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**ISO/IEC JTC 1/SC 29/WG 7 MPEG Coding for 3D Graphics and haptics**

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| **Title** | **Usage of V-PCC for best coding performances** |
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**Summary**

This document reports the best results obtained with V-PCC TM2 reference software [1] that should be used to compare the V-PCC performance with other technologies.

# Best configurations

During the evaluation experiments, various configurations had been tested and compared to find the configuration providing the best results in term of BD-Rate and in term of visual quality [2].

The best results were obtained with the configuration Extended-Rec2.

The configuration of those experiments is based on the V-PCC CTC conditions [3] with the following adding encoder parameters:

    --profileCodecGroupIdc=3 \

    --profileToolsetIdc=1 \

    --profileReconstructionIdc=2 \

    --mapCountMinus1=1 \

    --pointLocalReconstruction=1 \

    --pbfEnableFlag=1 \

    --useEightOrientations=1 \

    --additionalProjectionPlaneMode=5

The enabled tools/profiles in these configurations are:

* Extended profile
* Reconstruction 2 profile
* VTM encoder
* 2 maps
* Point local reconstruction
* Patch border filtering
* Use eight orientations
* Additional projection plane

# Results

The obtained BD-Rate gains evaluated with [1] can be found in the following table.

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The subjective evaluations had been evaluated by AG5 [3] and were not reevaluated in this contribution.

Please note that these results are in the ./test/ sub-folder of the TM2 repository (<http://mpegx.int-evry.fr/software/MPEG/PCC/TM/mpeg-pcc-tmc2/-/tree/master/test>):

* R21.0\_CTC\_300Frames.xlsm
* R21.0\_CTC\_32Frames.xlsm
* R21.0\_ExtRec2\_300Frames.xlsm
* R21.0\_ExtRec2\_32Frames.xlsm

# Conclusions

Given these results, we recommend that the group create an output contribution with those results and promote their use for future comparisons with V-PCC.

# References

1. “V-PCC Test Model v21”, ISO/IEC JTC1/SC29/WG7, MDS22418, N0503, Online, January 2023
2. “Report on MPEG AG 5 Workshop on Quality of Immersive Media: Assessment and Metrics”, ISO/IEC JTC1/SC29/WG7, MDS21041, N00042, Online, October 2021
3. “Common Test Conditions for V-PCC”, ISO/IEC JTC1/SC29 WG7 Doc. N00038, Online, October 2020.