



Rich Communication Suite 5.3 Endorsement of OMA CPM 2.0 Message Storage Version 5.0 28 February 2015

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1 Introduction

1.1 Overview

This document describes which sections of the OMA CPM 2.0 Message Storage specification (see [CPMMSGSTORE]) are supported by RCS (Rich Communication Suite) 5.3.

For details on how this fits technically in this in the RCS scope see [RCS5.3].

For easier reference, this document follows the same structure as [CPMMSGSTORE]. For that reason the headings of the sections are citations of the headings used in [CPMMSGSTORE], within the sections they describe what part the equivalent section in [CPMMSGSTORE] is supported by RCS. For sections that are not applicable in their entirety, this is mentioned at the top level of the section and the subsections are not mentioned explicitly thereafter. For sections in which no difference with [CPMMSGSTORE] is introduced however, also the subsections are mentioned to state explicitly that they are applicable as well.

This specification lists differences and clarifications for RCS compared to [CPMMSGSTORE]. The former category includes both differences in expected behaviour compared to [CPMMSGSTORE] as well as corrections in behaviour, which should appear over time when bug fixes are applied to [CPMMSGSTORE]. The latter category describes what options are chosen for RCS in case [CPMMSGSTORE] provides multiple possibilities and provides clarifications on how the provided functionality is expected to be used.

In RCS, the message store will be used for two purposes:

- Long term, permanent storage/backup of messages the user wishes to store
- Temporary storage for sent/received messages in order to allow synchronization with devices that respectively didn't participate in the sending or were offline when the message was received

The latter messages will be stored by the participating function in conversations in the "default" system folder of the Message Store. Messages stored in conversations in that root folder will be removed from the storage by the server when they reach their expiry time. Message objects and folders in the "default" system folder can be preserved from scheduled expiry by copying or moving them to the "RCSMessageStore" folder. Objects and folders are synchronized across all devices which have sessions towards the RCS user's message storage server, and notifications of activity can be aggregated to reduce network load. Object and folder deletion follows the conventional IMAP two-step deletion process: first flagged for deletion, then expunged at a later time or by separate action.

Permanently stored messages (that is the user's message store) will be stored in conversations in a folder called "RCSMessageStore" or sub-folders thereof. "RCSMessageStore" will be a folder stored directly in the user's store i.e. a peer of the "default" system folder.

This leads to a Message Store structure as shown in the example in Figure 1:

