ISO/IEC JTC 1/SC 29/WG 11

Coding of moving pictures and audio

Convenorship: UNI (Italy)

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Abstract

Core experiment 13.36 intends to investigate changes to the geometry tree structure that simplify the G-PCC design both technically and conceptually.

Mandate

The mandate of the core experiment is to evaluate the proposed geometry tree structure to —

- verify that the proposal is still applicable to the current v10 design,

- examine any coding efficiency impact arising from the proposal

- evaluate the benefits and detriments of the proposal.

Participants

Company	Contact	E-mail	Status
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Timeline

2020-05-15	Expected release of TMC13v10
2020-05-31	Distribution of CE software and results for verification
2020-06-24	MPEG 131 document upload deadline
2020-06-29	MPEG 131, Online

Evaluation

All CTC [1] test conditions for TMC13 will be evaluated using category one and three content.

Description of proposals

m53677 – A simplified octree node structure

The G-PCC geometry coder represents geometry via an octree. Conceptually under a breadth-first traversal, each tree node may convey parameters about the current node and indicate the presence of up to eight child nodes that are in turn processed at the next tree level. However, in the current design, some coding tools split information across tree levels. In particular, the planar mode conveys in a current node additional independent information about the state of each child. A consequence of this has been multiple interactions with geometry quantisation and qtbt, and necessitates maintaining additional local information.

The proposed design [2] eliminates the need to track multiple node sizes for the current node. It eliminates both the QtBt interaction that required tracking state about child node splitting, and it eliminates the quantisation interaction that required planar to be disabled (since quantisation can no longer occur between determination of the planar information and the signalling of occupancy).

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References

[1] 3DG, "Common Test Conditions for PCC," ISO/IEC JTC1/SC29/WG11, 130th meeting, Alpbach, Tech. Rep. w19324, Apr. 2020.

[2] D. Flynn and K. Mammou, "G-PCC: A simplified octree node structure," ISO/IEC JTC1/SC29/WG11, 130th meeting, Alpbach, Tech. Rep. m53677, Apr. 2020.

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