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29/WG 11**

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Abstract

This contribution reports the simulation results for Test CE5.1.4 [1]. In this test, the CABAC engine uses a single window to estimate the binary symbol probabilities, where the window parameters are different for different contexts and are stored in a pre-defined look-up table (LUT). The range update method used for the CABAC engine is either the one proposed in JVET-L0117 [2] or the one proposed in JVET-L0335 [3]. Compared with VTM3.0, the average coding gains of the proposed CABAC engine are -0.89% AI, -0.71% RA, and -0.61% LDB, when JVET-L0117 is used for range update; and are -0.80% AI, -0.64% RA, and -0.56% LDB, when JVET-L0335 is used for range update.

Introduction

Probability Estimation

The CABAC probability estimation method of this test was proposed in JVET-L0116 [4]. Denote $P[k]$ as the probability for binary arithmetic coding and $P[k]$ has 14-bit precision. The single-window probability estimation is implemented using the following recursive equations.

If the current bin is 1, $P[k]$ is updated to $P[k+1]$ by (1),

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JVET-M0413

<http://vexpertise.stbit.ru/documents/JVET-M0413>

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Document Information

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https://jvet-experts.org/doc_end_user/documents/13_Marrakech/wg11/JVET-M0413-v2.zip

DOC JVET-L1001-v7.docx

XLS JVET-M0413 (L0117 for range update).xlsm

XLS JVET-M0413 (L0335 for range update).xlsm

DOC JVET-M0413.docx



MEETING NOTES

external meeting notes

https://www.itu.int/wftp3/av-arch/jvet-site/2019_01_M_Marrakech/JVET-M_Notes_dH.docx

Joint Video Experts Team (JVET) of ITU-T SG21 WP3/21 and ISO/IEC JTC 1/SC 29

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1 Summary



MEETING NOTES

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A. Said, J. Dong, H. Egilmez, Y.-H. Chao, M. Karczewicz, V. Seregin, "CE5: Per-context CABAC initialization with single window (Test 5.1.4)", JVET-M0413, 13th Meeting: Marrakech, January 2019.

REFERENCES

1. [A. Said, J. Dong, H. Egilmez, Y.-H. Chao, M. Karczewicz, V. Seregin, "CE5: Per-context CABAC initialization with single window \(Test 5.1.7\)", JVET-L0116, 12th Meeting: Macao, October 2018.](#)
2. [A. Said, J. Dong, H. Egilmez, Y.-H. Chao, M. Karczewicz, V. Seregin, "CE5: Binary arithmetic coding range update with small table or short multiplications \(Test 5.2.4\)", JVET-L0117, 12th Meeting: Macao, October 2018.](#)
3. [F. Bossen, "CE5: probability update \(5.1.1\) and range computation \(5.2.1\) tests", JVET-L0335, 12th Meeting: Macao, October 2018.](#)
4. [H. Kirchhoffer, A. Said, "Description of Core Experiment 5 \(CE5\): Arithmetic Coding Engine", JVET-L1025, 12th Meeting: Macao, October 2018.](#)