

**INTERNATIONAL ORGANISATION FOR STANDARDISATION
ORGANISATION INTERNATIONALE DE NORMALISATION
ISO/IEC/JTC 1/SC 29/WG 11
CODING OF MOVING PICTURES AND AUDIO**

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MPEG Plans First MAFs Awareness Event

Marrakech, Morocco – The 79th MPEG meeting was held in Marrakech, Morocco from 15-19 January 2007.

Highlights of 79th Meeting

First Multimedia Application Formats Awareness Event

MPEG will organize on April 28, 2007, at the Doubletree Hotel in San Jose, USA, the 1st Multimedia Application Formats Awareness Event under the theme of 'Connecting Multimedia Applications and Services'. This event will bring to interested parties the recent achievements made by MPEG in the realm on one of its newest standards, MPEG-A, Multimedia Application Formats (MAF). A MAF is a combination of tested and verified tools (possibly taken entirely from within the MPEG standards body), providing an appropriate technical solution for a class of applications. The major objective of a MAF is to facilitate the swift development of innovative, standards-based multimedia applications and services, benefiting many different businesses that are engaged in dealing with digital content by providing enhanced interoperability. The MAFs Awareness Event will include presentations and demos of the most mature MAFs made by those who led their development. For further information, interest parties should contact Wo Chang, NIST, wchang@nist.gov.

Video -- New AVC Profiles for Professional Applications

Jointly with the International Telecommunications Union's (ITU-T) Study Group 16, and in coordination with the Society for Motion Picture and Television Engineers (SMPTE), MPEG and the Joint Video Team (JVT) of MPEG and ITU-T have completed the standardization of five additional profiles and two new types of supplemental enhancement information for the state-of-the-art AVC video coding standard (ISO/IEC 14496-10 | ITU-T H.264). These profiles and supplemental information will serve applications in the professional domain with enhanced compression capabilities for color sampling structures ranging up to 4:4:4 and bit depth dynamic ranges up to 14 bits per sample (in contrast with typical consumer-oriented video applications that use only 4:2:0 color sampling and 8 bits of dynamic range). Four of the new profiles support "intra-

only" applications with demands for extreme low-latency operation, simple editing, and random-access functionality. Applications for the new profiles include studio camcorders, content creation and contribution, professional digital video recording and editing systems, studio production and post production systems, digital cinema / large screen digital imagery systems, and compression for high fidelity display systems.

Audio -- MPEG Surround Verification Test Report

With the approval of the final ballot on MPEG Surround, the Audio subgroup has finalized the work on MPEG Surround by performing an extensive verification test of the new technology. The tests were divided into a DVB oriented test case and a Music store / portable player test case.

The test results show that, at lower transmission bitrates, MPEG Surround offers superior compression efficiency to existing multichannel technology and at higher transmission bitrates offers quality comparable to that of discrete channel systems while inherently providing a high quality, backwards-compatible downmix. Furthermore, MPEG surround offers several binaural decoding modes of excellent quality that enable a high quality surround sound experience over headphones for portable devices. Finally, the enhanced matrix mode of MPEG Surround operates without any side-information and performs significantly better than legacy matrix based systems.

In conclusion, MPEG Surround enables a provider to establish a new service achieving the same quality as a discrete multi-channel coding system, while maintaining stereo backwards compatibility. For upgrading an existing Layer-2 based system the only options previously available were matrix technology or simulcast with a high bitrate penalty. MPEG Surround in combination with Layer-2 offers a vastly superior alternative. Additionally, a music store provider can easily upgrade to surround sound without a high bitrate penalty, and provide content offering surround sound both over speakers and over headphones on a portable player.

