



MSF H248 Media Server Profile

MSF-IA-MEGACO.015-FINAL

MultiService Forum Implementation Agreement

Contribution Number: msf2008.013.05
Document Filename: MSF-IA-MEGACO.015-FINAL
Working Group: Protocol and Control
Title: MSF H248 Media Server Profile

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Date: July 30, 2008

Abstract:

The MultiService Forum (MSF) is responsible for developing Implementation Agreements or Architectural Frameworks which can be used by developers and network operators to ensure interoperability between components from different vendors. MSF Implementation Agreements are formally ratified via a Straw Ballot and then a Principal Member Ballot.

Draft MSF Implementation Agreements or Architectural Framework may be published before formal ratification via Straw or Principal Member Ballot. In order for this to take place, the MSF Technical Committee must formally agree that a draft Implementation Agreement or Architectural Framework should be progressed through the balloting process. A Draft MSF Implementation Agreement or Architectural Framework is given a document number in the same manner as an Implementation Agreement.

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The use of capitalization of the key words "MUST", "SHALL", "REQUIRED", "MUST NOT", "SHOULD NOT", "SHOULD", "RECOMMENDED", "NOT RECOMMENDED", "MAY" or "OPTIONAL" is as described in section V-B of the MSF Technical Committee Operating Procedures.

The goal of the MSF is to promote multi-vendor interoperability as part of a drive to accelerate the deployment of next generation networks. To this end the MSF looks to adopt pragmatic solutions in order to maximize the chances for early deployment in real world networks.

To date the MSF has defined a number of detailed Implementation Agreements and detailed Test Plans for the signaling protocols between network components and is developing additional Implementation Agreements and Test Plans addressing some of the other technical issues such as QoS and Security to assist vendors and operators in deploying interoperable solutions.

The MSF welcomes feedback and comment and would encourage interested parties to get involved in this work program. Information about the MSF and membership options can be found on the MSF website <http://www.msforum.org/>

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I. The MultiService Forum

The MultiService Forum (MSF) is a global association of service providers, system suppliers and other organizations committed to developing and promoting open-architecture, multiservice communication systems. Founded in 1998, the MSF is an open-membership organization comprised of the world's leading telecommunications companies.

The MSF's activities include developing implementation agreements, promoting worldwide compatibility and interoperability, and encouraging input to appropriate national and international standards bodies.

As part of MSF's effort to drive and promote interoperability, the MSF has created a number of programs geared toward accelerating real world network deployments:

1. Global MSF Interoperability (GMI) events. GMI events provide a real-world setting for vendors to test their solutions and provide evidence that vendor products meet the interoperability standards set forth by MSF Implementation Agreements. Each MSF GMI event is built around a set of capabilities defined for a given release of the MSF Architecture.
2. Next Generation Network (NGN) Test Bed. The NGN test bed provides a facility to enable carriers and vendors to perform in-depth testing of a specific interface as defined in a given release of the MSF architecture.
3. Certification Programs. For more mature technologies the MSF can provide Certification of compliance to a given Implementation Agreement where MSF members believe that it is of value to the industry to do so.

II. An introduction to MSF documentation and GMI 2008

This document is part of the MSF Release 4 set of architectural, protocol and test documentation.

The MSF Release 4 Architecture is a physical implementation of the functional architectures that have been proposed by the key Standards Development Organizations. As such the MSF Release 4 Architecture represents the current state of the industry and it identifies current open interfaces between physically separate network elements.

MSF Implementation Agreements define the protocols to be used over specific open interfaces. Where possible MSF Implementation Agreements are based on industry standard protocols augmented with additional information so as to ensure interoperability between communicating network elements. This level of interoperability is achieved by closing any gaps and tightening any optional capabilities in those industry standards to remove the danger of mutually incompatible selections by vendors. An MSF Implementation Agreement is targeted at a given release of the MSF architecture but can

be used in any circumstance where an operator wishes to deploy the open interface and its functionality within their own network.

