Enabler Test Specification for RCS Conformance

Candidate Version 1.2.2 – 07 Nov 2014

Open Mobile Alliance

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Contents

Figures

No table of figures entries found.

Tables

1. Scope

This document describes in detail the conformance test cases for the deployment suite of RCS 1.2.2 as described in reference [RCS] together with the RCS Implementation Guidelines [RIG].

The test cases are split into two categories, conformance and interoperability test cases. The interoperability test cases are defined in a separate interoperability ETS.

The conformance test cases are aimed to verify the adherence to the requirements described in the technical specifications.

2. References

2.1 Normative References

[OMA_IM_TS] "Instant Messaging Requirements", Version 1.0, Open Mobile Alliance™, OMA-RD-IM-V1_0, URL:http://www.openmobilealliance.org/

[OMA_IM_XDM] "IM XDM Specification", Version 1.0, Open Mobile Alliance™, OMA-TS-IM_XDM-V1_0, URL:http://www.openmobilealliance.org/

[RFC2119] "Key words for use in RFCs to Indicate Requirement Levels", S. Bradner, March 1997, URL:http://www.ietf.org/rfc/rfc2119.txt

2.2 Informative References

[OMADICT] "Dictionary for OMA Specifications", Version 2.9, Open Mobile Alliance™, OMA-ORG-Dictionary-V2_9, URL:http://www.openmobilealliance.org/

[RCS] "RCS-e – Advanced Communications: Services and Client Specification", v1.2.2, July 2012, GSM Association, RCS_e_Specification_Document_1_2_2, URL:http://www.gsma.com/rcs/wp-content/uploads/2012/03/rcs-e_advanced_comms_specification_v1_2_2_approved.pdf

[RIG] "GSMA RCS IOT RCS-e Implementation Guidelines", Version 3.2, 10 December 2012, URL: http://www.gsma.com/rcs/wp-content/uploads/2012/12/RCS-e_Implementation_guidelines_v3_2_clean.pdf

[VSI] "GSMA Video Share Service Definition", Version 1.4, 20 December 2010, URL: http://www.gsma.com/newsroom/ir-74-1-4-video-share-interoperability-specification

3. Terminology and Conventions

3.1 Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except “Scope”, are normative, unless they are explicitly indicated to be informative.

The following numbering scheme is used:

xxx-y.z-con-number where:

xxx	Name of enabler, e.g. MMS or Browsing
y.z	Version of enabler release, e.g. 1.2 or 1.2.1
’con’	Indicating this test is a conformance test case
number	Leap number for the test case

Or

xxx-y.z-int-number where:

xxx	Name of enabler, e.g. MMS or Browsing
y.z	Version of enabler release, e.g. 1.2 or 1.2.1
’int’	Indicating this test is a interoperability test case
number	Leap number for the test case

3.2 Definitions

Auto-Configuration Service	A component of RCS functionality that provides an interoperable way to provision RCS configuration information from a Service Provider to an RCS Client.
Client	Uses definition from [OMADICT].
Component	Uses definition from [OMADICT].
IMS Mode	A mode of SIP signalling used for SIP session setup, as described in [VSI], section 3.4
RCS Client	A Client which adheres and conforms to GSMA RCS specifications and is capable to receive RCS service.
Service	Uses definition from [OMADICT].
Service Provider	Uses definition from [OMADICT].

3.3 Abbreviations

RCS	Rich Communications Suite
SIM	Subscriber Identity Module
USIM	Universal Subscriber Identity Module
UX	User eXperience

4. Introduction

The purpose of this document is to provide conformance test cases for RCS version 1.2.2.

The implementation of some features is optional for the Clients and/or the Servers in the RCS Enabler. The tests associated with these optional features are marked as "(Includes Optional Features)" in the test specification.

5. RCS Client Conformance Test Cases

5.1 General

In this section, the following conventions apply:

- Client A is the client on the device-under-test and User A is the notional user of the device.
- All other Users and Clients are simulated in the Test Tool.
- When User A triggers an action or sends or receives a message, file, image, video etc. this shall be performed or verified either on the UI of the device-under-test or via some test-automation interface to the device.

The common procedures used by some test cases are defined in Appendix C.

The message content for most messages is defined in Appendix D.

For tests requiring “video share”, video from any of the following, as defined in [RCS] section 3.3, may be used:

- The front camera (“me”)
- The rear camera (“what I see”)
- A file (“video streaming”)

For tests requiring “image share”, image from any of the following, as defined in [RCS] section 3.3, may be used:

- A picture taken using the front camera (“me”)
- A picture taken using the rear camera (“what I see”)
- A file (“send stored image”)

5.2 Configuration

5.2.1 RCS-con-001 First-time unsuccessful configuration - Subscriber unauthorized (Auto-Configuration Server)

Test Case Id	RCS-con-001
Test Object	RCS Client
Test Case Description	First-time unsuccessful configuration: Subscriber unauthorized
Specification Reference	RCS 2.2.2.1.2
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A NOT IMS registered for RCS
Test Procedure	1. Handset is powered on 2. Execute "Successful autoconfiguration" (C.6.1.1). In step 4 set the version in the XML body to "0". 3. Reboot the handset. 4. Execute "Successful autoconfiguration" (C.6.1.1).
Pass-Criteria	1. After step 2 service is not enabled on the handset. 2. At step 4 of the test procedure in step 3 of C.6.1.1 "vers" parameter SHALL be 0. 3. After step 4 service is enabled on the handset.

5.2.2 Void

5.2.3 Void

5.2.4 RCS-con-004 Configuration - RCS re-configuration successful

Test Case Id	RCS-con-004
Test Object	RCS Client
Test Case Description	Successful re-configuration: RCS configuration enableRcseSwitch first set to 'true' and then set to 'false'
Specification Reference	RCS 2.10 (and A.2.6)
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• RCS services previously configured on the phone/(U)SIM pair
Test Procedure	1. User A's handset is powered on. 2. Execute "Successful autoconfiguration" (C.6.1.1). In step 4 set the enableRcseSwitch to true in the XML body. 3. User A's RCS client performs IMS registration. 4. User A's handset is power cycled. 5. Execute "Successful autoconfiguration" (C.6.1.1). In step 4 set the enableRcseSwitch to false in the XML body. 6. User A's RCS client performs IMS registration.
Pass-Criteria	1. After step 3 User A's handset, RCS UX provides the following control elements: 'RCS Service while roaming' enabled/disabled switch; and 'RCS Service' enabled/disabled switch. 2. After step 6 User A's handset, RCS UX does not provide the following control element: 'RCS Service' enabled/disabled switch.

5.3 Keep Alive

5.3.1 RCS-con-020 Keep-Alive for SIPoUDP (STUN) (Includes Optional Features)

Test Case Id	RCS-con-020
Test Object	RCS Client
Test Case Description	Keep-alive for SIPoUDP (STUN)
Specification Reference	RCS 2.8
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• The client A is a registered RCS user. • The client A's handset coverage is Wi-Fi. Applicability: • ics_stun_udp

Test Procedure	1) The client A exchanges initial STUN message. 2) The client A's handset registers for the RCS service. 3) The client A's constantly sends keep-alive message.
Pass-Criteria	1) During the step 3, the test tool receives STUN keep-alive messages from the client A.

5.4 Mobile Originated Capability Discovery

5.4.1 RCS-con-030 Mobile Originated Capability Discovery – Successful

Test Case Id	RCS-con-030
Test Object	RCS Client
Test Case Description	Mobile Originated Capability Discovery - Successful
Specification Reference	RCS 2.3.1
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A is IMS registered for RCS • User A's RCS device is provisioned for RCS
Test Procedure	1. User A triggers a capability discovery procedure towards User B at User A's device. This can be done by one of the following: a. Adding new User B entry (RCS user) to User A's address book; or b. Refreshing User B's status (RCS user) manually 2. Execute "Mobile Originated Capability Exchange" (C.1.1) 3. Check that User B is shown as available for RCS on User A's RCS client
Pass-Criteria	1. At step 3 User A's RCS client shows User B as available.

5.4.2 RCS-con-031 Mobile Originated Capability Discovery – Unsuccessful – 480 Temporarily Unavailable

Test Case Id	RCS-con-031
Test Object	RCS Client
Test Case Description	Mobile Originated Capability Discovery – Unsuccessful – 480 Temporarily Unavailable
Specification Reference	RCS 2.3.1
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A is IMS registered for RCS • User A's RCS device is provisioned for RCS

Test Procedure	1. User A triggers a capability discovery procedure towards User B on User A's device. This can be done by one of the following: a. Adding new User B entry (RCS user) to User A's address book; or b. Refreshing User B's (RCS user) status manually 2. Execute step 1 of "Mobile Originated Capability Exchange" (C.1.1). 3. The test tool responds with a 480 TEMPORARILY UNAVAILABLE (D.1.7) towards User A's RCS client. 4. Check that User B is shown as not available for RCS on User A's RCS client
Pass-Criteria	1. At step 4 User A's RCS client shows User B as not available.

5.4.3 RCS-con-032 Mobile Originated Capability Discovery – Unsuccessful –408 Request Timeout

Test Case Id	RCS-con-032
Test Object	RCS Client
Test Case Description	Mobile Originated Capability Discovery – Unsuccessful –408 Request Timeout
Specification Reference	RCS 2.3.1
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A is IMS registered for RCS • User A's RCS device is provisioned for RCS
Test Procedure	1. User A triggers a capability discovery procedure towards User B on User A's device. This can be done by one of the following: a. Adding new User B entry (RCS user) to User A's address book; or b. Refreshing User B's (RCS user) status manually 2. Execute step 1 of "Mobile Originated Capability Exchange" (C.1.1). 3. The test tool responds with a 408 REQUEST TIMEOUT (D.1.6) towards the RCS client. 4. Check that User B is shown as not available for RCS on User A's RCS client
Pass-Criteria	1. At step 4 User A's RCS client shows User B as not available.

5.4.4 RCS-con-033 Mobile Originated Capability Discovery – Unsuccessful – 404 Not Found

Test Case Id	RCS-con-033
Test Object	RCS Client
Test Case Description	Mobile Originated Capability discovery – Unsuccessful – 404 Not Found
Specification Reference	RCS 2.3.1
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A is IMS registered for RCS • User A's RCS device is provisioned for RCS

Test Procedure	1. User A triggers a capability discovery procedure towards User B on User A's device. This can be done by one of the following: a. Adding new User B entry (RCS user) to User A's address book; or b. Refreshing User B's (RCS user) status manually 2. Execute step 1 of "Mobile Originated Capability Exchange" (C.1.1). 3. The test tool responds with a 404 NOT FOUND (D.1.5) towards User A's RCS client. 4. Check that User B is shown as not available for RCS on User A's RCS client
Pass-Criteria	1. At step 4 User A's RCS client shows User B as not available.

5.4.5 RCS-con-034 Mobile Originated Capability Discovery – Successful – Multiple Identities

Test Case Id	RCS-con-034
Test Object	RCS Client
Test Case Description	Mobile Originated Capability Discovery – Successful – Multiple Identities
Specification Reference	RCS 2.3.1
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A is IMS registered for RCS • User A's RCS device is provisioned for RCS
Test Procedure	1. User A creates a new contact (User C) in address book with the following four unique entries 1. MSISDN number 1 (RCS capable) 2. MSISDN number 2 (without RCS capabilities) 3. MSISDN number 3 (RCS capable, different from 1) 4. SIP-URI (RCS capable, if supported by the UI, independent from 1, 2 or 3). 2. Execute step 1 of "Mobile Originated Capability Exchange" (C.1.1) for all four entries (three if SIP-URI was not supported). 3. The test tool responds with 200 OK towards User A's RCS client for each OPTIONS message. 4. Check that User C's identities 1, 3 and 4 (if supported) are shown as available for RCS on User A's RCS client
Pass-Criteria	1. At step 4 User A's RCS client shows User C's identities 1, 3 and 4 (if supported) as available.

5.4.6 RCS-con-035 Mobile Originated Capability Discovery – Successful (IMS registered, does not support RCS)

Test Case Id	RCS-con-035
Test Object	RCS Client
Test Case Description	Mobile Originated Capability Discovery - Successful
Specification Reference	RCS 2.3.1
SCR Reference	

Test code	Verified TTCN-3 code
Preconditions	• User A is IMS registered for RCS • User A's RCS device is provisioned for RCS • User B is IMS registered, but does not support RCS
Test Procedure	1. User A triggers a capability discovery procedure towards User B at User A's device. This can be done by one of the following: a. Adding new User B entry (RCS user) to User A's address book; or b. Refreshing User B's (RCS user) status manually 2. Execute "Mobile Originated Capability Exchange" (C.1.1) with exception to not sending feature param tag in the contact header of 200 OK. 3. Check that User B is shown as unavailable for RCS on User A's RCS client
Pass-Criteria	1. At step 3 User A's RCS client shows User B as unavailable.

5.5 Mobile Terminated Capability Discovery

5.5.1 RCS-con-040 Mobile Terminated Capability Discovery – Correct Presentation of Remote Capabilities

Test Case Id	RCS-con-040
Test Object	RCS Client
Test Case Description	Mobile Terminated Capability Discovery – Correct Presentation of Remote Capabilities
Specification Reference	RCS 2.4.1
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A is IMS registered for RCS • User A's RCS device is provisioned for RCS • User B is stored in User A's address book
Test Procedure	1. Execute "Mobile Terminated Capability Exchange" (C.1.2) 2. Check that User B is shown as available for RCS on User A's RCS client.
Pass-Criteria	1. At step 2 User A's RCS client shows User B as available for RCS.

5.5.2 RCS-con-041 Mobile Terminated Capability Discovery – Learning Unknown New Users RCS Capabilities

Test Case Id	RCS-con-041
Test Object	RCS Client
Test Case Description	Mobile Terminated Capability Discovery – Learning Unknown New Users RCS Capabilities
Specification Reference	RCS 2.4.1
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's and User X's RCS devices are provisioned for RCS • User A and User X are IMS registered for RCS • User X is not currently stored in User A's address book

Test Procedure	1. Execute "Mobile Terminated Capability Exchange" (C.1.2) with User X as sender and condition B4 in D.1.3. 2. Execute “Mobile Terminated Session Establishment” (C.2.2) with the message “Hello A” from User X. 3. Execute “Mobile Terminated Session Termination” (C.3.2). 4. Store User X contact in the address book.
Pass-Criteria	1. In Step 2 User A receives “Hello A” from User X. 2. In step 4 verify that User X capabilities are visible on User A’s terminal when the contact is stored in the address book.

5.6 Capability Update

5.6.1 RCS-con-050 Capability update during a MO call for video /image sharing (Includes Optional Features)

Test Case Id	RCS-con-050
Test Object	RCS Client
Test Case Description	When a voice call is established the participants have to update their capabilities
Specification Reference	RCS 3.3.1
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A is IMS registered for RCS • User A’s RCS device is provisioned for RCS • The client A’s handset coverage is 3G Applicability: ics_imageShare OR ics_videoShare
Test Procedure	1. User A initiates a CS voice call to User B at User A’s device. 2. Execute "Mobile Originated Capability Exchange" (C.1.1). 3. Check that User B is shown as available for video and/or image sharing on User A’s RCS client as supported by User A’s RCS client.
Pass-Criteria	1. At step 3 User A’s RCS client shows User B as available for video / image sharing as matching User A’s RCS client's capabilities.

