



ISO/IEC JTC 1/SC 29 "Coding of audio, picture, multimedia and hypermedia information"

Secretariat: JISC

Committee Manager: Koike Mayumi Ms.



Press Release, the 90th SC 29/WG 1 meeting, 2021-01-18/22, Online [SC 29/WG 1 N 90005]

Document type	Related content	Document date	Expected action
General document / Other		2021-02-09	INFO

Description

In accordance with Recommendation taken at the 90th SC 29/WG 1 meeting, 2021-01-18/22, Online, SC 29 Secretariat has placed this press release on SC 29 Web site. [Requested action: For SC 29's information]



ISO/IEC JTC 1/SC29/WG1 N90005
90th Meeting – Online– 18-22 January 2021

INTERNATIONAL ORGANISATION FOR STANDARDIZATION
ORGANISATION INTERNATIONALE DE NORMALISATION

**ISO/IEC JTC 1/SC 29/WG1
(ITU-T SG16)**

Coding of Still Pictures

JBIG

Joint Bi-level Image
Experts Group

JPEG

Joint Photographic
Experts Group

TITLE: Press Release of the 90th JPEG meeting

SOURCE: JPEG (ISO/IEC JTC 1/SC 29/WG1)

PROJECT: -

STATUS: Final

REQUESTED ACTION: Distribution, publication on JPEG and SC29 websites

DISTRIBUTION: Public

Contact:

ISO/IEC JTC 1/SC 29/WG1 Convenor – Prof. Touradj Ebrahimi
EPFL/STI/IEL/GR-EB, Station 11, CH-1015 Lausanne, Switzerland
Tel: +41 21 693 2606, Fax: +41 21 693 7600, E-mail: convenor@jpeg.org



ISO/IEC JTC 1/SC29/WG1 N90005
90th Meeting – Online– 18-22 January 2021

ISO/IEC JTC1/SC29/WG1 N90005
Date: 25, January 2021

Title: Press Release of the 90th JPEG Meeting, 18-22, January 2021
Source: JPEG

Press Release
For immediate distribution
Contacts: Antonio Pinheiro, Frederik Temmermans (pr@jpeg.org)

JPEG AI becomes a new work item of ISO/IEC

The 90th JPEG meeting was held online from 18 to 22 January 2021. This meeting was distinguished by very relevant activities, notably the new JPEG AI standardization project planning, and the analysis of the Call for Evidence on JPEG Pleno Point Cloud Coding.

The new JPEG AI Learning-based Image Coding System has become an official new work item registered under ISO/IEC 6048 and aims at providing compression efficiency in addition to image processing and computer visions tasks without the need for decompression.

The response to the Call for Evidence on JPEG Pleno Point Cloud Coding was a learning-based method that was found to offer state of the art compression efficiency. Considering this response, the JPEG Pleno Point Cloud activity will analyse the possibility of preparing a future call for proposals on learning-based coding solutions that will also consider new functionalities, building on the relevant use cases already identified that require machine learning tasks processed in the compressed domain.

Meanwhile the new JPEG XL coding system has reached FDIS stage and it is ready for adoption. JPEG XL offers compression efficiency similar to the best state of the art in image coding, the best lossless compression performance, affordable low complexity and integration with the legacy JPEG image coding standard allowing a friendly transition between the two standards.

In the following, some of the JPEG standardisation activities and explorations that were carried out and progressed during the 90th JPEG meeting are highlighted.

JPEG AI

The scope of the JPEG AI is the creation of a learning-based image coding standard offering a single-stream, compact compressed domain representation, targeting both human visualization with significant compression efficiency improvement over image coding standards in common use at equivalent subjective quality, and effective

performance for image processing and computer vision tasks, with the goal of supporting a royalty-free baseline.

JPEG AI has made several advances during the 90th technical meeting. During this meeting, the JPEG AI Use Cases and Requirements were discussed and collaboratively defined. Moreover, the JPEG AI vision and the overall system framework of an image compression solution with efficient compressed domain representation was defined. Following this approach, a set of exploration experiments were defined to assess the capabilities of the compressed representation generated by learning-based image codecs, considering some specific computer vision and image processing tasks.

Moreover, the performance assessment of the most popular objective quality metrics, using subjective scores obtained during the call for evidence were discussed, as well as anchors and some techniques to perform spatial prediction and entropy coding.

JPEG Pleno Point Cloud

JPEG Pleno is working towards the integration of various modalities of plenoptic content under a single and seamless framework. Efficient and powerful point cloud representation is a key feature within this vision. Point cloud data supports a wide range of applications including computer-aided manufacturing, entertainment, cultural heritage preservation, scientific research and advanced sensing and analysis. During the 90th JPEG meeting, the JPEG Committee reached an exciting major milestone and reviewed the results of its Final Call for Evidence on JPEG Pleno Point Cloud Coding. With an innovative Deep Learning based point cloud codec supporting scalability and random access submitted, the Call for Evidence results highlighted the emerging role of Deep Learning in point cloud representation and processing. Between the 90th and 91st meetings, the JPEG Committee will be refining the scope and direction of this activity in light of the results of the Call for Evidence.

