

Technical information on OMA RCS V1.2 (Second Delivery)

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5th July 2013**

Abstract

The following gives an overview and introduction about the approach used to define the OMA RCS V1.2 framework.

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References

The work used and is based on the following reference documents:

- [1] RCS-e - Advanced Communications: Services and Client Specification Version 1.2.2 04 July 2012
- [2] Enabler Test Specification for RCS Conformance Draft Version 1.2.2 – 22 May 2013
- [3] GSMA RCS IOT RCS-e Implementation Guidelines Version 3.2 10 December 2012

General remarks

The work has been based on the existing 3GPP LTE IMS TTCN-3 framework 3GPP_34_229_LTE_IMS_D13wk15.

The existing 3GPP LTE IMS code has been reused whenever possible or modified with minimal changes.

Test case overview

5.2 CONFIGURATION

RCS-e-1.2-con-001 **First-time unsuccessful configuration - Subscriber unauthorized (Auto-Configuration Server)**

RCS-e-1.2-con-004 **Configuration - RCS-e re-configuration successful**

5.3 KEEP ALIVE

RCS-e-1.2-con-020 **Keep-Alive for SIPoUDP (STUN) (Includes Optional Features)**

5.4 MOBILE ORIGINATED CAPABILITY DISCOVERY

RCS-e-1.2-con-030 **Successful**

RCS-e-1.2-con-031 **Unsuccessful – 480 Temporarily Unavailable**

RCS-e-1.2-con-032 **Unsuccessful –408 Request Timeout**

RCS-e-1.2-con-033 **Unsuccessful – 404 Not Found**

RCS-e-1.2-con-034 **Successful – Multiple Identities**

RCS-e-1.2-con-035 **Successful (IMS registered, does not support RCS-e)**

5.5 MOBILE TERMINATED CAPABILITY DISCOVERY

RCS-e-1.2-con-040 **Correct Presentation of Remote Capabilities**

RCS-e-1.2-con-041 **Learning Unknown New Users RCS-e Capabilities**

5.6 CAPABILITY UPDATE

RCS-e-1.2-con-050 **during a MO call for video /image sharing (Includes Optional Features)**

RCS-e-1.2-con-051 **during a MT call for video /image sharing**

RCS-e-1.2-con-052 **during initiation of an MO voice call - fails as other end has no capability (Includes Optional Features)**

RCS-e-1.2-con-053 **Exchange Optimization during a Call**

5.7 MOBILE ORIGINATED 1-TO-1 CHAT

RCS-e-1.2-con-100 **session establishment – Mobile Originated session termination**

RCS-e-1.2-con-101 **session establishment – Mobile Terminated session termination**

RCS-e-1.2-con-102 **display notification (Includes Optional Features)**

RCS-e-1.2-con-103 **duplicate session**

RCS-e-1.2-con-104 **race condition**

RCS-e-1.2-con-105 **inactivity timeout**

RCS-e-1.2-con-106 **store and forward – sender still in active IM session**

RCS-e-1.2-con-107 **store and forward – sender still online**

5.8 MOBILE TERMINATED 1-TO-1 CHAT

RCS-e-1.2-con-120 **session establishment – Mobile Terminated session termination**

RCS-e-1.2-con-121 **session establishment – Mobile Originated session termination**

