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

**CODING OF MOVING PICTURES AND AUDIO**

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**Brussels, BE – January 2020**

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**Description of Core Experiment 13.33 for G-PCC on Coding of transform coefficients**

# Abstract

This document provides a description of G-PCC Core Experiment (CE) 13.33 on Coding of transform coefficients.

# Introduction

The goal of CE 13.33 is to investigate the performance of the coding scheme for transform coefficients as proposed in m52720 [1].

# Information about proposed tools

## m52720: Alphabet-partition coding of transform coefficients [1]

In this contribution, a method for simplifying the attribute coefficient coding is proposed. It replaces multiple look-up-tables that need regular updates with a single fixed one and applies to coding of Predicting-Transform, Lifting-Transform, and RAHT-Transform coefficients. It shows coding gains for all testing conditions consistently and achieves average lossy BDR-savings of up to 1% (C2, Lifting) and lossless bitrate reduction of up to 2.4% (CW, Predict, reflectance).

# Experimental description

In this CE, the proposed transform coefficient coding scheme will be evaluated in terms of its coding efficiency and implementation aspects.

## Mandates

1. Study and evaluate the compression performance of the proposed method [1].

2. Evaluate the trade-off between the coding performance and complexity of the method.

## Participants

| **Name** | **Company** | **E-mail address** | **Type** |
| --- | --- | --- | --- |
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| Khaled Mammou | Apple | [kmammou@apple.com](mailto:kmammou@apple.com) | Crosscheck |
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### Software

TMC13v9 shall be used for these experiments. The proposed tools shall be implemented on top of TMC13v9.

### Test configurations

Parameters and configurations for TMC13v9 software will be provided by the proponent.

### Evaluation Method

The point cloud test material will be tested under the following conditions of the CTC [3]:

Predict-Lifting + Octree

* C1 Lossless Geometry - Lossy Attributes
* C2 Lossy Geometry - Lossy Attributes
* CY Lossless Geometry - Nearlossless Attributes
* CW Lossless Geometry - Lossless Attributes

RAHT + Octree

* C1 Lossless Geometry - Lossy Attributes
* C2 Lossy Geometry - Lossy Attributes

(Optional Tests) Predict-Lifting + Trisoup

* C2 Lossy Geometry - Lossy Attributes

(Optional Tests) RAHT + Trisoup

* C2 Lossy Geometry - Lossy Attributes

## CE.13.33 Coordinators

Sehoon Yea ([sehoonyea@tencent.com](mailto:sehoonyea@tencent.com))

# Timeline:

* **2020-03-20**: Deliver source code and results for cross check;
* **2020-04-03**:Report of preliminary cross check results;
* **2020-04-15**: MPEG document upload deadline.

# References

1. Alphabet-partition coding of transform coefficients, ISO/IEC JTC1/SC29 WG11 m52720, Brussels, BE, January 2020.
2. G-PCC Test Model v9, ISO/IEC JTC1/SC29/WG11 w19083, Brussels, BE, January 2020.
3. Common Test Conditions for PCC, ISO/IEC JTC1/SC29 WG11 w19084, Brussels, BE, January 2020.