5.6.2 RCS-con-051 Capability update during a MT call for video /image sharing

Test Case Id	RCS-con-051
Test Object	RCS Client
Test Case Description	When a voice call is established the participants have to update their capabilities
Specification Reference	RCS 3.3.1
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A is IMS registered for RCS • User A’s RCS device is provisioned for RCS • The client A’s handset coverage is 3G

Test Procedure	1. User A accepts a CS voice call from User B at User A's device. 2. Execute "Mobile Terminated Capability Exchange" (C.1.2). 3. Check that User B's capabilities for video and image sharing are shown as available on User A's RCS client matching User A's RCS client's capabilities according to ICS.
Pass-Criteria	1. At step 3 User B's capabilities for video and image sharing are shown as available on User A's RCS client matching User A's RCS client's capabilities according to ICS.

5.6.3 RCS-con-052 Capability update during initiation of an MO voice call - fails as other end has no capability (Includes Optional Features)

Test Case Id	RCS-con-052
Test Object	RCS Client
Test Case Description	When a voice call is initiated the call participants have to update their capabilities. The **recipient** should not be shown as available for video / image share if the corresponding tags are not included in the 200 OK response
Specification Reference	RCS 3.3.1
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• The client A's handset coverage is 3G • User A is IMS registered for RCS • User A's RCS device is provisioned for RCS Applicability: ics_imageShare OR ics_videoShare
Test Procedure	1. User A initiates a CS voice call to User B at User A's device. 2. Execute "Mobile Originated Capability Exchange" (C.1.1) and do not use condition B1 and B2 in step 2 (D.1.4). 3. Check that User B is shown as not available for video and image sharing on User A's RCS client.
Pass-Criteria	1. At step 3 User A's RCS client shows User B as not available for video and image sharing.

5.6.4 RCS-con-053 Capability Exchange Optimization during a Call

Test Case Id	RCS-con-053
Test Object	RCS Client
Test Case Description	Capability exchange optimization during a call
Specification Reference	Sec 2.3.1 of GSMA RCS 1.2.2 specifications
SCR Reference	
Test code	Verified TTCN-3 code

Preconditions	• The client A's handset coverage is 3G. • The client A is RCS registered user. • The client A's handset is in an on-going CS voice call with a test tool (simulating an RCS user) and the test tool delivers its RCS capabilities to the client A during the execution of "Mobile Originated Capability Exchange" (C.1.1). • The displayed capabilities on the client A's handset for the current call include both image and video share.
Test Procedure	1) The client A's handset's coverage is changed to HSPA. 2) Wait for 15 seconds. 3) The client A's handset's coverage is changed to 3G. 4) Wait for 15 seconds.
Pass-Criteria	1. Client A is not sending SIP OPTIONS message at the step #2 and the step #4.

5.7 Mobile Originated 1-to-1 Chat

5.7.1 RCS-con-100 Mobile Originated 1-to-1 Chat - session establishment – Mobile Originated session termination

Test Case Id	RCS-con-100
Test Object	RCS Client
Test Case Description	Verifies Mobile Originated 1-to-1 Chat session establishment with Mobile Originated session termination
Specification Reference	RCS 3.2.4
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's device is provisioned for RCS • User A is IMS registered for RCS • In case of User A's device support UI for switching display notifications on/off then display notification are to be switched on

Test Procedure	1. User A initiates a 1-to-1 Chat session with User B on his device with the message “Hello B”. 2. Execute “Mobile Originated Session Establishment” (C.2.1) with the message “Hello B” 3. User A receives an indication that the message “Hello B” has been delivered. 4. If the session invitation in step 2 contained a request for display notification, then execute MSRP SEND request towards A that contains display status for message “Hello B”. 5. Execute “MSRP Session Message” (C.7.1) with the message “Hello A” from the Test Tool 6. User A receives an “Is Composing” indication from User B. 7. User A receives “Hello A” from User B. 8. User A sends the message “Bye B” to User B. 9. Execute “MSRP Session Message” (C.7.1) with the message “Bye B” from client A. 10. User A receives an indication that the message “Bye B” has been delivered and if display notifications were requested, then an indication that the message has been displayed. 11. User A terminates the session. 11. Execute “Mobile Originated Session Termination” (C.3.1)
Pass-Criteria	1. At step 3 User A receives an indication that the message “Hello B” has been delivered. 2. At step 4 User A receives an indication that message “Hello B” has been displayed. 3. At step 6 User A receives an “Is Composing” indication from User B. 4. At step 7 User A receives “Hello A” from User B. 5. At step 10 User A receives an indication that the message “Bye B” has been delivered and if display notifications were requested, then an indication that the message has been displayed.

5.7.2 RCS-con-101 Mobile Originated 1-to-1 Chat - session establishment – Mobile Terminated session termination

Test Case Id	RCS-con-101
Test Object	RCS Client
Test Case Description	Verifies Mobile Originated 1-to-1 Chat session establishment with Mobile Terminated session termination
Specification Reference	RCS 3.2.4
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A’s device is provisioned for RCS • User A is IMS registered for RCS • In case of User A’s device support UI for switching display notifications on/off then display notification are to be switched on

Test Procedure	1. User A initiates a 1-to-1 Chat session with User B on his device with the message “Hello B”. 2. Execute “Mobile Originated Session Establishment” (C.2.1) with the message “Hello B” 3. User A receives an indication that the message “Hello B” has been delivered. 4. If the session invitation in step 2 contained a request for display notification, then execute MSRP SEND request towards A that contains display status for message “Hello B”. 5. Execute “MSRP Session Message” (C.7.1) with the message “Hello A” from the Test Tool 6. User A receives an “Is Composing” indication from User B. 7. User A receives “Hello A” from User B. 8. User A sends the message “Bye B” to User B. 9. Execute “MSRP Session Message” (C.7.1) with the message “Bye B” from client A. 10. User A receives an indication that the message “Bye B” has been delivered and if display notifications were requested, then an indication that the message has been displayed. 11. Execute “Mobile Terminated Session Termination” (C.3.2)
Pass-Criteria	1. At step 3 User A receives an indication that the message “Hello B” has been delivered. 2. At step 4 User A receives an indication that message “Hello B” has been displayed. 3. At step 6 User A receives an “Is Composing” indication from User B. 4. At step 7 User A receives “Hello A” from User B. 5. At step 10 User A receives an indication that the message “Bye B” has been delivered and if display notifications were requested, then an indication that the message has been displayed.

5.7.3 RCS-con-102 Mobile Originated 1-to-1 Chat – display notification (Includes Optional Features)

Test Case Id	RCS-con-102
Test Object	RCS Client
Test Case Description	Verifies display notification in Mobile Originated 1-to-1 Chat session
Specification Reference	RCS 3.2.2.4
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A’s device is provisioned for RCS • User A is IMS registered for RCS • User A’s device is configured to request display notifications Applicability: ics_request_displayNotifications

Test Procedure	1. User A initiates a 1-to-1 Chat session with User B on his device with the message “Hello B”. 2. Execute “Mobile Originated Session: 1-to-1 Chat with display notification” (C.2.3) with the message “Hello B” 3. User A receives an indication that the message “Hello B” has been delivered. 4. User A receives an indication that the message “Hello B” has been displayed. 5. Execute “MSRP Session Message” (C.7.1) with the message “Hello A” from the Test Tool 6. User A receives “Hello A” from User B. 7. User A sends the message “Bye B” to User B. 8. Execute “MSRP Session Message with Display Notification” (C.7.2) with the message “Bye B” from client A. 9. User A receives an indication that the message “Bye B” has been delivered. 10. User A receives an indication that the message “Bye B” has been displayed. 11. User A terminates the session. 12. Execute “Mobile Originated Session Termination” (C.3.1)
Pass-Criteria	1. At step 3 User A receives an indication that the message “Hello B” has been delivered. 2. At step 4 User A receives an indication that the message “Hello B” has been displayed. 3. At step 9 User A receives an indication that the message “Bye B” has been delivered. 4. At step 10 User A receives an indication that the message “Bye B” has been displayed.

5.7.4 RCS-con-103 Mobile Originated 1-to-1 Chat– duplicate session

Test Case Id	RCS-con-103
Test Object	RCS Client
Test Case Description	Verifies a duplicate session in a Mobile Originated 1-to-1 Chat session
Specification Reference	RCS 3.2.4.1
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A’s device is provisioned for RCS • User A is IMS registered for RCS • In case of User A’s device support UI for switching display notifications on/off then display notification are to be switched on

Test Procedure	1. User A initiates a 1-to-1 Chat session with User B on his device with the first message “Hello B”. 2. Execute “Mobile Originated Session Establishment - 1-to-1 Chat with two messages” (C.2.5) with the first message “Hello B” 3. User A receives an indication that the message “Hello B” has been delivered. 4. User A sends the second message “Wake up B” to User B. 5. Continue to execute “Mobile Originated Session Establishment - 1-to-1 Chat with two messages” (C.2.5) with the second message “Wake up B” 7. If the session invitation in step 2 contained a request for display notification, then execute MSRP SEND request towards A that contains display status for message “Hello B”. 8. If the session invitation in step 5 contained a request for display notification, then execute MSRP SEND request towards A that contains display status for message “Wake up B”. 9. Execute “MSRP Session Message” (C.7.1) with the message “Hello A” from the Test Tool 10. User A receives “Hello A” from User B. 11. User A terminates the session. 12. Execute “Mobile Originated Session Termination” (C.3.1)
Pass-Criteria	1. At step 3 User A receives an indication that the message “Hello B” has been delivered. 2. At step 6 User A receives an indication that the message “Wake up B” has been delivered. 3. At step 7 User A receives an indication that message “Hello B” has been displayed. 4. At step 8 User A receives an indication that message “Wake up B” has been displayed. 5. At step 10 User A receives “Hello A” from User B

5.7.5 RCS-con-104 Mobile Originated 1-to-1 Chat - race condition

Test Case Id	RCS-con-104
Test Object	RCS Client
Test Case Description	Verifies Mobile Originated 1-to-1 Chat session race condition with two simultaneous invites
Specification Reference	RCS 3.2.4.18.1
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A’s device is provisioned for RCS • User A is IMS registered for RCS • In case of User A’s device support UI for switching display notifications on/off then display notification are to be switched on

Test Procedure	1. User A initiates a 1-to-1 Chat session with User B on his device with the message “Hello B”. 2. Execute “Mobile Originated Session Establishment: simultaneous INVITEs” (C.2.8) with the messages “Hello B” from User A and “Hello A” from User B 3. User A receives “Hello A” from User B. 4. User A receives an indication that the message “Hello B” has been delivered. 5. If the session invitation in step 2 contained a request for display notification, then execute MSRP SEND request towards A that contains display status for message “Hello B”. 6. User A sends the message “Quick B” to User B. 7. Execute “MSRP Session Message” (C.7.1) with the message “Quick B” from client A. 8. Execute “MSRP Session Message” (C.7.1) with the message “Yes A” from the Test Tool 9. User A receives “Yes A” from User B. 10. User A receives an indication that the message “Quick B” has been delivered and if display notifications were requested, then an indication that the message has been displayed. 11. User A terminates the session. 12. Execute “Mobile Originated Session Termination” (C.3.1)
Pass-Criteria	1. At step 3 User A receives “Hello A” from User B. 2. At step 4 User A receives an indication that the message “Hello B” has been delivered. 3. At step 5 User A receives an indication that message “Hello B” has been displayed. 4. At step 9 User A receives “Yes A” from User B. 5. At step 10 User A receives an indication that the message “Quick B” has been delivered and if display notifications were requested, then an indication that the message has been displayed.

5.7.6 RCS-con-105 Mobile Originated 1-to-1 Chat – inactivity timeout

Test Case Id	RCS-con-105
Test Object	RCS Client
Test Case Description	Verifies 1-to-1 Chat inactivity timeout
Specification Reference	RCS 3.2.4.8
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A’s device is provisioned for RCS • User A is IMS registered for RCS • In case of User A’s device support UI for switching display notifications on/off then display notification are to be switched on

Test Procedure	1. User A initiates a 1-to-1 Chat session with User B on his device with the message “Hello B”. 2. Execute “Mobile Originated Session Establishment” (C.2.1) with the message “Hello B” 3. User A receives an indication that the message “Hello B” has been delivered. 4. If the session invitation in step 2 contained a request for display notification, then execute MSRP SEND request towards A that contains display status for message “Hello B”. 5. Execute “MSRP Session Message” (C.7.1) with the message “Hello A” from the Test Tool 6. User A receives “Hello A” from User B. 7. User A waits until the chat inactivity (ixit_chat_inactivity_timeout) timeout occurs and Client A then terminates the session 8. Execute “Mobile Originated Session Termination” (C.3.1)
Pass-Criteria	1. At step 8 Client A terminates the session.

5.7.7 RCS-con-106 Mobile Originated 1-to-1 Chat - store and forward – sender still in active IM session

Test Case Id	RCS-con-106
Test Object	RCS Client
Test Case Description	Verifies Mobile Originated 1-to-1 Chat session with store and forward when the sender is still in active IM session (with MSRP session still active) when the recipient comes back online.
Specification Reference	RCS 3.2.4.11
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A’s device is provisioned for RCS • User A is IMS registered for RCS • In case of User A’s device support UI for switching display notifications on/off then display notification are to be switched on.

Test Procedure	1. User A initiates a 1-to-1 Chat session with User B on his device with the message “Hello B”. (User B is offline) 2. Execute “Mobile Originated Session: Store and Forward - Receiver offline” (C.2.10) with the message “Hello B” 3. User A sends the message “Again B” to User B. (User B is offline) 4. Execute “MSRP Session Store and Forward” (C.7.3) with the message “Again B” from Client A. 5. (User A keeps chat session open and User B comes back online) 6. Execute “MSRP Session Store and Forward Message Delivered” (C.7.4) for the message “Hello B” from Client A. 7. User A receives an indication that the message “Hello B” has been delivered. 8. If the session invitation in step 2 contained a request for display notification, then execute MSRP SEND request towards A that contains display status for message “Hello B”. 9. Execute “MSRP Session Store and Forward Final Message Delivered” (C.7.5) for the message “Again B” from Client A. 10. User A receives an indication that the message “Again B” has been delivered and if display notifications were requested, then an indication that the message has been displayed.
Pass-Criteria	1. At step 7 User A receives an indication that the message “Hello B” has been delivered. 2. At step 8 User A receives an indication that message “Hello B” has been displayed. 3. At step 10 User A receives an indication that the message “Again B” has been delivered and if display notifications were requested, then an indication that the message has been displayed.

