Rich Communication Suite

Endorsement of 3GPP TS 26.114 MMTel Media Handling

Release 2

Document Version 1.0

31st August 2009

This is a non-binding permanent reference document of the GSM Association.

Security Classification: This document contains non-confidential GSMA information

Table of Contents

1 INTRODUCTION

1.1 Summary

The following are the major functions endorsed as of 26.114 that RCS R2 broadband clients are expected to support regarding media handling within a single MMTel-session communication:

- Voice only
- AMR-WB is optional. AMR-NB is mandatory.
- RTP profile by AVP is mandatory. RTP profile AVPF is not applicable to RCS R2.
- RTCP
- DTMF

Endorsement statements made throughout this document is based on the above summary.

1.2 Overview

This document describes which sections of the 3GPP MMtel Media and Interaction specification (see [3GPPMMTelMedia]) are supported by RCS R2 Broadband Access devices.

For general overview of RCS R2 including high-level requirements regarding broadband client (packet-only access hence without circuit) based voice, please see document RCS Functional Description [FUNCDESC].

For details on how this fits technically in RCS R2, please see document RCS Technical Realization [TECHREAL].

For easier reference this document follows the same structure as [3GPPMMTelMedia]. For this reason the headings of the sections are citations of the headings used in [3GPPMMTelMedia], the sections themselves describe what part the equivalent section in [3GPPMMTelMedia] is supported by RCS R2. For sections that are not applicable in their entirety, this is mentioned at the top level of the section and the subsections are not mentioned explicitly anymore. For sections in which no difference with [3GPPMMTelMedia] is introduced however, also the subsections are mentioned to state it clearly that they are applicable as well.

1.3 Scope

This document provides the details of the PS voice user-plane technology used in RCS voice related services e.g. Video Share, for RCS R2 Broadband Access devices such as a PC.
The present document specifies the endorsement of 26.114 with regard to media handling for MMTel-voice required by RCS R2 broadband access clients.
.

1.4 Definition of Terms

Term	Description
RCS	Rich Communication Suite

1.5 Document Cross-References

Document	Name
[IR.74]	Video Share Interoperability Specification 1.3
[FUNCDESC]	RCS R2 Functional Description (TBD)
[TECHREAL]	Rich Communication Suite: RCS R2 Technical Realization (Stage 2/3) (TBD)
[3GPPMMTelMedia]	3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; IP Multimedia Subsystem (IMS); Multimedia Telephony; Media handling and interaction (Release 8) 3GPP TS 26.114 Version 8.2.1
[Provisioning]	RCS R2 Management objects

2 REFERENCES

See chapter 1.4

3 DEFINITIONS AND ABBREVIATIONS

The same definition and abbreviations used in chapter 3 of [3GPPMMTelMedia]) are valid for RCS R2. Additional abbreviations and terms specific for this document can be found in chapter 1.3.

4 SYSTEM DESCRIPTION

No difference with [3GPPMMTelMedia]

4.1 System

No difference with [3GPPMMTelMedia]

4.2 Client

A difference with [3GPPMMTelMedia] is that video and text media handling is not applicable to RCS R2.

4.3 MRFP and MGW

A difference with [3GPPMMTelMedia] is that inter-working with 3G-324M services is not applicable to RCS R2.

5 MEDIA CODECS

5.1 Media components

A difference with [3GPPMMTelMedia] is that video and text media handling is not applicable to RCS R2.

5.2 Codecs for MTSI clients in terminals

5.2.1 Speech

A difference with [3GPPMMTelMedia] is that wideband speech communication is optional in RCS R2.
Note: Even though nor RCS nor 3GPP mandate it, clients are of course free to implement other codecs (e.g. G.711) as well.
Note2: To allow transcoder-free interworking with CS voice services, an RCS client shall follow the recommended practice in [3GPPMMTelMedia] and use Config-NB-Code=1 for AMR-NB and Config-WB-Code=0 for AMR-WB unless negotiated otherwise.

5.2.2 Video

Not applicable for RCS R2.

5.2.3 Real-time text

Not applicable for RCS R2.

6 MEDIA CONFIGURATION

6.1 General

A difference with [3GPPMMTelMedia] is that SDPCapNeg is not applicable to RCS R2.

