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Title **3DV/FTV EE4 report on Poznan Street sequence**
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1 Introduction

This document presents results of Exploration Experiment (EE4) performed on “Poznan_Street” sequence [2] and is a response to W11630 "Description of Exploration Experiments in 3D Video Coding" [1].

2 Experiments conditions

Experiments were performed basing on W11630 [1] guidelines, and with the use of standard configuration file provided by the reflector.

Three view case:

- Original reference texture data for views 3, 4 and 5 of “Poznan_Street” sequence was compressed using JMVM software version 8.3.1 with different QP values. GOP length was set to 12 frames, to comply with the requirement of at least 0.5 second GOP length (Poznan_Street is a 25 fps sequence)
- Depth maps for views 3, 4 and 5, were compressed using JMVM software version 8.3.1 with different QP values (called QD). GOP length was set to 12 frames.
- Reconstructed texture and depth data were fed to the view synthesis software VSRS version 3.5, together with the camera system parameters and Znear, Zfar values to recreate view 3.5.
- Synthesized view 3.5 was compared in terms of PSNR with view 3.5 synthesized using uncompressed data.
- All combinations of QP and QD value were tested.

3 Results

3.1 Three view case:

Figure 1. shows synthesis quality with respect to bitrate of 3 view and 3 depth. Each gray line represents compression of views with a given QP, while QD vary along the line. Basing on the results of compression of texture and depth data with various QP and QD indexes, upper quality bound at a given bitrate was designated (black envelope on Fig. 1).

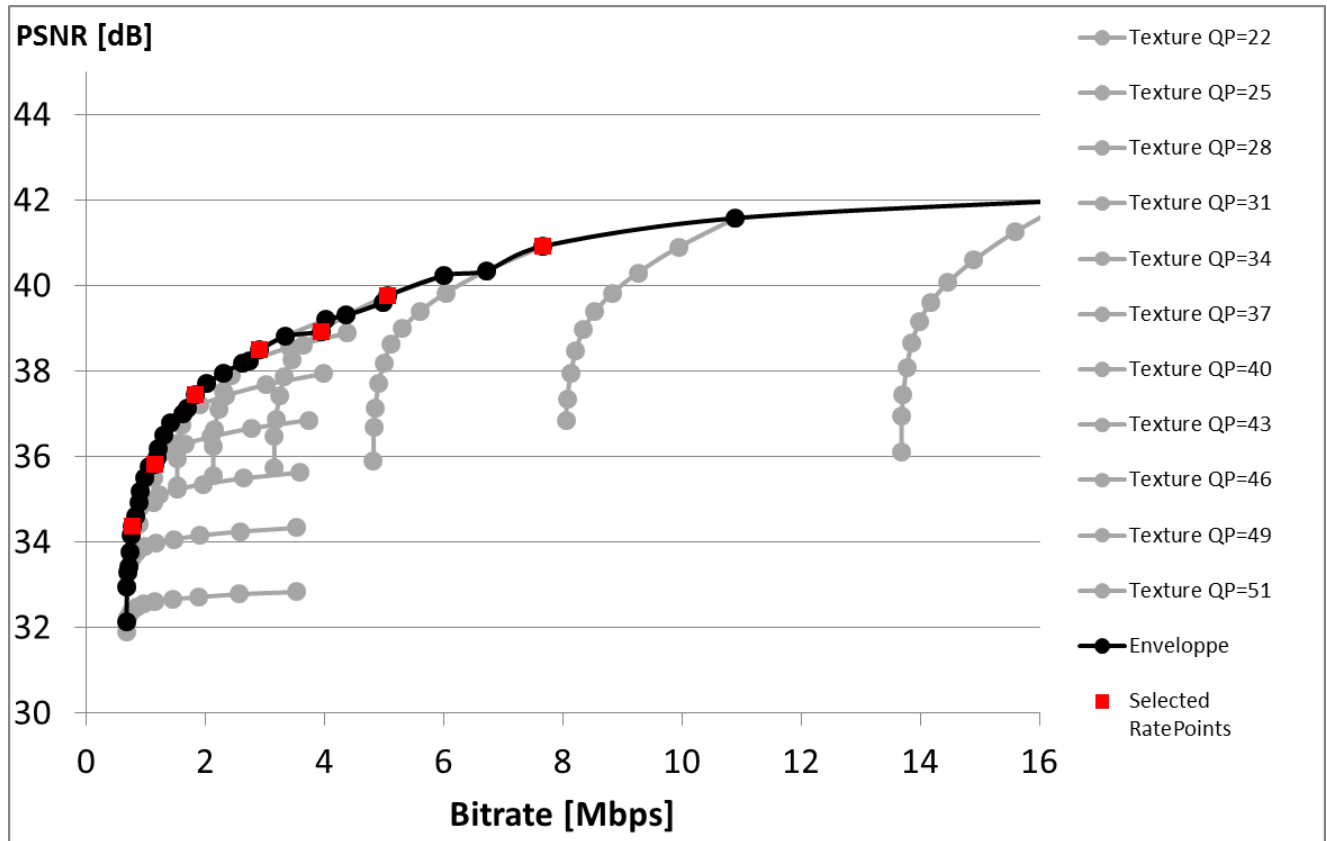


Figure 1. Comparison of total bitrates against quality of synthesized view

The proposed bitrates for Poznan_Street sequences proved to be too low to provide sufficient quality for Full HD sequence. To meet the requirements of quality equally distributed from good to poor, the following bitrates and pairs of QP and QD have been proposed (QP index for depth encoding).

Table 1. Selected QP-QD pairs for the synthesis

Bitrate	QP-QD pairs selected	RatePoint
0,764	46, 46	R4
1,148	40, 46	R3 a
1,182	37, 37	R3
2,907	34, 31	R2
3,932	31, 31	R2 a
5,049	31, 25	R1
7,666	28, 22	R0

4 Conclusions

4.1. Three view case

- Required bitrates are higher than for other sequences, due to higher resolution and complicated depth structure.

5 References

- [1] "Description of Exploration Experiments in 3D Video Coding" MPEG 2009/W11630, Guangzhou, China, October 2010.
- [2] M. Domański, T. Grajek, K. Klimaszewski, M. Kurc, O. Stankiewicz, J. Stankowski, K. Wegner, "Poznań Multiview Video Test Sequences and Camera Parameters", ISO/IEC JTC1/SC29/WG11 MPEG 2009/M17050, Xian, China, October 2009.