve record
Recipient MMS Relay/Server Address	M	IP address or domain name of the recipient MMS Relay/Server
Message ID	M	The MM identification provided by the originator MMS Relay/Server
Reply Charging ID	C	This field is present in the CDR only if the MM is a reply-MM to an original MM. The Reply-Charging ID is the Message ID of the original MM
Sender address	C	The address of the MMS User Agent as used in the MM1_retrieve.RES. This parameter is present in the CDR regardless of address hiding
Recipient address	M	The address of the recipient MM User Agent of the MM
Access Correlation	M_o	A unique identifier delivered by the used access network domain of the originator MMS User Agent.
Message Reference	M	Location of the content of the MM to be retrieved as specified in the MM1_retrieve.REQ
Content type	M	The content type of the MM content
MM component list	M_o	The list of media components with volume size
Message class	C_o	The class of the message (e.g., personal, advertisement, information service) if specified in the MM1_retrieve.RES
Submission Time	M	The time at which the MM was submitted or forwarded as specified in the MM1_retrieve.RES
Message size	M_o	The total size of the MM content
Delivery report Requested	M_o	A request for delivery report as specified in the Delivery Report information element in the MM1_retrieve.RES
Priority	C_o	The priority (importance) of the message if specified in the MM1_retrieve.RES
Read reply Requested	C_o	A request for read-reply report if specified in the Read Reply information element in the MM1_retrieve.RES
MM Status Code	M_o	The status code of the MM at the time when the CDR is generated
Status Text	M_o	This field includes a more detailed technical status of the message at the point in time when the CDR is generated
Reply Deadline	C_o	In case of reply-charging the latest time of submission of a reply granted to the recipient as specified in the MM1_retrieve.RES
Reply Charging-Size	C_o	In case of reply-charging the maximum size of a reply-MM granted to the recipient as specified in the MM1_retrieve.RES
Duration Of Transmission	M_o	The time used for transmission of the MM between the User Agent and the MMS Relay/Server
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Serving network identity	M_o	SGSN PLMN Identifier (MCC and MNC) used during this record
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.2.5 Recipient MM1 Acknowledgement CDR (R1A-CDR)

If enabled, a Recipient MM1 Acknowledgement Charging Data Record (R1A-CDR) shall be produced in the recipient MMS Relay/Server if and when the recipient MMS Relay/Server receives an MM1_acknowledgement.REQ from the recipient MMS User Agent.

Table 6.13: Recipient MM1 Acknowledgement record (R1A-CDR)

Field	Category	Description
Record Type	M	Recipient MM1 Acknowledgement record
Recipient MMS Relay/Server Address	M	IP address or domain name of the recipient MMS Relay/Server
Message ID	M	The MM identification provided by the originator MMS Relay/Server
Recipient address	M	The address of the recipient MM User Agent of the MM
Access Correlation	M_o	A unique identifier delivered by the used access network domain of the originator MMS User Agent.
Report allowed	C	Request to allow or disallow the sending of a delivery report to the MM originator if specified in the MM1_acknowledgement.RES
MM Status Code	M_o	The status code of the MM at the time when the CDR is generated
Status Text	M_o	This field includes a more detailed technical status of the message at the point in time when the CDR is generated
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Serving network identity	M_o	SGSN PLMN Identifier (MCC and MNC) used during this record
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.2.6 Recipient MM4 Delivery report Request CDR (R4DRq-CDR)

If enabled, a Recipient MM4 Delivery report Request Charging Data Record (R4DRq-CDR) shall be produced in the recipient MMS Relay/Server if and when the recipient MMS Relay/Server sends an MM4_delivery_report.REQ to the originator MMS Relay/Server.

Table 6.14: Recipient MM4 Delivery report Request record (R4DRq-CDR)

Field	Category	Description
Record Type	M	Recipient MM4 Delivery report Request record
Recipient MMS Relay/Server Address	M	IP address or domain name of the recipient MMS Relay/Server
Originator MMS Relay/Server Address	M	IP address or domain name of the originator MMS Relay/Server
Message ID	M	The MM identification provided by the originator MMS Relay/Server
3GPP MMS Version	M_o	The MMS version of the recipient MMS Relay/Server
Originator address	M	The address of the originator MMS User Agent of the MM
Recipient address	M	The address of the MM recipient of the MM
MM Date and time	M_o	Date and time the MM was handled (retrieved, expired, rejected, etc.)
Acknowledgement Request	M	Request for MM4_delivery_report.RES
MM Status Code	M_o	The status code of the MM as sent in the MM4_delivery_report.REQ
Status Text	C_o	This field includes the status text as sent in the MM4_delivery_report.REQ corresponding to the MM Status Code
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.2.7 Recipient MM4 Delivery report Response CDR (R4DRs-CDR)

If enabled, a Recipient MM4 Delivery report Response Charging Data Record (R4DRs-CDR) shall be produced in the recipient MMS Relay/Server if and when the recipient MMS Relay/Server receives an MM4_delivery_report.RES from the originator MMS Relay/Server.

