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AMENDMENT 1
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Information technology — Multimedia application format (MPEG-A) —

Part 4: Musical slide show application format

AMENDMENT 1: Conformance and reference software for musical slide show application format

Technologies de l'information — Format pour application multimédia (MPEG-A) —

Partie 4: Format pour application de présentation musicale de diapositives

AMENDEMENT 1: Logiciel de conformité et de référence pour format pour application de présentation musicale de diapositives

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Amendment 1 to ISO/IEC 23000-4:2009 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

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Information technology — Multimedia application format (MPEG-A) —

Part 4:
Musical slide show application format

AMENDMENT 1: Conformance and reference software for musical slide show application format

After Clause 10, add the following two new clauses:

11 Conformance

11.1 Introduction

The following section defines the conformance points for the file format and device.

11.2 File conformance points

11.2.1 File structure

11.2.1.1 General

Conformant files shall be readable by the MSS application format reference software player. The general file-level structure of the files shall conform to the normative file structure defined in 5.3.

11.2.1.2 List of files

Sample files	Mode types	Description
mss_basic.mp4	Basic	A conformant file shall contain one audio track with track-level metadata box containing MPEG-7 metadata, and one slide show track with track-level metadata box containing MPEG-7 metadata.
mss_enhanced.mp4	Enhanced	A conformant file shall contain one audio track with track-level metadata box containing MPEG-7 metadata, one slide show track with track-level metadata box containing MPEG-7 metadata, and one movie-level metadata box containing LASeR scene description for animation.

11.2.2 Animation

The LASeR scene description shall conform to LASeR specification as defined in 6.3.

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11.2.3 Timed text

The timed text sample structure shall conform to 3GPP TS 26.245 timed text specification.

11.2.4 Metadata

Metadata shall conform to MPEG-7 MDS specification as defined in 6.5.

11.2 Player conformance points

Conformant players shall be able to read and decode files that satisfy the file conformance points defined in 7.2.

12 Reference software

12.1 Introduction

This clause provides a technical description on the structure, functionalities, and dependencies of the reference software.

12.2 Software architecture and components

The basic aim for the reference software is to provide an application that enables the user to create and play a simple Musical slide show file. AMD1.1 shows the architecture model for the reference software. The application mainly uses three different core modules (SVGApiLib, MPEG4ip, and FMOD) for creation and playback. All modules are accessed through interface classes (except for the SVG dll).

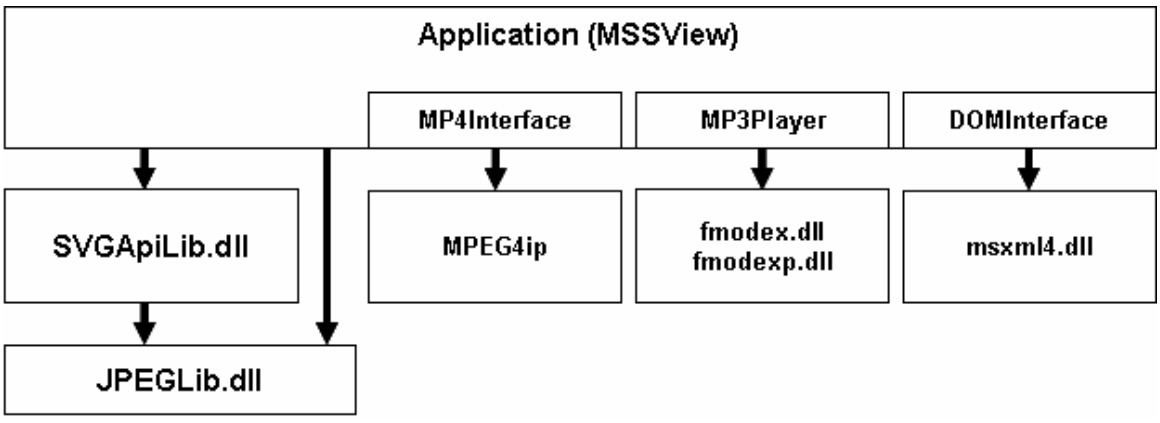


Figure AMD1.1 — Software architecture model

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Table AMD1.1 provides descriptions of the components and their functionalities.

Table AMD1.1 — Functional components

Component	Functionality
MP4 file creator and parser	The MP4 file creator and parser module is based on MPEG4ip open source codes. This module is responsible for packaging multimedia resources required by the Musical slide show application format into an *.mp4 file. The module can be accessed through the MP4Interface class.
MP3 player	The MP3 player module is implemented using the FMOD audio engine. Users are able to play MP3 files, as well as MP3 data bytes in memory. The engine is accessed through the MP3Player class.
LASeR scene description creator and parser	The LASeR module is based on a combination of engines. For creation, the scene description is simply scripted using MSXML (accessed through the DOMInterface class). For playback (i.e. slide show presentation with animation effect), the LASeR XML (text) data is first converted to SVG XML from the application level to be used as an input to the SVG engine (SVGApiLib.dll).

12.3 External dependencies

The description for the external libraries used in building the reference software is provided in Table AMD1.2.

Table AMD1.2 — External libraries

External library	Description
MPEG4IP	MPEG4IP is an open source library that provides standards-oriented tools for developing multimedia software applications (e.g. MP4 file creator). The library is downloadable from http://mpeg4ip.sourceforge.net.
FMOD	FMOD provides an audio engine used for decoding MP3 audio. The software tool is downloadable from http://www.fmod.org.
MSXML	MSXML is a software development kit (SDK) used for building XML-based applications. The SDK is downloadable from http://www.microsoft.com.

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