5.7.8 RCS-con-107 Mobile Originated 1-to-1 Chat - store and forward – sender still online

Test Case Id	RCS-con-107
Test Object	RCS Client
Test Case Description	Verifies Mobile Originated 1-to-1 Chat session with store and forward when the sender is still online when the recipient comes back online. The same call-flow is also used for delivery of deferred notifications when the sender goes offline and then comes back on line later.
Specification Reference	RCS 3.2.4.11
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A’s device is provisioned for RCS • User A is IMS registered for RCS • In case of User A’s device support UI for switching display notifications on/off then display notification are to be switched on

Test Procedure	1. User A initiates a 1-to-1 Chat session with User B on his device with the message “Hello B”. (User B is offline) 2. Execute “Mobile Originated Session Store and Forward - Receiver offline” (C.2.10) with the message “Hello B” 3. User A sends the message “Again B” to User B. (User B is offline) 4. Execute “MSRP Session Store and Forward” (C.7.3) with the message “Again B” from Client A. 5. User A terminates the session. 6. Execute “Mobile Originated Session Termination” (C.3.1) 7. (User A stays online and User B comes back online) 8. Execute “Mobile Originated Session Store and Forward - deferred delivery” (C.2.11) 9. Execute “MSRP Session Store and Forward Message Delivered” (C.7.4) for the message “Hello B” from Client A. 10. Client A auto-accepts and User A receives an indication that the message “Hello B” has been delivered. 11. If the session invitation in step 2 contained a request for display notification, then execute MSRP SEND request towards A that contains display status for message “Hello B”. 12. Execute “MSRP Session Store and Forward Final Message Delivered” (C.7.5) for the message “Again B” from Client A. 13. User A receives an indication that the message “Again B” has been delivered and if display notifications were requested, then an indication that the message has been displayed.
Pass-Criteria	1. At step 10 User A receives an indication that the message “Hello B” has been delivered. 2. At step 11 User A receives an indication that message “Hello B” has been displayed. 3. At step 13 User A receives an indication that the message “Again B” has been delivered and if display notifications were requested, then an indication that the message has been displayed.

5.8 Mobile Terminated 1-to-1 Chat

5.8.1 RCS-con-120 Mobile Terminated 1-to-1 Chat - session establishment – Mobile Terminated session termination

Test Case Id	RCS-con-120
Test Object	RCS Client
Test Case Description	Verifies Mobile Terminated 1-to-1 Chat session establishment with Mobile Terminated session termination
Specification Reference	RCS 3.2.4
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A’s RCS device is provisioned for RCS • User A is IMS registered for RCS

Test Procedure	1. Execute “Mobile Terminated Session Establishment” (C.2.2) with the message “Hello A” from User B 2. User A receives “Hello A” from User B. 3. User A sends the message “Hello B” to User B before the session times out. 4. Execute “MSRP Session Message” (C.7.1) with the message “Hello B” from client A. 5. Execute “MSRP Session Message” (C.7.1) with the message “Bye A” from the Test Tool 6. User A receives an “Is Composing” indication from User B. 7. User A receives “Bye A” from User B. 8. Execute “Mobile Terminated Session Termination” (C.3.2)
Pass-Criteria	1. At step 2 User A receives “Hello A” from User B. 2. At step 6 User A receives an “Is Composing” indication from User B. 3. At step 7 User A receives “Bye A” from User B.

5.8.2 RCS-con-121 Mobile Terminated 1-to-1 Chat - session establishment – Mobile Originated session termination

Test Case Id	RCS-con-121
Test Object	RCS Client
Test Case Description	Verifies Mobile Terminated 1-to-1 Chat session establishment with Mobile Originated session termination
Specification Reference	RCS 3.2.4
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A’s RCS device is provisioned for RCS • User A is IMS registered for RCS
Test Procedure	1. Execute “Mobile Terminated Session Establishment” (C.2.2) with the message “Hello A” from User B 2. User A receives “Hello A” from User B. 3. User A sends the message “Hello B” to User B before the session times out. 4. Execute “MSRP Session Message” (C.7.1) with the message “Hello B” from client A. 5. Execute “MSRP Session Message” (C.7.1) with the message “Bye A” from the Test Tool 6. User A receives an “Is Composing” indication from User B. 7. User A receives “Bye A” from User B. 8. User A terminates the session. 9. Execute “Mobile Originated Session Termination” (C.3.1)
Pass-Criteria	1. At step 2 User A receives “Hello A” from User B. 2. At step 6 User A receives an “Is Composing” indication from User B. 3. At step 7 User A receives “Bye A” from User B.

5.8.3 RCS-con-122 Mobile Terminated 1-to-1 Chat – spam/blacklist

Test Case Id	RCS-con-122

Test Object	RCS Client
Test Case Description	Verifies Mobile Terminated 1-to-1 Chat session establishment when the sender is on the spam/blacklist
Specification Reference	RCS 3.2.4.15
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's RCS device is provisioned for RCS • User A is IMS registered for RCS • User A has User S listed in the spam/blacklist
Test Procedure	1. Execute "Mobile Terminated Session Establishment: Spam" (C.2.7) with the message "Spam for A" from User S 2. User A does not receive the message from User S. 3. The message "Spam for A" is available in the spam filter.
Pass-Criteria	1. During step 1 Client A sends a delivery notification with status "delivered" to Client S. 2. At step 2 User A does not receive the message from User S. 3. At step 3 the message "Spam for A" is available in the spam filter.

5.8.4 RCS-con-123 Mobile Terminated 1-to-1 Chat – display notification

Test Case Id	RCS-con-123
Test Object	RCS Client
Test Case Description	Verifies display notification in Mobile Terminated 1-to-1 Chat session
Specification Reference	RCS 3.2.2.4
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's RCS device is provisioned for RCS • User A is IMS registered for RCS • User A's device is configured to respond to display notification requests
Test Procedure	1. Execute "Mobile Terminated Session Establishment: 1-to-1 Chat with display notification" (C.2.4) with the message "Hello A" from User B 2. User A receives "Hello A" from User B. 3. User A sends the message "Hello B" to User B before the session times out. 4. Execute "MSRP Session Message" (C.7.1) with the message "Hello B" from client A. 5. Execute "MSRP Session with Display Notification" (C.7.2) with the message "Bye A" from the Test Tool 6. User A receives "Bye A" from User B. 7. User A displays "Bye A" from User B. 8. Execute "Mobile Terminated Session Termination" (C.3.2)
Pass-Criteria	1. The pass-criteria are completely contained in the message flows in Appendix C

5.8.5 RCS-con-124 Mobile Terminated 1-to-1 Chat– duplicate session

Test Case Id	RCS-con-124
Test Object	RCS Client
Test Case Description	Verifies a duplicate session in a Mobile Terminated 1-to-1 Chat session
Specification Reference	RCS 3.2.4.1
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's RCS device is provisioned for RCS • User A is IMS registered for RCS
Test Procedure	1. Execute "Mobile Terminated Session Establishment: 1-to-1 Chat with two messages" (C.2.6) with the first message "Hello A" from User B and the second message "Wake up A" from User B. 2. User A receives "Hello A" from User B (but performs no action). 3. User A receives "Wake up A" from User B. 4. User A sends the message "Hello B" to User B before the session times out. 5. Execute "MSRP Session Message" (C.7.1) with the message "Hello B" from client A. 6. Execute "MSRP Session Message" (C.7.1) with the message "Bye A" from the Test Tool 7. User A receives "Bye A" from User B. 8. Execute "Mobile Terminated Session Termination" (C.3.2)
Pass-Criteria	1. At step 2 User A receives "Hello A" from User B. 2. At step 3 User A receives "Wake up A" from User B. 3. At step 7 User A receives "Bye A" from User B.

5.8.6 RCS-con-125 Mobile Terminated 1-to-1 Chat - race condition

Test Case Id	RCS-con-125
Test Object	RCS Client
Test Case Description	Verifies Mobile Terminated 1-to-1 Chat session race condition with new invite received after previous invite has been accepted
Specification Reference	RCS 3.2.4.18.2
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's RCS device is provisioned for RCS • User A is IMS registered for RCS

Test Procedure	1. Execute “Mobile Terminated Session Establishment: new INVITE race” (C.2.9) with the first message “Hello A” from User B and the second message “Again A” from User B 2. User A receives “Hello A” from User B. 3. User A receives “Again A” from User B. 4. User A sends the message “Two B” to User B before the session times out. 5. Execute “MSRP Session Message” (C.7.1) with the message “Two B” from client A. 6. Execute “MSRP Session Message” (C.7.1) with the message “Bye A” from the Test Tool 7. User A receives “Bye A” from User B. 8. Execute “Mobile Terminated Session Termination” (C.3.2)
Pass-Criteria	1. At step 2 User A receives “Hello A” from User B. 2. At step 3 User A receives “Again A” from User B. 3. At step 7 User A receives “Bye A” from User B.

5.8.7 RCS-con-126 Mobile Terminated 1-to-1 Chat - store and forward

Test Case Id	RCS-con-126
Test Object	RCS Client
Test Case Description	Verifies delivery of deferred messages in a Mobile Terminated 1-to-1 Chat session.
Specification Reference	RCS 3.2.4.11, RCS 3.2.4.19
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A’s RCS device is provisioned for RCS • User A is IMS registered for RCS • User A is offline
Test Procedure	1. User A comes online. 2. Execute “Mobile Terminated Session Store and Forward - deferred delivery” (C.2.12) with the first stored message “Hello A” from User B and the second stored message “Again A” from User B. 3. User A receives an indication of the stored message “Hello A” from User B and may optionally receive an indication of the stored message “Again A” from User B. User A opens the chat window. 4. Execute “MSRP Session Store and Forward Final Message Delivered” (C.7.5) with the stored message “Yet again A” from User B. 5. User A receives the stored message “Again A” from User B if not already received and then the message “Yet again A” from User B and the session is closed.
Pass-Criteria	1. At step 3 User A receives an indication of the stored message “Hello A” from User B and optionally receives an indication of the stored message “Again A” from User B. 2. At step 5 User A receives the stored message “Again A” from User B if not already received and then receives the stored message “Yet again A” from User B and the session is closed.

5.9 Mobile Originated Group Chat

5.9.1 RCS-con-130 Mobile Originated Group Chat - establishment – Originating User leaves the session

Test Case Id	RCS-con-130
Test Object	RCS Client
Test Case Description	Verifies Mobile Originated Group Chat session establishment and Originating User leaves the session
Specification Reference	RCS 3.2.5
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's device is provisioned for RCS • User A is IMS registered for RCS
Test Procedure	1. User A initiates a Group Chat session with User B, User C and User D on his device with the subject "Test". 2. Execute "Mobile Originated Session Establishment: Group Chat" (C.2.13) with the subject "Test" and participants list with User B and User C as accepted (User D does not accept). 3. User A receives the participant list and the status for each one 4. User A sends the message "Hello group" to the group. 5. Execute "MSRP Group Session Message" (C.7.6) with the message "Hello group" from Client A. 6. Execute "MSRP Group Session Message" (C.7.6) with the message "Hello A" from the Test Tool from User B 7. User A receives "Hello A" from User B. 8. User A leaves the Group Chat session. 9. Execute "Mobile Originated Session Termination" (C.3.1)
Pass-Criteria	1. At step 3 User A receives the participant list and the status for each one 2. At step 7 User A receives "Hello A" from User B.

5.9.2 RCS-con-131 Mobile Originated Group Chat - non-originating Users leave the session

Test Case Id	RCS-con-131
Test Object	RCS Client
Test Case Description	Verifies Mobile Originated Group Chat session when non-originating Users leave the session and the session is closed
Specification Reference	RCS 3.2.5
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's device is provisioned for RCS • User A is IMS registered for RCS

Test Procedure	1. User A initiates a Group Chat session with User B, User C and User D on his device with the subject "Test". 2. Execute "Mobile Originated Session Establishment: Group Chat" (C.2.13) with the subject "Test" and participants list with User B and User C as accepted (User D does not accept). 3. Execute "MSRP Group Session Message" (C.7.6) with the message "B going" from the Test Tool from User B 4. User A receives the message "B going" from User B. 5. Execute "Participant List Update" (C.5.1) with User B as offline (and User C as accepted). 6. User A receives the participant list and the status for each one (User B as offline and User C as accepted). 7. Execute "MSRP Group Session Message" (C.7.6) with the message "C going" from the Test Tool from User C 8. User A receives the message "C going" from User C. 9. Execute "Participant List Update" (C.5.1) with User C as offline. 10. User A receives the participant list and the status for each one (User C as offline). 11. Execute "Mobile Terminated Session Termination" (C.3.2).
Pass-Criteria	1. At step 4 User A receives the message "B going" from User B. 2. At step 6 User A receives the participant list and the status for each one (User B as offline and User C as accepted). 3. At step 8 User A receives the message "C going" from User C. 4. At step 10 User A receives the participant list and the status for each one (User C as offline).

5.9.3 RCS-con-132 Mobile Originated Group Chat - adding new User to the session

Test Case Id	RCS-con-132
Test Object	RCS Client
Test Case Description	Verifies Group Chat when a new User is added to the session
Specification Reference	RCS 3.2.5.5.4
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's device is provisioned for RCS • User A is IMS registered for RCS
Test Procedure	1. User A initiates a Group Chat session with User B and User C on his device with the subject "Test". 2. Execute "Mobile Originated Session Establishment: Group Chat" (C.2.13) with the subject "Test" and participants list with User B and User C as accepted. 3. User A selects User D to add to the session 4. Execute "Inviting new User to Group Chat" (C.5.2) with new User D added to the Group Chat 5. User A receives the participant list and the status for each one (User D as added/accepted and User B and User C as accepted). 6. User A leaves the Group Chat session. 7. Execute "Mobile Originated Session Termination" (C.3.1)

Pass-Criteria	1. At step 5 User A receives the participant list and the status for each one (User D as added/accepted and User B and User C as accepted).

5.10 Mobile Terminated Group Chat

5.10.1 RCS-con-140 Mobile Terminated Group Chat - establishment – Terminating User leaves the session

Test Case Id	RCS-con-140
Test Object	RCS Client
Test Case Description	Verifies Mobile Terminated Group Chat session establishment and Terminating User leaves the session
Specification Reference	RCS 3.2.5
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's RCS device is provisioned for RCS • User A is IMS registered for RCS
Test Procedure	1. Execute "Mobile Terminated Session Establishment: Group Chat" (C.2.14) with User B as the initiator and User C also invited 2. User A receives the invitation and the participant list. 3. User A accepts the invitation. 4. Continue to execute "Mobile Terminated Session Establishment: Group Chat" (C.2.14) 5. Execute "MSRP Group Session Message" (C.7.6) with the message "Hello group" from the Test Tool from Client B. 6. User A receives the message "Hello group" from User B. 7. User A sends the message "Hello BC" to the Group. 8. Execute "MSRP Group Session Message" (C.7.6) with the message "Hello BC" from User A to the Group 9. User A leaves the Group Chat session. 10. Execute "Mobile Originated Session Termination" (C.3.1)
Pass-Criteria	1. At step 2 User A receives the invitation and the participant list (User B and User C). 2. At step 6 User A receives the message "Hello group" from User B.

