|  |  |
| --- | --- |
| **Joint Video Experts Team (JVET)****of ITU-T SG21 WP3/21 and ISO/IEC JTC 1/SC 29**40th Meeting: Geneva, CH, 3–12 October 2025 | Document: JVET-AN\_notes\_d0 |

****

|  |  |
| --- | --- |
| *Title:* | **Meeting Report of the 40th Meeting of the Joint Video Experts Team (JVET),Geneva, 3 – 12 October 2025** |
| *Status:* | Report document from the chair of JVET |
| *Purpose:* | Report |
| *Author(s) orContacts):* | **Jens-Rainer Ohm**Institute of Communication EngineeringRWTH AachenMelatener Straße 23D-52074 Aachen | Tel:Email: | +49 241 80 27671ohm@ient.rwth-aachen.de |
| *Source:* | Chair of JVET |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Summary

The Joint Video Experts Team (JVET) of ITU-T WP3/21 and ISO/IEC JTC 1/‌SC 29 held its fortieth meeting during 3 – 12 October 2025 at the ITU headquarters facilities in Geneva, Switzerland. The meeting was held as a physical meeting with remote participation, provided on best-effort basis for experts who were unable to travel.

For ISO/IEC purposes, JVET is alternatively designated ISO/IEC JTC 1/‌SC 29/‌WG 5, and this was the twentieth meeting as WG 5. The JVET meeting was held under the chairmanship of Dr Jens-Rainer Ohm (RWTH Aachen/Germany). For rapid access to particular topics in this report, a subject categorization is found (with hyperlinks) in section 2.16 of this document. It is further noted that work items which had originally been conducted by the Joint Collaborative Team on Video Coding (JCT-VC) were continued in JVET as a single joint team, and explorations towards possible future need of standardization in the area of video coding are also conducted by JVET, as negotiated by the parent bodies.

The JVET meeting began at approximately 1400 hours CEST (UTC+2) on Friday 3 October 2025. Meeting sessions were held on all days including the weekend days of Saturday and Sunday 4, 5, 11 and 12 October 2025, until the meeting was closed at approximately XXXX hours CEST on Sunday 12 October 2025. Approximately XXX people attended the JVET meeting (XXX in person and XXX remotely), and approximately XXX input documents (not counting crosschecks, reports, and summary documents), 18 AHG reports, 2 EE summary reports, X BoG report(s), and X incoming liaison document(s) were discussed. The meeting took place in a collocated fashion with a meeting of SG21 – one of the two parent bodies of the JVET, under whose auspices this JVET meeting was held. Various SC29 Working Groups and Advisory Groups were also meeting in Geneva with partial temporal overlap – where WG 5 is representing the Joint Video Experts Team and its activities from the perspective of the SC 29 parent body. The subject matter of the JVET meeting activities consisted of work on further development and maintenance of the twin-text video coding technology standards *Advanced Video Coding* (AVC), *High Efficiency Video Coding* (HEVC), *Versatile Video Coding* (VVC)*, Coding-independent Code Points (Video)* (CICP), and *Versatile Supplemental Enhancement Information Messages for Coded Video Bitstreams* (VSEI), as well as related technical reports, reference software and conformance testing packages. Further important goals were reviewing the results of the Exploration Experiment (EE) on Neural Network-based Video Coding, of the EE on Enhanced Compression beyond VVC capability, of other technical input on novel aspects of video coding technology, and to plan next steps for investigation of candidate technology towards further standard development. In the latter context, the evaluation of responses received on the Joint Call for Evidence on video compression with capability beyond VVC was a major activity at his meeting.

As a primary goal, the JVET meeting reviewed the work that had been performed in the interim period since the thirty-ninth JVET meeting in producing the following documents:

a) JVET documents

* JVET-AM1005 Future CICP extensions (Draft 1)
* JVET-AM1006 HEVC additional profiles and SEI messages (Draft 4)
* JVET-AM1008 Conformance testing for HEVC multiview extended and monochrome profiles
* JVET-AM1017 Support for additional VSEI messages in AVC (Draft 3), also issued as WG 5 DAM N 363
* JVET-AM1018 HEVC with extensions and corrections (Draft 2)
* JVET-AM2005 Additions and corrections for VVC version 4 (Draft 13)
* JVET-AM2006 Additional SEI messages for VSEI version 4 (Draft 7)
* JVET-AM2019 Description of algorithms version 12 and software version 14 in neural network-based video coding (NNVC)
* JVET-AM2021 Verification test plan for VVC multilayer coding (update 6)
* JVET-AM2023 Exploration experiment on neural network-based video coding (EE1)
* JVET-AM2024 Exploration experiment on enhanced compression beyond VVC capability (EE2)
* JVET-AM2025 Algorithm description of Enhanced Compression Model 18 (ECM 18)
* JVET-AM2026 Joint Call for Evidence on video compression with capability beyond VVC, also issued as WG 5 N 367
* JVET-AL2032 Technologies under consideration for future extensions of VSEI (version 9)
* JVET-AL2038 White paper on VSEI, also issued as AG 3 N 209

b) documents produced as WG 5 documents only:

* WG 5 N 362 Disposition of comments received on ISO/IEC 14496-10:202x (11th ed.) CDAM 1
* WG 5 N 364 Disposition of comments received on CD ISO/IEC 23090-15:202x (3rd ed.)
* WG 5 N 365 Text of DIS ISO/IEC 23090-15:202x (3rd ed.) Conformance testing for versatile video
* WG 5 N 366 Disposition of comments received on DIS ISO/IEC 23090-16:202x (2nd ed.) Reference software for versatile video coding

As main results, the JVET produced XX output documents from the current meeting (update):

* JVET-AM1005 Future CICP extensions (Draft 1)
* JVET-AM1006 HEVC additional profiles and SEI messages (Draft 4)
* JVET-AM1008 Conformance testing for HEVC multiview extended and monochrome profiles
* JVET-AM1017 Support for additional VSEI messages in AVC (Draft 3), also issued as WG 5 DAM N 363
* JVET-AM1018 HEVC with extensions and corrections (Draft 2)
* JVET-AM2005 Additions and corrections for VVC version 4 (Draft 13)
* JVET-AM2006 Additional SEI messages for VSEI version 4 (Draft 7)
* JVET-AM2019 Description of algorithms version 12 and software version 14 in neural network-based video coding (NNVC)
* JVET-AM2021 Verification test plan for VVC multilayer coding (update 6)
* JVET-AM2023 Exploration experiment on neural network-based video coding (EE1)
* JVET-AM2024 Exploration experiment on enhanced compression beyond VVC capability (EE2)
* JVET-AM2025 Algorithm description of Enhanced Compression Model 18 (ECM 18)
* JVET-AM2026 Joint Call for Evidence on video compression with capability beyond VVC, also issued as WG 5 N 367
* JVET-AL2032 Technologies under consideration for future extensions of VSEI (version 9)
* JVET-AL2038 White paper on VSEI, also issued as AG 3 N 209

The following X draft ITU-T Recommendations and Supplements were forwarded by JVET and Q6/21 for ITU-T Consent or Agreement (update):

* SG21 TD44R1/Plen H-Series Supplement 21 (ex. H.Sup-FGST) Film grain synthesis technology for video applications

The following X documents were produced as WG 5 documents only, without a corresponding JVET output document or direct repetition of their content in this meeting report (update):

* WG 5 N 362 Disposition of comments received on ISO/IEC 14496-10:202x (11th ed.) CDAM 1
* WG 5 N 364 Disposition of comments received on CD ISO/IEC 23090-15:202x (3rd ed.)
* WG 5 N 365 Text of DIS ISO/IEC 23090-15:202x (3rd ed.) Conformance testing for versatile video
* WG 5 N 366 Disposition of comments received on DIS ISO/IEC 23090-16:202x (2nd ed.) Reference software for versatile video coding

For the organization and planning of its future work, the JVET established XX “ad hoc groups” (AHGs) to progress the work on particular subject areas. At this meeting, X Exploration Experiments (EE) were defined. The next ten JVET meetings were planned for 14 – 23 January 2026 under ISO/IEC JTC 1/‌SC 29 auspices, to be conducted as teleconference meeting; during 24 April – 1 May 2026 under ISO/IEC JTC 1/‌SC 29 auspices in Santa Eulària, ES; during 7 – 15 July 2026 under ITU-T SG21 auspices in Geneva, CH; during 14 – 23 October 2026 under ISO/IEC JTC 1/‌SC 29 auspices in Hangzhou, CN; during 13 – 22 January 2027 under ISO/IEC JTC 1/‌SC 29 auspices in Brisbane, AU; during April 2027 under ITU-T SG21 auspices, date and location t.b.d.; during 7 – 16 July 2027 under ISO/IEC JTC 1/‌SC 29 auspices in Tampere, FI; during 20 – 29 October 2027 under ISO/IEC JTC 1/‌SC 29 auspices in Shenzhen, CN; during January 2028 under ITU-T SG21 auspices, date and location t.b.d.; and during April 2028 under ISO/IEC JTC 1/‌SC 29 auspices, date and location t.b.d.

The document distribution site <https://jvet-experts.org/> was used for distribution of all documents. The most recent versions of JCT-VC and JCT-3V documents can now be accessed directly via the JVET site, whereas all uploaded versions are also available from <http://wftp3.itu.int/av-arch/jctvc-site/> and <http://wftp3.itu.int/av-arch/jct3v-site/>, respectively. JVET documents are also provided via <http://wftp3.itu.int/av-arch/jvet-site/>, but as this is cannot currently be maintained as a mirror with the jvet-experts.org site, documents are typically only made available with a delay of two or three meeting cycles, to avoid that late uploads of output documents would be missing.

The reflector to be used for discussions by the JVET and all its AHGs is the JVET reflector:
jvet@lists.rwth-aachen.de hosted at RWTH Aachen University. For subscription to this list, see <https://lists.rwth-aachen.de/postorius/lists/jvet.lists.rwth-aachen.de/>.

# Administrative topics

## Organization

The ITU-T/ISO/IEC Joint Video Experts Team (JVET) is a group of video coding experts from the ITU-T Study Group 21 Visual Coding Experts Group (VCEG) and ISO/IEC JTC 1/‌SC 29/‌WG 5. The parent bodies of the JVET are ITU-T WP3/21 and ISO/IEC JTC 1/‌SC 29.

The Joint Video Experts Team (JVET) of ITU-T WP3/21 and ISO/IEC JTC 1/‌SC 29 held its fortieth meeting during 3 – 12 October 2025 at the ITU headquarters facilities in Geneva, Switzerland. The meeting was held as a physical meeting with remote participation, provided on best-effort basis for experts who were unable to travel.

It is further noted that the unabbreviated name of JVET was formerly known as “Joint Video *Exploration* Team”, but the parent bodies modified it when entering the phase of formal development of the *Versatile Video Coding* (VVC) and *Versatile Supplemental Enhancement Information Messages for Coded Video Bitstreams* (VSEI) standards, as well as associated conformance test sets, reference software, verification testing, and non-normative guidance information. Furthermore, starting from the twentieth meeting, work items which had originally been conducted by the Joint Collaborative Team on Video Coding (JCT-VC) were continued to be conducted in JVET as a single joint team, as negotiated by the parent bodies. This particularly consists of work on:

* *High Efficiency Video Coding* (HEVC) and its extensions, the development of associated conformance test sets, reference software, verification testing, and non-normative guidance information,
* Specification of *Coding-independent Code Points (Video)* (CICP), and associated technical report(s),
* Maintenance and enhancement work on the *Advanced Video Coding* (AVC) standard, associated conformance test sets and reference software.

Furthermore, explorations towards possible future need of standardization in the area of video coding are also conducted by JVET. Currently, the following topics are under investigation:

* Exploration on Neural Network-based Video Coding
* Exploration on Enhanced Compression beyond VVC capability

As requested by the parent bodies, JVET had issued a call for evidence on video compression with capability beyond existing standards, with responses evaluated during the current meeting.

This report contains three important annexes, as follows:

* Annex A contains a list of the documents of the JVET meeting
* Annex B contains a list of the meeting participants, consisting of two parts, (B1) in-person attendees as recorded by a sign-in sheet circulated in meeting rooms, (B2) remote attendees as recorded by the teleconferencing tool used for the meeting
* Annex C contains the meeting recommendations of ISO/IEC JTC 1/‌SC 29/‌WG 5 for purposes of results reporting to ISO/IEC.

## Meeting logistics

Information regarding logistics arrangements for the meeting had been provided via the email reflector jvet@lists.rwth-aachen.de and at <http://wftp3.itu.int/av-arch/jvet-site/2025_10_AN_Geneva/>.

## Primary goals

As a primary goal, the JVET meeting reviewed the work that was performed in the interim period since the thirty-ninth JVET meeting in producing the following output documents:

a) JVET documents

* JVET-AM1005 Future CICP extensions (Draft 1)
* JVET-AM1006 HEVC additional profiles and SEI messages (Draft 4)
* JVET-AM1008 Conformance testing for HEVC multiview extended and monochrome profiles
* JVET-AM1017 Support for additional VSEI messages in AVC (Draft 3), also issued as WG 5 DAM N 363
* JVET-AM1018 HEVC with extensions and corrections (Draft 2)
* JVET-AM2005 Additions and corrections for VVC version 4 (Draft 13)
* JVET-AM2006 Additional SEI messages for VSEI version 4 (Draft 7)
* JVET-AM2019 Description of algorithms version 12 and software version 14 in neural network-based video coding (NNVC)
* JVET-AM2021 Verification test plan for VVC multilayer coding (update 6)
* JVET-AM2023 Exploration experiment on neural network-based video coding (EE1)
* JVET-AM2024 Exploration experiment on enhanced compression beyond VVC capability (EE2)
* JVET-AM2025 Algorithm description of Enhanced Compression Model 18 (ECM 18)
* JVET-AM2026 Joint Call for Evidence on video compression with capability beyond VVC, also issued as WG 5 N 367
* JVET-AL2032 Technologies under consideration for future extensions of VSEI (version 9)
* JVET-AL2038 White paper on VSEI, also issued as AG 3 N 209

b) documents produced as WG 5 documents only:

* WG 5 N 362 Disposition of comments received on ISO/IEC 14496-10:202x (11th ed.) CDAM 1
* WG 5 N 364 Disposition of comments received on CD ISO/IEC 23090-15:202x (3rd ed.)
* WG 5 N 365 Text of DIS ISO/IEC 23090-15:202x (3rd ed.) Conformance testing for versatile video
* WG 5 N 366 Disposition of comments received on DIS ISO/IEC 23090-16:202x (2nd ed.) Reference software for versatile video coding

Further important goals were reviewing the results of the EE on Neural Network-based Video Coding, of the EE on Enhanced Compression beyond VVC capability, of other technical input on novel aspects of video coding technology, and planning next steps for investigation of candidate technology towards further standard development.

## Documents and document handling considerations

### General

The document distribution site <https://jvet-experts.org/> was used for distribution of all documents.

Document registration timestamps, initial upload timestamps, and final upload timestamps are listed in Annex A of this report.

The document registration and upload times and dates listed in Annex A and in headings for documents in this report are in Paris/Geneva time. Dates mentioned for purposes of describing events at the meeting follow the KST timezone (local time in Daejeon), except as otherwise noted.

Highlighting of recorded decisions in this report is practised as follows:

* Decisions made by the group that might affect the normative content of a future standard are identified in this report by prefixing the description of the decision with the string “Decision:”.
* Decisions that affect one of the various software packages but have no normative effect on text are marked by the string “Decision (SW):”.
* Decisions that fix a “bug” in one of the test model descriptions such as VTM, HM, etc. (an error, oversight, or messiness) or in the associated software package are marked by the string “Decision (BF):”.
* Decisions that are merely editorial without effect on the technical content of a draft standard are marked by the string "Decision (Ed.):". Such editorial decisions are merely suggestions to the editor, who has the discretion to determine the final action taken if their judgment differs.
* Other parenthetical comments may be used for describing the impact or motivation of a decision. Some decisions are recorded with the word “agreed” rather than “Decision:”, especially for work items under study, non-normative, editorial and planning matters.

This meeting report is based primarily on notes taken by the JVET chair, or other experts that were appointed to chair parallel sessions. It is indicated who took the notes in review of a given category (or individual documents în a category), and by which day and time the review was conducted. The preliminary notes were also circulated publicly by ftp and http during the meeting on a daily basis. It should be understood by the reader that 1) some notes may appear in abbreviated form, 2) summaries of the content of contributions are often based on abstracts provided by contributing proponents without an intent to imply endorsement of the views expressed therein, and 3) the depth of discussion of the content of the various contributions in this report is not uniform. Generally, the report is written to include as much information about the contributions and discussions as is feasible (in the interest of aiding study), although this approach may not result in the most polished output report. Expressions such as “X.XX%” indicate that the desired results were not available at the time the information was recorded.

### Late and incomplete document considerations

The formal deadline for registering and uploading non-administrative contributions had been announced as Friday, 26 September 2025. Any documents uploaded after 1159 hours Paris/Geneva time on Saturday 27 September 2025 were considered “officially late”, with a grace period of 12 hours (to accommodate those living in different time zones of the world). The deadline does not apply to AHG reports and other such reports which can only be produced after the availability of other input documents.

All contribution documents with registration numbers higher than JVET-AN0270 were registered after the “officially late” deadline (and therefore were also uploaded late). However, some documents in the “late” range might include break-out activity reports that were generated during the meeting, or documents which were requested to be produced for the purpose of improving specification text, and are therefore better considered as report documents rather than as late contributions.

In many cases, contributions were also revised after the initial version was uploaded. The contribution document archive website retains publicly accessible prior versions in such cases. The timing of late document availability for contributions is generally noted in the section discussing each contribution in this report.

One suggestion to assist with the issue of late submissions has been to require the submitters of late contributions and late revisions to describe the characteristics of the late or revised (or missing) material at the beginning of discussion of the contribution. This has been agreed to be a helpful approach to be followed at the meeting.

The following technical design proposal contributions were registered and/or uploaded late:

* JVET-AN0XXX (a proposal on …), uploaded 09-XX,
* …

It may be observed that some of the above-listed contributions were submissions made in response to issues that arose in discussions during the meeting or from the study of other contributions, and thus could not have been submitted by the ordinary deadline.

The following other documents not proposing normative technical content, but with some need for consideration, were registered and/or uploaded late:

* JVET-AN0XXX (a study on …), uploaded 09-XX,
* …

All cross-verification reports at this meeting (except for JVET-AN0082, JVET-AN165, JVET-AN166, and JVET-AN243) were registered late, and/or uploaded late. In the interest of brevity, these are not specifically identified here. Initial upload times for each document are recorded in Annex A of this report.

The following contribution registrations were noted that were later cancelled, withdrawn, never provided, were cross-checks of a withdrawn contribution, or were registered in error: JVET-AN0159, JVET-AN0268, JVET-AN0273, JVET-AN0290, JVET-AN0320, … .

The following cross-verification report(s) were still missing by the end of the meeting, but were uploaded later: JVET-AN0XXX, …. The following report(s) had not become available yet three weeks after the end of the meeting: JVET-AN0XXX, … . These were marked as withdrawn by the JVET chair, assuming the registration had become obsolete.

“Placeholder” contribution documents that were basically empty of content, or lacking any results showing benefit for the proposed technology, and obviously uploaded with an intent to provide a more complete submission as a revision, had been agreed to be considered unacceptable and to be rejected in the document management system until a more complete version was available (which would then be counted as a late contribution if the update was after the document deadline). At the current meeting, this situation did not apply to any contributions. (did apply to document(s) JVET-AN0XXX, being initially empty of results and flagged as late in the list above, based on the time of the first reasonable document upload | sentence kept for future use).

It was remarked that documents that are substantially revised after the initial upload can also be a problem, as this becomes confusing, interferes with study, and puts an extra burden on synchronization of the discussion. This can especially be a problem in cases where the initial upload is clearly incomplete, and in cases where it is difficult to figure out what parts were changed in a revision. For document contributions, revision marking is very helpful to indicate what has been changed. Also, the “comments” field on the web site can be used to indicate what is different in a revision, although participants tend to seldom notice what is recorded there.

As a general policy, missing documents were not to be presented, and late documents (and substantial revisions) could only be presented when there was a consensus to consider them and there was sufficient time available for their review. Again, an exception is applied for AHG reports, CE and HLS topic summaries, and other such reports which can only be produced after the availability of other input documents. There were no objections raised by the group regarding presentation of late contributions, although there may have been some expression of annoyance and remarks on the difficulty of dealing with late contributions and late revisions.

A few contributions may have had some problems relating to IPR declarations in the initial uploaded versions (missing declarations, declarations saying they were from the wrong companies, etc.). Any such issues were corrected by later uploaded versions in a reasonably timely fashion in all cases (to the extent of the awareness of the responsible coordinators).

Some other errors may have also noticed in other initial document uploads (wrong document numbers or meeting dates or meeting locations in headers, etc.) which were generally sorted out in a reasonably timely fashion. The document web site contains an archive of each upload.

### Outputs of the preceding meeting

All output documents of the previous meeting, particularly the meeting report JVET-AM1000, the Future CICP extensions (draft 1) JVET-AM1005, the HEVC additional profiles and SEI messages (draft 4) JVET-AM1006, the Conformance testing for HEVC multiview extended and monochrome profiles JVET-AM1008, the Support for additional SEI messages in AVC (draft 3) JVET-AM1017, the HEVC with extensions and corrections (draft 2) JVET-AM1018, the Additions and corrections for VVC version 4 (Draft 13) JVET-AM2005, the Additional SEI messages for VSEI version 4 (Draft 7) JVET-AM2006, the Description of algorithms version 12 and software version 14 in neural network-based video coding (NNVC) JVET-AM2019, the Verification test plan for VVC multilayer coding (update 6) JVET-AM2021, the Description of the EE on Neural Network-based Video Coding JVET-AM2023, the Description of the EE on Enhanced Compression beyond VVC capability JVET-AM2024, the Algorithm description of Enhanced Compression Model 18 (ECM 18) JVET-AM2025, the Joint Call for Evidence on video compression with capability beyond VVC JVET-AM2026, the Technologies under consideration for future extensions of VSEI (version 9) JVET-AM2032, and the White paper on VSEI JVET-AM2038, had been completed and those which were available were approved. In a few cases, the corresponding WG 5 N-numbered documents had not yet been uploaded, and this was requested to be done as soon as possible. The software implementations of VTM version 23.9 and 23.10, ECM version 18.0, and NNVC version 14.0 were also approved.

It was further noted that some editorial modifications were necessary on the WG 5 versions of standard deliverables, to be compliant with the ISO/IEC rules.

Only minor editorial issues were found in the meeting report JVET-AM1000; no need to produce an update was identified (see section 2.14 for details).

The available output documents of the previous meeting and the software had been made available in a reasonably timely fashion.

## Attendance

The list of participants in the JVET meeting can be found in Annexes B1 and B2 of this report.

The meeting was open to those qualified to participate either in ITU-T WP3/21 or ISO/IEC JTC 1/‌SC 29/‌WG 5 (including experts who had been personally invited as permitted by ITU-T or ISO/IEC policies).

Participants had been reminded of the need to be properly qualified to attend. Those seeking further information regarding qualifications to attend future meetings may contact the responsible coordinators.

It was further announced that it is necessary to register for the meeting through the ISO Meetings website for ISO/IEC experts, and through the Q6/21 rapporteur for ITU-T experts. The password for meeting access had been sent to registered participants via these channels. Links to the Zoom sessions (without the necessary password) were available in the posted meeting logistics information and the calendar of meeting sessions in the JVET web site.

The following rules were established for those participating remotely via Zoom teleconference meeting:

* Use the “hand-raising” function to enter yourself in the queue to speak (unless otherwise instructed by the session chair). If you are dialed in by phone, request your queue position verbally. The online queue will be interleaved with the room queue, though it may not always be guaranteed that the sequence perfectly follows the sequence by which hand raising occurred.
* Stay muted unless you have something to say. People are muted by default when they join and need to unmute themselves to speak. The chair may mute anyone who is disrupting the proceedings (e.g. by forgetting they have a live microphone while chatting with their family or by causing bad noise or echo).
* Identify who you are and your affiliation when you begin speaking. The same applies for speakers in the room to let online participants know who is speaking.
* Use your full name and company/organization and country affiliation in your joining information, since the participation list of Zoom would also be used to compile the online part of attendance records.
* Turn on the chat window and watch for chair communication and side commentary there as well as by audio.
* Generally, do not use video for the teleconferencing calls in order to avoid overloading internet connections; enable only voice and screen sharing.
* Extensive use of screen sharing is encouraged, to enable participants to view the presented material and the meeting notes. At times, multiple sources of screen sharing may be enabled, so it may be necessary for participants to understand that this is happening and to understand how to select which shared screen they want to see.

## Agenda

The agenda for the meeting, for the further development and maintenance of the twin-text video coding technology standards *Advanced Video Coding* (AVC), *High Efficiency Video Coding* (HEVC), *Versatile Video Coding* (VVC)*, Coding-independent Code Points (Video)* (CICP), and *Versatile Supplemental Enhancement Information Messages for Coded Video Bitstreams* (VSEI), as well as related technical reports, software and conformance packages, was as follows:

* Opening remarks and review of meeting logistics and communication practices
* Roll call of participants
* Approval of the agenda
* Code of conduct policy reminder
* IPR policy reminder and declarations
* Contribution document allocation
* Review of results of the previous meeting
* Review of target dates
* Reports of ad hoc group (AHG) activities
* Report of exploration experiment on neural-network-based video coding (EE1)
* Report of exploration experiment on enhanced compression beyond VVC capability (EE2)
* Consideration of contributions on high-level syntax
* Consideration of contributions and communications on project guidance
* Consideration of video coding technology contributions
* Consideration of contributions on conformance and reference software development
* Consideration of contributions on software development in exploration activities
* Consideration of contributions on coding-independent code points for video signal type identification
* Consideration of contributions on film grain synthesis technology
* Consideration of contributions on gaming content compression
* Consideration of contributions on generative face video compression
* Consideration of contributions on optimization of encoders and receiving systems for machine analysis of coded video content
* Consideration of contributions on assessment of implementation complexity of video coding technology
* Consideration of contributions submitted as responses to the Joint Call for Evidence on video compression with capability beyond VVC, assessment of results collected in the context of the CfE, and planning of next steps towards a possible Call for Proposals on future video coding standardization
* Consideration of contributions on aspects of ultra-low latency and packet loss resilience in the context of video compression
* Consideration of contributions on errata relating to standards in the domain of JVET
* Consideration of contributions on technical reports relating to standards and exploration study activities in the domain of JVET
* Consideration of contributions providing non-normative guidance relating to standards and exploration study activities in the domain of JVET
* Consideration of information contributions
* Consideration of future work items
* Coordination of visual quality testing
* Liaisons, coordination activities with other organizations
* Review of project editor and liaison assignments
* Approval of output documents and associated editing periods
* Future planning: Determination of next steps, discussion of working methods, communication practices, establishment of coordinated experiments (if any), establishment of AHGs, future meeting planning, other planning issues
* Other business as appropriate for consideration
* Closing

The agenda was approved as suggested.

The times of meeting sessions followed the needs of the face-to-face meeting, with highest priority given to the aim of achieving the goals of the meeting. Typical meeting hours were expected to be 0900-2000 CEST with coffee breaks and lunch breaks as appropriate, however some early morning or late-night sessions were anticipated to be necessary. Sessions were announced in the online JVET calendar in advance as far as possible, but it was agreed that some activities (such as breakout sessions) could be held at short notice.

## ISO, IEC and ITU-T Code of Conduct reminders

Participants were reminded of the ISO and IEC Codes of Conduct, found at

<https://www.iso.org/publication/PUB100011.html>.

<https://www.iec.ch/basecamp/iec-code-conduct-technical-work>

These include points relating to:

* Behave ethically
* Promote and enable all voices to be heard
* Engage constructively in ISO and IEC activities
* Respect others (in meetings, when writing, on social media)
* Declare actual and potential conflicts of interest and manage them appropriately
* Protect confidential information
* Protect ISO and IEC assets
* Avoid and prevent any form of bribery or corruption
* Uphold the consensus process
* When disputes arise, escalate, resolve and uphold agreed resolution

Participants were also reminded of the UN Codes of Conduct, applying to work under ITU-T, found at <https://www.un.org/management/sites/www.un.org.management/files/un-system-model-code-conduct.pdf>

## IPR policy reminder

Participants were reminded of the IPR policy established by the parent organizations of the JVET and were referred to the parent body websites for further information. The IPR policy was summarized for the participants.

The ITU-T/ITU-R/ISO/IEC common patent policy shall apply. Participants were particularly reminded that contributions proposing normative technical content shall contain a non-binding informal notice of whether the submitter may have patent rights that would be necessary for implementation of the resulting standard. The notice shall indicate the category of anticipated licensing terms according to the ITU-T/ITU-R/ISO/IEC patent statement and licensing declaration form.

This obligation is supplemental to, and does not replace, any existing obligations of parties to submit formal IPR declarations to ITU-T/ITU-R/ISO/IEC.

Participants were also reminded of the need to formally report patent rights to the top-level parent bodies (using the common reporting form found on the database listed below) and to make verbal and/or document IPR reports within the JVET necessary in the event that they are aware of unreported patents that are essential to implementation of a standard or of a draft standard under development.

Some relevant links for organizational and IPR policy information are provided below:

* <http://www.itu.int/ITU-T/ipr/index.html> (common patent policy for ITU-T, ITU-R, ISO, and IEC, and guidelines and forms for formal reporting to the parent bodies)
* <http://ftp3.itu.int/av-arch/jvet-site> (JVET contribution templates)
* <http://www.itu.int/ITU-T/dbase/patent/index.html> (ITU-T IPR database)

The responsible coordinators invited participants to make any necessary verbal reports of previously-unreported IPR in technology that might be considered as prospective candidate for inclusion in future standards, and opened the floor for such reports: No such verbal reports were made.

## Software copyright disclaimer header reminder

It was noted that the VTM and ECM software implementation packages use the same software copyright license header as the HEVC reference software, where the latter had been agreed at the 5th meeting of the JCT-VC and approved by both parent bodies at their collocated meetings at that time. This license header language is based on the BSD license with a preceding sentence declaring that other contributor or third party rights, including patent rights, are not granted by the license, as recorded in [N 10791](https://dms.mpeg.expert/doc_end_user/documents/89_London/wg11/w10791.zip) of the 89th meeting of ISO/IEC JTC 1/‌SC 29/‌WG 11 of June/July 2009. Both ITU and ISO/IEC will be identified in the <OWNER> and <ORGANIZATION> tags in the header. This software header is also used in the process of designing the VTM and ECM software, and for evaluating proposals for technology to be potentially included in these designs. This software or parts thereof might be published by ITU-T and ISO/IEC as an example implementation of a future video coding standard and for use as the basis of products to promote adoption of such technology.

Different copyright statements shall not be committed to the committee software repository (in the absence of subsequent review and approval of any such actions). As noted previously, it must be further understood that any initially-adopted such copyright header statement language could further change in response to new information and guidance on the subject in the future.

These considerations apply to the 360Lib video conversion software and HDRTools as well. The SADL and NNVC packages for neural network-based video coding use the same licensing terms.

Software packages that had been developed in prior work of the JVT, the JCT-VC and the JCT-3V have similar considerations and are maintained according to the past practice in that work.

## Communication practices

The documents for the meeting can be found at <https://jvet-experts.org/>. The site contains links for creating a user account for document uploading and for contacting an administrator – e.g., to update the email address associated with an account, and experts were reminded to keep this information up to date. It was reminded to send a notice to the chairs in cases of changes to document titles, authors, etc.

It was noted that also the most recent versions of JCT-VC and JCT-3V documents can be accessed directly via the JVET site. A mirror for JCT-VC, JCT-3V and JVET document access (including all versions with original upload dates) has also been provided via the ITU ftp site, providing a “documents” subfolder in the directory of each respective meeting.