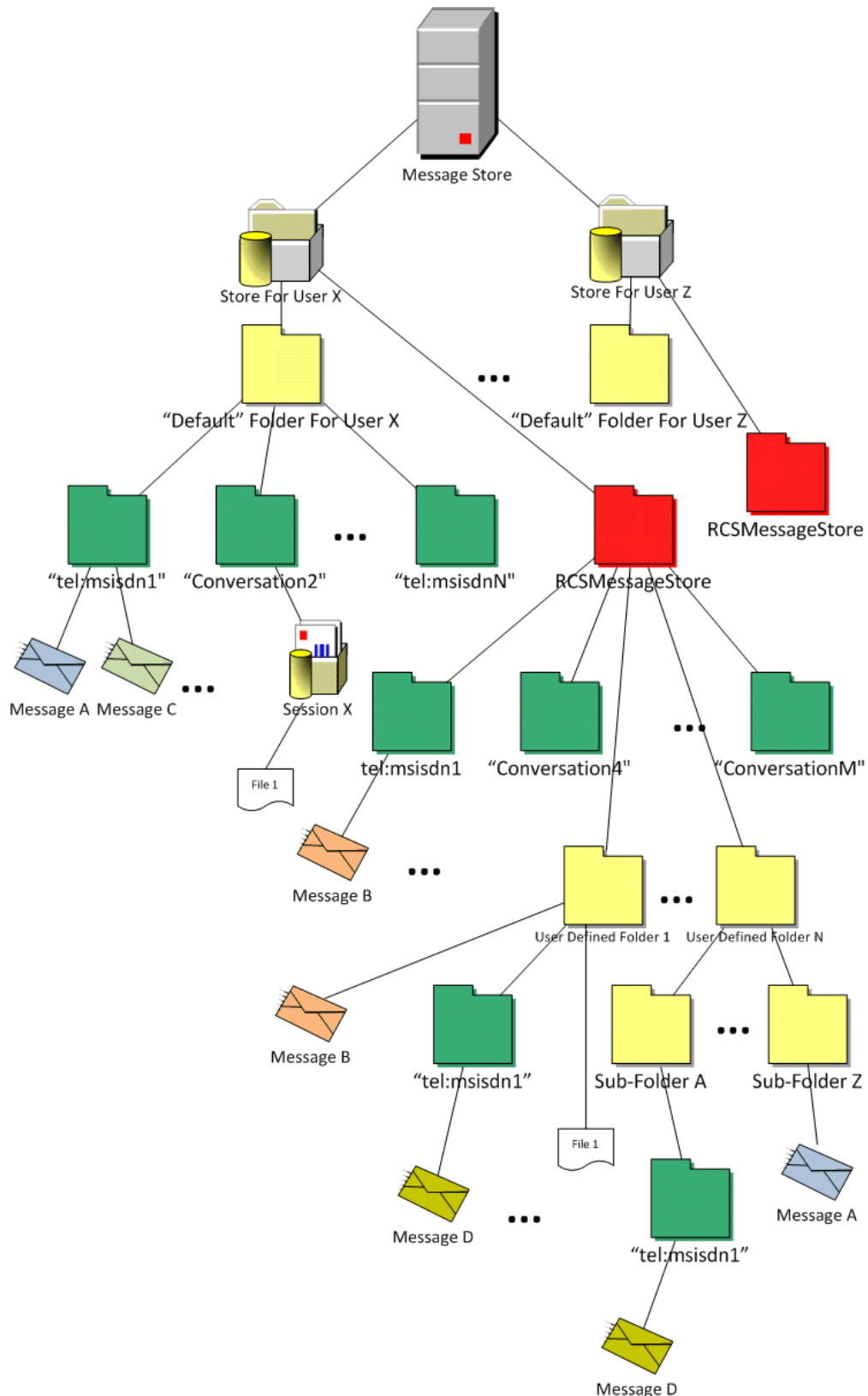


Figure 1: Message Store Example

As shown in the figure above, the store for the user contains the “default” system folder that contains only Conversation History folders. The “RCSMessageStore” folder located at the same level as the “default” system folder can contain Conversation History folders and other

folders. A folder hierarchy to organize the messages and session histories is thus only possible starting from the “RCSMessageStore” folder. The messages and session histories themselves are always stored in conversation history folders that correspond to the conversation in which the message or session history was sent. The same message or session history can occur multiple times in conversation history folders in different subfolders of the “RCSMessageStore” folder. For messages or session histories stored in a conversation history that is directly in the “default” system folder, a copy will not exist in the RCS Message Store folder or its subfolders

From a user perspective the only difference between an object or subfolder in a conversation history in the “default” system folder and a similar object or subfolder in a conversation history in the “RCSMessageStore” folder is that he (or his client) has selected the latter object or subfolder for permanent storage. An RCS client will therefore present those messages and session histories as if they were in the same location. That is in the example Message B will always be presented in the same conversational view as Message A and Message C.

A user may only create their folders under “RCSMessageStore” to better manage their stored information. A user defined folder is similar to a folder created for a file management system and the user can manipulate the contents in it freely; such as:

- store a standalone media object in it
- copy any objects from other folders into it
- remove any objects in it and move any objects in it to other user defined folders

1.2 Scope

This document provides the details of the storage interfaces used for the messaging technology in RCS.