6.2 Session set-up procedures

6.2.1 General

A difference with [3GPPMMTelMedia] is that AVPF offers and SDPCapNeg are not applicable to RCS R2.

6.2.1a RTP profile negotiation

6.2.1a.1 General

Not applicable for RCS R2.

6.2.1a.2 Using SDPCapNeg in SDP offer

Not applicable for RCS R2.

6.2.1a.3 Answering to an SDP offer using SDPCapNeg

Not applicable for RCS R2.

6.2.2 Speech

6.2.2.1 General

A difference with [3GPPMMTelMedia] is that AVPF offers are not applicable to RCS R2.

6.2.2.2 Generating SDP offers for AMR-NB and AMR-WB

A difference with [3GPPMMTelMedia] is that AMR-WB is optional in RCS R2.

6.2.2.3 Generating the SDP answer

A difference with [3GPPMMTelMedia] is that AMR-WB is optional in RCS R2.

6.2.3 Video

Not applicable for RCS R2.

6.2.4 Text

Not applicable for RCS R2.

6.2.5 Bandwidth negotiation

No difference with [3GPPMMTelMedia]

6.2.6 The Synchronization Info attribute "3gpp_sync_info"

Not applicable for RCS R2.

6.2.7 Negotiated QoS parameters

A difference with [3GPPMMTelMedia] is that QoS aspects of this chapter, is applicable to voice only for RCS R2.

6.2.8 Session control procedures

Not applicable for RCS R2.

7 DATA TRANSPORT

7.1 General

No difference with [3GPPMMTelMedia]

7.2 RTP profiles

A difference with [3GPPMMTelMedia] is that real-time text, video and AVPF aspects, are not applicable for RCS R2.

7.3 RTCP usage

7.3.1 General

No difference with [3GPPMMTelMedia]

7.3.2 Speech

A difference with [3GPPMMTelMedia] is that AVPF is not supported.

7.3.3 Video

Not applicable for RCS R2.

7.3.4 Real-time text

Not applicable for RCS R2.

7.3.5 Non-compound RTCP

Not applicable for RCS R2.

7.4 RTP payload formats for MTSI clients

7.4.1 General

No difference with [3GPPMMTelMedia]

7.4.2 Speech

A difference with [3GPPMMTelMedia] is that AMR-WB is optional in RCS R2
A further difference with [3GPPMMTelMedia] is that RCS R2 clients will include only one speech frame per packet in all cases.

7.4.3 Video

Not applicable for RCS R2.

7.4.4 Real-time text

Not applicable for RCS R2.

7.5 Media Flow

7.5.1 General

No difference with [3GPPMMTelMedia]

7.5.2 Media specific

7.5.2.1 Speech

7.5.2.1.1 General

No difference with [3GPPMMTelMedia]
Note: As recommended in [3GPPMMTelMedia] RCS R2 clients shall include only one speech frame per packet in all cases.

Note2: To allow transcoder-free interworking with CS voice services, an RCS client shall follow the recommended practice in [3GPPMMTelMedia] and use Config-NB-Code=1 for AMR-NB and Config-WB-Code=0 for AMR-WB unless negotiated otherwise.

7.5.2.1.2 Default operation

A difference with [3GPPMMTelMedia] is that AMR-WB is optional in RCS R2.

7.5.2.1.3 HSPA

No difference with [3GPPMMTelMedia] - if HSPA is supported by the RCS R2 device, that is.

7.5.2.1.4 EGPRS

Not applicable for RCS R2.

7.5.2.1.5 GIP

No difference with [3GPPMMTelMedia]

7.5.2.1.6 Initial codec mode

No difference with [3GPPMMTelMedia].

7.5.2.2 Video

Not applicable for RCS R2.

7.5.2.3 Text

Not applicable for RCS R2.

7.5.3 Media synchronization

7.5.3.1 General

Not applicable for RCS R2.
Note: RCS R2 point-to-point speech excludes need for multiple media synchronization.

7.5.3.2 Text

Not applicable for RCS R2.

8 JITTER BUFFER MANAGEMENT IN MTSI CLIENTS IN TERMINALS

8.1 General

No difference with [3GPPMMTelMedia].

8.2 Speech

8.2.1 Terminology

No difference with [3GPPMMTelMedia].

8.2.2 Functional requirements for jitter-buffer management

No difference with [3GPPMMTelMedia].