Table 6.15: Recipient MM4 Delivery report Response record (R4DRs-CDR)

Field	Category	Description
Record Type	M	Recipient MM4 Delivery report Response record
Recipient MMS Relay/Server Address	M	IP address or domain name of the recipient MMS Relay/Server
Originator MMS Relay/Server Address	M	IP address or domain name of the originator MMS Relay/Server
Message ID	M	The MM identification provided by the originator MMS Relay/Server
3GPP MMS Version	M_o	The MMS version of the originator MMS Relay/Server
Request Status Code	M_o	The status code of the MM as received in the MM4_delivery_report.RES
Status Text	C_o	This field includes the status text as received in the MM4_delivery_report.RES corresponding to the Request Status Code
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.2.8 Recipient MM1 Read reply Recipient CDR (R1RR-CDR)

If enabled, a Recipient MM1 Read reply Recipient Charging Data Record (R1RR-CDR) shall be produced in the recipient MMS Relay/Server if and when the recipient MMS Relay/Server receives an MM1_read_reply_recipient.REQ from the recipient MMS User Agent.

Table 6.16: Recipient MM1 Read reply Recipient record (R1RR-CDR)

Field	Category	Description
Record Type	M	Recipient MM1 Read reply Recipient record
Recipient MMS Relay/Server Address	M	IP address or domain name of the recipient MMS Relay/Server
Message ID	M	The MM identification provided by the originator MMS Relay/Server
Recipient address	M	The address of the recipient MM User Agent of the MM
Originator address	M	The address of the MM originator of the original MM, i.e., the recipient of the read-reply report
Access Correlation	M_o	A unique identifier delivered by the used access network domain of the originator MMS User Agent
MM Status Code	M_o	The status code of the MM at the time when the CDR is generated
Status Text	M_o	This field includes a more detailed technical status of the message at the point in time when the CDR is generated
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Serving network identity	M_o	SGSN PLMN Identifier (MCC and MNC) used during this record
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.2.9 Recipient MM4 Read reply report Request CDR (R4RRq-CDR)

If enabled, a Recipient MM4 Read reply report Request Charging Data Record (R4RRq-CDR) shall be produced in the recipient MMS Relay/Server if and when the recipient MMS Relay/Server sends an MM4_read_reply_report.REQ to the originator MMS Relay/Server.

Table 6.17: Recipient MM4 Read reply report Request record (R4RRq-CDR)

Field	Category	Description
Record Type	M	Recipient MM4 read reply report Request record
Recipient MMS Relay/Server Address	M	IP address or domain name of the recipient MMS Relay/Server
Originator MMS Relay/Server Address	M	IP address or domain name of the originator MMS Relay/Server
Message ID	M	The MM identification provided by the originator MMS Relay/Server
3GPP MMS Version	M_o	The MMS version of the recipient MMS Relay/Server
Originator address	M	The address of the originator MMS User Agent of the MM
Recipient address	M	The address of the MM recipient of the MM
MM Date and time	M_o	Date and time the MM was handled (retrieved, expired, rejected, etc.)
Acknowledgement Request	M	Request for MM4_read_reply_report.RES
MM Status Code	M_o	The status code of the MM at the time when the CDR is generated
Status Text	M_o	This field includes a more detailed technical status of the message at the point in time when the CDR is generated
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.2.10 Recipient MM4 Read reply report Response CDR (R4RRs-CDR)

If enabled, a Recipient MM4 Read reply report Response Charging Data Record (R4RRs-CDR) shall be produced in the recipient MMS Relay/Server if and when the recipient MMS Relay/Server receives an MM4_read_reply_report.RES from the originator MMS Relay/Server.