JVET email lists are managed through the site <https://lists.rwth-aachen.de/postorius/lists/jvet.lists.rwth-aachen.de/>, and to send email to the reflector, the email address is jvet@lists.rwth-aachen.de. Only members of the reflector can send email to the list. However, membership of the reflector is not limited to qualified JVET participants.

It was emphasized that reflector subscriptions and email sent to the reflector must use real names when subscribing and sending messages and subscribers must respond to inquiries regarding the nature of their interest in the work. The current number of subscribers on the JVET email list was 1348 (as of 2 Oct. 2025). All discussions (including those on AVC, HEVC, VVC, CICP, etc.) shall be conducted on the JVET reflector rather than any of the old reflectors (including JVT, JCT-VC, and JCT-3V) which are retained for archiving purposes.

It is further emphasized that the document JVET-AJ1012 gives valuable hints about communication practices as well as other IT resources used in JVET, such as software, conformance, and test materials.

## Terminology

* **ACT**: Adaptive colour transform
* **AFF**: Adaptive frame-field
* **AI**: All-intra
* **AIF**: Adaptive interpolation filtering
* **ALF**: Adaptive loop filter
* **AMP**: Asymmetric motion partitioning – a motion prediction partitioning for which the sub-regions of a region are not equal in size (in HEVC, being N/2x2N and 3N/2x2N or 2NxN/2 and 2Nx3N/2 with 2N equal to 16 or 32 for the luma component)
* **AMVP**: Adaptive motion vector prediction
* **AMT or MTS**: Adaptive multi-core transform, or multiple transform selection
* **AMVR**: (Locally) adaptive motion vector resolution
* **APS**: Adaptation parameter set
* **ARC**: Adaptive resolution conversion (synonymous with DRC, and a form of RPR)
* **ARMC**: Adaptive re-ordering of merge candidates
* **ARSS**: Adaptive reference sample smoothing
* **ATM**: AVC-based multiview and 3D test model
* **ATMVP** or “subblock-based temporal merging candidates”: Alternative temporal motion vector prediction
* **AU**: Access unit
* **AUD**: Access unit delimiter
* **AVC**: Advanced video coding – the video coding standard formally published as ITU-T Recommendation H.264 and ISO/IEC 14496-10
* **BA**: Block adaptive
* **BC**: See CPR or IBC
* **BCW**: Biprediction with CU based weighting
* **BD**: Bjøntegaard-delta – a method for measuring percentage bit rate savings at equal PSNR or decibels of PSNR benefit at equal bit rate (e.g., as described in document VCEG-M33 of April 2001)
* **BDOF**: Bi-directional optical flow (formerly known as **BIO**)
* **BDPCM**: Block-wise DPCM
* **BL**: Base layer
* **BMS**: Benchmark set (no longer used), a former preliminary compilation of coding tools on top of VTM, which provide somewhat better compression performance, but are not deemed mature for standardzation
* **BoG**: Break-out group
* **BR**: Bit rate
* **BT**: Binary tree
* **BV**: Block vector (used for intra BC prediction)
* **CABAC**: Context-adaptive binary arithmetic coding
* **CBF**: Coded block flag(s)
* **CC**: May refer to context-coded, common (test) conditions, or cross-component
* **CCALF**: Cross-component ALF
* **CCLM**: Cross-component linear model
* **CCCM**: Cross-component convolutional model
* **CCP**: Cross-component prediction
* **CCSAO**:Cross-component SAO
* **CE**: Core Experiment – a coordinated experiment conducted toward assessment of coding technology
* **CG**: Coefficient group
* **CGS**: Colour gamut scalability (historically, coarse-grained scalability)
* **CIIP**: Combined inter/intra prediction
* **CL-RAS**: Cross-layer random-access skip
* **CPB**: Coded picture buffer
* **CPMV**: Control-point motion vector
* **CPMVP**: Control-point motion vector prediction (used in affine motion model)
* **CPR**: Current-picture referencing, also known as IBC – a technique by which sample values are predicted from other samples in the same picture by means of a displacement vector called a block vector, in a manner conceptually similar to motion-compensated prediction
* **CST**: Chroma separate tree
* **CTC**: Common test conditions
* **CVS**: Coded video sequence
* **DCI**: Decoder capability information
* **DCT**: Discrete cosine transform (sometimes used loosely to refer to other transforms with conceptually similar characteristics)
* **DCTIF**: DCT-derived interpolation filter
* **DF**: Deblocking filter
* **DIMD**: Decoder intra mode derivation
* **DMVR**: Decoder motion vector refinement
* **DoCR**: Disposition of comments report
* **DPB**: Decoded picture buffer
* **DPCM**: Differential pulse-code modulation
* **DPS**: Decoding parameter sets
* **DRC**: Dynamic resolution conversion (synonymous with ARC, and a form of RPR)
* **DT**: Decoding time
* **DQ**: Dependent quantization
* **ECS**: Entropy coding synchronization (typically synonymous with WPP)
* **EMT**: Explicit multiple-core transform
* **EOTF**: Electro-optical transfer function – a function that converts a representation value to a quantity of output light (e.g., light emitted by a display
* **EPB**: Emulation prevention byte (as in the emulation\_prevention\_byte syntax element)
* **ECM**: Enhanced compression model – a software codebase for future video coding exploration
* **ECV**: Extended Colour Volume (up to WCG)
* **EIP**: Extrapolation based intra prediction
* **EL**: Enhancement layer
* **EOS**: End of (coded video) sequence
* **ET**: Encoding time
* **FRUC**: Frame rate up conversion (pattern matched motion vector derivation)
* **GCI**: General constraints information
* **GDR**: Gradual decoding refresh
* **GFV**: Generative face video
* **GLM**: Gradient linear model
* **GOP**: Group of pictures (somewhat ambiguous)
* **GPM**: Geometry partitioning mode
* **GRA**: Gradual random access
* **HBD**: High bit depth
* **HDR**: High dynamic range
* **HEVC**: High Efficiency Video Coding – the video coding standard developed and extended by the JCT-VC, formalized by ITU-T as Rec. ITU-T H.265 and by ISO/IEC as ISO/IEC 23008-2
* **HLS**: High-level syntax
* **HM**: HEVC Test Model – a video coding design containing selected coding tools that conforms to the HEVC standard design (possibly with under-development extensions) – now also used especially in reference to the (non-normative) encoder algorithms (see WD and TM)
* **HMVP**: History based motion vector prediction
* **HOP**: High-complexity operating point for neural network-based filter.
* **HRD**: Hypothetical reference decoder
* **HTM**: HEVC-based multiview and 3D test model (developed by JCT-3V)
* **HyGT**: Hyper-cube Givens transform (a type of NSST)
* **IBC** (also **Intra BC**): Intra block copy, also known as CPR – a technique by which sample values are predicted from other samples in the same picture by means of a displacement vector called a block vector, in a manner conceptually similar to motion-compensated prediction
* **IBDI**: Internal bit-depth increase – a technique by which lower bit-depth (8 bits per sample) source video is encoded using higher bit-depth signal processing, ordinarily including higher bit-depth reference picture storage (ordinarily 12 bits per sample)
* **IBF**: Intra boundary filtering
* **ILP**: Inter-layer prediction (in scalable coding)
* **ILRP**: Inter-layer reference picture
* **IPCM**: Intra pulse-code modulation (similar in spirit to IPCM in AVC and HEVC)
* **IRAP**: Intra random access picture
* **ISP**: Intra subblock partitioning
* **JCCR**: Joint coding of chroma residuals
* **JCT-3V**: Joint collaborative team on 3D video (for AVC and HEVC)
* **JCT-VC**: Joint collaborative team on video coding (for HEVC)
* **JEM**: Joint exploration model – a software codebase previously used for video coding exploration
* **JM**: Joint model – the primary software codebase that has been developed for the AVC standard
* **JSVM**: Joint scalable video model – another software codebase that has been developed for the AVC standard, which includes support for scalable video coding extensions
* **JVET**: Joint video experts team (initially for VVC, later expanded)
* **JVT**: Joint video team (for AVC)
* **KLT**: Karhunen-Loève transform
* **LB** or **LDB**: Low-delay B – the variant of the LD conditions that uses B pictures
* **LD**: Low delay – one of two sets of coding conditions designed to enable interactive real-time communication, with less emphasis on ease of random access (contrast with RA). Typically refers to LB, although also applies to LP
* **LFNST**: Low-frequency non-separable transform
* **LIC**: Local illumination compensation
* **LM**: Linear model
* **LMCS**: Luma mapping with chroma scaling (formerly sometimes called “in-loop reshaping”)
* **LOP**: Low-complexity operating point for neural network-based filter.
* **LP** or **LDP**: Low delay P – the variant of the LD conditions that uses P frames
* **LUT**: Look-up table
* **LTRP**: Long-term reference picture
* **MANE**: Media-aware network element
* **MC**: Motion compensation
* **MCP**: Motion compensated prediction
* **MCTF**: Motion compensated temporal pre-filtering
* **MDNSST**: Mode dependent non-separable secondary transform
* **MIP**: Matrix-based intra prediction
* **MMLM**: Multi-model (cross component) linear mode
* **MMVD**: Merge with MVD
* **MPEG**: Moving picture experts group (an alliance of working groups and advisory groups in ISO/IEC JTC 1/‌SC 29, one of the two parent bodies of the JVET)
* **MPM**: Most probable mode (in intra prediction)
* **MRL**: Multiple reference line intra prediction
* **MV**: Motion vector
* **MVD**: Motion vector difference
* **NAL**: Network abstraction layer
* **NNPF**: Neural network post filter
* **NNVC**: Neural network-based video coding (experimental software package)
* **NSQT**: Non-square quadtree
* **NSPT**: Non-separable primary transform
* **NSST**: Non-separable secondary transform
* **NUH**: NAL unit header
* **NUT**: NAL unit type (as in AVC and HEVC)
* **OBMC**: Overlapped block motion compensation (e.g., as in H.263 Annex F)
* **OETF**: Opto-electronic transfer function – a function that converts to input light (e.g., light input to a camera) to a representation value
* **OLS**: Output layer set
* **OOTF**: Optical-to-optical transfer function – a function that converts input light (e.g. l,ight input to a camera) to output light (e.g., light emitted by a display)
* **ONNX**: Open Neural Network Exchange – a format used to convert code from common neural network software packages into SADL code
* **operation point**: A temporal subset of an OLS
* **PDPC**: Position-dependent (intra) prediction combination
* **PERP**: Padded equirectangular projection (a 360° projection format)
* **PH**: Picture header
* **PHEC**: Padded hybrid equiangular cubemap (a 360° projection format)
* **PMMVD**: Pattern-matched motion vector derivation
* **POC**: Picture order count
* **PoR**: Plan of record
* **PROF**: Prediction refinement with optical flow
* **PPS**: Picture parameter set
* **PTL**: Profile/tier/level combination
* **QM**: Quantization matrix
* **QP**: Quantization parameter (sometimes conflated with quantization step size)
* **QT**: Quadtree
* **RA**: Random access – a set of coding conditions designed to enable relatively-frequent random access points in the coded video data, with less emphasis on minimization of delay (contrast with LD)
* **RADL**: Random-access decodable leading (type of picture)
* **RASL**: Random-access skipped leading (type of picture)
* **R-D**: Rate-distortion
* **RDO**: Rate-distortion optimization
* **RDOQ**: Rate-distortion optimized quantization
* **RDPCM**: Residual DPCM
* **ROI**: Region of interest
* **ROT**: Rotation operation for low-frequency transform coefficients
* **RPL**: Reference picture list
* **RPLM**: Reference picture list modification
* **RPR**: Reference picture resampling (e.g., as in H.263 Annex P), a special case of which is also known as ARC or DRC
* **RPS**: Reference picture set
* **RQT**: Residual quadtree
* **RRU**: Reduced-resolution update (e.g. as in H.263 Annex Q)
* **RVM**: Rate variation measure
* **SADL**: Small adhoc deep learning librar
* **SAO**: Sample-adaptive offset
* **SBT**: Subblock transform
* **SbTMVP**: Subblock based temporal motion vector prediction
* **SCIPU**: Smallest chroma intra prediction unit
* **SD**: Slice data; alternatively, standard-definition
* **SDH**: Sign data hiding
* **SDT**: Signal-dependent transform
* **SE**: Syntax element
* **SEI**: Supplemental enhancement information
* **SH**: Slice header
* **SHM**: Scalable HM
* **SHVC**: Scalable high efficiency video coding
* **SIF**: Switchable (motion) interpolation filter
* **SIMD**: Single instruction, multiple data
* **SMVD**: Symmetric MVD
* **SPO**: SEI processing order
* **SPS**: Sequence parameter set
* **SR**: Super-resolution
* **STMVP**: Spatial-temporal motion vector prediction
* **STRP**: Short-term reference picture
* **STSA**: Step-wise temporal sublayer access
* **TBA/TBD/TBP**: To be announced/determined/presented/public
* **TGM**: Text and graphics with motion – a category of content that primarily contains rendered text and graphics with motion, mixed with a relatively small amount of camera-captured content
* **TIMD**: Template-based intra mode derivation
* **TM**: Template matching
* **TMVP**: Temporal motion vector prediction
* **TS**: Transform skip
* **TSRC**: Transform skip residual coding
* **TT**: Ternary tree
* **UGC**: User-generated content
* **UWP**: Unequal weight prediction
* **VCEG**: Visual coding experts group (ITU-T Q.6/21, the relevant rapporteur group in ITU-T WP3/21, which is one of the two parent bodies of the JVET)
* **VCM**: Video coding for machines
* **VPS**: Video parameter set – a parameter set that describes the overall characteristics of a coded video sequence – conceptually sitting above the SPS in the syntax hierarchy
* **VQA**: Visual quality assessment
* **VT**: Verification testing
* **VTM**: VVC Test Model
* **VUI**: Video usability information
* **VVC**: Versatile Video Coding
* **WCG**: Wide colour gamut
* **WG**: Working group, a group of technical experts (usually used to refer to the WGs of ISO/IEC JTC 1/SC 29).
* **WPP**: Wavefront parallel processing (usually synonymous with ECS)
* Block and unit names in HEVC:
	+ **CTB**: Coding tree block (luma or chroma) – unless the format is monochrome, there are three CTBs per CTU.
	+ **CTU**: Coding tree unit (containing both luma and chroma, synonymous with LCU), with a size of 16x16, 32x32, or 64x64 for the luma component.
	+ **CB**: Coding block (luma or chroma), a luma or chroma block in a CU.
	+ **CU**: Coding unit (containing both luma and chroma), the level at which the prediction mode, such as intra versus inter, is determined in HEVC, with a size of 2Nx2N for 2N equal to 8, 16, 32, or 64 for luma.
	+ **PB**: Prediction block (luma or chroma), a luma or chroma block of a PU, the level at which the prediction information is conveyed or the level at which the prediction process is performed in HEVC.
	+ **PU**: Prediction unit (containing both luma and chroma), the level of the prediction control syntax within a CU, with eight shape possibilities in HEVC:
		- **2Nx2N**: Having the full width and height of the CU.
		- **2NxN (or Nx2N)**: Having two areas that each have the full width and half the height of the CU (or having two areas that each have half the width and the full height of the CU).
		- **NxN**: Having four areas that each have half the width and half the height of the CU, with N equal to 4, 8, 16, or 32 for intra-predicted luma and N equal to 8, 16, or 32 for inter-predicted luma – a case only used when 2N×2N is the minimum CU size.
		- **N/2x2N** paired with **3N/2x2N** or **2NxN/2** paired with **2Nx3N/2**: Having two areas that are different in size – cases referred to as AMP, with 2N equal to 16 or 32 for the luma component.
	+ **TB**: Transform block (luma or chroma), a luma or chroma block of a TU, with a size of 4x4, 8x8, 16x16, or 32x32.
	+ **TU**: Transform unit (containing both luma and chroma), the level of the residual transform (or transform skip or palette coding) segmentation within a CU (which, when using inter prediction in HEVC, may sometimes span across multiple PU regions).
* Block and unit names in VVC:
	+ **CTB**: Coding tree block (luma or chroma) – there are three CTBs per CTU in a P or B slice or in an I slice that uses a single tree, and one CTB per luma CTU and two CTBs per chroma CTU in an I slice that uses separate trees.
	+ **CTU**: Coding tree unit (synonymous with LCU, containing both luma and chroma in a P or B slice or in an I slice that uses a single tree, containing only luma or only chroma in an I slice that uses separate trees), with a size of 16x16, 32x32, 64x64, or 128x128 for the luma component.
	+ **CB**: Coding block, a luma or chroma block in a CU.
	+ **CU**: Coding unit (containing both luma and chroma in P/B slice, containing only luma or chroma in I slice), a leaf node of a QTBT. It’s the level at which the prediction process and residual transform are performed in JEM. A CU can be square or rectangle shape.
	+ **PB**: Prediction block, a luma or chroma block of a PU.
	+ **PU**: Prediction unit, has the same size as a CU in the VVC context.
	+ **TB**: Transform block, a luma or chroma block of a TU.
	+ **TU**: Transform unit, has the same size as a CU in the VVC context.

## Standards, TRs, supplements and technical papers approval and publication status (update)

* MPEG-2 | H.262 (the video coding specification is common text)
	+ ITU-T H.262 V3 was approved in 2012-02; Amd.1 was approved in 2013-03 and was not published separately; it was instead incorporated directly into the V3 text and published 2013-09
	+ ISO/IEC 13818-2:2013 (Ed. 3) FDIS ballot closed 2012-05-08; FDAM 1 ballot closed 2013-04-12 and was not published separately; it was instead incorporated directly into the V3 text and published 2013-10
	+ Conformance testing (not joint with ITU-T)
		- ISO/IEC 13818-4:2004 (Ed. 2) FDIS closed 2004-08-22, published 2004-12-12; it specifies conformance testing for Part 1 (Systems), Part 2 (Video), Part 3 (Audio), and Part 7 (AAC)
		- ISO/IEC 13818-4:2004/Amd 3:2009 Level for 1080@50p/60p conformance testing
		- Cor 1:2007, Cor 2:2009, Cor 3:2012, Cor 4:2011 may also have video relevance
	+ Reference software (not joint with ITU-T)
		- ISO/IEC TR 13818-5:2005 (Ed. 2) FDIS closed 2005-07-24, published 2005-10; it specifies reference software for Part 1 (Systems), Part 2 (Video), Part 3 (Audio), Part 7 (AAC) and Part 11 (IPMP)
* AVC (twin text)
	+ ITU-T H.264 V14 was Consented at 22nd meeting on 2021-04-30 (with annotated regions, shutter interval, and miscellaneous corrections), approved 2021-08-22, published 2021-10-13
	+ ISO/IEC 14496-10:2020 (Ed. 9) FDIS ballot closed 2020-11-27, published 2020-12-15
	+ ISO/IEC 14496-10:2022 (Ed. 10), had been forwarded from DIS directly for publication 2022-01-21 (with annotated regions, shutter interval, and miscellaneous corrections) with an editing period, submitted to ITTF in 2022-05 after consultation with ISO staff on format of graphics files, upgraded to “DIS approved for registration” in ISO Project system 2022-07-04, published 2022-11-07
	+ Preliminary draft text for YCgCo-Re and YCgCo-Ro issued at 26th meeting, second draft including SMPTE ST 2128 IPT-PQ-C2 issued at 28th meeting 2022-10, third draft issued at 29th meeting 2023-01, fourth draft issued at 30th meeting 2023-04, formal project requested and CD of 11th edition issued at 31st meeting 2023-07, DIS issued at 32nd meeting 2023-10, DAM ballot closed 2024-04-15
		- H.264 V15 Consented 2024-04-26, last call began 2024-07-16, approved 2024-08-13, published 2024-11-13
		- ISO/IEC 14496-10:2025 (Ed. 11) FDIS issued at 34th meeting 2024-04, DIS approved for registration as FDIS 2024-09-17, FDIS ballot issued 2025-01-14, FDIS ballot closed 2025-03-23; published 2025-07-10
	+ Amendment to support some SEI messages of VSEI v4 requested at 37th meeting 2025-01, registered to work programme 2025-01-25, CDAM issued at 38th meeting 2025-04, consultation initiated 2025-04-23, closed 2025-06-18, ready to issue DAM at the current meeting
	+ Conformance testing (twin text)
		- ITU-T H.264.1 V6 Approved 2016-02-13, published 2016-06-17
		- Various amendments of ISO/IEC 14496-4:2004, including:
			* ISO/IEC 14496-4:2004/AMD 6:2005 Advanced Video Coding conformance
			* ISO/IEC 14496-4:2004/AMD 9:2006 AVC fidelity range extensions conformance
			* ISO/IEC 14496-4:2004/AMD 30:2009 Conformance testing for new profiles for professional applications
			* ISO/IEC 14496-4:2004/AMD 31:2009 Conformance testing for SVC profiles
			* ISO/IEC 14496-4:2004/AMD 38:2010 Conformance testing for Multiview Video Coding
			* ISO/IEC 14496-4:2004/AMD 41:2014 Conformance testing of MVC plus depth extension of AVC
			* ISO/IEC 14496-4:2004/AMD 42:2014 Conformance testing of Multi-Resolution Frame Compatible Stereo Coding extension of AVC
			* ISO/IEC 14496-4:2004/AMD 43:2015 3D-AVC conformance testing
			* ISO/IEC 14496-4:2004/AMD 45:2016 Conformance Testing for the Multi-resolution Frame Compatible Stereo Coding with Depth Maps Extension of AVC
	+ Reference software (twin text)
		- ITU-T H.264.2 V7 Approved 2016-02-13, published 2016-05-30
		- Various amendments of ISO/IEC 14496-5:2001 have been published, including:
			* ISO/IEC 14496-5:2001/AMD 6:2005 Advanced Video Coding (AVC) and High Efficiency Advanced Audio Coding (HE AAC) reference software
			* ISO/IEC 14496-5:2001/AMD 8:2006 AVC fidelity range extensions reference software
			* ISO/IEC 14496-5:2001/AMD 15:2010 Reference software for Multiview Video Coding
			* ISO/IEC 14496-5:2001/AMD 18:2008 Reference software for new profiles for professional applications
			* ISO/IEC 14496-5:2001/AMD 19:2009 Reference software for Scalable Video Coding
			* ISO/IEC 14496-5:2001/AMD 33:2015 Reference software for MVC plus depth extension of AVC
			* ISO/IEC 14496-5:2001/AMD 34:2014 Reference software of the multi-resolution frame compatible stereo coding of AVC
			* ISO/IEC 14496-5:2001/AMD 35:2015 3D-AVC Reference software
			* ISO/IEC 14496-5:2001/AMD 39:2016 Reference software for the Multi-resolution Frame Compatible Stereo Coding with Depth Maps of AVC
			* ISO/IEC 14496-5:2001/AMD 42:2017 Reference software for the alternative depth information SEI message extension of AVC
* HEVC (twin text)
	+ ITU-T H.265 V7 approved 2019-11-29, published 2020-01-10
	+ ISO/IEC 23008-2:2020 (Ed. 4) FDIS ballot closed 2020-07-16, published 2020-08-27
	+ ITU-T H.265 V8 Consented at the 22nd meeting (shutter interval information SEI message and miscellaneous corrections), published 2020-10-13
	+ ISO/IEC 23008-2:2020/AMD 1:2021 (shutter interval information SEI message) published 2021-07-12
	+ ISO/IEC 23008-2:2023 (Ed. 5) began as CDAM 2 High-range levels output of 25th meeting of January 2022, CDAM ballot closed 2022-04-15, conversion to 5th edition with miscellaneous corrections planned at 26th meeting of 2022-04, text submitted for DIS ballot 2022-07-10, DIS ballot closed 2023-01-10, FDIS issued 29th meeting of 2023-01, FDIS ballot opened 2023-08-06, closed 2023-10-02, published 2023-10-30
	+ ITU-T H.265 V9 Consented at 31st meeting 2023-07, approved 2023-09-13, and pre-published 2023-09, published 2023-11-24
	+ Preliminary draft HEVC text for YCgCo-Re and YCgCo-Ro issued at 26th meeting 2022-04, second draft including SMPTE ST 2128 issued at 28th meeting 2022-10, third draft at 29th meeting 2023-01, fourth draft at 30th meeting 2023-04, formal work item requested and CDAM1 issued 31st meeting 2023-07, DAM issued with new (multiview) profiles and SEI messages at 32nd meeting 2023-10, DAM ballot closed 2024-04-08
		- H.265 V10 Consented 2024-04-26, last call opened 2024-07-01, closed 2024-07-28, approved 2024-07-29, pre-published 2024-08-06, published 2024-10-07
		- ISO/IEC 23008-2:2025 (Ed. 6) FDIS issued from 35th meeting 2024-04, DIS approved for registration as FDIS 2024-10-03, FDIS registered for formal approval 2024-10-13, FDIS ballot issued 2024-12-30, FDIS ballot closed 2025-02-24, published 2025-03-20
	+ Amendment to support additional (multiview) profiles and some SEI messages of VSEI v4, project requested at 36th meeting 2024-11, project registered in ISO/IEC work programme 2025-01-25, CDAM issued at 37th meeting, consulation began 2025-02-01, closed 2025-03-29, DAM issued at 38th meeting 2025-04, pending DAM ballot to be initiated
	+ Conformance testing (twin text)
		- ITU-T H.265.1 V3 approved 2018-10-14, published 2019-01-15
		- ISO/IEC 23008-8:2018 (Ed. 2) Conformance specification for HEVC, published 2018-08-06
		- ISO/IEC 23008-8:2018/AMD 1:2019 Conformance testing for HEVC screen content coding (SCC) extensions and non-intra high throughput profiles, published 2019-10-15
	+ Reference software (twin text)
		- ITU-T H.265.2 V4 approved 2016-12-22, published 2017-04-10
		- ISO/IEC 23008-5:2017 (Ed. 2) Reference software for high efficiency video coding, FDIS issued from 2016-02 meeting, published 2017-03-01
		- ISO/IEC 23008-5:2017/AMD 1:2017 Reference software for screen content coding extensions, FDAM issued from 2017-04 meeting, FDAM ballot opened 2017-08-10, closed 2017-10-07, published 2017-11-09
* VVC (twin text)
	+ ITU-T H.266 V1 approved 2020-08-29, published 2020-11-10
	+ ISO/IEC 23090-3:2021 (Ed. 1) published 2021-02-16
	+ ITU-T H.266 V2 with operation range extensions, Consented 2022-01-28, Last Call began 2022-04-01, Approved 2022-04-29, pre-published 2022-06-06, published 2022-07-12
	+ ISO/IEC 23090-3:2022 (Ed. 2) with operation range extensions, approval at WG level to proceed to FDIS 2022-01-21, FDIS ballot opened 2022-06-29, closed 2022-08-24, published 2022-09-25
	+ ISO/IEC 23090-3:2024 (Ed. 3), initated as (Ed. 2) / Amd.1 New level and systems-related supplemental enhancement information, CDAM 1 issued from 26th meeting, ballot closed 2022-07-14, DAM 1 issued from 27th meeting, ballot closed 2023-01-03, FDIS issued at WG level 2023-07, FDIS ballot opened 2024-05-11, closed 2024-06-26, published 2024-07-17
	+ ITU-T H.266 V3 Consented 2023-07, approved 2023-09-29 and pre-published 2023-09, published 2023-11-29
	+ ISO/IEC 23090-3:2024/CDAM 1 Request & CDAM issued 2024-04, consultation deferred due to meeting timing, updated text issued 2024-07, consultation initiated 2024-09-05, closed 2024-10-31, ready for action to issue ISO/IEC DAM (or DIS)
	+ Conformance testing (twin text)
		- ITU-T H.266.1 V1 Consented 2022-01-28, Last Call began 2022-04-01, Approved 2022-04-29, pre-published 2022-05-17, published 2022-07-12
		- ISO/IEC 23090-15:2022 (Ed. 1) approval at WG level to proceed to FDIS 2022-10-15, upgraded to “DIS approved for registration” in ISO Projects system 2021-10-24, upgraded to “FDIS registered for formal approval” 2022-07-11, FDIS ballot closed 2022-11-04, published 2022-11-24
		- ISO/IEC 23090-15:2024 (Ed. 2) began as Amd.1 Operation range extensions – CDAM 1 issued from 24th meeting 2021-10, DAM 1 issued from 25th meeting 2022-01-21, upgraded to “CD approved for registration as DIS” status in ISO Projects system 2022-05-31, upgraded to “DIS registered” 2022-06-22, DAM ballot closed 2022-11-15, consolidated into FDIS 2nd edition issued as an output of the 29th meeting in January 2023, ballot opened 2024-04-08, closed 2024-06-03, published 2024-07-04
		- ITU-T H.266.1 V2 Consented 2023-07, approved 2023-09-13 and pre-published 2023-09, published 2023-10-19
		- ISO/IEC 23090-15 (Ed. 3) project requested at 37th meeting, project registered in work programme 2025-01-25, CD issued at 38th meeting 2025-04, consultation initiated 2025-05-05, pending closure 2025-06-30 during the current meeting, can issue DIS by the end of the current meeting
	+ Reference software (twin text)
		- ITU-T H.266.2 V1 Consented 2022-01-28, Last Call began 2022-04-01, Approved 2022-04-29, pre-published 2022-05-17, published 2022-07-12
		- ISO/IEC 23090-16:2022 V1 approval at WG level to proceed to FDIS 2022-01-21, upgraded to “DIS approved for registration” status in ISO Projects system 2022-04-21, upgraded to “FDIS registered for formal approval” 2022-04-22, FDIS ballot initiated 2022-07-24, FDIS ballot closed 2022-09-19, published 2022-10-23
		- H.266.2 V2 Consented 2024-04-26, last call opened 2024-05-16, closed 2024-06-12, approved 2024-06-13, pre-published 2024-08-06, published 2024-10-09
		- ISO/IEC 23090-16:202x (Ed. 2) Request & CD issued 2024-04, consultation deferred due to meeting timing, consultation initiated 2024-09-06, closed 2024-11-01, DIS issued at 36th meeting 2024-11, approved for registration as DIS 2024-12-18, DIS registered 2025-01-7, DIS ballot opened 2025-03-09, closed 2025-06-01, ready to issue FDIS or proceed to publication at the current meeting. (Roughly corresponding to H.266.2 V2 already approved and published in ITU-T)
* VSEI (twin text)
	+ ITU-T H.274 V1 approved 2020-08-29, published 2020-11-10
	+ ISO/IEC 23002-7:2021 (Ed. 1) published 2021-01-28
	+ ITU-T H.274 V2 Consented 2022-01-28, Last Call began 2022-04-01, Approved 2022-05-22 (after 1 Last Call comment and Additional Review), pre-published 2022-06-17, published 2022-07-25
	+ ISO/IEC 23002-7:2022 (Ed. 2) approval at WG level to proceed to FDIS 2022-01-21, upgraded to “DIS approved for registration” status in ISO Projects system 2022-05-05 and “FDIS registered for formal approval” 2022-05-08, FDIS ballot closed 2022-09-27, published 2022-10-30
	+ ISO/IEC 23002-7:2024 (Ed. 3) began as (2nd Ed.) Amd.1 Request for new edition and CD for additional SEI messages issued at 27th meeting, ballot closed 2022-10-10, DAM registered 2022-11-13, DAM ballot closed 2022-04-06, FDIS 3rd edition issued 2023-07, FDIS ballot began 2024-07-25, closed 2024-09-20, published 2024-10-30
	+ ITU-T H.274 V3 Consent 2023-07, approved 2023-09-29, pre-published 2023-10-11, published 2024-03-12
	+ ISO/IEC 23002-7:202x (Ed. 4) Request & CDAM 1 issued 2024-04, consultation deferred due to meeting timing, updated text issued 2024-07, CD consultation initiated 2024-09-05, closed 2024-10-31, DAM issued at 38th meeting 2025-04, pending DAM ballot to be initiated
* CICP (twin text)
	+ ITU-T H.273 V2 (with 4:2:0 sampling alignment and corrections for range of values for sample aspect ratio, ICTCP equations for HLG, and transfer characteristics function for sYCC of IEC 61966-2-1) Consented on 2021-04-30, Last Call closed during the 23rd meeting with approval on 2021-07-14, published 2021-09-24
	+ ISO/IEC 23091-2:2021 (Ed. 2) had been forwarded from DIS directly for publication in 2021-04 and published 2021-10-18
	+ ITU-T H.273 V3 Consent 2023-07, approved 2023-09, not published due to waiting for publication of SMPTE ST 2128
	+ ITU-T H.273 V4 Consented 2024-04-26, last call opened 2024-06-16, closed 2024-07-13, approved 2024-07-14, pre-published 2024-08-06, published 2024-10-07
	+ ISO/IEC 23091-2:2025 (Ed. 3) Request for new edition and CD for new edition (including YCgCo-Re and YCoCg-Ro) issued at 27th meeting, ballot closed 2022-10-10, DIS registered 2022-11-13, DIS ballot closed 2023-04-06, preliminary draft text for including SMPTE ST 2128 issued at 28th meeting, incorporated into preliminary FDIS at 30th meeting 2023-04, FDIS issued 2024-04 (after waiting for publication of SMPTE ST 2128, then proceeding), FDIS registered for formal approval 2024-10-24, FDIS ballot issued 2024-12-03, FDIS ballot closed 2025-01-28, published 2025-02-25
* Conversion and coding practices for HDR/WCG Y′CbCr 4:2:0 video with PQ transfer characteristics (twin text)
	+ ITU-T H-Series Supplement H.Sup15 V1, approved 2017-01-27, published 2017-04-12
	+ ISO/IEC TR 23008-14:2018 (Ed. 1) published 2018-08-06
* Signalling, backward compatibility and display adaptation for HDR/WCG video coding (twin text)
	+ ITU-T H-Series Supplement H.Sup18 V1, approved 2017-10-27, published 2018-01-18
	+ ISO/IEC TR 23008-15:2018 (Ed. 1) published 2018-08
* Usage of video signal type code points (twin text)
	+ ITU-T H-Series Supplement H.Sup19 V3 approved 2021-04-30, published 2021-06-04
	+ ISO/IEC TR 23091-4:2021 (Ed. 3) published 2021-05-23
* Working practices using objective metrics for evaluation of video coding efficiency experiments (twin text)
	+ ITU-T H-Series Supplement HSTP-VID-WPOM V1 approved 2020-07-03, published 2020-11
	+ ISO/IEC TR 23002-8:2021 (Ed. 1) published 2021-05-20
* Film grain synthesis technologies for video applications (twin text)
	+ ISO/IEC TR 23002-9:2024 (Ed. 1) Request for subdivision and WD 1 issued at 25th meeting 2022-01-21, WD 2 issued at 27th meeting, WD 3 issued at 28th meeting, CDTR issued at 29th meeting 2023-01, consultation period ended 2023-07-09, DTR text was issued from the 31st meeting in July 2023, put on hold by ISO staff editors, DTR ballot opened 2024-03-05, closed 2024-04-30, NB comments handled by ISO staff editor in consultation with project editors, published 2024-07-24
	+ ITU-T H-Series Supplement H.Sup21 (ex H.Sup-FGST), Agreement 2025-01-24 by ITU-T SG21, pre-publication 2025-03-26, pending final publication
	+ ISO/IEC TR 23002-9 (Ed. 2) Edition 2 planned but not yet in formal work programme of ISO/IEC
* Optimization of encoders and receiving systems for machine analysis of coded video content (twin text)
	+ ISO/IEC 23888-3 (Ed. 1) Request for subdivision issued from 33rd JVET meeting 2024-01, CDTR issued from 34th meeting 2024-04, consultation deferred due to meeting timing, updated text issued from 35th meeting 2024-07, consultation further deferred due to meeting timing, further updated text issued from 36th meeting 2024-11, consultation initiated 2025-01-14, consultation period ended 2025-03-11, DTR issued at 38th meeting 2025-04, pending DTR ballot to be initiated
	+ ITU-T provisional name H.Sup-MACVC
* The following freely available standards are published here in ISO/IEC:
<https://standards.iso.org/ittf/PubliclyAvailableStandards/index.html> as of the time of the current meeting (or soon afterwards, as a temporary problem was reported and fixed around 8 May 2025):
	+ ISO/IEC 13818-4:2004 Conformance testing for MPEG-2
	+ ISO/IEC 13818-4:2004/Amd 3:2009 Level for 1080@50p/60p conformance testing
	+ ISO/IEC TR 13818-5:2005 Software simulation for MPEG-2
	+ Various amendments of ISO/IEC 14496-4:2004 Conformance for AVC
	+ Various amendments of ISO/IEC 14496-5:2001 Reference software for AVC
	+ ISO/IEC 14496-10:2022 (Ed. 10) AVC
	+ ISO/IEC 23090-16:2022 (Ed. 1) Reference software for VVC
* The following standards that have been intended by JVET to be publicly available were not available at <https://standards.iso.org/ittf/PubliclyAvailableStandards/index.html> as of the time of the current meeting. (These should be checked for previously issued requests for free availability.)
	+ ISO/IEC 23002-7:2024 (Ed. 3) – VSEI, published 2024-10-30 (public availability requested 2023-07)
	+ ISO/IEC 23008-2:2025 (Ed. 6) HEVC, published 2023-10-30 (public availability requested 2024-04)
	+ ISO/IEC 23008-5:2017 (Ed. 2) Reference software for HEVC, published 2017-03-01 (public availability requested 2016-02)
	+ ISO/IEC 23008-5:2017/AMD 1:2017 Reference software for HEVC screen content coding extensions, published 2017-11-09 (not requested 2017-01, 2017-04, 2017-07, 2017-10, 2018-01)
	+ ISO/IEC 23008-8:2018 (Ed. 2) Conformance specification for HEVC, published 2018-08-06 (public availability requested 2018-10)
	+ ISO/IEC 23008-8:2018/AMD 1:2019 Conformance testing for HEVC screen content coding (SCC) extensions and non-intra high throughput profiles, published 2019-10-15
	+ ISO/IEC 23090-3:2024 (Ed. 3) VVC, published 2024-07-17
	+ ISO/IEC 23090-15:2024 (Ed. 2) Conformance specification for VVC, published 2024-07-04
	+ ISO/IEC 23091-2:2025 (Ed. 3) CICP, published 2025-02-25 (public availability requested 2024-04)
* The following technical reports by JVET may not have been requested to be publicly available due to a former policy interpretation by ITTF that has since been changed. (These should be checked for previously issued requests for free availability.)
	+ ISO/IEC TR 23008-14:2018 (Ed. 1) Conversion and coding practices for HDR/WCG Y′CbCr 4:2:0 video with PQ transfer characteristics, published 2018-08-06
	+ ISO/IEC TR 23008-15:2018 (Ed. 1) Signalling, backward compatibility and display adaptation for HDR/WCG video coding, published 2018-08
	+ ISO/IEC TR 23091-4:2021 (Ed. 3) Usage of video signal type code points, published 2021-05-23
	+ ISO/IEC TR 23002-8:2021 (Ed. 1) Working practices using objective metrics for evaluation of video coding efficiency experiments, published 2021-05-20
	+ ISO/IEC TR 23002-9:2024 (Ed. 1) Film grain synthesis technologies for video applications, published 2024-07-24 (not requested 2024-04)
* It appears necessary to check if all older software and conformance packages are publicly available – it might be that this was never requested, e.g. for those that were produced by JCT-3V. This topic was left TBD until the current meeting – perhaps it would be best to compile a list of all relevant software and conformance parts of AVC, HEVC, MPEG-2 aka H.262, CICP, and request these in bulk.

