Rich Communication Suite 5.1 Endorsement of OMA SIP/SIMPLE IM 1.0

Version 1.0

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1 Introduction

1.1 Overview

This document describes which sections of the OMA SIMPLE IM specification (see [OMASIMPLEIM]) are supported by Rich Communication Suite (RCS) 5.1.

For details on how this fits in the whole of RCS 5.1 please see [RCS5.1].

For easier reference, this document follows the same structure as [OMASIMPLEIM]. For that reason the headings of the sections are citations of the headings used in [OMASIMPLEIM], within the sections they describe what part the equivalent section in [OMASIMPLEIM] 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 thereafter. For sections in which no difference with [OMASIMPLEIM] is introduced however, also the subsections are mentioned to state explicitly that they are applicable as well.

1.2 Scope

This document provides the details of the IM technology used in this release of RCS 5.1.

1.3 Definition of Terms

Term	Description
CPIM	Common Profile for Instant Messaging
IM	Instant Messaging
IP	Internet Protocol
MMS	Multimedia Messaging Service
MSRP	Message Session Relay Protocol
OMA	Open Mobile Alliance
RCS	Rich Communication Suite
SDP	Session Description Protocol
SIMPLE	SIP for Instant Messaging and Presence Leveraging Extensions
SIP	Session Initiation Protocol
SMS	Short Message Service
TCP	Transmission Control Protocol

1.4 Document Cross-References

Document	Name
[IR.79]	Image Share Interoperability Specification http://www.gsmworld.com/documents/ireg/ir79_11.pdf
[RCS5.1]	RCS 5.1 - Advanced Communications: Services and Client Specification, Version 1.0, 13 August 2012 http://www.gsma.com/rcs/
[OMASIMPLEIM]	Instant Messaging using SIMPLE, Open Mobile Alliance Ltd. OMA-TS-SIMPLE_IM-V1_0-20110513-C http://member.openmobilealliance.org/ftp/public_documents/COM/IM/Permanent_documents/OMA-TS-SIMPLE_IM-V1_0-20110513-C.zip
[RFC3261]	SIP: Session Initiation Protocol, IETF, June 2002 http://www.rfc-editor.org/rfc/rfc3261.txt
[RFC3994]	Indication of Message Composition for Instant Messaging, IETF, January 2005 http://www.ietf.org/rfc/rfc3994.txt?number=3994
[RFC4145]	TCP-Based Media Transport in the Session Description Protocol (SDP), IETF, September 2005 http://www.ietf.org/rfc/rfc4145.txt?number=4145
[RFC4975]	The Message Session Relay Protocol (MSRP),IETF, September 2007 http://www.ietf.org/rfc/rfc4975.txt?number=4975

Document	Name
[RFC5366]	Conference Establishment using Request-contained lists in the Session Initiation Protocol (SIP), IETF, October 2008 http://www.ietf.org/rfc/rfc5366.txt?number=5366
[RFC5438]	Instant Message Disposition Notification (IMDN), IETF, February 2009 http://www.ietf.org/rfc/rfc5438.txt?number=5438
[RFC5547]	Session Description Protocol (SDP) Offer/Answer Mechanism to Enable File Transfer, IETF, May 2009 http://www.ietf.org/rfc/rfc5547.txt?number=5547
[RFC5627]	Using Globally Routable User Agent URIs (GRUUs) in the Session Initiation Protocol (SIP) IETF RFC http://tools.ietf.org/html/rfc5627
[RFC6135]	An Alternative Connection Model for the Message Session Relay Protocol, IETF, February 2011 http://www.ietf.org/rfc/rfc6135.txt?number=6135
[draft-ietf-simple-msrp-sessmatch]	Session Matching Update for the Message Session Relay Protocol (MSRP), IETF, April 2010 http://tools.ietf.org/id/draft-ietf-simple-msrp-sessmatch-10.txt

2 References

See chapter 1.4.

3 Terminology and Conventions

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

4 Introduction

Note:
RCS 5.1 supports following modes of communication

- One-to-one session and Ad-hoc session mode messaging (chapter 4.3.1)
- Peer-to-peer Instant Messaging (IM) Session (chapter 4.3.2)
- Pager Mode (chapter 4.2.1), but only for the transmission of delivery reports and read notifications

RCS 5.1 does not support following modes of communication

- Pager Mode (chapter 4.2.1), for all other types of content
- Large Message Mode messaging (chapter 4.2.1)
- Group Messages (chapter 4.2.2)
- Deferred Messages (chapter 4.2.3)
- Predefined session mode messaging (chapter 4.3.1)

4.1 Version 1.0

No differences with [OMASIMPLEIM].

4.2 Pager Mode And Large Message Mode Messaging

4.2.1 General

Following differences for RCS:

- Pager Mode and Large message Mode are reserved and can be used for an implementation of the Short Message and Multimedia Messaging Services (SMS and MMS respectively) for packet-only devices.

- Pager Mode messages are used though for the specific purpose of delivering delivery reports and read notifications that are sent outside of the scope of a session. As these are small messages, there is no need for the use of Large Message mode.

4.2.2 Group Messages

Not applicable for RCS.

4.2.3 Deferred Messages

Not applicable for RCS.

