

JCTVC-H0253

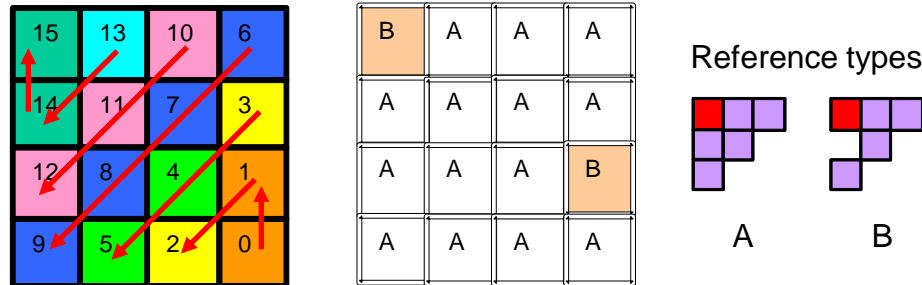
Improvement on parallelism for context derivation process of significant_coeff_flag

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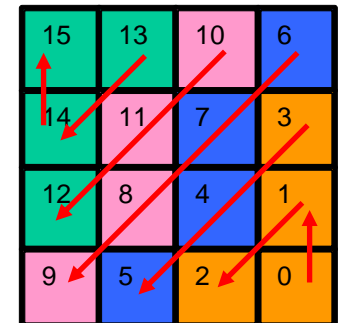
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Overall Summary

- In HM-5, two context derivations can be done in parallel for significant_coeff_flag coding

