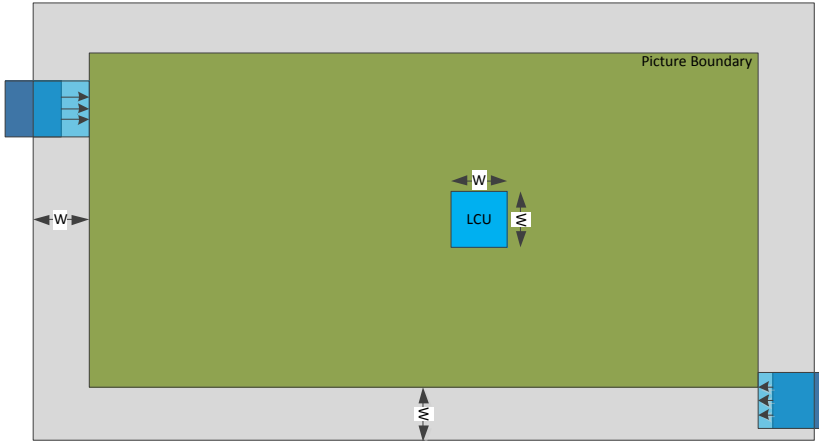# JCTVC-G134
Motion Vector Predictor Candidate Clipping Removal

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Algorithm

- Problem: In HM4.0, MVP values are clipped using the non-normative motion vector clipping operation in the motion compensation process.


```
Void TComDataCU::clipMv    (TComMv&  rcMv)
{
    Int  iMvShift = 2;
    Int iHorMax = (m_pcSlice->getSPS()->getWidth() - m_uiCUPelX - 1 )<<iMvShift;
    Int iHorMin = (-(Int)g_uiMaxCUWidth - (Int)m_uiCUPelX + 1 )<<iMvShift;

    Int iVerMax = (m_pcSlice->getSPS()->getHeight() - m_uiCUPelY - 1 )<<iMvShift;
    Int iVerMin = (-(Int)g_uiMaxCUHeight - (Int)m_uiCUPelY + 1 )<<iMvShift;

    rcMv.setHor( min (iHorMax, max (iHorMin, rcMv.getHor())) );
    rcMv.setVer( min (iVerMax, max (iVerMin, rcMv.getVer())) );
}
```

- Remove the normative motion vector clipping operation in (MVP) candidate derivation process.

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Results (HM4.0 Anchor)

	Random Access HE			Random Access LC		
	Y	U	V	Y	U	V
Class A	0.01%	-0.08%	-0.26%	0.00%	0.02%	0.04%
Class B	0.01%	0.06%	0.01%	0.00%	-0.02%	0.08%
Class C	0.02%	0.01%	-0.01%	-0.01%	0.02%	0.05%
Class D	0.02%	0.03%	-0.02%	-0.02%	0.03%	0.02%
Class E						
Overall	0.01%	0.01%	-0.06%	-0.01%	0.01%	0.05%
	0.01%	0.01%	-0.06%	-0.01%	0.01%	0.04%
Enc Time[%]	97%			98%		
Dec Time[%]	100%			102%		

	Low delay B HE			Low delay B LC		
	Y	U	V	Y	U	V
Class A						
Class B	0.02%	-0.05%	-0.17%	0.02%	0.00%	-0.01%
Class C	0.01%	0.00%	-0.10%	0.02%	0.06%	-0.20%
Class D	0.03%	0.10%	-0.15%	0.00%	-0.13%	-0.11%
Class E	-0.01%	-0.32%	0.39%	-0.03%	-0.19%	-0.19%
Overall	0.01%	-0.05%	-0.04%	0.01%	-0.05%	-0.11%
	0.01%	-0.05%	-0.04%	0.01%	-0.10%	-0.16%
Enc Time[%]	98%			100%		
Dec Time[%]	100%			101%		

	Low delay P HE			Low delay P LC		
	Y	U	V	Y	U	V
Class A						
Class B	0.03%	0.00%	-0.05%	0.01%	0.02%	-0.03%
Class C	0.00%	0.00%	-0.10%	0.02%	-0.07%	0.09%
Class D	0.04%	-0.08%	-0.10%	0.00%	0.03%	-0.02%
Class E	-0.03%	-0.20%	-0.09%	0.00%	-0.07%	0.15%
Overall	0.01%	-0.06%	-0.08%	0.01%	-0.02%	0.04%
	0.01%	-0.08%	-0.07%	0.01%	-0.01%	0.01%
Enc Time[%]	97%			100%		
Dec Time[%]	99%			100%		

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