As a clarification for RCS:
RCS includes deferred messaging functionality for Session Mode (restricted to one-to-one sessions) which functions only in a Push based manner (see chapter 5.2.1) and is thus not related to the Deferred messaging functionality for Pager Mode and Large Message Mode messages that is defined in [OMASIMPLEIM]. As the delivery reports and read notifications are related to that chat functionality, the deferred messaging functionality for those reuses the mechanisms defined for chat.

4.3 Session Mode Messaging

No differences with [OMASIMPLEIM].

4.3.1 Session Mode Messaging as an IM conference

Only one difference with [OMASIMPLEIM]: the statement referring to pre-defined groups is not applicable for RCS, as it does not support them.

4.3.2 Peer-to-Peer IM Session

No differences with [OMASIMPLEIM].

5 Common Procedures

5.1 Authenticated Originator's IM Address

No differences with [OMASIMPLEIM].

5.2 IM Service Registration

5.2.1 General

Registration will be done as described in [RCS5.1]. This means following differences with [OMASIMPLEIM]:

- In step 2, the feature tags for the other RCS use cases will be included.
- In Step 2a, the inclusion of the feature-tags '+g.oma.sip-im.system-message' and '+g.oma.sip-im.large-message', is not applicable for RCS.
- In step 2 the Contact header included in the REGISTER request shall also include a sip.instance parameter with a value set according to the DEVICE ID configuration parameter as described in [RCS5.1].

5.2.2 IM Service Registration and Re-Registration

No differences with [OMASIMPLEIM].

5.2.3 IM Service De-Registration

Only one difference with [OMASIMPLEIM]: in step 2 the feature tags "+g.oma.sip-im.system-message" and '+g.oma.sip-im.large-message' are not applicable for RCS.

5.2.4 IM Service Settings Client procedure

Not applicable for RCS

5.3 Getting Information on Client Status

No differences with [OMASIMPLEIM].

5.4 IM Server Sending System Message

Not applicable for RCS

5.5 Display Name

Only 4 differences for RCS:

- An inviting client providing a display name shall include it both in the P-Preferred-Identity header and in the From header
- The case for a predefined group is not applicable for RCS
- Step 1 (anonymity) of the Controlling IM Function handling is not applicable for RCS
- The first case of step 2 of the Controlling IM Function handling (a display name from the IM Group definition) is not applicable for RCS

5.6 Warning Header

No differences with [OMASIMPLEIM].

5.7 Final Delivery Report

Not applicable for RCS

5.8 MSRP Connection Set Up

No differences with [OMASIMPLEIM].

5.8.1 Negotiate Direction of the MSRP Connection Setup

Only one difference with [OMASIMPLEIM]:
An RCS client SHALL support [RFC4145] (instead of SHOULD)

As a clarification for RCS:

- Not receiving any setup attribute in the Session Invitation shall be interpreted as in [RFC4145]; the offerer is the active party and the receiving client shall either include a=setup:passive in the response, or not include any a=setup attribute at all in the response. Note that as per [RFC4145], not including a=setup:passive in the response is the same as including it, since that is the default value if it is not present in the response.
- With regards to the initiation of the Transmission Control Protocol (TCP) connection during session establishment in MSRP (Message Session Relay Protocol): If the offered session invitation includes a = setup:"actpass", then the offerer shall start listening to its own advertised port before sending the ACK to a response from the receiving client/server (the answerer) including a=setup:”active”
- With regards to the initiation of the TCP connection during session establishment in MSRP: the answerer, receiving client/server, that responds to the offerer with a=setup :”active”, shall initiate the TCP connection after receiving ACK from the sending client/server

5.8.2 Support of Application Level Gateway

Only one difference with [OMASIMPLEIM]
In addition for RCS: the IM functional entities supporting MSRP SHALL support the version of [draft-ietf-simple-msrp-sessmatch] referenced in this specification instead of the one referred to from [OMASIMPLEIM].

5.9 Contribution Identifier Header

No differences with [OMASIMPLEIM].

As a clarification for RCS: the value included in the Contribution Identifier Header shall not allow identifying the client that generated it and thus not include any identifiers that refer to that client such as an IP address. If the value in the Call-ID header complies with these restrictions, the initiating client may reuse that value in the Contribution Identifier Header.

5.10 Session-Replaces Header

No differences with [OMASIMPLEIM].

6 Procedures at the IM Server

6.1 Participating IM Functions Procedures

6.1.1 Originating Participating Function

Only one difference with [OMASIMPLEIM]: the statement referring to the conversational history function is not applicable for RCS.

6.1.1.1 General

No differences with [OMASIMPLEIM] for the general sections and the handling of the response. For the handling of the request only step 1 (checking of authenticated originator's address) applies.

6.1.1.2 IM Session

6.1.1.2.1 Determination of Session Handling

Only one difference with [OMASIMPLEIM]: Step 1 (checking of feature tag '+g.oma.sip-im.large-message') is not applicable for RCS.

6.1.1.2.2 Reception of an Initial SIP INVITE IM Session Request

Only one difference with [OMASIMPLEIM]:

- the section on history handling (step 7 of 200 "OK" response) is not applicable for RCS

As a clarification for RCS:

- The IM Server shall transparently pass any received subject header into the outgoing Session Initiation Protocol (SIP) INVITE request.

6.1.1.2.3 Void

No content in [OMASIMPLEIM].

