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# <JCTVC-I0103> Non-CE3: On scanIdxC derivation for chroma LM mode

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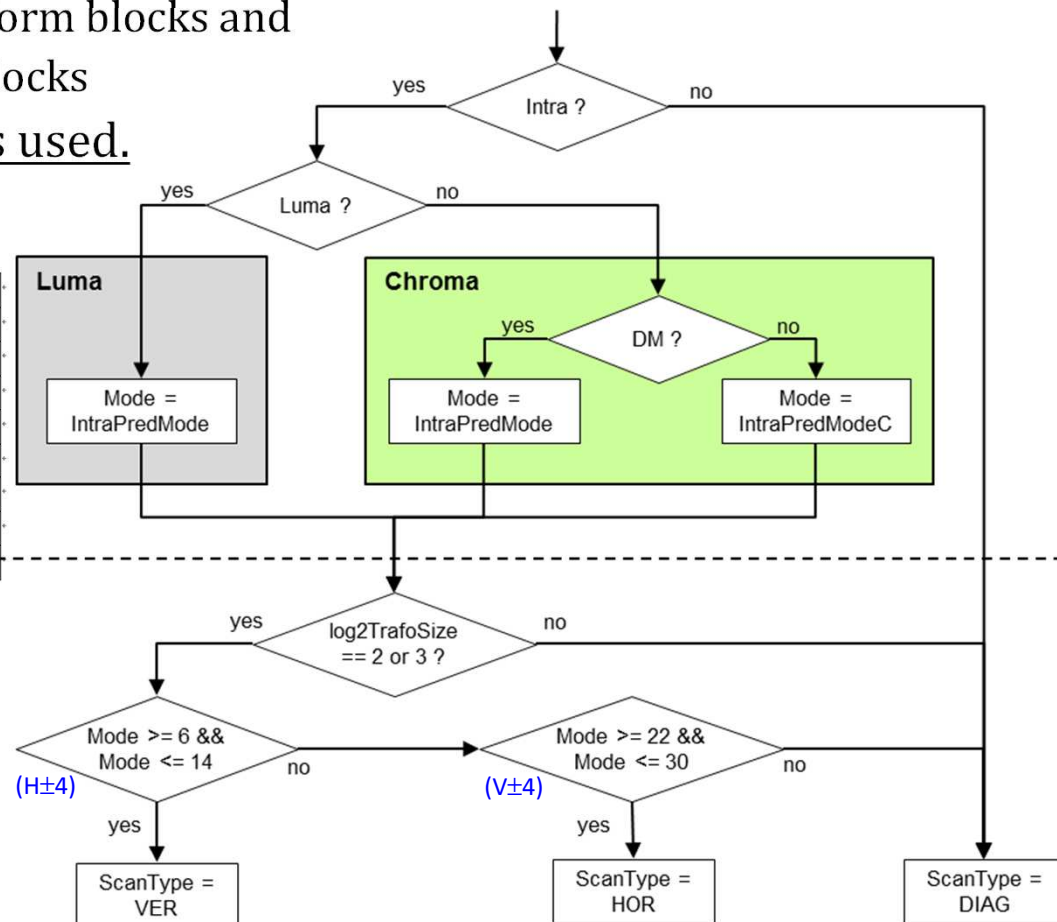
# Background

## ❑ Current HM

- ❖ Intra prediction Mode Dependent Coefficient Scanning (MDCS) is used for:
  - 4x4 and 8x8 Luma transform blocks and
  - 4x4 Chroma transform blocks
- ❖ For LM mode, DIAG scan is used.

Table 7-12 – Specification of ScanType[ log2TrafoSize – 2 ][ IntraPredMode ]

IntraPredMode	log2TrafoSize – 2			
	0	1	2	3
0	0	0	0	0
1	0	0	0	0
2 – 5	0	0	0	0
6 – 14	2	2	0	0
15 – 21	0	0	0	0
22 – 30	1	1	0	0
31 – 35	0	0	0	0



# Proposal

## ❑ Use Luma ScanType for Chroma LM-mode

### ❖ Rationale

- LM prediction is just a scaled and offset version of a reconstructed Luma samples  
→ Similar directionality