Table 6.18: Recipient MM4 DeliveryRead reply report Response record (R4DRRs-CDR)

Field	Category	Description
Record Type	M	Recipient MM4 Read reply report Response record
Recipient MMS Relay/Server Address	M	IP address or domain name of the recipient MMS Relay/Server
Originator MMS Relay/Server Address	M	IP address or domain name of the originator MMS Relay/Server
Message ID	M	The MM identification provided by the originator MMS Relay/Server
3GPP MMS Version	M_o	The MMS version of the originator MMS Relay/Server
Request Status Code	M_o	The status code of the MM as received in the MM4_read_reply_report.RES
Status Text	C_o	This field includes a more detailed technical status if received in the MM4_read_reply_report.RES corresponding to the Request Status Code
Record Time Stamp	M_o	Time of generation of the CD
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.2.11 Recipient MM Deletion CDR (RMD-CDR)

If enabled, a Recipient MM Deletion Charging Data Record (RMD-CDR) shall be produced in the recipient MMS Relay/Server if and when:

a) the recipient MMS Relay/Server decides to abandon processing of the MM at any point after receiving the corresponding MM4_forward.REQ; or

b) the recipient MMS Relay/Server decides to delete the MM because of expiry of storage time, which may either be indicated in the submit request or governed by operator procedure(e.g. after successful MM delivery).

Abandoning the processing of the MM implies that there remains no knowledge of the MM in the recipient MMS Relay/Server.

The status code indicates the precise reason for abandoning or deleting the MM with respect to the MMS transactions specified in 3GPP TS 23.140 [61].

A special case is where the recipient MMS Relay/Server is also the forwarding MMS Relay/Server. In this case only the Originator MM Deletion CDR specified in subclause 6.1.1.8 is required.

Table 6.19: Recipient MM Deletion record (RMD-CDR)

Field	Category	Description
Record Type	M	Recipient MM Deletion record
Originator MMS Relay/Server Address	M	IP address or domain name of the originator MMS Relay/Server
Recipient MMS Relay/Server Address	M_o	IP address or domain name of the recipient MMS Relay/Server
Message ID	M	The MM identification provided by the originator MMS Relay/Server
Message size	M_o	The total size of the MM content
MM Status Code	M_o	The status code of the MM at the time when the CDR is generated
Status Text	M_o	This field includes a more detailed technical status of delivering the message
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.3 MMS records for forwarding MMS Relay/Server

6.1.3.1 Forwarding CDR (F-CDR)

If enabled, a Forwarding Charging Data Record (F-CDR) shall be produced in the forwarding MMS Relay/Server on receipt of an MM1_forward.REQ if and when the forwarding MMS Relay/Server responds with an MM1_forward.RES indicating acceptance.

Table 6.20: MM Forwarding record (F-CDR)

Field	Category	Description
Record Type	M	MM Forwarding record
Forwarding MMS Relay/Server Address	M	IP address or domain name of the forwarding MMS Relay/Server
Message ID	M	The MM identification provided by the originator MMS Relay/Server
Forwarding address	M	One or more addresses of the forwarding MMS User Agent (i.e., of the MMS User Agent that has sent the MM1_forward.REQ)
Recipients address list	M	The address(es) of the recipient MMS User Agent(s) of the forwarded MM. Multiple addresses are possible
Charge Information	M_o	The charged party indication and charge type
Time of Expiry	C_o	The desired date of expiry or duration of time prior to expiry for the MM if specified by the forwarding MMS User Agent
Earliest Time Of Delivery	C_o	This field contains either the earliest time to deliver the MM or the number of seconds to wait before delivering the MM
Delivery Report Requested	M_o	This field indicates whether a delivery report has been requested by the forwarding MMS User Agent or not
Read reply requested	M_o	A request for read reply report as specified in the MM1_forward.REQ
Message reference	M	A reference, e.g., URI, for the MM as specified in the MM1_forward.REQ
MM Status Code	M_o	The status code of the MM at the time when the CDR is generated
Status Text	M_o	This field includes a more detailed technical status of the message at the point in time when the CDR is generated
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types
MMBox Storage Information	C_o	A set of parameters related to the MMBox management. This parameter is only present if the MMBox feature is supported by the MMS Relay/Server and storage of the MM was requested by the forwarding MMS User Agent (i.e., of the MMS User Agent that has sent the MM1_forward.REQ)
Serving network identity	M_o	SGSN PLMN Identifier (MCC and MNC) used during this record
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension

6.1.4 Service records for MMS Relay/Server supporting MMBoxes

6.1.4.1 MMBox MM1 Store CDR (Bx1S-CDR)

If enabled, an MMBox MM1 Store Charging Data Record (Bx1S-CDR) shall be produced in the MMS Relay/Server if and when the MMS Relay/Server responds with an MM1_mmbox_store.RES to the MMS User Agent.

