

The background is a solid green color with a repeating pattern of white line-art icons. These icons include various nautical items like anchors, lifebuoys, and compasses, as well as outdoor and travel-related items like a backpack, a tent, a bird, and a sun. The icons are scattered across the entire slide.

MEDIATEK

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Maximum TS size considering chroma sampling ratio

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Overall Summary

- Propose to decide the maximum chroma TS size depending on chroma sampling ratio

#	Config.	VTM7.0		
		Y	Cb	Cr
Proposed method	AI	0.00%	-0.01%	-0.01%
	RA	0.00%	0.02%	0.06%
	LB	0.02%	-0.15%	-0.06%

Introduction to TS Signalling

- When signalling the TS flag for Y/Cb/Cr, size constraint is applied
 - If TB width and height are smaller than or equal to the maximum TS size (MaxTsSize, same for luma and chroma TBs), the TS flag can be signalled

if(sps_transform_skip_enabled_flag && !BdpcmFlag[x0][y0][0] && tbWidth <= MaxTsSize && tbHeight <= MaxTsSize && (IntraSubPartitionsSplit[x0][y0] == ISP_NO_SPLIT) && !cu_sbt_flag)	
transform_skip_flag[x0][y0][0]	ae(v)
if(sps_transform_skip_enabled_flag && !BdpcmFlag[x0][y0][1] && wC <= MaxTsSize && hC <= MaxTsSize && !cu_sbt_flag)	
transform_skip_flag[xC][yC][1]	ae(v)
if(sps_transform_skip_enabled_flag && !BdpcmFlag[x0][y0][2] && wC <= MaxTsSize && hC <= MaxTsSize && !cu_sbt_flag)	
transform_skip_flag[xC][yC][2]	ae(v)
wC = CbWidth[chType][x0][y0] / SubWidthC	
hC = CbHeight[chType][x0][y0] / SubHeightC	

→ Chroma TB width and height

TS Signalling Issues

- The chroma maximum TS size is not adjusted according to chroma sampling format
- However, according to the meeting notes, “For high-level syntax, the luma mechanisms of TS shall be applied for chroma, no separate signalling. Max TU size of TS inherited based on chroma sampling”
 - It should not use a fixed value as the maximum TS size for luma and chroma TBs
- The chroma maximum TS size should be derived by using the maximum luma TS size and chroma sampling format
 - Align with the maximum chroma transform size derivation, which depends on the maximum luma transform size and chroma sampling

Proposed Method

- For Cb and Cr TBs, when the TB width is less than or equal to $\text{MaxTsSize}/\text{SubWidthC}$ and TB height is less than or equal to $\text{MaxTsSize}/\text{SubHeightC}$, the TS flag can be signalled

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if(sps_transform_skip_enabled_flag && !BdpcmFlag[x0][y0][1] && wC <= (MaxTsSize/SubWidthC) && hC <= (MaxTsSize/SubHeightC) && !cu_sbt_flag)	
transform_skip_flag[xC][yC][1]	ae(v)
if(sps_transform_skip_enabled_flag && !BdpcmFlag[x0][y0][2] && wC <= (MaxTsSize/SubWidthC) && hC <= (MaxTsSize/SubHeightC) && !cu_sbt_flag)	
transform_skip_flag[xC][yC][2]	ae(v)

Performance of Proposed Method

	All Intra Main10				
	Over VTM-7.0				
	Y	U	V	EncT	DecT
Class A1	0.00%	-0.05%	0.03%	100%	100%
Class A2	0.00%	-0.02%	-0.02%	101%	98%
Class B	0.00%	-0.01%	-0.03%	101%	99%
Class C	0.00%	-0.01%	-0.05%	100%	102%
Class E	-0.01%	0.02%	0.02%	102%	101%
Overall	0.00%	-0.01%	-0.01%	101%	100%
Class D	0.00%	0.00%	-0.01%	100%	101%
Class F	-0.01%	0.04%	-0.01%	99%	98%
	Random access Main10				
	Over VTM-7.0				
	Y	U	V	EncT	DecT
Class A1	0.01%	-0.03%	0.11%	100%	97%
Class A2	-0.01%	0.07%	0.10%	100%	100%
Class B	-0.01%	0.02%	0.06%	99%	97%
Class C	-0.01%	0.00%	0.00%	99%	98%
Overall	0.00%	0.02%	0.06%	99%	98%
Class D	-0.01%	-0.04%	0.03%	100%	97%
Class F	0.00%	-0.05%	-0.03%	99%	98%
	Low delay B Main10				
	Over VTM-7.0				
	Y	U	V	EncT	DecT
Class B	0.02%	-0.37%	-0.19%	101%	99%
Class C	0.01%	-0.11%	-0.04%	100%	98%
Class E	0.02%	0.17%	0.15%	100%	100%
Overall	0.02%	-0.15%	-0.06%	100%	99%
Class D	0.02%	-0.02%	0.28%	100%	100%
Class F	-0.11%	-0.22%	0.55%	99%	101%

Conclusion

- Propose to consider chroma sampling format for determine the maximum chroma TS size
- With this modification, the maximum TS size is decided as suggested in the meeting notes and aligned with maximum transform size derivation
- Negligible BD-rate impact