8.2.3 Minimum performance requirements for jitter-buffer management

8.2.3.1 General

No difference with [3GPPMMTelMedia].

8.2.3.2 Objective performance requirements

8.2.3.2.1 General

No difference with [3GPPMMTelMedia].

8.2.3.2.2 Jitter induced concealment operations
No difference with [3GPPMMTelMedia].

8.2.3.3 Delay and error profiles
No difference with [3GPPMMTelMedia].

8.2.3.4 Speech material for JBM minimum performance evaluation
A difference with [3GPPMMTelMedia] is that AMR-WB is not applicable for RCS R2.

8.3 Video

Not applicable for RCS R2.

8.4 Text

Not applicable for RCS R2.

9 PACKET-LOSS HANDLING

9.1 General

No difference with [3GPPMMTelMedia].

9.2 Speech

9.2.1 General

A difference with [3GPPMMTelMedia] is that wide-band speech communication is optional in RCS R2.
A further difference with [3GPPMMTelMedia] is that RCS R2 clients will send only one speech frame per packet.
A final difference is that an RCS R2 client shall not transmit redundant frames and need not be prepared to receive them.

9.2.2 Transmitting redundant frames

Not applicable for RCS R2.

9.2.3 Receiving redundant frames

Not applicable for RCS R2.

9.3 Video

Not applicable for RCS R2.

9.4 Text

Not applicable for RCS R2

10 ADAPTATION

10.1 General

No difference with [3GPPMMTelMedia].

10.2 Speech

10.2.1 RTCP-APP with codec control requests

No difference with [3GPPMMTelMedia].

10.2.2 Example use cases

No difference with [3GPPMMTelMedia].

10.3 Video

Not applicable for RCS R2.

10.4 Text

Not applicable for RCS R2.

11 FRONT-END HANDLING

11.1 General

Not applicable for RCS R2.

12 INTER-WORKING

12.1 General

No difference with [3GPPMMTelMedia].

12.2 3G-324M

Not applicable for RCS R2.

12.2.1 General

12.2.2 Codec usage

Not applicable for RCS R2.

12.2.2.1 General

Not applicable for RCS R2.

12.2.2.2 text

Not applicable for RCS R2.

12.2.3 Payload format

Not applicable for RCS R2.

12.2.4 MTSI media gateway trans-packetization

12.2.4.1 General

Not applicable for RCS R2.

12.2.4.2 Speech de-jitter buffer

Not applicable for RCS R2.

12.2.4.3 Video bitrate equalization

Not applicable for RCS R2.

12.2.4.4 Data loss detection

Not applicable for RCS R2.

12.2.4.5 Data integrity indication

Not applicable for RCS R2.

12.2.4.6 Packet size considerations

Not applicable for RCS R2.

12.2.4.7 Setting RTP timestamps

Not applicable for RCS R2.

12.2.4.8 Protocol termination

Not applicable for RCS R2.

12.2.4.9 Media synchronization

Not applicable for RCS R2

12.2.5 Session control

Not applicable for RCS R2

12.3 GERAN/UTRAN CS inter-working

No difference with [3GPPMMTelMedia].

12.3.0 3G-324M

Not applicable for RCS R2.

12.3.1 Codecs for MTSI media gateways

12.3.1.1 Speech

A difference from [3GPPMMTelMedia] is that gateway handling of wide-band speech communication is optional in RCS R2.

12.3.2 RTP payload formats for MTSI media gateways

12.3.2.1 Speech

No difference with [3GPPMMTelMedia].

12.4 PSTN

12.4.1 3G-324M

Not applicable for RCS R2.

12.4.2 Text

Not applicable for RCS R2.

12.5 GIP inter-working

12.5.1 Text

Not applicable for RCS R2.

12.5.2 Speech

Not applicable for RCS R2.

12.6 TISPAN/NGN inter-working

12.6.1 Text

Not applicable for RCS R2.

12.6.2 Speech

Not applicable for RCS R2.

12.7 Inter-working with other IMS and non-IMS IP networks

12.7.1 General

Not applicable for RCS R2.