Table 6.21: MMBox MM1 Store record (Bx1S-CDR)

Field	Category	Description
Record Type	M	MMBox MM1 Store record
MMS Relay/Server Address	M	An address of the MMS Relay/Server
Managing address	M	The address of the managing MMS User Agent (i.e., of the MMS User Agent that has sent the MM1_mmbox_store.REQ)
Access Correlation	M_o	A unique identifier delivered by the used access network domain of the originator MMS User Agent
Content type	M_o	The content type of the MM content
Message size	M_o	The size of the MM
Message Reference	M_o	A reference to the newly stored or updated MM, suitable for subsequent usage (e.g.: with MM1_retrieve.REQ and MM1_mmbox_delete.REQ)
MM State	M_o	The state of the MM. If not present when the Message Reference is from a notification request, defaults to New. No value is assumed when the Message Reference refers to an already stored MM
MM Flags	C_o	If available, the keyword flags of the MM. There are no defaults
Store status	C_o	The status code of the request to store the MM as received in the MM1_store.RES
Store Status Text	C_o	This field includes a more detailed technical description of the store status at the point in time when the CDR is generated. This field is only present if the store status is present
Sequence Number	M_o	Record number
Time Stamp	M_o	Time of generation of the CDR
Serving network identity	M_o	SGSN PLMN Identifier (MCC and MNC) used during this record
Record extensions	C_o	A set of network/manufacturer specific extensions to the record

6.1.4.2 MMBox MM1 View CDR (Bx1V-CDR)

If enabled, an MMBox MM1 View Charging Data Record (Bx1V-CDR) shall be produced in the MMS Relay/Server if and when the MMS Relay/Server has sent an MM1_mmbox_view.RES to the MMS User Agent.

Table 6.22: MMBox MM1 View record (Bx1V-CDR)

Field	Category	Description
Record Type	M	MMBox MM1 View record
MMS Relay/Server Address	M	An address of the MMS Relay/Server.
Managing address	M	The address of the managing MMS User Agent (i.e., of the MMS User Agent that has sent the MM1_mmbox_view.REQ).
Access Correlation	M_o	A unique identifier delivered by the used access network domain of the originator MMS User Agent.
Attributes list	M_o	A list of information elements that are to be returned as a group for each MM to be listed in the MM1_mmbox_view.RES. If absent, the default list (i.e. Message ID, Date and time, Sender address, Subject, Message size, MM State, and MM Flags) shall apply.
Message Selection	M_o	A list of MM State or MM Flags keywords (e.g. new or draft) or a list of Message Reference by which MMs within the MMBox can be selected. If both are absent, a listing of all MMs currently stored within the MMBox shall be selected.
Start	M_o	A number, indicating the index of the first MM of those selected to have information elements returned in the response. If this is absent, the first item selected is returned.
Limit	M_o	A number indicating the maximum number of selected MMs to their information elements returned in the response. If this is absent, information elements from all remaining MMs are returned.
Totals requested	M_o	This field indicates whether the current total number of messages and/or size contained by the MMBox has been requested by the managing MMS User Agent.
Quotas requested	M_o	This field indicates whether the current message and/or size quotas (i.e. the maximum number of messages allowed and/or the maximum size allowed) has been requested by the managing MMS User Agent.
MM listing	M_o	The requested listing of the selected MMs, which shall be one or more groups of information elements, one for each MM listed. Each MM group shall include: a Message Reference, and may include additional information elements as well. If absent, no MMs were found or selected.
Request Status Code	M_o	The status code of the request to view the MM as received in the MM1_view.RES.
Status Text	C_o	This field includes the status text as received in the MM1_view.RES corresponding to the Request Status Code. Present only if provided in the MM1_view.RES.
Totals	C_o	The total number of messages and/or octets for the MMBox, identified with Messages or Octets, respectively, depending upon the presence of Totals in the request.
Quotas	C_o	The quotas of the MMBox in messages and/or octets identified with Messages or Octets, respectively, depending upon the presence of Quotas in the request.
Sequence Number	M_o	Record number.
Time Stamp	M_o	Time of generation of the CDR.
Serving network identity	M_o	SGSN PLMN Identifier (MCC and MNC) used during this record.
Record extensions	C_o	A set of network/manufacturer specific extensions to the record.

