RCS Universal Profile Corrections and Clarifications

Version 1.1

02 June 2017

This is a Non-binding Permanent Reference Document of the GSMA

Security Classification: Non-confidential

Access to and distribution of this document is restricted to the persons permitted by the security classification. This document is confidential to the Association and is subject to copyright protection. This document is to be used only for the purposes for which it has been supplied and information contained in it must not be disclosed or in any other way made available, in whole or in part, to persons other than those permitted under the security classification without the prior written approval of the Association.

Copyright Notice

Disclaimer

The GSM Association ("Association") makes no representation, warranty or undertaking (express or implied) with respect to and does not accept any responsibility for, and hereby disclaims liability for the accuracy or completeness or timeliness of the information contained in this document. The information contained in this document may be subject to change without prior notice.

Antitrust Notice

The information contain herein is in full compliance with the GSM Association's antitrust compliance policy.

Table of Contents

1 Introduction

1.1 Overview

When issues are found in a version of the Rich Communication Services (RCS) Universal Profile and documents that it refers to or items are found to be misunderstood, a solution for the issue shall be described in this document rather than releasing an update of the affected document for every issue that is found. For a next version of the RCS Universal Profile, those solutions will be covered in updated specifications where relevant. This document only covers such solutions for issues and clarifications. New and evolved functionality will be provided through new releases of the RCS Universal Profile.

This means that a release of the RCS Universal Profile will have a stable feature set and that it is documented in the version of the RCS Universal Profile Service Definition Document that is relevant for that release, along with the versions of the Permanent Reference Documents (PRDs) that that document refers to as well as this document. Once a release has been published all those documents will be stable for the purpose of that release except the current document which given its nature may be updated frequently.

1.1.1 Structure of the document

The document contains a top level section for each document for which items for correction or clarification need to be documented.

For every item an indication is provided on which version(s) of the RCS Universal Profile it is applicable for.

> NOTE: When a later release of the RCS Universal Profile is not mentioned, that doesn't necessarily mean that the behaviour is changed. It may be that the behaviour is described in the updates of the specifications relevant for that release.

Every item is also numbered using the following format: ID-<docnumber>-<version>-<sequence number>. Where the <docnumber> is the document number (e.g. "RCC.71"), <version> is the version of the document where the issue to be resolved was found (e.g. "1.0" for an item covering [RCC.71-UP1.0], "7.0" for an item covering [RCC.07-RCS6.0]) and <sequence> is a monotonously increasing sequence number for items applying to that document.

Each item is assigned one of the following types:

- Requirement

  Introduces new mandatory behaviour that will be included in future updates of the specifications relevant for the RCS Universal Profile, if still relevant. It may add on to what is already described in the documents relevant for the mentioned version of the RCS Universal Profile or replace what is described there. This behaviour is considered to be an integral part of the RCS Universal Profile versions mentioned; that is, it is treated in the same way as the behaviour described in the other documents relevant for those RCS Universal Profile versions.
  To allow for implementations to adapt to this change in the definition of the profile, a

grace period of 3 months from the mentioned publication date is allowed where implementations that do not implement the change yet may still be considered to be compliant. Given that the change aims to resolve an issue that was discovered, it is highly recommended that implementations adapt as soon as possible after the publication.

- Clarification

  Provides further background on functionality already described in the documents relevant for the RCS Universal Profile versions mentioned to improve understanding. This may end up in future revisions of the specification.

- Recommendation

  Includes some suggestions on how the functionality required in the latest version of the RCS specification can be implemented.

1.2 Scope

This document is a complement to the RCS Universal Profile.

1.3 Abbreviations

Term	Description
FT	File Transfer
FToHTTP	File Transfer over HyperText Transfer Protocol
HTTP	HyperText Transfer Protocol
IM	Instant Messaging
IMSI	International Mobile Subscriber Identity
kbps	Kilobit per second
MSISDN	Mobile Subscriber Integrated Services Digital Network Number
OMA	Open Mobile Alliance
OTP	One-Time Password
PRD	Permanent Reference Document
RCS	Rich Communication Services
SIM	Subscriber Identity Module
SIMPLE	Session Initiation Protocol for Instant Messaging and Presence Leveraging Extensions
SIP	Session Initiation Protocol
SMS	Short Message Service
URL	Uniform Resource Locator
XML	eXtensible Markup Language

1.4 References

Ref	Doc Number	Title
[1]	[RCC.71-UP1.0]	GSMA PRD RCC.71, RCS Universal Profile Service Definition

