# INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

# ORGANISATION INTERNATIONALE DE NORMALISATION

# ISO/IEC/JTC 1/SC 29/WG 11

# CODING OF MOVING PICTURES AND AUDIO

**ISO/IEC JTC 1/SC 29/WG 11 N14311**

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# HEVC Version 1 is shown to achieve more than 50% bitrate savings

Valencia, ES − The 108th MPEG meeting was held in Valencia, ES, from 31 March – 4 April, 2014**.**

**Verification tests confirm the performance of HEVC (ITU-T Rec H.265 | ISO/IEC 23008-2)**

To assess the compression benefit of the High Efficiency Video Coding (HEVC) standard’s first version, which had been finalized in 2013, a verification test campaign has been performed. In this test, a formal subjective quality assessment has been executed using a large variety of video material, ranging from wide-screen VGA resolution up to 4K. The material had not previously been used in optimizing HEVC’s compression technology. Clear evidence was found that HEVC is able to achieve 50% bitrate savings and more, compared to the AVC High Profile. The results will be made publicly available in the report N14420, which can be found in the public documents section of the [MPEG website](http://mpeg.chiariglione.org).

**Work begins to add Screen Content Coding to HEVC**

Seven submissions were received in response to the Call for Proposals on Screen Content Coding, i.e. coding of video containing a significant proportion of rendered (moving or static) graphics, text, or animation rather than, or in addition to, camera-captured video scenes.. Responses to the call, which had been jointly issued by MPEG and VCEG, show substantial benefit in compression for such type of content, and as a result, a new standardization project has been launched with the goal of extending HEVC, to be finalized in late 2015. The technical development will be performed by the JCT-VC (joint MPEG-VCEG team).

**HEVC 2nd edition includes support for additional colour formats, higher precision**

Another milestone has been achieved for HEVC by finalizing the Range Extensions amendment, with technology allowing efficient compression of video content for colour sampling formats beyond 4:2:0 and up to 16 bits of processing precision. In particular, the lossless and near lossless range of visual quality is more efficiently compressed than is possible with the current version 1 technology. The amendment is integrated into a new edition of HEVC to be published as the 2nd edition, along with corrigendum items for version 1 of the specification.

**Web Video Coding advances to Final Draft International Status**

MPEG is pleased to announce the progression of ISO/IEC 14496-29 Web Video Coding to Final Draft International Standard (FDIS), the final stage before approval. This project, started with the goal of developing a video codec that could be licensed under 'Type 1' conditions (that include being worldwide, reasonable and non-discriminatory, and free of charge), is compatible with the Constrained Baseline profile of ISO/IEC 14496-10, Advanced Video Coding. Those interested to see and evaluate the report of the IPR declarations received are encouraged to visit the ISO and/or IEC web sites.

**Public seminar for free-viewpoint television planned for 109th MPEG meeting in July**

A public seminar on FTV (Free-viewpoint Television) will be held on 8th July 2014 during the [109th MPEG meeting in Sapporo](http://mpeg.chiariglione.org/meetings/109). The purpose of this seminar is to introduce MPEG’s activity on FTV and to align its future standardization of FTV technologies with users and industry needs.

MPEG’s current FTV standardization targets three very specific application scenarios:

* *Super Multiview Displays* where hundreds of very densely rendered views provide horizontal motion parallax for realistic 3D visualization, extracted from a dense or sparse set of input views/cameras in a circular or linear arrangement.
* *Integral Photography* where 3D video with both horizontal and vertical motion parallax are captured for realistic display.
* *Free Navigation* that allows the user to freely navigate or fly through the scene, not just along predefined pathways.

MPEG expects that future FTV systems will require new functionalities such as a substantial increase in coding efficiency and rendering capability compared to technology currently available. The FTV initiative will also consider novel means for acquiring 3D content that have recently emerged, e.g. plenoptic and light field cameras. You are invited to join the FTV seminar to learn more about MPEG activities in this area and to work with us to revolutionize the viewing experience.

**MPEG issues Committee Draft to formalize video coding for browsers**

Even while MPEG continues to develop, from the ground up, standards that result in leading edge technologies that enrich our interaction with multimedia, it recognizes that other technologies that target specific needs and application areas could also be formalized as standards.  Such is the case for a technology recently submitted to MPEG that targets a video coding standard for browsers under 'Type 1' licensing conditions (that include being worldwide, reasonable and non-discriminatory, and free of charge).  This video codec for browsers will be formalized as ISO/IEC 14496-31 beginning with the Committee Draft of the standard that has been issued at the 108th MPEG meeting.   MPEG expects to complete the Final Draft International Standard in February 2015.

