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**ISO/IEC JTC 1/SC 29/WG 07 MPEG 3DGH**

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**Abstract**

This document is a working draft of specification for Geometry-based Point Cloud Compression (G-PCC) 2nd edition. The starting point was output document N00871 “Preliminary WD 7.0 of G-PCC 2nd Edition” from MPEG 146 Rennes meeting.

The draft specification text document is temporarily divided into 5 separate documents to facilitate editing and reading according to chapters, as follows

* chapter 1 - 6,
* chapter 7 - 8 (Syntax and semantics, decoding process),
* chapter 9 (Slice geometry),
* chapter 10 (Slice attribute),
* chapter 11 - Annex E.

The separate documents are planned to be merged into one main document at CD stage.

The following adoptions have been integrated:

* m67539 Improvements to Trisoup surface reconstruction
* m67062 Reconstructing non-closed surface in Trisoup
* m68929 Speed up the triangle voxelization process
* m57286 Enable Planar mode for inter
* m59619 Including reducing the number of contexts used by inter prediction and changing the IDCM eligibility
* m58013/m61084 Bi-direction Inter Prediction
* m64045 Extend inter bi-prediction of predlift to prediction mode
* m66466 Inter prediction buffers in predictive geometry coding
* m69040 On inter prediction buffers in predictive geometry coding
* m68325 Downsampling the reference frame
* m49198 Layer structure based PCC slice segmentation
* m55350 Slice segmentation considering coding layers
* m55996 Slice segmentation for spatial access
* m56750 Report on granularity slices
* m57350 Report on fine granularity slices using layer-group structure
* m58119 Report on fine granularity slices using layer-group structure
* m58829 Report on fine granularity slices using layer-group structure
* m63583 On EE reference software of geometry layer-group slicing for TMC13v21
* m57112 Report on granularity slicing and group structure inventory
* m59572 Attribute coding on fine granularity slicing
* m61009 Attribute coding on fine granularity slicing
* m65427 Attribute coding on fine granularity slicing
* m59800 Context reference signaling of attribute layer-group slicing
* m60273 Report on attribute layer-group slicing
* m58124 On context buffer management
* m64265 On context buffer management
* m68975 On direct node eligibility condition on layer-group boundary
* m68970 Use a syntax to describe the depth of the partial occupancy tree in the first FGS
* m67565 Additional prediction mode for RAHT layer coding method (Intra)
* m68770 Canonical geometry order-based periodic subsampling method for LOD
* m67564 Additional prediction mode for RAHT layer coding method (Inter)
* m68646 GM compensated for attribute coding
* m68282 Resampling for inter prediction in lossless RAHT
* m69133 On inter prediction syntax elements in G-PCC
* m68407 Conditional signaling of RAHT syntaxes
* m68408 Mismatch fix on lod\_dist\_log2\_offset
* m69041 Inter-frame context dependence for RAHT pred mode / array / vector assignment

In this work in progress, the color code for highlights is the following:

part to be checked or completed, or with editors’ comment to indicate there are some remaining works.