RCS-e-1.2-con-122 **spam/blacklist**

RCS-e-1.2-con-123 **display notification**

RCS-e-1.2-con-124 **duplicate session**

RCS-e-1.2-con-125 **race condition**

RCS-e-1.2-con-126 **store and forward**

5.9 MOBILE ORIGINATED GROUP CHAT

RCS-e-1.2-con-130 **establishment – Originating User leaves the session**

RCS-e-1.2-con-131 **non-originating Users leave the session**

RCS-e-1.2-con-132 **adding new User to the session**

5.10 MOBILE TERMINATED GROUP CHAT

RCS-e-1.2-con-140 **establishment – Terminating User leaves the session**

5.11 GROUP CHAT

RCS-e-1.2-con-145 **automatic re-join**

RCS-e-1.2-con-146 **re-start: 404 (Not Found)**

RCS-e-1.2-con-147 **re-start: 403 (Forbidden)**

RCS-e-1.2-con-148 **Concurrent sessions**

5.12 MOBILE ORIGINATED FILE TRANSFER

- RCS-e-1.2-con-200 **successful (Includes Optional Features)**
- RCS-e-1.2-con-201 **Rejected (Includes Optional Features)**
- 5.13 MOBILE TERMINATED FILE TRANSFER**
 - RCS-e-1.2-con-210 **successful (Includes Optional Features)**
 - RCS-e-1.2-con-211 **Rejected (Includes Optional Features)**
 - RCS-e-1.2-con-212 **File Size Limit (Includes Optional Features)**
 - RCS-e-1.2-con-213 **File Size Warn Limit (Includes Optional Features)**
- 5.14 MOBILE ORIGINATED IMAGE SHARING**
 - RCS-e-1.2-con-250 **Session Establishment – Mobile Originated Session Termination**
 - RCS-e-1.2-con-251 **Session Establishment - rejected (Includes Optional Features)**
- 5.15 MOBILE TERMINATED IMAGE SHARING**
 - RCS-e-1.2-con-270 **Session Establishment – Mobile Terminated Session Termination**
 - RCS-e-1.2-con-271 **Session Establishment - rejected (Includes optional Features)**
- 5.16 MOBILE ORIGINATED VIDEO SHARING**
 - RCS-e-1.2-con-300 **Session Establishment – Mobile Originated Session Termination (Includes Optional Features)**
 - RCS-e-1.2-con-301 **Session Establishment – Mobile Terminated Session Termination (Includes Optional Features)**
 - RCS-e-1.2-con-302 **Session Establishment - Rejected (Includes Optional Features)**
- 5.17 MOBILE TERMINATED VIDEO SHARING**
 - RCS-e-1.2-con-320 **Session Establishment – Mobile Terminated Session Termination (Includes Optional Features) Open Question: VideoStream (RTP)**
 - RCS-e-1.2-con-321 **Session Establishment – Mobile Originated Session Termination (Includes Optional features) Open Question: VideoStream (RTP)**
 - RCS-e-1.2-con-322 **Session Establishment - Rejected (Includes Optional Features)**

Test Architecture

The RCS V1.2 defined in Figure 2 has been adapted from the 3GPP LTE IMS architecture (3GPP_34_229_LTE_IMS_D13wk15) defined in Figure 1.

