**A black and white logo

Description automatically generated** **ISO/IEC JTC 1/SC 29/WG 03 N1660**

**ISO/IEC JTC 1/SC 29/WG 03**

**MPEG Systems   
Convenorship: KATS (Korea, Republic of)**

**Document type:** Output Document

**Title: Technologies under consideration on MIAF**

**Status:** Approved

**Date of document:** 2025-10-11

**Source:** ISO/IEC JTC 1/SC 29/WG 03

**Expected action:** ACT

**Action due date:**

**No. of pages:** 5 (with cover page)

**Email of Convenor:** young.L@samsung.com

**Committee URL:** <https://isotc.iso.org/livelink/livelink/open/jtc1sc29wg3>

**INTERNATIONAL ORGANIZATION FOR STANDARDIZATION**

**ORGANISATION INTERNATIONALE DE NORMALISATION**

**ISO/IEC JTC 1/SC 29/WG 03 MPEG SYSTEMS**

**ISO/IEC JTC 1/SC 29/WG 03 N1660**

**Geneva – October 2025**

|  |  |
| --- | --- |
| **Title** | **Technologies under consideration on MIAF** |
| **Source** | **WG 03, MPEG Systems** |
| **Status** | **Approved** |
| **Serial Number** | **25634** |

# Introduction

This document captures the technologies under consideration for future amendments of the Multi-Image Application Format (MIAF), ISO/IEC 23000-22 specification.

The current technologies under consideration include:

* Tone mapping in allowed derivation chain.

# Include tone mapping in allowed derivation chain

# 2.1 Abstract

Propose some changes to ISO/IEC 23000-22 (MIAF) [1] so that the Tone-Mapping

derived image item as introduced in ISO/IEC 23008-12 3rd edition DAM 1 [2] and mentioned in ISO/IEC 23000-22 CDAM 1 [3] is allowed in MIAF image item derivation chains.

# 2.2 Proposal

The modified parts are highlighted in yellow.

Change subclause 7.3.11.1 General to read:

A MIAF file may include any derived image defined in ISO/IEC 23008-12 with the constraints defined here.

A MIAF player shall process all derived images of the types identified in this subclause.

The maximum derivation chain is shown in the following list; the Identity, Grid, Overlay, and Tone-map derivations are optional. All derivation chains shall originate from one or more coded images. An identity derivation shall not be derived immediately from another identity derivation. If derivations occur, they shall be in this order:

— mandatory coded image(s)

— optional identity derivation (subclause 7.3.11.2)

— optional grid (subclause 7.3.11.4)

— optional identity derivation (subclause 7.3.11.2)

— optional overlay (subclause 7.3.11.3)

— optional identity derivation (subclause 7.3.11.2)

— optional tone map (subclause 7.3.11.5)

— optional identity derivation (subclause 7.3.11.2)

.

# References

1. ISO/IEC 23000-22,"Information technology — Multimedia application format (MPEG-A) — Part 22: Multi-image application format (MIAF)"
2. ISO/IEC 23008-12:2025 AMD 1:2025, "Information technology — High efficiency coding and media delivery in heterogeneous environments – Part 12: Image File Format - Amendment 1: Support for tone map derived image items and other improvements”
3. ISO/IEC 23000-22 CDAM 1, "Implementation based technologies for MIAF" https://www.mpeg.org/wpcontent/uploads/mpeg\_meetings/148\_Kemer/w24413

# Codec switch constraints

# 2.1 Abstract

Propose to add an explicit constraint prohibiting codec switches within sequence tracks in MIAF.

# 2.2 Introduction

The ISO Base Media File Format permits multiple sample entries within a track (stsd), and does not by itself forbid codec switching. Derived specifications often introduce stricter constraints. CMAF, for instance, requires that all sample entries in a track use the same codingname (four-character code). HEIF, in turn, defines “the sample entry of type 'hvc1' ...” for image sequence tracks coded with HEVC, implicitly assuming only a single sample entry, but without explicitly prohibiting codec switches. This lack of clarity may cause interoperability issues.

# 2.3 Proposal

It is proposed that MIAF explicitly prohibit codec switching within sequence tracks, in alignment with CMAF’s constraint.

**Constraint**: For sequence tracks in MIAF, all sample entries in the stsd box shall have the same codingname (four-character code). Consequently, all samples in a sequence track shall conform to a single codec type. Multiple sample entries may be present, provided they all have the same codingname (e.g., to allow different codec configurations within a track).

This aligns with CMAF constraints and clarifies the assumption made in HEIF regarding “the sample entry” for image sequence tracks.