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| **Source** | **Panasonic corporation** |
| **Status** | **Input contribution** |
| **Title** | **[G-PCC] Cross check for CE13.38 on angular mode for prediction coding** |
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# Abstract

This contribution is a cross check report of angular mode for prediction coding in CE13.38. The target of CE13.38 is to investigate the use of an angular coding mode in the predictive geometry coder and evaluate its compression performance as well as benefits and detriments. The experimental results on angular mode for prediction coding were matched with the ones provided by proponent.

# Experimental Condition

The purpose of CE13.38 [1] is to study the impact on compression performance of the proposed new angular coding mode in the predictive geometry, which were proposed in [2]. Moreover, it is also to evaluate the benefits and detriments of the proposed method.

This contribution reports the results of Predictive Geometry Coding and the following two configurations:

* v10ctc: The v10 CTC anchors
* predgeom: The v10 predictive geometry scheme configured using cfg-slice=0.yaml, and cfg-predgeom=azimuth.yaml
* predgeom+ang: The proposed scheme, configured using cfg-slice=0.yaml, cfg-predgeom-angular.yaml, and cfg-predgeom-angular-lossy.yaml

The software was provided by the proponent on the server [3].

The computing platform is Linux 64bits and the executables were compiled on 64-bit Linux with gcc 5.4.2.

# Results

It was confirmed that the results were exactly matched with the ones provided by the proponent. Detailed results are included in the attached excel sheet.

# Observation

In the current implementation on CE13.38, the removal of sign-bit inference in the PCM predictor [4] adopted at previous meeting is removed since this conflicts with the angular prediction.

# Conclusion

The results of Angular Mode for Prediction Coding in CE13.38 were confirmed. We suggest to consider how to manage the confict issue before adopting angular mode.

# References

1. “CE 13.38 on angular mode for prediction coding” ISO/IEC JTC1/SC29 WG11 Doc. N19359, Online, April 2020
2. “[G-PCC][New proposal] Optimization of the predictive coding scheme for Spinning Lidars” ISO/IEC JTC1/SC29 WG11, Doc. m53618, Alpbach, April 2020
3. http://mpegx.int-evry.fr/software/MPEG/PCC/CE/mpeg-pcc-tmc13/tree/mpeg130/ce13.38/predgeom+angular
4. “[G-PCC] [EE13.8 Related] Predictive tree encoding modifications”, ISO/IEC JTC1/SC29 WG11, Doc. m53538, Alpbach, April 2020