

# **Simplified MVD context selection (Extension of E324) (JCTVC-F133)**

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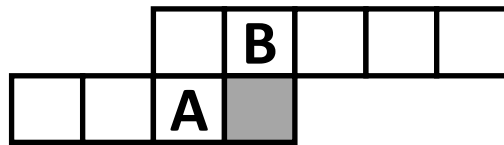
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**6th Meeting: Turin, IT, 13-22 July, 2011**

# Modified MVD Context Selection



Context selection ( $\chi_{incr}$ ) dependent on A & B (4x4 blocks for *mvd*); as a result, last line buffer is required.

## AVC

(1) SUM:

$$e(A,B) = |mvd(A)| + |mvd(B)|$$

(2) THRESHOLD:

$$\chi_{incr} = \begin{cases} 0 \rightarrow \text{if } e(A,B) < 3 \\ 1 \rightarrow \text{if } 3 \leq e(A,B) \leq 32 \\ 2 \rightarrow \text{if } e(A,B) > 32 \end{cases}$$

## E324

Change context selection of *binIdx0* of MVD

(1) THRESHOLD:

$$\text{threshA} = |mvd(A)| > 16$$

$$\text{threshB} = |mvd(B)| > 16$$

(2) SUM:

$$\chi_{incr} = \text{threshA} + \text{threshB}$$

**If switch order, reduce from 6-bits to 1-bits stored per component**

Reduce overall CABAC Last Line Buffer Size by 50%  
Negligible impact on coding efficiency

# Extension of E324

- Number of contexts remain the same
- If simplify context selection binIdx0 of MVD, such that it does not depend on neighbor
  - Remove line buffer for MVD
  - Reduce number of contexts from 7 to 5 per component per direction (reduction of 8 overall)

# Experiment Results

- HM-3.0 under common conditions
- Simulation platform is LSF equipped with Intel(R) Xeon(R) CPU X5570@2.93GHz 64 bits Linux machines
- Results cross-checked by MediaTek (F658)

## Coding efficiency impact

	Intra	Random Access	Low Delay
Remove neighboring dependency for context selection of MVD	0.0	0.0	0.0

# Summary

- Reduce last line buffer size and context memory in CABAC
- Negligible impact on coding efficiency (0.0%)
- Recommend for adoption into HEVC test model
  - Draft text available in contribution