The MSF Release 4 architecture and its associated implementation agreements are used as the basis for GMI 2008. GMI 2008 is a global test event executed to demonstrate multi-vendor, multi-service interoperability based around IMS and includes IPTV and web based services.

As part of GMI 2008 a number of detailed test scenarios have been developed and a number of test plans defined. Test plans contain the set of test cases required to demonstrate a given MSF Release 4 capability and serve to exercise and validate the set of Implementation Agreements required to realize the capability.

Following the completion of GMI 2008 the MSF Release 4 architecture and individual implementation agreements will be updated if the testing identifies any deficiencies in the documents.

For more information about the scope of GMI2008 please go to <http://www.msforum.org>

III. Impact on previously published MSF documents

This specification is new for MSF release 4 and GMI 2008. It replaces the following earlier MSF documents :-

- MSF-SIP-IA.011-FINAL
- MSF-SIP-IA.015-FINAL

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1. Scope

This Implementation Agreement covers the H248 based profile for a Media Server within the MSFR4 architecture in preparation for the GMI2008 event. This IA is an endorsement of 3GPP TS 29.333 (Multimedia Resource Function Controller (MRFC) – Multimedia Resource Function Processor (MRFP) Mp Interface – Stage 3). The specification TS 29.333 v7.2.0 is part of 3GPP R7.

This IA corresponds to the MSF APP3 interface in the MSF R4 Architecture (see [27]) and is applicable to the following MSFR4 entities:-

- Call Agent,
- MRB,
- MS (Media Server).

It is assumed that the MSF CA/MRB is functionally equivalent (in 3GPP terms) to a MRFC and the MS is equivalent to a MRFP.

2. MSF Endorsement Notice

The present document endorses TS 29.333 (V7.2.0): " Multimedia Resource Function Controller (MRFC) – Multimedia Resource Function Processor (MRFP) Mp Interface – Stage 3".

Where implementation detail is not provided within this IA, the implementation specification as described in TS 29.333 shall take precedence over that in other specifications.

Except where otherwise indicated, each section that follows has the same number as the section of TS 29.333 which it modifies. Unmodified sections are omitted.

The following notation is used to identify the differing types of changes or modifications used compared to the specification in TS 29.333.

- <AP> - indicates a provision which adds precision, but no new normative content.
- <NEW> - indicates new normative content. <NEW> in a section header indicates that the section heading is new relative to ES 283 027 v2.4.0.
- <CHG> - indicates changed normative content.

Note: The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", "OPTIONAL", "CONDITIONAL" and "IF" in this document are to be interpreted as described in the Technical Committee Operating Procedures.

MSF Release 4 **Endorsement of 3GPP TS 29.333 (v7.2.0)**

Modifications to 3GPP TS 29.333 Release 7

1 Scope

<CHG> Replace the current text with the following.

The present document is an MSF endorsement of 3GPP TS 29.333 (v7.2.0) - "Multimedia Resource Function Controller (MRFC) – Multimedia Resource Function Processor (MRFP) Mp interface: Stage 3" and defines a profile of the Gateway Control Protocol (H.248.1), for controlling Multimedia Resource Function Processor supporting in-band user interaction, conferencing and transcoding for multimedia-services.

The present document is valid for a MSFR4 network. The MSFR4 architecture is described in [2], the functional requirements are described in 3G TS 23.333 [25]

<AP> This document relates to the APP3 interface in [2].