Ref	Doc Number	Title
		Document, Version 1.0, 16 November 2016 http://www.gsma.com/
[2]	[RCC.07-RCS6.0]	GSMA PRD RCC.07, Rich Communication Suite 6.0 Advanced Communications Services and Clients specification, Version 7.0, 21 March 2016 http://www.gsma.com/
[3]	[RCC.09-v6.0]	GSMA PRD RCC.09, Rich Communication Suite 6.0 Endorsement of OMA CPM 2.1 Message Store, Version 6.0, 21 March 2016 http://www.gsma.com/
[4]	[RCC.11-v5.0]	GSMA PRD RCC.11, Rich Communication Suite 6.0 Endorsement of OMA CPM 2.1 Conversation Functions, Version 5.0, 21 March 2016 http://www.gsma.com/
[5]	[RCC.12-v5.0]	GSMA PRD RCC.12, Rich Communication Suite 6.0 Endorsement of OMA SIP SIMPLE IM, Version 5.0, 21 March 2016 http://www.gsma.com/
[6]	[RCC.14-v3.0]	GSMA PRD RCC.14, Service Provider Device Configuration, Version 3.0, 21 March 2016 http://www.gsma.com/
[7]	[RCC.15-v2.0]	GSMA PRD RCC.15, IMS Device Configuration and Supporting Services, Version 2.0, 21 March 2016 http://www.gsma.com/
[8]	[RCC.20-v2.0]	GSMA PRD RCC.20, Enriched Calling Technical Specification, Version 2.0, 21 March 2016 http://www.gsma.com/
[9]	[RFC2119]	"Key words for use in RFCs to Indicate Requirement Levels", S. Bradner, March 1997. Available at http://www.ietf.org/rfc/rfc2119.txt
[10]	[RFC3986]	"Uniform Resource Identifier (URI): Generic Syntax", January 2005. Available at http://www.ietf.org/rfc/rfc3986.txt

1.5   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]."

2   Clarifications and Issue Solutions for RCS Universal Profile

2.1   RCC.71 Version 1.0

This section contains solutions for issues found in [RCC.71-UP1.0].

2.1.1   ID_RCC.71_1.0_1: Modifying a Contact

ID	ID_RCC.71_1.0_1
Title	Modifying a Contact
Type	Requirement

Related spec and section	[RCC.71-UP1.0] Section 3.2
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	26.02.2017
Superseded by	

2.1.1.1   Expected Behaviour

Modifying an existing contact's telephone number or adding a telephone number to a Contact shall be considered to be equivalent to adding a new contact from the perspective of R3-3-3-1 of [RCC.71-UP1.0].

2.1.2   ID_RCC.71_1.0_2: Max Group Chat Size

ID	ID_RCC.71_1.0_2
Title	Max Group Chat Size
Type	Requirement
Related spec and section	[RCC.71-UP1.0] Section 6.2 and Annex C
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	26.02.2017
Superseded by	

2.1.2.1   Issue Description

Annex C of [RCC.71-UP1.0] wrongly indicates that the MAX_AD-HOC_GROUP_SIZE is set to an aligned value of 50, whereas R6-1-4 of [RCC.71-UP1.0] states that the Service Provider shall allow 100 users to participate in a Group Chat.

2.1.2.2   Expected Behaviour

The aligned value for MAX_AD-HOC_GROUP_SIZE in table 50 of Annex C of [RCC.71-UP1.0] shall be 100.

2.1.3   ID_RCC.71_1.0_3: Network Fallback Capability

ID	ID_RCC.71_1.0_3
Title	Network Fallback Capability
Type	Requirement
Related spec and section	[RCC.71-UP1.0] Sections 5.3.2 and 5.3.4
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	26.02.2017
Superseded by	

2.1.3.1   Issue Description

Section 5.3.2 of [RCC.71-UP1.0] indicates that it is mandatory for networks to indicate support for one of the network fallback mechanisms while section 5.3.4.1 of [RCC.71-UP1.0] indicates that there are no additional procedures if the network supports the network fallback delivery assurance procedure.

2.1.3.2   Expected Behaviour

The following text replaces the procedures for handling a Session Initiation Protocol (SIP) INVITE request for a 1-to-1 Chat defined in section 5.3.4.1 of [RCC.71-UP1.0].

The following procedures shall be implemented:

- When handling an SIP INVITE request for a 1-to-1 Chat session, the messaging server in the originating network shall add either the message revocation or the network interworking feature tag defined in Table 9 of [RCC.71-UP1.0] in the Contact header field of the SIP INVITE request sent towards the terminating client based on the chat fallback mechanism that is supported.
- When handling an SIP INVITE request for a 1-to-1 Chat session, the messaging server in the terminating network shall add either the message revocation or the network interworking feature tag defined in Table 9 of [RCC.71-UP1.0] in the Contact header field of every SIP 200 OK response to the SIP INVITE request sent towards the originating client.

2.1.4   ID_RCC.71_1.0_4: Resize video files before transferring

ID	ID_RCC.71_1.0_4
Title	Resize video files before transferring
Type	Requirement
Related spec and section	[RCC.71-UP1.0] Section 7.3.4
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	26.02.2017
Superseded by	

2.1.4.1   Issue Description

To improve the experience when transferring video files, it should be possible to resize a video at point of send within the Chat window that the File Transfer belongs to.

2.1.4.2   Expected Behaviour

In section 7.3 of [RCC.71-UP1.0], instead of stating in R7-24-18 that US7-6 and its requirement R7-6-1 shall be implemented locally on the device, R7-24-18 is modified as shown here. The technical realization of the similar requirement for File Transfer during a Call is implicitly updated in the same way since it references section 7.3 in [RCC.71-UP1.0].

