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: **AHG9/AHG2: Miscellaneous changes for HEVC**

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Purpose: Proposal

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Source: ByteDance, Apple

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Abstract

This document contains the draft text for changes to the High Efficiency Video Coding (HEVC) standard (Rec. ITU-T H.265 | ISO/IEC 23008-2). The changes include the support of a new profile, namely the Multiview Main 10 profile, and the support of 12 new SEI messages, namely the SEI processing order, processing order nesting, encoder optimization information, source picture timing information, modality information, digitally signed content initialization, digitally signed content selection, and digitally signed content verification, generative face video, generative face video enhancement, AI usage restrictions, and packed regions information SEI messages, through referencing the Versatile Supplemental Enhancement Information (VSEI) standard (Rec. ITU-T H.274 | ISO/IEC 23002-7). The changes also include some extensions and corrections to the previous version of the HEVC standard.

Changes that have been integrated for the 38th JVET meeting in March-April 2025:

JVET-AL0059 AHG9: Inclusion of the packed regions information SEI message in HEVC

"JVET-AL0324 (incl. aspects of AL0072 AL0098 AL0120 AL0122 AL0129 AL0303)" AHG9: A summary of proposals on the PRI SEI message

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LINKS

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JVET-AM0048

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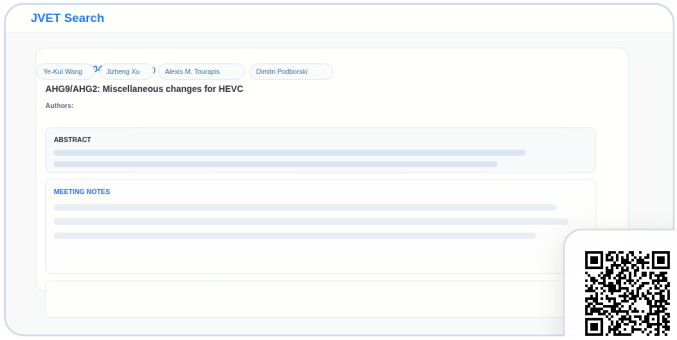

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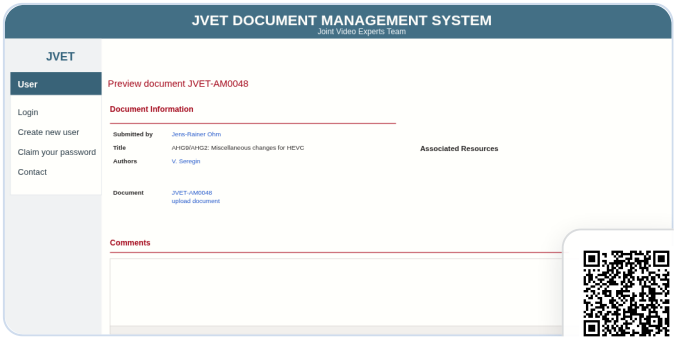

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MEETING NOTES

external meeting notes

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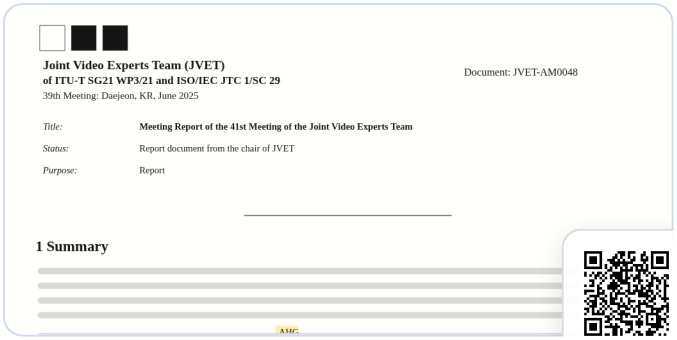

MEETING NOTES

JVET-AM0048 AHG9/AHG2: Miscellaneous changes for HEVC [Y.-K. Wang, J. Xu (Bytedance)]

This contribution proposes the following changes for HEVC:

1. Changed the value range of pri_region_layer_id[i] in bitstreams conforming to "this version of this Specification" from 0..55 to 0..62, as the value range 0..55 is good for VVC but not good for HEVC as in HEVC the corresponding value range of nuh_layer_id is 0..62.an asserted bug fix, in subclause G.11.1.3 (Multiview format range extensions profiles) in JVET-AL1006-v1, change the following (thanks to Alexis M. Tourapis for spotting the error):

- Otherwise (OpTid of the output operation point is less than vps_max_sub_layer_minus1), the conformance is indicated by sub_layer_profile_idc[OpTid] being equal to 10 or sub_layer_profile_compatibility_flag[OpTid][10] being equal to 1, with the additional indications specified in Table H.4 for the flags associated with the index OpTid.

to the following (change the two instances of "10" to "14"):

- Otherwise (OpTid of the output operation point is less than vps_max_sub_layer_minus1), the conformance is indicated by sub_layer_profile_idc[OpTid] being equal to 14 or sub_layer_profile_compatibility_flag[OpTid][14] being equal to 1, with the additional indications specified in Table H.4 for the flags associated with the index OpTid.

The detailed proposed text changes, marked relative to JVET-AL1006-v1, are included in an attachment to this contribution.

> Decision: Adopt item 1 and item 2.

Further discussion 1745 – 1800 on Monday 30 June 2025.

The -v2 version of this contribution adds a third item.

As an asserted bug fix, in subclause F.7.4.3.1.1 (Video parameter set extension semantics), replace the following sentence:is a requirement of bitstream conformance that AuxId[IdDirectRefLayer[nuhLayerIdA] [j]] for any values of nuhLayerIdA and j shall be equal to AuxId[nuhLayerIdA], when AuxId[nuhLayerIdA] is in the range of 0 to 2, inclusive.

with the following:

It is a requirement of bitstream conformance that AuxId[IdDirectRefLayer[nuhLayerIdA][j]] for any value of nuhLayerIdA for which NumDirectRefLayers[nuhLayerIdA] is greater than 0 and any value of j in the range of 0 to NumDirectRefLayers[nuhLayerIdA] − 1, inclusive, shall be equal to AuxId[nuhLayerIdA], when AuxId[nuhLayerIdA] is in the range of 0 to 2, inclusive.

> Decision: Adopt item 3.

> JVET-AM0048 AHG9/AHG2: Miscellaneous changes for HEVC

CITATION

Y.-K. Wang, J. Xu, A. M. Tourapis, D. Podborski, "AHG9/AHG2: Miscellaneous changes for HEVC", JVET-AM0048, 39th Meeting: Daejeon, KR, June 2025.