

**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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Title: **JVET AHG report: Encoding algorithm optimization (AHG10)**

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Purpose: Proposal

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Source: P. de Lagrange, A. Duenas, R. Sjöberg, A. Tourapis (AHG chairs)

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Abstract

This document summarizes the activities of AHG10 on encoding algorithm optimization, between the 36th meeting (Kemer, TR, 1–8 November 2024) and 37th meeting (Geneva, CH, 14–22 January 2025).

Mandates

At the 37th meeting of the ITU-T/ISO/IEC Joint Video Experts Team (JVET), an ad hoc group on encoding algorithm optimization was established with the following mandates:

Study the impact of using techniques such as tool adaptation and configuration, and perceptually optimized adaptive quantization for encoder optimization.

Study the impact of non-normative techniques of preprocessing for the benefit of encoder optimization.

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LINKS

CARD

JVET-AK0010

<http://vexpertise.stbit.ru/documents/JVET-AK0010>

The screenshot shows the 'JVET Search' interface. At the top, there's a search bar containing the text 'JVT AHG report: Encoding algorithm optimization (AHG10)'. Below the search bar, a list of authors is displayed: Philippe de Lathauwer, A. Dumas, Rickard Sjoberg, Alexis Tourassis, and Jens-Rainer Ohm. The main content area is titled 'JVT AHG report: Encoding algorithm optimization (AHG10)' and lists the authors. Below this, there are sections for 'ABSTRACT' and 'MEETING NOTES', each with a blue header and a light blue background. The 'ABSTRACT' section contains two lines of text, and the 'MEETING NOTES' section contains three lines of text. A QR code is visible in the bottom right corner of the image.

ARCHIVE

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https://jvet-experts.org/doc_end_user/documents/37_Geneva/wg11/JVET-AK0010-v1.zip

A screenshot of a document interface. At the top left, the word 'Archive' is written in a light blue font. Below it, a light blue rounded rectangle contains a blue square icon with the white text 'DOC' and the document title 'JVET-AK0010-v1.docx' in a dark blue font. In the bottom right corner, there is a white rounded rectangle containing a black and white QR code.

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Java, Video Experts' Team

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Document Information

Submitted by

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Title

JVET-AVC Input: Encoding algorithm optimization (vrtx121)

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Associated Resources

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MEETING NOTES

external meeting notes

http://vexpertise.stbit.ru/meeting-notes/source/meeting_37_ak

  	Joint Video Experts Team (JVET) of ITU-T SG21 WP3/21 and ISO/IEC JTC 1/SC 29 37th Meeting: Geneva, CH, January 2025	Document: JVET-AK0010
Title:	Meeting Report of the 41st Meeting of the Joint Video Experts Team	
Status:	Report document from the chair of JVET	
Purpose:	Report	
1 Summary		
		

MEETING NOTES

[JVET-AK0010](#) JVET AHG report: Encoding algorithm optimization (AHG10) [P. de Lagrange, A. Duenas, R. Sjöberg, A. Tourapis (AHG chairs)]

1. Activity

The regular JVET e-mail reflector was used for discussions (jvet@lists.rwth-aachen.de).

Teleconferences were held on December 4th and December 19th, and a few related organizational e-mails were sent to the JVET reflector, as well as a few support requests and answers to reproduce the results from the previous meeting cycle that were used for multilayer viewing tests during the Kemer meeting.

1. Related contributions

Two contributions were identified relating to AHG10 and summarized in the following sections.

General

JVET-AK0052 - AHG10: Teleconference on encoder optimization

This document summarizes discussions during teleconferences on encoder optimization.

The remaining work related to VVC multi-layer coding was discussed, including support for multi-view (suggested tests, test sequences, expected software tools improvements and if specific configurations and encoder optimizations for visual testing would be acceptable.

Common test conditions

JVET-AK0181 - AHG10: Suggested upgrade of CTC for random access for VTM

This contribution suggests upgrading the VTM settings for random access to better handle a larger span of bitrates:

- Enabling GOP-based RPR as it can be beneficial to encode at a lower resolution for lower bitrates
- Enabling DMVR encoder control to improve subjective quality in some situations also especially at lower bitrates

Minor BD-rate gains (around -0.3%) were reported using the CTC, but more gain (up to -1.6%) when testing higher QPs, and more gain at higher resolutions. Visual quality improvement was reported, especially at low bitrates.

1. Recommendation

The AHG recommended that the related input contributions are reviewed, and to further continue the study of encoding algorithm optimizations in JVET.

CITATION

P. de Lagrange, A. Duenas, R. Sjöberg, A. Tourapis, "JVET AHG report: Encoding algorithm optimization (AHG10)", JVET-AK0010, 37th Meeting: Geneva, CH, January 2025.