1.3 Definition of Terms

Term	Description
ACL	Access Control List
CPIM	Common Presence and Instant Messaging
CPM	Converged IP Messaging
IMAP	Internet Message Access Protocol
MIME	Multipurpose Internet Mail Extensions
OMA	Open Mobile Alliance
PSK	Pre Shared Key
RCS	Rich Communication Suite
RTP	Real Time Protocol
SASL	Simple Authentication and Security Layer
TLS	Transport Layer Security
UID	Unique (Message) Identifier
URL	Uniform Resource Locator

1.4 Document Cross-References

Ref	Document Number	Title
1	[RCS5.3]	GSMA PRD RCC.07 RCS5.3 - Advanced Communications: Services and Client Specification, Version 6.0, 28 February 2015 http://www.gsma.com/rcs/
2	[CPMMSGSTORE]	CPM Message Storage, Open Mobile Alliance Ltd. OMA-TS-CPM_MessageStorage-V2_0-20150113-C http://member.openmobilealliance.org/ftp/public_documents/COM/COM-CPM/Permanent_documents/OMA-TS-CPM_MessageStorage-V2_0-20150113-C.zip
3	[RCS5-CONVENDORS]	GSMA PRD RCC.11 - Rich Communication Suite 5.3 Endorsement of OMA CPM 2.0 Conversation Functions, Version 4.0, 28 February 2015 http://www.gsma.com/rcs/
4	[RFC3261]	SIP (Session Initiation Protocol) IETF RFC http://tools.ietf.org/html/rfc3261
5	[RFC3501]	INTERNET MESSAGE ACCESS PROTOCOL - VERSION 4rev1 IETF RFC http://tools.ietf.org/html/rfc3501
6	[RFC3966]	The tel URI for Telephone Numbers IETF RFC http://tools.ietf.org/html/rfc3966
7	[RFC5819]	"IMAP4 Extension for Returning STATUS Information in Extended LIST", A. Melnikov et al, March 2010 http://www.ietf.org/rfc/rfc5819.txt
8	[RFC6068]	The 'mailto' URI Scheme IETF RFC http://tools.ietf.org/html/rfc6068

2 References

See chapter 1.4.

3 Terminology and Conventions

The same conventions, terminology, definitions and abbreviations used in chapter 3 of [CPMMSGSTORE] are valid for RCS. Additional abbreviations and terms specific for this document can be found in chapter 1.3.

4 Introduction

Note: RCS supports the following in the area of message storage

- Storage of Standalone CPM Messages
- Storage of CPM Session Histories including Session Info and Group State Objects
- Storage of File Transfer Histories
- Storage of those as CPM Conversation Histories
- Storage of Media objects attached to CPM Messages

- Storage of Stand-alone Media Objects
- Management of the storage folders and objects
- Synchronization with the device's local message store
- Search of storage folders and objects by keywords

RCS does not support the following in the area of message storage:

- Authorization of other users to access the message store

4.1 CPM Version 1.0

Following differences with [CPMMSGSTORE]:

- In the Operations, the management of access rights on stored objects is not applicable for RCS

4.2 CPM Version 2.0

No differences with [CPMMSGSTORE].

5 Common Procedures

5.1 Authorization and Authentication

No differences with [CPMMSGSTORE].

5.1.1 Authentication

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- TLS/PSK-TLS (transport layer security / pre-shared key-transport layer security) will be used for RCS

5.1.2 Authorization

Following differences with [CPMMSGSTORE]:

- The extension with the possibility to define access control lists including the reference to the IMAPv4 (Internet Message Access Protocol) ACL (Access Control List) Extension is not applicable for RCS

As a clarification for RCS:

- The use of IMAP4 URLAUTH is limited to only the home domain

5.2 Storage Folder and Objects

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- In RCS, the "default" system folder shall only contain Conversation History Folders (see section 5.2.6)
- In the user's store, the RCS client shall store messages in a user folder named "/RCSMessageStore" which the user cannot remove. This folder could contain Conversation History Folders moved/copied directly from the "default" system folder as well as other user defined folders.

- An RCS Message Store Client (e.g. RCS Client or Participating Function) shall ignore unknown storage objects
- An RCS Message Store Client (e.g. RCS Client or Participating Function), for all objects of this section, shall store MIME headers as described in section 6.3.1 of this document.
- An RCS Client shall store objects in the RCSMessageStore folder and shall not store objects in the “default” system folder.