5.11 Group Chat

5.11.1 RCS-con-145 Group Chat automatic re-join

Test Case Id	RCS-con-145
Test Object	RCS Client
Test Case Description	Verifies Group Chat automatic re-join when a participant leaves the session due to loss of connectivity.
Specification Reference	RCS 3.2.5.5.6, RIG ID_4_21_2
SCR Reference	
Test code	Verified TTCN-3 code

Preconditions	• User A's RCS device is provisioned for RCS • User A is IMS registered for RCS
Test Procedure	1. User A, User B and User C are in an established Group Chat session initiated by User B. (Execute "Mobile Terminated Session Establishment: Group Chat" (C.2.14) with User B as the initiator and User A and User C also invited). 2. User A leaves the Group Chat involuntarily. Simulate by e.g. severely attenuating the cellular signal from the Test Tool to the device under test and waiting ixit_RF_loss_recognition_timer seconds. 3. Connectivity with the device under test is restored by re-establishing the cellular signal from the Test Tool. 4. Client A re-registers with the IMS core (Test Tool). 5. Client A automatically re-joins the original Group Chat session using the original Contribution ID. Execute: "Group Chat automatic re-join" (C.2.15) with User A as the initiator. 6. Execute "MSRP Group Session Message" (C.7.6) with the message "Hello again A" from User B to the Group. 7. User A receives the message "Hello again A" from User B. 8. User A leaves the Group Chat session. 9. Execute "Mobile Originated Session Termination" (C.3.1)
Pass-Criteria	1. At step 5 Client A automatically re-joins the original Group Chat 2. At step 7 User A receives the message "Hello again A" from User B.

5.11.2 RCS-con-146 Group Chat re-start: 404 (Not Found)

Test Case Id	RCS-con-146
Test Object	RCS Client
Test Case Description	Verifies correct behaviour after a Group Chat times out and a participant attempts to re-start the session and receives a 404 Not Found response from the IM server.
Specification Reference	RCS 3.2.5.5.6, RIG ID_4_21_3
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's RCS device is provisioned for RCS • User A is IMS registered for RCS

Test Procedure	1. User A, User B and User C are in an established Group Chat session initiated by User B. (Execute “Mobile Terminated Session Establishment: Group Chat” (C.2.14) with User B as the initiator and User A and User C also invited). Set the FFS timer to FFS value. 2. Wait FFS until the Group Chat session times out. 3. User A sends the message “Restart” to the original Group. 4. Client A attempts to automatically re-join the original Group Chat session using the original Contribution ID. This fails as the session has expired and the IM server (Test Tool) sends 404 Not Found. Execute: “Group Chat re-start: 404 Not Found” (C.2.16) with User A as the initiator. 5. Client A automatically starts a new Group Chat session using the original Contribution ID and participant list. Execute: “Group Chat auto-start” (C.2.18) with User A as the initiator and User B and User C as the other members of the previous group session participants list. 6. Execute “MSRP Group Session Message” (C.7.6) with the message “Restart” from Client A. 7. User A leaves the Group Chat session. 8. Execute “Mobile Originated Session Termination” (C.3.1)
Pass-Criteria	1. At step 4 Client A attempts to automatically re-join the original Group Chat. 2. At step 5 Client A automatically starts a new Group Chat session using the original Contribution ID and participant list.

5.11.3 RCS-con-147 Group Chat re-start: 403 (Forbidden)

Test Case Id	RCS-con-147
Test Object	RCS Client
Test Case Description	Verifies correct behaviour after a Group Chat times out and a participant attempts to re-start the session but receives a 403 Forbidden response from the IM server.
Specification Reference	RIG ID_4_21_3
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A’s RCS device is provisioned for RCS • User A is IMS registered for RCS

Test Procedure	1. User A, User B and User C are in an established Group Chat session initiated by User B. (Execute "Mobile Terminated Session Establishment: Group Chat" (C.2.14) with User B as the initiator and User A and User C also invited). Set the FFS timer to FFS value. 2. Wait FFS until the Group Chat session times out. 3. User A sends the message "Restart" to the original Group. 4. Client A attempts to automatically re-join the original Group Chat using the original Contribution ID. This fails as the session has expired and the IM server (Test Tool) sends 403 Forbidden. Execute: "Group Chat re-start: 403 Forbidden" (C.2.17) with User A as the initiator. 5. Client A either: a) Abandons the attempt to start a Group Chat and sends no new messages. Or b) Starts a new Group Chat in which case execute "Mobile Originated Session Establishment: Group Chat" (C.2.13) with User A as the initiator, with the subject "Restart" and participants list with User B and User C. Then User A leaves the Group Chat session. Execute "Mobile Originated Session Termination" (C.3.1)
Pass-Criteria	1. At step 4 Client A attempts to automatically re-join the original Group Chat. 2. At step 5 Client A either: a) Sends no messages. Or b) Starts a new Group Chat.

5.11.4 RCS-con-148 Group Chat: Concurrent sessions

Test Case Id	RCS-con-148
Test Object	RCS Client
Test Case Description	Verifies correct behaviour after a Group Chat is re-started more than once leading to two concurrent sessions.
Specification Reference	RIG ID_4_21_3
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's RCS device is provisioned for RCS • User A is IMS registered for RCS

Test Procedure	1. User A, User B, User C and User D are in a re-started Group Chat session (session 1), re-started by User B. (Execute "Mobile Terminated Session Establishment: Group Chat" (C.2.14) with User B as the initiator and User A and User C and User D also invited). User C does not re-join (as is offline). 2. Wait 5 seconds. 3. User C (the Test Tool) re-starts the same Group Chat using the same Contribution ID (session 2). (User C was offline at step 1 and also was not aware that User D was a member of the Group Chat). Execute: "Group Chat re-start: Mobile Terminated" (C.2.19) with User C as the initiator and User A and User B (only) as the other members of the participants list. 4. Client A auto-accepts the group session request from step 3. Execute: "Auto-accept Group Chat" (C.2.20). 5. Client A auto-invites Client D to the Group Chat (session 2). Execute: "Auto-invite Group Chat" (C.2.21). 6. User A sends the message "Hello again" to the group using session 2. 7. Execute "MSRP Group Session Message" (C.7.6) (session 2) with the message "Hello again" from Client A. 8. (User B (the Test Tool) did not receive the second re-start (session 2) at step 3 and so when he sends a message Client B uses session 1). Execute "MSRP Group Session Message" (C.7.6) with the message "Back again" from the Test Tool from Client B using session 1. 9. User A receives the message "Back again" from User B. 10. Client A auto-invites Client B to the Group Chat (session 2). Execute: "Auto-invite Group Chat" (C.2.21). 11. User A leaves the Group Chat session. 12. Execute "Mobile Originated Session Termination" (C.3.1).
Pass-Criteria	1. At step 4 Client A auto-accepts the group session request. 2. At step 5 Client A auto-invites Client D to the Group Chat session 2. 3. At step 7 the MSRP Group Session uses session 2. 4. At step 9 User A receives the message "Back again" from User B. 5. At step 10 Client A auto-invites Client B to the Group Chat session 2.

5.12 Mobile Originated File transfer

5.12.1 RCS-con-200 Mobile Originated File Transfer (Includes Optional Features)

Test Case Id	RCS-con-200
Test Object	RCS Client
Test Case Description	Mobile Originated File Transfer
Specification Reference	RCS 3.4.1
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's RCS device is provisioned for RCS • User A is IMS registered for RCS

Test Procedure	1. User A initiates a File Transfer towards User B on his device. 2. Execute "Mobile Originated Session Establishment" (C.2.1) 3. User A's RCS client sends a file in an MSRP session. 4. Execute "Mobile Originated Session Termination" (C.3.1) Applicability: ics_fileTransfer
Pass-Criteria	1. At step 3 the MSRP session is setup correctly and a file is transferred successfully.

5.12.2 RCS-con-201 Mobile Originated File Transfer – Rejected (Includes Optional Features)

Test Case Id	RCS-con-201
Test Object	RCS Client
Test Case Description	Mobile originated file transfer – Rejected
Specification Reference	RCS 3.4.3
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's RCS device is provisioned for RCS • User A is IMS registered for RCS Applicability: ics_fileTransfer
Test Procedure	1. User A initiates a File Transfer towards User B on his device. 2. Execute "Mobile Originated Session – Reject" (C.4.1)
Pass-Criteria	1. At step 2 User A's RCS client shows User B rejected the file sharing session.

5.13 Mobile Terminated File transfer

5.13.1 RCS-con-210 Mobile Terminated File Transfer (Includes Optional Features)

Test Case Id	RCS-con-210
Test Object	RCS Client
Test Case Description	Mobile Terminated File Transfer
Specification Reference	RCS 3.4.1
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's RCS device is provisioned for RCS • User A is IMS registered for RCS Applicability: ics_fileTransfer
Test Procedure	1. Execute "Mobile Terminated Session Establishment" (C.2.2) 2. The test tool sends a file in an MSRP session to User A's RCS client. 3. Execute "Mobile Terminated Session Termination" (C.3.2)

Pass-Criteria	1. At step 2 User A's RCS client receives the file.

5.13.2 RCS-con-211 Mobile Terminated File Transfer – Rejected (Includes Optional Features)

Test Case Id	RCS-con-211
Test Object	RCS Client
Test Case Description	Mobile terminated file transfer – Rejected
Specification Reference	RCS 3.4.3
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's RCS device is provisioned for RCS • User A is IMS registered for RCS • User A's RCS device is configured with File Transfer Auto-accept set to "off" (ftAutAccept set to 0) Applicability: ics_fileTransfer
Test Procedure	1. Execute "Mobile Terminated Session – Reject" (C.4.2)
Pass-Criteria	1. At step 1 on User A's RCS client shows no ongoing file transfer.

5.13.3 RCS-con-212 Mobile Terminated File Transfer – File Size Limit (Includes Optional Features)

Test Case Id	RCS-con-212
Test Object	RCS Client
Test Case Description	File size limit
Specification Reference	RCS 3.4.6
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A is IMS registered for RCS • User A's RCS device is provisioned for RCS • User A's RCS device is configured with a non-zero value of FT MAX SIZE Applicability: ics_fileTransfer ixit: ixit_FTMAXSIZE
Test Procedure	1. Execute steps 1 to 3 of "Mobile Terminated Session Establishment: File Transfer" (C.2.2) from User B, for a file of size larger than FT MAX SIZE (i.e. maximum file size User A's RCS client is allowed to receive, given by ixit_FTMAXSIZE). 2. User A's RCS client auto-rejects the file transfer invitation request with a 603 DECLINE towards User B (and User A receives a warning message). 3. The test tool sends a SIP ACK message to User A's RCS client

Pass-Criteria	1. At step 2 User A's RCS client auto-rejects the file transfer invitation request. 2. At step 2 User A receives a warning message indicating file size too large.

5.13.4 RCS-con-213 Mobile Terminated File Transfer – File Size Warn Limit (Includes Optional Features)

Test Case Id	RCS-con-213
Test Object	RCS Client
Test Case Description	File size warning
Specification Reference	RCS 3.4.6
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A is IMS registered for RCS • User A's RCS device is provisioned for RCS • User A's RCS device is configured with a non-zero value of FT WARN SIZE Applicability: ics_fileTransfer ixit: ixit_FTWARNSIZE
Test Procedure	1. Execute steps 1 to 3 of "Mobile Terminated Session Establishment: File Transfer" (C.2.2) from User B, for a file of size larger than FT WARN SIZE (i.e. maximum file size User A's RCS client is allowed to receive, given by ixit_FTMAXSIZE, before a warning requesting confirmation is required). 2. User A's RCS client determines file is of size larger than FT WARN SIZE and User A receives a warning message requesting confirmation. 3. User A accepts the confirmation request. 4. Continue to execute steps 6 to 8 of "Mobile Terminated Session Establishment: File Transfer" (C.2.2).
Pass-Criteria	1. At step 2 User A receives a warning message requesting confirmation. 2. At step 4 the file is transferred successfully.

5.14 Mobile Originated Image sharing

5.14.1 RCS-con-250 Mobile Originated Image Sharing Session Establishment – Mobile Originated Session Termination (Includes Optional Features)

Test Case Id	RCS-con-250
Test Object	RCS Client
Test Case Description	Mobile Originated Image sharing session – Mobile originated Session termination
Specification Reference	RCS 3.3.8
SCR Reference	
Test code	Verified TTCN-3 code

Preconditions	• User A's RCS device is provisioned for RCS • User A is IMS registered for RCS Applicability: ics_imageShare
Test Procedure	1. User A establishes a CS Voice call to User B. 2. Execute "Mobile Originated Capability Exchange" (C.1.1) 3. User A initiates an Image Share session towards User B on his device. 4. Execute "Mobile Originated Session Establishment" (C.2.1) 5. User A's RCS client sends an image in an MSRP session. 6. Execute "Mobile Originated Session Termination" (C.3.1) 7. Execute "Mobile Terminated Capability Exchange" (C.1.2)
Pass-Criteria	1. At step 5 the MSRP session is setup correctly and an image is transferred successfully. 2. At step 7 on User A's RCS client shows User B still as available for image sharing.

5.14.2 RCS-con-251 Mobile Originated Image Sharing - Session Establishment - rejected (Includes Optional Features)

Test Case Id	RCS-con-251
Test Object	RCS Client
Test Case Description	Mobile originated image sharing session establishment – Rejected
Specification Reference	RCS 3.3.11
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's RCS device is provisioned for RCS • User A is IMS registered for RCS Applicability: ics_imageShare
Test Procedure	1. User A establishes a CS Voice call to User B. 2. Execute "Mobile Originated Capability Exchange" (C.1.1) 3. User A initiates an Image Share session towards User B on his device. 4. Execute "Mobile Originated Call – Reject" (C.4.1)
Pass-Criteria	1. At step 4 User A's RCS client shows User B rejected the image sharing session.

5.15 Mobile Terminated Image sharing

5.15.1 RCS-con-270 Mobile Terminated Image Sharing - Session Establishment – Mobile Terminated Session Termination (Includes Optional Features)

Test Case Id	RCS-con-270
Test Object	RCS Client
Test Case Description	Mobile Terminated Image sharing session – Mobile Terminated session termination

Specification Reference	RCS 3.3.8
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's RCS device is provisioned for RCS • User A is IMS registered for RCS Applicability: ics_imageShare
Test Procedure	1. User A establishes a CS Voice call to User B. 2. Execute "Mobile Originated Capability Exchange" (C.1.1) 3. Execute "Mobile Terminated Session Establishment" (C.2.2) 4. The test tool sends an image in an MSRP session to User A's RCS client. 5. Execute "Mobile Terminated Session Termination" (C.3.2) 6. Execute "Mobile Originated Capability Exchange" (C.1.1)
Pass-Criteria	1. At step 4 User A's RCS client receives the image. 2. At step 6 User A's RCS client shows User B still as available for image sharing.

5.15.2 RCS-con-271 Mobile Terminated Image Sharing - Session Establishment - rejected (Includes optional Features)

Test Case Id	RCS-con-271
Test Object	RCS Client
Test Case Description	Mobile terminated Image sharing session establishment – Rejected
Specification Reference	RCS 3.3.11
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• User A's RCS device is provisioned for RCS • User A is IMS registered for RCS Applicability: ics_imageShare
Test Procedure	1. User A establishes a CS Voice call to User B. 2. Execute "Mobile Originated Capability Exchange" (C.1.1) 3. Execute "Mobile Terminated Session – Reject" (C.4.2)
Pass-Criteria	1. At step 3 on User A's RCS client shows no ongoing image share session.