6.1.1.2.4 IM Session Modification

Not Supported for RCS. A session modification request will be rejected.

6.1.1.2.5 SIP SUBSCRIBE Request

Only a small difference with [OMASIMPLEIM]: in the support for IM Groups needs to be removed from the Note.

6.1.1.2.6 SIP REFER Request

Steps 1 and 2 (Delete and History) are NOT supported by RCS. Step 3b is NOT supported by RCS: REFER with the Request URI set to an IM session identity and the method set to BYE. Step 3a is supported by RCS: REFER with the Request URI set to an IM session identity and no method or the INVITE method is specified.

6.1.1.2.7 SIP CANCEL Request

No differences with [OMASIMPLEIM].

6.1.1.2.8 SIP BYE Request from IM Client

Only one difference with [OMASIMPLEIM]: the paragraph on history handling is not applicable for RCS.

6.1.1.2.9 SIP Session Timer Expiry

Only one difference with [OMASIMPLEIM]: the paragraph on history handling is not applicable for RCS.

6.1.1.3 Pager Mode Messaging

6.1.1.3.1 Receiving SIP MESSAGE request for Pager mode

Only following differences with [OMASIMPLEIM]:

- Step 2 (use of anonymous request) is not applicable for RCS
- The section on history handling is not applicable for RCS.

6.1.1.4 Large Message Mode

Not applicable for RCS

6.1.1.5 IM Service Setting Procedure

Not applicable for RCS

6.1.2 Terminating Participating Function

Only one difference with [OMASIMPLEIM]: the statement on the Conversational History function is not applicable for RCS

6.1.2.1 General

The general sections are supported. Steps 1 to 5 are not supported.

6.1.2.2 IM Session

6.1.2.2.1 Determination of Session Handling

The only difference with [OMASIMPLEIM] is that step 1a is not supported.

6.1.2.2.2 Receiving request for IM Session

Only following differences with [OMASIMPLEIM]:

- Anonymity is not supported: step 3 when receiving a request and when receiving a 200 “Ok” responses are not applicable for RCS.
- The section on history handling (step 10 when receiving a 200 “Ok” response) is not applicable for RCS.

As a clarification for RCS:

- The IM Server shall transparently pass any received subject header into the outgoing SIP Invite request.

6.1.2.2.3 IM Session modification

Not applicable for RCS

6.1.2.2.4 SIP CANCEL Request

No differences with [OMASIMPLEIM].

6.1.2.2.5 SIP BYE request

Only 1 difference with [OMASIMPLEIM]: the paragraph on history handling is not applicable for RCS.

6.1.2.3 Pager mode Messaging

6.1.2.3.1 Receiving SIP MESSAGE request

Only following differences with [OMASIMPLEIM]:

- Step 3 (use of history) is not applicable for RCS
- The Note (on MESSAGE requests received outside the dialog of an IM Session) is not applicable for RCS.

6.1.2.4 Large Message Mode

Not applicable for RCS

6.1.2.5 SIP Notify request

No differences with [OMASIMPLEIM].

6.1.2.6 Extended Group Advertisement

Not applicable for RCS

6.1.3 User Plane

Only following differences with [OMASIMPLEIM]:

- In the general section, Large Message is not applicable for RCS.
- Step 1a is not applicable for RCS

When the Participating Function remains in the media path, it SHOULD, depending on Local Server Policy[1], start forwarding each MSRP SEND request in either direction as soon as it has completely received the headers of the incoming MSRP SEND request. The Participating Function shall thus forward the MSRP SEND request without waiting for it to be received completely.

6.1.4 Private Messages

Not applicable for RCS

7 IM Sessions

7.1 IM Client Procedures for IM Sessions

7.1.1 Originating Client Procedures

7.1.1.1 General

Only 1 difference with [OMASIMPLEIM]:

- Anonymity is not supported: step 5 including the NOTE and step 8 when generating an initial request is not applicable for RCS.

As a clarification for RCS:

- In step 4, when setting up a Group Chat session and supporting File Transfer in a Group Chat the client shall take into account the differences and clarifications provided in [RCS5.1].
- An RCS client can include a Subject header set to a value provided by the RCS user as Subject for the chat in the IM Session invite.
- For the value of the Contribution-ID header in step 11, the clarification given in section 5.9 of this document shall be taken into account

[1] Several policies can be available depending on Operator requirements: the specified behaviour is highly recommended when there are no screening requirements: it minimizes buffering delays on the Participating Function.

7.1.1.2 Establishment of an One-to-One IM session

No differences with [OMASIMPLEIM]:

As a clarification for RCS: When a 200 OK response is received on an INVITE request from a user with whom a one-to-one IM session is established already, an RCS client will terminate the existing session by sending a SIP BYE request. This situation may happen when multiple INVITE requests have been sent to a user and more than one of these requests are answered with a 200 OK.

7.1.1.3 IM Client initiates an Ad-hoc IM Conference

No differences with [OMASIMPLEIM].

As a clarification for usage of [RFC5366] in step 3:

- Only the mandatory parts of the URI-List are applicable for RCS
- RCS clients will not indicate that some contacts have to be anonymized.