5.2.1 Message Object

Following differences with [CPMMSGSTORE]:

- Instead of setting the MIME From to the address of the initiator of the CPM request or legacy message retrieved from the authenticated originator’s CPM Address in the SIP request, or setting it to the value of the Referred-By header field if it is present in the SIP request,
 - The MIME From header value for a message sent between two users is set to the address of the originator of the message or legacy message retrieved from the corresponding authenticated originator’s CPM Address in the associated SIP request or response, and
 - The MIME From header value for a message sent within a Group Chat is set to the address of the originator of the message or legacy message retrieved from the CPIM From header.
- Instead of setting the MIME To header to the address of the recipient of the CPM request or legacy message retrieved from the authenticated recipient’s CPM Address in the 200 “OK” SIP response to the SIP request,
 - The MIME To header value for a message sent between two users is set to the address of the recipient of the message or legacy message retrieved from the corresponding authenticated originator’s CPM Address in the associated SIP request or response, and
 - The MIME To header value for a message sent within a Group Chat is set to the address of the recipient of the message retrieved from the CPIM To header. In a message being sent by a participant to the other Group Chat participants, this is the address of the Group Chat session identity, and in a message being received by a participant in the Group Chat, it is the address of the participant.

NOTE: an earlier version of RCS defined a header called RCS-SMS-Content. This header is now replaced with the CPM defined header Message-Correlator.

5.2.2 File Transfer History Object

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- File Transfer History Objects will always be stored in their corresponding conversation history or session history folders (see sections 5.2.6 and 5.2.7)

5.2.2.1 Application/X-CPM-File-Transfer Content Type Definition

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- As in each session only one file is transferred only one file-object element will be provided.

5.2.3 Session Info Object

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- Refer to section 6.3.5

5.2.3.1 Application/X-CPM-Session Content Type Definition

No differences with [CPMMSGSTORE].

5.2.4 Group State Object

No differences with [CPMMSGSTORE].

5.2.5 Stand-alone Media Object

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- The standalone Media Object can only be stored in a user defined folder.

5.2.6 Conversation History Folder

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- To preserve the integrity of a conversation history, Objects stored in a conversation history folder shall not be moved to another place, instead the whole folder should be moved together. An Object stored in a conversation history folder can be copied to a user defined folder. In this case it might lose its association with the original conversation history.

5.2.7 Session History Folder

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- To preserve the integrity of a chat session, Objects stored in a session history folder should not be moved independently to another conversation history or session history folder. An Object stored in a session history folder can be copied to a user defined folder. In this case it might lose its association with the original chat history.

5.2.8 User Folder

No differences with [CPMMSGSTORE].

5.3 Identification of Storage Objects

No differences with [CPMMSGSTORE].

5.4 Notifications

No differences with [CPMMSGSTORE].

5.5 Metadata Structure

No differences with [CPMMSGSTORE].

6 Procedures at Message Storage Client

Following difference with [CPMMSGSTORE]:

- The “ACL” IMAP4 extension defined in RFC 4314 is not applicable for RCS
- The “CONDSTORE” IMAP4 extension defined in RFC 7162 is mandatory for RCS
- The “QRESYNC” IMAP4 extension defined in RFC 7162 is mandatory for RCS
- The “URLAUTH” IMAP4 extension defined in RFC 4467 is not applicable for RCS
- The “ENABLE” IMAP4 extension defined in RFC 5161 is mandatory for RCS
- The “METADATA” IMAP4 extension defined in RFC 5464 is not applicable for RCS
- The “ANNOTATE” IMAP4 extension defined in RFC 5257 is not applicable for RCS
- The “CONVERT” IMAP4 extension defined in RFC 5259 is not applicable for RCS

6.1 General Operations

6.1.1 Authenticate Operation

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- If the user’s message store folder does not contain an “RCSMessageStore” folder at the same level as the “default” system folder when the client logs in for the first time, the client will create such a folder.

6.1.2 Set Active Folder Operation

No differences with [CPMMSGSTORE].

6.2 Access Control List Operations

Not applicable for RCS

6.3 Message and History Operations

6.3.1 Object Store Operation

Following differences with [CPMMSGSTORE]:

- Based on the clarifications for RCS listed under section 6 above: RFC 5257 (“ANNOTATE”) is not applicable to RCS.
- Unless requested by the user to store them in a specific folder as part of a move or copy operation, for RCS objects relating to a 1-to-1 conversation (i.e. file transfer objects, session info objects, message objects related to standalone messages, 1-to-

1 chat messages, and legacy messages (i.e. SMS/MMS)) shall be stored in a folder identified by the identity of the Contact in the Conversation as defined in [CPMMSGSTORE]. This identity shall be determined based on the Authenticated Originator's Address that is part of the signalling.