## Draft standards progression status for active work items (update)

* AVC ISO/IEC 14496-10:2025/CDAM 1 to support some SEI messages of VSEI v4 requested at 37th meeting 2025-01, registered to work programme 2025-01-25, CDAM issued at 38th meeting 2025-04, consultation initiated 2025-04-23, closed 2025-06-18, ready to issue DAM at the current meeting
* HEVC ISO/IEC 23008-2:2025/DAM 1 to support additional (multiview) profiles and some SEI messages of VSEI v4, project requested at 36th meeting 2024-11, project registered in ISO/IEC work programme 2025-01-25, CDAM issued at 37th meeting, consulation began 2025-02-01, closed 2025-03-29, DAM issued at 38th meeting 2025-04, pending DAM ballot to be initiated
* VVC ISO/IEC 23090-3:2024/CDAM 1, Request & CDAM issued 2024-04, consultation deferred due to meeting timing, updated text issued 2024-07, consultation initiated 2024-09-05, closed 2024-10-31, DAM issued at 38th meeting 2025-04, pending DAM ballot to be initiated
* VVC conformance ISO/IEC 23090-15 (Ed. 3) project requested at 37th meeting, project registered in work programme 2025-01-25, CD issued at 38th meeting 2025-04, consultation initiated 2025-05-05, pending closure 2025-06-30 during the current meeting, can issue DIS by the end of the current meeting
* VVC reference software ISO/IEC 23090-16:202x (Ed. 2) Request & CD issued 2024-04, consultation deferred due to meeting timing, consultation initiated 2024-09-06, closed 2024-11-01, DIS issued at 36th meeting 2024-11, approved for registration as DIS 2024-12-18, DIS registered 2025-01-7, DIS ballot opened 2025-03-09, closed 2025-06-01, ready to issue FDIS or proceed to publication at the current meeting (roughly corresponding to H.266.2 V2 already approved and published in ITU-T)
* VSEI ISO/IEC 23002-7:202x (Ed. 3) / CDAM 1 Request & CDAM issued 2024-04, consultation deferred due to meeting timing, updated text issued 2024-07, CD consultation initiated 2024-09-05, closed 2024-10-31, DAM issued at 38th meeting 2025-04, pending DAM ballot to be initiated
* ISO/IEC TR 23002-9 (Ed. 2) Film grain synthesis technology for video applications – Edition 2 planned but not yet in formal work programme of ISO/IEC
* H.Sup-MACVC | ISO/IEC 23888-3 (Ed. 1) Optimization of encoders and receiving systems for machine analysis of coded video content – ISO/IEC 23888-3 Request for subdivision issued from 33rd JVET meeting 2024-01, CDTR issued from 34th meeting 2024-04, consultation deferred due to meeting timing, updated text issued from 35th meeting 2024-07, consultation further deferred due to meeting timing, further updated text issued from 36th meeting 2024-11, consultation initiated 2025-01-14, consultation period ended 2025-03-11, DTR issued at 38th meeting 2025-04, pending DTR ballot to be initiated (ITU-T provisional name H.Sup-MACVC)
* A request for free availability in ISO/IEC has to be made for each edition, amendment and corrigendum, and the request needs to be approved in the WG 5 Recommendations. A request form also needs to be filled out (but the form does not need to be issued as a WG 5 document). A freely available URL for the ITU publication should be provided for the ongoing work items when they become finalized.

## Opening remarks

Remarks during the opening session of the meeting Friday 3 October at XXXX-XXXX CEST were as follows.

* Timing and organization of the meeting and online access and calendar posting of session plans were reviewed
	+ The initial number of documents was higher than for last meeting (approximately 230 vs. 200 by the time of opening the meeting) – parallel sessions were announced to be necessary.
	+ Start of parallel sessions (HLS and EE review) Saturday morning
	+ Expert viewing of CfE submissions to be conducted Saturday, Sunday and potentially Monday
	+ JVET will not meet during the WP3/21 plenary on Monday 6 Oct. 1415-1545 CEST. JVET might likely meet during the MPEG information exchange sessions on Tuesday 7 Oct. (0900-1200 CEST) and Thursday 9 Oct. (0900-1000 CEST), both of them held in CICG. It is planned to approve WG 5 recommendations before the MPEG information exchange on Saturday 41 Oct. (1400-1600 CEST, in ITU/Popov) where those should be presented. JVET will however continue working until Sunday 12 Oct. evening (depending on workload).
	+ SG21 workshop on Friday 1400-1830 “Embodied AI and Media Technology Standards” (<https://www.itu.int/en/ITU-T/Workshops-and-Seminars/2025/1010/Pages/default.aspx>). The current plan is that they use half of room C and JVET uses the other half. Another option would be that JVET meets in smaller rooms (e.g., breakout) during that time. The problem is that if Room C is in split mode Friday afternoon, that will stay over the weekend which would be undesirable for the last two days.
* Future non-virtual meetings will be held as hybrid meetings with best-effort remote access (when under ISO/IEC SC 29 auspices) or as physical meetings with remote participation (when under ITU-T SG21 auspices). In terms of practical arrangements, this is identical.
* Plans for subsequent non-virtual meetings were reviewed: April 2026 (Santa Eulària), July 2026 (Geneva), October 2026 (Hangzhou), January 2027 (Brisbane), April 2027 (likely Geneva), July 2027 (Tampere), October 2027 (Shenzhen), January 2028 (likely Geneva).
* The January 2026 meeting remains planned to be virtual.
* Depending on the status of preparing future standardization activities, it may be necessary to extend the duration of meetings, or plan for AHG meeting days prior to the regular meeting (e.g., for analysis of CfE/CfP submissions)
* Significant workload was expected at this meeting for AHG17 activities – to evaluate responses to the the Call for Evidence and plan subsequent steps. Before starting discussion, the viewing of CfE submissions needs to be conducted (Sat.-Mon.). Up to 336 volunteers are needed for viewing sessions (but experts can participate in multiple sessions). Review of EE1/EE2 needs to be done in parallel. Joint meetings with parent bodies are also expected next week on this topic.
* The meeting logistics, agenda, working practices, policies, and document allocation considerations were reviewed.
	+ Access to the meeting was provided using Zoom. The meeting notes by the session chair were to be continually shared via zoom screen sharing. In the meeting room C, it is also possible to show them on a separate projection screen in parallel with another presentation.
	+ Having text and software available is crucial (and not just arriving at the end of the meeting).
* The results of the previous meeting and the meeting report JVET-AM1000 were reviewed (which was finalized during early September, but sufficiently mature drafts had been available before in the ITU ftp site). Only minor issues in the meeting report were noted and were not considered sufficient to warrant issuing a revision.
* At the current meeting, on-site attendance will again be recorded via the traditional sign-in sheet, in addition to the list of web registrations made via ITU. Participants were asked to correct their affiliation and email in cases where these changed (also in the ITU account). Remote attendance (of those not present in person) will be recorded via the zoom reports. It is therefore important to follow the conventions of naming as mentioned before. Participants who cannot be correctly identified will not appear in the attendance sheet.
* There were no objections voiced in the opening plenary to the consideration of late contributions.
* There were again a few documents registered where authors’ given names were not abbreviated according to the JVET custom (which helps produce shorter headings in the JVET meeting report), and/or company affiliation was missing in the authors’ list. Participants were reminded to stick to JVET’s conventions. As for now, the JVET chair took action of correcting those cases in the document registry.
* Experts were asked not to pick a specific JVET number for regular documents – this function is reserved for AHG reports, summary reports, and output docs. Reserving numbers without filling a precise title shall also be avoided – the chair may flag such documents as withdrawn, as they cannot be allocated to a certain category in the meeting notes.
* Experts were asked to always register JVET documents via the “jvet-experts.org” site, not via the MPEG DMS site, as WG 5 docs (as that feature of the DMS site has not been working properly).
* Experts were asked to inform the chair when the title of a document is changed, or if authors are added. Otherwise, that might not be correct in the meeting notes. Provisional titles such as “EEx contribution” shall be avoided.
* Still, only the newest versions of the JCT-VC and JCT-3V documents are available from the links in the JVET site, but a second source for JVET, JCT-VC and JCT-3V documents was set up in the ITU ftp directories of each meeting. This includes all versions of documents with original upload times. JVET documents can only be made available with a delay of at least one meeting cycle, as often newer versions (in particular of output documents) are still uploaded later
* The following ballot results had become available through the SC 29 secretariat:
	+ DAM HEVC [mxxxxx](https://dms.mpeg.expert/doc_end_user/current_document.php?id=99765&id_meeting=203)
	+ DAM VVC [mxxxxx](https://dms.mpeg.expert/doc_end_user/current_document.php?id=99765&id_meeting=203)
	+ DAM VSEI [mxxxxx](https://dms.mpeg.expert/doc_end_user/current_document.php?id=99765&id_meeting=203)
	+ DTR machine analysis [mxxxxx](https://dms.mpeg.expert/doc_end_user/current_document.php?id=99765&id_meeting=203)
* It is planned to issue FDIS of new editions for HEVC, VVC and VSEI at this meeting, and also submit them for ITU-T consent on the next versions of H.265, H.266 and H.274.
* It is planned to submit the supplement on machine analysis for ITU-T approval. Depending on ballot comments, a second DTR might also be issued, aligned with the ITU version.
* The AVC amendment (support for additional VSEI messages) is currently under DAM ballot which will close before the January 2026 meeting. An FDIS on the next edition could be planned for January, and the next H.264 version be submitted in April 2026.
* The 3rd edition of VVC conformance is currently under DIS ballot. Submission to consent on next version of H.266.1 could be considered at the current meeting.
* Plans for generating the next versions of reference software for AVC, HEVC and VVC (which would need to support new SEI messages from VSEIv4) need to be developed. Earliest target date for ITU-T consent would be April 2026 – should requests be made for ISO? For AVC, it might also be useful to generate a new part of ISO/IEC 14496.
* The primary goals of the meeting were:
	+ Generate next versions/editions of VSEI, VVC and HEVC
	+ Machine analysis TR finalization / supplement for ITU approval
	+ VVC conformance for ITU consent
	+ Evaluation of CfE results, and further steps
	+ TuC on VSEI and CICP
	+ Exploration Experiments
		- Neural network-based video coding
		- Enhanced compression beyond VVC
	+ Liaison communication – any?
	+ VVC white paper update (remove VSEI, some update of the 2021 version)
* Joint meetings were expected with MPEG AG 5 (on matters involving visual quality assessment), and with MPEG WG 2 Requirements and ITU-T VCEG on future video standardization (see section 7.3). Another potential joint meeting may be necessary on Gaussian splatting (SEI proposal) with WGs 4 and 7.
* As a follow-up to communication after previous meetings, parent bodies need to conduct further discussion about future JVET management structures.
* Principles of standards development were discussed.
* Scheduling of sessions was discussed – see under sections 2.6 and 2.12.

## Scheduling of discussions

The times of the meeting sessions followed the needs of the onsite meeting arrangements, with highest priority given to the aim of achieving the goals of the meeting. Typical meeting hours were in the range of 0900-2000 CEST with coffee breaks and lunch breaks as appropriate, however some early morning or late-night sessions were noted to potentially be necessary. Sessions were announced in the JVET calendar as far as possible in advance, although it was acknowledged that some activities (such as breakout sessions) might be held at short notice.

Particular scheduling notes are shown below, although not necessarily 100% accurate or complete. Times are recorded in the local timezone of the meeting venue, except as otherwise noted:

Coffee breaks were regularly scheduled at 1030 and 1630.

* Fri.. 3 October, 1st day
	+ Afternoon session:
		- 1400–XXXX Opening remarks, review of practices, agenda, IPR policy reminder
		- XXXX–XXXX Reports of AHGs 1-18
* Sat. 4 Oct., 2nd day
	+ Morning sessions:
		- XXXX–XXXX Experts viewing of CfE submissions
		- 0900–XXXX EEx review (Rm. C)
		- XXXX–XXXX HLS … (Rm. A, chaired by Jill Boyce)
	+ Afternoon sessions:
		- XXXX–XXXX Experts viewing of CfE submissions
		- XXXX–XXXX EEx review (Rm. C)
		- XXXX–XXXX HLS … (Rm. A, chaired by Jill Boyce)
* Sun. 5 Oct., 3rd day
	+ Morning sessions:
		- XXXX–XXXX TBD
		- …
	+ Afternoon sessions:
		- XXXX–XXXX TBD
		- …
* Mon. 6 Oct., 4th day
	+ Morning sessions:
		- XXXX–XXXX TBD
		- …
	+ Afternoon sessions:
		- XXXX–XXXX TBD
		- …
* Tue. 7 Oct., 5th day
	+ 0900–XXXX MPEG information sharing session
	+ Morning sessions:
		- XXXX–XXXX TBD
		- …
	+ Afternoon sessions:
		- XXXX–XXXX TBD
		- …
* Wed. 8 Oct., 6th day
	+ Morning sessions:
		- XXXX–XXXX TBD
		- …
	+ Afternoon sessions:
		- XXXX–XXXX TBD
		- …
* Thu. 9 Oct., 7th day
	+ 0900–1015 MPEG information sharing session
	+ Morning sessions:
		- XXXX–XXXX TBD
		- …
	+ Afternoon sessions:
		- XXXX–XXXX TBD
		- …
* Fri. 10 Oct., 8th day
	+ Morning sessions:
		- XXXX–XXXX TBD
		- …
	+ Afternoon sessions:
		- XXXX–XXXX TBD
		- …
* Sat. 11 Oct., 9th day
	+ XXXX–XXXX JVET plenary:
		- CfE results and further planning
		- Planning of output docs
		- Establishment of AHGs
		- Review of WG 5 meeting recommendations
	+ 1400–1600 MPEG information sharing session
	+ XXXX–XXXX JVET remaining business
* Sun. 10 Oct., 10th day
	+ XXXX–XXXX JVET remaining business
	+ XXXX–XXXX JVET plenary:
		- EE review
		- Final approval of output docs
		- Software timeline
		- Future planning, a.o.b.
		- Closing of meeting

## Contribution topic overview

The approximate subject categories and quantity of contributions per category for the meeting were summarized as follows (note that the noted document counts do not include crosschecks and summary reports, and may not be completely accurate; documents which are allocated to multiple sections are only counted in one of them):

* AHG reports (18) (section 3)
* Project development (section 4)
	+ AHG1: Development, deployment and advertisement of standards (1)
	+ AHG2: Text development and errata reporting (1)
	+ AHG3: Software development (1)
	+ AHG3: Test conditions (1)
	+ AHG4: Subjective quality testing and verification testing (1)
	+ AHG4: Test and training material (2)
	+ AHG5: Conformance test development (0)
	+ AHG7: ECM tool assessment (6)
	+ AHG8: Optimization of encoders and receiving systems for machine analysis of coded video content (0)
	+ AHG10: Encoding algorithm optimization (0)
	+ AHG13: Film grain synthesis (1)
	+ Implementation studies (0)
	+ Profile/tier/level specification (1)
	+ AHG15: Gaming content compression (2)
	+ AHG16: Generative face video (1)
	+ AHG17: CfE on video coding technology (16)
	+ AHG18: Ultra-low latency and error resilience (8)
	+ CICP (1)
* Low-level tool technology proposals (section 5) with subtopics (number counts excluding BoG and summary reports)
	+ AHG11/AHG14 and EE1: Neural network-based video coding (26) (section 5.1)
	+ AHG6/AHG12 and EE2: Enhanced compression beyond VVC capability (71) (section 5.2)
* AHG9: High-level syntax (HLS) proposals (section 6) with subtopics
	+ Aspects of SEI messages in VSEI, VVC, HEVC and AVC (7) (section 6.1)
	+ Aspects of SEI messages in VSEI v4 (29) (section 6.2)
	+ SEI messages in TuC for VSEI (46) (section 6.3)
	+ SEI messages on other topics (6) (section 6.4)
	+ SEI software and showcases (1) (section 6.5)
	+ Non-SEI HLS aspects (1) (section 6.6)
* Joint meetings, plenary discussions, BoG reports (X) liaison (X), summary of actions (section 7)
* Project planning (section 8)
* Establishment of AHGs (section 9)
* Output documents (section 10)
* Future meeting plans and concluding remarks (section 11)

The document counts above do not include cross-checks and summary reports.

# AHG reports (18)

These reports were discussed during XXXX–XXXX on Friday 3 Oct. 2025 (chaired by JRO).

[JVET-AN0001](https://jvet-experts.org/doc_end_user/current_document.php?id=16254) JVET AHG report: Project Management (AHG1) [J.-R. Ohm (chair), G. J. Sullivan (vice chair)]

[JVET-AN0002](https://jvet-experts.org/doc_end_user/current_document.php?id=16255) JVET AHG report: Draft text and test model algorithm description editing (AHG2) [B. Bross, C. Rosewarne (co-chairs), F. Bossen, A. Browne, S. Kim, S. Liu, J.-R. Ohm, G. J. Sullivan, A. Tourapis, Y.-K. Wang, Y. Ye (vice chairs)]

[JVET-AN0003](https://jvet-experts.org/doc_end_user/current_document.php?id=16256) JVET AHG report: Test model software development (AHG3) [F. Bossen, X. Li, K. Sühring (co-chairs), E. François, Y. He, K. Sharman, V. Seregin, A. Tourapis (vice chairs)]

[JVET-AN0004](https://jvet-experts.org/doc_end_user/current_document.php?id=16257) JVET AHG report: Test material and visual assessment (AHG4) [V. Baroncini, T. Suzuki, M. Wien (co-chairs), W. Husak, S. Iwamura, P. de Lagrange, S. Liu, X. Meng, S. Puri, A. Segall, S. Wenger (vice-chairs)]

[JVET-AN0005](https://jvet-experts.org/doc_end_user/current_document.php?id=16258) JVET AHG report: Conformance testing (AHG5) [I. Moccagatta (chair), F. Bossen, T. Ikai, S. Iwamura, H.-J. Jhu, K. Kawamura, P. de Lagrange, S. Paluri, K. Sühring, Y. Yu (vice chairs)]

[JVET-AN0006](https://jvet-experts.org/doc_end_user/current_document.php?id=16259) JVET AHG report: ECM software development (AHG6) [V. Seregin (chair), J. Chen, R. Chernyak, F. Le Léannec, K. Zhang (vice-chairs)]

[JVET-AN0007](https://jvet-experts.org/doc_end_user/current_document.php?id=16260) JVET AHG report: ECM tool assessment (AHG7) [X. Li (chair), L.-F. Chen, Z. Deng, J. Gan, E. François, R. Ishimoto, H.-J. Jhu, J. Lainema, X. Li, J. Pardo, A. Stein, H. Wang (vice chairs)]

[JVET-AN0008](https://jvet-experts.org/doc_end_user/current_document.php?id=16261) JVET AHG report: Optimization of encoders and receiving systems for machine analysis of coded video content (AHG8) [S. Liu, J. Ström, S. Wang, M. Zhou (AHG chairs)]

[JVET-AN0009](https://jvet-experts.org/doc_end_user/current_document.php?id=16262) JVET AHG report: SEI message studies (AHG9) [S. McCarthy, J. Boyce, Y.-K. Wang (co-chairs), T. Chujoh, S. Deshpande, M. M. Hannuksela, P. de Lagrange, G. J. Sullivan, H. Tan, A. Tourapis, S. Wenger, P. Wu (vice-chairs)]

[JVET-AN0010](https://jvet-experts.org/doc_end_user/current_document.php?id=16263) JVET AHG report: Encoding algorithm optimization (AHG10) [K. Andersson, P. de Lagrange, A. Duenas (co-chairs), T. Ikai, T. Solovyev, A. Tourapis (vice chairs)]

[JVET-AN0011](https://jvet-experts.org/doc_end_user/current_document.php?id=16264) JVET AHG report: Neural network-based video coding (AHG11) [E. Alshina, F. Galpin, S. Liu (co-chairs), J. Li, Y. Li, R.-L. Liao, M. Santamaria, T. Shao, M. Wien, P. Wu (vice chairs)]

[JVET-AN0012](https://jvet-experts.org/doc_end_user/current_document.php?id=16265) JVET AHG report: Enhanced compression beyond VVC capability (AHG12) [M. Karczewicz, Y. Ye, L. Zhang (co-chairs), B. Bross, R. Chernyak, X. Li, K. Naser, Y. Yu (vice-chairs)]

[JVET-AN0013](https://jvet-experts.org/doc_end_user/current_document.php?id=16266) JVET AHG report: Film grain technologies (AHG13) [W. Husak, P. de Lagrange (co-chairs), A. Duenas, X. Meng, M. Radosavljević, A. Segall, G. Teniou, A. Tourapis (vice-chairs)]

[JVET-AN0014](https://jvet-experts.org/doc_end_user/current_document.php?id=16025) JVET AHG report: NNVC software development (AHG14) [F. Galpin (chair), R. Chang, Yue Li, Yun Li, M. Santamaria, J. N. Shingala, Z. Xie (vice chairs)]

[JVET-AN0015](https://jvet-experts.org/doc_end_user/current_document.php?id=16267) JVET AHG report: Gaming content compression (AHG15) [S. Puri, J. Sauer (co-chairs), R. Chernyak, A. Duenas, L. Wang, V. Zakharchenko (vice chairs)]

[JVET-AN0016](https://jvet-experts.org/doc_end_user/current_document.php?id=16268) JVET AHG report: Generative face video compression (AHG16) [Y. Ye (chair), H.-B. Teo, Z. Lyu, S. McCarthy, S. Wang (vice chairs)]

[JVET-AN0017](https://jvet-experts.org/doc_end_user/current_document.php?id=16269) JVET AHG report: Testing of video coding technology beyond CTC (AHG17) [J.-R. Ohm, M. Wien, F. Bossen (co-chairs), M. Abdoli, E. Alshina, V. Baroncini, J. Chen, R. Chernyak, Z. Deng, P. de Lagrange, L. Li, P. Nikitin, D. Rusanovskyy (vice chairs)]

[JVET-AN0018](https://jvet-experts.org/doc_end_user/current_document.php?id=16270) JVET AHG report: Ultra-low latency and packet loss resilience (AHG18) [S. Ikonin, S. Wenger, V. Zakharchenko (co-chairs), S. Deshpande, S. Fößel, C. Kim, X. Ma, S. Puri, J. Ström (vice-chairs)]

# Project development (43)

## AHG1: Development, deployment and advertisement of standards (1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0021](https://jvet-experts.org/doc_end_user/current_document.php?id=16242) Deployment status of the VVC standard [G. J. Sullivan]

## AHG2: Text development and errata reporting (1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

See also sections 6.1 and 6.2.1.

[JVET-AN0258](https://jvet-experts.org/doc_end_user/current_document.php?id=16243) Reference Guide to the Structural Concepts in the Versatile Video Coding (VVC) Standard [G. J. Sullivan (Dolby Labs)]

## AHG3: Software development (1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0292](https://jvet-experts.org/doc_end_user/current_document.php?id=16296) Multiview HEVC Reference SW implementation status [S. Choi, S. Paluri, D. Podborski, A. M. Tourapis (Apple)] [late]

## AHG3: Test conditions (1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0051](https://jvet-experts.org/doc_end_user/current_document.php?id=16035) Influence of color transformation on codec performance A. Grzelka, M. Domanski (Poznan Univ.)] [late] [miss]

## AHG4: Subjective quality testing and verification testing (1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0048](https://jvet-experts.org/doc_end_user/current_document.php?id=16032) AHG4: teleconference on VVC multilayer testing [P. de Lagrange (InterDigital)]

[JVET-AN0298](https://jvet-experts.org/doc_end_user/current_document.php?id=16302) AHG4: proposed updates for VVC multi-layer verification test plan [P. de Lagrange (InterDigital)] [late] [miss]

## AHG4: Test and training material (2)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0053](https://jvet-experts.org/doc_end_user/current_document.php?id=16037) AHG4/AHG15/AHG17: 4K gaming sequences featuring “Black Myth: Wukong” [J. Sauer, Y. Zhao, Y. Sun, J. Zhou, E. Alshina (Huawei)]

[JVET-AN0177](https://jvet-experts.org/doc_end_user/current_document.php?id=16161) AHG4/AHG17: Response to the call for new HDR materials for future video coding development [J. Wang, J. Zhang, L. Yu (ZJU)]

## AHG5: Conformance test development (0)

This section is kept as a template for future use.

