

# **JCT3V-G0076 – CE4 related: Residual Prediction for View Synthesis Prediction**

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# Residual Prediction for VSP

- ❖ Inter-view residual prediction was adopted at the last meeting
- ❖ Therefore, the residual prediction can be applied to VSP candidate
  - There is no additional memory complexity
    - since residual prediction uses bi-linear filter for MC process
- ❖ Simulation Results (based on CTC with HTM 9.0r1)
  - 0.1% bit saving for coded and synthesized views

	video 0	video 1	video 2	video PSNR / video bitrate	video PSNR / total bitrate	synth PSNR / total bitrate	enc time	dec time	ren time
Balloons	0.0%	-0.3%	-0.3%	-0.1%	-0.1%	-0.2%	98.9%	87.3%	93.0%
Kendo	0.0%	-0.2%	-0.4%	-0.1%	-0.1%	-0.1%	100.2%	98.1%	101.9%
Newspaper_CC	0.0%	-0.1%	0.1%	0.0%	0.0%	0.0%	99.7%	101.2%	100.8%
GT_Fly	0.0%	-0.1%	-0.2%	0.0%	0.0%	0.0%	100.1%	104.6%	100.1%
Poznan_Hall2	0.0%	-0.1%	0.0%	0.0%	0.0%	0.0%	100.6%	95.7%	91.7%
Poznan_Street	0.0%	-0.1%	-0.2%	0.0%	0.0%	0.0%	100.9%	98.6%	101.7%
Undo_Dancer	0.0%	-1.1%	-0.8%	-0.2%	-0.2%	-0.2%	99.3%	95.9%	100.3%
Shark	0.0%	-0.1%	-0.2%	0.0%	-0.1%	0.0%	99.5%	107.5%	97.9%
1024x768	0.0%	-0.2%	-0.2%	-0.1%	-0.1%	-0.1%	99.6%	95.6%	98.6%
1920x1088	0.0%	-0.3%	-0.3%	-0.1%	-0.1%	0.0%	100.1%	100.5%	98.3%
<b>average</b>	<b>0.0%</b>	<b>-0.3%</b>	<b>-0.2%</b>	<b>-0.1%</b>	<b>-0.1%</b>	<b>-0.1%</b>	<b>99.9%</b>	<b>98.6%</b>	<b>98.4%</b>

# Conclusions

- ❖ We propose to apply the residual prediction to VSP
  - 0.1% bit-saving for coded and synthesized views
  - No additionally memory bandwidth requirement
- ❖ We recommend to adopt the proposed method into next 3D-HEVC WD

Thanks **NTT** for the cross checking (JCT3V-G0154).