- If a global E.164 phone number is available, that shall be used in the global-number representation of a tel URI as defined in [RFC3966]. Parameters are not used in the folder name.
Example: tel:+4917123456789

NOTE: RCS user clients storing messages in the Common Message Store may not have sufficient information to normalize all destination addresses to global E.164 phone number format. In this case the folder name may be formatted as defined below for non E.164 numbers.

- If a non E.164 phone number is available, it shall be used in the local-number representation of a tel URI as defined in [RFC3966]. These numbers are typically short codes used for addressing of value added services outside the public numbering plan. Parameters and context are not used in the folder name.
Example: tel:22632677
- Phone numbers are typically derived from
 - tel URI in SIP Signalling
 - SIP URI in SIP signalling if appended by user=phone parameter
 - SMS Originator Address
 - SMS Destination Address
 - MMS Originator Address
 - MMS Recipient Address
- If a SIP URI is available it shall be used as defined in [RFC3261] after converting it to lower case first. Parameters shall not be included in the folder name.
Example: sip:joe@example.com
SIP URIs are typically derived from:
 - SIP URI in SIP signalling if not appended by user=phone parameter
- If an e-mail address is available it shall be used as mailto URI [RFC6068] after converting characters to lower case first.
Example: mailto:joe@example.com
e-mail addresses are typically derived from
 - MMS Originator Address
 - MMS Recipient Address
- If an alphanumeric address is available it shall be used with no conversion. These addresses are typically display names from SMS value added services without a routing address.
Example: ACME Corporation
Alphanumerical addresses are typically derived from

- SMS Originator Address
- Entities managing folder names in the Common Message Store shall comply with the mailbox international naming conventions defined in [RFC3501].

NOTE: Folder Naming for MMS multiple recipients is for further study.

As a clarification for RCS

- An RCS Message Store Client using the Object Store operation may provide an initial set of metadata flags

6.3.2 Object Fetch Operation

No differences with [CPMMSGSTORE].

6.3.3 Object Preview Fetch Operation

Following differences with [CPMMSGSTORE]:

- Not applicable since RFC 5259 (“CONVERT”) is not applicable to RCS as per section 6 above

6.3.4 Object Copy Operation

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- Objects in a conversation history folder can only be copied to a user defined folder.
- Objects in a session history folder can only be copied to a user defined folder.
- The associated session info object shall also be copied with the message object if not already present in the user defined folder.

6.3.5 Object Remove Operation

Following differences with [CPMMSGSTORE]:

- The RCS client SHALL NOT expunge messages from the “default” system folder. The RCS client may allow the user to restore deleted messages.
- The RCS client should expunge messages to remove messages permanently from the “RCSMessageStore” folder, but only once the RCS client confirms from the user there is no need to restore the deleted messages.

As a clarification for RCS:

- The RCS user shall be able to preserve objects that are scheduled for deletion by archiving them (i.e., copying them) to the “RCSMessageStore” folder for longer term storage.
- When archiving a conversation, or a subset of a conversation, from the “default” system folder to a user folder, the following objects Shall be copied to the destination user folder but Shall Not be removed from their original default folder until the folder itself is deleted:
 - any session info object in the source session history folder, or in the conversation history folder;
 - the latest Group State Object(s) in the source session history folder.

- The associated session info object shall be deleted only when the last message object related to this session in the session history folder is deleted.
- The conversation history folder shall be deleted only when the last object related to this conversation is deleted.
- For message removal by clients: When the client deletes a message from the “default” system folder or “RCSMessageStore” folder from one device, all other clients belonging to the user shall no longer display that message. Procedures for RCS are defined in [RCS5.3].
- For message removal by the server: When the server deletes (expunges) messages in the “default” system folder (e.g. because of message expiry), the client shall Not remove these same messages from their own device.