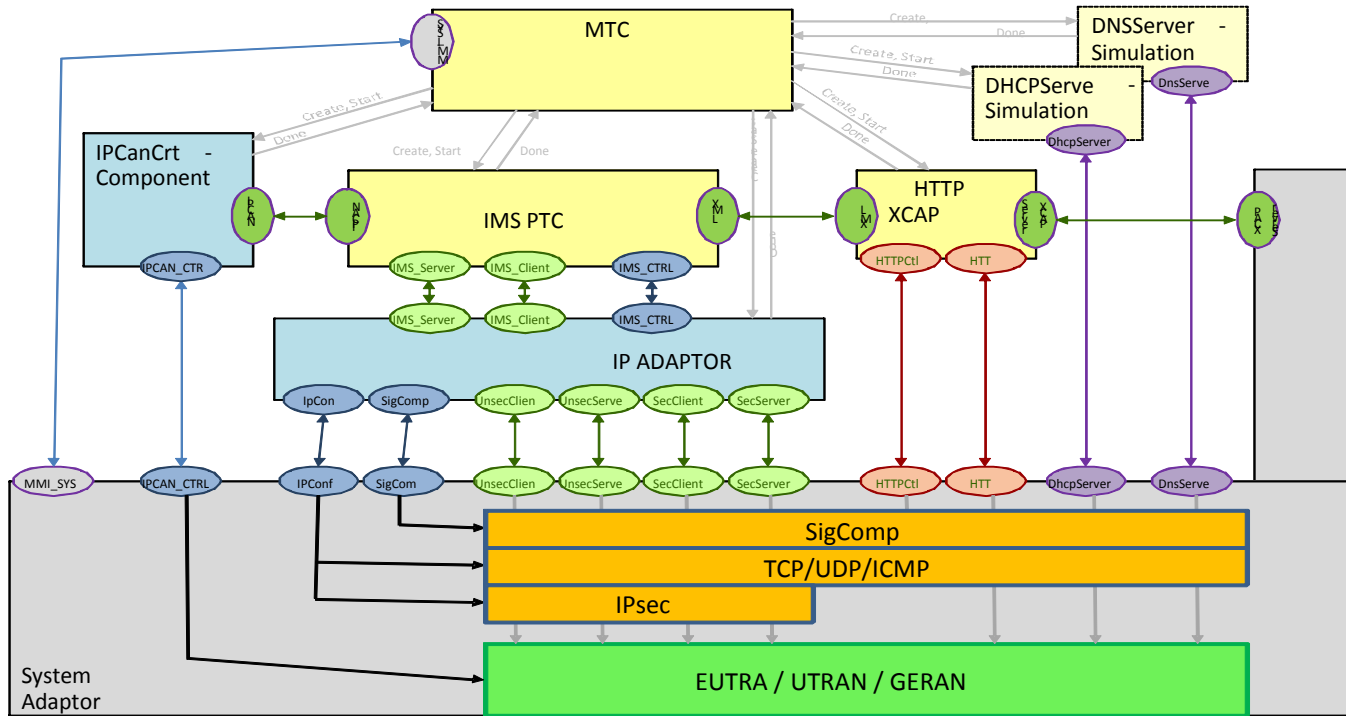


Figure 1: 3GPP LTE IMS Test Architecture

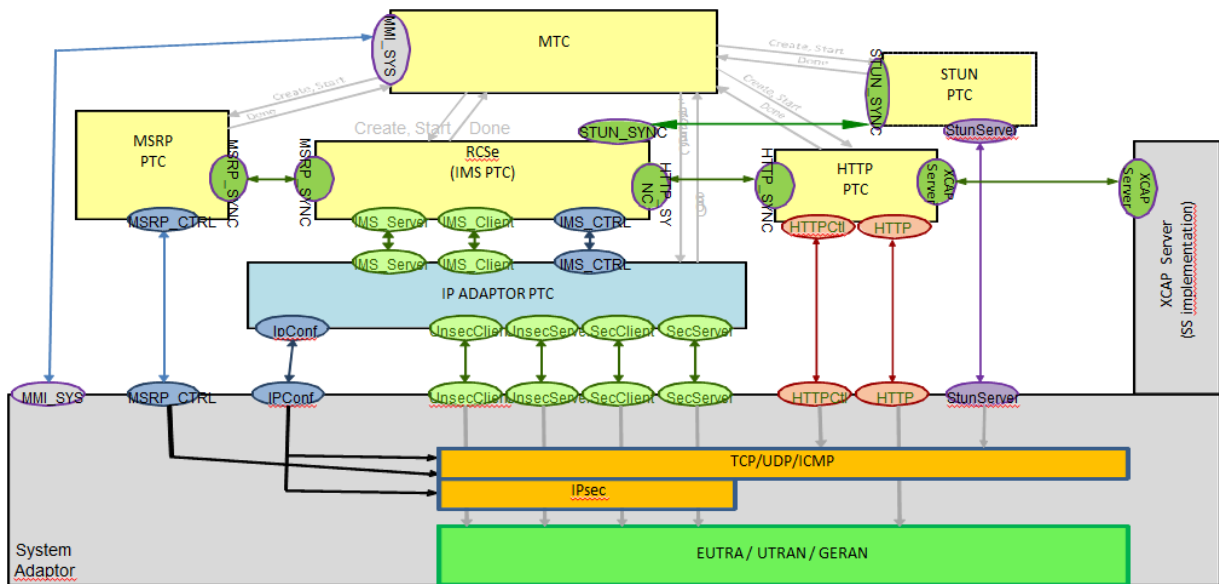


Figure 2: RCS V1.2 Test Architecture

New components:

- **RCS Component**(RCS_PTC) – extends IMS component and is used to the RCS functionality and to coordinate the communication with STUN and MSRP components
- **MSRP Component**(MSRP_PTC) - used to handle the MSRP functionality
- **STUN Component**(STUN_PTC) - used to handle the Initial and Keep-Alive STUN message

Synchronization Communication:

- Between **RCS** and **MSRP** via **MSRP_SYNC**
- Between **RCS** and **STUN** via **STUN_SYNC**
- Between **RCS** and **HTTP** via **HTTP_SYNC**

Open issues

1. Some SIP messages are not sufficiently described in OMA test plan: e.g. D.1.10, D.1.11, D.1.14, D.1.14 (e.g. in C.2.13)
2. In some SIP INVITE messages it is not clear if an XML message body has to be sent or/and a SIP SUBJECT header (e.g. in C.2.13, C.5.1, C.5.2)
3. For RCS-1.2-con-200 and RCS-1.2-con-220 the Step with MSRP File Transfer is missing, OMA Feedback needed
4. For RCS-1.2-con-250 and RCS-1.2-con-270 the Step with MSRP Image Transfer is missing, OMA Feedback needed
5. For RCS-1.2-con-320 and RCS-1.2-con-321 the Step with RTP Video Transfer is missing, Open Question
6. C.2.13, C.2.14, C.2.15 and C.2.19 need to consider participant list in MIME message body (RFC 4826/5366?) !!! Very Important
7. C.2.1, C.2.5, C.2.8 and C.4.1 without PRACK/UPDATE from f_IMS_MOCallSetup_AnnexC21_Steps5To9
8. C.2.9 step 6 to be clarified by OMA
9. C.2.17: 403 response needs value for "WarnAgent"
10. RCS-1.2-con-145 Step 3: Connectivity with the device under test is restored by re-establishing the cellular signal from the Test Tool?
11. C.6.1.1 a XSD or DTD is needed for the Message-Body of the message D.2.

Electronic attachments

The TTCN-3 source code files and the documentation of this delivery are attached to this technical information.

The test cases and their description can be found in the main module RCS_Testcases

The files have been organized using subfolders:

ttcn-3\IMS

ttcn-3\MSRP

ttcn-3\RCS_Types

ttcn-3\STUN

t3doc