

Non-CE9: Derivation process for reference indices for temporal merging candidates

JCTVC-G217

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1. Overview

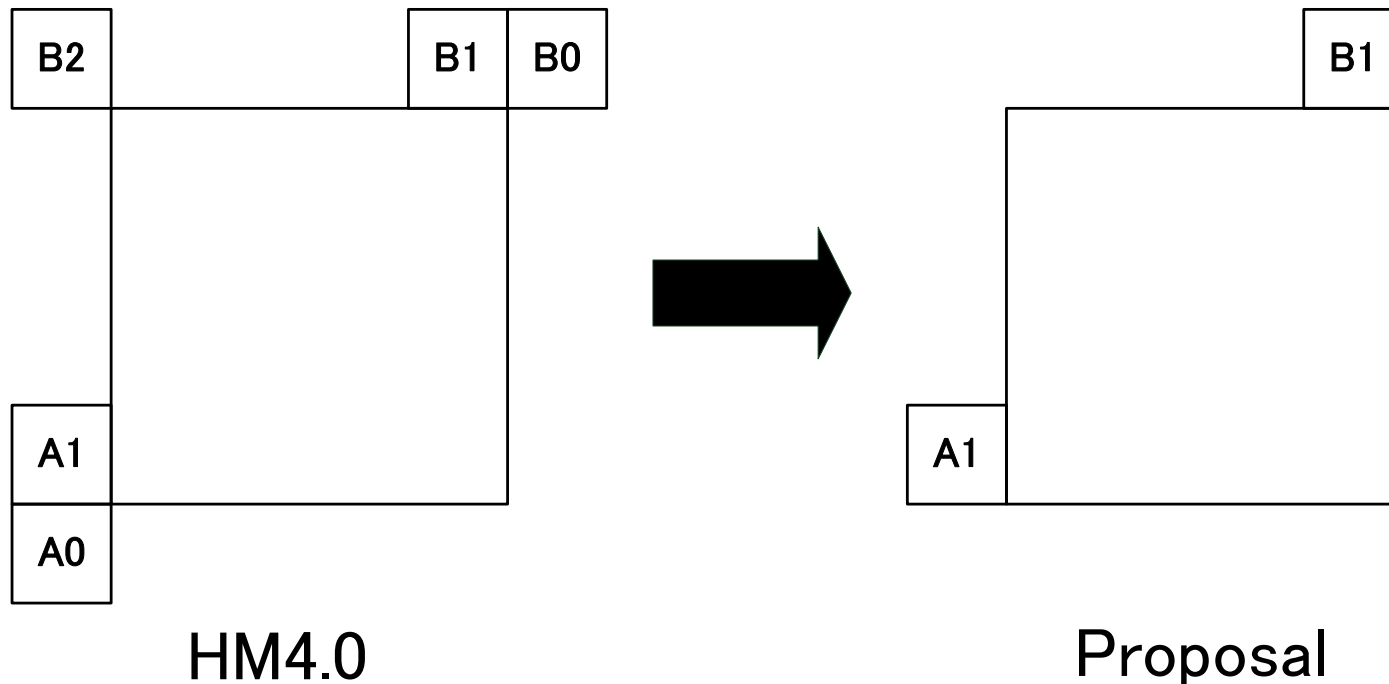
Overview

- Proposed technique
 - Derivation process for RefIdx for temporal merging candidate
- Algorithm
 - Refer only 2 positions (left, above) for derivation of RefIdx
 - Use minimum value of RefIdx
- Crosscheck
 - JCTVC-G742 by Samsung
- Simulation results
 - No coding loss for all settings



2. Algorithm

Algorithm: Derivation for Refldx for temporal merge



- Refer A1, B1 and
Corner (B0, A0 or B2)
- Use the value of the majority

- Refer A1 and B1
- Use a smaller value

Source Code Changes


HM.4.0

```

if (iRefIdxLeft[i] == iRefIdxAbove[i] && iRefIdxAbove[i] == iRefIdxCor[i])
{
    iRefIdxSkip[i] = (iRefIdxLeft[i] == -1) ? 0 : iRefIdxLeft[i];
}
else if (iRefIdxLeft[i] == iRefIdxAbove[i])
{
    iRefIdxSkip[i] = (iRefIdxLeft[i] == -1) ? iRefIdxCor[i] : iRefIdxLeft[i];
}
else if (iRefIdxAbove[i] == iRefIdxCor[i])
{
    iRefIdxSkip[i] = (iRefIdxAbove[i] == -1) ? iRefIdxLeft[i] : iRefIdxAbove[i];
}
else if (iRefIdxLeft[i] == iRefIdxCor[i])
{
    iRefIdxSkip[i] = (iRefIdxLeft[i] == -1) ? iRefIdxAbove[i] : iRefIdxLeft[i];
}
else if (iRefIdxLeft[i] == -1)
{
    iRefIdxSkip[i] = min(iRefIdxAbove[i], iRefIdxCor[i]);
}
else if (iRefIdxAbove[i] == -1)
{
    iRefIdxSkip[i] = min(iRefIdxLeft[i], iRefIdxCor[i]);
}
else if (iRefIdxCor[i] == -1)
{
    iRefIdxSkip[i] = min(iRefIdxLeft[i], iRefIdxAbove[i]);
}
else
{
    iRefIdxSkip[i] = min( min(iRefIdxLeft[i], iRefIdxAbove[i]), iRefIdxCor[i]);
}

```

Proposed method



```

iRefIdxSkip[i] = (iRefIdxLeft[i] != -1) ? ( (iRefIdxAbove[i] != -1) ? min(iRefIdxLeft[i],
    iRefIdxAbove[i]) : iRefIdxLeft[i] ) : ( (iRefIdxAbove[i] != -1) ? iRefIdxAbove[i] : 0 );

```

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3. Experiments

Experiments

- No coding loss for all settings
- Crosscheck: JCTVC-G742 by Samsung

	Random Access HE			Random Access LC		
	Y	U	V	Y	U	V
Class A	0.0%	0.0%	-0.1%	0.0%	0.1%	0.0%
Class B	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Class C	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%
Class D	0.0%	0.0%	0.0%	0.0%	-0.1%	0.0%
Class E						
Overall	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Enc Time[%]	100%			100%		
Dec Time[%]	100%			100%		

	Low delay B HE			Low delay B LC		
	Y	U	V	Y	U	V
Class A						
Class B	0.0%	0.1%	-0.1%	0.0%	0.2%	0.2%
Class C	0.0%	0.0%	0.0%	0.0%	0.2%	-0.1%
Class D	0.0%	0.3%	0.3%	0.0%	0.3%	0.0%
Class E	0.1%	0.3%	1.0%	0.0%	0.0%	-0.1%
Overall	0.0%	0.2%	0.2%	0.0%	0.2%	0.0%
	0.0%	0.1%	0.1%	0.0%	0.2%	0.0%
Enc Time[%]	100%			100%		
Dec Time[%]	100%			100%		



4. Conclusion

Conclusion

- Simper than HM4.0
- Suggestion
 - Adopted to the next WD and HM

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