6.4 Folder Operations

6.4.1 Folder Create Operation

No differences with [CPMMSGSTORE].

6.4.2 List Folder Operation

Following differences from [CPMMSGSTORE]:

- After initial synchronization, the Message Storage Client SHALL make use of the LIST-STATUS operation as defined in [RFC5819] for any subsequent folder synchronization, instead of SHOULD.

6.4.3 Folder Move Operation

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- An RCS client can move Conversation History folders in the “default” system folder to the “RCSMessageStore” folder.
- An RCS client shall not move nor remove the “RCSMessageStore” folder

6.4.4 Folder Remove Operation

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- If the folder being removed contains further objects:
 - The RCS client shall generate individual remove requests for each object in the folder being removed

6.4.5 Folder Search Operation

No differences with [CPMMSGSTORE].

6.5 Reference Operations

6.5.1 Generate Reference Operation

Following differences from [CPMMSGSTORE]: Not applicable since RFC 4467 (“URLAUTH”) is out of scope RCS as per section 6 above.

6.5.2 Fetch by Reference Operation

No Following differences from [CPMMSGSTORE]: Not applicable since RFC 4467 (“URLAUTH”) is out of scope for RCS as per section 6 above.

6.6 Metadata Management Operations

No differences with [CPMMSGSTORE].

6.6.1 Metadata Update Operation

Following differences with [CPMMSGSTORE] based on the clarifications for RCS listed under section 6 above: RFC 5257 (“ANNOTATE”) and RFC 5464 (“METADATA”) are not applicable to RCS.

6.6.2 Metadata Fetch Operation

Following difference with [CPMMSGSTORE] based on the clarifications for RCS listed under section 6 above: RFC 5257 (“ANNOTATE”) is not applicable to RCS.

6.7 Synchronization

Following difference with [CPMMSGSTORE]: based on the clarifications for RCS listed in section 6 above: RFC 5161 (“ENABLE”) and RFC 7162 (“CONDSTORE” and “QRESYNC”) are mandatory for RCS.

As a clarification for RCS:

- An RCS client will present message objects in a conversation history folder or a session history folder from the “default” system folder of the Message Store as well as message objects in a conversation history folder or a session history folder from the “RCSMessageStore” folder in the same (conversational) views as newly received messages albeit with the proper status
- If an RCS client finds that an object in a conversation history folder in the “default” system folder of the Message Store has been marked for deletion and expunged by the server (e.g. the expiration time for that object is in the past), the client shall not remove the object from its local storage and shall continue to present the object in the relevant conversational view.
- If an RCS client finds that an object in a conversation history folder in the “default” system folder of the Message Store has been marked for deletion, the client shall remove the object from its local storage and thus shall not present the object in any conversational view.
- An RCS client will provide an option to preserve messages from being deleted at expiry, by copying the message to the “RCSMessageStore” folder, preserving the same (conversational) hierarchy as the message had in the “default” system folder.

6.8 Notification Operations

No differences with [CPMMSGSTORE].

7 Procedures at Message Storage Server

Following difference with [CPMMSGSTORE]:

- The “ACL” IMAP4 extension defined in RFC 4314 is not applicable for RCS
- The “CONDSTORE” IMAP4 extension defined in RFC 7162 is mandatory for RCS
- The “QRESYNC” IMAP4 extension defined in RFC 7162 is mandatory for RCS
- The “METADATA” IMAP4 extension defined in RFC 5464 is not applicable for RCS
- The “ANNOTATE” IMAP4 extension defined in RFC 5257 is not applicable for RCS
- The “CONVERT” IMAP4 extension as defined in RFC 5259 is not applicable for RCS
- The “URLAUTH” IMAP4 extension defined in RFC 4467 is not applicable for RCS
- The “ENABLE” IMAP4 extension defined in RFC 5161 is mandatory for RCS
- The “METADATA” IMAP4 extension defined in RFC 5464 is not applicable for RCS

7.1 General Operations

7.1.1 Authenticate Operation

No differences with [CPMMSGSTORE].

7.1.2 Set Active Folder Operation

No differences with [CPMMSGSTORE].

