Joint Video Experts Team (JVET) of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 11
32nd Meeting, Hannover, DE, 13-20 October 2023

Document: JVET-AF2002
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Title: **Algorithm description for Versatile Video Coding and Test Model 21 (VTM 21)**

Status: Input document to JVET

Purpose: Proposal

Author(s) or Contact(s):
A. Browne | adrian.browne@sony.com
Y. Ye | yan.ye@alibaba-inc.com
S. Kim | seunghwan3.kim@lge.com
Jens-Rainer Ohm | ohm@ient.rwth-aachen.de | submitter

Source: A. Browne, Y. Ye, S. Kim

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Abstract

The JVET established the VVC Test Model 2 (VTM2) software at its 3 meeting (-2 2023,). This document serves as a source of general tutorial information on the VVC design and also provides an algorithm description and encoding method description of VTM2 software. It is noted that, as no update of the algorithm description document was released at the 27thJVET meeting, the numbering of the VTM software version is higher than that of this description document. In the main body of the text, numbering refers to the software version. The VVC has been developed by a joint collaborative team of ITU-T and ISO/IEC experts known as the Joint Video Experts Team (JVET), which is a partnership of ITU-T Study Group 16 Question 6 (known as VCEG) and ISO/IEC JTC 1/SC 29/WG 11 (known as MPEG). This new standard has been designed with two primary goals. The first of these is to specify a video coding technology with a compression capability that is substantially beyond that of the prior generations of such standards, and the second is for this technology to be highly versatile for effective use in a broadened range of applications. In addition to the applications that have commonly been addressed by prior video coding standards, some key application areas for the use of this standard include in particular ultra-high-definition video (e.g., with 3840×2160 or 7620×4320 picture resolution and bit depth of 10 or 12 bits as specified in Rec. ITU-R BT.2100), video with a high dynamic range and wide colour gamut (e.g., with the perceptual quantization or hybrid log-gamma transfer characteristics specified in Rec. ITU-R BT.2100), and video for immersive media applications such as 360° omnidirectional video projected using a common projection format such as the equirectangular or cubemap projection format.

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LINKS

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JVET-AF2002

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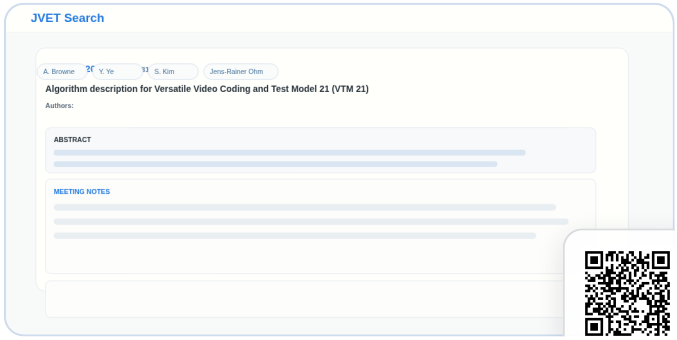

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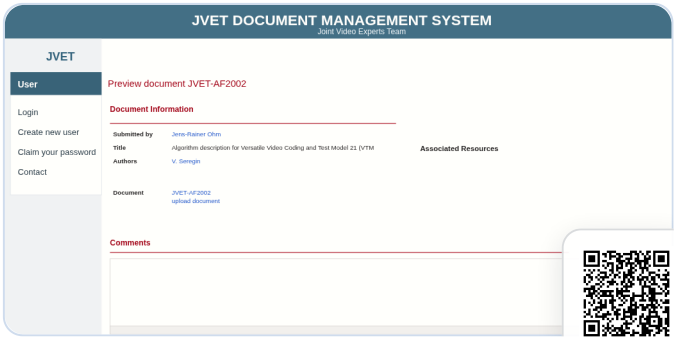