### ❖ Required SW change:

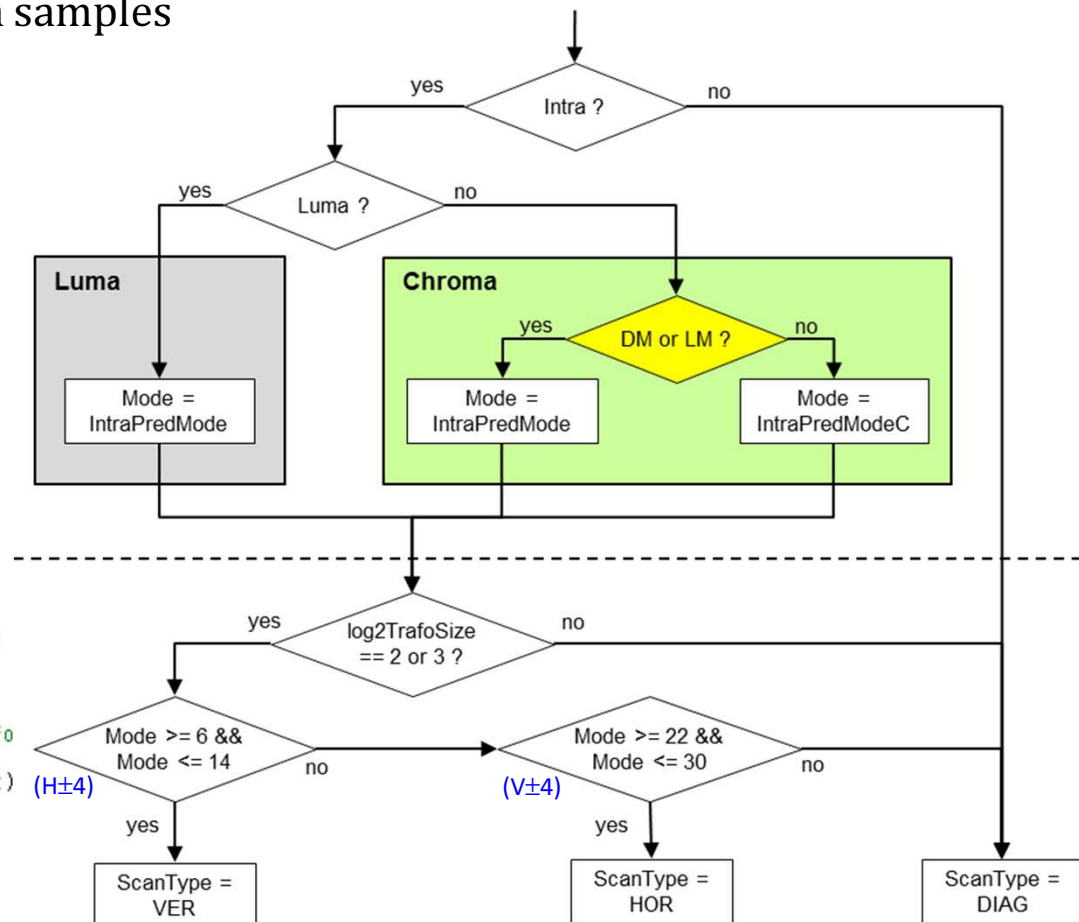
- Just one line!

```

uiDirMode = getChromaIntraDir(uiAbsPartIdx);
#if ETRIKKHU_LM_SCANIDX
if( uiDirMode == DM_CHROMA_IDX || uiDirMode == LM_CHROMA_IDX )
#else
if( uiDirMode == DM_CHROMA_IDX )
#endif
{
    // get number of partitions in current CU
    UInt depth = getDepth(uiAbsPartIdx);
    UInt numParts = getPic()->getNumPartInCU() >> (2 + depth);

    // get luma mode from upper-left corner of current CU
    uiDirMode = getLumaIntraDir((uiAbsPartIdx/numParts)*numParts);
}
#if LOG1_INTRA_NAME_3MPH
uiScanIdx = SCAN_ZIGZAG;
if (uiCTXIdx > 4 && uiCTXIdx < 7) //if multiple scans supported fo
{
    uiScanIdx = abs((Int) uiDirMode - VER_IDX) < 5 ? 1 : (abs((Int)
}
#else

```



# Results & Conclusion

## ❑ Experimental Results

- ❖ Consistent Chroma gain is observed over all classes
  - avg. 0.1% for both component
  - negligible effect of luma performance
- ❖ Results confirmed by Qualcomm (JCTVC-I0327)

	All Intra HE10		
	Y	U	V
Class A	0.0%	-0.1%	-0.1%
Class B	0.0%	-0.1%	-0.2%
Class C	-0.0%	-0.2%	-0.2%
Class D	0.0%	-0.2%	-0.1%
Class E	0.0%	-0.1%	0.0%
Overall	0.0%	-0.1%	-0.1%
	0.0%	-0.1%	-0.1%
Class F	-0.0%	-0.3%	-0.2%
Enc Time[%]	98%		
Dec Time[%]	100%		

## ❑ Conclusion

- ❖ Recommend adopting the proposed extension of MDCS into the next version of HM.