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**Email of convenor: leonardo@chiariglione.org**

**Committee URL: mpeg.chiariglione.org**

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**CODING OF MOVING PICTURES AND AUDIO**

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**Gothenburg, SE – July 2019**

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**Description of Core Experiment 13.24 for G-PCC on Color Space**

# Abstract

This document provides a description of G-PCC Core Experiment (CE) 13.24 on Color Space.

# Introduction

The goal of CE 13.24 is to investigate the use of RGB-to-YCoCg-R transform as a lossless color conversion tool as proposed in m49601.

# Information about proposed tools

## m49601: Lossless Color Transform for Attribute Coding

The result of applying YCoCg-R as lossless color-transform is reported. It was implemented as an additional color-conversion pre/post-processing tool in addition to the default color-conversion tool, which is RGB-to-YCbCr, to enable more efficient lossless coding of RGB point-cloud data.

For the CW (lossless attribute coding) test, the current implementation shows 18.0% and 6.8% bpp reductions compared with the anchor method (RGB-domain coding) under CTC for Cat1A and Cat3FS data, respectively.

# Description of Core Experiments

In this CE, proposed lossless color transform method will be investigated in terms of lossless coding gain benefits and its SW implementation.

## Mandates

* Report the SW implementation of the proposed color space conversion.
* Report related updates on lossy coding distortion metric (YCoCg-R & YCbCr) in the SW
* Evaluate and report the compression performance with the proposed method

## Participants

| **Name** | **Company** | **E-mail address** | **Type** |
| --- | --- | --- | --- |
| Sehoon Yea | Tencent | sehoonyea@tencent.com | Proponent |
| David Flynn | Apple | [davidflynn@apple.com](mailto:davidflynn@apple.com) | Crosscheck |
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### Software

TMC13v7 shall be used for these experiments. The proposed tools shall be implemented on top of TMC13v7.

### Test configurations

Parameters and configurations for TMC13v7 software will be provided by the proponent.

### Evaluation Method

The point cloud test material will be tested under the following conditions of the CTC [6]:

* CW Lossless Geometry – Lossless Attributes
* (optional) C1 Lossless Geometry – Lossy Attributes

## CE.13.24 Coordinators

Sehoon Yea (sehoonyea@tencent.com)

# Timeline:

* **2019-08-12**: Expected date for TMC13v7 release;
* **2019-09-02 [TMC13v7 + 3 weeks]**: Deliver source code and results for cross check;
* **2019-09-16**: **[TMC13v7 + 5 weeks]** Report of preliminary cross check results;
* **2019-10-02**: MPEG document upload deadline.

# References

1. [G-PCC][New Proposal] Lossless Color Transform for Attribute Coding, ISO/IEC JTC1/SC29 WG11 m49601, Gothenburg, SE, July 2019

[2] PCC Test Model Category 13 v7, ISO/IEC JTC1/SC29/WG11 w18664, Gothenburg, SE, July 2019.

[3] Common Test Conditions for PCC, ISO/IEC JTC1/SC29 WG11 w18665, Gothenburg, SE, July 2019.