

JCT3V-H0123

CE1: Result on simplification for VSP merging candidates construction

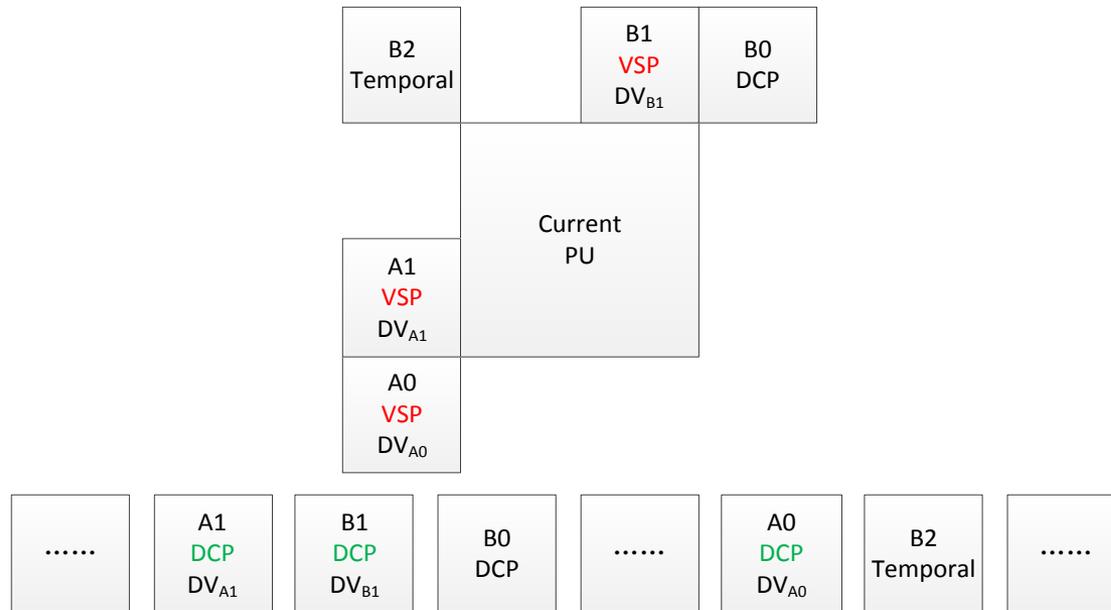
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Introduction

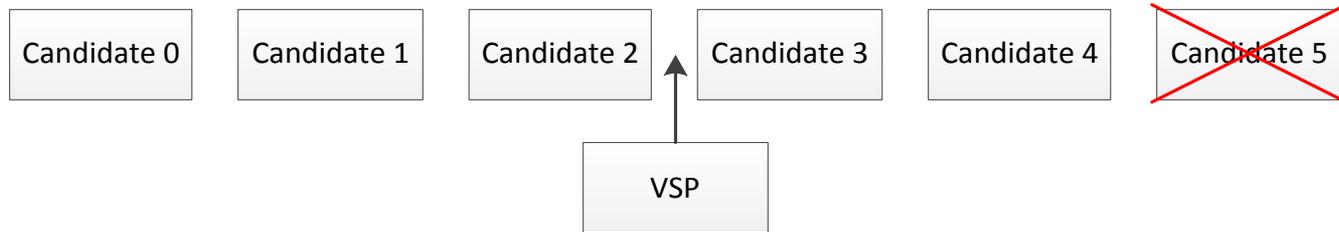
- VSP Candidate Inheriting
 - VSP candidates are inherited from spatial neighboring blocks of current PU and multiple VSP-coded neighboring blocks results in multiple VSP candidates in MCL
- Virtual Depth Block Fetching
 - Unified DV (NBDV) for virtual depth block fetching to align with the one used for DoNBDV, to avoid multiple depth block fetches
- **Multiple VSP candidates with same synthesis result**
- Different DVs for virtual depth block fetching in previous design of 3D-HEVC
- Additional conditional checking for VSP flags of spatial neighboring blocks and storage for VSP flags

Proposed Method



- VSP inheritance disabled
 - The corresponding candidate of VSP-coded spatial neighboring blocks in MCL are treated as DCP candidates (already done by the HEVC MCL construction process)
- VSP flags storage removed
- Conditional checking of VSP flags removed

Proposed Method



- Put the default VSP candidate in a fixed (4th) position in MCL
 - “mrgIdx = 3” equals VSP mode
 - The position of VSP candidate is relatively higher than the default VSP candidate in current design in most cases
 - When merge index is equal to 3, the whole MCL construction process could be skipped

Complexity reduction

	Current 3D-HEVC	Proposed
VSP flag checking of spatial neighboring blocks	5	0
CTU line checking	3	0
VSP flag storage	16+16	1

Experimental results

- Proposed method vs Anchor (HTM-10.0r1)

	video 0	video 1	video 2	video PSNR / video bitrate	video PSNR / total bitrate	synth PSNR / total bitrate	enc time	dec time
Balloons	0.00%	0.12%	0.05%	0.0%	0.0%	0.0%	105.8%	102.6%
Kendo	0.00%	0.11%	-0.04%	0.0%	0.0%	0.0%	101.0%	98.2%
Newspaper_CC	0.00%	0.11%	-0.16%	0.0%	0.0%	-0.1%	102.0%	101.6%
GT_Fly	0.00%	0.55%	0.35%	0.1%	0.1%	0.1%	100.5%	100.3%
Poznan_Hall2	0.00%	-0.15%	-0.33%	-0.1%	-0.1%	-0.2%	104.3%	101.1%
Poznan_Street	0.00%	0.03%	0.08%	0.0%	0.0%	0.0%	94.9%	99.2%
Undo_Dancer	0.00%	0.57%	0.46%	0.1%	0.1%	0.1%	102.0%	99.8%
Shark	0.00%	0.27%	0.06%	0.0%	0.0%	0.0%	101.9%	99.6%
1024x768	0.00%	0.11%	-0.05%	0.0%	0.0%	0.0%	102.9%	100.8%
1920x1088	0.00%	0.25%	0.12%	0.0%	0.0%	0.0%	100.7%	100.0%
average	0.00%	0.20%	0.06%	0.0%	0.0%	0.0%	101.6%	100.3%

Thanks Sharp ([G0178](#)) for
cross-checking this proposal