# INCITS: Technical Committee L3 on Moving Picture Experts Group Multimedia Service Platform Technologies (MPEG-M) Standard

## Background

Through the use of standards and conformity assessment initiatives, multimedia services can support new business opportunities, such as internet protocol television (IPTV) and over-the-top content (OTT). International Organization for Standardization/International Electrotechnical Commission Joint Technical Committee 1/Subcommittee 29/ Working Group 11, *Coding of Moving Pictures and Audio*, (ISO/IEC JTC 1/SC 29/WG 11), known as the Moving Picture Experts Group (MPEG), has developed a large portfolio of standards in multimedia coding, transport, and systems that can be assembled to provide multimedia services including text, audio, still images, animation, video, and interactive content forms.

## Problem

New end-user experiences and business opportunities – such as IPTV and OTT services – are moving quickly. Standards are needed to ensure effective and efficient design, implementation, and interoperability in delivering and exchanging innovative multimedia web services in different scales.

## Approach

MPEG seeks to continue its approach of providing standards for the next generation of products, services, and applications. To that end MPEG has developed ISO/IEC 23006, *Information Technology - Multimedia Service Platform Technologies (MPEG-M)*, a standard for advanced IPTV services.

Launched as a collaborative effort in 2008 with the International Telecommunication Union's (ITU) IPTV initiative, MPEG-M is based on a flexible architecture capable of accommodating and extending in an interoperable fashion many features that are being deployed on the web for multimedia IPTV content like that available on Hulu, Netflix, or Apple TV. MPEG-M also utilizes standard MPEG technologies such as high efficiency video coding and dynamic adaptive streaming over hypertext transfer protocol (HTTP).

MPEG-M envisaged a thriving digital media economy where:

- Developers can offer MPEG-M service components to the professional market, enabled by the standard MPEG-M component service application programming interfaces (API);
- Manufacturers can offer MPEG-M devices to the global consumer market because of the global reach of MPEG-M services;
- Service providers can set up and launch innovative MPEG-M services value chains; and,
- Users can seamlessly create, offer, search, access, pay for, and consume MPEG-M

services.

**Outcome**

In the first edition of ISO/IEC 23006, MPEG-M is referred to as MPEG Extensible Middleware (MXM) and specifies an architecture, an API, a reference software, and a set of protocols which MXM devices must adhere to. In the second edition, MPEG-M is referred to as Multimedia Service Platform Technologies (MSPT) and conserves the architecture and design philosophy of the first edition while stressing the service-oriented architecture, and also specifies how to combine elementary services into aggregated services. The second edition also addresses the demand of service specification for an advanced IPTV terminal (AIT).

The MPEG-M suite of standards extends device capabilities with advanced service features such as content generation, processing, and distribution by a large number of users. It facilitates the creation of new services by offering à la carte service components as well as global, seamless, and transparent use of services regardless of geo-location, service provider, network provider, device manufacturer, or payment provider. The standard offers a diversity of user experience through the easy download and installation of applications produced by a global community of developers because all applications share the same middleware APIs. MPEG-M fosters innovative business models through the ease of design and implementation of media-handling value chains whose devices interoperate because they are based on the same set of MPEG technologies.

Looking ahead, MPEG-M aims to leverage advanced technologies so that IPTV services continue to be dynamic, offering a buoyancy of exciting new initiatives and features such as open APIs and the possibility for third parties to provide applications to those APIs.