7.2 Access Control List Operations

Not applicable for RCS

7.3 Objects Operations

7.3.1 Object Store Operation

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- The client’s responsibility to keep proper conversation histories is not enforced by the server

7.3.1.1 Handling Deferred CPM Message Objects

Not applicable for RCS

7.3.2 Object Fetch Operation

No differences with [CPMMSGSTORE].

7.3.3 Object Preview Fetch Operation

Following difference from [CPMMSGSTORE]: based on the clarifications for RCS listed under section 7 above: RFC 5229 (“CONVERT”) is not applicable for RCS.

7.3.4 Object Copy Operation

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- The client's responsibility to keep proper conversation histories is not enforced by the server
- The Message Storage Server shall preserve the integrity of a conversation or chat history in the conversation history and session history folders. To preserve the integrity of the conversations and CPM Sessions, the Message Store Client should copy the entire content of a folder and not just isolated message objects. That ensures that IMDNs associated with a message, as well as full context for the message (e.g. session info object(s), Group State Object(s) if applicable) are also copied at the same time as the message object(s).

7.3.5 Object Remove Operation

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- The latest Group State Object shall not be removed from the session history folder. The latest Group State Object can only be removed together with the removal of the entire session history folder.
- The Message Storage Server shall remove session history folders which no longer contain any chat message objects, according to service provider policy.
- The Message Storage Server will remove objects from conversation history folders in the "default" system folder of the Message Store that have expired according to a service provider's policy.
- The Message Storage Server will remove conversation history folders that contain no Message, file transfer history or session history folders any longer from the "default" system folder of the Message Store.
- The Message Storage Server shall support object removal using the conventional IMAP two-step deletion process:
 - objects which the user deletes, or which have reached their expiry time, shall be first marked for deletion,
 - and they are then expunged from the Message Storage Server at a subsequent fixed interval in time.
- The expunging of objects marked for deletion may be based on explicit RCS user request or by service provider policy. The client's responsibility to keep proper conversation histories is not enforced by the server.
 - To allow a user's other devices to detect a message deleted by a device, the server should not expunge messages in the "default" system folder until they are to be expunged according to operator policy (e.g., at message expiry time).
 - The Message Storage Server shall only expunge messages from the "RCSMessageStore" folder if requested to do so by the user.

7.4 Metadata Management Operation

No differences with [CPMMSGSTORE].

7.4.1 Metadata Update Operation

Following difference with [CPMMSGSTORE]: based on the clarifications for RCS listed under section 7 above: RFC 5257 (“ANNOTATE”) and RFC 5464 (METADATA”) are not applicable for RCS.

7.4.2 Metadata Fetch Operation

Following difference with [CPMMSGSTORE]: based on the clarifications for RCS listed under section 7 above: RFC 5257 (“ANNOTATE”) and RFC 5464 (METADATA”) are not applicable for RCS.

7.5 Folder Operations

7.5.1 Folder Create Operation

No differences with [CPMMSGSTORE].

7.5.2 List Folders Operation

No differences with [CPMMSGSTORE].

7.5.3 Folder Move Operation

No differences with [CPMMSGSTORE].

7.5.4 Folder Remove Operation

No differences with [CPMMSGSTORE].

7.5.5 Folder Search Operation

No differences with [CPMMSGSTORE].

7.6 Reference Operations

7.6.1 Generate Reference Operation

Following difference from [CPMMSGSTORE]: based on the clarifications for RCS listed under section 7 above: RFC 4467 (“URLAUTH”) is out of scope for RCS.

7.6.2 Fetch by Reference Operation

Following difference from [CPMMSGSTORE]: based on the clarifications for RCS listed under section 7 above: RFC 4467 (“URLAUTH”) is out of scope for RCS.

7.7 Message and History Synchronization Operations

Following difference from [CPMMSGSTORE] based on the clarifications for RCS listed under section 7 above: RFC 5161 (“ENABLE”) and RFC 7162 (“CONDSTORE” and “QRESYNC”) are mandatory for RCS.

7.8 Notifications Operations

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- The Message Storage Server may, subject to service provider policy, aggregate notifications of activity such that only a single notification results at the end of a series of operations.