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

- [1] 3GPP TS 23.228: "IP Multimedia Subsystem (IMS); Stage 2".
- [2] <CHG> Replace this reference as shown below:-
3GPP TS 23.002: "Network architecture".
MSF-ARCH-004.00-FINAL - MSF Release 4 Architecture
- [3] ITU-T Recommendation H.248.1 (05/2002), Gateway control protocol: Version 2 + Corrigendum 1 (03/2004).
- [4] ITU-T Recommendation H.248.4 (11/2000), Gateway control protocol: Transport over Stream Control Transmission Protocol (SCTP) + Corrigendum 1 (03/2004).
- [5] ITU-T Recommendation H.248.7 (03/2004), Gateway control protocol: Generic announcement package.
- [6] ITU-T Recommendation H.248.9 (03/2002), Gateway control protocol: Advanced media server package.
- [7] ITU-T Recommendation H.248.11 (11/2002), Gateway control protocol: Media gateway overload control package.
- [8] IETF RFC 2960: "Stream Control Transmission Protocol".
- [9] ITU-T Recommendation H.248.14 (03/2002), Gateway control protocol: Inactivity timer package.

- [10] ITU-T Recommendation H.248.16 (11/2002), Gateway control protocol: Enhanced digit collection packages and procedures + Corrigendum 1 (03/2004).
- [11] ITU-T Recommendation H.248.19 (03/2004) Gateway control protocol: Decomposed Multipoint Control Unit, Audio, Video and Data Conferencing package
- [12] ITU-T Recommendation H.248.27 (07/2003), Gateway control protocol: Supplemental Tones package
- [13] ITU-T Recommendation Q.1950 (12/2002), Bearer independent call bearer control protocol.
- [14] ITU-T Recommendation G.711 (11/1988), Pulse code modulation (PCM) of voice frequencies.
- [15] ITU-T Recommendation G.711 Appendix I (09/1999), A high quality low-complexity algorithm for packet loss concealment with G.711.
- [16] ITU-T Recommendation G.711 Appendix I (09/1999), A comfort noise payload definition for ITU-T G.711 use in packet-based multimedia communication systems.
- [17] ITU-T Recommendation E.180 (03/1998), Technical characteristics of tones for the telephone service.
- [18] ~~TS 183-022: Telecommunication and Internet converged Services and Protocols for Advanced Networking (TISPAN); MGC Information Package.~~
~~ITU-T Recommendation H.248.45 (05/2006): "MGC Information Package".~~
- [19] ES 201 970 Access and Terminals (AT); Public Switched Telephone Networks (PSTN); Harmonized specification of physical and electrical characteristics at a 2-wire analogue presented Network Termination Point (NTP).
- [20] IETF RFC 2327 (1998), SDP: Session Description Protocol.
- [21] IETF RFC 3551(2003), RTP Profile for Audio and Video Conferences with Minimal Control.
- [22] IETF RFC 2833 (2000), RTP Payload for DTMF Digits, Telephony Tones and Telephony Signals.
- [23] IETF RFC 4040 (2005), RTP payload format for a 64 kbit/s transparent call.
- [24] IETF RFC 3555 (2003), MIME Type Registration of RTP Payload Formats.
- [25] 3GPP TS 23.333: "Multimedia Resource Function Controller (MRFC) – Multimedia Resource Function Processor (MRFP) Mp interface: Procedures Descriptions."
- [26] ITU-T Recommendation H.248.9a1 (03/2007), "Gateway control protocol: Advanced media server package (draft work in progress)".
- [27] 3GPP TS 29.163: "Interworking between the IM CN subsystem and CS networks – Stage 3".
- [28] W3C Recommendation (September 2004): "Speech Synthesis Markup Language (SSML) Version 1.0".
- [29] W3C Recommendation (September 2004): "Speech Recognition Grammar Specification (SRGS) Version 1.0".
- [30] ITU-T Recommendation H.248.36 (09/2005): "Hanging Termination Detection Package".
- <NEW>
- [31] 3GPP TS 29.333: "Multimedia Resource Function Controller (MRFC) – Multimedia Resource Function Processor (MRFP) Mp interface: Stage 3."

3 Definitions & Symbols

3.1 Definitions

<AP> Replace the text in [31] with the following:-

For the purposes of the present document, the [following] terms and definitions [given in ... and the following] apply.