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MEETING NOTES

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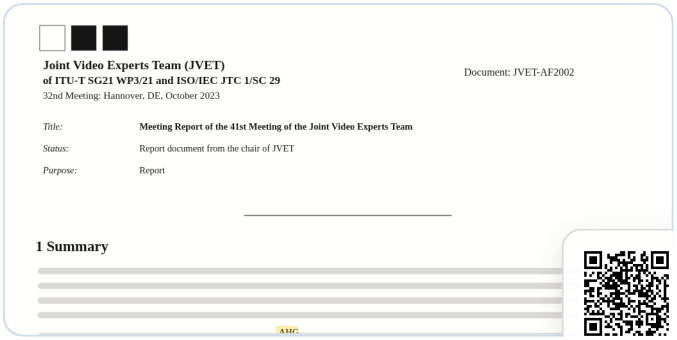

MEETING NOTES

JVET-AF2002 Algorithm description for Versatile Video Coding and Test Model 21 (VTM 21) [A. Browne, Y. Ye, S. Kim] [WG 5 N 245] (2024-01-12, near next meeting)

New elements from notes elsewhere in this report:

- Decision (SW): Adopt the new threshold in JVET-AF0111 to the next releases of ECM, VTM and VTM-11ecm.
- Decision (SW): Adopt JVET-AF0122 to the next release of VTM, turned off by default in CTC.

> It is noted that the list above may not be complete; if some adoption is missing that is recorded somewhere else in the meeting notes it shall also be considered included.

Remains valid – not updated: JVET-AC2003 Guidelines for VTM-based software development [F. Bossen, X. Li, K. Sühring]

Remains valid – not updated: JVET-T2004 Algorithm descriptions of projection format conversion and video quality metrics in 360Lib (Version 12) [Y. Ye, J. Boyce]

Remains valid – not updated: JVET-AE2005 New level and systems-related supplemental enhancement information for VVC (Draft 6) [B. Bross, E. François, M. M. Hannuksela, A. Tourapis, Y.-K. Wang] (2023-08-18)

Primary editor for this document, the corresponding ITU consent text, and the corresponding FDIS text WG 5 N 228: B. Bross.

Remains valid – not updated: JVET-AE2006 Additional SEI messages for VSEI (Draft 5) [S. McCarthy, T. Chujoh, M. M. Hannuksela, G. J. Sullivan, Y.-K. Wang] (2023-08-18)

Primary editor for this document, the corresponding ITU consent text, and the corresponding FDIS text WG 5 N 220: Y.-K. Wang.

Remains valid – not updated: JVET-AD2007 Guidelines for NNVC software development [F. Galpin, S. Eadie, L. Wang, Z. Xie, Y. Li] (2023-05-26)

Remains valid – not updated: JVET-X2008 Conformance testing for versatile video coding (Draft 7) [J. Boyce, F. Bossen, K. Kawamura, I. Moccagatta, W. Wan]

Remains valid – not updated: JVET-Y2009 Reference software for versatile video coding (Draft 3) [F. Bossen, K. Sühring, X. Li]

Remains valid – not updated JVET-AB2010 VTM and HM common test conditions and software reference configurations for SDR 4:2:0 10 bit video [F. Bossen, X. Li, V. Seregin, K. Sharman, K. Sühring]

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Remains valid – not updated: JVET-U2012 JVET common test conditions and evaluation procedures for 360° video [Y. He, J. Boyce, K. Choi, J.-L. Lin]

Remains valid – not updated: JVET-T2013 VTM common test conditions and software reference configurations for non-4:2:0 colour formats [Y.-H. Chao, Y.-C. Sun, J. Xu, X. Xu]

Remains valid – not updated: JVET-Q2014 JVET common test conditions and software reference configurations for lossless, near lossless, and mixed lossy/lossless coding [T.-C. Ma, A. Nalci, T. Nguyen]

Remains valid – not updated: JVET-Q2015 JVET functionality confirmation test conditions for reference picture resampling [J. Luo, V. Seregin]

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