**Standard for Multimedia Preservation Archival Format reaches Committee Draft milestone**

Understanding the importance for the preservation of digital multimedia used in many different domains including cultural heritage, scientific research, engineering, education and training, entertainment, and fine arts, MPEG has started to work on the standardization of the Multimedia Preservation Archival Format as ISO/IEC 23000-15. At this meeting, MPEG has reached the first milestone to develop a standard for the preservation of digital multimedia by issuing the Committee Draft of Multimedia Preservation Application Format (MPAF). The MPAF standard is based on many tools already developed by MPEG-7 and MPEG-21 standards and is expected to reach the Final Draft International Standard stage in early 2015.

**MPEG starts amendment to MPEG-2 TS to add carriage of multiview and scalable features of HEVC**

Aligning with the recent development of amendments to HEVC enabling layered coding for multiview and scalable coding, an extension to the MPEG-2 TS standard for the carriage of these new layered features of HEVC has been started. Amendment 7 to ITU-T Rec H.222.0 (06/2012) | ISO/IEC 13818-1:2013 has reached PDAM stage at this meeting and is anticipated to reach the FDAM stage in early 2015. This amendment specifies transport of layered coding extensions for scalable and multiview enhancements of HEVC, and the signaling of associated descriptors so that different layers can be encapsulated and transported individually.

**MPEG-H 3D Audio reaches Committee Draft status**

At the 108th MPEG meeting, MPEG-H 3D Audio progressed to Committee Draft status. MPEG-H 3D Audio supports a highly immersive audio experience for loudspeakers placed in a 3-dimensional configuration (e.g. high, mid and low for front, side and surround). Key functionalities are a compact and bit-efficient representation of multi-channel audio programs, and the ability to flexibly render audio content to an arbitrary number of loudspeakers with an arbitrary configuration, as well as provide a binaural experience over headphones. The technology supports content in multiple formats: channel-based, channels and objects (CO), and Higher Order Ambisonics (HOA) scene-based. MPEG expects that the Committee Draft will progress to Draft International Standard at the July 2014 MPEG meeting and to International Standard at the February 2015 MPEG meeting.

**MPEG Audio Dynamic Range Control reaches Committee Draft status**

The Committee Draft (CD) of Dynamic Range Control (DRC) was issued at the 108th meeting. DRC defines a high-performance, codec-agnostic tool for dynamic range and loudness control and covers use cases for gain control, such as voice-over. The DRC system provides comprehensive control to adapt the audio as appropriate for the particular content, the listening device, environment, and user preferences. The loudness control can be applied to meet regulatory requirements and to improve the user experience especially for content with large loudness variations. The CD is expected to become the ISO/IEC 23003 Part 4 standard in February 2015. The corresponding amendment to the ISO Base Media File Format (ISO/IEC 14496-12 Amd 4) that supports the dynamic range and loudness control on the system level progressed to CD status as well. The Dynamic Range Control tool will also be used in the upcoming MPEG-H 3D Audio standard.

**MMT Developers’ Day to be held in July in Sapporo, JP**

Recognizing that development of digital broadcasting standards to offer 4K/8K UHDTV services by using the newly developed MPEG standard, MPEG Media Transport (MMT) has begun in Japan and that a the number of companies that are implementing MMT for various applications is growing, MPEG is organizing MMT Developers’ Day in conjunction with its 109th meeting in Sapporo, Japan. The event will be held free of charge on 5th July 2014, the Saturday before the meeting, at Sapporo Convention Centre. In this event, there will be presentations and demos about the MMT implementation to share the status of MMT development and to understand additional requirements and industry needs on further extensions to MMT.

**Digging Deeper – How to Contact MPEG**

Communicating the large and sometimes complex array of technology that the MPEG Committee has developed is not a simple task. Experts, past and present, have contributed a series of tutorials and vision documents that explain each of these standards individually. The repository is growing with each meeting, so if something you are interested is not yet there, it may appear shortly – but you should also not hesitate to request it. You can start your MPEG adventure at <http://mpeg.chiariglione.org/>

**Further Information**

Future MPEG meetings are planned as follows:

No. 109, Sapporo, JP, 07 – 11 July 2014

No. 110, Strasbourg, FR, 20 – 24 October 2014

No. 111, Geneva, CH, 16 – 20 February 2015

No. 112, Warsaw, PL, 22 – 26 June 2015

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The MPEG homepage also has links to other MPEG pages that 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 at [a.hinds@cablelabs.com](mailto:a.hinds@cablelabs.com)