

# **JCT3V-F0140 – CE1 related: Problem Fix on View Synthesis Prediction**

---

**Min Woo Park**

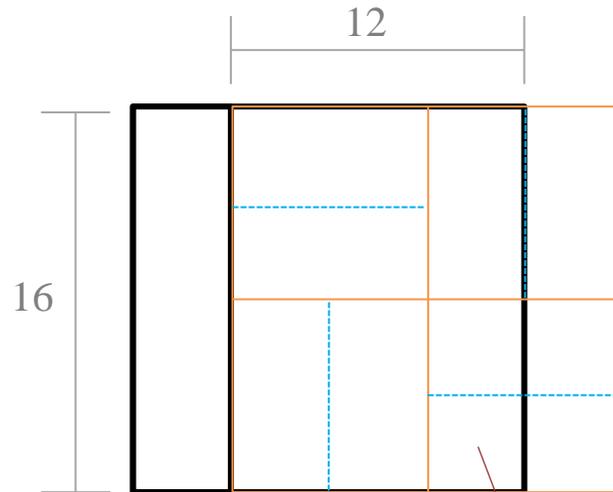
Multimedia Platform Lab.  
DMC R&D Center  
**Samsung Electronics**

# Introduction

## ❖ Current BVSP process

- 8x4 or 4x8 partition is used for 2<sup>nd</sup> Disparity Compensation Prediction
  - 8x8 block-basis decision
- But, does not fully support Asymmetric Motion Partition mode
  - 4x4 2<sup>nd</sup> DCP can be performed

**e.g. CU 16x16, PART\_nLx2N**



**4x4 disparity compensation**

# Proposed Method

- ❖ In order to avoid 4x4 DCP (disparity compensation prediction)
  - When either width or height of the current PU is not multiple of 8  
→ the 2<sup>nd</sup> DCP size is set to the current PU size

Current

```
if(width < 8 || height < 8)
{
    not split
}
else
{
    split
}
```

Proposed

```
if(width & 7 || height & 7)
{
    not split
}
else
{
    split
}
```



# Experimental Results

- ❖ Based on CTC with HTM 8.0
  - No coding loss

	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	0.00%	0.12%	-0.06%	0.00%	0.02%	0.01%	100.1%	101.0%	100.6%
Kendo	0.00%	0.05%	-0.05%	0.01%	0.00%	0.01%	99.9%	102.1%	100.6%
Newspaper_CC	0.00%	0.14%	0.08%	0.04%	0.03%	0.05%	100.6%	97.7%	100.1%
GT_Fly	0.00%	0.11%	-0.10%	-0.01%	-0.01%	0.03%	100.4%	103.3%	101.0%
Poznan_Hall2	0.00%	0.10%	-0.27%	-0.04%	-0.03%	-0.11%	99.6%	98.7%	98.4%
Poznan_Street	0.00%	0.12%	0.07%	0.03%	0.02%	0.01%	100.2%	96.6%	100.9%
Undo_Dancer	0.00%	0.06%	-0.14%	0.00%	0.00%	-0.01%	100.0%	100.9%	100.9%
1024x768	0.00%	0.11%	-0.01%	0.02%	0.02%	0.02%	100.2%	100.3%	100.4%
1920x1088	0.00%	0.10%	-0.11%	-0.01%	-0.01%	-0.02%	100.0%	99.9%	100.3%
<b>average</b>	<b>0.00%</b>	<b>0.10%</b>	<b>-0.07%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>100.1%</b>	<b>100.1%</b>	<b>100.4%</b>
Shark	0.00%	-0.04%	0.17%	0.01%	0.01%	0.02%	99.7%	104.8%	99.0%

# Conclusions

- ❖ We propose a method to avoid 4x4 DCP for VSP
  - When either width or height is not multiple of 8,  
→ 2<sup>nd</sup> DCP size is set to the current PU size
  - Minor change in 3D-HEVC text and HTM software
  - No coding loss
- ❖ We recommend to adopt the proposed method into next 3D-HEVC WD

Thanks **NTT** for the cross checking (JCT3V-F0182).

