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Title **Immersive Video Core Experiments 2: Summary report**
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Abstract

This document reports the experiments performed during Core Experiment 2 [N18933].

1 Introduction

The goal of the experiment was to study performance of pixel pruning. Given either re-projected or selected source views, pruning operation is performed in order to reduce the number of pixels that is to be finally packed into texture and depth atlases. It is also necessary that the resulting patches have temporal consistency to compress efficiently using a HEVC encoder.

Three participants registered for the experiments:

2.1. Philips,
2.5. ETRI (Electronics and Telecommunications Research Institute),
2.6. InterDigital.

Two experiments (2.5 and 2.6) have been done, however ETRI did not keep the timeline.

2 Summary of experiments

2.5 *m52629: ETRI response to Immersive Video CE-2: Test for optimizing pruning order*

This experiment was conducted by replacing the method of pruning order determination in TMIV 3.0 with ETRI's previous CE-2 response (m50030).

- ETRI’s response shows a possibility that the performance of TMIV 3.0's pruner can be improved by changing the pruning order.
- ETRI’s response outperforms the MIV anchor for BA97 and CA97 on almost the whole objective metrics.

ETRI recommends to:
- adopt their contribution into TMIV 4.0,
- keep CE-2 open for future responses.

2.6 *InterDigital response:*

2.6.1 m52413: [MPEG-I Visual] CE2.6.1 Synthesizer

In this sub-experiment an enhanced synthesizer at decoder side was tested. This synthesizer was used also in m52414. Interdigital's synthesizer provides good subjective and objective quality for encoded bitstreams of TMIV3.0 anchors.

Interdigital recommends to:

- adopt their synthesizer in TMIV 4.0 (at least as an additional synthesizer),
- use their synthesizer at encoder side wherever a virtual view needs to be synthesized.

2.6.2 m52414: [MPEG-I Visual] CE2.6.2 Graph-Based Pruning for Natural Contents

Interdigital recommends:

- embedding the pruning information in metadata in order to properly handle and render inconsistent MVD inputs,
- addressing the notion of profile to define typical atlas resolutions,
- questioning the validity of objective metrics when inconsistent with subjective quality.

3 Summary of crosschecks

3.1 *Crosscheck of m52629*

Results of m52629 were partially crosschecked by PUT (full crosscheck for QP3 and QP5). The crosschecker obtained **exactly** the same results as the results provided by ETRI.

3.2 *Crosscheck of m52413 and m52414*

Results of m52413 and m52414 were successfully crosschecked by Philips.

4 References

[N18933] "Description of Immersive Video Core Experiments 2: Pixel Pruning",
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