R7-24-18 For the requirement R7-6-1 of user story US7-6, videos shall be optimised and resized to facilitate a faster transfer experience during a call (i.e. "low file size" as

the default selection). The recommended approach is to resize the video by modifying the resolution:

- The default resolution shall be 480p encoded at 1200 kilobit per second (kbps).
- The resulting size shall be compared to FT WARN SIZE and FT MAX SIZE. The UI shall act correspondingly if the values are reached.

For a pre-recorded video:

- If the resolution is higher than 480p but the file is smaller than FT WARN SIZE the UI warns the user about the resolution of the video.
- if the resolution is higher than 480p and the file is higher than FT WARN SIZE but smaller than FT_MAX_SIZE then the UI warns the user about the resolution and the size.
- if the resolution is higher than 480p and the file is higher than FT MAX SIZE then the UI warns the user about the size and forces the compression or aborts the transfer.

For a live video recording:

- Recording at the default resolution of 480p encoded at 1200 kbps is done. When the FT WARN SIZE is reached, the recording is stopped automatically.

The video resizing itself shall happen before the File Transfer to the recipient is initiated.

2.1.5   ID_RCC.71_1.0_5: Sample HTTP Content Server response body

ID	ID_RCC.71_1.0_5
Title	Sample HTTP Content Server response body
Type	Requirement
Related spec and section	[RCC.71-UP1.0] Section 7.3.2.7.1
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	02.06.2017
Superseded by	

2.1.5.1   Issue Description

The Sample HTTP Content Server response body in Table 35 of section 7.3.2.7.1 of [RCC.71-UP1.0] does not escape the ampersand character (&).

2.1.5.2   Expected Behaviour

Table 35 in section 7.3.2.7.1 of [RCC.71-UP1.0] is replaced by the following:

```
<?xml version="1.0" encoding="UTF-8"?>
<file xmlns="urn:gsma:params:xml:ns:rcs:rcs:fthttp"
    xmlns:e="urn:gsma:params:xml:ns:rcs:rcs:up:fthttpext">
```

```
    <file-info type="thumbnail">
        <file-size>82</file-size>
        <content-type>image/jpeg</content-type>
        <data url="https://ftcontentserver.rcs.mnc001.mcc262.pub.3gppnetwork.org/..."
            until="2017-04-22T19:30:00Z"/>
    </file-info>
        <file-info type="file">
        <file-size>32464</file-size>
        <file-name>example.jpg</file-name>
        <content-type>image/jpeg</content-type>
        <data
            url="https://ftcontentserver.rcs.mnc001.mcc262.pub.3gppnetwork.org/...?t=image%2Fjpeg&amp;s=3
            2464&amp;e=20170422T193000Z"
            until="2017-04-22T19:30:00Z"/>
        <e:branded-url>https://www.operator.com/...</e:branded-url>
    </file-info>
</file>
```

2.1.6   ID_RCC.71_1.0_6: "geo" URI Label encoding

ID	ID_RCC.71_1.0_6
Title	"geo" URI Label encoding
Type	Requirement
Related spec and section	[RCC.71-UP1.0] Section 5.3.6.3
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	02.06.2017
Superseded by	

2.1.6.1   Issue Description

The description of the label extension of the RFC5870 "geo" URI in section 5.3.6.3 of [RCC.71-UP1.0] lacks a definition of the character encoding of the value.

2.1.6.2   Expected Behaviour

The value of the "rcs-l" extension parameter defined in section 5.3.6.3 of [RCC.71-UP1.0] shall be encoded via UTF-8 character encoding.

Example "geo" URI with parameter extension:

```
geo:50.7311865,7.0914591;u=10.3;rcs-l=The%20Quiet%20Man%20%F0%9F%8D%BB
```

2.1.7   ID_RCC.71_1.0_7: Full Store and Forward configuration parameters

ID	ID_RCC.71_1.0_7
Title	Full Store and Forward configuration parameters
Type	Requirement
Related spec and section	[RCC.71-UP1.0] Annex C
Applicable Universal	Universal Profile v1.0

Profile release	
Publication Date	02.06.2017
Superseded by	

2.1.7.1   Issue Description

There is a requirement in Annex C of [RCC.71-UP1.0] to supply the configuration parameters GROUP CHAT FULL STORE FORWARD and GROUP CHAT INVITE ONLY FULL STORE FORWARD with a fixed value "0". These configuration parameters are not supported in of [RCC.07-RCS6.0].

2.1.7.2   Expected Behaviour

The entries of the configuration parameters GROUP CHAT FULL STORE FORWARD and GROUP CHAT INVITE ONLY FULL STORE FORWARD are removed from Table 50 of Annex C of [RCC.71-UP1.0].

2.1.8   ID_RCC.71_1.0_8: GEOLOCATION TEXT MAX LENGTH aligned value

ID	ID_RCC.71_1.0_8
Title	GEOLOCATION TEXT MAX LENGTH aligned value
Type	Requirement
Related spec and section	[RCC.71-UP1.0] Annex C
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	02.06.2017
Superseded by	

2.1.8.1   Issue Description

The aligned value of the configuration parameter GEOLOCATION TEXT MAX LENGTH in Annex C of [RCC.71-UP1.0] exceeds the maximum value of the configuration parameter in Table 81 of [RCC.07-RCS6.0].