As a clarification for RCS:

- In step 5, the accept-types and accept-wrapped-types attributes will be set as described in [RCS5.1]

7.1.1.4 IM Client initiates a Pre-Defined IM Conference

Not applicable for RCS

7.1.1.5 IM Client IM Session Modification

Not applicable for RCS

7.1.1.6 IM Client extends 1-to-1 IM Session to an Ad-hoc IM conference

No differences with [OMASIMPLEIM]

As a clarification for RCS:

- Appendix L provides a related clarification.
- In step 5, the accept-types and accept-wrapped-types attributes will be set as described in [RCS5.1]

7.1.1.7 IM Client adding IM User(s) to an IM Conference Session

Only one difference with [OMASIMPLEIM]: the section on anonymity (step 6 when receiving a request from the IM user) including the NOTE1 is not applicable for RCS.

7.1.1.8 SIP Session refresh

No differences with [OMASIMPLEIM].

7.1.1.9 IM Client rejoins an IM Conference Session

No differences with [OMASIMPLEIM].

7.1.1.10 IM Client joins a Public Conference Session

Not applicable for RCS

7.1.1.11 IM Client subscription to the conference state event package

There are only following differences with [OMASIMPLEIM]:

- In step 2 the usage of an IM group identity is not applicable for RCS.
- Step 3 is not mandatory for RCS, it is highly recommended though
- Step 4 when receiving a SIP NOTIFY request (checking of the access policy) including the NOTE is not applicable for RCS.

7.1.1.12 IM Client leaving an IM Session

Only one difference with [OMASIMPLEIM]: the section on anonymity (step 3 when the participant wants to leave the session) is not applicable for RCS.

7.1.1.13 IM Client cancelling a IM Session

Only one difference with [OMASIMPLEIM]: in the first sentence, the reference to “IM Client initiates a Pre-defined IM conference” is not applicable for RCS.

7.1.1.14 IM Client removing IM User from an IM Conference Session

Not applicable for RCS: this is seen as a quite advanced use case.

7.1.1.15 Joining an IM conference with a chat alias

This is chapter is only applicable for a pre-defined conference: Not applicable for RCS.

7.1.1.16 Ending a One-to-One IM session

No differences with [OMASIMPLEIM].

7.1.2 Terminating Client Procedures

Only two differences with [OMASIMPLEIM]:

1. In the first list, item “a” (Large Message session) is not applicable for RCS.
2. In the second section, the handling of the ‘+g.oma.sip-im.large-message’ feature tag is not applicable for RCS.

7.1.2.1 IM Client invited to an IM session

No differences with [OMASIMPLEIM].

Following clarifications are given for RCS:

1. The invited RCS device shall respond with SIP 180 to announce to inviting user that the IM Session Invite has reached the invited user.
2. If a participant list according to [RFC5366] is present in the invitation, the client shall communicate it to the user.
3. In step 6, when supporting File Transfer in a Group Chat the client shall take into account the differences and clarifications provided in [RCS5.1].

7.1.2.2 IM Client receiving an IM Session Modification request

An RCS client receiving a SIP re-INVITE request that includes a new Session Description Protocol (SDP) offer in the body SHALL reject the request with a SIP 488 "Not Acceptable Here" response towards the IM Server according to the rules and procedures of SIP/IP (Internet Protocol) Core and exit this procedure.

7.1.2.3 IM Client receiving an IM Session release request

No differences with [OMASIMPLEIM].

7.1.2.4 IM Client receiving an IM Session SIP CANCEL request

No differences with [OMASIMPLEIM].

7.1.3 User Plane

7.1.3.1 General

No differences with [OMASIMPLEIM].

7.1.3.2 Generating MSRP requests in an IM Session

Following differences with [OMASIMPLEIM]:

- An RCS client shall not include a Success-Report header in the MSRP SEND requests with a value of “yes”. Either no Success-Report header shall be included or it shall have a value of “No”

As a clarification for RCS:

- For a 1-to-1 session an RCS client shall provide “sip:anonymous@anonymous.invalid” in the Common Profile for Instant Messaging (CPIM) From and To headers
- In RCS, the mechanism that is described in the second paragraph for not rendering the content automatically will not be used.
- The content type of the MSRP request shall be set in accordance to the actual content being sent.
- All RCS clients shall send UTF-8 encoded text with “text/plain” content type.
- An RCS Client shall offer the user to send non-text content using the File Transfer mechanism
- If the content to be sent is larger than the value of the parameter for “maximum allowed content size in 1-to-1 chat” defined in [RCS5.1], the RCS client should inform the user indicating that it is not possible to send messages that large

7.1.3.2.1 Generating MSRP requests in an IM conference

Only following differences with [OMASIMPLEIM]:

- Step 2 when generating an MSRP request is not applicable for RCS.
- Step 3 (handling of private messages) is applicable for RCS only for the transmission of delivery and read notifications
- Step 6 when generating an MSRP request (requesting a Final Delivery Report) is not applicable for RCS.

As a clarification for RCS:

- When sending a message an RCS client shall provide “sip:anonymous@anonymous.invalid” in the CPIM To Header.
- An RCS client shall include the display-name of the user (in case one is available) and the user’s identity in the CPIM From header of a Message
- For Group IM Sessions, all RCS clients shall send text with “text/plain” content type inside the CPIM wrapper.
- An RCS Client shall notify the user that the content is not possible to send in a group chat if the content to be sent is larger than the value of the parameter for “maximum allowed content size in group chat” defined in [RCS5.1].
  Alternatively, the RCS client may offer the possibility to adapt the content to fit within the configured limit after consulting the user.