5.16 Mobile Originated Video sharing

5.16.1 RCS-con-300 Mobile Originated Video Sharing - Session Establishment – Mobile Originated Session Termination (Includes Optional Features)

Test Case Id	RCS-con-300
Test Object	RCS Client
Test Case Description	Mobile Originated Video sharing session – Mobile originated termination
Specification Reference	RCS 3.3.4

SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• The client A's handset coverage is 3G • User A's RCS device is provisioned for RCS • User A is IMS registered for RCS Applicability: ics_videoShare
Test Procedure	1. User A establishes a CS Voice call to User B. 2. Execute "Mobile Originated Capability Exchange" (C.1.1) 3. User A initiates a Video Share session towards User B on his device. 4. Execute "Mobile Originated Session Establishment" (C.2.1) 5. User A terminates the Video Share session. 6. Execute "Mobile Originated Session Termination" (C.3.1) 7. Execute "Mobile Terminated Capability Exchange" (C.1.2)
Pass-Criteria	1. At step 4 the test tool receives an RTP video stream from User a's RCS device. 2. At step 7 User A's RCS client shows User B still as available for video sharing.

5.16.2 RCS-con-301 Mobile Originated Video Sharing - Session Establishment – Mobile Terminated Session Termination (Includes Optional Features)

Test Case Id	RCS-con-301
Test Object	RCS Client
Test Case Description	Mobile Terminated Video sharing session – Mobile Terminated Session termination
Specification Reference	RCS 3.3.5
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• The client A's handset coverage is 3G • User A's RCS device is provisioned for RCS • User A is IMS registered for RCS Applicability: ics_videoShare
Test Procedure	1. User A establishes a CS Voice call to User B. 2 Execute "Mobile Originated Capability Exchange" (C.1.1) 3. User A initiates a Video Share session towards User B on his device. 4. Execute "Mobile Originated Session Establishment" (C.2.1) 5. Execute "Mobile Terminated Session Termination" (C.3.2) 6. Execute "Mobile Originated Capability Exchange" (C.1.1)
Pass-Criteria	1. At step 3 the test tool receives an RTP video stream from User a's RCS device. 2. At step 5 User A's RCS client shows User B still as available for video sharing.

5.16.3 RCS-con-302 Mobile Originated Video Sharing - Session Establishment - Rejected (Includes Optional Features)

Test Case Id	RCS-con-302
Test Object	RCS Client
Test Case Description	Unsuccessful mobile originated video sharing session establishment
Specification Reference	RCS 3.3.11
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• The client A's handset coverage is 3G • User A's RCS device is provisioned for RCS • User A is IMS registered for RCS Applicability: ics_videoShare
Test Procedure	1. User A establishes a CS Voice call to User B. 2. Execute "Mobile Originated Capability Exchange" (C.1.1) 3. User A initiates a Video Share session towards User B on his device. 4. Execute "Mobile Originated Session – Reject" (C.4.1)
Pass-Criteria	1. At step 4 User A's RCS client shows User B rejected the video sharing session.

5.17 Mobile Terminated Video sharing

5.17.1 RCS-con-320 Mobile Terminated Video Sharing - Session Establishment – Mobile Terminated Session Termination (Includes Optional Features)

Test Case Id	RCS-con-320
Test Object	RCS Client
Test Case Description	Mobile Terminated Video sharing session – Mobile Terminated Session termination
Specification Reference	RCS 3.3.4
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• The client A's handset coverage is 3G • User A's RCS device is provisioned for RCS • User A is IMS registered for RCS Applicability: ics_videoShare
Test Procedure	1. User A establishes a CS Voice call to User B. 2. Execute "Mobile Originated Capability Exchange" (C.1.1) 3. Execute "Mobile Terminated Session Establishment" (C.2.2) 4. The test tool sends a video stream to User A's RCS client. 5. Execute "Mobile Terminated Session Termination" (C.3.2) 6. Execute "Mobile Originated Capability Exchange" (C.1.1)

Pass-Criteria	1. At step 4 on User A's RCS client the video stream received from User B can be seen. 2. At step 6 User A's RCS client shows User B still as available for video sharing.

5.17.2 RCS-con-321 Mobile Terminated Video Sharing - Session Establishment – Mobile Originated Session Termination (Includes Optional features)

Test Case Id	RCS-con-321
Test Object	RCS Client
Test Case Description	Mobile Terminated Video sharing session – Mobile Originated session termination
Specification Reference	RCS 3.3.5
SCR Reference	
Test code	Verified TTCN-3 code
Preconditions	• The client A's handset coverage is 3G • User A's RCS device is provisioned for RCS • User A is IMS registered for RCS Applicability: ics_videoShare
Test Procedure	1. User A establishes a CS Voice call to User B. 2. Execute "Mobile Originated Capability Exchange" (C.1.1) 3. Execute "Mobile Terminated Session Establishment" (C.2.2) 4. The test tool sends a video stream to User A's RCS client. 5. User A terminates the Video Share session. 6. Execute "Mobile Originated Session Termination" (C.3.1) 7. Execute "Mobile Terminated Capability Exchange" (C.1.2)
Pass-Criteria	1. At step 4 on User A's RCS client the video stream received from User B can be seen. 2. At step 7 User A's RCS client shows User B still as available for video sharing.

5.17.3 RCS-con-322 Mobile Terminated Video Sharing - Session Establishment - Rejected (Includes Optional Features)

Test Case Id	RCS-con-322
Test Object	RCS Client
Test Case Description	Unsuccessful mobile terminated video sharing session establishment
Specification Reference	RCS 3.3.11
SCR Reference	
Test code	Verified TTCN-3 code

Preconditions	• The client A's handset coverage is 3G • User A's RCS device is provisioned for RCS • User A is IMS registered for RCS Applicability: ics_videoShare
Test Procedure	1. User A establishes a CS Voice call to User B. 2. Execute "Mobile Originated Capability Exchange" (C.1.1) 3. Execute "Mobile Terminated Session – Reject" (C.4.2)
Pass-Criteria	1. At step 3 User A's RCS client shows User B as still available for video sharing.

Appendix A. Change History (Informative)

A.1 Approved Version History

Reference	Date	Description
n/a	n/a	No prior version

A.2 Draft/Candidate Version 1.2.2 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-ETS-RCS-e-CON-V1_2	19 Sep 2012	All	New separate conformance specification created from previous combined specification, as agreed in OMA-IOP-MEC-2012-0108-CR_RCS_e_conformance_ETS
	20 Sep 2012	All	Incorporated CRs: OMA-IOP-MEC-2012-0101R03-CR_RCS_e_more_videoshare_test_cases OMA-IOP-MEC-2012-0102R01-CR_RCS_e_image_share_conformance_test_cases OMA-IOP-MEC-2012-0104R01-CR_RCS_e_default_procedures
	25 Sep 2012	All	Incorporated CRs: OMA-IOP-MEC-2012-0105R01-CR_RCS_e_default_message_content OMA-IOP-MEC-2012-0109-CR_RCS_e_1_to_1_chat_basic_conformance_test_cases OMA-IOP-MEC-2012-0112R01-CR_RCS_e_file_transfer OMA-IOP-MEC-2012-0113R03-CR_RCS_e_CON_ETS_update
	18 Oct 2012	All	Incorporated CRs: OMA-IOP-MEC-2012-0120-CR_RCS_e_CON_ETS_addition OMA-IOP-MEC-2012-0117-CR_RCSe_removeDuplicateCO OMA-IOP-MEC-2012-0116-CR_RCSe_enableRCSeSwitch
	07 Nov 2012	5	Incorporates CRs: OMA-IOP-MEC-2012-0126R02-CR_RCS_e_CON_ETS_new_chat_test_cases OMA-IOP-MEC-2012-0127R01-CR_RCS_e_CON_ETS_new_store_and_forward_test_cases OMA-IOP-MEC-2012-0128-CR_RCS_e_CON_ETS_new_group_chat_test_cases OMA-IOP-MEC-2012-0130-CR_RCS_e_CON_ETS_new_default_procedures
	08 Nov 2012	5, C	Re-application of : OMA-IOP-MEC-2012-0126R02-CR_RCS_e_CON_ETS_new_chat_test_cases OMA-IOP-MEC-2012-0130-CR_RCS_e_CON_ETS_new_default_procedures
	20 Nov 2012	1, 2.2, 5.6, App C and D	Incorporates CRs: OMA-IOP-MEC-2012-0147R01-CR_RCS_e_CON_ETS_addition_of_Implementation_Guidelines OMA-IOP-MEC-2012-0148R01-CR_RCS_e_default_procedures_for_autoconfiguration OMA-IOP-MEC-2012-0151R01-CR_RCS_e_capability_discovery_conformance_test_cases_update
	21 Nov 2012	All	Incorporates CRs: OMA-IOP-MEC-2012-0143R01-CR_RCS_e_CON_ETS_addition_of_ICS_for_optional_features OMA-IOP-MEC-2012-0150R01-CR_RCS_e_autoconfiguration_correction. Re-application of OMA-IOP-MEC-2012-0151R01 in CON-041. Font set to black in D 2.4. Formatting of bullets. Latest template applied to cover page in clean version. Language set to English UK.
	27 Nov 2012	All	Fixed erroneous automatical numbering of lists in test cases.
	20 Dec 2012	All	Incorporates CR: OMA-IOP-MEC-2012-0166-CR_RCS_e_CON_ETS_minor_updates

Document Identifier	Date	Sections	Description
	21 Jan 2013	All	Incorporates CRs: OMA-IOP-MEC-2012-0168R01-CR_RCS_e_CON_ETS_MSRP_session_details OMA-IOP-MEC-2013-0001R01-CR_RCS_e_CON_ETS_further_minor_updates OMA-IOP-MEC-2013-0003R01-CR_RCS_e_CON_ETS_additional_group_chat_test_cases OMA-IOP-MEC-2013-0004-CR_RCS_e_CON_ETS_correction_con_132 OMA-IOP-MEC-2013-0005R04-CR_RCSe_Con_Minor_Update OMA-IOP-MEC-2013-0007-CR_RCS_e_CON_ETS_removal_TBDs OMA-IOP-MEC-2013-0010-CR_RCSe_Con_Updates
	31 Jan 2013	All	Incorporates CR: OMA-IOP-MEC-2013-0015-CR_RCSe_CON_ETS_minor_corrections Normative references sorted in alphabetical order
Candidate Version OMA-ETS-RCS-e-CON-V1_2	12 Feb 2013	n/a	Status changed to Candidate by TP Ref # OMA-TP-2013-0034-INP_RCS_e_V1_2_CON_ETS_for_Candidate_approval
Draft Version OMA-ETS-RCS-e-CON-V1_2	05 Mar 2013	All	Incorporates CRs: OMA-IOP-MEC-2013-0019R03-CR_RCSe_Con_FinalPass OMA-IOP-MEC-2013-0020R05-CR_RCS_e_CON_ETS_notifications OMA-IOP-MEC-2013-0028-CR_RCS_e_CON_ETS_RIG_update OMA-IOP-MEC-2013-0032R01-CR_RCSe_default_provisioning_content OMA-IOP-MEC-2013-0034R02-CR_RCS_e_IETF_vs_IMS_mode OMA-IOP-MEC-2013-0036-CR_RCS_e_CON_ETS_auto_numbering_changes OMA-IOP-MEC-2013-0037-CR_RCS_e_CON_ETS_correction_C.4.1 OMA-IOP-MEC-2013-0038-CR_RCS_e_CON_ETS_correction_con_211 OMA-IOP-MEC-2013-0039-CR_RCS_e_CON_ETS_correction_appendix_section_number
Draft Version OMA-ETS-RCS-CON-V1_2_2	11 Apr 2013	All	Incorporates CR: OMA-IOP-MEC-2013-0049-CR_New_RCS_1.2.2_CON_ETS
Candidate Version OMA-ETS-RCS-CON-V1_2_2	23 Apr 2013	n/a	Status changed to Candidate by TP Ref # OMA-TP-2013-0115-INP_RCS_1_2_2_CON_ETS_for_notification
Draft Versions OMA-ETS-RCS-CON-V1_2_2	15 May 2013	5	Incorporates CR: OMA-IOP-MEC-2013-0057-CR_RCS_IETF_mode_removal
	22 May 2013	App D. 1, 5.5.2	Incorporates CRs: OMA-IOP-MEC-2013-0060R01-CR_RCS_TC_041_fix OMA-IOP-MEC-2013-0062-CR_RCS_headers
	25 Jun 2013	All	Incorporates CRs: OMA-IOP-MEC-2013-0078R01-CR_RCS_Connectivity_cleanup OMA-IOP-MEC-2013-0081-CR_RCS_con_cleanup
	15 Oct 2013	5.5.2, 5.6.1, 5.6.2, 5.6.3, 5.6.4, 5.7.6, D1.1	Incorporates CRs: OMA-IOP-MEC-2013-0096R02-CR_RCS_con_Capdiscovery_correction OMA-IOP-MEC-2013-0097R02-CR_RCS_con_MessageContent_correction OMA-IOP-MEC-2013-0101-CR_RCS_con_105_clarification
	03 Dec 2013	5.14.1, 5.16.1, 5.17.2, C.2.1, C.2.12, C.2.18, C.5.2, C.7.5, D.1.16	Incorporated CRs: OMA-IOP-MEC-2013-0111-CR_RCS1.2.2_reference_clean_up-2 OMA-IOP-MEC-2013-0113-CR_RCS1.2.2_referenced_procedures_update Editorial changes

Document Identifier	Date	Sections	Description
	06 Mar 2014	5.2.1, 5.2.4, 5.3-5.17, B.2, B.4, D.1.1, D.1.10, D.1.11	Incorporated CRs: OMA-IOP-MEC-2014-0006R01-CR_RCS_Conference_XML_Body_defaul_messages OMA-IOP-MEC-2014-0007R02-CR_RCS_SUBSCRIBE_NOTIFY_default_content_for_conference OMA-IOP-2014-0023-CR_RCS_test_case_ID_modification OMA-IOP-2014-0025-CR_RCS_1to1_chat_default_message_body Editorial changes
Candidate Version OMA-ETS-RCS-CON-V1_2_2	10 Mar 2014	n/a	Status changed to Candidate by TP TP Ref # OMA-TP-2014-0056-INP_RCSe_Testing_V1_2_2_ETS_for_Notification
Draft Versions OMA-ETS-RCS-CON-V1_2_2	19 May 2014	5.7.2, C.7.5	Incorporated CR: OMA-IOP-2014-0056-CR_RCS_CON_ETS_reference_correction
	23 Jun 2014	D.1.1, D.1.13	Incorporeted CR: OMA-IOP-2014-0105-CR_RCS_CON_ETS_Appendix_D_updates
Candidate Version OMA-ETS-RCS-CON-V1_2_2	07 Nov 2014	n/a	Status changed to Candidate by TP TP Ref # OMA-TP-2014-0263-INP_RCS_V1_2_2_CON_ETS_for_Notification

Appendix B. Conformance Test Case applicability

B.1 Introduction

This appendix allows implementers of RCS clients or servers to select the appropriate Conformance test cases that are applicable to the features implemented.

