

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

Document: JVET-AA0115-v2

MPEG: m60085

27th Meeting, by teleconference, 13-22 July 2022

**Title:** EE1-1.6-related: ALF with Samples before Deep In-Loop Filter

**Status:** Input document to JVET

**Purpose:** Proposal

**Author(s) or** [Jingxin Li](#) | [lijingxin@cesl.cn](mailto:lijingxin@cesl.cn) (ByteDance)

**Contact(s):** [Kai Zhang](#) | [zhangkai.video@bytedance.com](mailto:zhangkai.video@bytedance.com) | submitter (ByteDance)

[Yun Li](#) | [yli30@qti.qualcomm.com](mailto:yli30@qti.qualcomm.com) (ByteDance)

[Li Zhang](#) | [lizhang.idm@bytedance.com](mailto:lizhang.idm@bytedance.com) (ByteDance)

**Source:** ByteDance

---

---

HEADER EXCERPT FROM SOURCE DOCUMENT

Abstract

This contribution presents a loop filter (ALF) technique on top of the deep learning-based in-loop filtering method in EE1-1.6. ALF is proposed to take luma samples before CNN-based filtering as the additional input where filters with 3x3 and 5x5 diamond shapes are utilized to derive the filtered samples. Compared with VTM11.0\_nnvc, the proposed method with 5x5 diamond shapes reportedly shows on average {x%, x%, x%}, { x%, x%, x%}, and {x%, x%, x%} BD-rate reductions for {Y, Cb, Cr} components, under AI, RA, and LDB configurations, respectively. With 3x3 diamond shapes, the proposed method reportedly bring on average {x%, x%, x%}, { x%, x%, x%}, and {x%, x%, x%} BD-rate reductions for {Y, Cb, Cr} components, under AI, RA, and LDB configurations, respectively.

Introduction

In EE1-1.6 [1], a deep learning-based in-loop filtering method has been proposed to improve the coding efficiency. Combined with the CNN-based filtering, ALF takes the samples after CNN-based filtering as input. For luma component, a filter with 7x7 diamond shape is utilized to generate the filtered sample in ALF. In JVET-Z0146 [2], it is proposed to utilize samples before deblocking filter in ALF.

Built from JVET-AA0115.docx

LINKS

CARD

JVET-AA0115

<http://vexpertise.stbit.ru/documents/JVET-AA0115>

JVET Search

Jinglin LiKai ZhangYan LiLi Zhang

EE1-1.6-related: ALF with Samples before Deep In-Loop Filter

Authors:

ABSTRACT

MEETING NOTES



SOURCE

external source

[https://jvet-experts.org/doc\\_end\\_user/current\\_document.php?id=11791](https://jvet-experts.org/doc_end_user/current_document.php?id=11791)

JVET DOCUMENT MANAGEMENT SYSTEM

JVET

User

Login

Create new user

Claim your password

Contact

Preview document JVET-AA0115

Document Information

Submitted byJinglin Chen

TitleEE1-1.6-related: ALF with Samples before Deep In-Loop Filter

AuthorsV. Samarin

DocumentJVET-AA0115  
uploaded document

Associated Resources

Comments



ARCHIVE

archive v2

[https://jvet-experts.org/doc\\_end\\_user/documents/27\\_Teleconference/wg11/JVET-AA0115-v2.zip](https://jvet-experts.org/doc_end_user/documents/27_Teleconference/wg11/JVET-AA0115-v2.zip)

DOCJVET-AA0115.docx

PDFJVET-AA0115.pdf

PDFJVET-AA0115.pdf

XLSJVET-AA0115\_3x3.xlsm

XLSJVET-AA0115\_3x3\_vs\_EE1-1.6.xlsm

XLSJVET-AA0115\_5x5.xlsm

XLSJVET-AA0115\_5x5\_vs\_EE1-1.6.xlsm

DOCJVET-AA0115\_r1.docx



CITATION

J. Li, K. Zhang, Y. Li, L. Zhang, "EE1-1.6-related: ALF with Samples before Deep In-Loop Filter", JVET-AA0115, 27th Meeting: by teleconference, July 2022.

## REFERENCES

---

1. [J. Li, Y. Li, K. Zhang, L. Zhang, "EE1-1.6-related: RDO Considering Deep In-Loop Filter with SADL", JVET-AA0113, 27th Meeting: by teleconference, July 2022.](#)
2. [N. Hu, V. Seregin, M. Karczewicz, "AHG12: Using samples before deblocking filter for adaptive loop filter", JVET-Z0146, 26th Meeting: by teleconference, April 2022.](#)
3. [F. Galpin, T. Dumas, P. Bordes, E. François, "AhG11: SADL update", JVET-Z0161, 26th Meeting: by teleconference, April 2022.](#)
4. [E. Alshina, R.-L. Liao, S. Liu, A. Segall, "Common Test Conditions and evaluation procedures for neural network-based video coding technology", JVET-Z2016, 26th Meeting: by teleconference, April 2022.](#)