Appendix A. Change History

Appendix not relevant for RCS: as with the other RCS documents the history table is at the end of the document.

Appendix B. Static Conformance Requirements

Appendix not relevant for RCS

Appendix C. CPM-Defined MIME HEADERS FOR IMAP OBJECTS

No differences with [CPMMSGSTORE].

C.1. CONVERSATION-ID MIME HEADER FIELD

No differences with [CPMMSGSTORE].

C.2. CONTRIBUTION-ID MIME HEADER FIELD

No differences with [CPMMSGSTORE].

C.3. INREPLYTO-CONTRIBUTION-ID MIME HEADER FIELD

No differences with [CPMMSGSTORE].

C.4. IMDN-MESSAGE-ID-CONTRIBUTION-ID MIME HEADER FIELD

No differences with [CPMMSGSTORE].

C.5. P-ASSERTED-SERVICE MIME HEADER FIELD

No differences with [CPMMSGSTORE].

C.6. MESSAGE-CORRELATOR MIME HEADER FIELD

No differences with [CPMMSGSTORE].

Appendix D. Example of Session History Folder

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- An RCS Message Store Client will always store MIME headers as described in section 6.3.1 of this specification.

Appendix E. Example of File Transfer History Object

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- An RCS Message Store Client will always store MIME headers as described in section 6.3.1 of this specification.

Appendix F. STORAGE OF CPM SESSION

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- An RCS Message Store Client will always store MIME headers as described in section 6.3.1 of this specification.

Appendix G. GROUP STATE OBJECT SCHEMA

No differences with [CPMMSGSTORE].

Appendix H. CPM METADATA ANNOTATIONS (NORMATIVE)

Following differences with [CPMMSGSTORE]:

- Based on the clarifications for RCS listed under section 6 and 7 above: RFC 5464 (“METADATA”) is not applicable for RCS.
- the “default” system folder DefaultFolderLocation is actually called “/Default” and is thus at the root level

H.1. METADATA ENTRY FORMATS

Not applicable for RCS.

H.1.1. DEFAULTFOLDERLOCATION

Following differences with [CPMMSGSTORE]:

- based on the clarifications for RCS listed under section 6 and 7 above RFC 5464 (“METADATA”) is not applicable for RCS
- the “default” system folder DefaultFolderLocation is called “/Default” and is thus at the root level.

Appendix I. REPRESENTATION OF CPM CONVERSATIONS IN THE CPM MESSAGE STORAGE (INFORMATIVE)

I.1. STANDALONE EXCHANGES

No differences with [CPMMSGSTORE].

I.2. CHAT EXCHANGES EXAMPLE

No differences with [CPMMSGSTORE].

I.3. LONG-LIVED CHAT EXCHANGES

No differences with [CPMMSGSTORE].

As a clarification for RCS:

- Only one Group Chat session history folder is supported inside a conversation history folder.

I.4. STANDALONE TO 1-1 CHAT

No differences with [CPMMSGSTORE].

I.5. EXTENDING 1-1 CHAT TO GROUP CHAT

Following differences with [CPMMSGSTORE]:

- This use case is not applicable for RCS

I.6. CONVERSATION VIA PARALLEL CHANNELS

No differences with [CPMMSGSTORE].

Document Management

Document History

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
1.0	13 Aug 2012	First version of the document based on Rich Communication Suite 5.0 Endorsement of OMA CPM 1.0 Message Storage Version 1.0 Approved by DAG and PSMC	PSMC	Tom Van Pelt / GSMA
1.0	26 Sep 2012	Added RCC.09 Number		Tom Van Pelt / GSMA
1.0	17 Sep 2013	Applied new document template		Tom Van Pelt / GSMA
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3.0	28 November 2013	Applied MCR1002 approved by DQR and Global Specification Group (GSG)	GSG	Tom Van Pelt / GSMA
4.0	07 May 2014	First version of the document for RCS 5.2: Include approved CR1003	GSG	Tom Van Pelt / GSMA
5.0	28 February 2015	First version of the document for RCS 5.3: Include approved CR1004	PSMC	Tom Van Pelt / GSMA

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