This appendix lists:

- All test cases testing only mandatory features as described in [RCS] section 1.2.2 "*Conformance*",
- ICS (Implementation Conformance Statement)
- IXIT (Implementation eXtra Information for testing)
- The mapping from ICS/IXIT to the applicable optional test cases.

B.2 Client Test Cases testing only mandatory features

These Client Conformance test cases are independent from any applicability and are testing only mandatory features and SHALL be run with every implementation.

Client Test Cases
RCS-con-001 First-time unsuccessful configuration: Subscriber unauthorized (Auto-Configuration Server)
RCS-con-004 Configuration: RCS re-configuration successful
RCS-con-030 Mobile Originated Capability Discovery – Successful
RCS-con-031 Mobile Originated Capability Discovery – Unsuccessful – 480 Temporary Unavailable
RCS-con-032 Mobile Originated Capability Discovery – Unsuccessful –408 Request Timeout
RCS-con-033 Mobile Originated Capability discovery – Unsuccessful – 404 Not Found
RCS-con-034 Mobile Originated Capability Discovery – Successful – Multiple Identities
RCS-con-035 Mobile Originated Capability Discovery – Successful (IMS registered, does not support RCS)
RCS-con-040 Mobile Terminated Capability Discovery – Correct Presentation of Remote Capabilities
RCS-con-041 Mobile Terminated Capability Discovery – Learning Unknown New Users RCS Capabilities
RCS-con-051 Capability update during a MT call for video /image sharing
RCS-con-053 Capability Exchange Optimization During a Call
RCS-con-100 Mobile Originated 1-to-1 Chat - session establishment – Mobile Originated session termination
RCS-con-101 Mobile Originated 1-to-1 Chat - session establishment – Mobile Terminated session termination
RCS-con-103 Mobile Originated 1-to-1 Chat – duplicate session
RCS-con-104 Mobile Originated 1-to-1 Chat - session race condition
RCS-con-105 Mobile Originated 1-to-1 Chat – inactivity timeout
RCS-con-106 Mobile Originated 1-to-1 Chat session - store and forward – sender still in active IM session
RCS-con-107 Mobile Originated 1-to-1 Chat - session store and forward – sender still online
RCS-con-120 Mobile Terminated 1-to-1 Chat - session establishment – Mobile Terminated session termination
RCS-con-121 Mobile Terminated 1-to-1 Chat session establishment – Mobile Originated session termination
RCS-con-122 Mobile Terminated 1-to-1 Chat – spam/blacklist

RCS-con-123 Mobile Terminated 1-to-1 Chat– display notification
RCS-con-124 Mobile Terminated 1-to-1 Chat– duplicate session
RCS-con-125 Mobile Terminated 1-to-1 Chat - race condition
RCS-con-126 Mobile Terminated 1-to-1 Chat - store and forward
RCS-con-130 Mobile Originated Group Chat - session establishment –Originating User leaves the session
RCS-con-131 Mobile Originated Group Chat - non-originating Users leave the session
RCS-con-132 Mobile Originated Group Chat - adding new User to the session
RCS-con-140 Mobile Terminated Group Chat - session establishment – Terminating User leaves the session
RCS-con-145 Group Chat automatic re-join
RCS-con-146 Group Chat re-start: 404 (Not Found)
RCS-con-147 Group Chat re-start: 403 (Forbidden)
RCS-con-148 Group Chat: Concurrent sessions

Table 1

B.3 Applicability

B.3.1 Client ICS

ICS	*Description*	**Reference(s)**	**Supported** *(yes/no)*
ics_fileTransfer	Support of file transfer	1.2.2	
ics_imageShare	Support of in-call image share	1.2.2	
ics_videoShare	Support of in-call video share	1.2.2	
ics_request_displayNotifications	Support of requesting display notifications	3.2.2.2	
ics_stun_udp	Support of STUN when using SIP/UDP	2.8	

Table 2

B.3.2 Client IXIT

IXIT	*Description*	**Unit** **<(Range of values)>**	**Value**
ixit_FTMAXSIZE	Value of FT MAX SIZE	<Any non-zero value>Kbytes	
Ixit_FTWARNSIZE	Value of FT WARN SIZE	<Any non-zero value>Kbytes	
ixit_RF_loss_recognition_	Time until handset recognizes the RF connection is lost (default is 15)	seconds	

Table 3

B.3.3 Server ICS

ICS	*Description*	**Reference(s)**	**Supported** *(yes/no)*

Table 4

B.3.4 Server IXIT

IXIT	*Description*	**Unit** **<(Range of values)>**	**Value**

Table 5

B.4 Client ICS to test case mapping

According to the Client ICS described above the applicable optional Client test cases can be derived from the following table.

Applicability	Client Test Cases
ics_imageShare OR ics_videoShare	RCS-con-050 Capability update during a MO call for video /image sharing RCS-con-052 Capability update during a MO voice call fails as other end has no capability
ics_request_displayNotifications	RCS-con-102 Mobile Originated 1-to-1 Chat– display notification
ics_fileTransfer	RCS-con-200 Mobile Originated File Transfer RCS-con-201 Mobile Originated File Transfer – Rejected RCS-con-210 Mobile Terminated File Transfer RCS-con-211 Mobile Terminated File Transfer – Rejected RCS-con-212 Mobile Terminated File Transfer - File Size Limit (receiver) RCS-con-213 Mobile Terminated File Transfer - File Size Warn Limit (receiver)
ics_imageShare	RCS-con-250 Mobile Originated Image Sharing - Session Establishment – Mobile Originated Session Termination RCS-con-251 Mobile Originated Image Sharing - Session Establishment – rejected RCS-con-270 Mobile Terminated Image Sharing - Session Establishment – Mobile Terminated Session Termination RCS-con-271 Mobile Terminated Image sharing - Session Establishment - rejected
ics_videoShare	RCS-con-300 Mobile Originated Video Sharing Session Establishment – Mobile Originated Session Termination RCS-con-301 Mobile Originated Video Sharing Session Establishment –

	Mobile Terminated Session Termination RCS-con-302 Mobile Originated Video Sharing Session Establishment – Rejected RCS-con-320 Mobile Terminated Video Sharing Session Establishment – Mobile Terminated Session Termination RCS-con-321 Mobile Terminated Video Sharing Session Establishment – Mobile Originated Session Termination RCS-con-322 Mobile Terminated Video Sharing Session Establishment - Rejected
ics_stun_udp	RCS-con-020 Keep-Alive for SIPoUDP (STUN)

Appendix C. Default Procedures

This Appendix provides the details of some re-occurring RCS signalling procedures.

C.1 Capability Exchange

C.1.1 Mobile Originated Capability Exchange

1. User A's RCS client sends a SIP OPTIONS (see D.1.3) message towards User B.

2. The test tool responds with a 200 OK (D.1.4) towards User A's RCS client.

C.1.2 Mobile Terminated Capability Exchange

1. The test tool sends a SIP OPTIONS (see D.1.3) message towards User A's RCS client.

2. User A's RCS client responds with a 200 OK (D.1.4) towards User B.

C.2 Session Establishment

This section SHALL serve with default procedures to establish one of the following session types:

Video Sharing

Image Sharing

File Sharing

Group Chat

IM 1-1 Chat

C.2.1 Mobile Originated Session Establishment: Video share, Image share, File share, basic 1-to-1 Chat

NOTE: For Video share IMS mode (according to pc_precondition) execute C.2.1a otherwise for IETF mode execute the following steps.

1. User A's RCS client sends a SIP INVITE message (D.1.1) towards User B to start the session.

2. The test tool responds with a SIP 183 SESSION PROGRESS towards User A's RCS client.

3. The test tool responds with a 180 RINGING towards User A's RCS client.

4. (1-to-1 chat only) The test tool responds with a SIP MESSAGE (D.1.13) (message delivered) towards User A's RCS client.

5. (1-to-1 chat only) User A's RCS client responds with a 200 OK (D.1.14) towards User B.

6. The test tool responds with a 200 OK (D.1.14) towards User A's RCS client.

7. User A's RCS client sends a SIP ACK message towards User B.

C.2.1a Mobile Originated Session Establishment: Video share (IMS mode)

Execute the message flow of 3GPP 34.229-1 C.21 with the following exceptions:

1. Use the message content from D.1.1 and D.1.2.

C.2.2 Mobile Terminated Session Establishment: Video share, Image share, File share, basic 1-to-1 Chat

1. The test tool sends a SIP INVITE message (D.1.1) towards User A's RCS client to start the session.

2. (Optional) User A's RCS client responds with a 100 TRYING.

3. (Optional for Image and Video share) User A's RCS client responds with a 180 RINGING.

4. (1-to-1 chat only) User A's RCS client sends a SIP MESSAGE (D.1.13) (message delivered) towards the test tool.

5. (1-to-1 chat only) The test tool responds with a 200 OK (D.1.14) towards User A's RCS client.

6. User A accepts the incoming session request.

7. User A's RCS client responds with a 200 OK (D.1.2).

8. The test tool sends a SIP ACK message.

C.2.3 Mobile Originated Session Establishment: 1-to-1 Chat with display notification

1. Repeat steps 1 to 7 of C.2.1 Mobile Originated Session Establishment: Video share, Image share, File share, basic 1-to-1 Chat.

C.2.4 Mobile Terminated Session Establishment: 1-to-1 Chat with display notification

1. Repeat steps 1 to 8 of C.2.1 Mobile Originated Session Establishment: Video share, Image share, File share, basic 1-to-1 Chat.

C.2.5 Mobile Originated Session Establishment - 1-to-1 Chat with two messages

1. Repeat steps 1 to 5 of C.2.1 Mobile Originated Session Establishment: Video share, Image share, File share, basic 1-to-1 Chat with the first message.

2. User A's RCS client sends a SIP INVITE message (D.1.1) with the second message towards User B.

3. The test tool responds with a SIP 183 SESSION PROGRESS towards User A's RCS client.

4. The test tool responds with a 180 RINGING towards User A's RCS client.

5. The test tool responds with a SIP MESSAGE (D.1.13) (second message delivered) towards User A's RCS client.

6. User A's RCS client responds with a 200 OK (D.1.14) towards User B.

7. The test tool responds with a 486 BUSY HERE (D.1.9) for the first INVITE towards User A's RCS client.

8. User A's RCS client sends a SIP ACK message towards User B

9. The test tool responds with a 200 OK (D.1.2) for the second INVITE towards User A's RCS client.

10. User A's RCS client sends a SIP ACK message towards User B

C.2.6 Mobile Terminated Session Establishment: 1-to-1 Chat with two messages

1. Repeat steps 1 to 5 of C.2.2 Mobile Terminated Session Establishment: Video share, Image share, File share, basic 1-to-1 Chat with the first message.

2. (User A ignores the incoming session request.)

3. The test tool sends a SIP INVITE message (D.1.1) with the second message towards User A's RCS client.

4. (Optional) User A's RCS client responds with a 100 TRYING.

5. User A's RCS client responds with a 180 RINGING.

6. User A's RCS client sends a SIP MESSAGE (D.1.13) (second message delivered) towards the test tool.

7. The test tool responds with a 200 OK (D.1.14) towards User A's RCS client.

8. User A's RCS client sends a 486 BUSY HERE (D.1.9) for the first INVITE towards the test tool.

9. The test tool sends a SIP ACK message.

10. User A accepts the incoming session request.

11. User A's RCS client responds with a 200 OK (D.1.2) for the second INVITE towards the test tool.

12. The test tool sends a SIP ACK message.

C.2.7 Mobile Terminated Session Establishment: Spam

1. Repeat steps 1 to 5 of C.2.2 Mobile Terminated Session Establishment: Video share, Image share, File share, basic 1-to-1 Chat.

2. User A's RCS client responds with a 486 BUSY HERE (D.1.9).

3. The test tool sends a SIP ACK message.

C.2.8 Mobile Originated Session Establishment: simultaneous INVITEs

1. User A's RCS client sends a SIP INVITE message (D.1.1) with message one towards User B to start the session.

2. The test tool responds with a SIP 183 SESSION PROGRESS towards User A's RCS client.

3. The test tool responds with a 180 RINGING towards User A's RCS client.

4. The test tool sends a SIP INVITE message (D.1.1) with message two towards User A's RCS client.

5. (Optional) User A's RCS client responds with a 100 TRYING.

6. User A's RCS client responds with a 180 RINGING.

7. User A's RCS client responds with a 486 BUSY HERE (D.1.9).

8. The test tool sends a 486 BUSY HERE (D.1.9) towards User A's RCS client.

9. The test tool sends a SIP ACK message towards User A's RCS client.

10. User A's RCS client sends a SIP ACK message towards User B.

11. User A's RCS client sends a SIP MESSAGE (D.1.13) (message two delivered) towards the test tool.

12. The test tool responds with a 200 OK (D.1.14) towards User A's RCS client.

13. The test tool responds with a SIP MESSAGE (D.1.13) (message one delivered) towards User A's RCS client.

14. User A's RCS client responds with a 200 OK (D.1.14) towards User B.

C.2.9 Mobile Terminated Session Establishment: new INVITE race

1. Repeat steps 1 to 7 of C.2.2 Mobile Terminated Session Establishment: Video share, Image share, File share, basic 1-to-1 Chat with the first message.

2. The test tool sends a second SIP INVITE message (D.1.1) with the second message towards User A's RCS client.

3. (Optional) User A's RCS client responds with a 100 TRYING.

4. User A's RCS client responds with a 180 RINGING.

5. The test tool sends a SIP ACK message for the first session established in step 1.

6. MSRP session is established

7. User A's RCS client sends a SIP BYE (D.1.12) for the session established in step 1.

8. The test tool responds with a 200 OK (D.1.14) towards User A's RCS client.

9. User A's RCS client sends a SIP MESSAGE (D.1.13) (second message delivered) towards the test tool.

10. The test tool responds with a 200 OK (D.1.14) towards User A's RCS client.

11. User A's RCS client responds with a 200 OK (D.1.2).

12. The test tool sends a SIP ACK message for the second session established.

C.2.10 Mobile Originated Session: Store and Forward - Receiver offline

1. User A's RCS client sends a SIP INVITE message (D.1.1) towards User B to start the session.

2. The test tool responds with a SIP 183 SESSION PROGRESS towards User A's RCS client.

3. The test tool responds with a 200 OK (D.1.2) towards User A's RCS client.

4. User A's RCS client sends a SIP ACK message towards User B.

C.2.11 Mobile Originated Session: Store and Forward - deferred delivery

1. The test tool sends a SIP INVITE message (D.1.1) towards User A's RCS client.

2. Client A auto-accepts the incoming session request.

3. User A's RCS client responds with a 200 OK (D.1.2).

4. The test tool sends a SIP ACK message.

C.2.12 Mobile Terminated Session: Store and Forward - deferred delivery

1. Repeat steps 1 to 12 of C.2.6 Mobile Terminated Session Establishment: 1-to-1 Chat with two messages.

C.2.13 Mobile Originated Session Establishment: Group Chat

1. User A's RCS client sends a SIP INVITE message (D.1.1) towards the IMS core (test tool) to start the group session.

2. The test tool responds with a 200 OK (D.1.2) towards User A's RCS client.

3. User A's RCS client sends a SIP ACK message towards the IMS core (test tool).

4. void

5. User A's RCS client sends a SIP SUBSCRIBE message (D.1.10) towards the IMS core (test tool) to get the participants.

6. The test tool responds with a 200 OK (D.1.14) towards User A's RCS client.

7. The test tool sends a SIP NOTIFY (D.1.11) towards User A's RCS client.

8. User A's RCS client responds with a SIP 200 OK message towards the IMS core (test tool).

C.2.14 Mobile Terminated Session Establishment: Group Chat

1. The IMS core (test tool) sends a SIP INVITE message (D.1.1) towards User A's RCS client to invite User A to the group session.