## AHG7: ECM tool assessment (6)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0043](https://jvet-experts.org/doc_end_user/current_document.php?id=16027) AHG7: Preliminary tool analysis with the criteria in JVET-AM0042 [X. Li (Google)]

[JVET-AN0044](https://jvet-experts.org/doc_end_user/current_document.php?id=16028) Report of AHG7 conference call on Complexity Analysis [X. Li]

[JVET-AN0119](https://jvet-experts.org/doc_end_user/current_document.php?id=16103) AHG7: Analysis on group-off tests using Valgrind [R. Ishimoto, F. Zheming, T. Ikai (Sharp)]

[JVET-AN0203](https://jvet-experts.org/doc_end_user/current_document.php?id=16187) AHG7: On RGPM moved into group-2 [P. Bordes, K. Reuzé, E. François, K. Naser, F. Le Léannec (InterDigital)]

[JVET-AN0223](https://jvet-experts.org/doc_end_user/current_document.php?id=16207) AHG7: On bin to bit ratio in ECM [T. N. Canh, P. Yin, S. McCarthy (Dolby), J. N. Shingala (Ittiam)] [late] [miss]

[JVET-AN0253](https://jvet-experts.org/doc_end_user/current_document.php?id=16237) AHG7: On Memory Bandwidth Measurement [X. Li (Google), Y. Kim (Samsung), J. Pardo (Huawei), R. Ishimoto (Sharp), L.-F. Chen (Tencent)]

[JVET-AN0317](https://jvet-experts.org/doc_end_user/current_document.php?id=16321) AHG7: Preliminary tool analysis with the criteria in JVET-AM0042 – Update on IntraTMP [K. Naser, T. Dumas, M. Radosavljevic (InterDigital)] [late]

## AHG8: Optimization of encoders and receiving systems for machine analysis of coded video content (0)

This section is kept as a template for future use.

## AHG10: Encoding algorithm optimization (0+2)

This section is kept as a template for future use.

[JVET-AN0189](https://jvet-experts.org/doc_end_user/current_document.php?id=16173) AHG17/AHG10: On perceptual coding for next-generation video coding standard [Y. Zhao, A. Karabutov, T. Guo, P. Jia, E. Alshina (Huawei)]

See section 4.16.1

[JVET-AN0190](https://jvet-experts.org/doc_end_user/current_document.php?id=16174) AHG17/AHG10: On test model simulating hardware encoder [Y. Zhao, J. Mao, R. Zhao, X. Ma, T. Solovyev, E. Alshina (Huawei)]

See section 4.16.1

## AHG13: Film grain synthesis (1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0237](https://jvet-experts.org/doc_end_user/current_document.php?id=16221) AHG13: Film grain analysis improvement [M. Radosavljević, F. Lefebvre, P. de Lagrange, Z. Ameur (InterDigital)]

## Implementation studies (0)

This section is kept as a template for future use.

## Profile/tier/level specification (1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0293](https://jvet-experts.org/doc_end_user/current_document.php?id=16297) Multiview 4:4:4 profiles for HEVC [S. Choi, S. Paluri, D. Podborski, E. Asbun, A. M. Tourapis (Apple)] [late]

## AHG15: Gaming content compression (2+1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0053](https://jvet-experts.org/doc_end_user/current_document.php?id=16037) AHG4/AHG15/AHG17: 4K gaming sequences featuring “Black Myth: Wukong” [J. Sauer, Y. Zhao, Y. Sun, J. Zhou, E. Alshina (Huawei)]

See section 4.6

[JVET-AN0174](https://jvet-experts.org/doc_end_user/current_document.php?id=16158) AHG15: Compression of gaming content using auxiliary data [J. Sauer, Z. Li (Huawei)]

[JVET-AN0263](https://jvet-experts.org/doc_end_user/current_document.php?id=16248) AHG15: Transformer based depthmaps reconstruction for gaming content [V. Zakharchenko (Nokia)]

## AHG16: Generative face video (1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

See also section 6.2.14.

[JVET-AN0057](https://jvet-experts.org/doc_end_user/current_document.php?id=16041) AHG16: Colour calibration post-processing for generative face video coding [S. Yin, Z. Zhang, S. Wang (CityUHK), B. Chen, R.-L. Liao, J. Chen, Y. Ye (Alibaba)]

## AHG17: CfE on video coding technology beyond VVC (16)

### General (4+2)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0041](https://jvet-experts.org/doc_end_user/current_document.php?id=16024) AHG17: AhG meeting notes [M. Wien]

[JVET-AN0052](https://jvet-experts.org/doc_end_user/current_document.php?id=16036) [AHG17] [ Performance of GOP based RPR under CfE test conditions [Y. Sun, Y. Zhao, J. Sauer, J. Pardo, P. Jia, T. Solovyev, E. Alshina (Huawei)]

[JVET-AN0055](https://jvet-experts.org/doc_end_user/current_document.php?id=16039) Crosscheck of JVET-AN0052 on Performance of GOP based RPR under CfE test conditions [X. Li (Google)] [late] [miss]

[JVET-AN0243](https://jvet-experts.org/doc_end_user/current_document.php?id=16227) Crosscheck of JVET-AN0052 (AHG17: Performance of GOP based RPR under CfE test conditions) [Z. Xiang (Tencent)]

[JVET-AN0294](https://jvet-experts.org/doc_end_user/current_document.php?id=16298) Crosscheck of JVET-AN0052 (Performance of GOP based RPR under CfE test conditions) [L. Li, J. Park, K. Choi] [late] [miss]

[JVET-AN0053](https://jvet-experts.org/doc_end_user/current_document.php?id=16037) AHG4/AHG15/AHG17: 4K gaming sequences featuring “Black Myth: Wukong” [J. Sauer, Y. Zhao, Y. Sun, J. Zhou, E. Alshina (Huawei)]

See section 4.6

[JVET-AN0157](https://jvet-experts.org/doc_end_user/current_document.php?id=16141) AHG17: Valgrind complexity analysis on CfE encoder run time targets [S. Hong, Y. Tokumo, T. Ikai (Sharp)]

[JVET-AN0177](https://jvet-experts.org/doc_end_user/current_document.php?id=16161) AHG4/AHG17: Response to the call for new HDR materials for future video coding development [J. Wang, J. Zhang, L. Yu (ZJU)]

See section 4.6

[JVET-AN0189](https://jvet-experts.org/doc_end_user/current_document.php?id=16173) AHG17/AHG10: On perceptual coding for next-generation video coding standard [Y. Zhao, A. Karabutov, T. Guo, P. Jia, E. Alshina (Huawei)]

[JVET-AN0190](https://jvet-experts.org/doc_end_user/current_document.php?id=16174) AHG17/AHG10: On test model simulating hardware encoder [Y. Zhao, J. Mao, R. Zhao, X. Ma, T. Solovyev, E. Alshina (Huawei)]

### CfE submissions and evaluation (8)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0080](https://jvet-experts.org/doc_end_user/current_document.php?id=16064) AHG18: CfE response in additional functionality on ultra-low latency and packet loss resilience [S. Ikonin, V. Khamidullin, I. Gribushin, M. Sychev, K. Malyshev, A. Dzugaev, A. Bovsha, X. Ma, E. Alshina (Huawei)]

[JVET-AN0085](https://jvet-experts.org/doc_end_user/current_document.php?id=16069) Response to the joint CfE on video compression with capability beyond VVC [M. Abdoli, P. Nikitin, F. Plowman, A. Tissier, R. G. Youvalari, M.-L. Champel (Xiaomi), Y.-J. Chang, C.-C. Chen, M. Coban, K. Cui, P. Garus, N. Hu, M. Karczewicz, J.-L. Lin, P.-H. Lin, X. Meng, B. Ray, V. Seregin, Y. Shao, G. Verba, H. Wang, E. Ye, R. Yu, Y. Zhang, Z. Zhang, W. Zhu (Qualcomm), F. Le Léannec, K. Naser (InterDigital), F. Wang (OPPO), Y. Kidani, H. Kato, T. Chujoh, K. Kawamura (KDDI), Z. Deng, K. Zhang, L. Zhang (Bytedance), A. Filippov, J. Konieczny, V. Rufitskiy, H. Qin, T. Dong, Z. Xu, K. Ding, C. Hollmann, I. Zupancic, D. Li (TCL), X. Xiu, X. Wang (Kwai)]

[JVET-AN0198](https://jvet-experts.org/doc_end_user/current_document.php?id=16182) [AHG17] Wuhan University’s Response in Joint Call for Evidence on Video Compression with Capability beyond VVC [W. Zhang, L. Qin, X. Chen, N. Fu, H. Qu, W. Ma, J. Zhang, Z. Chen (Wuhan Univ.)]

[JVET-AN0212](https://jvet-experts.org/doc_end_user/current_document.php?id=16196) AHG17: Description of NNVC-based CfE response [D. Kim, S.-C. Lim (ETRI), T. Solovyev, J. Sauer, J. Pardo, P. Jia, A. Karabutov, E. Alshina (Huawei), H. Kwon, H. Ko (HYU), F. Galpin, T. Dumas, E. François (InterDigital), Y. Li, M. Karczewicz (Qualcomm), Z. Xiang, R. Chernyak, S. Liu (Tencent)]

[JVET-AN0267](https://jvet-experts.org/doc_end_user/current_document.php?id=16250) Ericsson, Fraunhofer HHI and Nokia responses to Joint CfE on Video Compression with Capability beyond VVC [W. Ahmad, K. Andersson, M. Damghanian, V. Gritsenko, L. Litwic, D. Liu, M. Pettersson, V. Shchukin, R. Sjöberg, N. Stegmaier, J. Ström, N. Svensson, P. Wennersten (Ericsson), C. Bartnik, J. Brandenburg, B. Bross, V. George, J. Güther, G. Hege, A. Henkel, T. Hinz, G. Lazarov, C. Lehmann, W. Lim, Y. Liu, S. de Luxán Hernández, D. Marpe, V. Menon, T. Nguyen, J. Pfaff, S. Puttkammer, T. Schierl, H. Schwarz, B. Stallenberger, C. Stoffers, K. Sühring, A. Wieckowski, T. Wiegand, M. Winken (Fraunhofer HHI), P. Astola, S. Blasi, D. Buğdayci Sansli, C. Feldmann, D. Fortin, J. Funnell, S. Hong, I. Jumakulyyev, J. Lainema, N. Neumann, J. Ridge, D. Rusanovskyy, S. Schwarz (Nokia)]

[JVET-AN0272](https://jvet-experts.org/doc_end_user/current_document.php?id=16276) AHG17: ECM comparison points for CfE [K. Andersson, E. François, S. Hong, Y. Kidani, F. Le Léannec, X. Li, R.-L. Liao, Z. Lyu, F. Pu, V. Seregin, H.-B. Teo, A. Tissier, G. Verba, F. Wang, J.-R. Ohm, M. Wien, F. Bossen, M. Abdoli, E. Alshina, V. Baroncini, J. Chen, R. Chernyak, Z. Deng, P. de Lagrange, L. Li, P. Nikitin, D. Rusanovskyy] [late]

[JVET-AN0303](https://jvet-experts.org/doc_end_user/current_document.php?id=16307) External memory bandwidth evaluation for CfE response JVET-AN0267 [C. Feldmann (Nokia)] [late]

[JVET-AN0318](https://jvet-experts.org/doc_end_user/current_document.php?id=16322) AHG17 – Review of CfE responses [K. Naser, F. Le Léannec, F. Galpin, E. François (InterDigital)] [late]

### Considerations towards CfP (4)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0056](https://jvet-experts.org/doc_end_user/current_document.php?id=16040) On Next Generation Video Codec Call for Proposal Timing [S. Wenger (Tencent)]

[JVET-AN0204](https://jvet-experts.org/doc_end_user/current_document.php?id=16188) AHG18: Request on inclusion ultra-low latency and packet loss resilience category into CfP [S. Ikonin, X. Ma, E. Alshina (Huawei), S. Wenger (Tencent)]

[JVET-AN0249](https://jvet-experts.org/doc_end_user/current_document.php?id=16233) Suggestions for a potential upcoming CfP [J. Samuelsson-Allendes, S. Deshpande (Sharp)]

[JVET-AN0301](https://jvet-experts.org/doc_end_user/current_document.php?id=16305) AhG17 Sharing experience of conducting JPEG AI Call for Proposals [E. Alshina (Huawei)] [late]

## AHG18 Ultra-low latency and packet loss resilience (8+2)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0045](https://jvet-experts.org/doc_end_user/current_document.php?id=16029) AHG18: Codec software for ultra-low latency and packet loss resilience [S. Ikonin, V. Khamidullin, K. Malyshev, I. Gribushin, X. Ma, E. Alshina (Huawei)]

[JVET-AN0082](https://jvet-experts.org/doc_end_user/current_document.php?id=16066) AhG18: Crosscheck report for JVET-AM0195 [V. Zakharchenko (Nokia)]

[JVET-AN0046](https://jvet-experts.org/doc_end_user/current_document.php?id=16030) AHG18: On test conditions for ultra-low latency and packet loss resilience with full QP range [S. Ikonin, I. Gribushin, V. Khamidullin, B. Shevchenko, E. Alshina (Huawei)]

[JVET-AN0049](https://jvet-experts.org/doc_end_user/current_document.php?id=16033) AHG18: Teleconference on ultra-low latency and packet loss resilience [S. Ikonin, S. Wenger, V. Zakharchenko (co-chairs), S. Deshpande, J. Ström, X. Ma, C. Kim, S. Puri, S. Fößel (vice-chairs)]

[JVET-AN0050](https://jvet-experts.org/doc_end_user/current_document.php?id=16034) AHG18: An Introduction to 5G Latency/Throughput Measurement and Real-Time Monitoring for ULL Application Scenarios [B. Jeon (TTA), S. M. Kim (LGUplus)]

[JVET-AN0079](https://jvet-experts.org/doc_end_user/current_document.php?id=16063) AHG18: Proposed methodology and test conditions for ultra-low latency and packet loss resilience performance evaluation [S. Ikonin, I. Gribushin, X. Ma, E. Alshina (Huawei), S. Deshpande (Sharp]

[JVET-AN0080](https://jvet-experts.org/doc_end_user/current_document.php?id=16064) AHG18: CfE response in additional functionality on ultra-low latency and packet loss resilience [S. Ikonin, V. Khamidullin, I. Gribushin, M. Sychev, K. Malyshev, A. Dzugaev, A. Bovsha, X. Ma, E. Alshina (Huawei)]

See section 4.16.2

[JVET-AN0081](https://jvet-experts.org/doc_end_user/current_document.php?id=16065) AHG18: Software fixes for robust decoding in unicast scenario [K. Malyshev, V. Khamidullin, M. Sychev, S. Ikonin, E. Alshina (Huawei)]

[JVET-AN0089](https://jvet-experts.org/doc_end_user/current_document.php?id=16073) AHG12/AHG18: On GDR test condition for video compression beyond VVC [T. Chujoh, Y. Kidani, K. Kawamura (KDDI)]

[JVET-AN0204](https://jvet-experts.org/doc_end_user/current_document.php?id=16188) AHG18: Request on inclusion ultra-low latency and packet loss resilience category into CfP [S. Ikonin, X. Ma, E. Alshina (Huawei), S. Wenger (Tencent)]

See section 4.16.3

[JVET-AN0254](https://jvet-experts.org/doc_end_user/current_document.php?id=16238) AHG18: Packet marking mechanism for unicast scenario with channel feedback [V. Zakharchenko (Nokia)]

## CICP (1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0070](https://jvet-experts.org/doc_end_user/current_document.php?id=16054) CICP enum for generic subsampling and sample location [L. Barnes, D. Podborski, A. Tourapis (Apple)] [late]

# Low-level tool technology proposals (97)

## AHG11/AHG14: Neural network-based video coding (26)

### Summary and BoG reports

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0023](https://jvet-experts.org/doc_end_user/current_document.php?id=16271) EE1: Summary report of exploration experiment on neural network-based video coding [E. Alshina, R. Chang, F. Galpin, Yue Li, Yun Li, M. Santamaria, T. Shao, J. Ström, Z. Xie (EE coordinators)]

[JVET-AN0042](https://jvet-experts.org/doc_end_user/current_document.php?id=16026) [AHG11] [AHG14] Teleconference on NNVC [E. Alshina, F. Galpin]

### EE1 contributions: Neural network-based video coding (8)

There was no presentation or discussion about specific proposals in this category – contributions were discussed in the context of the EE summary report JVET-AN0023. For actions decided to be taken, see section 5.2.1, unless otherwise noted.

[JVET-AN0083](https://jvet-experts.org/doc_end_user/current_document.php?id=16067) EE1-1.2: Backbone Block Enhancement of LOP In-Loop Filter with Over-Parameterized Training and Variable Channels [J. Han, C. Jung, Q. Qin (Xidian Univ.)]

[JVET-AN0084](https://jvet-experts.org/doc_end_user/current_document.php?id=16068) EE1-3.2: RA/LDB Unified Reference Frame Synthesis for VVC Inter Coding [Q. Qin, C. Jung (Xidian Univ.)]

[JVET-AN0306](https://jvet-experts.org/doc_end_user/current_document.php?id=16310) Crosscheck of JVET-AN0084 (EE1-3.2: RA/LDB Unified Reference Frame Synthesis for VVC Inter Coding) [N. Bhaskar (Huawei)] [late] [miss]

[JVET-AN0127](https://jvet-experts.org/doc_end_user/current_document.php?id=16111) EE1-1.1: LOP with Overlapped Feature Integration [J. Chi, A. Li, Y. Du, C. Zhu, L. Luo, H. Guo (UESTC), Y. Huo, Y. Liu, Z. Zhang (Transsion)]

[JVET-AN0281](https://jvet-experts.org/doc_end_user/current_document.php?id=16285) Crosscheck of JVET-AN0127 (EE1-1.1: LOP with Overlapped Feature Integration) [Z. Xu (TCL)] [late] [miss]

[JVET-AN0153](https://jvet-experts.org/doc_end_user/current_document.php?id=16137) EE1-2.2: Decomposed Content-Adaptive VLOP4 [Z. Xu, J. Konieczny, A. Filippov, C. Hollmann, V. Rufitskiy, T. Dong, H. Qin (TCL)]

[JVET-AN0282](https://jvet-experts.org/doc_end_user/current_document.php?id=16286) Crosscheck of JVET-AN0153 (EE1-2.2: Decomposed Content-Adaptive VLOP4) [J. Chi, A. Li, Y. Du, C. Zhu, L. Luo, H. Guo (UESTC), Y. Huo, Y. Liu, Z. Zhang (Transsion)] [late] [miss]

[JVET-AN0193](https://jvet-experts.org/doc_end_user/current_document.php?id=16177) EE1-3.1: Deep Reference Frame Generation for Inter Prediction Enhancement with Structural Re-parameterization [W. Zhang, N. Fu, X. Chen, W. Ma, J. Zhang, Z. Chen (Wuhan Univ.)]

[JVET-AN0304](https://jvet-experts.org/doc_end_user/current_document.php?id=16308) Crosscheck of JVET-AN0193 (EE1-3.1: Deep Reference Frame Generation for Inter Prediction Enhancement with Structural Re-parameterization) [N. Bhaskar (Huawei)] [late]

[JVET-AN0195](https://jvet-experts.org/doc_end_user/current_document.php?id=16179) EE1-3.5: Retrained DRF in NNVC-14.0 [X. Chen, N. Fu, W. Zhang, W. Ma, J. Zhang, Z. Chen (Wuhan Univ.)]

[JVET-AN0305](https://jvet-experts.org/doc_end_user/current_document.php?id=16309) Crosscheck of JVET-AN0195 (EE1-3.5: Retrained DRF in NNVC-14.0) [N. Bhaskar (Huawei)] [late]

[JVET-AN0201](https://jvet-experts.org/doc_end_user/current_document.php?id=16185) EE1-4.1: NNSR with new backbone block based on Spatial-Channel Mixing (SCM) [H. Cho, S. Bahk, H. Y. Kim (KHU), D. Kim, S.-C. Lim (ETRI)]

[JVET-AN0277](https://jvet-experts.org/doc_end_user/current_document.php?id=16281) Crosscheck of JVET-AN0201 (EE1-4.1: NNSR with new backbone block based on Spatial-Channel Mixing (SCM)) [T. Yang, W.-X. He, Y.-Q. Zhu, X.-T. Xie, J.-S. Gong, Q.-M. Wang, Q. Liu (HUST), Z.-Y. Lv (vivo)] [late] [miss]

[JVET-AN0238](https://jvet-experts.org/doc_end_user/current_document.php?id=16222) EE1-4.2: Cross-component enhanced NNSR [T. Yang, W.-X. He, Y.-Q. Zhu, X.-T. Xie, J.-S. Gong, Q.-M. Wang, Q. Liu (HUST), Z.-Y. Lv (vivo)]

[JVET-AN0256](https://jvet-experts.org/doc_end_user/current_document.php?id=16240) Crosscheck of JVET-AM0238 (EE1-4.1: Cross-component enhanced NNSR) [H. Cho, S. Bahk, T. Lee, H. Y. Kim (KHU), D. Kim, S.-C. Lim (ETRI)] [late] [miss]

### EE1 related and beyond-EE contributions: Neural network-based video coding (11)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0047](https://jvet-experts.org/doc_end_user/current_document.php?id=16031) EE1-related: Automated environment information collection [N. Le, M. Santamaria, H. Zhang, F. Cricri (Nokia)]

[JVET-AN0172](https://jvet-experts.org/doc_end_user/current_document.php?id=16156) AHG11: Proposal of normative TDO method as an alternative option in NNVC [H. Kwon, H. Ko (Hanyang Univ.), D. Kim, S.-C. Lim (ETRI)]

[JVET-AN0202](https://jvet-experts.org/doc_end_user/current_document.php?id=16186) [AHG11/AHG14] Comparison of Multi-Layer and Single-Layer Interfaces for Hybrid End-to-End Video Coding Frameworks [N. Zou, A. Hallapuro, F. Cricri, H. Zhang, A. B. Koyuncu, J. Ahonen, M. M. Hannuksela (Nokia)]

[JVET-AN0209](https://jvet-experts.org/doc_end_user/current_document.php?id=16193) AhG 11/AHG 14: Harmonization of Deep Reference Frame (DRF) with RPR in NNVC14.1 [N. Bhaskar, T. Solovyev, E. Alshina (Huawei)]

[JVET-AN0215](https://jvet-experts.org/doc_end_user/current_document.php?id=16199) AhG11: Filter restriction depending on hierarchical depth [F. Galpin, E. François (InterDigital)]

[JVET-AN0216](https://jvet-experts.org/doc_end_user/current_document.php?id=16200) [AHG11] Update on Multilayer framework for supporting a hybrid codec using End-to-End Learned Image Codec and Conventional Video Codec [F. Urban, Y. Chen, F. Galpin, P. de Lagrange (InterDigital)]

[JVET-AN0225](https://jvet-experts.org/doc_end_user/current_document.php?id=16209) [AHG11][AHG14]: Further Improvements on Hybrid Multilayer Framework for End-to-End Learned Intra Frame [M. Aderdor, T. Solovyev, E. Alshina (Huawei)]

[JVET-AN0224](https://jvet-experts.org/doc_end_user/current_document.php?id=16208) [AHG11] A Hybrid Framework Integrating End-to-End Learned Intra-Frame Codec with Conventional Codec [N. Zou, A. Hallapuro, F. Cricri, H. Zhang, A.B. Koyuncu, J. Ahonen, M. M. Hannuksela (Nokia)]

[JVET-AN0255](https://jvet-experts.org/doc_end_user/current_document.php?id=16239) AHG11: VLOP3 with new backbone block based on Spatial-Channel Mixing (SCM) [H. Cho, S. Bahk, H. Y. Kim (KHU), D. Kim, S.-C. Lim (ETRI)]

[JVET-AN0285](https://jvet-experts.org/doc_end_user/current_document.php?id=16289) AHG11: In-loop filter with dynamic feature guidance for NNVC [X.-T. Xie, W.-X. He, T. Yang, Y.-Q. Zhu, J.-S. Gong, Q.-M. Wang, Q. Liu (HUST), Z.-Y. Lv (vivo)] [late] [miss]

[JVET-AN0319](https://jvet-experts.org/doc_end_user/current_document.php?id=16323) EE1-related: FlowWarp Operator for DRF Integer Inference Optimization [N. Fu, X. Chen, L. Qin, W. Zhang, Z. Chen (Wuhan Univ.)] [late]

### SADL and NNVC implementation, CTC (7)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0054](https://jvet-experts.org/doc_end_user/current_document.php?id=16038) AHG14: Extension of the QP range for TDO Lambda in NNVC S/W [H. Kwon, H. Ko (Hanyang Univ.), D. Kim, S.-C. Lim (ETRI)]

[JVET-AN0128](https://jvet-experts.org/doc_end_user/current_document.php?id=16112) AhG14: Improvement of SIMD implementation with expanded SIMD operators in SADL for LOP with Overlapped Feature Integration [J. Chi, A. Li, Y. Du, C. Zhu, L. Luo, H. Guo (UESTC), Y. Huo, Y. Liu, Z. Zhang (Transsion)]

[JVET-AN0196](https://jvet-experts.org/doc_end_user/current_document.php?id=16180) AHG14: Operator Improvements in the SADL library [W. Zhang, N. Fu, L. Qin, X. Chen, Z. Chen (Wuhan Univ.)]

[JVET-AN0197](https://jvet-experts.org/doc_end_user/current_document.php?id=16181) AHG14: The extension of SADL library [L. Qin, W. Zhang, N. Fu, Z. Chen (Wuhan Univ.)]

[JVET-AN0213](https://jvet-experts.org/doc_end_user/current_document.php?id=16197) AhG14: SADL update [F. Galpin (InterDigital)]

[JVET-AN0222](https://jvet-experts.org/doc_end_user/current_document.php?id=16206) [AHG14] New NN elements for SADL [A. Karabutov, E. Alshina (Huawei)]

[JVET-AN0257](https://jvet-experts.org/doc_end_user/current_document.php?id=16241) [AHG11] CPU and GPU time comparison for NNVC models [A. Karabutov, E.Alshina (Huawei)] [late] [miss]

## AHG6/AHG12: Enhanced compression beyond VVC capability (71)

### Summary and BoG reports

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0024](https://jvet-experts.org/doc_end_user/current_document.php?id=16272) EE2: Summary report of exploration experiment on enhanced compression beyond VVC capability [V. Seregin, D. Buğdayci Sansli, J. Chen, R. Chernyak, K. Naser, J. Ström, F. Wang, M. Winken, X. Xiu, K. Zhang (EE coordinators)]

### EE2 contributions: Enhanced compression beyond VVC capability (24)

There was no presentation or discussion about specific proposals in this category – contributions were discussed in the context of the EE summary report JVET-AN0024. For actions decided to be taken, see section 5.2.1, unless otherwise noted.

[JVET-AN0090](https://jvet-experts.org/doc_end_user/current_document.php?id=16074) EE2-2.6: Adaptive subsampling filter selection for CCLM/CCCM [Y. Kidani, H. Kato, K. Kawamura (KDDI)]

[JVET-AN0251](https://jvet-experts.org/doc_end_user/current_document.php?id=16235) Crosscheck of JVET-AN0090 (EE2-2.6: Adaptive subsampling filter selection for CCLM/CCCM) [P. Bordes (InterDigital)] [late]

[JVET-AN0278](https://jvet-experts.org/doc_end_user/current_document.php?id=16282) Crosscheck report for JVET-AN0090 (EE2-2.6: Adaptive subsampling filter selection for CCLM/CCCM) [D. Buğdayci Sansli (Nokia)] [late]

[JVET-AN0091](https://jvet-experts.org/doc_end_user/current_document.php?id=16075) EE2-3.2: Joint reordering of GPM with affine prediction [L. Zhang, Y. Yu, Z. Sun, H. Yu, D. Wang (OPPO)]

[JVET-AN0315](https://jvet-experts.org/doc_end_user/current_document.php?id=16319) Crosscheck of JVET-AN0091 (EE2-3.2: Joint reordering of GPM with affine prediction) [Y. Wang (Bytedance)] [late] [miss]

[JVET-AN0092](https://jvet-experts.org/doc_end_user/current_document.php?id=16076) EE2-3.3: Joint reordering of GPM with intra prediction [Z. Sun, Y. Yu, L. Xu, H. Yu, D. Wang (OPPO)]

[JVET-AN0165](https://jvet-experts.org/doc_end_user/current_document.php?id=16149) Crosscheck of JVET-AN0092 (EE2-3.3: Joint reordering of GPM with intra prediction) [N. Zouidi (Ofinno)]

[JVET-AN0276](https://jvet-experts.org/doc_end_user/current_document.php?id=16280) Crosscheck of JVET-AN0092 (EE2-3.3: Joint reordering of GPM with intra prediction) [X. Li (Alibaba)] [late] [miss]

[JVET-AN0093](https://jvet-experts.org/doc_end_user/current_document.php?id=16077) EE2-3.4: Combination of EE2-3.2 and EE2-3.3 [L. Zhang, Z. Sun, Y. Yu, H. Yu, D. Wang (OPPO)]

[JVET-AN0323](https://jvet-experts.org/doc_end_user/current_document.php?id=16327) Crosscheck of JVET-AN0093 (EE2-3.4: Combination of EE2-3.2 and EE2-3.3) [X. Li (Alibaba)] [late] [miss]

[JVET-AN0094](https://jvet-experts.org/doc_end_user/current_document.php?id=16078) EE2-4.1: Linked Sign Prediction [Y. Zhang, L. Xu, Y. Yu, J. Gan, H. Yu, D. Wang (OPPO)]

[JVET-AN0312](https://jvet-experts.org/doc_end_user/current_document.php?id=16316) Crosscheck of JVET-AN0094 (EE2-4.1: Linked Sign Prediction) [C. Hollmann (TCL), L. Xu (SYSU)] [late]

[JVET-AN0095](https://jvet-experts.org/doc_end_user/current_document.php?id=16079) EE2-4.2a, b, c: Shifting Quantization Center for non-CTC [Y. Yu, H. Yu, J. Gan, L. Xu, H. Huang, F. Wang, Z. Xie, D. Wang (OPPO), M. Pendu, F. Le Léannec, K. Naser (InterDigital)]

[JVET-AN0239](https://jvet-experts.org/doc_end_user/current_document.php?id=16223) Crosscheck of JVET-AN0095 (EE2-4.2a, b, c: Shifting Quantization Center for non-CTC) [P. Nikitin (Xiaomi)] [late] [miss]

[JVET-AN0291](https://jvet-experts.org/doc_end_user/current_document.php?id=16295) Crosscheck of JVET-AN0095 (EE2-4.2a\*, b\*, c\*: Shifting Quantization Center for non-CTC) [M. Balcilar (Ofinno)] [late]

[JVET-AN0311](https://jvet-experts.org/doc_end_user/current_document.php?id=16315) Crosscheck of JVET-AN0095 (EE2-4.2a\*, b\*, c\*: Shifting Quantization Center for non-CTC) [B. Ray (Qualcomm)] [late] [miss]

[JVET-AN0096](https://jvet-experts.org/doc_end_user/current_document.php?id=16080) EE2-4.2d, e, f: Shifting Quantization Center for CTC [Y. Yu, H. Yu, J. Gan, L. Xu, H. Huang, F. Wang, Z. Xie, D. Wang (OPPO), M. Pendu, F. Le Léannec, K. Naser (InterDigital)]

[JVET-AN0240](https://jvet-experts.org/doc_end_user/current_document.php?id=16224) Crosscheck of JVET-AN0096 (EE2-4.2d, e, f: Shifting Quantization Center for CTC) [P. Nikitin (Xiaomi)] [late] [miss]

[JVET-AN0097](https://jvet-experts.org/doc_end_user/current_document.php?id=16081) EE2-4.2g, h, i: Shifting Quantization Center for non-CTC [M. Pendu, F. Le Léannec, K. Naser (InterDigital), Y. Yu, H. Yu, J. Gan, L. Xu, H. Huang, F. Wang, Z. Xie, D. Wang (OPPO)]

[JVET-AN0250](https://jvet-experts.org/doc_end_user/current_document.php?id=16234) Crosscheck of JVET-AN0097 (EE2-4.2g, h, i: Shifting Quantization Center for non-CTC) [M. Balcilar (Ofinno)] [late]

[JVET-AN0098](https://jvet-experts.org/doc_end_user/current_document.php?id=16082) EE2-5.1: On regularization of ALF-CCCM [Z. Xie, N. Song, L. Xu, F. Wang, Y. Yu, H. Yu, D. Wang (OPPO)]