Multimedia Middleware – New Application Programming Interface

M3W (ISO/IEC 23004 MPEG-E) is the standardization of an Application Programming Interface (API) for Multimedia Middleware (M3W) allowing application software to execute multimedia functions with a minimum knowledge of the inner workings of the multimedia middleware. Such functionality enhances interoperability and business models for middleware. M3W is suitable for embedded devices and supports extra features like Fault Tolerance, Resource and Terminal management. These enable the structured (run-time) controlling, updating, upgrading and/or extension of multimedia middleware. M3W has a generic infrastructure that is easily tailored and open, with an extendible (both for the functional and non-functional parts) architecture and component model. This new standard is suitable for multiple application domains like Entertainment, (Mobile) Communication, (Broadcast/IP) SetTopBox and Gaming. The view concept is extendible to support different and new (software component) business models.

M3W consists of eight parts. The first four parts (Architecture, Multimedia API, Component Model and Resource and Quality Management) have reached FDIS stage. It is expected that the next three parts (Component Download, Fault Management and Integrity Management) will reach the FDIS stage at the 80th MPEG meeting in April 2007. In addition, reference software, which will be made available to support the developed technologies, will be Part 8 of M3W. This part is currently in the WD stage

Other Recent MPEG Accomplishments

Call for Proposals on Spatial Audio Object Coding

At the 79th meeting WG11 issued a Call for Proposals on Spatial Audio Object Coding. Such technology will support efficient coding of audio scenes and also permit interactive manipulation of encoded sound objects in

those scenes. See 8853, Call for Proposals on Spatial Audio Object Coding at http://www.chiariglione.org/mpeg/working_documents.htm for more information.

Auxiliary Video Data Streams and Supplemental Information

MPEG has finalized the standardization of a new part of the MPEG-C video technology standard (ISO/IEC 23003-3) entitled "Representation of Auxiliary Video Streams and Supplemental Information". This standard can be used to carry additional data maps related to video, such as scene depth data, or other kinds of supplemental data related to a video stream. For encoding of an auxiliary data map stream, an ordinary video coding standard such as MPEG-2 or AVC can be used. The first envisaged usage of this new standard will be simple stereoscopic applications, where a second view can be generated by a depth map. An amendment to the MPEG-2 Systems part, supporting the carriage of the auxiliary data, has been standardized at the same time.

Frame Based Animation of 3D Graphics Objects

MPEG has initiated the standardization of a new compression tool for frame-based animation of 3D graphics objects. In contrast with existing MPEG-4 3D tools that are based on applying deformation controllers, this new tool may be used for representing the result of any type of mesh deformation. In the new scheme, the mesh vertex positions will be encoded for each frame in a manner analogous to the way pixel colors are represented for each frame in video coding formats.

Geometry and Shadow

MPEG has finalized a new amendment of MPEG-4 3D Graphics, entitled Geometry and Shadow. The three new tools standardized in this amendment provide:

- view dependent navigation in large environments (including transmission of progressive data between client and server) addressing applications such as city visualization
- improvement of a tool initially published in 1998 for mesh compression for static 3D objects
- a shadow model for 3D scenes.

Contact MPEG

Digging Deeper Once Again

Communicating the large and sometimes complex array of technology that the MPEG Committee has developed is not a simple task. The experts past and present have contributed a series of white-papers that explain each of these standards individually. The repository is growing each meeting so if something you are interested in is not there yet it may be shortly - but do not hesitate to request it as well. You can start your MPEG adventure at: <http://www.chiariglione.org/mpeg/mpeg-tech.htm>

Further Information

Future MPEG meetings are as follows:

- No. 80, San Jose, CA (US) 23-27 April 2007
- No. 81, Lausanne, Switzerland 2-6 July 2007
- No. 82, Shenzhen, CN 22-26 October 2007

For further information about MPEG, please contact:

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This press release and other MPEG-related information can be found on the MPEG homepage:

<http://www.chiariglione.org/mpeg>

The text and details related to the Call mentioned above (together with other current Calls) are in the Hot News section, http://www.chiariglione.org/mpeg/hot_news.htm. These documents include information on how to respond the Calls.

The MPEG homepage also has links to other MPEG pages, which are maintained by the MPEG subgroups. It also contains links to public documents that are freely available for download by non-MPEG members.

Journalists that wish to receive MPEG Press Releases by email can contact Arianne Hinds as shown above.