2.1.8.2   Expected Behaviour

The aligned value of the configuration parameter GEOLOCATION TEXT MAX LENGTH in Annex C of [RCC.71-UP1.0] shall be "200".

2.1.9   ID_RCC.71_1.0_9: Group Chat Subject and Icon technical implementation

ID	ID_RCC.71_1.0_9
Title	Technical Implementation of Group Chat Subject and Icon
Type	Requirement
Related spec and section	[RCC.71-UP1.0] Section 6.3.2
Applicable Universal Profile release	Universal Profile v1.0

Publication Date	02.06.2017
Superseded by	

2.1.9.1   Issue Description

The technical implementation in R6-29-2 through R6-29-6 of [RCC.71-UP1.0] does not satisfy the requirements for the management of subject and icon of User Story US6-2 of [RCC.71-UP1.0].

2.1.9.2   Expected Behaviour

The technical implementation described in R6-29-2 of [RCC.71-UP1.0] is replaced by the following:

The requirement R6-2-1 shall be implemented as follows:

- When initiating a Group Chat or when invited to a Group Chat, the client shall process the subject of the Group Chat Conversation as defined in section 3.4.4.1.1 of [RCC.07-RCS6.0]. The client shall store the assigned value of the subject locally with the Group Chat conversation.
- If the client invites new participants to a Group Chat it shall send the subject value initially assigned to the Group Chat as defined in section 3.4.4.1.2 of [RCC.07-RCS6.0].
- If the client re-starts a Group Chat via the procedure defined in section 3.4.4.1.7 of [RCC.07-RCS6.0], then it shall add a subject header in the SIP INVITE with the value initially assigned to the Group Chat.
- If the client is re-invited to an existing Group Chat as defined in section 3.4.4.1.7 of [RCC.07-RCS6.0], then the client shall ignore the subject header field contained in the SIP INVITE.
- When initiating a Group Chat, the client shall set the icon of the Group Chat locally. The selected icon shall not be transmitted to the participants of the Group Chat.

The technical implementation described in R6-29-4 of [RCC.71-UP1.0] is replaced by the following:

The requirement R6-2-3 shall be implemented locally on the client.

The technical implementation described in R6-29-6 of [RCC.71-UP1.0] is replaced by the following:

For requirement R6-2-5, if the subject is changed by the user for a Group Chat conversation, then the client shall keep the initial value of the subject stored with the Group Chat to be able to satisfy the procedures described in the technical implementation in R6-29-2. If the icon of a Group Chat is changed by the user for a Group Chat conversation, then the client shall not transmit the selected icon to the participants of the Group Chat.

2.1.10   ID_RCC.71_1.0_10: Audio Message support in FT fallback

ID	ID_RCC.71_1.0_10

Title	Audio Message support in FT fallback
Type	Requirement
Related spec and section	[RCC.71-UP1.0] Section 7.3.2.4 and 8.3
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	02.06.2017
Superseded by	

2.1.10.1 Issue Description

In [RCC.71-UP1.0], an Audio Message received by SMS resulting from a fallback procedure is handled as any other file and is just rendered as a regular File Transfer. However, it would be a better experience if the Client could handle it specifically as an audio message: displaying the duration of the message and allowing it to be played directly in the messaging application.

2.1.10.2 Expected Behaviour

When the originating client decides to fall back to SMS for a File Transfer, in addition to the procedures defined for any file in section 7.3.2.4 of [RCC.71-UP1.0], if the file is a RCS Recorded Audio Message, then the client shall modify the URL to be sent via SMS in the following way:

- generate a "d" parameter as defined in the table below, using the value extracted from the "playing-length" element contained in the data element of the file-info element of the original message for which fallback to SMS applies, and append it to the URL using HTML form encoding respecting the definitions of [RFC3986].

Parameter	Type	Value
d	Integer	Playing length in seconds of the Audio Message

Table 1: Audio Message HTTP URL parameters for File Transfer fallback

On reception of such SMS message, the presence of a "d" parameter is the indication for the client that the file is a RCS Recorded Audio Message that can be played directly from the Chat application upon user action.

2.1.11 ID_RCC.71_1.0_11: In-Call Geolocation Push Technology

ID	ID_RCC.71_1.0_11
Title	In-Call Geolocation Push Technology
Type	Requirement
Related spec and section	[RCC.71-UP1.0] Section 12.7.2.5 [RCC.07-RCS6.0] Section 3.10.4
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	02.06.2017

Superseded by	

2.1.11.1   Issue Description

Section 12.7.2.5 of [RCC.71-UP1.0] and section 3.10.4 of [RCC.07-RCS6.0] state that location sharing during a call should be done using CPM File Transfer while outside of a call the RCS Chat service would be used to transfer such a location. Given that this would be the only use case for CPM File Transfer in the RCS Universal Profile, this may create issues in the networks and clients.

2.1.11.2   Expected Behaviour

An RCS Universal Profile Client shall use the procedure defined in section 3.10.4.1.2 of [RCC.07-RCS6.0] also for transferring the location during a call.

