

**Telecommunications and Information Exchange Between Systems**

**ISO/IEC JTC 1/SC 6**

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**INTERNATIONAL ORGANISATION FOR STANDARDISATION  
ORGANISATION INTERNATIONALE DE NORMALISATION**

**ISO/IEC JTC1/SC29/WG11**

**CODING OF MOVING PICTURES AND AUDIO**

**ISO/IEC JTC1/SC29/WG11**

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**Title:** Draft Modern Media Transport (MMT) Context and Objectives  
**Group:** Requirements

## **1 Background**

MPEG has developed various technologies for multimedia transport, such as MPEG-2 TS and MP4 file format. These technologies have been widely accepted and heavily used by various industries and applications, such as digital broadcasting, audio and video transport over the Internet, mobile phones and etc. On the other hands, the standardization organizations such as IETF, IEEE, and 3GPP have been providing various protocols to deliver multimedia contents packetized or packaged by such MPEG transport technologies. For example, several RTP payload formats have been developed to enable the streaming of media from a server to a client over IP networks.

During the recent years, broadcasting services and mobile services has started converging and it is expected that this trend will continue with other markets. This means that various content and services will be delivered over different networks and the user expects to consume these services on any of those networks, depending the availability and reach of the network at the time of consumption. In order to deploy efficient solutions for the transport of MPEG media in an interoperable and universal fashion, especially given the recent increase demand in the heterogeneous network environment, the urgent need for an international standard that is widely adopted is sensed and therefore, MPEG is about to launch a new work item in this area.

Since beginning of this year, MPEG started to gathering information on the current limitations of available applications and standards in the area of media transport. Furthermore, it started to investigate challenges in emerging network environments. To overcome existing limitations and face the challenges that emerging applications impose on the requirements of standardization, a half-day workshop in London during the 89th WG11 meeting was held. Use cases, problem statements, and initial requirements were discussed (<http://www.chiariglione.org/mpeg/tutorials/seminars/mmt-2009/index.htm>) and as a result, a non-exhaustive initial list of use cases and requirements from related industries and researchers are collected in this document.

Finally, after a careful investigation on the needs and requirements of emerging network environments, MPEG now is about to launch a new standardization work item in this area and invites all interested parties to participate in this effort.

## 2 Objective

The main objectives of this new standard are:

- Efficient delivery of media over packet based networks in adaptive progressive download/streaming fashion over various network such as terrestrial, satellite and cable broadcast networks and IP networks, fitting into traffic management, content distribution, and network management, by using or living with HTTP, TCP, CDNs, proxies and caches, and NATs and firewalls. The key difference between streaming media and progressive download is in how the digital media data is received and stored by the end user device that is accessing the digital media. This converged application can be used in an adaptive way depending on network, storage, and CPU resources.
- Enable content and network adaptive and flexible error protection and recovery, including potential use of a return channel, for various delivery channels.
- Enable the use of cross-layer optimization to improve the Quality of Service/Experience (QoS/QoE). By incorporating QoS-related variables from the video layer, transport layer, and MAC/PHY layers, a set of the optimal choices of the QoS variables can be selected and then are adjusted in the server and in the network entity, such as an access point or a base station.
- Support integrated services with multiple components and/or hybrid delivery environment. The specification will provide ability of seamless and efficient use of heterogeneous network environments including broadcast, multicast, storage media and mobile network.
- Support of conversational services such as video conferencing and other 2 way low delay applications.
- Support efficient signaling, delivery and utilization of multiple content protection and rights management tools.