2. User A accepts the incoming group session request.

3. User A's RCS client responds with a 200 OK (D.1.2).

4. The IMS core (test tool) sends a SIP ACK message.

5. User A's RCS client sends a SIP SUBSCRIBE message (D.1.10) towards the IMS core (test tool) to get the participants.

6. The test tool responds with a 200 OK (D.1.14) towards User A's RCS client.

7. The test tool sends a SIP NOTIFY (D.1.11) towards User A's RCS client.

8. User A's RCS client responds with a SIP 200 OK message towards the IMS core (test tool).

C.2.15 Group Chat automatic re-join

1. User A's RCS client sends a SIP INVITE message (D.1.1) towards the IMS core (test tool) to re-join the group session using the same Contribution ID as in the previous group session.

2. The test tool responds with a 200 OK (D.1.2) towards User A's RCS client.

3. User A's RCS client sends a SIP ACK message towards the IMS core (test tool).

C.2.16 Group Chat re-start: 404 Not Found

1. User A's RCS client sends a SIP INVITE message (D.1.1) towards the IMS core (test tool) to re-join the group session using the same Contribution ID as in the previous group session.

2. The test tool responds with a 404 Not Found (D.1.5) towards User A's RCS client.

3. User A's RCS client sends a SIP ACK message towards the IMS core (test tool).

C.2.17 Group Chat re-start: 403 Forbidden

1. User A's RCS client sends a SIP INVITE message (D.1.1) towards the IMS core (test tool) to re-join the group session using the same Contribution ID as in the previous group session.

2. The test tool responds with a 403 Forbidden with the warning text set to "127 Service not authorised" (D.1.8) towards User A's RCS client.

3. User A's RCS client sends a SIP ACK message towards the IMS core (test tool).

C.2.18 Group Chat auto-start

1. User A's RCS client sends a SIP INVITE message (D.1.1) towards the IMS core (test tool) to auto-start the group session using the same Contribution ID and participant list as in the previous group session.

2. Execute steps 2 to 8 of "Mobile Originated Session Establishment: Group Chat" (C.2.13).

C.2.19 Group Chat re-start: Mobile Terminated

1. The IMS core (test tool) sends a SIP INVITE message (D.1.1) towards User A's RCS client to invite User A to the group session using the same Contribution ID as in the previous group session but a new session ID (session 2).

C.2.20 Auto-accept Group Chat

1. Client A auto-accepts the incoming group session request.

2. User A's RCS client responds with a 200 OK (D.1.2).

3. The IMS core (test tool) sends a SIP ACK message.

C.2.21 Auto-invite Group Chat

1. Client A auto-invites the new User to the Group Chat

2. Execute "Inviting new User to Group Chat" (C.5.2)

C.3 Session Termination

C.3.1 Mobile Originated Session Termination: Video share, Image share, File share, 1-to-1 sessions

1. User A's RCS client sends a SIP BYE message towards User B to terminate the session.

2. The test tool responds with 200 OK (D.1.14) towards User A's RCS client.

C.3.2 Mobile Terminated Session Termination: Video share, Image share, File share, 1-to-1 sessions

1. The test tool sends a SIP BYE message towards User A's RCS client to terminate the session.

2. User A's RCS client responds with a 200 OK (D.1.14)

C.3.3 Mobile Originated Session Termination: Group chat

1. User A's RCS client sends a SIP BYE message towards the IMS core (test tool) to leave the group session.

2. The IMS core (test tool) responds with 200 OK (D.1.14) towards User A's RCS client.

C.3.4 Mobile Terminated Session Termination: Group chat

1. The IMS core (test tool) sends a SIP BYE message towards User A's RCS client to terminate the group session.

2. User A's RCS client responds with a 200 OK (D.1.14).

C.4 Session Rejection

C.4.1 Mobile Originated Session - Reject

1. User A's RCS client sends a SIP INVITE message (D.1.1) towards User B to start the session.

2. The test tool responds with a SIP 183 SESSION PROGRESS towards User A's RCS client.

3. The test tool responds with a 180 RINGING towards User A's RCS client.

4. The test tool responds with a 603 DECLINE towards User A's RCS client.

5. User A's RCS client sends a SIP ACK message towards User B.

C.4.2 Mobile Terminated Session - Reject

1. The test tool sends a SIP INVITE message (D.1.1) towards User A's RCS client to start the session.

2. (Optional) User A's RCS client responds with a 100 TRYING.

3. (Optional for Image and Video share) User A's RCS client responds with a 180 RINGING.

4. User A rejects the incoming session request.

5. User A's RCS client responds with a 603 DECLINE.

6. The test tool sends a SIP ACK message.

C.5 Other Procedures

C.5.1 Participant List Update

1. The IMS core (test tool) sends a SIP NOTIFY message (D.1.11) towards User A's RCS client with new participants' status.

2. User A's RCS client responds with a 200 OK (D.1.14).

C.5.2 Inviting new User to Group Chat

1. User A's RCS client sends a SIP REFER message (D.1.15) towards the IMS core (test tool) to invite a new User to the group session.

2. The IMS core (test tool) responds with a 202 ACCEPTED (D.1.16) towards User A's RCS client.

3. Wait 1 second

4. The IMS core (test tool) sends a SIP NOTIFY (D.1.11) towards User A's RCS client with the list of participants.

5. User A's RCS client responds with a SIP 200 OK (D.1.14) message towards the IMS core (test tool).

C.6 Autoconfiguration Procedures

C.6.1 HTTP

C.6.1.1 Successful autoconfiguration

1. User A's RCS client sends a HTTP request (D.2.1) to the autoconfiguration server (test tool).

2. The test tool responds with 200 OK (D.2.2).

3. User A's RCS client sends a HTTPS request to the autoconfiguration server (D.2.3).

4. The test tool responds with 200 OK (D.2.4).

C.7 MSRP session

C.7.1 MSRP Session Message

1. The Originating end sends a MSRP SEND message (D.3.1) to the Terminating end with an "iscomposing" notification.

2. The Terminating end responds with MSRP 200 OK (D.3.2).

3. In the case of the test tool being the Originating end, wait 2 seconds

4. The Originating end sends a MSRP SEND message (D.3.1) to the Terminating end with the required message.

5. The Terminating end responds with MSRP 200 OK (D.3.2).

6. The Terminating end sends a MSRP SEND message (D.3.1) to the Originating end with a "delivered" notification.

7. The Originating end responds with MSRP 200 OK (D.3.2).

C.7.2 MSRP Session Message with Display Notification

1. The Originating end sends a MSRP SEND message (D.3.1) to the Terminating end with an "iscomposing" notification.

2. The Terminating end responds with MSRP 200 OK (D.3.2).

3. In the case of the test tool being the Originating end, wait 2 seconds

4. The Originating end sends a MSRP SEND message (D.3.1) to the Terminating end with the required message.

5. The Terminating end responds with MSRP 200 OK (D.3.2).

6. The Terminating end sends a MSRP SEND message (D.3.1) to the Originating end with a "delivered" notification.

7. The Originating end responds with MSRP 200 OK (D.3.2).

8. In the case of the test tool being the Terminating end, wait 2 seconds

9. The Terminating end sends a MSRP SEND message (D.3.1) to the Originating end with a “displayed” notification.

10. The Originating end responds with MSRP 200 OK (D.3.2).

C.7.3 MSRP Session Store and Forward

1. User A's RCS client sends a MSRP SEND message (D.3.1) to the test tool with an “iscomposing” notification.

2. The test tool responds with MSRP 200 OK (D.3.2).

3. User A's RCS client sends a MSRP SEND message (D.3.1) to the test tool with the required message.

4. The test tool responds with MSRP 200 OK (D.3.2).

C.7.4 MSRP Session Store and Forward Message Delivered

1. The test tool sends a MSRP SEND message (D.3.1) to User A's RCS client with a “delivered” notification.

2. User A's RCS client responds with MSRP 200 OK (D.3.2).

C.7.5 MSRP Session Store and Forward Final Message Delivered

1. The test tool sends a MSRP SEND message (D.3.1) to User A's RCS client with a “delivered” notification.

2. User A's RCS client responds with MSRP 200 OK (D.3.2).

3. Execute procedure " Mobile Terminated Session Termination: Video share, Image share, File share, 1-to-1 sessions " (C.3.2)

C.7.6 MSRP Group Session Message

1. The Originating end sends a MSRP SEND message (D.3.1) to the Terminating end with the required message.

2. The Terminating end responds with MSRP 200 OK (D.3.2).

Appendix D. Default Message Content

D.1 SIP message content

The default message content from 3GPP TS 34.229-1 Appendix A is used per default. This section just modifies or clarifies the default messages specified there.

D.1.1 INVITE

Header/param	Cond	Value/remark	Rel	Reference
Accept-Contact				RFC 3841 [64]
ac-value	B1	+g.3gpp.cs-voice		
	B2	+g.3gpp.iari-ref="urn%3Aurn-7%3A3gpp-application.ims.iari.gsma-is"		
	B3	+g.oma.sip-im		
	B4, B5	+g.oma.sip-im		
Contact				
feature-param	B1	+g.3gpp.cs-voice+		
	B2	+g.3gpp.iari-ref="urn%3Aurn-7%3A3gpp-application.ims.iari.gsma-is"		
	B3	+g.oma.sip-im		
	B4, B5	+g.oma.sip-im		
Content-Type				RFC 3261 [15]
media-type	*B1, B2, B3*	*application/sdp*		
	B4, B5	multipart/mixed;boundary="boundary1"		
Supported				RFC 3261 [15]
		Precondition is not included		
Require				RFC 3261 [15]
		Precondition is not included		
Message-body	B1	m=video *port* RTP/AVP *(rtp payload types)* a=sendonly a=rtpmap: *payload type* H264/90000 a=fmtp: *payload type* profile-level-id=42C00D; packetization-mode=0 a=rtpmap: *payload type* H263-2000/90000 a=framesize: *payload type* 176-144 a=framerate:8 a=fmtp: *payload type* profile=0; level=45		RFC 4119 [99]
	B2	m=message *port* TCP/MSRP * a=sendonly a=accept-types:message/cpim a=accept-wrapped-types:* a=path:msrp://*(IP address)*:*port*/jshA7we;tcp a=file-selector: type:image/jpeg size:*(size of file)* a=file-transfer-id:Q6LMoGymJdh0IKIgD6wD0jkcfgva4xvE		
	B3	m=message *port* TCP/MSRP * a=sendonly a=accept-types:message/cpim a=accept-wrapped-types:* a=path:msrp://*(IP address)*:*port*/jshA7we;tcp a=file-selector: type:image/jpeg size:*(size of file)* a=file-transfer-id:Q6LMoGymJdh0IKIgD6wD0jkcfgva4xvE		

	B4	--boundary1 Content-Type: application/sdp m=message *port* TCP/MSRP * a=accept-types: message/cpim text/plain a=max-size: 7665 a=path:msrp://*(IP address)*:*port*/jshA7we;tcp --boundary1 Content-Type: message/cpim From: <sip:anonymous@anonymous.invalid> To: <sip:anonymous@anonymous.invalid> DateTime: 2014-01-15T10:17:49.727+01:00 NS: imdn <urn:ietf:params:imdn> imdn.Message-ID: 7QsgkAl8QZvr9XPFtiiCtLj3sls0oNok imdn.Disposition-Notification: positive-delivery, display Content-type: text/plain;charset=UTF-8 *Initial message* --boundary1--		
	B5	--boundary1 Content-Type: application/sdp <B4 content> --boundary1 Content-Type: application/resource-lists+xml Content-Disposition: recipient-list <?xml version="1.0" encoding="UTF-8"?> <resource-lists xmlns="urn:ietf:params:xml:ns:resource-lists" xmlns:cp="urn:ietf:params:xml:ns:copycontrol"> <list> <entry uri="<SIP or TEL URI of User 1>" cp:copyControl="to"/> … *(NOTE: Add further users as necessary)* </list> </resource-lists> --boundary1--		

Condition	Explanation
B1	Video Sharing (ics_videoShare)
B2	Image Sharing (ics_imageShare)
B3	File Sharing (ics_fileTransfer)
B4	IM Chat (1 to 1 session)
B5	IM Group chat

D.1.2 200 OK for INVITE

Header/param	Cond	Value/remark	Rel	Reference
Contact				
feature-param	B1	+g.3gpp.cs-voice		
	B2	+g.3gpp.iari-ref="urn%3Aurn-7%3A3gpp-application.ims.iari.gsma-is"		
	B3	+g.oma.sip-im		
	B4	+g.oma.sip-im		
Content-Type				RFC 3261 [15]
media-type		*application/sdp*		
Message-body	B1	m=video *port* RTP/AVP *(rtp payload types)* a= recvonly a=rtpmap: *payload type* H264/90000 a=fmtp: *payload type* profile-level-id=42C00D; packetization-mode=0 a=rtpmap: *payload type* H263-2000/90000 a=framesize: *payload type* 176-144 a=framerate:8 a=fmtp: *payload type* profile=0; level=45		RFC 4119 [99]
	B2	m=message *port* TCP/MSRP * a=recvonly a=accept-types:message/cpim a=accept-wrapped-types:* a=path:msrp://*(IP address)*:*port*/jshA7we;tcp a=file-selector: *(copied from INVITE)* a=file-transfer-id: *(copied from INVITE)*		
	B3	m=message *port* TCP/MSRP * a=recvonly a=accept-types:message/cpim a=accept-wrapped-types:* a=path:msrp://*(IP address)*:*port*/jshA7we;tcp a=file-selector: *(copied from INVITE)* a=file-transfer-id: *(copied from INVITE)*		

Condition	Explanation
B1	Video Sharing (ics_videoShare)
B2	Image Sharing (ics_imageShare)
B3	File Sharing (ics_fileTransfer)
B4	IM Chat