Media Gateway: See Recommendation H.248.1 [3].

Media Gateway Controller: See Recommendation H.248.1 [3].

MultiMedia Resource Function Controller: See MSF-ARCH-004.00-FINAL - MSF Release 4 Architecture [2].

MultiMedia Resource Function Processor: MSF-ARCH-004.00-FINAL - MSF Release 4 Architecture [2].

3.2 Symbols

No change

5.1 Profile Identification

No change

5.3 Gateway Control Protocol Version

<CHG> Modify the text as follows:

Version 2 shall be the minimum version supported. Support of this version implies conformance to ITU-T Recommendation H.248 Version 2 [3] and Corrigendum 1, and reference to implementation of the corrections available in the latest version of the H.248 Implementors' Guide.

5.7.4 Signals Descriptor

Add the following three lines to Table 5.7.4.1

	Signal ID	Termination Type	Stream Type/ID
	aassm/*	IP	Audio/Video
	an/*	IP	Audio/Video

<CHG> Replace Table 5.7.4.5 as below:

<AP> The change to this table is due to an error in [31] which omits cg/*

Table 5.7.4.5: Notify completion

Notify completion supported:	Yes	
<i>If yes</i>	Signal ID	Type of completion supported
	cg/*, svrtn/*, xcg/*, an/*, int/*, biztn/*, confn/*, tonegen/*, bcg/*, aasb/*	ALL

5.9 Generic Command Syntax and Encoding

<CHG> Replace table 5.9.1 as follows:

Table 5.9.1: Encoding

Supported Encodings:	<u>Binary encoding is mandatory in this profile and text encoding is optional. If text encoding is supported, then both the long and short form of text encoding shall be supported at the receiving side.</u>
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5.12 Transport

<CHG> Replace table 5.12.1 as follows:

Table 5.12.1: Transport

Supported Transports:	Transport over SCTP shall be supported and shall conform to Recommendation H.248.4 [4] (NOTES 1 & 2). UDP may also optionally be supported.
NOTE1: the MRFP shall always be the node to perform the "Initiation".	
NOTE2: H.248 is "SCTP user" in this case of H.248/SCTP/IP based transport according ITU-T Rec. H.248.4. The number of used SCTP Streams for traffic of the H.248 Control Association must be defined, see § 8/H.248.4. A single SCTP Stream is the default assumption ("Single-Stream Mode") in this Profile.	

Annex ZA (Normative) – MRFP Functional Requirements

Support of the packages identified in the profile definition implies support of the underlying functionality. This annex identifies additional functional requirements that media resource function processors conforming to the present document shall comply with:

- Media Resource Function Processors (MRFP) shall support IPv4 and may support IPv6.
- Media Resource Function Processors (MRFP) shall support G.711 A-law and Mu-Law voice codecs and may support other codecs. Media Resource Function Processors supporting transcoding are expected to support a wide range of well-known codecs. The list of codecs is outside the scope of the present document.
- Media Resource Function Processors (MRFP) shall support the procedures defined in RFC 2833 to generate, detect and forward DTMF digits. DTMF shall be identified by name (see mode "Named Telephone Events" in clause 3 of RFC 2833), as opposed to their waveform properties.
- All properties of tones requested by the MRFC shall be provisioned in the MRFP. The MRFC is not required to send the physical characteristics of tones to Media Resource Function Processors (MRFP).

History

Document history		
V0.0	January 2008	Initial version.
V0.1	January 2008	Minor typo corrected. Input to MSF San Franscisco meeting. This version was sent to straw ballot in the San Francisco meeting.
V0.2	March 2008	Changes made due to comments received in straw ballot comment resolution – see msf2008.087.00.
V0.3	March 2008	Additional change made to References – see msf2008.087.01.
V0.4	April 2008	Changes applied during comment resolution in Shanghai meeting.
V0.5	July 2008	Boiler plate text from msf2008.200 added.