12.7.2 Speech

12.7.2.1 General

Not applicable for RCS R2

12.7.2.2 Speech codecs and formats

Not applicable for RCS R2

12.7.2.3 Codec preference order for session negotiation
Not applicable for RCS R2

12.7.2.4 RTP profiles
Not applicable for RCS R2

12.7.2.5 RTP payload formats
Not applicable for RCS R2
12.7.2.6 Packetization
Not applicable for RCS R2
12.7.2.7 RTCP usage and adaptation
Not applicable for RCS R2
12.7.2.8 RTP usage
Not applicable for RCS R2
12.7.2.9 Session setup and session modification
Not applicable for RCS R2

13 VOID

13a.1 General

Not applicable for RCS R2.

13a.2 Difference relative to 3GPP TS 26.141

Not applicable for RCS R2.

13a.2.1 Video

Not applicable for RCS R2.

14 SUPPLEMENTARY SERVICES

14.1 General

Not applicable for RCS R2.

14.2 Media formats and transport

Not applicable for RCS R2.

14.2.1 Media handling in hold procedures

Not applicable for RCS R2.

15 NETWORK PREFERENCE MANAGEMENT OBJECT

See [Provisioning]

16 QUALITY OF EXPERIENCE

16.1.1 General

Not applicable for RCS R2.

16.2 Metrics Definition

Not applicable for RCS R2.

16.2.1 Corruption duration metric

Not applicable for RCS R2.

16.2.2 Successive loss of RTP packets

Not applicable for RCS R2.

16.2.3 Frame rate

Not applicable for RCS R2.

16.2.4 Jitter duration

Not applicable for RCS R2.

16.2.5 Sync loss duration

Not applicable for RCS R2.

16.2.6 Round-trip time

Not applicable for RCS R2.

16.2.7 Average codec bitrate

Not applicable for RCS R2.

16.2.8 Codec information

Not applicable for RCS R2.

16.3 Metric Configuration

Not applicable for RCS R2.

16.3.1 QoE metrics reporting management object

Not applicable for RCS R2.

16.3.2 QoE metric reporting configuration

Not applicable for RCS R2.

16.3.3 QoE reporting rule definition

Not applicable for RCS R2.

16.4 Metrics Reporting

Not applicable for RCS R2.

16.4.1 XML schema for QoE report message

Not applicable for RCS R2.

16.4.2 Example XML for QoE report message

Not applicable for RCS R2.

ANNEX A-F

A difference with [3GPPMMTelMedia] is that text, video, AVPF are not applicable for RCS R2. AMR-WB is optional in RCS R2.

ANNEX G DTMF EVENTS

G.1 GENERAL

No difference with [3GPPMMTelMedia].

G.2 ENCODING OF DTMF SIGNALS

No difference with [3GPPMMTelMedia].

G.3 SESSION SETUP

No difference with [3GPPMMTelMedia].

G.4 DATA TRANSPORT

No difference with [3GPPMMTelMedia].

DOCUMENT MANAGEMENT

Document History

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
0.1	6 April 09	First version using the GSMA Template. Document 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; IP Multimedia Subsystem (IMS); Multimedia Telephony; Media handling and interaction (Release 8), 26.114 Version 8.2.1, was used as a basis	RCS Programme	Mats Stille/ Ericsson
0.2	23rd April 09	Adding a summary chapter 1.1 Clarifying that RSC R2 endorses voice only, does not use AVPF and AMR-WB is optional CR 2009-TR0002 changes to version 0.2: Mandating code mode set Config-NB-Code=1 for AMR-NB and Config-WB-Code=0 for AMR-WB (WB is optional).		
0.3	1 June 09	Limiting the number of non-redundant speech frames per RTP packet to one (1). Making Redundant speech frames not applicable. Chapters modified are 5.2.1, 7.4.2, 7.5.2.1.1, 9.2.1, 9.2.2, 9.2.3		

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
0.4	22 June 09	No Comments received during consistency review Consistency Review R2 Review report : SPEC DOC RCS SPEC R2_007 https://infocentre.gsm.org/cgi-bin/docindex.cgi?33477 Page 2 Added, needed for DAG approval		Dirk Raeymaekers/ NSN
0.5	25 June 09	Accept changes front pages & grammar/spelling check	RCS Programme	Dirk Raeymaekers /NSN
1.0	31 Aug 09	Approved by DAG & EMC and version updated to 1.0	DAG & EMC	Dirk Raeymaekers /NSN

Other Information

Type	Description
Document Owner	Rich Communication Suite Programme
Editor / Company	Mats Stille/ Ericsson