

INTERNATIONAL ORGANISATION FOR STANDARDISATION
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: JPEG Pleno Point Cloud Point Cloud Scope and Timeline

SOURCE: Stuart Perry (Editor)

PROJECT: JPEG Pleno

STATUS: Approved

**REQUESTED
ACTION:** For Discussion

DISTRIBUTION: Public

Contact:

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JPEG Pleno Point Cloud Point Cloud Scope and Timeline

JPEG Pleno Point Cloud Point Cloud Scope:

The scope of the JPEG Pleno Point Cloud activity is the creation of a learning-based coding standard for point clouds and associated attributes, offering a single-stream, compact compressed domain representation, supporting advanced flexible data access functionalities. This standard targets both interactive human visualization, with significant compression efficiency over state of the art point cloud coding solutions in common use at equivalent subjective quality, and effective performance for 3D processing and computer vision tasks, and has the goal of supporting a royalty-free baseline.

This standard is envisioned to provide a number of unique benefits, including a single efficient point cloud representation for both humans and machines. The intent is to provide humans with the ability to visualise and interact with the point cloud geometry and attributes while providing machines the ability to perform 3D processing and computer vision tasks in the compressed domain enabling lower complexity and higher accuracy through the use of compressed domain features extracted from the original instead of the lossy decoded point cloud.

JPEG Pleno Point Cloud Point Cloud High-level Plan for Activity:

1. A standard addressing learning-based coding with emphasis on human visualization;
2. A standard addressing learning-based coding supporting both human visualization and compressed domain 3D processing such as de-noising and super-resolution; and
3. A standard addressing learning-based coding supporting both human visualization and compressed domain 3D processing with the addition of support for compressed domain computer vision tasks such as classification, recognition and segmentation.

JPEG Pleno Point Cloud Point Cloud Timeline for Activity

<p>04/21 - 91st Meeting</p>	<ul style="list-style-type: none"> • Release updated scope for activity. • Release updated Common Test Conditions to support geometry only codecs.
<p>04/21 - 07/21</p>	<ul style="list-style-type: none"> • Propose changes to use-cases and requirements document. • Assemble training datasets and process to define test sets. • Extend the CTC document to the new scope (new error metrics or subject testing protocols). • Promotion of the activity.
<p>07/21 - 92nd Meeting</p>	<ul style="list-style-type: none"> • Release updated use-cases and requirements document (new requirements related to learning-based solutions). • Release updated Common Test Conditions. • Determine Exploration Study for CTC new aspects.
<p>07/21 - 10/21</p>	<ul style="list-style-type: none"> • Perform Exploration Study into new aspects of CTC to support new scope.
<p>10/21 - 93rd Meeting</p>	<ul style="list-style-type: none"> • Review results of Exploration study of Common Test Conditions. • Release updated Common Test Conditions. • Determine Exploration Study for any remaining open issues with CTC. • Release Draft Call for Proposals.
<p>10/21 - 01/22</p>	<ul style="list-style-type: none"> • Promotion of the activity. • Perform Exploration Study into new aspects of CTC to support new scope.
<p>01/22 - 94th Meeting</p>	<ul style="list-style-type: none"> • Review results of Exploration study of Common Test Conditions. • Release updated Common Test Conditions. • Release Final Call for Proposals (Proposals presented at the 96th Meeting).
<p>01/22 - 04/22</p>	<ul style="list-style-type: none"> • Promote Call for Proposals and solicit registrations to Call for Proposals.



ISO/IEC JTC1/SC29/WG1 N91041

91st Meeting – Online – 19-23 April 2021

04/22 - 95th Meeting	<ul style="list-style-type: none">• Review registrations for Call for Proposals.
04/22 - 07/22	<ul style="list-style-type: none">• Perform subjective testing associated with Call for Proposals.
07/22 - 96th Meeting	<ul style="list-style-type: none">• Review submissions to Call for Proposals and results of subjective testing of Call for Proposals.• Based on results of Call for Proposals decide on next stage.