D.1.3 OPTIONS

Header/param	Cond	Value/remark	Rel	Reference
Request URI	B5	User-B's IMS identity (SIP-URI or TEL-URI/MSISDN)		
	B6	User-A's IMS contact-URI		
Accept-Contact				RFC 3841 [64]
	B1	+g.3gpp.cs-voice		

ac-value	B2	+g.3gpp.iari-ref="urn%3Aurn-7%3A3gpp-application.ims.iari.gsma-is"		
	B3	+g.3gpp.iari-ref="urn%3Aurn-7%3A3gpp-application.ims.iari.rcse.ft";+g.oma.sip-im (optional)		
	B4	+g.3gpp.iari-ref="urn%3Aurn-7%3A3gpp-application.ims.iari.rcse.im";+g.oma.sip-im (optional)		
Contact				
feature-param	B1	+g.3gpp.cs-voice+		
	B2	g.3gpp.iari-ref="urn%3Aurn-7%3A3gpp-application.ims.iari.gsma-is"		
	B3	+g.3gpp.iari-ref="urn%3Aurn-7%3A3gpp-application.ims.iari.rcse.ft";+g.oma.sip-im (optional)		
	B4	+g.3gpp.iari-ref="urn%3Aurn-7%3A3gpp-application.ims.iari.rcse.im";+g.oma.sip-im (optional)		
Content-Type				RFC 3261 [15]
media-type	*B1*	*application/sdp*		
Message-body	B1	supported video codecs. m=video *0* RTP/AVP *(rtp payload types)* a=rtpmap: *payload type* H264/90000 a=rtpmap: *payload type* H263-2000/90000		RFC 4119 [99] [RCS] 2.7.3
	Other cases	*Not present*		

Condition	Explanation
B1	Video Sharing (ics_videoShare) AND in CS Call
B2	Image Sharing (ics_imageShare) AND in CS Call
B3	File Sharing (ics_fileTransfer)
B4	IM Chat
B5	Mobile originated
B6	Mobile terminated
Note: If more than one of the above conditions evaluate to true and therefore multiple IARI tags are included, these must be combined in a comma separated list, as defined in [RCS] 1.2.2. section 2.3.1.1. For example: +g.3gpp.iari-ref="urn%3Aurn-7%3A3gpp-application.ims.iari.rcse.im,urn%3Aurn-7%3A3gppapplication.ims.iari.rcse.ft"	

D.1.4 200 OK for OPTIONS

Header/param	Cond	Value/remark	Rel	Reference
Contact				
feature-param	B1	+g.3gpp.cs-voice		
	B2	+g.3gpp.iari-ref="urn%3Aurn-7%3A3gpp-application.ims.iari.gsma-is"		
	B3	+g.3gpp.iari-ref="urn%3Aurn-7%3A3gpp-application.ims.iari.rcse.ft";+g.oma.sip-im (optional)		

Header/param	Cond	Value/remark	Rel	Reference
	B4	+g.3gpp.iari-ref="urn%3Aurn-7%3A3gpp-application.ims.iari.rcse.im";+g.oma.sip-im (optional)		
Content-Type				RFC 3261 [15]
media-type	*B1*	*application/sdp*		
Message-body	B1	supported video codecs. m=video *0* RTP/AVP *(rtp payload types)* a=rtpmap: *payload type* H264/90000 a=rtpmap: *payload type* H263-2000/90000		RFC 4119 [99]
	Other cases	*Not present*		

Condition	Explanation
B1	Video Sharing (ics_videoShare) AND in CS Call
B2	Image Sharing (ics_imageShare) AND in CS Call
B3	File Sharing (ics_fileTransfer)
B4	IM Chat
Note: If more than one of the above conditions evaluate to true and therefore multiple IARI tags are included, these must be combined in a comma separated list, as defined in [RCS] 1.2.2. section 2.3.1.1. For example: +g.3gpp.iari-ref="urn%3Aurn-7%3A3gpp-application.ims.iari.rcse.im,urn%3Aurn-7%3A3gppapplication.ims.iari.rcse.ft"	

D.1.5 404 Not found

FFS

D.1.6 408 Request Timeout

FFS

D.1.7 480 Temporarily Unavailable

FFS

D.1.8 403 Forbidden

FFS

D.1.9 486 BUSY HERE

Header/param	Cond	Value/remark	Rel	Reference
Contact				

D.1.10 SUBSCRIBE (conference)

Header/param	Cond	Value/remark	Rel	Reference
Request URI		Conference URI		
Event		conference		

D.1.11 NOTIFY (conference)

Header/param	Cond	Value/remark	Rel	Reference
Request URI				
Contact				
Content-Type		application/conference-info+xml		
Subscription-State		active ;expires=7200		
		<?xml version="1.0" encoding="UTF-8"?> <conference-info xmlns="urn:ietf:params:xml:ns:conference-info" entity="conference1@mrfc2.home1.net" state="full" version="0" > <user entity="<User SIP URI>"> <display- text>User 1</display-text> <endpoint entity=" sip:[5555::eee:fff:aaa:bbb]"> <status>connected</status> <!—- Note: not needed media id="1"> <type>audio</type> <label>34567</label> <src-id>534232</src-id> <status>sendrecv</status> </media--> </endpoint> </user> (NOTE: Add further users as necessary) </conference-info>		

D.1.12 BYE

Header/param	Cond	Value/remark	Rel	Reference
Request URI				
Contact				

D.1.13 MESSAGE

Header/param	Cond	Value/remark	Rel	Reference
Request URI				
Accept-Contact		+g.oma.sip-im		
Content-type		message/cpim		

Header/param	Cond	Value/remark	Rel	Reference
		From: Bob <im:bob@example.com> To: Alice <im:alice@example.com> NS: imdn <urn:ietf:params:imdn> imdn.Message-ID: d834jied93rf Content-type: message/imdn+xml Content-Disposition: notification Content-length: ... <?xml version="1.0" encoding="UTF-8"?> <imdn xmlns="urn:ietf:params:xml:ns:imdn"> <message-id>34jk324j</message-id> <datetime>2008-04-04T12:16:49-05:00</datetime> <recipient-uri>im:bob@example.com</recipient-uri> <original-recipient-uri >im:bob@example.com</original-recipient-uri> <delivery-notification> <status> <delivered/> </status> </delivery-notification> </imdn>		

D.1.14 200 OK (Generic)

Header/param	Cond	Value/remark	Rel	Reference
Contact				

D.1.15 REFER

Header/param	Cond	Value/remark	Rel	Reference
Request URI				
Contact				

D.1.16 202 ACCEPTED

Header/param	Cond	Value/remark	Rel	Reference
Contact				

D.2 HTTP autoconfiguration message content

D.2.1 Initial HTTP request

Header/param	Cond	Value/remark	Rel	Reference
Request Line				
Method URI		*GET* */ and no parameters*		
Message-Body		none		

D.2.2 200 OK for the initial HTTP request

Header/param	Cond	Value/remark	Rel	Reference
Status Line				
Status		*200 OK*		
Set-Cookie		Random value		
Message-Body		none		

D.2.3 Initial HTTPS request

Header/param	Cond	Value/remark	Rel	Reference
Request Line				
Method URI Parameter vers IMSI client_vendor client_version terminal_vendor terminal_model terminal_sw_version IMEI	 B1 B1	GET / Int (-1, 0 or a positive integer) 15 digit string 4 letter string Max 10 letter string 4 letter string Max 10 letter string Max 10 letter string Max 15 letter string		[RCS] 1.2.2 sect. 2.2.2.1.2
Cookie		Same as in 200 OK for HTTP		
Message-Body		None		

Condition	Explanation
B1	OS provides access to IMSI and IMEI (ics_os_supports_imsi_imei)

D.2.4 200 OK for the initial HTTPS request

Header/param	Cond	Value/remark	Rel	Reference
Status Line				
Status		*200 OK*		
Message-Body		<?xml version="1.0"?> <wap-provisioningdoc version="1.1"> <characteristic type="VERS"> <parm name=”version” value=”*<vers from request incremented by 1>*”/> <parm name=”validity” value=”1728000”/> </characteristic> <characteristic type="APPLICATION"> *See D.2.5* </characteristic> </wap-provisioningdoc>		

D.2.5 Default provisioning XML

<characteristic type="APPLICATION">

```
                                <parm name="AppID" value="ap2001"/>
                                <parm name="Name" value="IMS Settings"/>
                                <parm name="AppRef" value="IMS-Settings"/>
                                <characteristic type="ConRefs">
                                        <parm name="ConRef" value="X"/>
                                </characteristic>
                                <parm name="PDP_ContextOperPref" value="X"/>
                                <parm name="Timer_T1" value="2000"/>
                                <parm name="Timer_T2" value="16000"/>
                                <parm name="Timer_T4" value="17000"/>
                                <parm name="Private_User_Identity"
value="001010123456789@test.3gpp.com"/>
                                <characteristic type="Public_User_Identity_List">
                                        <parm name="Public_User_Identity"
value="sip:001010123456789@ims.mnc001.mcc001.3gppnetwork.org"/>
                                </characteristic>
                                <parm name="Home_network_domain_name" value="test.3gpp.com"/>
                                <characteristic type="Ext">
                                        <parm name="NatUrlFmt" value="1"/>
                                        <parm name="IntUrlFmt" value="1"/>
                                        <parm name="Q-Value" value="0.5"/>
                                        <characteristic type="SecondaryDevicePar">
                                                <parm name="VoiceCall" value="0"/>
                                                <parm name="Chat" value="0"/>
                                                <parm name="SendSms" value="0"/>
                                                <parm name="FileTranfer"
value="0"/>
                                                <parm name="VideoShare"
value="0"/>
                                                <parm name="ImageShare"
value="0"/>
                                        </characteristic>
                                        <parm name="MaxSizeImageShare" value="0"/>
                                        <parm name="MaxTimeVideoShare" value="0"/>
                                </characteristic>
                                <characteristic type="ICSI_List">
                                        <!--parm name="ICSI" value="0"/>
                                        <parm name="ICSI_Resource_Allocation_Mode"
value="X"/-->
                                </characteristic>
                                <characteristic type="LBO_P-CSCF_Address">
                                        <!--parm name="Address" value="X"/>
                                        <parm name="AddressType" value="X"/-->
                                </characteristic>
                                <parm name="Voice_Domain_Preference_E_UTRAN" value="4"/>
                                <parm name="SMS_Over_IP_Networks_Indication" value="1"/>
                                <parm name="Keep_Alive_Enabled" value="0"/>
                                <parm name="Voice_Domain_Preference_UTRAN" value="2"/>
                                <parm name="Mobility_Management_IMS_Voice_Termination"
value="0"/>
```

```
                        <parm name="RegRetryBaseTime" value="0"/>
                        <parm name="RegRetryMaxTime" value="0"/>
                        <characteristic type="PhoneContext_List">
                                <!--parm name="PhoneContext" value="X"/>
                                <parm name="Public_User_Identity" value="X"/-->
                        </characteristic>
                        <characteristic type="APPAUTH">
                                <parm name="AuthType" value="X"/>
                                <parm name="Realm" value="X"/>
                                <parm name="UserName" value="X"/>
                                <parm name="UserPwd" value="X"/>
                        </characteristic>
                </characteristic>
                <characteristic type="APPLICATION">
                        <parm name="AppID" value="ap2002"/>
                        <parm name="Name" value="RCS-e settings"/>
                        <parm name="AppRef" value="RCSe-Settings"/>
                        <characteristic type="IMS">
                                <parm name="To-AppRef" value="IMS-Settings"/>
                        </characteristic>
                        <characteristic type="PRESENCE">
                                <parm name="usePresence" value="0"/>
                                <parm name="presencePrfl" value="X"/>
                                <parm name="AvailabilityAuth" value="X"/>
                                <characteristic type="FAVLINK">
                                        <parm name="AutMa" value="X"/>
                                </characteristic>
                                <parm name="IconMaxSize" value="X"/>
                                <parm name="NoteMaxSize" value="X"/>
                                <characteristic type="SERVCAPWATCH">
                                        <parm name="FetchAuth" value="X"/>
                                        <parm name="ContactCapPresAut"
value="X"/>
                                </characteristic>
                                <characteristic type="ServCapPresentity">
                                        <parm
name="WATCHERFETCHAUTH" value="X"/>
                                </characteristic>
                                <parm name="PublishTimer" value="X"/>
                                <parm name="client-obj-datalimit" value="X"/>
                                <parm name="content-serveruri" value="X"/>
                                <parm name="source-throttlepublish" value="X"/>
                                <parm name="max-number-ofsubscriptions-inpresence-
list" value="X"/>
                                <parm name="service-uritemplate" value="X"/>
                        </characteristic>
                        <characteristic type="XDMS">
                                <parm name="RevokeTimer" value="X"/>
                                <parm name="XCAPRootURI" value="X"/>
```

```
                                        <parm name="XCAPAuthenticationUserName"
value="X"/>
                                        <parm name="XCAPAuthenticationSecret" value="X"/>
                                        <parm name="XCAPAuthenticationType" value="X"/>
                                </characteristic>
                                <characteristic type="IM">
                                        <parm name="imCapAlwaysON" value="1"/>
                                        <parm name="imWarnSF" value="1"/>
                                        <parm name="ftWarnSize" value="200"/>
                        <parm name=" ftAutAccept" value="1"/>
                                        <parm name="ChatAuth" value="1"/>
                                        <parm name="SmsFallBackAuth" value="0"/>
                                        <parm name="AutAccept" value="1"/>
                        <parm name="AutAcceptGroupChat" value="1"/>
                                        <parm name="MaxSize1to1" value="20000"/>
                                        <parm name="MaxSize1toM" value="20000"/>
                                        <parm name="TimerIdle" value="10"/>
                                        <parm name="MaxSizeFileTr" value="500"/>
                                        <parm name="pres-srv-cap" value="0"/><!-- tbr -->
                                        <parm name="deferred-msg-func-uri"
value="sip:foo@bar"/>
                                        <parm name="max_adhoc_group_size" value="4"/>
                                        <parm name="conf-fcty-uri" value="sip:foo@bar"/>
                                        <parm name="exploder-uri" value="sip:foo@bar"/>
                                </characteristic>
                                <characteristic type="CAPDISCOVERY">
                                        <parm name="pollingPeriod" value="0"/>
                                        <parm name="capInfoExpiry" value="0"/>
                                        <parm name="presenceDisc" value="0"/>
                                </characteristic>
                                <characteristic type="APN">
                                        <parm name="rcseOnlyAPN" value="ims"/>
                                        <parm name="enableRcseSwitch" value="1"/>
                                </characteristic>
                                <characteristic type="OTHER">
                                        <parm name="endUserConfReqId" value="0"/>
                                        <parm name="deviceID" value="0"/>
                                        <characteristic type=" transportProto">
                                                <parm name="psSignalling"
value="SIPoUDP"/>
                                                <parm name="psMedia"
value="MSRP"/>
                                                <parm name="psRTMedia"
value="RTP"/>
                                                <parm name="wifiSignalling"
value="SIPoUDP"/>
                                                <parm name="wifiMedia"
value="MSRP"/>
                                                <parm name="wifiRTMedia"
value="RTP"/>
```

```
                                        </characteristic>
                                </characteristic>

                        </characteristic>
```

D.3 MSRP message content

D.3.1 MSRP SEND

Header/param	Cond	Value/remark	Rel	Reference
[FFS]				

D.3.2 MSRP 200 OK for MSRP SEND message

Header/param	Cond	Value/remark	Rel	Reference
[FFS]				