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Information technology — Multimedia application format (MPEG-A) — Part XX: Messaging Media Application Format (MeMAF)

WD stage

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# Foreword

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The committee responsible for this document is ISO/IEC JTC1 SC29.

Information technology — Multimedia application format (MPEG-A) — Part XX: Messaging Media Application Format (MeMAF)

# Scope

The scope of this part of the standard is the definition of a Media Application Format that primarily can be used for Messaging Services. Hence, it is referred to as Messaging Media Application Format (MeMAF). The main target of the messaging format are:

* The packaging of media assets into a single container file for transactional exchanges (upload, download, storage, etc.)
* The instructions on how the media assets are to be processed for a desired experience, providing an entry point as well as a processing of the media assets
* Permit playback on a wide variety of end devices, preferably on existing ones.
* Allow generation and recording of the messages on constrained devices (mobile devices, etc.), but also allow generation of professionally produced messages.

To support basic interoperability, a baseline profile is defined which minimizes options. Beyond the baseline profile, additional profiles are defined that enable richer experiences.

MeMAF is a profile of ISO BMFF and does not define any new functions or boxes. MeMAF define specific profiles based on the ISO Base Media File Format (ISOBMFF), each defining a conformance point that provides interoperability between MeMAF conformant devices (MeMAF players) and MeMAF presentations/messages that support that profile.

MeMAF supports different entry points that enable composition and rendering of different messaging experiences. Among others, the following experiences are defined:

* An A/V multimedia message that includes video, audio and possibly text to be presented jointly in a synchronized manner.
* A message for which an image is the primary entry point
* A message that enables 3D and immersive experiences

# Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 14496‑1, Information technology — Coding of audio-visual objects — Part 1: Systems

ISO/IEC 14496‑12, Information technology — Coding of audio-visual objects — Part 12: ISO base media file format

ISO/IEC 14496‑14, Information technology — Coding of audio-visual objects — Part 14: MP4 file format

ISO/IEC 14496‑15, Information technology — Coding of audio-visual objects — Part 15: Carriage of network abstraction layer (NAL) unit structured video in the ISO base media file format

ISO/IEC 14496‑30, Information technology — Coding of audio-visual objects — Part 30: Timed text and other visual overlays in ISO base media file format

ISO/IEC 23001‑7, Information technology — MPEG systems technologies — Part 7: Common encryption in ISO base media file format files

ISO/IEC 23000‑19, Information technology — Multimedia application format (MPEG-A) — Part 19: Common Media Media Application Format (CMAF) for segmented media

IETF RFC 5234, Augmented BNF for Syntax Specifications: ABNF, https://tools.ietf.org/html/rfc5234

IETF RFC 6381, The ‘Codecs’ and ‘Profiles’ Parameters for “Bucket” Media Types, https://tools.ietf.org/html/rfc6381

# Terms, definitions, symbols, abbreviated terms and conventions

## Definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at <http://www.electropedia.org/>

— ISO Online browsing platform: available at <http://www.iso.org/obp>

To be done

## Abbreviated terms

|  |  |
| --- | --- |
| ABNF | augmented backus-naur form |
| URI | uniform resource identifier |
| URL | uniform resource locator |
| URN | uniform resource name |
| USAC | unified speech and audio coding |
| UTC | coordinated universal time |
| UUID | universally unique identifier |
| VOD | video-on-demand |
| VCL | video coding layer |
| VPS | video parameter set |
| VUI | video usability information |
| VVC | versatile video coding | |
| XML | eXtensible Mark-up Language |

## Conventions

# Overview of Messaging Media Application Format

## System Description

General Architecture

## Data Model

Entry Points

## Client Model

## Defined Brands and Profiles

# Common Track Constraints

## General Track Constraints

## Video Track Constraints

## Audio Track Constraints

## Text/Subtitles Track Constraints

# Common Item Constraints

# Encryption and Security

# Profiles

## Baseline Profile

## Image Profile

## Immersive Profile

# Media Profiles

1. (informative)  
     
   Hypothetical Playback Model for a MeMAF Player