7.1.3.3 Receiving MSRP requests in an IM conference

Following differences with [OMASIMPLEIM]:

- In the additional procedure 2 when receiving an MSRP request, the use of an IM Group Identity or the IM identity of the IM user (for private messaging) in the “To” header of the Message/CPIM is not applicable for RCS.
- In the additional procedure 2 when receiving an MSRP request, a message using “sip:anonymous@anonymous.invalid” as address in the CPIM To header shall be considered as a message that was sent to the whole group

7.1.3.4 Sending isComposing status during IM Session

No differences with [OMASIMPLEIM]. RCS clients will send isComposing status.
As a clarification for RCS: in a 1-to-1 session isComposing status shall be sent without CPIM wrapper.

7.1.3.5 Receiving isComposing status during IM Session

No differences with [OMASIMPLEIM].
As a clarification for RCS: RCS clients shall signal support of isComposing content type defined in [RFC3994] in the SDP part of the SIP Session setup according to [RFC4975] (together with other supported content types).

7.2 IM Controlling Functions for IM Sessions

One difference with [OMASIMPLEIM]: RCS clients shall support reception of isComposing status and SHALL (instead of SHOULD) display the status of the sender to the user. Whether the status is shown per participant or as a collective status of one or more participants is up to the RCS client.

7.2.1 Requests Terminating at the IM Server

7.2.1.1 General

Only 1 difference with [OMASIMPLEIM]: step 4b when sending a 200 “Ok” response (the use of an IM Group Identity) is not applicable for RCS.

7.2.1.2 Ad-hoc IM Group setup request

Only following differences with [OMASIMPLEIM]:

- Step 7 when receiving an initial SIP INVITE request (checking of the SDP parameters against the operator policy) is not applicable for RCS.
- In the NOTE below step 9 on when receiving an initial SIP INVITE request, RCS refers to [RFC5366] instead of to [draft-URI-list]

As a clarification for RCS: In step 3 when receiving an initial SIP INVITE the IM server will always deny anonymity.

7.2.1.3 Pre-defined IM Group setup request

Not applicable for RCS

7.2.1.4 Joining Pre-defined IM Group Session request

Not applicable for RCS

7.2.1.5 Rejoining IM Group Session request

Only following differences with [OMASIMPLEIM]:

- In Step 1, a 404 Not Found is returned instead of a 403 Forbidden
- Step 3 when receiving a SIP INVITE request that includes an IM Session Identity (the checking of <max-participant-count>) is not applicable for RCS.
  Step 6 when receiving a SIP INVITE request that includes an IM Session Identity (privacy handling) is not applicable for RCS.

As a clarification for RCS:

- The IM Server performing the Controlling IM Function may save the IM Session Identity as well as the last participant list for a configurable amount of time according to Service Provider policies, after the ad-hoc Group Chat has been torn down. If a rejoin request is received when there is no ongoing ad-hoc Group Chat but the IM Session Identity has been saved, the IM Server shall initiate a Group Chat as per section 7.2.2.1 and 7.2.2.2reusing the saved IM Session Identity and last participant list instead of expecting a URI-list from the SIP INVITE request.

7.2.1.6 IM Session modification

Not applicable for RCS

7.2.1.7 Adding Participants to IM Group Session request

Only following differences with [OMASIMPLEIM]:

- Step 2 when receiving a SIP REFER request (privacy handling) including the NOTE is not applicable for RCS.
- Step 10 when receiving a SIP REFER request (handling of a Refer-Sub header that is not present or set to true) including the NOTE is not applicable for RCS.

7.2.1.8 SIP REFER BYE request received when using IM Group session

Not applicable for RCS

7.2.1.9 Void

No content in [OMASIMPLEIM].

7.2.1.10 SIP BYE request received in a IM Session

No differences with [OMASIMPLEIM].

7.2.1.11 SIP Session refresh procedure

No differences with [OMASIMPLEIM].

7.2.1.12 Subscribing to Participant information

Only following differences with [OMASIMPLEIM]:

- Step 2 when receiving a SIP SUBSCRIBE request (a IM Group Identity in the Request-URI) is not applicable for RCS.
- In step 4 when receiving a SIP SUBSCRIBE request, the check on the authorization of the subscriber based on the <allow-conference-state> action is not applicable for RCS.

7.2.2 Requests Initiated by the IM Server

7.2.2.1 General

Only following differences with [OMASIMPLEIM]:

- Step 4b when generating an initial SIP INVITE (the Authenticated Originator's IM Address in case of a pre-defined group) is not applicable for RCS.
- In step 5 when generating an initial SIP INVITE, the case of a Pre-defined IM Group Session is not applicable for RCS
- Step 9 when generating an initial SIP INVITE (privacy handling) is not applicable for RCS.
- Step 11 (including the Note) when generating an initial SIP INVITE (the use of a "Subject" header for a pre-defined group) is not applicable for RCS.

As a clarification for RCS: The IM Server shall transparently pass any received subject header into the outgoing SIP Invite requests for an Ad-hoc group.

7.2.2.2 IM Session Invitation Requests

Only following differences with [OMASIMPLEIM]:

- Step 3 in the procedure for inviting an IM user (the handling of a pre-defined group) is not applicable for RCS.
- Step 3 when receiving a 200 “Ok” response (privacy handling) is not applicable for RCS

As a clarification for RCS:

- In step 2, the list of invited participants will be sent to the invitees.

