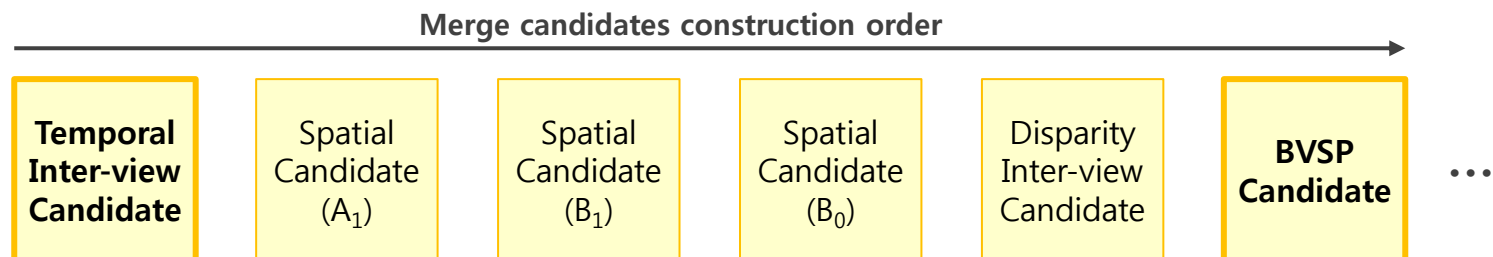# JCT3V-E0140 – CE1.h related: Disparity Vector Used for BVSP

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Introduction

❖ At last meeting, DV used for BVSP was changed from DoNBDV to NBDV
- DV is used to derive DVs for the 2nd disparity compensation

❖ However, DoNBDV is always available for BVSP candidate.
- Since DoNBDV should be used to identify the temporal inter-view candidate, which is the 1st candidate.
  - DoNBDV is used for checking the corresponding block's coding mode. If the coding mode is not "INTRA", then the temporal inter-view candidate is available.
- The temporal inter-view candidate always precedes all the other candidates.
  - So, DoNBDV is also always available for BVSP candidate

Merge candidates construction order

| Temporal Inter-view Candidate | Spatial Candidate (A$_1$) | Spatial Candidate (B$_1$) | Spatial Candidate (B$_0$) | Disparity Inter-view Candidate | BVSP Candidate | ... |

Proposed Method

❖ Therefore, we propose to use DoNBDV instead of NBDV for BVSP mode.

❖ No additional complexity to derive DoNBDV
  ▪ Since DoNBDV is always available before BVSP candidate.

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Experimental Results

❖ Based on CTC w/ HTM 7.0r1

- 0.2% and 0.3% bit-saving for video 1 and video 2
- 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%	0.0%	0.0%	0.0%	0.0%	0.0%	99.4%	86.7%	98.3%
Kendo	0.0%	0.0%	-0.2%	0.0%	0.0%	0.0%	100.3%	101.1%	100.6%
Newspaper_CC	0.0%	-0.1%	-0.2%	0.0%	0.0%	-0.3%	101.5%	98.4%	102.2%
GT_Fly	0.0%	-0.3%	-0.5%	-0.1%	-0.1%	-0.1%	99.3%	96.3%	101.2%
Poznan_Hall2	0.0%	-0.1%	-0.2%	-0.1%	-0.1%	-0.1%	99.9%	94.5%	99.6%
Poznan_Street	0.0%	-0.3%	-0.2%	-0.1%	-0.1%	-0.1%	99.4%	99.2%	100.0%
Undo_Dancer	0.0%	-0.3%	-0.6%	-0.1%	-0.1%	-0.1%	99.7%	102.5%	99.3%
1024x768	0.0%	0.0%	-0.2%	0.0%	0.0%	-0.1%	100.4%	95.4%	100.4%
1920x1088	0.0%	-0.3%	-0.4%	-0.1%	-0.1%	-0.1%	99.6%	98.1%	100.0%
average	**0.0%**	**-0.2%**	**-0.3%**	**-0.1%**	**-0.1%**	**-0.1%**	**99.9%**	**97.0%**	**100.2%**

Conclusions

❖ We propose to use DoNBDV for BVSP candidate.

- ▪ Minor changes in 3D-HEVC text and HTM software
- ▪ 0.2% and 0.3% bit-saving for video 1 and video 2
- ▪ 0.1% bit-saving for coded and synthesized view
- ▪ No additional complexity

❖ We recommend to adopt the proposed method into next 3D-HEVC TM.

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