

Second edition
2017-08-15

AMENDMENT 1
2017-09

**Information technology — High
efficiency coding and media delivery
in heterogeneous environments —**

**Part 1:
MPEG media transport (MMT)**

**AMENDMENT 1: Use of MMT Data in
MPEG-H 3D Audio**

*Technologies de l'information — Codage à haute efficacité et livraison
des médias dans des environnements hétérogènes —*
Partie 1: Transport des médias MPEG

AMENDEMENT 1: Usage de données MMT dans MPEG-H 3D Audio



Reference number
ISO/IEC 23008-1:2017/Amd.1:2017(E)

© ISO/IEC 2017

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO/IEC 23008-1:2017/Amd 1:2017](https://standards.iteh.ai/catalog/standards/sist/8949e3e0-da6d-4670-88a9-9d78dab3d941/iso-iec-23008-1-2017-amd-1-2017)
<https://standards.iteh.ai/catalog/standards/sist/8949e3e0-da6d-4670-88a9-9d78dab3d941/iso-iec-23008-1-2017-amd-1-2017>



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO/IEC 23008-1:2017/Amd 1:2017](https://standards.iteh.ai/catalog/standards/sist/8949e3e0-da6d-4670-88a9-9d78dab3d941/iso-iec-23008-1-2017-amd-1-2017)

<https://standards.iteh.ai/catalog/standards/sist/8949e3e0-da6d-4670-88a9-9d78dab3d941/iso-iec-23008-1-2017-amd-1-2017>

Information technology — High efficiency coding and media delivery in heterogeneous environments —

Part 1: MPEG media transport (MMT)

AMENDMENT 1: Use of MMT Data in MPEG-H 3D Audio

9.3.2.1, final paragraph

Add the following sentence at the end of the final paragraph.

If the PA message is acquired, MMT receiving entity can process the package. This PA message can be also delivered over MPEG-H 3D Audio stream as defined in ISO/IEC 23008-3:2016, 14.7. In this case, MMT receiving entity transacts as defined in Annex H of this document.

Page 145

Add a new Annex H.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO/IEC 23008-1:2017/Amd 1:2017
Annex H
(normative)
<https://standards.iteh.ai/catalog/standards/sist/8949e3e0-da6d-4670-88a9-9d78dab3d941/iso-iec-23008-1-2017-amd-1-2017>

Transactions on system data carried over MPEG-H 3D Audio

H.1 General

MMT service provisioning is also possible for MMT-capable devices (MMT receiving entities such as TVs) which are connected to STB. Currently, many people are still watching their TVs which are connected to STB. However, this STB may not be able to support system protocols (e.g. MMT) or IP-based media data reception in many cases and it may be hard to provide enriched services because system data may not reach to TV.

In this environment, TV can utilize various metadata attached to media as a trigger point for more enriched services. Contents providers or service providers who feed content to TV screens through STB are able to pop up new additional contents or advertisements on the TV screen to improve user service satisfaction. This content can be provided through broadband access connected to TV as depicted in Figure H.1, if triggered in some way. For example, additional content such as baseball player statistics or a different view angle of the player can be presented on the TV screen while the user is watching the baseball game through STB on TV.

ISO/IEC 23008-3:2016, 14.7 provides such a tool to initiate the service on a TV connected to STB. Based on it, this annex describes the operation of the MMT system engine on system metadata (SysMetaPayload) carried over MPEG-H 3D Audio MHAS stream. An MMT receiving entity that has an MPEG-H 3D Audio decoder shall have the functionality to transact with system metadata which are extracted and delivered from the MPEG-H 3D Audio decoder.

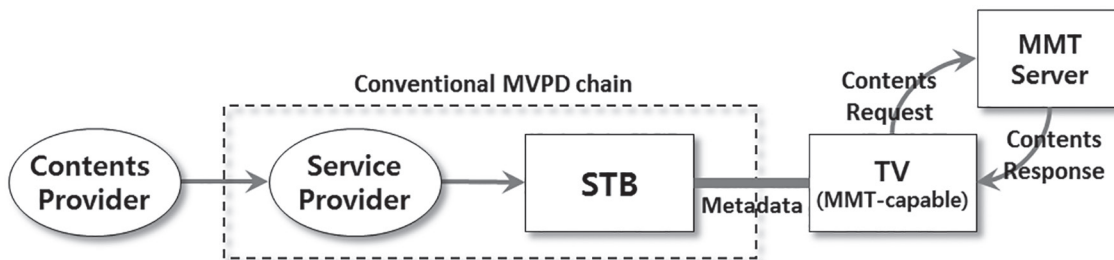


Figure H.1 — MMT service in conventional broadcast environment

H.2 Data type

The system metadata from the decoder shall be a URL to fetch a PA message or a CI document that will initiate the new media delivery from MMT sending entities. The URL length shall be within the range of 256 bytes and shall be UTF-8 encoded. The total bit rate associated with all packets of type **PACTYP_SYSMETA** to provide these information shall not be greater than 1 % of the audio bit rate, averaged over a 5 s time window, as specified in ISO/IEC 23008-3.

