Content Based Mode and Depth Skipping with Sharp and Directional Edges for Intra Coding in Screen Content Coding

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Background・Target

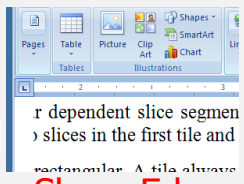
・Compression Standard → ・Extension

HEVC ⇒ for Natural Videos

Smooth Edge

Complexity **UP**

Screen Content Coding ⇒ for Screen Videos



Sharp Edge

Complexity reduction is necessary

Problem・Solution

In conventional works

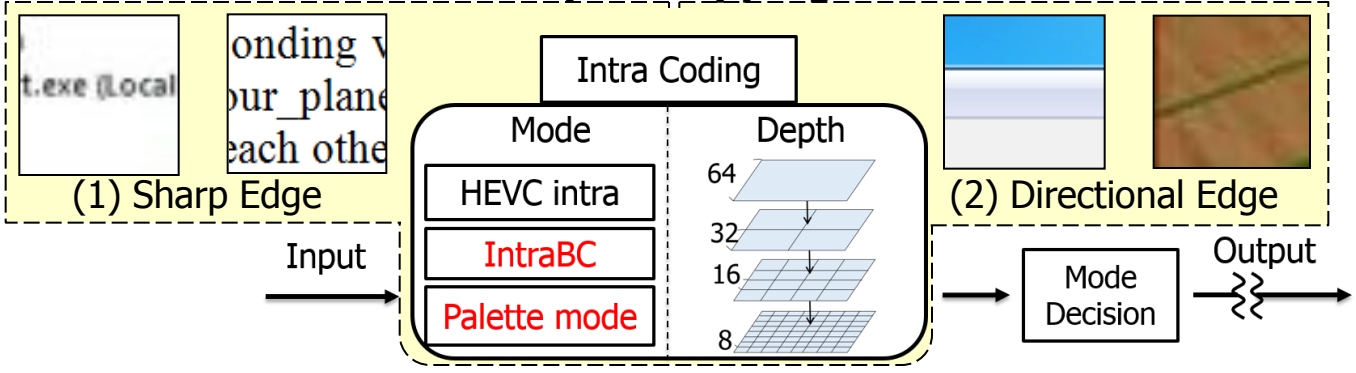
・Sharp **edge** content is not utilized

・**Complexity reduction** for general screen video is not enough

Content based complexity reduction

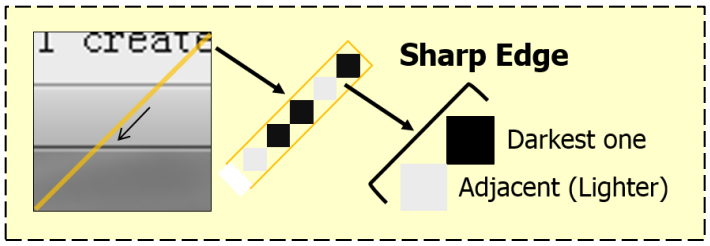
Concept of the proposal

Content based Mode & Depth Skipping

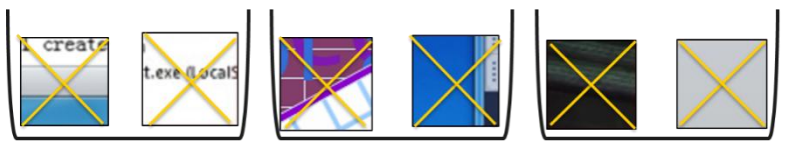


Skip Needless Candidates with two kinds of Classifications

(1) Sharp Edge based Classification (SEBC)

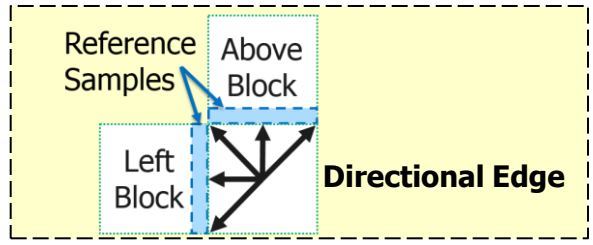


Blocks are classified based on **Sharp Edge** feature

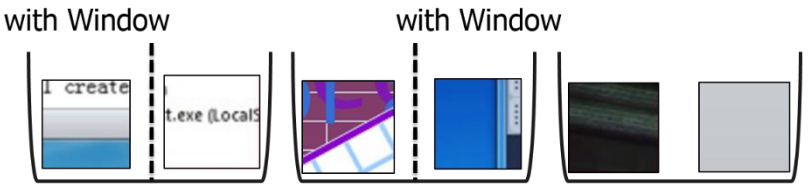


Collecting pixels along yellow lines

(2) Directional Edge based Classification (DEBC)



Classified based on **Directional Edge** feature

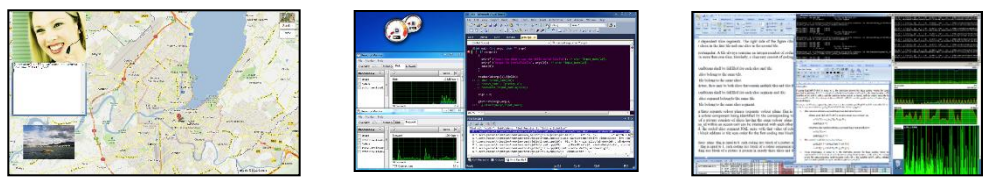


Experimental Result

Encoding Result

	BD-bitrate [%]	Time Saving [%]
SEBC	2.25	10.0
SEBC + DEBC	1.91	10.8

・This approach is effective for videos with large text region



Conclusion

・By Content Base Approach, over 10 % Time Saving is achieved in the Screen Content Coding encoder

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