6.1.4.3 MMBox MM1 Upload CDR (Bx1U-CDR)

If enabled, an MMBox MM1 Upload Charging Data Record (Bx1U-CDR) shall be produced in the MMS Relay/Server if and when the MMS Relay/Server has sent an MM1_mmbox_upload.RES to the MMS User Agent.

Table 6.23: MMBox MM1 Upload record (Bx1U-CDR)

Field	Category	Description
Record Type	M	MMBox MM1 Upload record
MMS Relay/Server Address	M	An address of the MMS Relay/Server.
Managing address	M	The address of the managing MMS User Agent (i.e., of the MMS User Agent that sends the MM1_mmbox_upload.REQ).
Access Correlation	M_o	A unique identifier delivered by the used access network domain of the originator MMS User Agent.
Message class	C_o	The class of the MM (e.g., personal, advertisement, information service) if provided by the MMS User Agent.
Upload Time	M_o	The time and date at which the MM was uploaded (time stamp).
Time of Expiry	C_o	The desired date of expiry or duration of time prior to expiry for the MM if specified by the originator MMS User Agent
Earliest Time Of Delivery	C_o	This field contains either the earliest time to deliver the MM or the number of seconds to wait before delivering the MM if specified by the originator MMS User Agent
Priority	C_o	This field indicates the priority (importance) of the message if specified by the MMS User Agent,
MM State	M_o	The state of the MM. Will default to the Draft state if absent
MM Flags	C_o	If available, the keyword flags of the MM. There are no defaults.
Content type	M_o	The content type of the MM content.
Message size	M_o	The size of the MM.
Message Reference	M_o	A reference to the newly stored MM, suitable for subsequent usage (e.g.: with MM1_retrieve.REQ, MM1_mmbox_delete.REQ, etc.).
Request Status Code	M_o	The status code of the request to view the MM as received in the MM1_upload.RES.
Status Text	C_o	This field includes the status text as received in the MM1_upload.RES corresponding to the Request Status Code. Present only if provided in the MM1_upload.RES.
Sequence Number	M_o	Record number.
Time Stamp	M_o	Time of generation of the CDR.
Serving network identity	M_o	SGSN PLMN Identifier (MCC and MNC) used during this record.
Record extensions	C_o	A set of network/manufacturer specific extensions to the record.

6.1.4.4 MMBox MM1 Delete CDR (Bx1D-CDR)

If enabled, an MMBox MM1 Delete Charging Data Record (Bx1D-CDR) shall be produced in the MMS Relay/Server if and when the MMS Relay/Server has sent an MM1_mmbox_delete.RES to the MMS User Agent.

Table 6.24: MMBox MM1 Delete record (Bx1D-CDR)

Field	Category	Description
Record Type	M	MMBox MM1 Delete record
MMS Relay/Server Address	M	An address of the MMS Relay/Server.
Managing address	M	The address of the managing MMS User Agent (i.e., of the MMS User Agent that sends the MM1_mmbox_upload.REQ).
Access Correlation	M_o	A unique identifier delivered by the used access network domain of the originator MMS User Agent.
Message Reference	C_o	A reference to the message in error, if any, to which the following information elements apply
Request Status Code	M_o	The status code of the request to view the MM as received in the MM1_delete.RES.
Status Text	C_o	This field includes the status text as received in the MM1_delete.RES corresponding to the Request Status Code. Present only if provided in the MM1_delete.RES.
Sequence Number	M_o	Record number.
Time Stamp	M_o	Time of generation of the CDR.
Serving network identity	M_o	SGSN PLMN Identifier (MCC and MNC) used during this record.
Record extensions	C_o	A set of network/manufacturer specific extensions to the record.

6.1.5 MMS records for MMS VAS applications

The following subclauses specify CDRs created in the originator MMS Relay/Server based on messages flowing over the MM7 reference point. Unless otherwise specified, the CDR parameters are copied from the corresponding MM7 message parameters as applicable.