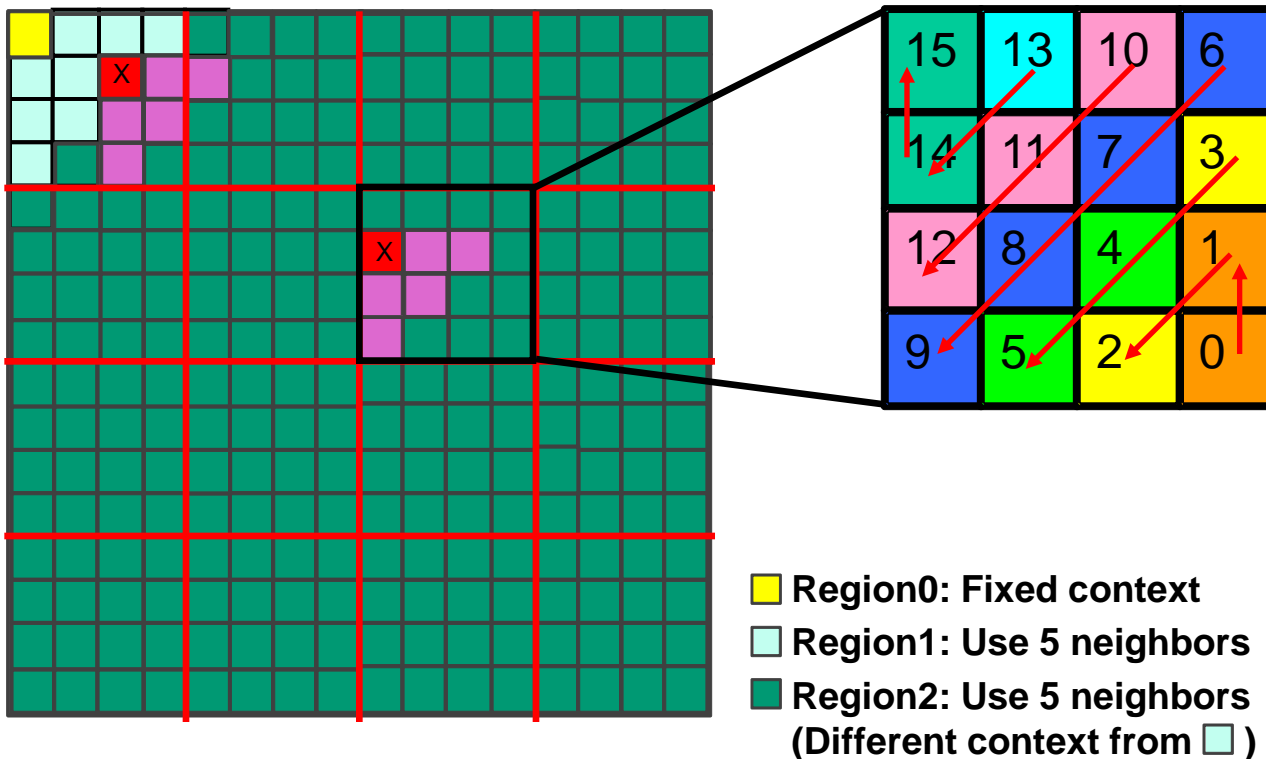


- Propose a minor modification to improve the parallelism of the context derivation
 - Four parallel context derivations can be performed
 - The coding performance of this scheme is about 0.1% loss on average compared with HM-5.0
 - Method 2 in JCTVC-H0427 is the same proposal
- Crosscheck
 - JCTVC-H0599 (NEC)
- Propose the scheme to be adopted to HM-6



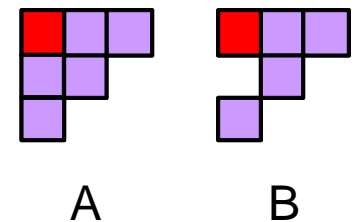
Current context derivation

- In case of 16x16 and 32x32 TU, 4x4 pixels sub-block scan is performed for significance map coding.
- Two context derivation processes can be performed in parallel.



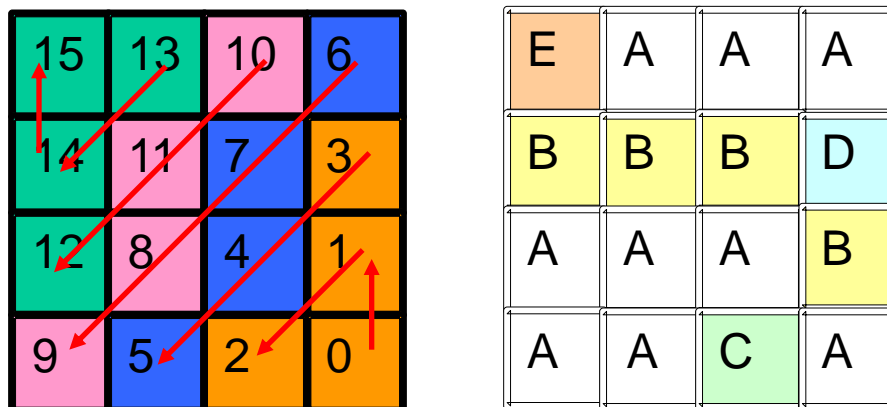
B	A	A	A
A	A	A	A
A	A	A	B
A	A	A	A

Reference types

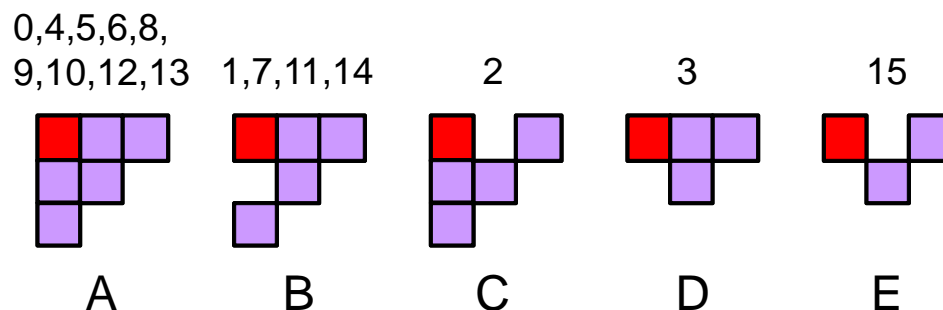


Proposed context derivation

- Introduce five types of the reference mask(A~E) to improve the parallelism of the context derivation.
- Four context derivations can be performed in parallel.



Reference types



Simulation Results

- Anchor: HM5.0
- Tested: Proposed scheme implemented on HM5.0

	High Efficiency			Low Complexity		
	Y	U	V	Y	U	V
All Intra	0.13%	0.22%	0.23%	0.09%	0.28%	0.28%
Random Access	0.08%	0.02%	0.14%	0.06%	0.30%	0.10%
Low delay B	0.10%	0.16%	0.10%	0.04%	0.26%	-0.04%
Random Access 10bit	0.17%	0.30%	0.50%	-	-	-

Small coding losses compared with HM5.0

Conclusions

- Propose a modification to improve the parallelism of the context derivation for significant_coeff_flag coding
 - Four context derivations can be performed in parallel
 - Small coding losses compared with HM5.0
- Propose the scheme to be adopted to HM-6