
System Requirement Specification Document

Media Server

Version 1.0

Document Information**Document Sign Off**

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Document Information

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Document Purpose

The information provided in this document explains both functional and non functional requirements for Media Server's API. It clearly identifies the requirements and contains detail information about it. For complete scope of Media Server please see the [Project Proposal](#).

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1. References & Abbreviations

References

Following is the 3GPP reference document list, which is related to the information present in this document:

- [1] IETF RFC 5022: “Media Server Control Markup Language (MSCML) and Protocol”.
- [2] 3GPP RFC 3261: “SIP : Session Initiation Protocol”.
- [3] IETF RFC 3470: “Guidelines for the Use of Extensible Markup Language (XML) within IETF Protocols”.
- [4] IETF RFC 4353: “A Framework for Conferencing with SIP”.
- [5] IETF RFC 4240: “Basic Network Media Services with SIP”.

Abbreviations

Following are the abbreviations that have been used in the document:

API	Application Program Interface.
MS	Media Server
MRFC	Media Resource Function Controller.
MRFP	Media Resource Function Processor.
Description	Detailed requirement description.
Group Name	Functional Requirement Grouping representing the Media Server API.
ID	ID is for internal requirement reference.
Name	Requirement Title

2. Project Overview

Media Server is most significant component in IMS architecture. Media Server is responsible of handling and delivery media services to end user. It provides all media related functions i.e. media manipulations, and playing of tones and announcements. Media Server is further decomposed into two separate elements i.e. MRFC and MRFP.

MRFC is responsible of controlling all session related measurements, it establishes multi party sessions, and deals with all kinds of announcement services and transcoding services. MRFP on the other hand, ensures RTP related activities i.e. number of incoming/outgoing of RTP Packets, number of octets of incoming/outgoing of RTP packets etc. It further controls all routing information interrogations from CSF and AS. MRFP is responsible of mixing/processing of all media streams and ensures that data is transferred in a correct format.

3. Functional Requirements

Following illustrates Media Server’s functional requirements.

3.1 General

Requirement: 1 – Transcoding Media for Recording.

ID	MS – 00062.
Group Name	General.
Name	Transcoding Media for Recording.
Description	MG should support recording in specified codec and file-format: PCMU PCMA GSM.

Requirement: 2 - Audio file support.

ID	MS – 00066.
Group Name	General.
Name	Audio file support.
Description	MG should support ulaw, alaw, gsm and pcm(raw) files.

Requirement: 3 – Call Movement.

ID	MS – 00056.
Group Name	General.
Name	Call Movement.
Description	The media server MUST support call movement between services through sending the media server a BYE on the existing dialog and establishing a new dialog with an INVITE to the desired service.

Requirement: 4 – Conferencing Support.

ID	MS – 00053.
Group Name	General.
Name	Conferencing Support.
Description	MG should support provide support for conferencing applications according to conferencing model described in RFC 4353.

Requirement: 5 – DTMF Grammar.

ID	MS – 00037.
Group Name	General.
Name	DTMF Grammar.
Description	MG should support specifying of DTMF grammar in the following formats: regular expression.

Requirement: 6 – http:// and https://.

ID	MS – 00041.
Group Name	General.
Name	http:// and https://.
Description	MG should support media retrieval and storage using http:// and https:// URI syntax.

Requirement: 7 – Media Mismatch Handling.

ID	MS – 00044.
Group Name	General.
Name	Media Mismatch Handling
Description	If there is a mismatch between the real time media and specified content, the media server MUST play or record the appropriate content, track the issue rather than failing the request.

Requirement: 8– MSCML and SDP Payload Support.

ID	MS – 00055.
Group Name	General.
Name	MSCML and SDP Payload Support.
Description	MG MUST support message bodies with the MIME type "multipart/mixed" in SIP INVITE requests.

Requirement: 9 – Timer Resolution.

ID	MS – 00057.
Group Name	General.
Name	Timer Resolution.
Description	MG should support timers in milliseconds.

Requirement: 10 – Transcoding Support.

ID	MS – 00054.
Group Name	General.
Name	Transcoding Support.
Description	MG should provide transcoding support.

Requirement: 11 – Access Control List.

ID	MS – 00149.
Group Name	General.
Name	Access Control List.
Description	Clients connecting from IP address and port that are given in an ACL will be allowed to use the resources of MG

3.2 MSCML**Requirement: 1 - Support for <audio> tag.**

ID	MS – 00027.
Group Name	MSCML.
Name	Support for <audio> tag.
Description	MG should support the <audio> tag and its following attributes: url encoding.

Requirement: 2 - Support for <error_info> tag.

ID	MS – 00028.
Group Name	MSCML; State Machine.
Name	Support for <error_info> tag.
Description	MG should support tag and its following attributes: code text context.

Requirement: 3 – Support for <play> tag.

ID	MS – 00029.
Group Name	MSCML.
Name	<play> tag
Description	MG should support tag and its following attributes: id Its should also support corresponding attributes in tag: reason playduration playoffset.

Requirement: 4- Support for <playcollect> tag.

ID	MS - 00030
Group Name	MSCML; State Machine.
Name	<playcollect> tag.
Description	MG should support tag and its attribute and its corresponding attributes in tag.

Requirement: 5– Support for <playrecord> tag.