To provide backward compatibility with older versions of RCS though, the client shall still support the procedure in section 3.10.4.1.1.2 of [RCC.07-RCS6.0] for receiving the location from the other party in the call. This sharing session shall be automatically accepted.

The technical implementation described in R12-24-35 of [RCC.71-UP1.0] is therefore replaced by the following:

> For requirement R12-22-2, an RCS Chat Message is used to convey the location information during a voice call following the procedure described in section 3.10.4.1.2 of [RCC.07-RCS6.0], but next to that during a call it shall also be supported to receive location information using CPM File Transfer as described in section 3.10.4.1.1.2 of [RCC.07-RCS6.0] to provide backward compatibility to older clients. For Geolocation Push fallback scenarios during a voice call, the procedures described in section 5.3 of [RCC.71-UP1.0] shall apply.

The technical implementation described in R12-24-37 of [RCC.71-UP1.0] is therefore replaced by the following:

> Requirement R12-22-4 shall be implemented locally on the device.

3   Clarifications and Issue Solutions for RCS Services and Client Specification

3.1   RCC.07 Version 7.0

3.1.1   ID_RCC.07_7.0_1: IMDN.Message-ID length

ID	ID_RCC.07_7.0_1
Title	IMDN.Message-ID length
Type	Requirement
Related spec and section	[RCC.11-v5.0] section 5.4 [RCC.07-RCS6.0] sections 3.2, 3.3, 3.4, 3.5 and 4.1
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	26.02.2017

Superseded by	

3.1.1.1   Issue Description

RFC5438 recommends a minimum but no maximum length for the Message-ID header which may be a cause for interoperability problems.

3.1.1.2   Expected Behaviour

The maximum length for the value of the IMDN.Message-ID header shall be 36 characters.

3.1.2   ID_RCC.07_7.0_2: File Transfer over HTTP: sender upload retries in error cases

ID	ID_RCC.07_7.0_2
Title	File Transfer over HTTP: sender upload retries in error cases
Type	Clarification
Related spec and section	[RCC.07-RCS6.0] section 3.5.4.8.3.1.1
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	26.02.2017
Superseded by	

3.1.2.1   Issue Description

The File Transfer over Hypertext Transfer Protocol (FToHTTP) upload resume procedures defined in section 3.5.4.8.3.1.1 of [RCC.07-RCS6.0] may fail in different steps of the procedures requiring different retry behaviour.

3.1.2.2   Expected Behaviour

The following clarifications to the procedures in section 3.5.4.8.3.1.1 in [RCC.07-RCS6.0] apply:

- If the "**Get upload info**" request fails with an error other than a Hypertext Transfer Protocol (HTTP) 404 or 410 error response then the client shall retry the "**Get upload info**" request.
- If the "**Resume upload**" request fails (content server response other than HTTP 200 OK) then the client shall retry by starting the section 3.5.4.8.3.1.1 Upload Resume procedure of [RCC.07-RCS6.0] anew.
- If the "**Get download info**" request fails (content server response other than HTTP 200 OK) then the client shall retry by starting the section 3.5.4.8.3.1.1 Upload Resume procedure of [RCC.07-RCS6.0] anew.
- Overall the client shall retry per file upload up to a maximum of three (3) times after which it is considered to be unsuccessful and no further automatic attempts will be done to transfer the remaining part of the file.

3.1.3   ID_RCC.07_7.0_3: MAX_AD-HOC_GROUP_SIZE parameter format

ID	ID_RCC.07_7.0_3

Title	MAX_AD-HOC_GROUP_SIZE parameter format
Type	Clarification
Related spec and section	[RCC.07-RCS6.0] section 3.5.4.8.3.1.1
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	26.02.2017
Superseded by	

3.1.3.1   Issue Description

The RCS 6.0 [RCC.07-RCS6.0] and Open Mobile Alliance (OMA) SIP for Instant Messaging and Presence Leveraging Extensions (SIMPLE) Instant Messaging (IM) [RCC.12-v5.0] specifications define MAX_AD-HOC_GROUP_SIZE configuration parameter with the dash between 'AD' and 'HOC' whereas the Tables 145 and 222 of A.2.6 and A.4 respectively in [RCC.07-RCS6.0] provide this parameter without the dash (e.g. max_adhoc_group_size) for the HTTP configuration document. As SIMPLE IM does not provide a mapping to the HTTP configuration there is no conflict and therefore the format to be used while performing HTTP provisioning is without dash, i.e. max_adhoc_group_size.

3.1.3.2   Expected Behaviour

The following text should be considered when reading Table 145 in section A.2.6 of [RCC.07-RCS6.0]:

Table 145 defines the formal mapping of the OMA SIMPLE IM provisioning parameters [RCC.12-v5.0] to values to be used while performing HTTP provisioning. In most cases it is a one to one mapping, with upper case characters mapped to lowercase, and dashes preserved, but the MAX_AD-HOC_GROUP_SIZE parameter maps to *max_adhoc_group_size* (i.e. with underscores used, and without the dash between "ad" and "hoc").

