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CODING OF MOVING PICTURES AND AUDIO**

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**MPEG Enables Music Representation for Scores of New Applications**

San Jose, California, U.S.A. – The 80<sup>th</sup> MPEG meeting was held in San Jose, U.S.A. from 23-27 April 2007.

**Highlights of the 80<sup>th</sup> Meeting**

**Audio -- Symbolic Music Representation Progresses to FDIS**

Music is a complex piece of information and, although it is usually experienced in its audible form, many notations have been developed over the years and ages to visually represent the information needed by a performer to play the musical work and to produce music as intended by the author. With the spread of computer technology into the artistic fields, new application scenarios for computer-based applications of symbolic music representation have been identified. The MPEG Symbolic Music Representation (SMR) enables the development of a large number of completely new applications for music representation in the domains of entertainment, education, and information delivery. The types of applications that can benefit from SMR include applications for distance learning, rehearsal and musical practice at home, and consumer electronics like set-top boxes for interactive TV, personal computers, and mobile systems.

The MPEG SMR may be used to represent many kinds of symbolic music including different styles of Chant, Renaissance, Classic, Romantic and 20th Century styles, Korean notation, simplified notations for children, Braille, and more.

**MPEG-4 3D Graphics -- 3D Multiresolution Profile**

MPEG has initiated a new amendment of MPEG-4 3D Graphics, entitled “3D Multiresolution Profile”. The MPEG tools selected for this profile allow view dependent

navigation in large 3D graphics environments. By including progressive transmission of compressed data between client and server, the profile addresses applications such as city visualization. Based on efficient data compression algorithms, the profile targets wide coverage of terminals and networks from high-end, dedicated 3D graphics devices to mobile devices.

The MPEG-4 tools selected for the “3D Multiresolution Profile” were published in ISO/IEC 14496-16 Second Edition (2006) and its first amendment. They consist of tools for efficient compression of static meshes, progressive mesh representation based on wavelet decomposition, progressive building representation based on adaptive footprint, as well as animation tools such as interpolator compression, bone-based animation and morphing. This unique collection will allow application developers to set up various scenarios such as terrain navigation in games or city guides. Preliminary implementations of the “3D Multiresolution Profile” were demonstrated at the 80<sup>th</sup> MPEG meeting.

## **MPEG-21 -- Conformance**

As a developer of standards designed to enable the creation of horizontal markets for its technologies, MPEG places a great deal of attention to the means for an implementer or a buyer of a product to test the claimed conformity to a standard such that interoperability between implementations from different sources can be guaranteed. This meeting saw the completion of the MPEG-21 Conformance specification. This document covers all eighteen parts of the standard and tackles conformance of metadata standards in ways that have not previously been considered. The standard contains many conformance files as well as test engines for areas such as Rights Expressions. This allows users to test whether new implementations are conformant and to guarantee interoperability. The Conformance specification is closely linked with the MPEG-21 Reference software, a new edition of which will shortly be made available by MPEG.

## **MPEG-A -- Protected Music Player MAF**

The second edition of the Music Player MAF was finalized at this meeting. This music player format combines MP3, MPEG-4 and MPEG-21 technologies to create a scalable format for the transfer of music and collections of tracks. It is a unique format as it can be used either with no protection or with various levels of protection ranging from simple encryption to the more complex DRM solutions. As such, it makes a perfect solution for managed music content which may or may not be protected. The format provides for metadata and images to be attached to the music tracks, creating a rich media experience. This is demonstrated by the accompanying reference software which is being made available by MPEG at <http://standards.iso.org/ittf/PubliclyAvailableStandards/>.

## **Other Accomplishments of the 80<sup>th</sup> Meeting**

### **Spatial Audio Object Coding**

At the 80<sup>th</sup> MPEG meeting, WG11 has produced the Final Spatial Audio Object Coding Evaluation Procedures and Criterion. This document will guide the evaluation of responses to the Call for Proposals on Spatial Audio Object Coding (SAOC). The Call was issued at the 79<sup>th</sup> meeting, and responses are due at the 81<sup>st</sup> meeting in Lausanne, CH.

### **MPEG-E Multimedia Middleware – M3W Components Finalization**

MPEG promoted the remaining three parts (Part 5: Component Download, Part 6: Fault Management and Part 7: System Integrity Management) of M3W (ISO/IEC 23004, MPEG-E (Multimedia Middleware)) to the final stage at the 80<sup>th</sup> meeting. The first four parts (Part 1: Architecture, Part 2: Multimedia API, Part 3: Component Model and Part 4: Resource and Quality Management) had already reached this stage at the previous MPEG meeting in January 2007. All seven parts of M3W are therefore now completed. M3W constitutes a major industry reference for the now pervasive domain of multimedia applications.

### **Musical Slide Show**

MPEG finalized the Musical Slide Show MAF standard at the 80<sup>th</sup> meeting, which was released as ISO/IEC 23000-4 Musical Slide Show Application Format. The Musical Slide Show MAF is MPEG's newest Multimedia Application Format, which will provide users with the ability to organize and combine JPEG photos with their favorite MP3 music to create various slide show presentations. Depending on the application, users can add animation effects to image transitions, which allow richer, smoother, and more exciting slide shows overall. The Musical Slide Show MAF uses the MPEG-4 file format, and it is intended to be played across various mobile devices, e.g. mobile phones, digital cameras, portable multimedia players, etc.

With the Musical Slide Show MAF, users can:

- Create personal slide shows using their favorite photos and MP3 music.
- Consume musical contents (resembling “music videos,” but much lighter in file size) authored and distributed by professionals.
- Study foreign language with standard test (such as TOEFL) samples created with a MAF file.

Other application scenarios include story-telling and Karaoke applications.

## **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 with each meeting, so if something you are interested is not there yet, it may appear there 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 planned as follows:

No. 81, Lausanne, CH 2-6 July 2007

No. 82, Shenzhen, CN 22-26 October 2007

No. 83, Antalya, TR 14-18 January 2008

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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](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 using the contact information provided above.