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| **Joint Collaborative Team on Video Coding (JCT-VC)**  **of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 11**  40th Meeting: by teleconference, 24 June – 1 July 2020 | Document: JCTVC-AN0002-v3 |

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| *Title:* | **JCT-VC AHG report: Test model editing and errata reporting (AHG2)** | | |
| *Status:* | AHG report input to JCT-VC | | |
| *Purpose:* | AHG report | | |
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| *Source:* | AHG | | |

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# Abstract

This document reports the work of the JCT-VC ad hoc group on (HEVC and AVC) test model editing and errata reporting (AHG2) between the 39th meeting by teleconference (Apr. 2020) and the 40th meeting by teleconference.

-v2 adds 20 SCC tickets that were not visible in the default view of open HEVC text tickets

-v3 has tickets removed from the ticket table that had been determined to have been resolved in already issued versions of HEVC. Of the 20 SCC tickets, 18 were already resolved, leaving two open SCC tickets. Seven tickets relating to v1/RExt were open, leaving nine open tickets.

# Mandate

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| **Title and Email Reflector** | **Chairs** | **Meeting** |
| **Test model editing and errata reporting (AHG2)**  ([jct-vc@lists.rwth-aachen.de](mailto:jct-vc@lists.rwth-aachen.de))   * Produce and propose improvements to the JCTVC-AL1002 HEVC Test Model 16 (HM 16) Update 13 of Encoder Description * Collect reports of errata for the HEVC, AVC, CICP, the Usage TR specification and the published HDR-related technical reports. * Gather and address comments for refinement of these documents. * Coordinate with AHG3 on software development and software technical evaluation to address issues relating to mismatches between software and text. | B. Bross, C. Rosewarne (co‑chairs), J.‑R. Ohm, K. Sharman, G. J. Sullivan, A. Tourapis, Y.‑K. Wang (vice‑chairs) | N |

# Status of AHG2 work

## JCTVC-AM1004 Errata report items for HEVC, AVC, Video CICP, and Codepoint Usage Technical Report

JCT-VC output document JCTVC-AM1004 was prepared and uploaded to the document register.

## JCTVC-AN0021 Errata for FGC SEI message semantics

This contribution proposes to correct the semantics of the film grain characteristics SEI message to support bit depths greater than 8 bits for AVC and HEVC.

## JCTVC-AN0024 Some HEVC and AVC errata items

This contribution reports some errata items for HEVC and AVC.

## Errata items arising from June 2020 (19th) JVET meeting and HLS AHG pre-meeting discussions

JVET-S0124 (3.1.2, item 15 of JVET-S0237), may also need to be an errata item for HEVC:

(aspect a, adopted with modification) Add derivation of TemporalId, ph\_non\_ref\_pic\_flag, and parameter sets to the decoding process for generating unavailable reference pictures (in order to enable checking of some constraints for them).

As proposed “parameter set information” was vague, and specifying inference of ph\_pic\_parameter\_set\_id instead was suggested.

JVET-S0156 aspect 3 (3.1.2, item 21 of JVET-S0237) noted to also affect HEVC:

In clause C.4 (Bitstream conformance), the 6th constraint, change "CpbRemovalTime[ n ] less than CpbRemovalTime[ currPic ]" to "DpbOutputTime[ n ] greater than DpbOutputTime[ currPic ]". This is asserted to be a bug, because all decoded pictures in the DPB are always decoded earlier than decoding of the current picture, and thus CpbRemovalTime[ n ] in the context is always less than CpbRemovalTime[ currPic ]. This is also asserted to be a bug in the latest HEVC spec.

JVET-S0160 aspect 6 (3.1.2, item 23 of JVET-S0237) noted to also affect HEVC:

Remove the following constraint from the definition of the two still picture profiles: The referenced SPS shall have max\_dec\_pic\_buffering\_minus1[ sps\_max\_sublayers\_minus1 ] equal to 0.

JVET-S0188 aspect 4 (3.1.2, item 33 of JVET-S0237) noted as possibly also affecting HEVC and AVC:

It was remarked that in the semantics of ph\_recovery\_poc\_cnt and possibly in a NOTE in 8.3.4.2, there is a lack of consideration of the case with recovery POC distance of 0.

Fix the description to consider the case with a recovery POC distance of 0.

JVET-S0042 (3.1.4, item 1 of JVET-S0237), noted that this should also be considered as an errata report for HEVC semantics clarification:

Relax the semantics so that an extension\_flag in DCI, VPS, SPS, PPS, or APS equal to 1 specifies that specifies extension\_data\_flag syntax elements *may be* present. (Currently, it says these flags *are* present.)

JVET-S0101 aspect 1 (3.1.8, item 5 of JVET-S0237):

Fix an asserted bug in Equation C.10 (also applicable to HEVC):

The asserted bug in both HEVC and VVC is that a delta (CpbDelayOffset) is incorrectly subtracted from the removal times after derivation of the removal times in the case that alternative timing is used, e.g. removal of RASL pictures.

JVET-S0178 aspect 4 (3.1.8, item 33 of JVET-S0237) noted as recently added as corrigendum item to the HEVC specification, but does AVC also need consideration?:

Add the clarification (that was recently added to the HEVC specification as an corrigendum item) on the value ranges of tone\_map\_id, frame\_packing\_arrangement\_id, knee\_function\_id, and colour\_remap\_id, including potential collisions of the interpretation for values of these syntax elements?

## Text ticket review

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| **Ticket** | **Summary** | **Status** |
| 1507 | Duplicate syntax element ctxInc assignments in Table 9-48. | Confirmed present in H.265 (11/19)  (new ticket, filed 2020-04-18). |
| 1505 | Relates to semantics of AUs appearing after an ‘end of sequence’ or ‘end of bitstream’ NAL unit. | See previous meeting notes regarding JCTVC-AM0002. |
| 1504 | Small typos in profile\_tier\_level syntax in tabular form (7.3.3) | Aspect 1: Extra ‘)’ is still present in H.265 (11/19) Aspect 2: sub\_layer\_profile\_compatibility\_flag missing[ i ] issue confirmed fixed in H.265 (11/19). |
| 1500 | typo in equation (8-69),(8-70) (palette\_transpose\_flag not transposing) | Confirmed present in H.265 (11/19). |
| 1498 | Typos in Table 9-43 (for palette\_run\_suffix PalletMaxRun should be PalletMaxRunMinus1) | Confirmed present in H.265 (11/19). |
| 1491 | duplicate invocation of 9.3.4.3 arithmetic decoding process (invoked both in 9.3.4.1 and also in 9.3.4.2). | Confirmed present in H.265 (11/19) – confirm whether action is needed) |
| 1456 | Clarification on note related to repetition of SPS | Confirmed present in H.265 (11/19). |
| 1437 | Typo in the spec in 8.4.4.3 | Corrected prior to publication in v4, but current spec now indicated 2 inputs to 8.6.8.1 (ACT) called resSampleArrayCb/Cr, both described as the array of chroma components of the current block. |
| 1427 | Eqns (8-185) and (8-187) could be removed as editorial cleanup. | The ticket is marked as enhancement and note the equation numbers are updated since the ticket was filed. |

# Recommendations

The recommendations of the test model editing and errata reporting AHG are for JCT-VC to:

1. Encourage the use of the issue tracker to report issues with the text of the HEVC, AVC, and CICP specifications in addition to any associate encoder description documents.
2. Review the above-identified input documents.
3. Review the above-identified errata reports.
4. Confirm resolutions of open tickets (if any) in the issue tracker and close them.