[JVET-AN0295](https://jvet-experts.org/doc_end_user/current_document.php?id=16299) Crosscheck of JVET-AN0098 (EE2-5.1: On regularization of ALF-CCCM) [M. Jia (ZTE)] [late] [miss]

[JVET-AN0099](https://jvet-experts.org/doc_end_user/current_document.php?id=16083) EE2-5.2: On ALF-CCCM [L. Xu, N. Song, Z. Xie, F. Wang, Y. Yu, H. Yu, D. Wang (OPPO)]

[JVET-AN0101](https://jvet-experts.org/doc_end_user/current_document.php?id=16085) EE2-5.3: Updated multi-models usage strategy for ALF-CCCM [N. Song, L. Xu, Z. Xie, Y. Yu, H. Yu, D. Wang (OPPO)]

[JVET-AN0103](https://jvet-experts.org/doc_end_user/current_document.php?id=16087) EE2-5.4: On ALF-CCCM Model [F. Wang, N. Song, Z. Xie, L. Xu, H. Huang, Y. Yu, H. Yu, D. Wang (OPPO)]

[JVET-AN0106](https://jvet-experts.org/doc_end_user/current_document.php?id=16090) EE2-5.5: The combinations of EE2-5.1, EE2-5.2, EE2-5.3 and EE2-5.4 [N. Song, L. Xu, F. Wang, Z. Xie, Y. Yu, H. Yu, D. Wang (OPPO)]

[JVET-AN0322](https://jvet-experts.org/doc_end_user/current_document.php?id=16326) Crosscheck of JVET-AN106 (EE2-5.5: The combinations of EE2-5.1, EE2-5.2, EE2-5.3 and EE2-5.4) [P. Astola (Nokia)] [late] [miss]

[JVET-AN0120](https://jvet-experts.org/doc_end_user/current_document.php?id=16104) EE2-2.3: Interpolation filter unification for unwrapping and TIMD template generation [T. Dong, V. Rufitskiy, A. Filippov (TCL)]

[JVET-AN0288](https://jvet-experts.org/doc_end_user/current_document.php?id=16292) Crosscheck of JVET-AN0120 (EE2-2.3b: Interpolation filter unification for unwrapping and TIMD template generation) [M. Abdoli (Xiaomi)] [late]

[JVET-AN0296](https://jvet-experts.org/doc_end_user/current_document.php?id=16300) Crosscheck of JVET-AN0120 (EE2-2.3a/ab: Interpolation filter unification for unwrapping and TIMD template generation) [S. Lee, Y. Kim, S. Noh, J. Bang, H. Choi (HNU)] [late]

[JVET-AN0121](https://jvet-experts.org/doc_end_user/current_document.php?id=16105) EE2-1.1: On partitioning optimization [G. Wang, C. Zhou, Z. Lv (vivo)]

[JVET-AN0274](https://jvet-experts.org/doc_end_user/current_document.php?id=16278) Crosscheck of JVET-AN0121 (EE2-1.1: On partitioning optimization) [Z. Deng (Bytedance)] [late]

[JVET-AN0129](https://jvet-experts.org/doc_end_user/current_document.php?id=16113) EE2-4.3: Residual Sign Prediction restriction [C. Hollmann, A. Filippov (TCL)]

[JVET-AN0158](https://jvet-experts.org/doc_end_user/current_document.php?id=16142) EE2-2.4: Longer tap interpolation filtering [V. Rufitskiy, A. Filippov, T. Dong (TCL)]

[JVET-AN0289](https://jvet-experts.org/doc_end_user/current_document.php?id=16293) Crosscheck of JVET-AN0158 (EE2-2.4: Longer tap interpolation filtering) [M. Abdoli (Xiaomi)] [late]

[JVET-AN0168](https://jvet-experts.org/doc_end_user/current_document.php?id=16152) EE2-2.8a: Enhanced CCP Fusion mode [P. Bordes, F. Galpin, K. Naser, F. Le Léannec (InterDigital)]

[JVET-AN0171](https://jvet-experts.org/doc_end_user/current_document.php?id=16155) EE2-2.1: TMRL blend [S. Blasi, G. Kulupana, D. Buğdayci Sansli, J. Lainema (Nokia), K. Naser, G. Rath, F. Le Leannec, T. Dumas (InterDigital)]

[JVET-AN0302](https://jvet-experts.org/doc_end_user/current_document.php?id=16306) Crosscheck of JVET-AN0171 (EE2-2.1: TMRL blend) [V. Rufitskiy (TCL), Y. Lu (SYSU)] [late] [miss]

[JVET-AN0173](https://jvet-experts.org/doc_end_user/current_document.php?id=16157) EE2-2.8b: Combination of EE2-2.7 and EE2-2.8a [P. Bordes, F. Galpin, K. Naser, F. Le Léannec (InterDigital), S. Wan, Y. Yin, Z. Zhu (NWPU), S. Xie, X. Zeng, C. Huang (ZTE)]

[JVET-AN0166](https://jvet-experts.org/doc_end_user/current_document.php?id=16150) Crosscheck of JVET-AN0168 and JVET-AN0173 (EE2-2.8: Enhanced CCP Fusion mode) [N. Zouidi (Ofinno)]

[JVET-AN0199](https://jvet-experts.org/doc_end_user/current_document.php?id=16183) EE2-5.6: Reuse of TALF control information [Y. Bai, M. Jia, W. Niu, S. Xie, C. Huang (ZTE)]

[JVET-AN0300](https://jvet-experts.org/doc_end_user/current_document.php?id=16304) Cross-check of JVET-AN0199 (EE2-5.6: Reuse of TALF control information) [I. Jumakulyyev (Nokia)] [late]

[JVET-AN0220](https://jvet-experts.org/doc_end_user/current_document.php?id=16204) EE2-2.7: Reducing Candidate Modes in DDCCP [S. Wan, Y. Yin, Z. Zhu (NWPU), S. Xie, X. Zeng, C. Huang (ZTE)]

[JVET-AN0252](https://jvet-experts.org/doc_end_user/current_document.php?id=16236) Crosscheck of JVET-AN0220 (EE2-2.7: Reducing Candidate Modes in DDCCP) [P. Bordes (InterDigital)] [late]

[JVET-AN0236](https://jvet-experts.org/doc_end_user/current_document.php?id=16220) EE2-3.1: Generated Merge Candidates [D. Buğdayci Sansli, J. Lainema (Nokia)]

[JVET-AN0241](https://jvet-experts.org/doc_end_user/current_document.php?id=16225) Crosscheck of JVET-AN0236 (EE2-3.1: Generated Merge Candidates) [R. G. Youvalari (Xiaomi)] [late] [miss]

[JVET-AN0314](https://jvet-experts.org/doc_end_user/current_document.php?id=16318) crosscheck of JVET-AN0236 EE2-3.1: Generated Merge Candidates [K. Naser (InterDigital)] [late]

[JVET-AN0275](https://jvet-experts.org/doc_end_user/current_document.php?id=16279) EE2-2.5a: Combination of tests EE2-2.1, EE2-2.3b, and EE2-2.4 [V. Rufitskiy, T. Dong, A. Filippov (TCL), S. Blasi, G. Kulupana, D. Buğdayci Sansli, J. Lainema (Nokia), K. Naser, G. Rath, F. Le Leannec, T. Dumas (InterDigital)] [late]

[JVET-AN0308](https://jvet-experts.org/doc_end_user/current_document.php?id=16312) Crosscheck of JVET-AN0275 (EE2-2.5a: Combination of tests EE2-2.1, EE2-2.3b, and EE2-2.4) [P. Andrivon (Ofinno)] [late] [miss]

### EE2 related contributions (4)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0109](https://jvet-experts.org/doc_end_user/current_document.php?id=16093) EE2-4.1-related: On Linked Sign Prediction [Y. Zhang, L. Xu, Y. Yu, J. Gan, H. Yu, D. Wang (OPPO)]

[JVET-AN0307](https://jvet-experts.org/doc_end_user/current_document.php?id=16311) Crosscheck of JVET-AN0109 (EE2-4.1-related: On Linked Sign Prediction) [C. Hollmann (TCL)] [late] [miss]

[JVET-AN0175](https://jvet-experts.org/doc_end_user/current_document.php?id=16159) EE2-related: Unbiased Simple Quantizer (Related to EE2-4.2i) [M. Balcilar, M. Blestel, P. Andrivon (Ofinno)]

[JVET-AN0316](https://jvet-experts.org/doc_end_user/current_document.php?id=16320) Crosscheck of JVET-AN0175 (EE2-related: Unbiased Simple Quantizer) [M. Le Pendu, F. Le Léannec (InterDigital)] [late]

[JVET-AN0179](https://jvet-experts.org/doc_end_user/current_document.php?id=16163) EE2-2.1-related: Multiple Transform Set Selection for TMRL blend [W. Feng, W. Zhang, F. Yang (Xidian Univ.), B. Li, F. Xing, P. Han, Z. Wang, W. Song (Hisense)]

[JVET-AN0324](https://jvet-experts.org/doc_end_user/current_document.php?id=16328) EE2-4.2i-related: Unbiased Simple Quantizer with Quantization Center Shifting [M. Le Pendu, F. Le Léannec (InterDigital)] [late]

### ECM modifications and software improvements beyond EE2 (39)

#### Intra and CIIP (16)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0110](https://jvet-experts.org/doc_end_user/current_document.php?id=16094) Non-EE2: Enhancement of Non-CCP Reordering List [Z. Liu, L. Zhang, Y. Yu, H. Yu, D. Wang (OPPO)]

[JVET-AN0123](https://jvet-experts.org/doc_end_user/current_document.php?id=16107) AHG12: Improvement on chroma MPM [Z. Li, W. Niu, X. Zeng, M. Jia, Y. Wang, C. Huang (ZTE)]

[JVET-AN0126](https://jvet-experts.org/doc_end_user/current_document.php?id=16110) Non-EE2: MPDIP clipping [K.-Y. Kim, J.-H. Son, J.-Y. Kim, J.-S. Kwak (WILUS)]

[JVET-AN0132](https://jvet-experts.org/doc_end_user/current_document.php?id=16116) Non-EE2: Enhancement of MDIP mode selection [K. Kim, G. Moon, J. Lee, J.-G. Kim (KAU), J. Lee, S.-C. Lim (ETRI)]

[JVET-AN0152](https://jvet-experts.org/doc_end_user/current_document.php?id=16136) Non-EE2: Multiple Candidate Selection for MDIP [L. Wang, W. Zhang, F. Yang (Xidian Univ.), B. Li, F. Xing, P. Han, Z. Wang, W. Song (Hisense)]

[JVET-AN0154](https://jvet-experts.org/doc_end_user/current_document.php?id=16138) Non-EE2: Position-dependent Weighted Prediction Extension [Y. Wang, X. Zeng, Z. Li, M. Jia, C. Huang (ZTE)]

[JVET-AN0313](https://jvet-experts.org/doc_end_user/current_document.php?id=16317) Crosscheck of JVET-AN0154 (Non-EE2: Position-dependent Weighted Prediction Extension) [S. Blasi (Nokia)] [late] [miss]

[JVET-AN0170](https://jvet-experts.org/doc_end_user/current_document.php?id=16154) Non-EE2: Additional OBIC candidates in MPM list [Y. Kim, S. Lee, S. Noh, H. Choi (HNU), W. Lim, S.-C. Lim (ETRI)]

[JVET-AN0192](https://jvet-experts.org/doc_end_user/current_document.php?id=16176) Non-EE2: Modification of reconstructed area for EIP [W. Niu, S. Xie, Z. Li, M. Jia, Y. Bai, C. Huang (ZTE)]

[JVET-AN0280](https://jvet-experts.org/doc_end_user/current_document.php?id=16284) Crosscheck of JVET-AN0192 (Non-EE2: Modification of reconstructed area for EIP) [L. Xu (OPPO)] [late] [miss]

[JVET-AN0194](https://jvet-experts.org/doc_end_user/current_document.php?id=16178) Non-EE2: Extension on TMRL mode [Y. Liu, Y. Huo, Z. Zhang (Transsion)]

[JVET-AN0200](https://jvet-experts.org/doc_end_user/current_document.php?id=16184) Non-EE2: On improving CIIP Fusion [Y. Wang, X. Zeng, M. Jia, Z. Li, C. Huang (ZTE)] [late]

[JVET-AN0219](https://jvet-experts.org/doc_end_user/current_document.php?id=16203) AHG12 IntraTMP with DMVR [K. Naser, P. Bordes, F. Le Léannec, A. Robert (InterDigital)]

[JVET-AN0221](https://jvet-experts.org/doc_end_user/current_document.php?id=16205) AHG12: Reference sample generation for intra prediction [T. N. Canh, P. Yin, S. McCarthy (Dolby)]

[JVET-AN0234](https://jvet-experts.org/doc_end_user/current_document.php?id=16218) Non-EE2: On filtering condition for angular modes [Z. Zhu, Y. Yin, H. Xu, S. Wan (NWPU), S. Xie, X. Zeng, C. Huang (ZTE)]

[JVET-AN0279](https://jvet-experts.org/doc_end_user/current_document.php?id=16283) Crosscheck of AN0234 (Non-EE2: On filtering condition for angular modes) [L. Xu (OPPO)] [late] [miss]

[JVET-AN0286](https://jvet-experts.org/doc_end_user/current_document.php?id=16290) Non-EE2: TMRL Angle Offset Refinement [G. Rath, K. Naser, F. Le Léannec, T. Dumas (InterDigital)] [late]

[JVET-AN0287](https://jvet-experts.org/doc_end_user/current_document.php?id=16291) Non-EE2: Combined Angular- and Gradient-PDPC [G. Kulupana, S. Blasi, N. Neumann, J. Lainema (Nokia)] [late]

[JVET-AN0299](https://jvet-experts.org/doc_end_user/current_document.php?id=16303) Non-EE2: Improvement for candidates on MPM [W. Niu, Z. Li, S. Xie, M. Jia, Y. Bai, C. Huang (ZTE)] [late]

[JVET-AN0309](https://jvet-experts.org/doc_end_user/current_document.php?id=16313) Crosscheck of JVET-AN0299 (Non-EE2: Improvement for candidates on MPM) [L. Xu (OPPO)] [late] [miss]

#### Inter (3)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0111](https://jvet-experts.org/doc_end_user/current_document.php?id=16095) Non-EE2: additional candidates for regular inter AMVP candidate list [C. Wang, Z. Xie, Y. Yu, H. Yu, D. Wang (OPPO)]

[JVET-AN0218](https://jvet-experts.org/doc_end_user/current_document.php?id=16202) Non-EE2: Extension of Sub-Block Merge Mode Availability Conditions [Y. Liu, Y. Huo, Z. Zhang (Transsion)]

[JVET-AN0266](https://jvet-experts.org/doc_end_user/current_document.php?id=16252) Pairwise Merge Candidates with Motion Vector Scaling [S. Hong, L. Wang, K. Panusopone, D. Rusanovskyy (Nokia)]

#### GPM (4)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0131](https://jvet-experts.org/doc_end_user/current_document.php?id=16115) Non-EE2: On interpolation filter for SGPM [J. Lee, G. Moon, K. Kim, J.-G. Kim (KAU), J. Lee, S.-C. Lim (ETRI)]

[JVET-AN0142](https://jvet-experts.org/doc_end_user/current_document.php?id=16126) Non-EE2: GPM without blending for screen content [J.-Y. Kim, J.-H. Son, K. Kim, J.-S. Kwak (WILUS)]

[JVET-AN0155](https://jvet-experts.org/doc_end_user/current_document.php?id=16139) Non-EE2: On improving adaptive GPM blending [Z. Zhang, Y. Huo, Y. Liu (Transsion)]

[JVET-AN0283](https://jvet-experts.org/doc_end_user/current_document.php?id=16287) Crosscheck of JVET-AN0155 (Non-EE2: On improving adaptive GPM blending) [M. Abdoli (Xiaomi)] [late] [miss]

[JVET-AN0191](https://jvet-experts.org/doc_end_user/current_document.php?id=16175) Non-EE2: Binarization Improvement of GPM [X. Wang, J. Chen, C. Zhu, L. Luo, H. Guo (UESTC), Y. Huo, Y. Liu, Z. Zhang (Transsion)]

[JVET-AN0321](https://jvet-experts.org/doc_end_user/current_document.php?id=16325) Crosscheck of JVET-AN0191 (Non-EE2: Binarization Improvement of GPM) [K. Jia (Alibaba)] [late] [miss]

#### In-Loop Filters (8)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0086](https://jvet-experts.org/doc_end_user/current_document.php?id=16070) AHG12: Bug Fix for ALF Coefficient Calculation [R. Xu, W. Zhang, F. Yang (Xidian Univ.), B. Li, F. Xing, P. Han, Z. Wang, W. Song (Hisense)]

[JVET-AN0113](https://jvet-experts.org/doc_end_user/current_document.php?id=16097) Non-EE2: Additional candidates for merge mode in ALF-CCCM [H. Zhang, N. Song, Y. Yu, H. Yu, D. Wang (OPPO)]

[JVET-AN0114](https://jvet-experts.org/doc_end_user/current_document.php?id=16098) Non-EE2: Local boosting CCP for ALF-CCCM [H. Huang, Y. Yu, H. Yu, D. Wang (OPPO)]

[JVET-AN0130](https://jvet-experts.org/doc_end_user/current_document.php?id=16114) Non-EE2: Improvement on Frame-level Inheritance Mode in ALF-CCCM [M. Jia, Y. Bai, X. Zeng, Z. Li, C. Huang (ZTE)]

[JVET-AN0163](https://jvet-experts.org/doc_end_user/current_document.php?id=16147) AHG12: On improving the bi-filtering modes in TALF [P. Astola, D. Buğdayci Sansli, J. Lainema (Nokia)]

[JVET-AN0164](https://jvet-experts.org/doc_end_user/current_document.php?id=16148) Non-EE2: ALF coefficient coding group extension [I. Jumakulyyev, D. Buğdayci Sansli, J. Lainema (Nokia)]

[JVET-AN0297](https://jvet-experts.org/doc_end_user/current_document.php?id=16301) Crosscheck of JVET-AN0164 (Non-EE2: ALF coefficient coding group extension) [V. Shchukin (Ericsson)] [late] [miss]

[JVET-AN0269](https://jvet-experts.org/doc_end_user/current_document.php?id=16273) AHG12: BIF with before DBF samples [K. Takada, S. Deshpande (Sharp)]

[JVET-AN0270](https://jvet-experts.org/doc_end_user/current_document.php?id=16274) Non-EE2: CCCM with clipping [L.-C. Xu, C.-F. Liao, Y.-K. Lu, F. Liang (SYSU)] [late]

#### Entropy coding, transforms, quantization, and transform coefficient coding (6)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0087](https://jvet-experts.org/doc_end_user/current_document.php?id=16071) AHG12: Budget Control for Transform Skip Residual Coding [R. Xu, W. Zhang, F. Yang (Xidian Univ.), B. Li, F. Xing, P. Han, Z. Wang, W. Song (Hisense)]

[JVET-AN0088](https://jvet-experts.org/doc_end_user/current_document.php?id=16072) AHG12: Context Modeling for sig\_coeff\_flag in TSRC [R. Xu, W. Zhang, F. Yang (Xidian Univ.), B. Li, F. Xing, P. Han, Z. Wang, W. Song (Hisense)]

[JVET-AN0112](https://jvet-experts.org/doc_end_user/current_document.php?id=16096) Non-EE2: Coding of a coefficient level in TSRC [Y. Yu, L. Xu, J. Gan, H. Yu, D. Wang (OPPO)]

[JVET-AN0284](https://jvet-experts.org/doc_end_user/current_document.php?id=16288) Crosscheck of JVET-AN0112 (Non-EE2: Coding of a coefficient level in TSRC) [M. Abdoli (Xiaomi)] [late] [miss]

[JVET-AN0125](https://jvet-experts.org/doc_end_user/current_document.php?id=16109) Non-EE2: On CABAC bin budget constraint [K.-Y. Kim, J.-H. Son, J.-Y. Kim, J.-S. Kwak (WILUS)]

[JVET-AN0169](https://jvet-experts.org/doc_end_user/current_document.php?id=16153) Non-EE2: On inter multiple transform set selection and advanced SBT [J. Huo, W. Zhang, F. Yang (Xidian Univ.), B. Li, F. Xing, P. Han, Z. Wang, W. Song (Hisense)]

[JVET-AN0214](https://jvet-experts.org/doc_end_user/current_document.php?id=16198) AhG12: CABAC contexts retraining [F. Galpin (InterDigital)]

#### Other (2)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0211](https://jvet-experts.org/doc_end_user/current_document.php?id=16195) AhG12: Second reference frame for temporal partitioning prediction [G. Laroche, P. Onno, B. Galmiche (Canon)]

[JVET-AN0228](https://jvet-experts.org/doc_end_user/current_document.php?id=16212) Independent CTUs for TM-padding [N. Neumann (Nokia)]

### CTC for EE2/ECM and general ECM improvements (4)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0118](https://jvet-experts.org/doc_end_user/current_document.php?id=16102) AHG6: ECM software extension for RDO count information [Y. Tokumo, S. Hong, T. Ikai (Sharp)]

[JVET-AN0151](https://jvet-experts.org/doc_end_user/current_document.php?id=16135) AHG6: Additional config files for ECM 2x and ECM 5x [T. Ikai, K.-W. Liang (Sharp)]

[JVET-AN0217](https://jvet-experts.org/doc_end_user/current_document.php?id=16201) AHG6: Software Implementation for Runtime Reporting [S.-Y. Lim, J. Gao, J.-Y. Thong, H.-B. Teo, C.-S. Lim, K. Abe (Panasonic)]

[JVET-AN0271](https://jvet-experts.org/doc_end_user/current_document.php?id=16275) Software optimization and complexity reduction of ECM [Y.-J. Chang, C.-C. Chen, M. Coban, K. Cui, P. Garus, N. Hu, M. Karczewicz, P.-H. Lin, X. Meng, B. Ray, V. Seregin, Y. Shao, G. Verba, H. Wang, E. Ye, R. Yu, Y. Zhang, Z. Zhang, W. Zhu (Qualcomm) [late]

# High-level syntax (HLS) and related proposals (90)

## AHG9: Aspects of SEI messages in VSEI, VVC, HEVC and AVC (7)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0071](https://jvet-experts.org/doc_end_user/current_document.php?id=16055) AHG9: On HEVC Omnidirectional viewport SEI in HEVC [L. Kerofsky, Y. He, S. Zhao, M. Karczewicz (Qualcomm)]

[JVET-AN0072](https://jvet-experts.org/doc_end_user/current_document.php?id=16056) AHG9: On 3DRD, MAI and Alternative Depth information SEI messages in HEVC and VSEI [L. Kerofsky, Y. He, S. Zhao, M. Karczewicz (Qualcomm)]

[JVET-AN0076](https://jvet-experts.org/doc_end_user/current_document.php?id=16060) AHG9: On floating point signaling in SEI [L. Kerofsky, Y. He, S. Zhao, M. Karczewicz (Qualcomm)]

 JVET- AN0076 also relates to JVET-AM2006 (VSEI) and in JVET-AM2032 TuC for VSEI

[JVET-AN0107](https://jvet-experts.org/doc_end_user/current_document.php?id=16091) AHG9: On scalable-nested DSCI SEI message [Y. He, L. Kerofsky, S. Zhao, M. Karczewicz (Qualcomm)]

 JVET- AN0107 also relates to the DSC SEI messages in JVET-AM2032 TuC for VSEI

[JVET-AN0059](https://jvet-experts.org/doc_end_user/current_document.php?id=16043) AHG9: On the SPO and PON SEI messages in VSEI version 4 and in the AVC, HEVC, and VVC interface text [M. M. Hannuksela, F. Cricri (Nokia)]

 JVET- AN0059 relates to JVET-AM1006 (HEVC), JVET-AM1017 (AVC), JVET-AM2005 (VVC), and JVET-AM2006 (VSEI)

[JVET-AN0185](https://jvet-experts.org/doc_end_user/current_document.php?id=16169) AHG9: Miscellaneous on VSEI codec interfaces [J. Lee, H. Tan, C. Kim, J. Nam, J. Lim, S. Kim (LGE)]

 JVET-AN0185 also relates to the NNPF, SPO, and DSC SEI messages

[JVET-AN0162](https://jvet-experts.org/doc_end_user/current_document.php?id=16146) AHG9: On subpicture sub-bitstream extraction in VVC [H. Tan, J. Lee, C. Kim, J. Nam, J. Lim, S. Kim (LGE)]

## AHG9: Aspects related to VSEI version 4 (29)

VSEI v4 is intended for FDIS at this meeting. There is a preference for design stability. Bug fixes and editorial improvements are OK. We intend to be cautious about adoptions that change the design. Small items with clear benefits may be considered.

### Editorial updates (4)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0067](https://jvet-experts.org/doc_end_user/current_document.php?id=16051) AHG9: Comments on Neural-network Post-filter in VSEI V4 and V3 [S. Deshpande (Sharp)]

 JVET-AN0067 also relates to the NNPF SEI messages

[JVET-AN0133](https://jvet-experts.org/doc_end_user/current_document.php?id=16117) AHG9: Miscellaneous editorial changes for the VSEI v4 draft [J. Xu, Y.-K. Wang (Bytedance)]

[JVET-AN0156](https://jvet-experts.org/doc_end_user/current_document.php?id=16140) AHG9: Text fixes and cleanup for GFV and GFE SEI messages [J. Chen, Y. Ye, B. Chen (Alibaba)]

 JVET-AN0156 also relates to the GFV SEI messages

[JVET-AN0186](https://jvet-experts.org/doc_end_user/current_document.php?id=16170) AHG9: Editorial updates for VSEI v4 [J. Lee, H. Tan, C. Kim, J. Nam, J. Lim, S. Kim (LGE)]

### Specification of syntax functions and descriptors (2+1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0134](https://jvet-experts.org/doc_end_user/current_document.php?id=16118) AHG9: On the SEI message payload extension in VSEI v4 [J. Xu, Y.-K. Wang (Bytedance)]

[JVET-AN0076](https://jvet-experts.org/doc_end_user/current_document.php?id=16060) AHG9: On floating point signaling in SEI [L. Kerofsky, Y. He, S. Zhao, M. Karczewicz (Qualcomm)]

 JVET- AN0076 also relates to VSEI, VVC, HEVC and AVC

[JVET-AN0242](https://jvet-experts.org/doc_end_user/current_document.php?id=16226) AHG9: Signalling of floating-point values in VSEI and graphics rendering information SEI [V. Zakharchenko, J. Boyce (Nokia)]

 JVET- AN0242 also relates to the GRI messages

### Film grain characteristics SEI message (1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0229](https://jvet-experts.org/doc_end_user/current_document.php?id=16213) AHG9: On the film grain characteristics SEI message in VSEI v4 [J. Xu, Y.-K. Wang (Bytedance)]

### SEI processing order and processing order nesting SEI messages (3+2)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0059](https://jvet-experts.org/doc_end_user/current_document.php?id=16043) AHG9: On the SPO and PON SEI messages in VSEI version 4 and in the AVC, HEVC, and VVC interface text [M. M. Hannuksela, F. Cricri (Nokia)]

 JVET- AN0059 also relates to the JVET-AM1006 (HEVC), JVET-AM1017 (AVC), and JVET-AM2005 (VVC)

[JVET-AN0065](https://jvet-experts.org/doc_end_user/current_document.php?id=16049) AHG9: On the SPO and PON SEI message in VSEI v4 [Y. He, L. Kerofsky, S. Zhao, M. Karczewicz (Qualcomm)]

[JVET-AN0181](https://jvet-experts.org/doc_end_user/current_document.php?id=16165) AHG9: On process SEI messages in processing chain in SPO SEI message [J. Lee, H. Tan, C. Kim, J. Nam, J. Lim, S. Kim (LGE)]

[JVET-AN0184](https://jvet-experts.org/doc_end_user/current_document.php?id=16168) AHG9: Miscellaneous on VSEI v4 draft [J. Lee, H. Tan, C. Kim, J. Nam, J. Lim, S. Kim (LGE)]

 JVET- AN0184 also relates to the EOI and SPTI SEI messages

[JVET-AN0185](https://jvet-experts.org/doc_end_user/current_document.php?id=16169) AHG9: Miscellaneous on VSEI codec interfaces [J. Lee, H. Tan, C. Kim, J. Nam, J. Lim, S. Kim (LGE)]

 JVET-AN0185 also relates to the NNPF and DSC SEI messages and interface text in JVET-AM1006, JVET-AM1017, and JVET-AM2006

### NNPF SEI extensions (4+2)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0058](https://jvet-experts.org/doc_end_user/current_document.php?id=16042) AHG9: On the NNPF SEI messages in VSEI version 4 [M. M. Hannuksela, F. Cricri (Nokia)]

[JVET-AN0063](https://jvet-experts.org/doc_end_user/current_document.php?id=16047) AHG9: On the NNPF SEI messages in VSEI v4 [Y. He, L. Kerofsky, S. Zhao, M. Karczewicz (Qualcomm)]

[JVET-AN0064](https://jvet-experts.org/doc_end_user/current_document.php?id=16048) AHG9: On the resampling constraint in VSEI v4 [Y. He, L. Kerofsky, S. Zhao, M. Karczewicz (Qualcomm)]

 JVET- AN0064 also relates to the PRI SEI message

[JVET-AN0067](https://jvet-experts.org/doc_end_user/current_document.php?id=16051) AHG9: Comments on Neural-network Post-filter in VSEI V4 and V3 [S. Deshpande (Sharp)]

 JVET-AN0067 also relates to editorial aspects of JVET-AM2006

[JVET-AN0140](https://jvet-experts.org/doc_end_user/current_document.php?id=16124) AHG9: On the neural-network post-filter characteristics SEI message in VSEI v4 [J. Xu, Y.-K. Wang (Bytedance)]

[JVET-AN0185](https://jvet-experts.org/doc_end_user/current_document.php?id=16169) AHG9: Miscellaneous on VSEI codec interfaces [J. Lee, H. Tan, C. Kim, J. Nam, J. Lim, S. Kim (LGE)]

 JVET-AN0185 also relates to the SPO and DSC SEI messages and interface text in JVET-AM1006, JVET-AM1017, and JVET-AM2006

### Encoder optimization information SEI message *(*0+1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0184](https://jvet-experts.org/doc_end_user/current_document.php?id=16168) AHG9: Miscellaneous on VSEI v4 draft [J. Lee, H. Tan, C. Kim, J. Nam, J. Lim, S. Kim (LGE)]

 JVET- AN0184 also relates to the SPO, PON, and SPTI SEI messages

### Object mask information SEI message *(*3)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0060](https://jvet-experts.org/doc_end_user/current_document.php?id=16044) AHG9: On the OMI SEI message in VSEI version 4 [M. M. Hannuksela, J. Boyce (Nokia)]

[JVET-AN0135](https://jvet-experts.org/doc_end_user/current_document.php?id=16119) AHG9: On the object mask information SEI message in VSEI v4 [J. Xu, Y.-K. Wang (Bytedance)]

[JVET-AN0161](https://jvet-experts.org/doc_end_user/current_document.php?id=16145) AHG9: On OMI SEI message [H. Tan, J. Lee, C. Kim, J. Nam, J. Lim, S. Kim (LGE)]

### AI usage restrictions SEI message *(*2)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0062](https://jvet-experts.org/doc_end_user/current_document.php?id=16046) AHG9: On the AI usage restrictions SEI message in VSEI version 4 [M. M. Hannuksela, F. Cricri, K. Kammachi Sreedhar (Nokia)]

[JVET-AN0136](https://jvet-experts.org/doc_end_user/current_document.php?id=16120) AHG9: On the AI usage restrictions SEI message in VSEI v4 [J. Xu, Y.-K. Wang (Bytedance)]

### Digitally signed content SEI messages (1+1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0182](https://jvet-experts.org/doc_end_user/current_document.php?id=16166) AHG9: On DSC SEI messages in VSEI v4 draft [J. Lee, H. Tan, C. Kim, J. Nam, J. Lim, S. Kim (LGE)]

