

Binarization modification for last position coding

V. Seregin and I.-K Kim

Samsung Electronics Co., Ltd.

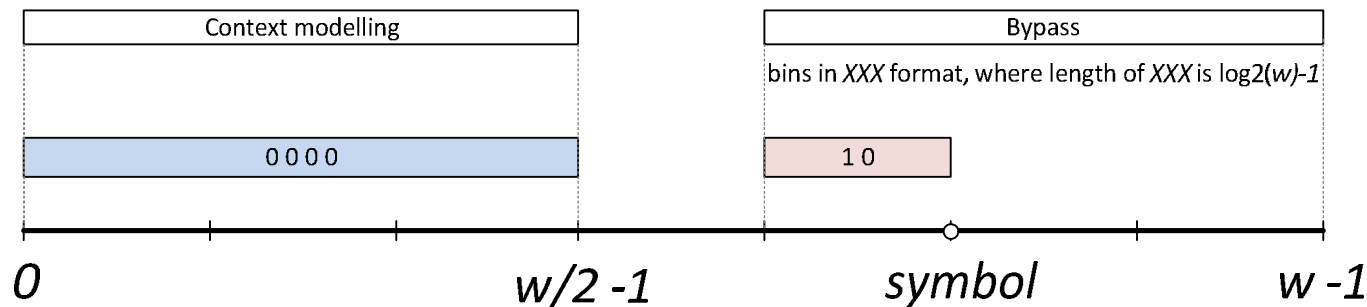
Introduction

- ❖ Last position is coded as x and y components
- ❖ Unary binarization is used for every component
- ❖ Context modeling is applied for each bin

- ❖ Suggested modification to simplify last position coding:
 - Reduce binarization length by applying fixed binary code in combination with unary
 - Reduce context models and context models update by using CABAC bypass coding for fixed binary part

Proposed binarization

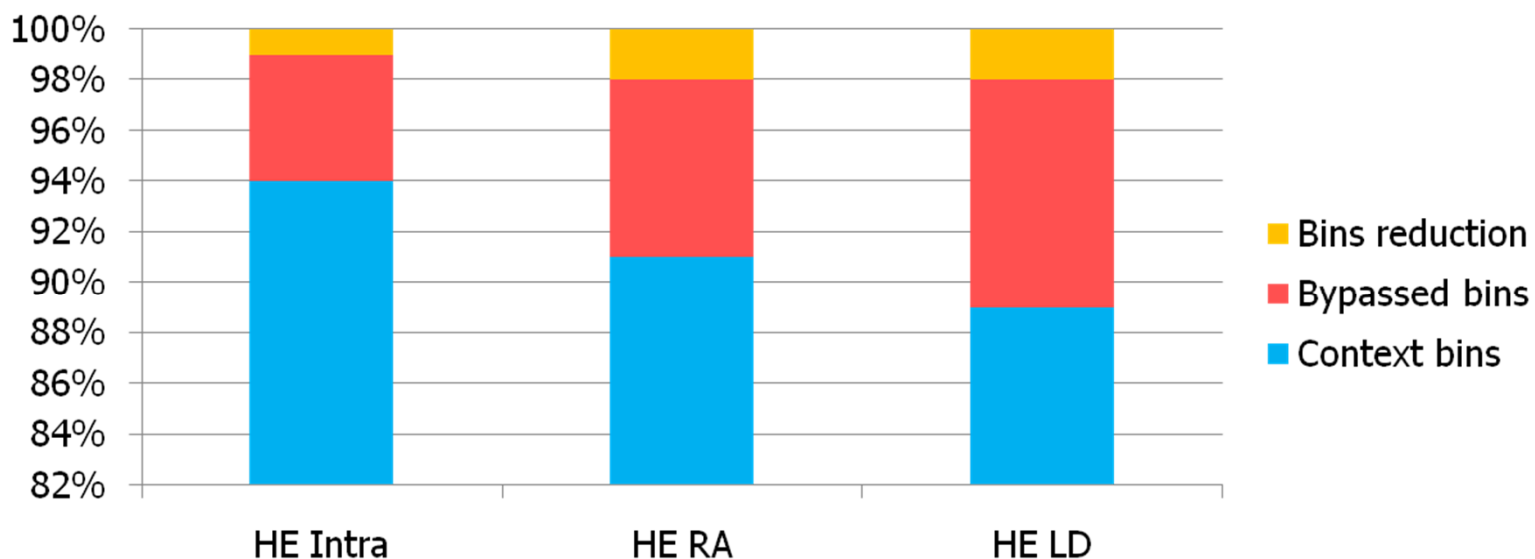
- ❖ Binarization for each component of last position coding
 - Use unary code as anchor for the magnitude less then $TU_size/2$
 - Apply fixed binary representation for the rest exciding $TU_size/2$
 - Fixed binary part of binarization is bypass coded



Magnitude of last position component	Truncated unary (context model)	Fixed binary (bypass)
0	1	-
1	01	-
2	001	-
3	0001	-
4	0000	00
5	0000	01
6	0000	10
7	0000	11

Simulation result

- ❖ Bypass bins are about 7% in average with around 1% of total bins reduction



<i>Test configuration</i>	<i>Proposed</i>				
	Y	U	V	eTime	dTime
HE Intra	0.1	0.0	0.0	100%	100%
HE Random Access	0.0	0.0	0.0	100%	100%
HE Low Delay	0.0	0.0	0.0	100%	100%
Overall	0.0	0.0	0.0	100%	100%



Thank you !