6.1.5.1 MM7 Submission CDR (MM7S-CDR)

If enabled, an MM7 Submission Charging Data Record (MM7S-CDR) shall be produced in the originator MMS Relay/Server for each MM submitted in an MM7_submit.REQ by a VASP to the originator MMS Relay/Server if and when the originator MMS Relay/Server responds with an MM7_submit.RES. The operator can configure whether this CDR, if enabled, shall only be created for MM7_submit.RES indicating acceptance of the submitted MM, or also for the unsuccessful submissions.

Table 6.25: MM7 Submission CDR (MM7S-CDR)

Field	Category	Description
Record Type	M	MM7 Submission record.
Originator MMS Relay/Server Address	M	.IP address or domain name of originator MMS Relay/Server.
Linked ID	C	This field is present in the CDR only if the MM defines a correspondence to a previous message that was delivered by the MMS Relay/Server. The MM identification provided by the originator MMS Relay/Server.
VASP ID	M	Identifier of the VASP for this MMS Relay/Server
VAS ID	M	Identifier of the originating application.
Message ID	M	The MM identification provided by the originator MMS Relay/Server.
Originator Address	M	The address of the MM originator.
Recipients address list	M	The address(es) of the recipient MMS User Agent(s) of the MM. Multiple addresses are possible if the MM is not a reply MM.
Service code	C_o	Charging related information that is used directly for billing purposes
Content type	M	The content type of the MM content.
MM component list	M_o	The list of media components with volume size.
Message size	M	The total size of the MM content.
Message class	C_o	The class selection such as personal, advertisement, information service if specified in the MM7_submit_REQ.
Charge Information	M_o	The charged party indication and charge type.
Submission Time	C_o	The time at which the MM was submitted from the VASP if specified in the MM7_submit_REQ.
Time of Expiry	C_o	The desired date of expiry or duration of time prior to expiry for the MM if specified by the VASP
Earliest Time Of Delivery	C	This field contains either the earliest time to deliver the MM or the number of seconds to wait before delivering the MM if specified by the VASP
Delivery Report Requested	M_o	This field indicates whether a delivery report has been requested by the VASP or not.
Reply Charging	C_o	A request for reply-charging if specified by the VASP
Read reply requested	M_o	A request for read reply report as specified in the MM7_submit.REQ.
Reply Deadline	C_o	In case of reply-charging the latest time of submission of replies granted to the recipient(s) as specified by the VASP
Reply Charging Size	C_o	In case of reply-charging the maximum size for reply-MM(s) granted to the recipient(s) as specified by the VASP
Priority	C_o	The priority (importance) of the message if specified by the VASP
Message Distribution Indicator	C_o	This field is present if specified in the MM7_submit.REQ If set to “false" the VASP has indicated that content of the MM is not intended for redistribution. If set to “true" the VASP has indicated that content of the MM can be redistributed.
Request Status Code	M_o	The status code of the associated MM7_submit_REQ
Status Text	C_o	This field includes a more detailed technical status of the message at the point in time when the CDR is generated. This field is only present if the MM submission is rejected.
Record Time Stamp	M_o	Time of generation of the CDR.
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types.
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension.

6.1.5.2 MM7 Deliver Request CDR (MM7DRq-CDR)

If enabled, a MM7 Deliver Request Charging Data Record (MM7DRq-CDR) shall be produced in the recipient MMS Relay/Server if and when the recipient MMS Relay/Server sends an MM7_deliver.REQ to the recipient MMS VASP.

Table 6.26: MM7 Deliver Request record (MM7DRq -CDR)

Field	Category	Description
Record Type	M	MM7 Deliver Request record.
Recipient MMS Relay/Server Address	M	IP address or domain name of the recipient MMS Relay/Server.
Linked ID	C	This field is present in the CDR only if the MM defines a correspondence to a previous message that was delivered by the MMS Relay/Server. The MM identification provided by the originator MMS Relay/Server.
Reply Charging ID	C	This field is present in the CDR only if the MM is a reply-MM to an original MM. The Reply-Charging ID is the Message ID of the original MM.
Originator address	M	The address of the MMS User Agent as used in the MM7_deliver_REQ.
Recipient address	M	The address of the MM recipient of the MM.
MM component list	M_o	The list of media components with volume size.
Message size	M_o	The total size of the MM content.
Content type	M	The content type of the MM content.
Priority	C_o	The priority (importance) of the message if specified by the VASP
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types.
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension.