3.1.4   ID_RCC.07_7.0_4: Client Handling of Registration Requests

ID	ID_RCC.07_7.0_4
Title	Client Handling of Registration Requests
Type	Clarification
Related spec and section	[RCC.07-RCS6.0] section 2.4.1
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	02.06.2017
Superseded by	

3.1.4.1   Issue Description

Simultaneous processing of multiple registrations for a single user identity may lead to failure scenarios in a single IMS core configuration.

3.1.4.2 Expected Behaviour

If there is a trigger for an initial registration, re-registration or de-registration and if there is a SIP REGISTER request in progress for another registration, then the UE must only initiate a new SIP REGISTER request when

- it has received a final response for the other SIP REGISTER request, or
- there has been an interruption, due to failure and reconnect, of the underlying signalling transport mechanism used for the other SIP REGISTER request, or
- the other SIP REGISTER request has timed out.

If there is no other SIP REGISTER request in progress the UE shall send the SIP REGISTER request when the trigger occurs.

4   Clarifications and Issue Solutions for RCS Message Store Endorsement

4.1   RCC.09 Version 6.0

This section contains solutions for issues found in [RCC.09-v6.0].

4.1.1   ID_RCC.09_6.0_1: Correction of Group State Object XML Schema

ID	3.1.1 ID_RCC.09_6.0_1
Title	Correction of Group State Object XML Schema
Type	Requirement
Related spec and section	[RCC.09-v6.0] Section 5.2.4
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	26.02.2017
Superseded by	

4.1.1.1   Issue Description

The eXtensible Markup Language (XML) schema of the Group State Object defined in [RCC.09-v6.0] is corrected. The missing definition of the "participant-type" element is added. The updated schema makes use consistent use of the "participant-type" element to describe an individual participant.

4.1.1.2   Expected Behaviour

Table 1 in section 5.2.4 of [RCC.09-v6.0] is replaced by the following:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:xml="http://www.w3.org/XML/1998/namespace"
elementFormDefault="qualified">
    <xs:import namespace="http://www.w3.org/XML/1998/namespace"
            schemaLocation="http://www.w3.org/2009/01/xml.xsd"/>

    <xs:element name="groupstate">
```

```xml
        <xs:complexType>
          <xs:sequence>
            <xs:element name="participant" type="participant-type" maxOccurs="unbounded"/>
            <xs:element name="status" minOccurs="0">
              <xs:complexType>
                <xs:choice>
                  <xs:element name="removed">
                    <xs:complexType>
                      <xs:sequence>
                          <xs:element name="participant" type="participant-type" minOccurs="0"/>
                          <xs:any minOccurs="0" maxOccurs="unbounded"
                          processContents="lax"/>
                      </xs:sequence>
                    </xs:complexType>
                  </xs:element>
                  <xs:any minOccurs="0" maxOccurs="unbounded" processContents="lax"/>
                </xs:choice>
                <xs:anyAttribute namespace="##other" processContents="lax"/>
              </xs:complexType>
            </xs:element>
            <xs:element name="subject" type="subject-type" minOccurs="0"/>
            <xs:element name="icon" type="icon-type" minOccurs="0"/>
            <xs:attribute name="lastfocussessionid" type="xs:string" use="required"/>
            <xs:attribute name="iw-number" type="xs:anyURI"/>
            <xs:attribute name="timestamp" type="xs:dateTime" use="required"/>
            <xs:attribute name="group-type" type="groupType" use="required"/>
            <xs:anyAttribute processContents="lax"/>
          </xs:sequence>
          <xs:any minOccurs="0" maxOccurs="unbounded" processContents="lax"/>
        </xs:complexType>
      </xs:element>

      <xs:simpleType name="groupType">
        <xs:restriction base="xs:normalizedString">
          <xs:enumeration value="Closed"/>
          <xs:enumeration value="Open"/>
        </xs:restriction>
      </xs:simpleType>

      <xs:element name="icon-type">
        <xs:complexType>
          <xs:choice>
            <xs:element name="icon-uri" type="xs:anyURI"/>
            <xs:element name="file-info" type="xs:string"/>
            <xs:any minOccurs="0" maxOccurs="unbounded" processContents="lax"/>
          </xs:choice>
        </xs:complexType>
        <xs:any namespace="##other" processContents="lax"/>
      </xs:element>

      <xs:element name="subject-type">
          <xs:complexType>
            <xs:sequence>
                <xs:element name="subject" type="xs:string"/>
                <xs:element name="participant" type="participant-type" minOccurs="0"/>
                <xs:element name="timestamp" type="dateTime" minOccurs="0"/>
                <xs:any minOccurs="0" maxOccurs="unbounded" processContents="lax"/>
            </xs:sequence>
```

```
        <xs:anyAttribute namespace="##other" processContents="lax"/>
      </xs:complexType>