7.2.2.3 IM Session Initiation Policy

Not applicable for RCS

7.2.2.4 Cancel of IM Session Invitation Requests

No differences with [OMASIMPLEIM].

7.2.2.5 Ending an IM Session

No differences with [OMASIMPLEIM].

7.2.2.6 IM Session Modification

Not applicable for RCS

7.2.2.7 IM Session Adding Policy

Only one difference with [OMASIMPLEIM]: the two first paragraphs are not applicable for RCS as they concern pre-defined groups.

As a clarification for RCS: In case of an Ad-hoc IM Group chat, all participants of the group chat session are allowed to add participants to the Ad-hoc IM Session.

7.2.2.8 IM Session Release Policy

Several differences with [OMASIMPLEIM]:

- The first paragraph (the use of the rules defined in the Group definition of a pre-defined group) is not applicable for RCS.
- The second paragraph (the use of <session-active-policy> in case of a pre-defined group) is not applicable for RCS.
- The auto-release variable influencing the release policy is not applicable for RCS
- The case for a Pre-defined IM Group session in the number-of-remaining-participants is not applicable for RCS.
- In the release policy section 1 (releasing the remaining participants from the session) whether in item a, the departure of the initiator from the session will trigger a release of the remaining participants from the session will, for RCS, be up to local server policy.
- In the release policy section 1 (releasing the remaining participants from the session), item b (originator leaves in case of a predefined group) is not applicable for RCS.
- In the release policy section 1 (releasing the remaining participants from the session) in item d, the case of a Pre-defined IM Group session is not applicable for RCS.
- In the release policy section 1 (releasing the remaining participants from the session), item f (a predefined group is deleted) is not applicable for RCS.
- In the release policy, section 2 (removing an individual participant from the IM Session) is not applicable for RCS. This includes item a (the group definition is changed in case of a Pre-defined IM Group Session).

7.2.2.9 IM Session Joining Policy

Only the following differences with [OMASIMPLEIM]:

- Only the first section from [OMASIMPLEIM] (the case of an ad-hoc group) is applicable for RCS.
- With RCS, Service Provider policy may be configured so that it is not possible for a user to re-join if the user had previously explicitly left the IM Session by sending a SIP BYE request.
- The sections on the case of a Pre-defined group based on the <join-handling>, the <age-restrictions> and <age-limit> elements in the group definition are not applicable for RCS, as is the section on the joining of the history function.

7.2.2.10 Generating a SIP NOTIFY Request

Only following differences with [OMASIMPLEIM]:

- In limitation 1 of the MIME application/conference-info+xml body, the use the IM Group Identity in case of a Pre-defined IM group Session is not applicable for RCS.
- In limitation 2/a/iii of the MIME application/conference-info+xml body, the use the identity defined in the IM Group definition in case of a Pre-defined IM group Session is not applicable for RCS.
- In limitation 2/a/iii of the MIME application/conference-info+xml body, the condition on privacy is not applicable for RCS.

7.2.2.11 Terminating the Subscription

No differences with [OMASIMPLEIM].

7.2.2.12 Removal of Participant from IM Session

No differences with [OMASIMPLEIM].

7.2.3 User Plane

No differences with [OMASIMPLEIM].

7.2.3.1 MSRP Switch

Only following differences with [OMASIMPLEIM]:

- The use of anonymity (4th bullet in [OMASIMPLEIM]) is not applicable for RCS.

As a clarification for RCS:

- The use of private messaging (6th bullet in [OMASIMPLEIM]) is applicable for RCS only for delivery and display notifications.
- These bullets clarify existing OMA SIMPLE IM functionality and are added to the bullet list in in [OMASIMPLEIM]:
  - SHALL temporarily queue any messages sent from a participant during the conference startup phase until there is a final response from all invited participants;
  - As each 200 OK is received, SHALL send to that participant all the messages temporarily queued up to that point

7.2.3.2 Chat Alias in an IM conference

Not applicable for RCS

7.2.3.3 Receiving and Sending messages in an IM Conference Server

Only following difference with [OMASIMPLEIM]: In step 2, “sip:anonymous@anonymous.invalid” shall also be considered as a valid address in the CPIM To header for distribution to the group.

As a clarification for RCS:

- Step 3 (private messages) is applicable for RCS only for delivery and display notifications
- The IM Server SHALL indicate that message larger than the “max-size” of the recipient has not been delivered by sending a ‘system message’ to both the sender and the intended recipient(s)
- The content of this system message is targeted for human consumption and SHALL be of content type text/plain

7.2.3.4 Receiving and Sending Private messages in an IM Conference

Only following differences with [OMASIMPLEIM]:

- In step a, the case for a predefined group and associated checking of XDM rules is not applicable for RCS

As a clarification for RCS:

- Private messages are used in RCS only for delivery and display notifications

7.2.3.5 System Messages from an IM Conference

No differences with [OMASIMPLEIM].

8 IM Pager Mode

8.1 Originating Client Procedures

No differences with [OMASIMPLEIM].

