

**Joint Video Experts Team (JVET)
of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC
29/WG 11**

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Abstract

This contribution proposes to remove the offset table from MIP and replaces it with a simple derivation based on a shift operation. It enables to both simplify the specification and the prediction process as offset multiplication is replaced a shift. Simulations show no losses on CTC and external datasets.

Introduction

During the 15th JVET meeting in Gothenburg, Sweden, a modified design of MIP was adopted for VVC draft version 6 [1], providing significant design simplification and storage savings [2]. Despite efforts to simplify the process and reduce the storage from previous versions [3], MIP still includes a lot of tables and can be further simplified. The VTM-6.0 MIP design comprises 34 matrices distributed as follows:

MipSizeId=0 N=18 matrices (16x4), one offset vector (1x18) and one shift vector (1x18).

MipSizeId=1 N=10 matrices (16x8), one offset vector (1x10) and one shift vector (1x10).

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JVET-P0625
<http://vexpertise.stbit.ru/documents/JVET-P0625>

JVET Search

Thibaud Blot

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Non-CE3: simplified MIP with power-of-two offsets

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ABSTRACT

MEETING NOTES

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James Pearson Chen

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V. Sengul

JVET-P0625
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Associated Resources

Comments

MEETING NOTES

external meeting notes
https://www.itu.int/wftp3/av-arch/jvet-site/2019_10_P_Geneva/JVET-P_Notes_dG.docx

Joint Video Experts Team (JVET)
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Meeting Report of the 41st Meeting of the Joint Video Experts Team

Report document from the chair of JVET

Report

1 Summary

MEETING NOTES

[JVET-P0625](#) Non-CE3: simplified MIP with power-of-two offsets [T. Biatek, A.K. Ramasubramonian, G. Van Der Auwera, M. Karczewicz (Qualcomm)] [late]

This contribution proposes to remove the offset table from MIP and replaces it with a simple derivation based on a shift operation. It enables to both simplify the specification and the prediction process as offset multiplication is replaced with a shift. Simulations show no losses on CTC and external datasets.

Aspect 1 proposed to remove offset table

Aspect 2 replace offset multiplication with a shift operation.

It was commented that the offset table is not necessary for implementation. It was commented that it might have impact when floating point model is used.

It is claimed that it removes mode dependency and replace with shift operation.

The BoG recommended further study.

CITATION

T. Biatek, A.K. Ramasubramonian, G. Van Der Auwera, M. Karczewicz, "Non-CE3: simplified MIP with power-of-two offsets", JVET-P0625, 16th Meeting: Geneva, October 2019.

REFERENCES

1. [J. Pfaff, B. Stallenberger, M. Schäfer, P. Merkle, P. Helle, T. Hinz, H. Schwarz, D. Marpe, T. Wiegand, "CE3: Affine linear weighted intra prediction \(CE3-4.1, CE3-4.2\)", JVET-N0217, 14th Meeting: Geneva, March 2019.](#)
2. [J. Ström, D. Saffar, P. Wennersten, R. Sjöberg, "AHG13: Tool-off tests on Open Images dataset", JVET-O0551, 15th Meeting: Gothenburg, SE, July 2019.](#)
3. [J. Pfaff, P. Merkle, P. Helle, H. Schwarz, D. Marpe, T. Wiegand, A. K. Ramasubramonian, T. Biatek, G. Van der Auwera, L. Pham Van, M. Karczewicz, J. Choi, J. Heo, J. Lim, M. Salehifar, S. Kim, K. Kondo, M. Ikeda, T. Suzuki, Z. Zhang, K. Andersson, R. Sjöberg, J. Ström, P. Wennersten, T. C. Ma, X. Xiu, Y. Wen, C. H. J. Jhu, X. Wang, J. Huo, Y. Ma, S. Wan, Y. Yu, "Non-CE3: Simplifications of MIP", JVET-O0925, 15th Meeting: Gothenburg, SE, July 2019.](#)
4. [B. Bross, J. Chen, S. Liu, "Versatile Video Coding \(Draft 6\)", JVET-O2001, 15th Meeting: Gothenburg, SE, July 2019.](#)