[JVET-AN0185](https://jvet-experts.org/doc_end_user/current_document.php?id=16169) AHG9: Miscellaneous on VSEI codec interfaces [J. Lee, H. Tan, C. Kim, J. Nam, J. Lim, S. Kim (LGE)]

 JVET-AN0185 also relates to the NNPF and SPO SEI messages and interface text in JVET-AM1006, JVET-AM1017, and JVET-AM2006

### Packed regions information SEI message *(*3+1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0064](https://jvet-experts.org/doc_end_user/current_document.php?id=16048) AHG9: On the resampling constraint in VSEI v4 [Y. He, L. Kerofsky, S. Zhao, M. Karczewicz (Qualcomm)]

 JVET- AN0064 also relates to the NNPFC SEI message

[JVET-AN0180](https://jvet-experts.org/doc_end_user/current_document.php?id=16164) AHG9: On PRI SEI message in processing chain [J. Lee, H. Tan, C. Kim, J. Nam, J. Lim, S. Kim (LGE)]

[JVET-AN0183](https://jvet-experts.org/doc_end_user/current_document.php?id=16167) AHG9: On PRI SEI message in VSEI v4 draft [J. Lee, H. Tan, C. Kim, J. Nam, J. Lim, S. Kim (LGE)]

[JVET-AN0310](https://jvet-experts.org/doc_end_user/current_document.php?id=16314) AHG9: On PRI ID [Y. Li (SJTU), Y.-K. Wang (Bytedance), K. Yang, Y. Xu (SJTU)] [late]

### Source picture timing information SEI message (0+1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0184](https://jvet-experts.org/doc_end_user/current_document.php?id=16168) AHG9: Miscellaneous on VSEI v4 draft [J. Lee, H. Tan, C. Kim, J. Nam, J. Lim, S. Kim (LGE)]

 JVET- AN0184 also relates to the SPO. PON, and EOI SEI messages

### Modality information SEI message (2)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0073](https://jvet-experts.org/doc_end_user/current_document.php?id=16057) AHG9: On MI SEI message in VSEI version 4 [L. Kerofsky, Y. He, S. Zhao, M. Karczewicz (Qualcomm)]

[JVET-AN0138](https://jvet-experts.org/doc_end_user/current_document.php?id=16122) AHG9: On the modality information SEI message in VSEI v4 [J. Xu, Y.-K. Wang (Bytedance)]

### Text description information SEI message (2)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0061](https://jvet-experts.org/doc_end_user/current_document.php?id=16045) AHG9: On the text description information SEI message in VSEI version 4 [M. M. Hannuksela (Nokia)]

[JVET-AN0139](https://jvet-experts.org/doc_end_user/current_document.php?id=16123) AHG9: On the text description information SEI message in VSEI v4 [J. Xu, Y.-K. Wang (Bytedance)]

### Generative face video SEI messages (1+1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0141](https://jvet-experts.org/doc_end_user/current_document.php?id=16125) AHG9: On the generative face video SEI message in VSEI v4 [J. Xu, Y.-K. Wang (Bytedance)]

[JVET-AN0156](https://jvet-experts.org/doc_end_user/current_document.php?id=16140) AHG9: Text fixes and cleanup for GFV and GFE SEI messages [J. Chen, Y. Ye, B. Chen (Alibaba)]

 JVET- AN0156 also relates to editorial aspects for JVET-AM2006

### Image format metadata SEI message (1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0137](https://jvet-experts.org/doc_end_user/current_document.php?id=16121) AHG9: On the image format metadata SEI message in VSEI v4 [J. Xu, Y.-K. Wang (Bytedance)]

## AHG9: Aspects on new and extended SEI messages in TuC for VSEI (46)

### Scalability dimension information SEI message *(*2)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0235](https://jvet-experts.org/doc_end_user/current_document.php?id=16219) AHG9: on the SDI SEI message dependency [S. Zhao, Y. He, L. Kerofsky, M. Karczewicz (Qualcomm)]

 JVET- AN0235 also relates to the FGRC, GRI, and PSI SEI messages

[JVET-AN0265](https://jvet-experts.org/doc_end_user/current_document.php?id=16251) AHG9: On confidence auxiliary layer design [E. Thomas, E. Potetsianakis, E. Alexiou, M.-L. Champel (Xiaomi)]

### Shutter interval information SEI message *(*1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0145](https://jvet-experts.org/doc_end_user/current_document.php?id=16129) AHG9: On the shutter interval information extension in TuC of VSEI [J. Xu, Y.-K. Wang (Bytedance)]

### NNPF SEI messages *(*3)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0068](https://jvet-experts.org/doc_end_user/current_document.php?id=16052) AHG9: On Neural-network Post-filter Information Signaling and Semantics [S. Deshpande (Sharp)]

[JVET-AN0176](https://jvet-experts.org/doc_end_user/current_document.php?id=16160) AHG9: On multi-purpose NNPFs [C.-H. Demarty, E. François, A. Ak (InterDigital)]

[JVET-AN0264](https://jvet-experts.org/doc_end_user/current_document.php?id=16249) AHG9: Support for implicit representations with the Gaussian splatting information SEI message [S. Lee, S. Sasse, Y. Sanchez, R. Skupin, T. M. Borges, C. Hellge, T. Schierl (Fraunhofer HHI)]

 JVET- AN0264 also relates to the Gaussian splatting information SEI message

### Constituent rectangles SEI message (4)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0102](https://jvet-experts.org/doc_end_user/current_document.php?id=16086) AHG9: On the CR SEI message [Y. He, L. Kerofsky, S. Zhao, M. Karczewicz (Qualcomm)]

[JVET-AN0116](https://jvet-experts.org/doc_end_user/current_document.php?id=16100) AHG9: On the colour mapping information SEI message [C. Kim, H. Tan, J. Lee, J. Nam, J. Lim, S. Kim (LGE)]

 JVET- AN0116 also relates to the BRI, ECFI, and CMI SEI messages

[JVET-AN0149](https://jvet-experts.org/doc_end_user/current_document.php?id=16133) AHG9: On the constituent rectangles SEI message in TuC of VSEI [J. Xu, Y.-K. Wang (Bytedance)]

[JVET-AN0160](https://jvet-experts.org/doc_end_user/current_document.php?id=16144) AHG9: On DR SEI, DOI SEI, and CR SEI messages [K. Abe, T. Nishi (Panasonic)]

 JVET- AN0160 also relates to the DOI and DR SEI messages

### Display rectangles SEI message (1+1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0124](https://jvet-experts.org/doc_end_user/current_document.php?id=16108) AHG9: Additional features in display rectangles SEI message [R. Imichi, Y. Tokumo, T. Ikai (Sharp)]

[JVET-AN0160](https://jvet-experts.org/doc_end_user/current_document.php?id=16144) AHG9: On DR SEI, DOI SEI, and CR SEI messages [K. Abe, T. Nishi (Panasonic)]

 JVET- AN0160 also relates to the CR and DOI SEI messages

### SEI processing order and processing order nesting SEI messages (1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0108](https://jvet-experts.org/doc_end_user/current_document.php?id=16092) AHG9: On the SPO SEI message extension complexity information [Y. He, L. Kerofsky, S. Zhao, M. Karczewicz (Qualcomm)]

### Encoder optimization information SEI message (1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0208](https://jvet-experts.org/doc_end_user/current_document.php?id=16192) AHG8/AHG9: Depth-aware optimization for Encoder optimization information SEI message [G. Teniou, S. Wenger, A. Hinds, J. Ricard (Tencent)]

### Digitally signed content messages (4+1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0078](https://jvet-experts.org/doc_end_user/current_document.php?id=16062) AHG9: Digitally signed content (DSC): On subpicture signing [I. Sodagar, C. Fersch, S. McCarthy (Dolby)]

[JVET-AN0107](https://jvet-experts.org/doc_end_user/current_document.php?id=16091) AHG9: On scalable-nested DSCI SEI message [Y. He, L. Kerofsky, S. Zhao, M. Karczewicz (Qualcomm)]

 JVET- AN0107 also relates to the study of SEI messages in VSEI, VVC, HEVC and AVC

[JVET-AN0187](https://jvet-experts.org/doc_end_user/current_document.php?id=16171) AHG9: On DSC SEI messages for subpicture-based signing in TuC of VSEI [J. Lee, H. Tan, C. Kim, J. Nam, J. Lim, S. Kim (LGE)]

[JVET-AN0188](https://jvet-experts.org/doc_end_user/current_document.php?id=16172) AHG9: On signing parameter sets in DSC SEI messages for subpictures in TuC of VSEI [J. Lee, H. Tan, C. Kim, J. Nam, J. Lim, S. Kim (LGE)]

[JVET-AN0210](https://jvet-experts.org/doc_end_user/current_document.php?id=16194) AHG9: On subpicture signing in the DSC SEI messages [M. Pettersson, R. Sjöberg, M. Damghanian (Ericsson)]

### Film grain regions characteristics SEI message (2+1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0069](https://jvet-experts.org/doc_end_user/current_document.php?id=16053) AHG9/AHG13: Updates for the film grain regions SEI message [E. François, F. Urban, P. de Lagrange, D. Doyen (InterDigital), G. Teniou (Tencent)]

[JVET-AN0146](https://jvet-experts.org/doc_end_user/current_document.php?id=16130) AHG9: On the film grain regions characteristics SEI message in TuC of VSEI [J. Xu, Y.-K. Wang (Bytedance)]

[JVET-AN0235](https://jvet-experts.org/doc_end_user/current_document.php?id=16219) AHG9: on the SDI SEI message dependency [S. Zhao, Y. He, L. Kerofsky, M. Karczewicz (Qualcomm)]

 JVET- AN0235 also relates to the SDI, GRI, and PSI SEI messages

### Quality metrics SEI message (3)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0066](https://jvet-experts.org/doc_end_user/current_document.php?id=16050) AHG9: On the QM SEI message [Y. He, L. Kerofsky, S. Zhao, M. Karczewicz (Qualcomm)]

[JVET-AN0246](https://jvet-experts.org/doc_end_user/current_document.php?id=16230) AHG9: Metric value range for quality metrics SEI [J. Boyce, M. M. Hannuksela, T. Biatek (Nokia)]

[JVET-AN0247](https://jvet-experts.org/doc_end_user/current_document.php?id=16231) AHG9: Quality metrics SEI for concatenated encoding [J. Boyce, T. Biatek, M. M. Hannuksela (Nokia)]

### Lens optical correction SEI message (1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0074](https://jvet-experts.org/doc_end_user/current_document.php?id=16058) AHG9: On Lens Optical Correction SEI [L. Kerofsky, Y. He, S. Zhao, M. Karczewicz (Qualcomm)]

### Display overlays information SEI message (6+1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0104](https://jvet-experts.org/doc_end_user/current_document.php?id=16088) AHG9: On the DOI SEI message [Y. He, L. Kerofsky, S. Zhao, M. Karczewicz (Qualcomm)]

[JVET-AN0105](https://jvet-experts.org/doc_end_user/current_document.php?id=16089) AHG9: On applying display overlay on CR target picture [Y. He, L. Kerofsky, S. Zhao, M. Karczewicz (Qualcomm)]

[JVET-AN0117](https://jvet-experts.org/doc_end_user/current_document.php?id=16101) AHG9: On display overlays information SEI message [C. Kim, H. Tan, J. Lee, J. Nam, J. Lim, S. Kim (LGE)]

[JVET-AN0148](https://jvet-experts.org/doc_end_user/current_document.php?id=16132) AHG9: On the display overlays information SEI message in TuC of VSEI [J. Xu, Y.-K. Wang (Bytedance)]

[JVET-AN0160](https://jvet-experts.org/doc_end_user/current_document.php?id=16144) AHG9: On DR SEI, DOI SEI, and CR SEI messages [K. Abe, T. Nishi (Panasonic)]

 JVET- AN0160 also relates to the CR and DR SEI messages

[JVET-AN0207](https://jvet-experts.org/doc_end_user/current_document.php?id=16191) AHG9: Overlay purpose indicator for Display overlays information SEI message [G. Teniou, S. Wenger, A. Hinds (Tencent)]

[JVET-AN0248](https://jvet-experts.org/doc_end_user/current_document.php?id=16232) AHG9: Overlay set purpose indicator for Display overlays information SEI message [T. Biatek, J. Boyce, M. M. Hannuksela (Nokia)]

### Bitdepth range information SEI message (1+1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0116](https://jvet-experts.org/doc_end_user/current_document.php?id=16100) AHG9: On the colour mapping information SEI message [C. Kim, H. Tan, J. Lee, J. Nam, J. Lim, S. Kim (LGE)]

 JVET- AN0116 also relates to the CR, ECFI, and CMI SEI messages

[JVET-AN0147](https://jvet-experts.org/doc_end_user/current_document.php?id=16131) AHG9: On the bitdepth range information SEI message in TuC of VSEI [J. Xu, Y.-K. Wang (Bytedance)]

### Colour mapping information SEI message (3+1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0116](https://jvet-experts.org/doc_end_user/current_document.php?id=16100) AHG9: On the colour mapping information SEI message [C. Kim, H. Tan, J. Lee, J. Nam, J. Lim, S. Kim (LGE)]

 JVET- AN0116 also relates to the CR, BRI, and ECFI SEI messages

[JVET-AN0231](https://jvet-experts.org/doc_end_user/current_document.php?id=16215) AHG9: on the CMI SEI message [S. Zhao, Y. He, L. Kerofsky, M. Karczewicz (Qualcomm)]

[JVET-AN0244](https://jvet-experts.org/doc_end_user/current_document.php?id=16228) AHG9: Prespecified colour maps for the colour mapping info SEI message [J. Boyce, M. M. Hannuksela, T. Biatek (Nokia)]

[JVET-AN0245](https://jvet-experts.org/doc_end_user/current_document.php?id=16229) AHG9: On colour mapping info SEI message [J. Boyce, M. M. Hannuksela, T. Biatek (Nokia)]

### Auxiliary sampling alignment information SEI message (1+1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0233](https://jvet-experts.org/doc_end_user/current_document.php?id=16217) AHG9: On ASAI SEI Message applied to primary and auxiliary layers [S. Zhao, Y. He, L. Kerofsky, M. Karczewicz (Qualcomm)]

[JVET-AN0235](https://jvet-experts.org/doc_end_user/current_document.php?id=16219) AHG9: on the SDI SEI message dependency [S. Zhao, Y. He, L. Kerofsky, M. Karczewicz (Qualcomm)]

 JVET- AN0235 also relates to the SDI, FGRC, GRI, and PSI SEI messages

### Localization and mapping information SEI message (4)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0075](https://jvet-experts.org/doc_end_user/current_document.php?id=16059) AHG9: On Localization and Mapping SEI [L. Kerofsky, Y. He, S. Zhao, M. Karczewicz (Qualcomm)]

[JVET-AN0150](https://jvet-experts.org/doc_end_user/current_document.php?id=16134) AHG9: On the localization and mapping SEI message in TuC of VSEI [J. Xu, Y.-K. Wang (Bytedance)]

[JVET-AN0167](https://jvet-experts.org/doc_end_user/current_document.php?id=16151) AHG9: On localization and mapping SEI message [C. Kim, H. Tan, J. Lee, J. Nam, J. Lim, S. Kim (LGE)]

[JVET-AN0260](https://jvet-experts.org/doc_end_user/current_document.php?id=16245) AHG9: Suggested modifications for the LAM SEI [V. Zakharchenko, J. Boyce (Nokia)]

### Danmu information SEI message (5)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0115](https://jvet-experts.org/doc_end_user/current_document.php?id=16099) AHG9: On the danmu Information SEI message [C. Kim, H. Tan, J. Lee, J. Nam, J. Lim, S. Kim (LGE)]

[JVET-AN0232](https://jvet-experts.org/doc_end_user/current_document.php?id=16216) AHG9: on the Danmu SEI message [S. Zhao, Y. He, L. Kerofsky, M. Karczewicz (Qualcomm)]

[JVET-AN0259](https://jvet-experts.org/doc_end_user/current_document.php?id=16244) AHG9: Enable the regional display in the Danmu information SEI message [S. Xie, P. Wu, W. Niu, Y. Gao, C. Huang (ZTE)]

[JVET-AN0261](https://jvet-experts.org/doc_end_user/current_document.php?id=16246) AHG9: Comments on the Danmu information SEI message [S. Xie, P. Wu, W. Niu, Y. Gao, C. Huang (ZTE)]

[JVET-AN0262](https://jvet-experts.org/doc_end_user/current_document.php?id=16247) AHG9: On danmu information SEI message [E. Thomas, E. Potetsianakis, E. Alexiou, M.-L. Champel (Xiaomi)]

### Graphics rendering information SEI message (2+2)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0144](https://jvet-experts.org/doc_end_user/current_document.php?id=16128) AHG9: On the graphics rendering information SEI message in TuC of VSEI [J. Xu, Y.-K. Wang (Bytedance)]

[JVET-AN0230](https://jvet-experts.org/doc_end_user/current_document.php?id=16214) AHG9: on the GRI SEI message [S. Zhao, Y. He, L. Kerofsky, M. Karczewicz (Qualcomm)]

[JVET-AN0235](https://jvet-experts.org/doc_end_user/current_document.php?id=16219) AHG9: on the SDI SEI message dependency [S. Zhao, Y. He, L. Kerofsky, M. Karczewicz (Qualcomm)]

 JVET- AN0235 also relates to the SDI, FGRC, and PSI SEI messages

[JVET-AN0242](https://jvet-experts.org/doc_end_user/current_document.php?id=16226) AHG9: Signalling of floating-point values in VSEI and graphics rendering information SEI [V. Zakharchenko, J. Boyce (Nokia)]

 JVET- AN0242 also relates to specification of syntax functions and descriptors

### Enhanced colour information SEI message (1+1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0116](https://jvet-experts.org/doc_end_user/current_document.php?id=16100) AHG9: On the colour mapping information SEI message [C. Kim, H. Tan, J. Lee, J. Nam, J. Lim, S. Kim (LGE)]

 JVET- AN0116 also relates to the CR, BRI, and CMI SEI messages

[JVET-AN0143](https://jvet-experts.org/doc_end_user/current_document.php?id=16127) AHG9: On the enhanced colour format information SEI message in TuC of VSEI [J. Xu, Y.-K. Wang (Bytedance)]

## Identify potential needs for additional SEI messages, including study of AVC and HEVC SEI messages for use in VVC (6)

### Gaussian splatting information SEI message (3+1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0100](https://jvet-experts.org/doc_end_user/current_document.php?id=16084) AHG9: Gaussian splatting information SEI message [Y. He, J. Jung, A. Akhtar, L. Kerofsky, G. van der Auwera, A. Akhtar, M. Karczewicz (Qualcomm), J. Xu, Y.-K. Wang, L. Zhang (Bytedance)]

[JVET-AN0205](https://jvet-experts.org/doc_end_user/current_document.php?id=16189) AHG9: Gaussian Splat Information SEI message [J. Ricard, G. Teniou, S. Wenger, A. Hinds (Tencent)]

[JVET-AN0206](https://jvet-experts.org/doc_end_user/current_document.php?id=16190) AHG9: Gaussian Splat compression experiment platform [J. Ricard, G. Teniou, S. Wenger, A. Hinds (Tencent)]

 JVET- AN0206 also relates to software and showcase information for SEI messages

[JVET-AN0264](https://jvet-experts.org/doc_end_user/current_document.php?id=16249) AHG9: Support for implicit representations with the Gaussian splatting information SEI message [S. Lee, S. Sasse, Y. Sanchez, R. Skupin, T. M. Borges, C. Hellge, T. Schierl (Fraunhofer HHI)]

 JVET- AN0264 also relates to NNPF SEI messages

### Other (3)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0077](https://jvet-experts.org/doc_end_user/current_document.php?id=16061) AHG9: Sample Grouping SEI message [L. Kerofsky, Y. He, S. Zhao, M. Karczewicz (Qualcomm)]

[JVET-AN0226](https://jvet-experts.org/doc_end_user/current_document.php?id=16210) AHG9: Spatial and bit depth restoration SEI message [X. Xu, M. Xu, S. Liu (Tencent)]

[JVET-AN0227](https://jvet-experts.org/doc_end_user/current_document.php?id=16211) AHG9: Temporal resampling information SEI message [X. Xu, S. Liu (Tencent)]

## SEI Software and showcases (1+1)

Contributions in this area were discussed during XXXX–XXXX on XXday X Oct. 2025 (chaired by XXX).

[JVET-AN0122](https://jvet-experts.org/doc_end_user/current_document.php?id=16106) AHG9/AHG11: Demo of real-time NNPF inference with banding reduction [S. Schwarz, H. Sethi, J. Funnell, M. Santamaria, R. Yang, F. Cricri, M.M. Hannuksela (Nokia)]

[JVET-AN0206](https://jvet-experts.org/doc_end_user/current_document.php?id=16190) AHG9: Gaussian Splat compression experiment platform [J. Ricard, G. Teniou, S. Wenger, A. Hinds (Tencent)]

 JVET- AN0206 also relates to identifying potential needs for additional SEI messages

## Non-SEI HLS aspects (1)

Kept as template for future use.

[JVET-AN0178](https://jvet-experts.org/doc_end_user/current_document.php?id=16162) VVC multilayer extension for an external base layer [F. Urban, Y. Chen, F. Galpin, E. François, P. de Lagrange, P. Bordes (InterDigital)]

# Plenary meetings, joint meetings, BoG reports, and liaison communications

## General

The following topics were discussed in JVET plenary XXday X Oct. XXXX–XXXX:

* Status of last meeting’s output documents
	+ …
* Liaison communication
	+ …
* Scheduling for the remaining week (further detail on scheduling is recorded in section 2.12)
	+ …
* Joint meetings
	+ …
* Standards progression and outputs
	+ DoCR preparation …
	+ Preparation of documents to be submitted to SG21 …
* Review status from tracks and discussion on potential open issues

### Review of documents at plenary level

…

## MPEG information sharing meetings (update)

Information sharing sessions with other WGs and AGs of the MPEG community were held on Monday 31 June 0900–1230, Wednesday 2 July 0900–1015, and Friday 4 July 1400–1550.

The status and plans for the work in the MPEG WGs and AGs was reviewed at these information sharing sessions.

## Joint meetings

### Joint sessions XXXX-XXXX XXday X Oct. on XXX: MPEG WG X / XXX, MPEG WG 5 / JVET, …

This joint session was chaired by Jens-Rainer Ohm (JVET) and XXX (WG X).

The notes were taken by XXX.

…

### Joint session XXXX-XXXX XXday X Oct. on next generation video standardization: MPEG WG 2 / Requirements, MPEG WG 5 / JVET, MPEG AG 5 Visual Quality Assessment, and VCEG (ITU-T Q6/21)

This joint session was chaired by Jens-Rainer Ohm (JVET Chair and WG 5 Convenor), Gary Sullivan (VCEG Rapporteur and SC 29 Chair), Mathias Wien (AG 5 Convenor), and Jörn Ostermann (AG 2 Convenor), on behalf of Igor Curcio (WG 2 Convenor)

Notes were taken by XXX.

## BoGs (X)

…

## Liaison communications (1)

The following liaison statements were received at this meeting (section retained as a template for future use).

The liaison document WG 5 N XXX was reviewed in JVET on XXday XX July at XXXX-XXXX. The draft reply was also presented in the MPEG AG 3 Communication meeting Thursday 03 July during 1500-1800.

# Project planning

## Software timeline (update)

ECM 18.0 software (including all adoptions) was planned to be available 3 weeks after the meeting (25 July).

The NNVC 14.0 codebase software was planned to be available 3 weeks after the meeting (25 July), including all elements needed for CTC and EE1. Additional integration and harmonization with VTM to be deferred for version 14.1.

VTM23.11 software will be released 1 week after the meeting at latest. Additional versions will be released as appropriate(e.g. for integration and updates of SEI messages included in JVET-AM2006).

Updates on top of HM18.0 and JM19.1 software will be released as appropriate (e.g., integration and updates of SEI messages included in JVET-AM1006 and JVET-AM1017 by the current meeting).

As a general rule in software development, a person who is executing a merge shall not be from the same company as the person who submitted that merge request.

## Core experiment and exploration experiment planning

An EE on neural network-based video coding was established, as recorded in output document JVET-AN2023.

An EE on enhanced compression technology beyond VVC capability using techniques other than neural-network technology was also established, as recorded in output document JVET-AN2024.

Initial versions of these documents were presented and approved (see section 10).

## Drafting of specification text, encoder algorithm descriptions, and software

The following agreement has been established: the editorial team has the discretion to not integrate recorded adoptions for which the available text is grossly inadequate (and cannot be fixed with a reasonable degree of effort), if such a situation hypothetically arises. In such an event, the text would record the intent expressed by the committee without including a full integration of the available inadequate text.

## Plans for improved efficiency and contribution consideration

The group considered it important to have the full design of proposals documented to enable proper study.

Adoptions need to be based on properly drafted working draft text (on normative elements) and HM/VTM encoder algorithm descriptions – relative to the existing drafts. Proposal contributions should also provide a software implementation (or at least such software should be made available for study and testing by other participants at the meeting, and software must be made available to cross-checkers in EEs).

Suggestions for future meetings included the following generally-supported principles:

* Normative contributions (relating to changes in bitstream/decoder) shall include draft specification text
* Proposals shall contain all details relevant for understanding and be self-contained. In cases where the document is a follow-up of a previous contribution, the overall concept and the novelties should be highlighted at minimum
* Coding tool and encoder optimization proposals shall contain Excel sheets that allow assessment on a per-sequence basis
* Algorithm description text is strongly encouraged for non-normative contributions that are intended to be included in model description documents (VTM, ECM, etc.), and that is required for inclusion in TR drafts.
* Early upload deadline to enable substantial study prior to the meeting
* Using a clock timer to ensure efficient proposal presentations (5 min) and discussions (not exercised currently)

As general guidance, it was suggested to avoid usage of company names in document titles, software modules etc., and not to describe a technology by using a company name.

## General issues for experiments

It was emphasized that those rules which had been set up or refined during the 12th JVET meeting should be observed. In particular, for some CEs of some previous meetings, results were available late, and some changes in the experimental setup had not been sufficiently discussed on the JVET reflector.

Group coordinated experiments have been planned as follows:

* “Core experiments” (CEs) are the coordinated experiments on coding tools which are deemed to be interesting but require more investigation and could potentially become part of a draft standard by the next meeting or in the near future.
* “Exploration experiments” (EEs) are also coordinated experiments. These are conducted on technology which is not foreseen to become part of a draft standard in the near future. The investigating methodology for assessment of such technology can also be an important part of an EE. (Further general rules for EEs, as far as deviating from the CE rules below, should be discussed in a future meeting. For the current meeting, procedures as described in the EE description document are deemed to be sufficient.)
* A CE is a test of a specific fully described technology in a specific agreed way. It is not a forum for thinking of new ideas (like an AHG). The CE coordinators are responsible for making sure that the CE description is complete and correct and has adequate detail. Reflector discussions about CE description clarity and other aspects of CE plans are encouraged.
* A description of each experiment is to be approved at the meeting at which the experiment plan is established. This should include the issues that were raised by other experts when the tool was presented, e.g., interference with other tools, contribution of different elements that are part of a package, etc. The experiment description document should provide the names of individual people, not just company names.
* Software for tools investigated in a CE will be provided in one or more separate branches of the software repository. Each CE will have a “fork” of the software, and within the CE there may be multiple branches established by the CE coordinator. The software coordinator will help coordinate the creation of these forks and branches and their naming. All JVET members will have read access to the CE software branches (using shared read-only credentials as described below).
* During the experiment, revisions of the experiment plans can be made, but not substantial changes to the proposed technology. Withdrawing parts of experiments that were intended to show the individual benefits of a tool or parts of a tool is strongly discouraged. Combination tests may not be considered in such cases. Any changes made to individual tools in a combination shall be documented.
* The CE description must match the CE testing that is done. The CE description needs to be revised if there has been some change of plans.
* The CE summary report must describe any changes that were made in the process of finalizing the CE.
* By the next meeting it is expected that at least one independent cross-checker will report a detailed analysis of each proposed feature that has been tested and confirm that the implementation is correct. Commentary on the potential benefits and disadvantages of the proposed technology in cross-checking reports is highly encouraged. Having multiple cross-checking reports is also highly encouraged (especially if the cross-checking involves more than confirmation of correct test results). The reports of cross-checking activities may (and generally should) be integrated into the CE report rather than submitted as separate documents.
* It is mandatory to report encoder optimizations made for the benefit of a tool, and if an equivalent optimization could be applied on the anchor, a comparison against the improved anchor shall be provided.
* A new proposal can be included in a CE based on group decision, regardless if an independent party has already performed a cross-check in the meeting when it was first proposed.

It is possible to define sub-experiments within particular CEs, for example designated as CEX.a, CEX.b, etc., where X is the basic CE number.

As a general rule, it was agreed that each CE should be run under the same testing conditions using one software codebase, which should be based on the group test model software codebase. An experiment is not to be established as a CE unless there is access given to the participants in (any part of) the CE to the software used to perform the experiments.

The general agreed common conditions for single-layer coding efficiency experiments for SDR video are described in the prior output document JVET-T2010.

Experiment descriptions should be written in a way such that it is understood as a JVET output document (written from an objective “third party perspective”, not a proponent perspective – e.g., not referring to methods as “improved”, “optimized”, “enhanced”, etc.). The experiment descriptions should generally not express opinions or suggest conclusions – rather, they should just describe what technology will be tested, how it will be tested, who will participate, etc. Responsibilities for contributions to CE work should identify individuals in addition to company names.

CE descriptions contain a basic description of the technology under test, but should not contain excessively verbose descriptions of a technology (at least not unless the technology is not adequately documented elsewhere). Instead, the CE descriptions should refer to the relevant proposal contributions for any necessary further detail. However, the complete detail of what technology will be tested must be available – either in the CE description itself or in documents that are referenced in the CE description that are also available in the JVET document archive.

Any technology must have at least one cross-check partner to establish a CE – a single proponent is not enough. It is highly desirable have more than just one proponent and one cross-checker.

The CE development workflow was previously described at:

<https://vcgit.hhi.fraunhofer.de/jvet/VVCSoftware_VTM/wikis/Core-experiment-development-workflow>

However, it was noted that the link doesn’t seem to exist anymore.

CE read access is available using shared accounts: One account exists for MPEG members, which uses the usual MPEG account data. A second account exists for VCEG members with account information available in the TIES informal ftp area (IFA) system at:

<https://www.itu.int/ifa/t/2017/sg16/exchange/wp3/q06/vceg_account.txt>

Some agreements relating to CE activities were established as follows:

* Only qualified JVET members can participate in a CE.
* Participation in a CE is possible without a commitment of submitting an input document to the next meeting. Participation was requested by contacting the CE coordinator.
* All software, results, and documents produced in the CE should be announced and made available to JVET in a timely manner.
* A JVET CE reflector will be established and announced on the main JVET reflector. Discussion of logistics arrangements, exchange of data, minor refinement of the test plans, and preparation of documents shall be conducted on the JVET CE reflector, with subject lines prefixed by “[CEx: ]”, where “x” is the number of the CE. All substantial communications about a CE other than such details shall take place on main JVET reflector. In the case that large amounts of data are to be distributed, it is recommended to send a link to the data rather than the data itself, or upload the data as an input contribution to the next meeting.

General timeline for CEs

T1= 3 weeks after the JVET meeting: To revise the CE description and refine questions to be answered. Questions should be discussed and agreed on JVET reflector. Any changes of planned tests after this time need to be announced and discussed on the JVET reflector. Initially assigned description numbers shall not be changed later. If a test is skipped, it is to be marked as “withdrawn”.

T2 = Test model software release + 2 weeks: Integration of all tools into a separate CE branch of the VTM is completed and announced to JVET reflector.