JPEG XL

The JPEG Committee has finalized JPEG XL Part 1 (Core Coding System), which is now at FDIS stage. The committee has defined new core experiments to determine appropriate profiles and levels for the codec, as well as appropriate criteria for defining conformance. With Part 1 complete, and Part 2 close to completion, JPEG XL is ready for evaluation and adoption by the market.

JPEG Fake Media

The JPEG Committee initiated the JPEG Fake Media JPEG exploration study with the objective to create a standard that can facilitate secure and reliable annotation of media asset generation and modifications. The initiative aims to support usage scenarios that are in good faith as well as those with malicious intent. During the 90th JPEG meeting,

the committee released a new version of the document entitled “JPEG Fake Media: Context Use Cases and Requirements” which is available on the JPEG website. A first workshop on the topic was organized on the 15th of December 2020. The program, presentations and a video recording of this workshop are available on the JPEG website. A second workshop will be organized around March 2021. More details will be made available soon on JPEG.org. JPEG invites interested parties to regularly visit <https://jpeg.org/jpegfakemedia> for the latest information and subscribe to the mailing list via <http://listregistration.jpeg.org>.

JPEG DNA

The JPEG Committee continued its exploration for coding of images in quaternary representation, particularly suitable for DNA storage. After a second successful workshop presentation by stakeholders, additional requirements were identified, and a new version of the JPEG DNA overview document was issued and made publicly available. It was decided to continue this exploration by organising a third workshop and further outreach to stakeholders, as well as a proposal for an updated version of the JPEG overview document. Interested parties are invited to refer to the following URL and to consider joining the effort by registering to the mailing list of JPEG DNA here: <https://jpeg.org/jpegdna/index.html>.

JPEG Systems

JUMBF (ISO/IEC 19566-5) Amendment 1 draft review is complete and it is proceeding to international standard and subsequent publication; additional features to support new applications are under consideration. Likewise, JPEG 360 (ISO/IEC 19566-5) Amendment 1 draft review is complete, and it is proceeding to international standard and subsequent publication. The JLINK (ISO/IEC 19566-7) standard completed the committee draft review and is preparing a DIS study text ahead of the 91st meeting. The JPEG Snack (ISO/IEC 19566-8) will make a second working draft. Interested parties can subscribe to the mailing list of the JPEG Systems AHG in order to contribute to the above activities.

JPEG XS

The 2nd edition of Part 2 (Profiles) is now at the DIS stage and defines the required new profiles and levels to support the compression of raw Bayer content, mathematically lossless coding of up to 12-bit per component images, and 4:2:0 sampled image content. With the second editions of Parts 1, 2, and 3 completed, and the scheduled second editions of Part 4 (Conformance) and 5 (Reference Software), JPEG XS will soon have received a complete backwards-compatible revision of its entire suite of standards. Moreover, the committee defined a new exploration study to create new coding tools for improving the HDR and mathematically lossless compression capabilities, while still honoring the low-complexity and low-latency requirements.

“The official approval of JPEG AI by JPEG Parent Bodies ISO and IEC is a strong signal of support of this activity and its importance in the creation of AI-based imaging applications” said Prof. Touradj Ebrahimi, the Convenor of the JPEG Committee.

About JPEG

The Joint Photographic Experts Group (JPEG) is a Working Group of ISO/IEC, the International Organisation for Standardization / International Electrotechnical Commission, (ISO/IEC JTC 1/SC 29/WG 1) and of the International Telecommunication Union (ITU-T SG16), responsible for the popular JPEG, JPEG 2000, JPEG XR, JPSearch, JPEG XT and more recently, the JPEG XS, JPEG Systems, JPEG Pleno and JPEG XL families of imaging standards.

The JPEG Committee nominally meets four times a year. The 89th JPEG Meeting was held online from 5 to 9 October 2020. The next 91st JPEG Meeting will be held online from 19 to 23 April 2021.

More information about JPEG and its work is available at jpeg.org or by contacting Antonio Pinheiro or Frederik Temmermans (pr@jpeg.org) of the JPEG Communication Subgroup.

If you would like to stay informed about JPEG activities, please subscribe to the jpeg-news mailing list on <http://jpeg-news-list.jpeg.org>.

Future JPEG meetings are planned as follows:

- No 91, will be held online from April 19 to 23, 2021.
- No 92, will be held online from July 7 to 13, 2021.