   </xs:element>


   <xs:element name="participant-type">
      <xs:complexType>
            <xs:attribute name="name" type="xs:string" use="required"/>
            <xs:attribute name="comm-addr" type="xs:anyURI" use="required"/>
            <xs:anyAttribute namespace="##other" processContents="lax"/>
      </xs:complexType>
   </xs:element>
</xs:schema>
```

5 Clarifications and Issue Solutions for Service Provider Device Configuration

5.1 RCC.14 Version 3.0

This section contains solutions for issues found in [RCC.14-v3.0].

5.1.1 ID_RCC.14_3.0_1: HTTP GET parameter terminal_sw_version maximum length

ID	ID_RCC.14_3.0_1
Title	HTTP GET parameter terminal_sw_version maximum length
Type	Requirement
Related spec and section	[RCC.14-v3.0] Section 2.2.1, section 2.3.2
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	26.02.2017
Superseded by	

5.1.1.1 Issue Description

There are clients with terminal_sw_version parameter value longer than the maximum length defined in the format of this parameter in sections 2.2.1 and 2.3.1 of [RCC.14-v3.0] i.e. longer than 10 characters. The requests of these clients may be rejected by the configuration server.

5.1.1.2 Expected Behaviour

The maximum length of the terminal_sw_version parameter defined in Table 1 of section 2.2.1 of [RCC.14-v3.0] and Table 9 of 2.3.2 of [RCC.14-v3.0] is changed from 10 to 20.

5.1.2 ID_RCC.14_3.0_2: SMS connectivity for first time configuration

ID	ID_RCC.14_3.0_2
Title	SMS connectivity for first time configuration
Type	Requirement

Related spec and section	[RCC.14-v3.0] Section 2.3.2
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	26.02.2017
Superseded by	

5.1.2.1   Issue Description

As long as there is no Short Message Service (SMS) connectivity (e.g. lack of indoor coverage) available for the client to receive the SMS that contains the One-Time Password (OTP), any attempt made by the client to perform the SMS based configuration procedure when no token is available or with token that does not privilege the server to issue a client configuration will fail. This impacts negatively the user experience.

5.1.2.2   Expected Behaviour

Depending on the use case, availability of SMS connectivity may be required to proceed with the configuration procedure. The text in section 2.3.2 of [RCC.14-v3.0] that describes the two situations that exist depending on client capability to access the user data (e.g. the user's International Mobile Subscriber Identity [IMSI]) is replaced by the following text:

1. The client is not able to retrieve the IMSI of the Subscriber Identity Module (SIM):

   The IMSI parameter shall always be omitted from requests. The following use cases apply for the determination of Mobile Subscriber Integrated Services Digital Network Number (MSISDN) and token.

   - If the request is not caused by a previous configuration response containing a cookie and connectivity for receiving SMS is available and the client

     - has not stored a token and
     - has not stored a MSISDN,

     then the client shall prompt the user to provide a MSISDN in E.164 format.
     In this case the value of the MSISDN parameter shall take the number entered by the user. The value of the token parameter shall be left empty as defined in Table 9 of [RCC.14-v3.0].
     If connectivity for receiving SMS is not available, the client shall wait for SMS connectivity prior to initiating the configuration procedure.
   - If the request is not caused by a previous configuration response containing a cookie and connectivity for receiving SMS is available and the client

     - has not stored a token and
     - has stored a MSISDN from a previous user input or has derived it from the Public_User_Identity parameter (defined in [RCC.15-v2.0]) of the client configuration,

     then the client may prompt the user to enter a MSISDN in E.164 format with the stored value as recommendation or may use the MSISDN without user interaction.

In this case the value of the MSISDN parameter shall take the value discovered by the client. The value of the token parameter shall be left empty.
If connectivity for receiving SMS is not available, the client shall wait for SMS connectivity prior to initiating the configuration procedure.

- If the client has not stored a token and the configuration request is caused by a previous configuration response containing a cookie, the client shall not prompt the user to enter the MSISDN and set the parameters as follows:

  - the token parameter shall be left empty
  - the MSISDN parameter shall be set to the value taken from a previous user input or as derived from the Public_User_Identity parameter (defined in [RCC.15-v2.0]) of the client configuration or it shall be omitted if none of these sources apply.

- If the client has stored a token it shall use it to set the value of the token parameter. The MSISDN parameter shall be set to the value of the MSISDN stored with the token being either derived from the Public_User_Identity parameter (defined in [RCC.15-v2.0]) or from previous user input or shall be omitted if these sources do not apply.

2. The client is able to retrieve the IMSI of the SIM:

The IMSI parameter shall be set in the requests to the IMSI value derived from the SIM. The following use cases apply for the determination of MSISDN and token:

- If the request is not caused by a previous configuration response containing a cookie and connectivity for receiving SMS is available and the client

  - has not stored a token

  then the client shall set the value of the MSISDN parameter to the MSISDN derived from the Public_User_Identity parameter (defined in [PRD-RCC.15]) of the client configuration or it shall omit it from the request. If the client has not stored a token, it shall leave the value of the token parameter empty as defined in Table 9 of [RCC.14-v3.0].
  If connectivity for receiving SMS is not available, the client shall wait for SMS connectivity prior to initiating the configuration procedure.
- If the provisioning request is caused by the configuration server response with status 403 FORBIDDEN as defined in section 2.3.4 of [RCC.14-v3.0] the client shall prompt the user to enter the MSISDN. In this case the MSISDN value shall be taken from the user input and may be the source of the MSISDN parameter values in subsequent requests.
- If the client has stored a token it shall use it to set the value of the token parameter as defined in Table 9 of [RCC.14-v3.0].

The client behaviour to supply the identification parameters in the request is the same regardless whether it is sent in result of a previous configuration response containing a cookie or not.

5.1.3   ID_RCC.14_3.0_3: Retry behaviour when OTP SMS is not received for first time configuration

ID	ID_RCC.14_3.0_3
Title	Retry behaviour when OTP SMS is not received for first time configuration
Type	Clarification
Related spec and section	[RCC.14-v3.0] Section 2.3.4
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	26.02.2017
Superseded by	

5.1.3.1   Expected Behaviour

If the client or the user is not able to receive the OTP via SMS, e.g. due to missing network connection, then the configuration procedure may start from the beginning (e.g. after a timeout period or selected by the user) including the request to enter the MSISDN if one was requested before.

6   Clarifications and Issue Solutions for Enriched Calling Technical Specification

6.1   RCC.20 Version 2.0

This section contains solutions for issues found in [RCC.20-v2.0].

6.1.1   ID_RCC.20_2.0_1: Correction of Call Composer Service XML Schema

ID	ID_RCC.20_2.0_1
Title	Modifying a Contact
Type	Requirement
Related spec and section	[RCC.20-v2.0] Section 2.4.4, Section 2.6
Applicable Universal Profile release	Universal Profile v1.0
Publication Date	26.02.2017
Superseded by	

6.1.1.1   Issue Description

The XML schema of the Call Composer Service defined in [RCC.20-v2.0] is corrected. The Uniform Resource Locator (URL) of the call composer picture shall be transferred in a "url" attribute of a "picture" element.

6.1.1.2   Expected Behaviour

Table 9 in section 2.4.4 of [RCC.20-v2.0] is replaced by the following:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<rcsenvelope xmlns="urn:gsma:params:xml:ns:rcs:rcs:calldata">
    <rcscalldata>
        <subject>this is the subject</subject>
        <importance>[0/1]</importance>
        <location>[coordinates]</location>
        <composerid>[Random generated number to identify the session]</composerid>
        <picture url="[HTTP URL for the file]"/>
    </rcscalldata>
</rcsenvelope>
```

