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

**CODING OF MOVING PICTURES AND AUDIO**

**ISO/IEC JTC 1/SC 29/WG 11 N19103**

**Brussels, BE – January 2020**

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| **Source:** | **3DG** |
| **Title:** | **Description of Core Experiment 13.6 for G-PCC: Attribute LoD generation** |

**Abstract**

Core experiment 13.6 aims to evaluate the neighbour search method for predlift transform in [1] and the LOD generation scheme combined with [1] as described in [2].

1. **Mandates**

The mandate of the core experiment is to evaluate the proposed methods [1][2] to:

* study the compression performance of the proposed tools.
* study the computational complexity of the proposed tools.
* study the memory/buffer usage of the proposed tools.

1. **Participants**

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| --- | --- | --- | --- |
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1. **Methods to be evaluated**

## neighbour search method from m52302

In contribution m52302 [1], a neighbour search method for predlift transform that takes into account the geometric structure and spatial distribution of a point cloud was proposed. The general idea of the proposed method is to find the predictors of a point P in block B within its neighbour blocks that may share a face, an edge or a vertex with B. Both the inter-LoD and intra-LoD search conditions are considered.

## LoD generation method from m52303

An LOD generation method for Cat1 sequences combined with the neighbour search method in [1] is proposed in [2]. The proposed method relies on the neighbour relationship to determine the assignment of points into different refinement layers. The determination of the dist2 parameters in current LoD generation is avoided. Also, the distance calculations process in current LOD generation scheme is avoided to further reduce the encoding/decoding time.

1. **Test Model, anchors and Test Conditions**

## Anchors

The proposed tools shall be implemented on top of TMC13v9.

## Test Conditions

The point cloud sequences of category

* (1) Static Objects and Scenes
* (3) Dynamic Acquisition

as defined by the CTC [3] will be tested. The following test conditions will be under evaluation

1. C1 AI, lossless geometry, lossy attribute
2. C2 AI, lossy geometry, lossy attribute
3. CW AI, lossless geometry, lossless attribute
4. CY AI, lossless geometry, near lossless attribute.
5. **Timeline**

2020/01/31 Expected date for release TMC13v9.0 software and anchors

2020/03/20[TMC13v9 + 7 weeks] Deliver source code and results for cross check

2020/04/03[TMC13v9 + 9 weeks] Crosscheck feedback to the proponents

2020/04/15 MPEG #130 document upload deadline

1. **References**

[1] “A neighbor search method for predlift transform”, ISO/IEC JTC1/SC29 WG11 input document m52302, Brussels, BE, January 2020.

[2] “A content-adaptive LOD generation scheme combined with the neighbor search method in m52302”, ISO/IEC JTC1/SC29 WG11 input document m52303, Brussels, BE, January 2020.

[3] “Common test conditions for PCC,” ISO/IEC JTC1/SC29/WG11 MPEG N19084, Brussels, BE, January 2020.