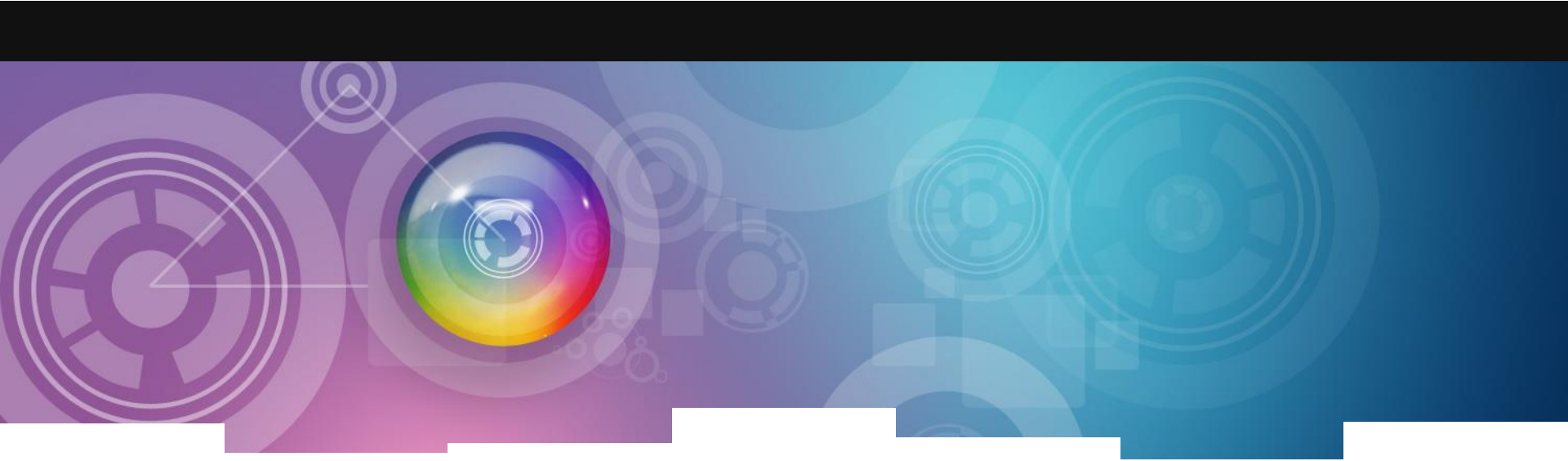


JVET-L0264

CE6-related: Removed MTS CU-Flag and Reduced MTS Pairs



Basic principle

- In current MST, horiz/vertic transform combination (DCT8,DCT8) is much less used

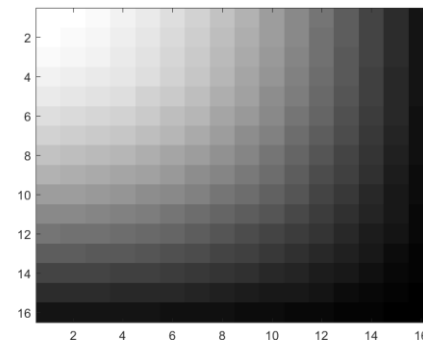
Idea

- Remove MTS flag
- Remove (DCT8,DCT8) as possible MTS transform combination
- Add DCT2 to MTS, while keeping the nb of possible horiz/vertic transform combinations to 4

Syntax change

- MTS flag not coded anymore (considered as always true)
- The decoding of EMT H/V transform indexes remains unchanged compared to VTM2

2D 1st basis function
of (DCT8,DCT8)s



Test-1: 4 possible MTS pairs

- {DCT2,DCT2}
- {DST7,DST7}
- {DST7,DCT8}
- {DCT8,DST7}

Test-2:

- use intra mode based mapping as in JEM to select the sets of H/V transforms, and replace DST1 & DCT5 by DCT2
 - { DST7, DCT8 }, { DST7, DST1 }, { DST7, DCT5 } → { DST7, DCT8 }, { DST7, DCT2 }, { DST7, DCT2 }
- forbid the last pair

Test1 results

AI	Y	U	V	EncT	DecT
Class A1	0.1%	0.2%	0.1%	97%	103%
Class A2	0.0%	0.1%	0.0%	96%	101%
Class B	0.0%	0.1%	0.1%	95%	102%
Class C	-0.1%	0.1%	0.2%	94%	101%
Class E	-0.1%	0.3%	0.2%	101%	100%
Overall	0.0%	0.1%	0.1%	96%	102%
Class D	0.0%	0.2%	-0.1%	92%	103%
Class F (optional)	-0.1%	0.1%	0.1%	96%	97%

0.0% AI, 0.1% RA
Enc time reduction (94% RA)

RA	Y	U	V	EncT	DecT
Class A1	0.1%	0.2%	0.4%	94%	101%
Class A2	0.0%	0.1%	0.1%	94%	102%
Class B	0.1%	0.1%	0.3%	94%	100%
Class C	0.0%	0.2%	0.3%	93%	98%
Class E					
Overall	0.1%	0.1%	0.3%	94%	100%
Class D	0.1%	0.0%	0.5%	93%	98%
Class F (optional)	0.0%	0.0%	0.0%	93%	101%

Test2 results

AI	Y	U	V	EncT	DecT
Class A1	0.0%	0.3%	0.2%	93%	102%
Class A2	0.0%	0.2%	0.2%	93%	101%
Class B	0.0%	0.2%	0.2%	92%	101%
Class C	0.0%	0.1%	0.3%	92%	101%
Class E	-0.1%	0.3%	0.2%	99%	99%
Overall	0.0%	0.2%	0.2%	93%	101%
Class D	0.0%	0.4%	-0.1%	91%	102%
Class F (optional)	-0.1%	0.1%	0.0%	95%	98%

0.0% AI, 0.1% RA
Enc time reduction (93% RA)

RA	Y	U	V	EncT	DecT
Class A1	0.1%	0.4%	0.3%	93%	100%
Class A2	0.0%	0.1%	0.1%	94%	101%
Class B	0.1%	-0.1%	0.2%	93%	100%
Class C	0.1%	0.1%	0.3%	93%	98%
Class E					
Overall	0.1%	0.1%	0.2%	93%	100%
Class D	0.0%	0.1%	0.4%	93%	98%
Class F (optional)	-0.1%	0.1%	0.1%	91%	98%