The description of the element "picture_url" under the element "rcscalldata" in section 2.4.4 of [RCC.20-v2.0] is removed. Instead a description of the element "picture" is added as follows:

- <picture>: provides the characteristics of the picture file on the File Transfer (FT) content server. The element includes an attribute "url" containing the URL of the picture file on the FT content server to be displayed.

Table 14 of section 2.6 of [RCC.20-v2.0] is replaced by the following:

```xml
<?xml version="1.0" encoding="UTF-8"?>

<xs:schema
  targetNamespace="urn:gsma:params:xml:ns:rcs:rcs:calldata"
  xmlns="urn:gsma:params:xml:ns:rcs:rcs:calldata"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">

  <!-- This import brings in the XML language attribute xml:lang -->
  <xs:import namespace="http://www.w3.org/XML/1998/namespace"
  schemaLocation="http://www.w3.org/2001/xml.xsd"/>

  <!-- The root "rcsenvelope" element -->
  <xs:element name="rcsenvelope">
      <xs:complexType>
          <xs:sequence>
              <xs:element name="rcscalldata" type="reasontype" maxOccurs="1"/>
              <xs:any minOccurs="0" maxOccurs="unbounded" processContents="lax"/>
          </xs:sequence>
      </xs:complexType>
  </xs:element>

  <!-- The definition of type "reasontype" is as below -->
  <xs:complexType name="reasontype">
      <xs:sequence>
          <xs:element name="subject" type="xs:string" minOccurs="0" maxOccurs="1"/>
          <xs:element name="importance" type="xs:boolean" minOccurs="0" maxOccurs="1"/>
          <xs:element name="location" type="xs:string" minOccurs="0" maxOccurs="1"/>
          <xs:element name="composerid" type="xs:string" minOccurs="0" maxOccurs="1"/>
          <xs:element name="picture" type="xs:string" minOccurs="0" maxOccurs="1">
              <xs:complexType>
                  <xs:attribute name="url" type="xs:anyURI" use="required"/>
                  <xs:anyAttribute namespace="##other" processContents="lax"/>
              </xs:complexType>
          </xs:element>
          <xs:element name="note" type="xs:string" minOccurs="0" maxOccurs="1"/>
          <xs:any minOccurs="0" maxOccurs="unbounded" processContents="lax"/>
```

```
        </xs:sequence>
    </xs:complexType>
</xs:schema>
```

Annex A   Document Management

A.1   Document History

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
1.0	26.02.2017	New PRD based on issues found in documents used by RCC.71 Approved in GSG and PSMC	GSG/PSMC	Tom Van Pelt / GSMA
1.1	02.06.2017	Update including new items in sections 2 and 3: ID_RCC.71_1.0_5 to ID_RCC.71_1.0_11 and ID_RCC.07_7.0_4	GSG	Tom Van Pelt / GSMA

A.2   Other Information

Type	Description
Document Owner	Global Specification Group
Editor / Company	Tom Van Pelt / GSMA

It is our intention to provide a quality product for your use. If you find any errors or omissions, please contact us with your comments. You may notify us at prd@gsma.com

Your comments or suggestions & questions are always welcome.