8.1.1 Sending SIP MESSAGE for Pager Mode

Only following differences with [OMASIMPLEIM]:

- Step 4, including Note 1 (The use of anonymity) is not applicable for RCS.
- Steps 6, 7 and 8 (messages to more than one user, to a pre-defined group and to the participants of an on-going session) is not applicable for RCS
- Step 9 (usage of external Content) is not applicable for RCS
- Step 10 (requesting a delivery report) is not applicable for RCS
- Note 2 and Note 3 are not applicable for RCS

8.2 Terminating Client procedures

8.2.1 IM Client receives SIP MESSAGE

Only one difference with [OMASIMPLEIM]:

- Steps 1-6 on receipt of a SIP MESSAGE (including the Note) are not applicable for RCS

8.3 Controlling Server procedures for Pager Mode

Not applicable for RCS.

9 IM Large Message Mode

Not applicable for RCS.

10 File Transfer

No differences with [OMASIMPLEIM].

RCS has the following restrictions on file transfer:

- One-to-Many File Transfer is only supported in a group chat

- The file transfer mechanism is not used for transfer in an ongoing session. In that case, a new dedicated file transfer session will always be set up (that is, no support for session modification).
- Only one file is sent per file transfer session.
- Only sending of files is supported for RCS. Requesting files is not part of the RCS use cases

10.1 File Transfer

Only following differences with [OMASIMPLEIM]:

- In the general section, the requesting of files is not applicable for RCS.
- Step 1 when instructions are received to send a file (file transfer with a re-invite during an ongoing session) is not applicable for RCS. The user can send a file to the participants of an ad-hoc session by using the mechanism described in [RCS5.1].
- In step 2 when instructions are received to send a file the case for sending the file to a Pre-defined group is not applicable for RCS.
- Step 4 when instructions are received to send a file (sending more than one file) is not applicable for RCS.
- Step 5, sending a re-Invite with the m line set to zero, is not applicable for RCS. This will always be the case, only a single file is transferred, after the transfer, RCS clients will always release the session as described in chapter 10.2.

As a clarification for RCS:

- Usage of the SDP attributes provided in [RFC5547] shall be identical to what is described in [IR.79] chapter 3.4. The only exception is the use of the file-disposition attribute. For File Transfer this will be set to ‘attachment’ or ‘render’ depending on the requested service. For a file transfer, ‘attachment’ shall be used. ‘render’ is used to indicate an immediate display of the image during an Image Sharing session.
- For RCS File transfer, message/cpim wrapped MSRP requests shall not be used. The content type of the MSRP request for File Transfer shall be set in accordance to the actual content being sent.
- If the file to be transferred is larger than the value of the parameter for “maximum allowed file size for File transfer” defined in [RCS5.1], the RCS Client shall notify the user that the file is not possible to send. Alternatively, the RCS Client may offer the possibility to adapt the content to fit within the configured limit after consulting the user.

10.2 File Transfer Session Release

Only following differences with [OMASIMPLEIM]:

- Since only one file per session is supported, RCS clients will send new files always in separate sessions. Therefore, the use of the timer is not applicable for RCS. The procedure described will therefore be executed immediately once the transfer is done.
- The case where a re-INVITE with the media line set to zero is send by the IM client when the timer expires in case there is any other media stream in the SDP (2nd bullet) is not applicable for RCS.
- The case where a re-INVITE with the media line set to zero is send by the IM client when the timer expires in case multiple files are transferred (3rd bullet) is not applicable for RCS.

10.3 Client Receiving File Transfer Request

No differences with [OMASIMPLEIM].

10.4 Controlling Server Procedures for File Transfer

Only following differences with [OMASIMPLEIM]:

- Step 3 when receiving an initial SIP INVITE request (a request sent to a pre-defined group) is not applicable for RCS.
- The handling of an MSRP SEND request containing a Final Report header is not applicable for RCS. In the general section, the requesting of files is not applicable for RCS.

As a clarification for RCS:
- In step 2, the Controlling Server shall take into account the differences and clarifications provided in [RCS5.1]

11 Error Handling

11.1 Conference-Factory Uri Does Not Exist

No differences with [OMASIMPLEIM].

11.2 Conference Uri Does Not Exist

No differences with [OMASIMPLEIM].

12 Deferred Messaging

Not applicable for RCS.

13 Conversation History Function

Not applicable for RCS
As a clarification for RCS: [RCS5.1] describes an alternative mechanism for the history recording.

14 System Concepts

14.1 Security

No differences with [OMASIMPLEIM].

14.1.1 General

No differences with [OMASIMPLEIM].

14.1.2 Trust Model

No differences with [OMASIMPLEIM].

14.1.3 SIP signalling security

No differences with [OMASIMPLEIM].

14.1.3.1 Integrity and confidentiality protection

No differences with [OMASIMPLEIM].

14.1.3.2 Assurance of user identity

No differences with [OMASIMPLEIM].

14.1.3.3 SIP MESSAGE Security

Not applicable for RCS

14.1.4 User Plane security

No differences with [OMASIMPLEIM].

14.1.5 Relation between SIP Signalling and User Plane Security

No differences with [OMASIMPLEIM].

14.1.5.1 Denial of Services

No differences with [OMASIMPLEIM].

14.1.6 XDMS Security

No differences with [OMASIMPLEIM].

14.2 Authorization

No differences with [OMASIMPLEIM].

14.3 Privacy

Not applicable for RCS
Privacy is not compatible with the conversational view. If people are on each other's contact lists, there is no reason to request privacy.