H.3 Security considerations

To make sure that only authorized MMT receiving entities are able to access the contents, an MMT sending entity should be able to authorize every individual request. For that purpose, URI Signing which is standardized in IETF URI Signing for CDN Interconnection (CDNI) Internet Draft shall be used.

H.4 MMT receiving entity operation

H.4.1 Data fetching

Figure H.2 shows the basic metadata processor architecture in a TV. The audio metadata processor receives actual metadata from the MPEG-H 3D Audio decoder and it is parsed at the metadata parser for operation.

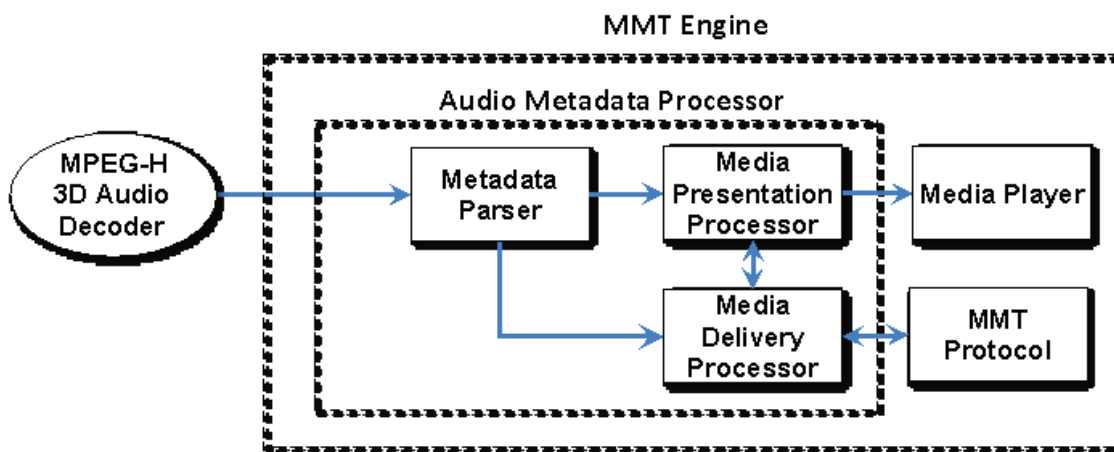


Figure H.2 — Architecture of metadata processor and its interface in a TV

The metadata described in sysData shall be a valid URL media source location to fetch media; the media delivery processor will query using the URL to acquire a PA signaling message as a root or CI document to initiate the MMT service. When the PA message is received, the MMT engine will parse it and extract all the subsequent signaling messages and assets based on it. When the MPEG CI document is received, it is delivered to the CI processing engine which is responsible for fetching the HTML5 file (and any other referenced files) and processing the CI information to control the presentation accordingly. The HTML5 file is typically parsed into a Document Object Model (DOM) tree and stored in memory. The CI

processing engine applies changes to the DOM at specified time according to the information contained in the CI file. The DOM nodes/elements are referenced using their identifiers or possibly using a certain pattern (e.g. provided through jQuery selectors).

The system data is encapsulated in an MHAS Packet as part of an MHAS audio data stream as defined in ISO/IEC 23008-3. If the sysType, t35Code, UUID or shortUuid fields are not understood, the Audio decoder should discard the packet. For example, to represent the MMT-formatted system metadata, UUID value can be "22523956-a253-11e6-80f5-76304dec7eb7".

H.4.2 Presentation

The receiving entity should extract the presentation information from the received signaling messages. When a CI document is received, it shall render the media (e.g. Assets) as described in the CI document, as described in ISO/IEC 23008-11:2015.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO/IEC 23008-1:2017/Amd 1:2017](https://standards.iteh.ai/catalog/standards/sist/8949e3e0-da6d-4670-88a9-9d78dab3d941/iso-iec-23008-1-2017-amd-1-2017)

<https://standards.iteh.ai/catalog/standards/sist/8949e3e0-da6d-4670-88a9-9d78dab3d941/iso-iec-23008-1-2017-amd-1-2017>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO/IEC 23008-1:2017/Amd 1:2017](https://standards.iteh.ai/catalog/standards/sist/8949e3e0-da6d-4670-88a9-9d78dab3d941/iso-iec-23008-1-2017-amd-1-2017)
<https://standards.iteh.ai/catalog/standards/sist/8949e3e0-da6d-4670-88a9-9d78dab3d941/iso-iec-23008-1-2017-amd-1-2017>