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MPEG Global Conference points the way to Ultra HD online services

London meeting sees significant improvement in compression for High Performance Video Coding

London, United Kingdom – The 89th MPEG meeting was held in London, United Kingdom from the 29th of June to the 3rd of July 2009.

Highlights of the 89th Meeting

Responses for Evidence Evaluated for HVC

During its 89th meeting, MPEG evaluated responses that were received on the Call for Evidence on High-Performance Video Coding (HVC), issued to obtain evidence of video coding technology providing compression capability clearly higher than that provided by the existing AVC standard (ITU-T H.264 | ISO/IEC 14496-10). Significant gains in compression were found when an assessment was made based on information brought by the contributors. A subjective comparison was performed in a blind test with a set of video test sequences encoded by the AVC High Profile at matching rate points. Gains were demonstrated for test cases ranging from resolutions as low as 412x240 pixels (Wide QVGA) up to resolutions for ultra-high definition. MPEG has therefore concluded that the development of the next generation of video compression technology is to be started with the issuing of a formal Call for Proposals by the next meeting.

AVC Extended with New Profiles for Baseline and MVC Technologies

At the 89th meeting, the AVC standard (ITU-T H.264 | ISO/IEC 14496-10) was further extended with the issuing of a Final Draft Amendment (FDAM) ballot containing the specification of two new profiles and new supplemental enhancement information. The first of the new profiles is the Constrained Baseline Profile, which forms the maximally-interoperable set of coding tools from the most widely deployed of existing profiles (the Baseline and High Profiles). The second new profile is a special case of multiview video coding (MVC) called the Stereo High Profile. The Stereo High profile enables all of the coding tools of the High Profile along with inter-view prediction capability for two-view (stereo) video applications such as 3D entertainment video.

Additionally, a new supplemental enhancement information (SEI) message has been defined for AVC. This new message – called the frame packing arrangement SEI message – enables the encoder to indicate to the decoder how to extract two distinct views of a video scene from a single decoded frame. The message also serves as a way to support stereo-view video in applications that require full compatibility with prior decoder designs that are not capable of supporting the new Stereo High Profile.

MPEG Promotes Technologies to link Real and Virtual Worlds

At its 88th meeting, MPEG had published a new call for proposals (N10526) with updated requirements (N10235) for an extension of the Media Context and Control project.

The technical contributions related to haptic and tactile devices, emotions, and virtual goods received at its 89th meeting have enabled MPEG to build a complete framework for defining haptic properties on top of virtual objects and to control haptic devices. This is now part of ISO/IEC 23005 or MPEG-V, a standard (formerly called *Information Exchange with Virtual Worlds*) providing a global framework and associated data representations to enable the interoperability between different virtual worlds (e.g. a digital content provider of a virtual world, a game with the exchange of real currency, or a simulator) and between virtual worlds and the real world (sensors, actuators, robotics, travel, real estate, or other physical systems).

MPEG Progresses Media Context and Control Project

MPEG has also advanced to the Committee Draft stage four parts of MPEG-V. The first part describes the architecture of the standard. The second part, “Control Information”, provides metadata representation of device capabilities and user preferences to be used for the information exchange between a controlling device and the real actuator or sensors. The third part, “Sensory Information”, provides metadata to represent sensory effects such as temperature, wind, vibration, fog, and more. The fourth part, “Avatar Characteristics”, provides metadata to commonly represent information about Avatars for the exchange of virtual characters between virtual worlds.

MPEG Hosts MXM Developer’s Day

The first MXM Developer’s Day workshop has been hosted by MPEG during its 89th meeting. The workshop featured demonstrations by companies and organisations that are developing MXM standards and applications. MXM, currently at its Final Committee Draft stage, provides specifications of APIs and an open source implementation (released under the BSD licence) to access various MPEG standards for easy deployment of applications. In this workshop detailed information about the APIs currently under standardization has been provided and several interesting demonstrations with the potential to create new business opportunities have also been presented. More information about this workshop can be found at <http://mxm.wg11.sc29.org>.

Rich Media User Interface Moves toward Completion

At its 89th meeting, MPEG has also advanced MPEG Rich Media UI (ISO/IEC 23007 or MPEG-U), to the Committee Draft stage. MPEG-U standardizes widget packaging, delivery, representation and communication formats. In its current draft, MPEG-U adopts and extends the W3C widget representation to provide a complete framework that can be used also in a non-Web based environment without a browser. Additionally, this standard enables communication among widgets on the same device or different devices, and other applications to better support connected environments.

Visual Signatures Enable New Applications

MPEG's Visual Signatures define the world's first standardized tools for content-based identification of any visual content even in very large databases, e.g. on the web. These tools enable a range of new applications including semantic linking, library management, metadata association (e.g. title, photographer, director, etc.) and content usage tracking. In the same way that a fingerprint or signature identifies a person, a Visual Signature is a compact descriptor uniquely representing either an image or video. The descriptor is derived directly from analysis of the visual content and is robust to heavy compression and editing.

The Image Signature and Video Signature are two separate amendments to MPEG-7. Collectively the two amendments are referred to as the MPEG-7 Visual Signatures. At the London meeting, the Video Signature advanced to the Proposed Draft Amendment (PDAM) stage with a target completion date of July 2010. The Image Signature was published as an ISO/IEC standard in April 2009.

Mobile Services to Be Enhanced by New BIFS Profile

At this meeting, MPEG advanced the new Binary Format for Scenes (BIFS) profile to the Committee Draft stage by incorporating additional nodes and technologies submitted as responses to the Call for Proposals for new BIFS technologies. The requirements for this profile (provided in N10567) originated from organizations of various industries and SDOs for digital radio and mobile television broadcasting. This profile will enable the development of more efficient and enhanced interactive services for mobile broadcasting services including digital radio or mobile television on small handheld devices. Moreover, it is backward compatible with Core2D@Level1 which is widely adopted by the industry.

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 in is not there yet, it may appear there shortly – but you should also not hesitate to request it. You can start your MPEG adventure at: <http://www.chiariglione.org/mpeg/mpeg-tech.htm>

Ends

Further Information

Future MPEG meetings are planned as follows:

No. 90, Xian, CN, 26-30 October, 2009

No. 91, Kyoto, JP, 18-22 January, 2010

For further information about MPEG, please contact:

Dr. Leonardo Chiariglione (Convener of MPEG, Italy)

Via Borgionera, 103

10040 Villar Dora (TO), Italy

Tel: +39 011 935 04 61

Email: <mailto:leonardo@chiariglione.org>

or

Dr. Arianne T. Hinds

Ricoh | IBM InfoPrint Solutions Company

6300 Diagonal Highway, MS 04N

Boulder, CO 80301, USA

Tel +1 720 663 3565

Email: arianne.hinds@infoprint.com

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 Calls 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 to 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 those who are not MPEG members. Journalists that wish to receive MPEG Press Releases by email should contact Dr. Arianne T. Hinds using the contact information provided above.