15 Timers

No differences with [OMASIMPLEIM].

15.1 Timers In The IM Server

Not applicable for RCS

15.2 Timers In The IM Client

For Tc3 there are no differences with [OMASIMPLEIM]. Tc1 and Tc2 are not applicable for RCS.

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. Initial Filter Criteria

Appendix not relevant for RCS

APPENDIX D. Examples Of Signalling Flows

Appendix not relevant for RCS

APPENDIX E. IM Service Settings

Appendix not relevant for RCS

APPENDIX F. OMA IM Parameter Definition And Conventions

F.1. Release Version In User-Agent And Server Headers

No differences with [OMASIMPLEIM].

F.2. Global Uri Definition An Convention

No differences with [OMASIMPLEIM].

APPENDIX G. OMA Sec Group Security Threats Analysis

Appendix not relevant for RCS

APPENDIX H. Presence Information Elements And Procedures

No differences with [OMASIMPLEIM].

H.1. IM SPECIFIC PRESENCE INFORMATION ELEMENTS OVERVIEW

Only following differences with [OMASIMPLEIM]:

- In the table, the “Availability for IM Pager Mode and Large Message Mode Messaging” is not applicable for RCS.
- In the table, the “Willingness for IM Pager Mode and Large Message Mode Messaging” is not applicable for RCS.
- In the table, the “Willingness for IM Session Mode Messaging” is not applicable for RCS.
- In the table, the “Willingness for File Transfer” is not applicable for RCS.

H.1.1. Availability for IM Pager Mode and Large Mode Messaging

Not applicable for RCS

H.1.2. Availability for IM Pager Mode and Large Mode Messaging

Not applicable for RCS

H.1.3. Availability for IM Session Mode Messaging

Only following differences with [OMASIMPLEIM]:

- The description that the <basic> sub element is set to “open” when the user registers and does not activate the incoming barring or does not decide to remain invisible is not applicable for RCS.
- The description that the <basic> sub element is set to “closed” when the user unregisters, activates the incoming barring, or decides to remain invisible is not applicable for RCS.

H.1.4. Willingness for IM Session Mode Messaging

Not applicable for RCS

H.1.5. Availability for File Transfer

Only following differences with [OMASIMPLEIM]:

- The description that the <basic> sub element is set to “open” when the user registers and does not activate the incoming barring or does not decide to remain invisible is not applicable for RCS.
- The description that the <basic> sub element is set to “closed” when the user unregisters, activates the incoming barring, or decides to remain invisible is not applicable for RCS.

H.1.6. Willingness for File Transfer

Not applicable for RCS

H.2. IM SERVER PROCEDURES

Not applicable for RCS: Presence is maintained from the client and not checked by the IM server.

H.3. IM CLIENT PROCEDURES

Not applicable for RCS: the behaviour for a RCS client acting as a presence source and watcher is described in [RCS5.1].

H.4. IM SPECIFIC PRESENCE VALUES

Only one difference with [OMASIMPLEIM]:
Service ID org.openmobilealliance:IM-pager-mode is not applicable for RCS

APPENDIX I. The Parameters to be Provisioned For IM Service

Appendix not relevant for RCS

APPENDIX J. Retrieve Deferred Messages

Appendix not relevant for RCS

APPENDIX K. Saving IM Content

Appendix not relevant for RCS

APPENDIX L. Extending One To One Session to a Conference

Just one clarification to [OMASIMPLEIM]. The procedure is supported, see section 7.1.1.6:
The format of the original participant should be:
<entry uri="sip:bob@biloxi.com;method=INVITE?Session-Replaces=abcdef-1234-5678-90ab-cdef01234567" />
According to [RFC3261]
NOT (as indicated in appendix L of [OMASIMPLEIM]):
<entry uri="bob@biloxi.com;method=INVITE? Session-Replaces: abcdef-1234-5678-90ab-cdef01234567" />

APPENDIX M. Conference Event Package

No differences with [OMASIMPLEIM].

M.1. Extensions to the Conference Event Package Xml Schema

No differences with [OMASIMPLEIM].

APPENDIX N. Emoticons

N.1. List Of Supported Emoticons

No differences with [OMASIMPLEIM].

N.2. Emoticon Processing By The Clients

No differences with [OMASIMPLEIM].

N.2.1. Emoticons in composed sent instant messages

No differences with [OMASIMPLEIM].

N.2.2. Emoticons in received/displayed instant messages

No differences with [OMASIMPLEIM].

APPENDIX O. Final Delivery Report

Appendix not relevant for RCS

APPENDIX P. Use Of Refer Method in IM

No differences with [OMASIMPLEIM]. The procedure is supported for adding a participant to a Group IM Session, see section 7.1.1.7.

APPENDIX Q. IM Related Shared XDM Extensions

Appendix not relevant for RCS

APPENDIX R. Access Policy Examples

Appendix not relevant for RCS

APPENDIX S. Charging Use Cases

Appendix not relevant for RCS

Document Management

Document History

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
1.0	13 Aug 2012	First version of the document for RCS 5.1. "Endorsement of OMA SIP/SIMPLE IM 1.0, RCS 5.0, version 1.0" was used as a basis Approved by DAG and PSMC	PSMC	Tom Van Pelt/ GSMA

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