* Initial study by cross-checkers can begin.
* Proponents may continue to modify the software in this branch until T3.
* 3rd parties are encouraged to study and make contributions to the next meeting with proposed changes

T3: 3 weeks before the next JVET meeting or T2 + 1 week, whichever is later: Any changes to the CE test branches of the software must be frozen, so the cross-checkers can know exactly what they are cross-checking. A software version tag should be created at this time. The name of the cross-checkers and list of specific tests for each tool under study in the CE plan description shall be documented in an updated CE description by this time.

T4: Regular document deadline minus 1 week: CE contribution documents including specification text and complete test results shall be uploaded to the JVET document repository (particularly for proposals targeting to be promoted to the draft standard at the next meeting).

The CE summary reports shall be available by the regular contribution deadline. This shall include documentation about crosscheck of software, matching of CE description and confirmation of the appropriateness of the text change, as well as sufficient crosscheck results to create evidence about correctness (crosscheckers must send this information to the CE coordinator at least 3 days ahead of the document deadline). Furthermore, any deviations from the timelines above shall be documented. The numbers used in the summary report shall not be changed relative to the description document.

CE reports may contain additional information about tests of straightforward combinations of the identified technologies. Such supplemental testing needs to be clearly identified in the report if it was not part of the CE plan.

New branches may be created which combine two or more tools included in the CE document or the VTM (as applicable).

It is not necessary to formally name cross-checkers in the initial version of the CE description document. To adopt a proposed feature at the next meeting, JVET would like to see comprehensive cross-checking done, with analysis of whether the description matches the software, and a recommendation of the value of the tool and given tradeoffs.

The establishment of a CE does not indicate that a proposed technology is mature for adoption or that the testing conducted in the CE is fully adequate for assessing the merits of the technology, and a favourable outcome of CE does not indicate a need for adoption of the technology into a standard or test model.

Availability of specification text is important to have a detailed understanding of the technology and also to judge what its impact on the complexity of the specification will be. There must also be sufficient time to study this in detail. CE contributions without sufficiently mature draft specification text in the CE input document should not be considered for adoption.

Lists of participants in CE documents should be pruned to include only the active participants. Read access to software will be available to all members.

# Establishment of ad hoc groups (update)

The ad hoc groups established to progress work on particular subject areas until the next meeting are described in the table below. The discussion list for all of these ad hoc groups was agreed to be the main JVET reflector (jvet@lists.rwth-aachen.de).

Chairs of AHGs were asked to send draft mandates to JRO before 0800 on 4 July, preferably copy from the table below and sending with changemarks or yellow highlight of changes.

Review of AHG plans was conducted during the plenary on Friday 4 July 2025 at 1050–XXXX.

|  |  |  |
| --- | --- | --- |
| **Title and Email Reflector** | **Chairs** | **Mtg** |
| **Project Management (AHG1)**(jvet@lists.rwth-aachen.de)* Coordinate overall JVET interim efforts.
* Supervise AHG and experiment studies.
* Report on project status to JVET reflector.
* Provide a report to the next meeting on project coordination status.
* Supervise processing and delivery of output documents.
* Conduct consultation with parent bodies on future JVET management structures.
 | J.-R. Ohm (chair), G. J. Sullivan (vice‑chair) | N |
| **Draft text and test model algorithm description editing (AHG2)**(jvet@lists.rwth-aachen.de)* Produce and finalize draft text outputs of the meeting (JVET-AM1006, JVET-AM1017, JVET-AM2005 and JVET-AM2006).
* Collect reports of errata for VVC, VSEI, HEVC, AVC, CICP, and the published related technical reports.
* Coordinate with AHG3 to address issues relating to mismatches between software and text.
 | B. Bross, C. Rosewarne (co-chairs), F. Bossen, A. Browne, S. Kim, S. Liu, J.‑R. Ohm, G. J. Sullivan, A. Tourapis, Y.-K. Wang, Y. Ye (vice‑chairs) | N |
| **Test model software development (AHG3)**(jvet@lists.rwth-aachen.de)* Coordinate development of test models (VTM, HM, SCM, SHM, HTM, MFC, MFCD, JM, JSVM, JMVM, 3DV-ATM, 360Lib, and HDRTools) software and associated configuration files.
* Produce documentation of software usage for distribution with the software.
* Enable software support for recently standardized additional SEI messages (for both VTM and HM), and SEI messages in TuC (the latter in a separate branch of VTM).
* Discuss and make recommendations on the software development process.
* Perform comparative tests of test model behaviour using common test conditions, including HDR, high bit depth and high bit rate.
* Suggest configuration files for additional testing of tools.
* Investigate how to minimize the number of separate codebases maintained for group reference software.
* Coordinate with AHG2 to identify any mismatches between software and text, and make further updates and cleanups to the software as appropriate.
* Prepare drafts of merged and updated CTC documents for HM and VTM, as applicable.
 | F. Bossen, X. Li, K. Sühring (co-chairs), E. François, Y. He, K. Sharman, V. Seregin, A. Tourapis (vice‑chairs) | N |
| **Test material and visual assessment (AHG4)** (jvet@lists.rwth-aachen.de)* Consider plans for additional verification testing of VVC capability, particularly target conducting tests for VVC multi-layer features, and update the test plan accordingly.
* Maintain the video sequence test material database for testing the VVC and HEVC standards and potential future extensions, as well as exploration activities.
* Study coding performance and characteristics of available and proposed video test material.
* Identify and recommend appropriate test material for testing the VVC standard and potential future extensions, as well as exploration activities.
* Identify and characterize missing types of video material, solicit contributions, collect, and make available a variety of video sequence test material, in coordination with other AHGs, as appropriate.
* Maintain and update the directory structure for the test sequence repository, as necessary.
* Collect information about test sequences that have been made available by other organizations.
* Prepare and conduct expert viewing for purposes of subjective quality evaluation.
* Coordinate with AG 5 in studying and developing further methods of subjective quality evaluation, e.g. based on crowd sourcing, as well as studying objective metrics in that context.
* Coordinate with AHG17 on investigating sequences and making arrangements for viewing at the next meeting.
* Coordinate with AHG18 on investigating visual impact of data losses.
* Prepare availability of viewing equipment and facilities arrangements for future meetings.
 | V. Baroncini, T. Suzuki, M. Wien (co-chairs), W. Husak, S. Iwamura, P. de Lagrange, S. Liu, X. Meng, S. Puri, A. Segall, S. Wenger (vice-chairs) | Y (tel., 2 weeks notice) |
| **Conformance testing (AHG5)**(jvet@lists.rwth-aachen.de)* Study DIS of VVC conformance 3rd edition and suggest improvements to JVET-AL2028, as appropriate.
* Study the draft conformance bitstreams for new HEVC multiview profiles in JVET-AM1008, and further develop related conformance bitstreams.
* Coordinate with AHG3 on implementation of the new HEVC multiview profiles.
* Study the requirements of VVC, HEVC, and AVC conformance testing to ensure interoperability.
* Maintain and update the conformance bitstream database, and contribute to report problems, and suggest actions to resolve these.
* Study additional testing methodologies to fulfil the needs for VVC conformance testing.
 | I. Moccagatta (chair), F. Bossen, T. Ikai, S. Iwamura, H.-J. Jhu, K. Kawamura, P. de Lagrange, S. Paluri, K. Sühring, Y. Yu (vice‑chairs) | N |
| **ECM software development (AHG6)**(jvet@lists.rwth-aachen.de)* Coordinate development of the ECM software and associated configuration files.
* Produce documentation of software usage for distribution with the software.
* Prepare and deliver ECM-18.0 software version (and potential updates), corresponding VTM anchor, and the reference configuration encodings according to the ECM common test conditions.
* Investigate encoder speedup and other software optimization such as reduction of memory consumption.
* Coordinate with ECM algorithm description editors to identify any mismatches between software and text, make further updates and cleanups to the software as appropriate.
 | V. Seregin (chair), J. Chen, R. Chernyak, F. Le Léannec, K. Zhang (vice-chairs) | N |
| **ECM tool assessment (AHG7)**(jvet@lists.rwth-aachen.de)* Investigate methodology of tool assessment, such as the aspects of memory access and bandwidth, number of maximum processing cycles, block decoding dependencies, number of context coded bins, pipeline and parallelization.
* Prepare an input document to the next meeting on criteria for detailed complexity analysis with 1-2 tools from each group as examples.
* Coordinate with AHG6 on resolving tool-off test related software issues (missing tool controls and software bugs).
* Prepare configuration files and generate bitstreams and results of tool-on/tool-off testing.
* Prepare reporting of tool assessment results.
* Develop methodology of more reliable runtime measurement.
 | X. Li (chair), L.-F. Chen, Z. Deng, J. Gan, E. François, R. Ishimoto, H.-J. Jhu, J. Lainema, X. Li, J. Pardo, A. Stein, H. Wang (vice‑chairs) | Y (tel., 2 weeks notice) |
| **Optimization of encoders and receiving systems for machine analysis of coded video content (AHG8)**(jvet@lists.rwth-aachen.de)* Solicit and study non-normative encoder and receiving systems technologies that enhance performance of machine analysis tasks on coded video content.
* Identify and collect test materials that are suitable to be used by JVET for machine analysis tasks.
* Discuss improvements on the evaluation framework, including evaluation procedures and methodologies.
* Coordinate software development and experiments on optimization of encoders and receiving systems for machine analysis of coded video content, including combinations of proposed technologies.
* Maintain the software implementation examples and develop tool combination examples in the repository, including sufficient documentation in terms of operation and performance.
* Evaluate proposed technologies and their suitability for machine analysis applications.
* Propose potential improvements to JVET-AL2030 on optimization of encoders and receiving systems for machine analysis of coded video content.
* Study the potential of using SEI messages for the purpose of machine analysis in coordination with AHG9.
* Investigate the impact of using different machine task models in the evaluation of the compression performance of tools optimized for machine analysis tasks.
 | S. Liu, J. Ström, S. Wang, M. Zhou (AHG chairs) | N |
| **SEI message studies (AHG9)**(jvet@lists.rwth-aachen.de)* Study the SEI messages in VSEI, VVC, HEVC and AVC.
* Study JVET-AM1006, JVET-AM1017, JVET-AM2005, and JVET-AM2006, identify any issues and propose solutions as appropriate.
* Study JVET-AM2032, including study of SEI messages with different options, when those are present, and propose improvements.
* Collect software and showcase information for SEI messages, including encoder and decoder implementations and bitstreams for demonstration and testing.
* Identify potential needs for additional SEI messages.
* Study SEI messages specified in HEVC and AVC for potential use in the VVC context and SEI messages in VSEI for potential use in the HEVC or AVC context.
* Study the alignment of the same SEI messages in different standards.
* Coordinate with AHG3 for software support of SEI messages for JM, HM, and VTM.
 | S. McCarthy, J. Boyce, Y.-K. Wang (co-chairs), T. Chujoh, S. Deshpande, M. M. Hannuksela, P. de Lagrange, G. J. Sullivan, H. Tan, A. Tourapis, S. Wenger, P. Wu (vice-chairs) | N |
| **Encoding algorithm optimization (AHG10)**(jvet@lists.rwth-aachen.de)* 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.
* Study encoding techniques of optimization for objective quality metrics and their relationship to subjective quality.
* Study optimized encoding for reference picture resampling and scalability modes in VTM, and coordinate with AHG4 on improving encoders and test settings for multi-layer verification testing.
* Study optimized encoding and suitable test settings for noisy materials, such as sequences containing film grain.
* Study optimized encoding and tool combinations for low latency and for low complexity.
* Consider neural network-based encoding optimization technologies for video coding standards.
* Investigate other methods of improving objective and/or subjective quality, including adaptive coding structures and multi-pass encoding.
* Study methods of rate control and rate-distortion optimization and their impact on performance, subjective and objective quality.
* Study the potential of defining default or alternate software configuration settings and test conditions optimized for either subjective quality, higher objective quality, or encoding with improved complexity/performance tradeoff, and coordinate such efforts with AHG3, AHG6, and AHG17.
* Study the effect of varying configuration parameters depending on temporal layer, such as those related to deblocking, partitioning, chroma QP.
 | K. Andersson, P. de Lagrange, A. Duenas (co-chairs), T. Ikai, T. Solovyev, A. Tourapis (vice chairs) | N |
| **Neural network-based video coding (AHG11)** (jvet@lists.rwth-aachen.de)* Evaluate and quantify the performance improvement potential of NN-based video coding technologies compared to existing video coding standards such as VVC, including both individual coding tools, architectures and content adaptation with NN parameters overfitting.
* Establish logistics of training data sets, including list, location and md5sums. Generate and distribute anchor encoding, and develop supporting software as needed.
* Study potential improvements of the NNVC CTC document JVET-AJ2016.
* Study the impact of training (including the impact of loss functions) on the performance of candidate technologies and identify suitable material for testing and training.
* Analyse complexity characteristics for technologies under study, including transformers, perform complexity analysis, and develop complexity reductions of candidate technology.
* Discuss and propose improved metrics to perform complexity analysis of NN architectures, in particular also investigate bit-exact reproducibility of NN-based methods on various platforms.
* Finalize and discuss the EE on neural network-based video coding.
* Promote the call for training materials, distribute it, and actively communicate with content owners.
* Coordinate with other groups, including SC 29/AG 5 on the evaluation and assessment of visual quality, and AHG12 on the interaction with ECM coding tools. If possible, prepare encodings with combinations of tools included in the NNVC software for visual quality assessment at the next meeting.
* Coordinate with AHG14 on items related to NNVC software development and development of missing features of the interface in the NNVC software branch allowing to perform evaluation tests for end-to-end optimized AI coded reference pictures.
 | E. Alshina, F. Galpin, S. Liu (co-chairs), J. Li, Y. Li, R.-L. Liao, M. Santamaria, T. Shao, M. Wien, P. Wu (vice chairs) | Y (tel., 2 weeks notice), first on July 28, second on August 23 |
| **Enhanced compression beyond VVC capability (AHG12)**(jvet@lists.rwth-aachen.de)* Solicit and study non-neural-network video coding tools with enhanced compression capabilities beyond VVC.
* Discuss and propose refinements to the ECM18 algorithm description JVET-AM2025.
* Coordinate with AHG7 to study the performance and complexity tradeoff of these video coding tools.
* Coordinate with AHG6 on ECM software development.
* Support AHG6 in generating anchors according to the test conditions in JVET-AI2017.
* Analyse the results of exploration experiments described in JVET-AM2024 in coordination with the EE coordinators.
* Coordinate with AHG11 to study the interaction with neural network-based coding tools.
 | M. Karczewicz, Y. Ye, L. Zhang (co-chairs), B. Bross, R. Chernyak, X. Li, K. Naser, Y. Yu (vice-chairs) | N |
| **Film grain technologies (AHG13)**(jvet@lists.rwth-aachen.de)* Study the benefits and characteristics of film grain technologies, including autoregressive and frequency-filtering technologies.
* Discuss and propose refinements to the draft of the TR 2nd ed. JVET-AL2020.
* Study alternative film grain models and their associated documentation.
* Discuss and enumerate updates, improvements, and additions for the second edition of the technical report.
* In consultation with AHG4, study and define content characteristics and test conditions that are desirable for the study and testing of film grain technologies, and perform an assessment of newly available test materials in that regard.
* Investigate metrics for measuring film grain fidelity in itself, or as present in a video.
* Discuss the potential need for film grain conformance guidelines.
* Given the study of desirable content characteristics, solicit or create new test material for further determining the operational characteristics of, testing, and developing any related technologies.
* Study preprocessing and encoder technologies for determining values for FGC (Film Grain Characteristics) SEI message syntax elements.
* Identify potential need for additional film grain technology and signalling, if needed.
* Coordinate development of film grain technology software and configuration files.
* Coordinate with AG 5 on improving the plan for subjective quality testing of the FGC SEI message JVET-AJ2022, and conduct preparations for such testing.
* Coordinate with AHG3 for software support of the FGC SEI message.
 | W. Husak, P. de Lagrange (co-chairs), A. Duenas, X. Meng, M. Radosavljević, A. Segall, G. Teniou, A. Tourapis (vice-chairs) | Y (tel., 2 weeks notice) |
| **NNVC software development (AHG14)**(jvet@lists.rwth-aachen.de)* Coordinate development of the NNVC software and associated configuration files.
* Prepare and deliver NNVC-14.0 software version (and potential updates), based on updated VTM with adopted contributions and hybrid framework, and provide reference configuration encodings according to the NNVC common test conditions as described in JVET-AJ2016. Study the impact of the addition of new dataset on the already integrated models.
* Continue to bridge the gap between NNVC and most recent VTM as necessary.
* Continue to develop missing functionalities for hybrid end-to-end framework exploration.
* Investigate combinations of tools included in the NNVC software, prepare and release anchor data for all configurations of the software, including anchors for High and Low Operation Point (HOP/LOP) and Very Low Operation Point (VLOP) configurations.
* Study and maintain the SADL (Small Adhoc Deep-Learning Library). Identify gaps in functionality and develop improvements as needed.
* Coordinate with NNVC algorithm and software description (JVET-AM2019) editors to identify any mismatches between software and description document, suggest further updates to the description document as appropriate.
* Coordinate with AHG11 on items related to NNVC software development, and development of an interface to NNVC software branch allowing to perform evaluation tests for end-to-end optimized AI coded reference pictures.
 | F. Galpin (chair), R. Chang, Yue Li, Yun Li, M. Santamaria, J. N. Shingala, Z. Xie (vice chairs) | Y (tel., 2 weeks notice), first on July 28, second on August 23 |
| **Gaming content compression (AHG15)** (jvet@lists.rwth-aachen.de)* Identify gaming content application scenarios and their requirements for codec operation.
* Identify and characterize required types of content; solicit contributions, collect, and make a variety of gaming content available, in coordination with AHG4 and AG 5.
* Produce VTM and ECM anchor encodings according to CTC JVET-AJ2027, and provide test results at the next meeting.
* Develop and maintain interfaces for supporting use cases of camera parameters and depth maps in gaming applications, including mechanisms for efficient transporting these elements in the coded video bitstream.
* Evaluate JVET test models (such as ECM, VTM, NNVC, etc.) under the proposed test conditions.
* Investigate possibilities to enhance compression capability for gaming content.
* Study conversion of depth maps using integer representation, and identifying efficient bit-depth resolution of depth maps to support identified use-cases that will be an input to compression.
* Solicit contributions from industry on typical bitrate/quality/resolution used for gaming content compression.
 | S. Puri, J. Sauer (co-chairs), R. Chernyak, A. Duenas, L. Wang, V. Zakharchenko (vice chairs) | N |
| **Generative face video compression (AHG16)**(jvet@lists.rwth-aachen.de)* Maintain GFVC software tools, associated configuration files, and software usage documentation.
* Study the extension of GFVC software capability to handle video content with higher resolutions.
* Identify and study additional test content, including content with higher resolutions, suitable for use in GFVC performance evaluation.
* Study GFVC performance under test conditions defined in JVET-AJ2035, as well as performance on additional test content, and wider bitrate ranges.
* Coordinate with AHG9 on further development of the GFV and GFVE SEI messages in JVET-AM2006.
 | Y. Ye (chair), H.-B. Teo, Z. Lyu, S. McCarthy, S. Wang (vice chairs) | N |
| **Testing of video coding technology beyond CTC (AHG17)**(jvet@lists.rwth-aachen.de)* Disseminate the Call for Evidence (CfE) JVET-AM2026.
* Coordinate the generation of VTM and ECM bitstreams for the test cases defined in the CfE, and make them available according to the timeline.
* Communicate with parties who intend to make submissions to the CfE.
* Prepare logistics and plans for conducting the CfE at the next meeting.
 | J.-R. Ohm, M. Wien, F. Bossen (co-chairs), M. Abdoli, E. Alshina, V. Baroncini, J. Chen, R. Chernyak, Z. Deng, P. de Lagrange, L. Li, P. Nikitin, D. Rusanovskyy (vice chairs) | Y * tel., 2 weeks notice
 |
| **Ultra-low latency and packet loss resilience (AHG18)**(jvet@lists.rwth-aachen.de)* Investigate and identify test conditions, evaluation criteria and evaluation methodology, supporting a set of end-to-end latency targets in a range of 25-100 ms.
* Investigate creation of practical simulation software based on VTM, including network transmission aspects, and conduct performance evaluation.
* Identify potential requirements and feasibility of standard based technologies to support ultra-low delay requirements, including packet loss resilient decoding.
* Investigate packet loss resilient technologies beyond VVC supporting ultra-low delay coding for interactive and live broadcasting scenarios.
* Coordinate with AHG4 on investigating visual impact of data losses.
 | S. Ikonin, S. Wenger, V. Zakharchenko (co-chairs), S. Deshpande, S. Fößel, C. Kim, X. Ma, S. Puri, J. Ström (vice-chairs) | Y (tel., 2 weeks notice) |

It was confirmed that the rules which can be found in document ISO/IEC JTC 1/‌SC 29/‌AG 2 [N 046](https://www.mpegstandards.org/wp-content/uploads/2022/01/ISO-IECJTC1-SC29-AG2_N0046_AhG.pdf) “Ad hoc group rules for MPEG AGs and WGs” (available at <https://www.mpegstandards.org/adhoc/>), are consistent with the operation mode of JVET AHGs. It is pointed out that JVET does not maintain separate AHG reflectors, such that any JVET member is implicitly a member of any AHG. This shall be mentioned in the related WG Recommendations. The list above was also issued as a separate WG 5 document (ISO/IEC JTC 1/‌SC 29/‌WG 5 N 368) in order to make it easy to reference.

# Output documents (update)

The following documents were agreed to be produced or endorsed as outputs of the meeting. Names recorded below indicate the editors responsible for the document production. Where applicable, dates of planned finalization and corresponding parent-body document numbers are also noted.

It was reminded that in cases where the JVET document is also made available as a WG 5 output document, a separate version under the WG 5 document header should be generated. This version should be sent to GJS and JRO for upload.

The list of JVET ad hoc groups was also issued as a WG 5 output document WG 5 N 368, as noted in section 9.

[JVET-AM1000](https://jvet-experts.org/doc_end_user/current_document.php?id=16010) Meeting Report of the 39th JVET Meeting [J.-R. Ohm] [WG 5 N 361] (2025-08-01)

Initial versions of the meeting notes (d0 … dX) were made available on a daily basis during the meeting.

Remains valid – not updated: [JVET-AC1001](https://jvet-experts.org/doc_end_user/current_document.php?id=12566) Guidelines for HM-based software development [K. Sühring, F. Bossen, X. Li (software coordinators)]

Remains valid – not updated: [JVET-Y1002](https://jvet-experts.org/doc_end_user/current_document.php?id=11463) High Efficiency Video Coding (HEVC) Test Model 16 (HM 16) Encoder Description Update 16 [C. Rosewarne (primary editor), K. Sharman, R. Sjöberg, G. J. Sullivan (co-editors)] [WG 5 [N 103](https://dms.mpeg.expert/doc_end_user/current_document.php?id=82085&id_meeting=189)]

Remains valid – not updated: [JVET-AH1003](https://jvet-experts.org/doc_end_user/current_document.php?id=14259) Coding-independent code points for video signal type identification (Draft 3) [G. J. Sullivan, A. Tourapis]

Primary editor: G. J. Sullivan.

Remains valid – not updated: [JVET-AL1004](https://jvet-experts.org/doc_end_user/current_document.php?id=15674) Errata report items for VVC, VSEI, HEVC, AVC, and Video CICP [Y.-K. Wang, B. Bross, I. Moccagatta, C. Rosewarne, G. J. Sullivan]

Primary editor: Y.-K. Wang.

This includes changes from new bug tickets, some items removed that are resolved and include elements from JVET-AL0317.

[JVET-AM1005](https://jvet-experts.org/doc_end_user/current_document.php?id=16011) Future CICP extensions (Draft 1) [J. Boyce, E. Thomas, A. Tourapis] (2025-08-01)

Primary editor: J. Boyce.

Including updates from JVET-AM0089 and JVET-AM0335.

[JVET-AM1006](https://jvet-experts.org/doc_end_user/current_document.php?id=16012) HEVC additional profiles and SEI messages (Draft 4) [Y.-K. Wang, B. Bross, S. Deshpande, G. J. Sullivan, A. Tourapis] (2025-08-01)

Primary editor: Y.-K. Wang.

Editorial improvements and bug fixes agreed at this meeting, elements from:

* [JVET-AM0048](https://jvet-experts.org/doc_end_user/current_document.php?id=15695) AHG9/AHG2: Miscellaneous changes for HEVC
* [JVET-AM0118](https://jvet-experts.org/doc_end_user/current_document.php?id=15765) AHG9: Digital signing of selected SEI messages
* [JVET-AM0121](https://jvet-experts.org/doc_end_user/current_document.php?id=15768) AHG9: On the SEI processing order SEI message
* [JVET-AM0324](https://jvet-experts.org/doc_end_user/current_document.php?id=15992) Correction to the Alpha Channel Information SEI message processing order

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: [JCTVC-V1007](https://mpeg.expert/jct/files/JCTVC-V1007-v1.zip) SHVC Test Model 11 (SHM 11) Introduction and Encoder Description [G. Barroux, J. Boyce, J. Chen, M. M. Hannuksela, Y. Ye] [WG 11 N 15778]

[JVET-AM1008](https://jvet-experts.org/doc_end_user/current_document.php?id=16013) Conformance testing for HEVC multiview extended and monochrome profiles [I. Moccagatta, T. Fu, S. Paluri, A. Tourapis] (2025-07-25)

Two new multiview streams are added.

Remains valid – not updated: [JVET-AC1009](https://jvet-experts.org/doc_end_user/current_document.php?id=12569) Common test conditions for SHVC [K. Sühring]

Links to test sequences need to be updated due to the change of the content server.

Remains valid – not updated: [JCTVC-O1010](https://mpeg.expert/jct/files/JCTVC-O1010-v1.zip) Guidelines for Conformance Testing Bitstream Preparation [T. Suzuki, W. Wan]

Remains valid – not updated: [JVET-AJ1011](https://jvet-experts.org/doc_end_user/current_document.php?id=14991) White paper on HEVC [B. Bross, J.-R. Ohm, G. J. Sullivan, Y.-K. Wang] [AG 3 N 174]

Remains valid – not updated: JVET-[AJ1012](https://jvet-experts.org/doc_end_user/current_document.php?id=14992) Overview of IT systems used in JVET [J.-R. Ohm, I. Moccagatta, K. Sühring, M. Wien]

Update of bug tracking system description expected in next meeting.

Remains valid – not updated: [JCT3V-G1003](https://mpeg.expert/jct3v/files/JCT3V-G1003-v2.zip) 3D-AVC Test Model 9 [D. Rusanovskyy, F. C. Chen, L. Zhang, T. Suzuki] [WG 11 N 14239]

Remains valid – not updated: [JCT3V-K1003](https://mpeg.expert/jct3v/files/JCT3V-K1003-v1.zip) Test Model 11 of 3D-HEVC and MV-HEVC [Y. Chen, G. Tech, K. Wegner, S. Yea] [WG 11 N 15141]

Remains valid – not updated: [JVET-AE1013](https://jvet-experts.org/doc_end_user/current_document.php?id=13268) Common test conditions of 3DV experiments [K. Sühring, M. Wien]

Links to test sequences need to be updated due to the change of the content server.

Remains valid – not updated [JCTVC-V1014](https://mpeg.expert/jct/files/JCTVC-V1014-v1.zip) Screen Content Coding Test Model 7 Encoder Description (SCM 7) [R. Joshi, J. Xu, R. Cohen, S. Liu, Y. Ye] [WG 11 N 16049]

Remains valid – not updated: [JVET-AC1015](https://jvet-experts.org/doc_end_user/current_document.php?id=12571) Common test conditions for SCM-based screen content coding [K. Sühring]

Links to test sequences need to be updated due to the change of the content server.

Remains valid – not updated: [JVET-AH1016](https://jvet-experts.org/doc_end_user/current_document.php?id=14264) AVC with extensions and corrections (draft 3) [B. Bross, T. Ikai, G. J. Sullivan, A. Tourapis, Y.-K. Wang]

Primary editor: B. Bross.

[JVET-AM1017](https://jvet-experts.org/doc_end_user/current_document.php?id=16014) Support for additional SEI messages in AVC (Draft 3) [K. Sühring, J. Boyce, G. J. Sullivan, Y.-K. Wang] [WG 5 DAM N 363] (2025-07-18)

Primary editor: K. Sühring

A DoC WG 5 N 362 on the CDAM was reviewed and approved on Friday 4 July at 0930-0940.

Changes agreed at this meeting:

* Editorial improvements and bug fixes

Resolved bug fixes carried over from JVET-AL1004 were also to be included.

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.

[JVET-AM1018](https://jvet-experts.org/doc_end_user/current_document.php?id=16015) HEVC with extensions and corrections (Draft 2) [G. J. Sullivan, Y.-K. Wang] (2025-09-30)

Primary editor: Y.-K. Wang.

To prepare the next edition of H.265 – changes from the differential text JVET-AM1006 (e.g., new SEI messages) to be included.

No output: JVET-Axx1019 through JVET-Axx1099

Remains valid – not updated [JVET-AA1100](https://jvet-experts.org/doc_end_user/current_document.php?id=11944) Common Test Conditions for HM Video Coding Experiments [K. Sühring, K. Sharman]

This specifies only the CTC for non-4:2:0 colour formats. The corresponding document for VVC is JVET-T2013, with no unification yet.

Links to test sequences need to be updated due to the change of the content server.

No output: JVET-Axx2001

Remains valid – not updated: [JVET-AH2002](https://jvet-experts.org/doc_end_user/current_document.php?id=14265) Algorithm description for Versatile Video Coding and Test Model 22 (VTM 22) [Y. Ye, A. Browne, S. Kim] [WG 5 N 284]

Primary editor: Y. Ye.

New elements from notes elsewhere in this report (kept for future use):

* …

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.

It was suggested that editorial improvements submitted as input to the next meeting would be welcome.

Remains valid – not updated: [JVET-AJ2003](https://jvet-experts.org/doc_end_user/current_document.php?id=14993) Guidelines for VTM-based software development [F. Bossen, X. Li, K. Sühring]

Remains valid – not updated: [JVET-T2004](http://phenix.it-sudparis.eu/jvet/doc_end_user/current_document.php?id=10542) Algorithm descriptions of projection format conversion and video quality metrics in 360Lib (Version 12) [Y. Ye, J. Boyce]

[JVET-AM2005](https://jvet-experts.org/doc_end_user/current_document.php?id=16016) Additions and corrections for VVC version 4 (Draft 13) [G. J. Sullivan, B. Bross, M. M. Hannuksela, Y.-K. Wang] (2025-08-01)

Changes agreed at this meeting:

* [JVET-AM0118](https://jvet-experts.org/doc_end_user/current_document.php?id=15765) AHG9: Digital signing of selected SEI messages
* [JVET-AM0121](https://jvet-experts.org/doc_end_user/current_document.php?id=15768) AHG9: On the SEI processing order SEI message
* Editorial improvements and bug fixes

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.

Primary editor: G. J. Sullivan.

Editors are requested to make preparations for integration into a new edition until the next meeting.