6.1.5.3 MM7 Deliver Response CDR (MM7DRs-CDR)

If enabled, a MM7 Deliver Response Charging Data Record (MM7DRs-CDR) shall be produced in the recipient MMS Relay/Server if and when the recipient MMS Relay/Server receives an MM7_deliver.RES from the recipient MMS VASP.

Table 6.27: MM7 Deliver Response record (MM7DRs-CDR)

Field	Category	Description
Record Type	M	MM7 Deliver Response record.
Recipient MMS Relay/Server Address	M	IP address or domain name of the recipient MMS Relay/Server.
Message ID	M	The MM identification provided by the originator MMS Relay/Server.
Recipient address	M	The address of the MM recipient of the MM.
Service code	C_o	Charging related information that is used directly for billing purposes
Request Status Code	M_o	The status code of the associated MM7_deliver_REQ
Status Text	M_o	This field includes a more detailed technical status of the message at the point in time when the CDR is generated.
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types.
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension.

6.1.5.4 MM7 Cancel CDR (MM7C-CDR)

If enabled, an MM7 Cancel Charging Data Record (MM7C-CDR) shall be produced in the MMS Relay/Server if and when the MMS Relay/Server has sent an MM7_cancel.RES to the MMS VASP.

Table 6.28: MM7 Cancel record (MM7C-CDR)

Field	Category	Description
Record Type	M	MM7 Cancel record
Originator MMS Relay/Server Address	M	.IP address or domain name of originator MMS Relay/Server.
VASP ID	M	Identifier of the VASP for this MMS Relay/Server
VAS ID	M	Identifier of the originating application.
Message ID	M	The MM identification provided by the originator MMS Relay/Server.
Originator Address	M	The address of the MM originator.
Request Status Code	M_o	The status code of the associated MM7_cancel.REQ.
Status Text	C_o	This field includes the status text as received in the MM7_cancel.RES corresponding to the Request Status Code. Present only if provided in the MM7_cancel.RES.
Sequence Number	M_o	Record number.
Time Stamp	M_o	Time of generation of the CDR.
Record extensions	C_o	A set of network/manufacturer specific extensions to the record.

6.1.5.5 MM7 Replace CDR (MM7R-CDR)

If enabled, an MM7 Replace Charging Data Record (MM7R-CDR) shall be produced in the MMS Relay/Server if and when the MMS Relay/Server has sent an MM7_replace.RES to the MMS VASP.

Table 6.29: MM7 Replace record (MM7R-CDR)

Field	Category	Description
Record Type	M	MM7 Replace record
Originator MMS Relay/Server Address	M	.IP address or domain name of originator MMS Relay/Server.
VASP ID	M	Identifier of the VASP for this MMS Relay/Server
VAS ID	M	Identifier of the originating application.
Message ID	M	The MM identification provided by the originator MMS Relay/Server.
Originator Address	M	The address of the MM originator.
Service code	C_o	Charging related information that is used directly for billing purposes
Content type	M	The content type of the MM content.
Submission time	C_o	The time at which the MM was submitted from the VASP if specified in the MM7_replace_REQ.
Time of Expiry	C_o	The desired date of expiry or duration of time prior to expiry for the MM if specified by the VASP
Earliest Time Of Delivery	C_o	This field contains either the earliest time to deliver the MM or the number of seconds to wait before delivering the MM if specified by the VASP
Request Status Code	M_o	The status code of associated MM7_replace.REQ.
Status Text	C_o	This field includes the status text as received in the MM7_replace.RES corresponding to the Request Status Code. Present only if provided in the MM7_replace.RES.
Sequence Number	M_o	Record number
Time Stamp	M_o	Time of generation of the CDR.
Record extensions	C_o	A set of network/manufacturer specific extensions to the record.

6.1.5.6 MM7 Delivery Report Request CDR (MM7DRRq-CDR)

If enabled, a MM7 Delivery Report Request Charging Data Record (MM7DRRq-CDR) shall be produced in the recipient MMS Relay/Server if and when the recipient MMS Relay/Server sends an MM7_delivery_report.REQ to the MMS VASP.