ID	MS – 00031.
Group Name	MSCML; State Machine.
Name	<playrecord> tag
Description	MG should support tag and its following attributes : barge cleardigits escapekey recurl recencoding mode duration beep initsilence endsilence recstopmask It will also support following attributes in tag: reason playduration playoffset digits error_info reclength recduration

Requirement: 6- Support for <prompt> tag .

ID	MS – 00086.
Group Name	MSCML.
Name	<prompt> tag.
Description	MG should support tag and its following attributes : baseurl delay duration offset repeat stoponerror.

Requirement: 7 – Support for <response> tag.

ID	MS – 00032.
Group Name	MSCML; State Machine.
Name	Support for <response> tag.
Description	MG should support <response> tag and its following attributes : id request code text.

Requirement: 8 – Support for <stop> tag.

ID	MS – 00033.
Group Name	MSCML; State Machine.
Name	Support for <stop> tag.
Description	MG should support <stop> tag and its following attributes: id.

Requirement: 9 – Collection Timer.

ID	MS – 00034.
Group Name	MSCML; State Machine.
Name	Collection Timer.
Description	MG should support the following attributes for collection timers firstdigittimer interdigittimer extradigittimer interdigitcriticaltimer.

Requirement: 10 – Control of Digit Buffering & Barge- In.

ID	MS – 00036.
Group Name	MSCML; State Machine.
Name	Control of Digit Buffering and Barge-In.
Description	MG should support the following attributes to control digit buffering and barge-in: cleardigits barge.

Requirement: 11 – file:// URI support.

ID	MS – 00040.
Group Name	MSCML.
Name	file:// URI support.
Description	MG should support media retrieval and storage using file:// URI syntax.

Requirement: 12– http:// and https://.

ID	MS – 00041.
Group Name	MSCML.
Name	http:// and https://.
Description	MG should support media retrieval and storage using http:// and https:// URI syntax.

Requirement: 13 - Logging Caller DTMF Input.

ID	MS – 00042.
Group Name	MSCML.
Name	Logging Caller DTMF Input.
Description	MG should support the following attributes for logging of DTMF input maskdigits.

Requirement: 14 – Mapping DTMF Keys to Special Functions.

ID	MS – 00043.
Group Name	MSCML.
Name	Mapping DTMF Keys to Special Functions.
Description	MG should support the following tags to support mapping of DTMF keys to special functions: escapekey. returnkey.

Requirement: 15 – Media Server Control Markup Language (MSCML) .

ID	MS – 00045.
Group Name	MSCML.
Name	Media Server Control Markup Language (MSCML).
Description	MG should support the following MSCML tags with all their attributes as defined in RFC-5022: <play> <playcollect> <playrecord> <stop> <prompt> <audio>.

Requirement: 16 - VCR Control.

ID	MS – 00051.
Group Name	MSCML.
Name	VCR Control.
Description	MG should support the following attributes to support VCR Control skipinterval ffkey rwkey.

3.3 SIP**Requirement: 1 – MSCL Support in OPTION request.**

ID	MS – 00046.
Group Name	SIP
Name	MSCL Support in OPTION request.
Description	The media server MUST also advertise its support of MSCML in responses to OPTIONS requests by including "application/mediaservercontrol+xml" as a supported content type in an Accept header.

Requirement: 2 – Multiple content types.

ID	MS – 00065.
Group Name	SIP.
Name	Multiple content types.
Description	SIP in MG should be able to multiple content types.

Requirement: 3 – SIP UA with INFO.

ID	MS – 00049.
Group Name	SIP.
Name	SIP UA with INFO.
Description	MG should have SIP user agent functionality to transport MSCML message through INFO method. UA will be compliant with RFC 3261. UA should show MSCML support.

4. Non-Functional Requirements

Following illustrates non- functional Media Server’s requirements.

4.1 General**Requirement: 1 – Supported Operating System.**

ID	MS – 00052.
Group Name	General.
Name	Supported Operating System.
Description	MG should support Fedora Core 8 and Windows XP Professional.

Requirement: 2 - Addition of new functionality.

ID	MS – 00039.
Group Name	General.
Name	Addition of new functionality.
Description	Design should allow new functionality to be added without effecting already implemented functionality.

Requirement: 3 – Error Handling.

ID	MS – 00038.
Group Name	General.
Name	Error handling.
Description	MG should be able to handle errors gracefully appropriate error response.

Requirement: 4 – Simultaneous Request Handling.

ID	MS – 00048.
Group Name	General.
Name	Simultaneous request handling.
Description	MG should be able to handle 120 multiple simultaneous media channels.

4.2 MSCML**Requirement: 1 – RFC 3470.**

ID	MS – 00047.
Group Name	MSCML.
Name	RFC 3470.
Description	MSCML bodies MUST be well formed and valid as defined in RFC 3470.

Out of Scope Requirements

Requirement: 1 – Support for <faxrecord> tag.

ID	MS – 00063.
Group Name	MSCML; State Machine.
Name	Support for <faxrecord> tag.
Description	MG should not support <faxrecord> and its corresponding sub-elements.

Requirement: 2 - Support for <managecontent> tag.

ID	MS – 00064.
Group Name	MSCML; State Machine.
Name	Support for <managecontent> tag.
Description	MG should not support <managecontent> and its corresponding sub-elements.

Requirement: 3 – Video Support.

ID	MS – 00061.
Group Name	General.
Name	Video Support.
Description	Media Server does not handle video.