[JVET-AM2006](https://jvet-experts.org/doc_end_user/current_document.php?id=16017) Additional SEI messages for VSEI version 4 (Draft 7) [J. Boyce, J. Chen, S. Deshpande, M. M. Hannuksela, S. McCarthy, G. J. Sullivan, H. Tan, Y.-K. Wang] (2025-08-01)

Changes agreed at this meeting:

Multiple SEI messages

* [JVET-AM0189](https://jvet-experts.org/doc_end_user/current_document.php?id=15836) AHG9: On semantics of persistence flag of SEI messages in VSEI v4 and v3
* [JVET-AM0174](https://jvet-experts.org/doc_end_user/current_document.php?id=15821) AHG9: On general SEI payload constraints
* [JVET-AM0047](https://jvet-experts.org/doc_end_user/current_document.php?id=15694) AHG9: Miscellaneous changes for VSEI
* [JVET-AM0052](https://jvet-experts.org/doc_end_user/current_document.php?id=15699) AHG9: Editorial changes for VSEI
* [JVET-AM0191](https://jvet-experts.org/doc_end_user/current_document.php?id=15838) AHG9: Editorial updates for VSEI v4
* [JVET-AM0165](https://jvet-experts.org/doc_end_user/current_document.php?id=15812) AHG9: On value range and reserved values for syntax elements in VSEI v4

SEI processing order (SPO) and processing order nesting (PON)

* [JVET-AM0292](https://jvet-experts.org/doc_end_user/current_document.php?id=15960) AHG9/AHG2: On the semantics of po\_num\_bits\_in\_prefix\_indication\_minus1[ i ] and po\_sei\_prefix\_data\_bit[ i ][ j ]
* [JVET-AM0081](https://jvet-experts.org/doc_end_user/current_document.php?id=15728) AHG9: On the PON dependency constraint
* [JVET-AM0082](https://jvet-experts.org/doc_end_user/current_document.php?id=15729) AHG9: On the PON nested FGC SEI message
* [JVET-AM0121](https://jvet-experts.org/doc_end_user/current_document.php?id=15768) AHG9: On the SEI processing order SEI message
* [JVET-AM0166](https://jvet-experts.org/doc_end_user/current_document.php?id=15813) AHG9: Miscellaneous aspects in VSEI v4
* [JVET-AM0321](https://jvet-experts.org/doc_end_user/current_document.php?id=15989) AHG9: On SEI message types indicated by an SPO SEI message

AI usage restrictions (AUR)

* [JVET-AM0112](https://jvet-experts.org/doc_end_user/current_document.php?id=15759) AHG9: On AI usage restrictions SEI message
* [JVET-AM0152](https://jvet-experts.org/doc_end_user/current_document.php?id=15799) AHG9: AI usage restrictions for entities other than decoded pictures
* [JVET-AM0117](https://jvet-experts.org/doc_end_user/current_document.php?id=15764) AHG9: On the AI usage restrictions SEI message

Digitally signed content (DSC)

* [JVET-AM0118](https://jvet-experts.org/doc_end_user/current_document.php?id=15765) AHG9: Digital signing of selected SEI messages
* [JVET-AM0119](https://jvet-experts.org/doc_end_user/current_document.php?id=15766) AHG9: On start and end flags of digitally signed
* [JVET-AM0164](https://jvet-experts.org/doc_end_user/current_document.php?id=15811) AHG9: On DSC SEI
* [JVET-AM0190](https://jvet-experts.org/doc_end_user/current_document.php?id=15837) AHG9: On implicit association mode in digitally-signed content SEI messages in VSEI v4
* [JVET-AM0210](https://jvet-experts.org/doc_end_user/current_document.php?id=15857) AHG9: On miscellaneous aspects in digitally-signed content SEI messages in VSEI v4 draft

Packed regions info (PRI)

* [JVET-AM0075](https://jvet-experts.org/doc_end_user/current_document.php?id=15722) AHG9: On packed regions information SEI message
* [JVET-AM0211](https://jvet-experts.org/doc_end_user/current_document.php?id=15858) AHG9: On the packed regions information SEI message
* Generative face video (GFV)
* [JVET-AM0334](https://jvet-experts.org/doc_end_user/current_document.php?id=16002) AHG9: Common specification text for GFV SEI message

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.

Primary editor: J. Boyce.

Editors are requested to make preparations for integration into a new edition until the next meeting.

Remains valid – not updated: [JVET-AJ2007](https://jvet-experts.org/doc_end_user/current_document.php?id=14996) Guidelines for NNVC software development [F. Galpin, S. Eadie, L. Wang, Z. Xie, Y. Li]

Remains valid – not updated: [JVET-X2008](https://jvet-experts.org/doc_end_user/current_document.php?id=11228) Conformance testing for versatile video coding (Draft 7) [J. Boyce, F. Bossen, K. Kawamura, I. Moccagatta, W. Wan]

The document number was planned to be re-used for a 3rd edition in ITU , once that is submitted to ITU-T (could be in October 2025).

Remains valid – not updated: [JVET-AJ2009](https://jvet-experts.org/doc_end_user/current_document.php?id=14997) Reference software for versatile video coding 2nd edition (Draft 2) [F. Bossen, K. Sühring, X. Li] [WG 5 DIS N 322)]

Software relating to H.266.2 and ISO/IEC 23090-16 can be found at <https://vcgit.hhi.fraunhofer.de/jvet/VVCSoftware_VTM/-/tree/2nd-edition>.

A DoC WG 5 N 366 on the DIS was reviewed and approved on Thursday 3 July at 1640. The text was requested to be published as IS with editorial improvements as requested by ISO editor in the context of the ballot. Public availability was also requested.

Primary editor: F. Bossen.

Remains valid – not updated: [JVET-AL2010](https://jvet-experts.org/doc_end_user/current_document.php?id=15680) 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] (2025-04-18)

Add alternative configuration from JVET-AL0055 and clarification about intra picture period (see discussion under JVET-AL0114). Also links to test sequences are updated due to the change of the content server.

Remains valid – not updated: [JVET-AC2011](https://jvet-experts.org/doc_end_user/current_document.php?id=12575) VTM and HM common test conditions and evaluation procedures for HDR/WCG video [A. Segall, E. François, W. Husak, S. Iwamura, D. Rusanovskyy]

Links to test sequences need to be updated due to the change of the content server.

Remains valid – not updated: [JVET-U2012](https://jvet-experts.org/doc_end_user/current_document.php?id=10681) JVET common test conditions and evaluation procedures for 360° video [Y. He, J. Boyce, K. Choi, J.-L. Lin]

Links to test sequences need to be updated due to the change of the content server.

Remains valid – not updated: [JVET-T2013](http://phenix.it-sudparis.eu/jvet/doc_end_user/current_document.php?id=10546) 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]

Links to test sequences need to be updated due to the change of the content server.

Remains valid – not updated: [JVET-Q2014](http://phenix.it-sudparis.eu/jvet/doc_end_user/current_document.php?id=9683) JVET common test conditions and software reference configurations for lossless, near lossless, and mixed lossy/lossless coding [T.-C. Ma, A. Nalci, T. Nguyen]

Links to test sequences need to be updated due to the change of the content server.

Remains valid – not updated: [JVET-Q2015](http://phenix.it-sudparis.eu/jvet/doc_end_user/current_document.php?id=9684) JVET functionality confirmation test conditions for reference picture resampling [J. Luo, V. Seregin]

Links to test sequences need to be updated due to the change of the content server.

Remains valid – not updated: [JVET-AJ2016](https://jvet-experts.org/doc_end_user/current_document.php?id=14998) Common test conditions and evaluation procedures for neural network-based video coding technology [E. Alshina, F. Galpin, R.-L. Liao, S. Liu, A. Segall]

Remains valid – not updated: [JVET-AI2017](https://jvet-experts.org/doc_end_user/current_document.php?id=14615) Common test conditions and evaluation procedures for enhanced compression tool testing [M. Karczewicz, Y. Ye]

Links to test sequences need to be updated due to the change of the content server.

It was also commented that it might be good to add conditions relating to HDR, even though currently no HDR tests are conducted in CTC.

Remains valid – not updated: [JVET-AA2018](https://jvet-experts.org/doc_end_user/current_document.php?id=11949) Common test conditions for high bit depth and high bit rate video coding [A. Browne, T. Ikai, D. Rusanovskyy, X. Xiu, Y. Yu]

Links to test sequences need to be updated due to the change of the content server.

[JVET-AM2019](https://jvet-experts.org/doc_end_user/current_document.php?id=16018) Description of algorithms version 12 and software version 14 in neural network-based video coding (NNVC) [F. Galpin, Yue Li, Yun Li, D. Rusanovskyy, T. Shao, J. Ström, L. Wang] (2025-09-30)

New elements in text and software from notes elsewhere in this report:

* Decision: Adopt JVET-AM0135 EE1-2.1.
* Decision: Adopt JVET-AM0175 EE1-3.2 (non CTC, also provide training script).

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-AL2020](https://jvet-experts.org/doc_end_user/current_document.php?id=15682) Film grain synthesis technology for video applications ed. 2 (Draft 3) [W. Husak, P. de Lagrange, A. Norkin, A. Tourapis] (2025-08-15)

Output of last meeting not yet available by the time of closing the current meeting.

[JVET-AM2021](https://jvet-experts.org/doc_end_user/current_document.php?id=16019) Verification test plan for VVC multilayer coding (update 6) [O. Chubach, P. de Lagrange, M. Wien] (2025-09-15)

Developed from JVET-AM0223.

HHI (B. Bross) expresses interest for participating in bitstream generation.

To be discontinued if no increase of activity is observed over the next two meeting cycles.

Remains valid – not updated: [JVET-AJ2022](https://jvet-experts.org/doc_end_user/current_document.php?id=15002) Plan for subjective quality testing of the FGC SEI message (update 4) [P. de Lagrange, W. Husak, M. Radosavljević, M. Wien]

Number might be re-used (activity discontinued) as there has been no activity for 3 meeting cycles.

[JVET-AM2023](https://jvet-experts.org/doc_end_user/current_document.php?id=16008) Exploration experiment on neural network-based video coding (EE1) [E. Alshina, R. Chang, F. Galpin, Yue Li, Yun Li, M. Santamaria, T. Shao, J. Ström, Z. Xie (EE coordinators)] (2025-XX-XX)

An initial draft of this document was reviewed and approved at 1125-1140 on Friday 4 July.

This round of EE1 tests includes:

* EE1-1: LOP in-loop filter
	+ EE1-1.1 – LOP with Overlapped Feature Integration (JVET-AM0131)
	+ EE1-1.2 –Backbone Block Enhancement of LOP In-Loop Filter with Over-Parameterized Training and Variable Channels (JVET-AM0122)
	+ EE1-1.3 – Conditional LOP loop-filter (JVET-AM0053)
* EE1-2: VLOP in-loop filter
	+ EE1-2.1 – Conditional VLOP loop-filter (JVET-AM0053)
	+ EE1-2.2 – Decomposed Content-Adaptive VLOP (JVET-AM0185)
* EE1-3: NN-inter prediction
	+ EE1-3.1 – Deep Reference Frame Generation for Inter Prediction Enhancement with Structural Re-parameterization (JVET-AM0177)
	+ EE1-3.2 – RA/LDB Reference Frame Synthesis for VVC Inter Coding (JVET-AM0115)
	+ EE1-3.3 – Network architecture from EE1-3.1 with training from EE1-3.2
	+ EE1-3.4 – Network architecture from EE1-3.2 with training from EE1-3.3
* EE1-4: NN-based super-resolution
	+ EE1-4.1 NNSR with new backbone block based on Spatial-Channel Mixing (SCM) (JVET-AM0199)
	+ EE1-4.2 Cross-component enhanced NNSR (JVET-AM0257)

[JVET-AM2024](https://jvet-experts.org/doc_end_user/current_document.php?id=16009) Exploration experiment on enhanced compression beyond VVC capability (EE2) [V. Seregin, D. Bugdayci Sansli, J. Chen, R. Chernyak, K. Naser, J. Ström, F. Wang, M. Winken, X. Xiu, K. Zhang (EE coordinators)] (2025-XX-XX)

An initial draft of this document was reviewed and approved at 0920-0925 on Friday 4 July.

This round of EE2 tests will include:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Tests** | Tester | **Cross-checker** |
| 1 Partitioning |
| 1.1a | Restrictions for TT splitting | G.Wang (vivo) |  |
| 1.1b | Test 1.1a as encoder-only change | G.Wang (vivo) |  |
| 1.1c | Temporal partitioning prediction optimization | G.Wang (vivo) |  |
| 1.1d | Test 1.1a + Test 1.1c | G.Wang (vivo) |  |
| 1.1e | Test 1.1b + Test 1.1c | G.Wang (vivo) |  |
| 2 Intra prediction |
| 2.1 | TMRL blend | S. Blasi(Nokia) | V. Rufitskiy (TCL) |
| 2.2a | Alignment of interpolation filters used in reference samples unwrapping and predictor generation | V. Rufitskiy(TCL) |  |
| 2.2b | Disabling smoothing in interpolation and reference sample processing operations for DIMD and TIMD | V. Rufitskiy(TCL) |  |
| 2.3a | Unification of unwrapping interpolation filters in TIMD template and block prediction | T. Dong(TCL) |  |
| 2.3b | 8-tap interpolation filter for template generation in TIMD | T. Dong(TCL) |  |
| 2.4 | Longer tap interpolation filtering | V. Rufitskiy(TCL) |  |
| 2.5 | Combination of Test 2.2, Test 2.3, and Test 2.4 | V. Rufitskiy(TCL) |  |
| 2.6a | Adaptive subsampling filter selection for CCLM/intra-CCCM/ALF-CCCM | Y. Kidani(KDDI) |  |
| 2.6b | Adaptive subsampling filter selection for inter-CCCM | Y. Kidani(KDDI) |  |
| 2.6c | Test 2.6a + Test 2.6b | Y. Kidani(KDDI) |  |
| 2.7 | Reducing candidate modes in decoder derived CCP | S. Wan(NWPU)S. Xie(ZTE) |  |
| 2.8 | Enhanced CCP Fusion mode | P.Bordes (InterDigital) |  |
| 3 Inter prediction |
| 3.1 | Generated merge candidates | D. Bugdayci Sansli(Nokia) |  |
| 3.2a | Joint reordering of GPM with affine prediction | L. Zhang(OPPO) |  |
| 3.2b | Modifications to the affine merge list | L. Zhang(OPPO) |  |
| 3.2c | Test 3.2a + Test 3.2b | L. Zhang(OPPO) |  |
| 3.3 | Joint reordering of GPM with intra prediction | Z. Sun(OPPO) |  |
| 3.4 | Test 3.2c + Test 3.3 | Z. Sun(OPPO) |  |
| 4 Transform and coefficients coding |
| 4.1 | Linked sign prediction | Y. Zhang (OPPO) |  |
| 4.2a | Shifting quantization center for TSRC under non-CTC (RDOQ on) | Y. Yu (OPPO) |  |
| 4.2b | Shifting quantization center for RRC under non-CTC (DQ disabled, RDOQ on) | Y. Yu (OPPO) |  |
| 4.2c | Test 4.2a + Test 4.2b | Y. Yu (OPPO) |  |
| 4.2d | Shifting quantization center for TSRC under CTC | Y. Yu (OPPO) |  |
| 4.2e | Shifting quantization center for RRC under CTC | Y. Yu (OPPO) |  |
| 4.2f | Test 4.2d + Test 4.2e | Y. Yu (OPPO) |  |
| 4.2g | Shifting quantization center for RRC under non-CTC (DQ disabled, RDOQ disabled) | M. Le Pendu (InterDigital) |  |
| 4.2h | Shifting quantization center for TSRC under non-CTC (DQ disabled, RDOQ disabled) | M. Le Pendu (InterDigital) |  |
| 4.2i | Test 4.2g + Test 3.2h | M. Le Pendu (InterDigital) |  |
| 4.3a | Residual sign prediction restriction | C. Hollmann(TCL) |  |
| 4.3b | RSP context modelling | C. Hollmann(TCL) |  |
| 4.3c | Test 4.3a with retraining of existing contexts | C. Hollmann(TCL) |  |
| 4.3d | Test 4.3a + Test 4.3b | C. Hollmann (TCL) |  |
| 5 In-loop filtering |
| 5.1a | Regularization of ALF-CCCM | Z. Xie(OPPO) |  |
| 5.1b | Regularization for ALF-CCCM enabled in I slice | Z. Xie(OPPO) |  |
| 5.2a | Non-downsampled ALF-CCCM | L. Xu(OPPO) |  |
| 5.2b | Reuse of CU partition in ALF-CCCM | L. Xu(OPPO) |  |
| 5.2c | Test 5.2a + Test 5.2b | L. Xu(OPPO) |  |
| 5.3a | Remove single model of ALF-CCCM | N. Song(OPPO) |  |
| 5.3b | Separate “bad window” condition for Cb and Cr components | N. Song(OPPO) |  |
| 5.3c | Test 5.3a + Test 5.3b | N. Song(OPPO) |  |
| 5.4 | Additional models for ALF-CCCM | F. Wang(OPPO) |  |
| 5.5a | Test 5.1 + Test 5.2 | L. XuZ. Xie(OPPO) |  |
| 5.5b | Test 5.1 + Test 5.2 + Test 5.4 | L. XuZ. XieF. Wang(OPPO) |  |
| 5.5c | Test 5.1 + Test 5.2 + Test 5.3 + Test 5.4 | N. SongL. XuZ. XieF. Wang(OPPO) |  |
| 5.6 | Reuse of TALF control information | Y. Bai(ZTE) |  |

[JVET-AM2025](https://jvet-experts.org/doc_end_user/current_document.php?id=16020) Algorithm description of Enhanced Compression Model 18 (ECM 18) [M. Coban, R.-L. Liao, K. Naser, J. Ström, L. Zhang] (2025-09-30)

New elements from notes elsewhere in this report:

* Decision: Adopt JVET-AM0307 test 1.12.
* Decision: Adopt JVET-AM0163 test 1.7a.
* Decision: Adopt JVET-AM0157 test 1.8.
* Decision: Adopt JVET-AM0106 test 2.1b.
* Decision: Adopt JVET-AM0215 test 2.2a.
* Decision: Adopt JVET-AM0056 Test 3.1.
* Decision: Adopt JVET-AM0209 test 4.2.
* Decision: Adopt JVET-AM0063 test 4.3c.
* Decision: Adopt JVET-AM0231 (non-CTC) test 4.5c (non-CTC).
* Decision: Adopt JVET-AM0104 on top of EE2-1.7a.
* Decision (SW): add the missing implementation of JVET-AE0102 and JVET-AG0100 encoder operations to the next version of ECM.

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.

**[JVET-AM2026](https://jvet-experts.org/doc_end_user/current_document.php?id=16021) Joint Call for Evidence on video compression with capability beyond VVC [J.-R. Ohm, M. Wien, F. Bossen] [WG 5 N 367] (2025-07-04)**

Final version was reviewed in a BoG meeting Fri 4 July 0800-0915, where the substantial changes made were adjustments of bit rates and adding an annex for registration of submissions. The content of the document was approved by JVET at 0955 on Friday 4 July. The latest draft with all changes was uploaded as an attachment to the BoG report JVET-AM0336. Experts were asked to carefully review and inform the editors about possible need of changes until the end of the meeting.

Remains valid – not updated: [JVET-AJ2027](https://jvet-experts.org/doc_end_user/current_document.php?id=15005) Common test conditions for gaming applications [J. Sauer, R. Chernyak, S. Puri, S. Thiebaud]

Remains valid: [JVET-AL2028](https://jvet-experts.org/doc_end_user/current_document.php?id=15685) Additions and corrections for VVC conformance (draft 1) [S. Iwamura, P. de Lagrange, I. Moccagatta] (2025-05-02)

This is a delta change document, some aspects related to bitstream corrections and editorial notes to be removed. For DIS, WG 5 N 365 (with editing period 2025-7-25) was issued integrating additional corrected bitstreams (as per JVET-AM0005) together with the valid previous bitstreams as an attachment.

A DoC WG 5 N 364 on the CD was reviewed and approved on Thursday 3 July at 1700.

Editors are requested to make preparations for integration into a new edition of ITU-T H.266.1 until the next meeting.

Remains valid – not updated: [JVET-AH2029](https://jvet-experts.org/doc_end_user/current_document.php?id=14274) Visual quality comparison of ECM/VTM encoding [V. Baroncini, J.-R. Ohm, M. Wien] [AG 5 N 118]

Remains valid – not updated: [JVET-AL2030](https://jvet-experts.org/doc_end_user/current_document.php?id=15686) Optimization of encoders and receiving systems for machine analysis of coded video content (Draft 9) [S. Liu, J. Chen, J. Ström] [WG 5 DTR N 354] (2025-05-02)

Primary editor: S. Liu.

Remains valid – not updated: [JVET-AI2031](https://jvet-experts.org/doc_end_user/current_document.php?id=14623) Common test conditions for optimization of encoders and receiving systems for machine analysis of coded video content [S. Liu, C. Hollmann]

[JVET-AM2032](https://jvet-experts.org/doc_end_user/current_document.php?id=16022) Technologies under consideration for future extensions of VSEI (version 9) [S. McCarthy, J. Boyce, J. Chen, S. Deshpande, M. M. Hannuksela, H. Tan, Y.-K. Wang] (2025-08-31)

New elements from notes elsewhere in this report:

Encoder optimization info (EOI)

* [JVETAM0126](https://jvet-experts.org/doc_end_user/current_document.php?id=15773) AHG9: Temporal quality indication for EOI SEI message

Scalability dimension info (SDI) SEI

* [JVET-AM0090](https://jvet-experts.org/doc_end_user/current_document.php?id=15737) AHG9: SDI SEI extension for signalling described layer of confidence layer

Shutter interval

* [JVET-AM0100](https://jvet-experts.org/doc_end_user/current_document.php?id=15747) AHG9: Shutter interval information SEI message extension for rolling shutter cameras

Alpha channel info (ACI)

* [JVET-AM0324](https://jvet-experts.org/doc_end_user/current_document.php?id=15992) Correction to the Alpha Channel Information SEI message processing order

NNPF

* [JVET-AM0087](https://jvet-experts.org/doc_end_user/current_document.php?id=15734) AHG9: Comments on VSEI TuC
* [JVET-AM0173](https://jvet-experts.org/doc_end_user/current_document.php?id=15820) AHG9: NNPFA SEI message extension for multi-purpose NNPFs

Constituent rectangles (CR)

* [JVET-AM0092](https://jvet-experts.org/doc_end_user/current_document.php?id=15739) AHG9: Editorial changes on the CR SEI
* [JVET-AM0093](https://jvet-experts.org/doc_end_user/current_document.php?id=15740) AHG9: On the CR SEI message

Display rectangles (DR)

* [JVET-AM0095](https://jvet-experts.org/doc_end_user/current_document.php?id=15742) AHG9: On the DR SEI message
* [JVET-AM0146](https://jvet-experts.org/doc_end_user/current_document.php?id=15793) AHG9: On display rectangles with same display aspect ratio as cropped decoded picture

Digitally signed content (DSC)

* [JVET-AM0193](https://jvet-experts.org/doc_end_user/current_document.php?id=15840) AHG9: On digitally-signed content SEI messages for subpicture support in TuC of VSEI

Film grain regions characteristics (FGRC)

* [JVET-AM0085](https://jvet-experts.org/doc_end_user/current_document.php?id=15732) AHG9/AHG13: On Film Grain Regions Characteristics SEI message
* [JVET-AM0124](https://jvet-experts.org/doc_end_user/current_document.php?id=15771) [AHG9/AHG13]: On typo fix and interface software contribution to the FGRC SEI message

Lens optical correction (LOC)

* [JVET-AM0102](https://jvet-experts.org/doc_end_user/current_document.php?id=15749) AHG9: Additional models for the LOC SEI message
* [JVET-AM0101](https://jvet-experts.org/doc_end_user/current_document.php?id=15748) AHG9: On Lens Optical Correction SEI message

Display overlays info (DOI)

* [JVET-AM0094](https://jvet-experts.org/doc_end_user/current_document.php?id=15741) AHG9: On the DOI SEI
* [JVET-AM0147](https://jvet-experts.org/doc_end_user/current_document.php?id=15794) AHG9: On applying display overlays on display rectangles
* [JVET-AM0180](https://jvet-experts.org/doc_end_user/current_document.php?id=15827) AHG9: Overlay purpose indicator for Display overlays information SEI message

Picture segment info (PSI)

* [JVET-AM0097](https://jvet-experts.org/doc_end_user/current_document.php?id=15744) AHG9: On the PSI SEI message
* [JVET-AM0192](https://jvet-experts.org/doc_end_user/current_document.php?id=15839) AHG9: On picture segmentation SEI message in TuC of VSEI

Danmu information

* [JVET-AM0154](https://jvet-experts.org/doc_end_user/current_document.php?id=15801) AHG9: On danmu information SEI message
* [JVET-AM0161](https://jvet-experts.org/doc_end_user/current_document.php?id=15808) AHG9: On display timing in the danmu information SEI message
* [JVET-AM0182](https://jvet-experts.org/doc_end_user/current_document.php?id=15829) AHG9: On the Danmu SEI message

Photosensitive content

* [JVET-AM0086](https://jvet-experts.org/doc_end_user/current_document.php?id=15733) AHG9: On Photosensitive Content Information Signalling

Quality metric QM

* [JVET-AM0096](https://jvet-experts.org/doc_end_user/current_document.php?id=15743) AHG9: On the QM SEI message

Bitdepth range info (BRI)

* [JVET-AM0099](https://jvet-experts.org/doc_end_user/current_document.php?id=15746) AHG9: On the BRI SEI message

Colour mapping info (CMI)

* [JVET-AM0108](https://jvet-experts.org/doc_end_user/current_document.php?id=15755) AHG9: On colour mapping information SEI message

Referred to editors for consideration:

* [JVET-AM0079](https://jvet-experts.org/doc_end_user/current_document.php?id=15726) AHG9: On the SPO SEI message
* [JVET-AM0155](https://jvet-experts.org/doc_end_user/current_document.php?id=15802) AHG9: On the SPO SEI message complexity signalling

New messages:

* [JVET-AM0083](https://jvet-experts.org/doc_end_user/current_document.php?id=15730) AHG9: Auxiliary sampling alignment and transformation information SEI
* [JVET-AM0181](https://jvet-experts.org/doc_end_user/current_document.php?id=15828) AHG9: Proposed new SEI message on localization and mapping

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-AF2033](https://jvet-experts.org/doc_end_user/current_document.php?id=13593) Report of verification test on VVC multi-layer coding: Content layering [S. Iwamura, P. de Lagrange, M. Wien] [AG 5 N 105)]

Remains valid – not updated: [JVET-AI2034](https://jvet-experts.org/doc_end_user/current_document.php?id=14624) Call for new HDR materials for future video coding development [E. François, W. Husak, S. Iwamura, D. Rusanovskyy, A. Segall, M. Wien] [WG 5 N 312)]

Remains valid – not updated: [JVET-AJ2035](https://jvet-experts.org/doc_end_user/current_document.php?id=15008) Test conditions and evaluation procedures for generative face video coding [S. McCarthy, B. Chen]

Remains valid – not updated: [JVET-AG2036](https://jvet-experts.org/doc_end_user/current_document.php?id=13921) Call for training materials for neural network-based video coding tool development [E. Alshina, F. Galpin, S. Liu, M. Wien] [WG 5 N 266)]

Remains valid – not updated: [JVET-AJ2037](https://jvet-experts.org/doc_end_user/current_document.php?id=15009) Report on subjective quality testing of the FGC SEI message (AG 5 N 140) [P. de Lagrange, W. Husak, M. Wien] [AG 5 N 140)] (2024-12-31)

[JVET-AM2038](https://jvet-experts.org/doc_end_user/current_document.php?id=16023) White paper on VSEI [J. Boyce, S. McCarthy, S. Deshpande, G. J. Sullivan, Y. Sanchez, Y.-K. Wang] [AG 3 N209] (2025-09-15)

Was presented to AG 3, and target to release the final version by October.

# Future meeting plans, expressions of thanks, a.o.b., and closing of the meeting

The draft of the WG 5 recommendations (see Annex C) was reviewed and approved in JVET at XXXX-XXXX on XXday X October.

Future meeting plans were established with the following general guidelines (assuming face-to-face meetings):

* Meeting under ITU-T SG21 auspices when it meets (ordinarily starting meetings on the Tuesday or Wednesday of the first week and closing it on the Wednesday of the second week of the SG21 meeting – a total of 8-9 meeting days), and
* Otherwise meeting under ISO/IEC JTC 1/‌SC 29 auspices when its MPEG WGs meet (ordinarily starting meetings on the Thursday or Friday prior to the main week of such meetings and closing it on the same day as other MPEG WGs – a total of 8–9 meeting days).

In cases where an exceptionally high workload is expected for a meeting, an earlier starting date may be defined, or AHG meetings might be scheduled prior to the meeting. In cases of online meetings, no sessions should be held on weekend days, such that meetings would typically start two days earlier.

Some specific future meeting plans (to be confirmed) were established as follows:

* During 14 – 23 January 2026, 41st meeting under ISO/IEC JTC 1/‌SC 29 auspices, to be conducted as teleconference meeting,
* During 24 April – 1 May 2026, 42nd meeting under ISO/IEC JTC 1/‌SC 29 auspices in Santa Eulària, ES, to be conducted as hybrid meeting,
* During 7 – 15 July 2026, 43rd meeting under ITU-T SG21 auspices in Geneva, CH, to be conducted as physical meeting with remote participation,
* During 14 – 23 October 2026, 44th meeting under ISO/IEC JTC 1/‌SC 29 auspices in Hangzhou, CN, to be conducted as hybrid meeting,
* 13 – 22 January 2027, 45th meeting under ISO/IEC JTC 1/‌SC 29 auspices in Brisbane, AU, to be conducted as hybrid meeting,
* During April 2027, 46th meeting under ITU-T SG21 auspices, date and location t.b.d.
* During 7 – 16 July 2027, 47th meeting under ISO/IEC JTC 1/‌SC 29 auspices in Tampere, FI, to be conducted as hybrid meeting,
* During 20 – 29 October 2027, 48th meeting under ISO/IEC JTC 1/‌SC 29 auspices in Shenzhen, CN, to be conducted as hybrid meeting,
* During January 2028, 49th meeting under ITU-T SG21 auspices, date and location t.b.d.
* During April 2028, 50th meeting under ISO/IEC JTC 1/‌SC 29 auspices, date and location t.b.d.

The agreed document deadline for the 41st JVET meeting was planned to be Wednesday 7 Jan. 2026.

TCL was thanked for providing 4K displays used in the CfE viewing. Fraunhofer HHI and RWTH Aachen were thanked for providing play-out equipment. Mathias Wien was thanked for organizing and supervising the test, and Christian Lehmann was thanked for helping with the test setup. Kenneth Andersson, Philippe de Lagrange, and Adam Wieckowski were thanked for assistance in preparing and conducting the viewing. Numerous experts who volunteered to participate in the viewing were also thanked.

Alibaba, BossenTech, Bytedance, Dolby, Ericsson, Google, Huawei, InterDigital, KDDI, Nokia, OPPO, Panasonic, Qualcomm, Samsung, Sharp, Tencent, vivo, and Xiaomi were thanked for generating VTM and ECM bitstreams that were used in the experts viewing, and will also be used in the context of the Call for Evidence.

Marius Preda was thanked for the service of managing and maintaining the document site jvet-experts.org. Institut Mines-Télécom was thanked for hosting the sites.

ITU was thanked for the excellent hosting of the 37th JVET meeting in Geneva. Simão Campos and Stefano Polidori were thanked for the help in preparation and organisation, and Kelya-Axelle Beke was thanked for managing the registrations. The following members of ITU staff were thanked for their dedication and daily help in the technical setup of meeting facilities: Gent Bajrami, Marc Antoine Zanou, Ilia Londo, and Paul Marko.

The 40th JVET meeting was closed at approximately XXXX hours CEST on Sunday 12 October 2025.

# Annex A to JVET report:List of documents

Dates and times in the table below are in Paris/Geneva time (2 hr. ahead of UTC). It is noted that, if title or authorship of a document deviates from the title or author list in the body of the report, the list of documents in this annex contains the correct title and authors.

# Annex B1 to JVET report:List of meeting participants attending in person

The participants who were personally present at the meeting site of the fortieth meeting of the JVET, according to a sign-in sheet circulated in the JVET meeting rooms (approximately XXX people in total), were as follows:

1. …

# Annex B2 to JVET report:List of meeting participants attending remotely

The remote participants of the fortieth meeting of the JVET, according to the participation records from the Zoom teleconferencing tool used for the meeting sessions (approximately XXX people in total, not including those who had attended the meeting in person at least part-time (see annex B1), and not including those who attended only the joint sessions with other groups), were as follows:

1. …

# Annex C to JVET report:Recommendations of the 21st meeting ofISO/IEC JTC 1/SC 29/WG 5 MPEG Joint Video Experts Team with ITU-T SG21

**ISO/IEC JTC 1/SC 29/WG 5 N XXX**

**…**