Table 6.30: MM7 Delivery Report Request record (MM7DRRq-CDR)

Field	Category	Description
Record Type	M	MM7 Delivery Report Requestrecord.
Recipient MMS Relay/Server Address	M_o	IP address or domain name of the recipient MMS Relay/Server.
Message ID	M	The MM identification provided by the originator MMS Relay/Server.
Originator address	M_o	The address of the VAS that submitted the original MM.
Recipient address	M	The address of the MM recipient of the MM.
MM Date and time	M	Date and time the MM was handled (retrieved, expired, rejected, etc.) as specified in the MM7_delivery_report.REQ.
MM Status Code	M	The status code of the delivered MM as received in the MM7_delivery_report.RES.
MM Status Text	C_o	This field includes the status text as received in the MM7_delivery_report.RES corresponding to the MM Status Code. Present only if provided in the MM7_delivery_report.RES.
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types.
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension.

6.1.5.7 MM7 Delivery Report Response CDR (MM7DRRs-CDR)

If enabled, an MM7 Delivery Report Response Charging Data Record (MM7DRRs-CDR) shall be produced in the recipient MMS Relay/Server if and when the recipient MMS Relay/Server receives an MM7_delivery_report.RES from the MMS VASP.

Table 6.31: MM7 Delivery Report Response record (MM7DRRs-CDR)

Field	Category	Description
Record Type	M	MM7 Delivery Report Response record.
Recipient MMS Relay/Server Address	M_o	IP address or domain name of the recipient MMS Relay/Server.
Message ID	M	The MM identification provided by the originator MMS Relay/Server.
Originator address	M_o	The address of the VAS that submitted the original MM.
Recipient address	M	The address of the MM recipient of the MM.
Request Status Code	M_o	The status code of the associated MM7_delivery_report.REQ.
Status Text	C_o	This field includes the status text as received in the MM7_delivery_report.RES corresponding to the Request Status Code. Present only if provided in the MM7_delivery_report.RES.
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types.
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension.

6.1.5.8 MM7 Read reply report Request CDR (MM7RRq-CDR)

If enabled, a MM7 Read reply report Request Charging Data Record (MM7RRq-CDR) shall be produced in the originator MMS Relay/Server if and when the recipient MMS Relay/Server sends an MM7_read reply_report.REQ to the recipient MMS Relay/Server.

Table 6.32: MM7 Read reply report Request record (MM7RRq-CDR)

Field	Category	Description
Record Type	M	MM7 Read reply report Requestrecord.
Recipient MMS Relay/Server Address	M_o	IP address or domain name of the recipient MMS Relay/Server.
Message ID	M	The MM identification provided by the originator MMS Relay/Server.
Originator address	M_o	The address of the VAS that submitted the original MM.
Recipient address	M	The address of the MM recipient of the MM.
MM Date and time	M	Date and time the MM was handled (retrieved, expired, rejected, etc.) as specified in the MM7_Read reply_report.REQ.
Read Status	M	The status of the MM (e.g. Read, deleted without being read, etc.) as sent in the MM7_read_reply_report.REQ.
MM Status Text	C_o	This field includes the status text as received in the MM7_read reply_report.RES corresponding to the Read Status. Present only if provided in the MM7_read reply_report.REQ.
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types.
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension.

6.1.5.9 MM7 Read reply report Response CDR (MM7RRs-CDR)

If enabled, an MM7 Read reply report Response Charging Data Record (MM7RRs-CDR) shall be produced in the recipient MMS Relay/Server if and when the recipient MMS Relay/Server receives an MM7_Read reply_report.RES from the originator MMS VASP.

Table 6.33: MM7 Read reply report Response record (MM7RRs-CDR)

Field	Category	Description
Record Type	M	MM7 Read reply report Response record.
Recipient MMS Relay/Server Address	M_o	IP address or domain name of the recipient MMS Relay/Server.
Message ID	M	The MM identification provided by the originator MMS Relay/Server.
Originator address	M_o	The address of the VAS that submitted the original MM.
Recipient address	M	The address of the MM recipient of the MM.
Request Status Code	M_o	The status code of the associated MM7_read reply_report.REQ.
Status Text	C_o	This field includes the status text as received in the MM7_read reply_report.RES corresponding to the Request Status Code. Present only if provided in the MM7_read reply_report.RES.
Record Time Stamp	M_o	Time of generation of the CDR
Local Record Sequence Number	M_o	Consecutive record number created by this node. The number is allocated sequentially including all CDR types.
Record extensions	C_o	A set of network/manufacturer specific extensions to the record. Conditioned upon the existence of an extension.

6.2 Data description for MMS online charging

Editor's Note: To be completed

Annex A (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Sep 2003	S_21	SP-030412	--	--	Submitted to TSG SA#21 for Information	1.0.0	