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| **INTERNATIONAL ORGANIZATION FOR STANDARDIZATION ORGANISATION INTERNATIONALE DE NORMALISATION ISO/IEC JTC 1/SC 29/WG 5 MPEG JOINT VIDEO EXPERTS TEAM WITH ITU-T SG 21** |
| **ISO/IEC JTC 1 / SC 29 / WG 5 N 355** |
| **by teleconference, 26 March – 4 April 2025** |
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| **Joint Video Experts Team (JVET)**  **of ITU-T SG21 WP3/21 and ISO/IEC JTC 1/SC 29**  38th Meeting, by teleconference, 26 March – 4 April 2025 | Document: JVET-AL2026-v2 |

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| --- | --- | --- | --- |
| *Title:* | **Draft Joint Call for Evidence on video compression with capability beyond VVC** | | |
| *Status:* | Output document approved by JVET | | |
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# Introduction

The JVET has been tasked by its ITU-T and ISO/IEC parent bodies to study the potential for standardization of video coding technology with capability exceeding that of VVC (Rec. ITU-T H.266 | ISO/IEC 23090-3) in terms of compression, encoder/decoder implementability, applicability to a variety of content, and other features such as transmission latency/robustness, scalability, etc. Technology of interest could take the form of extending an existing standard, or might require definition of an entirely new standard.

Example sources include camera-captured content, computer-generated content, user-generated content, and high dynamic range content, while example applications include broadcast (both live or pre-authored content), real-time video conferencing, video chat, on-demand viewing, gaming, video upload, storage-based media replay, and surveillance with fixed or moving cameras [2].

This Call for Evidence (CfE) is being issued as part of this study. The CfE requests information regarding video compression technology that has compression performance or additional functionality beyond that of VVC, where the tradeoff in terms of implementation cost is also an important criterion.

As it is recognized that in a growing number of applications practically fast encoding is required, information on this aspect is also separately requested in the context of the CfE. As it cannot be expected that encoding with lower run time comes without a penalty in compression, this will be tested separately.

Responses to the CfE will be evaluated at the 40th JVET meeting during 3-12 October 2025, as further described below.

Depending on the result of the evaluation, a Call for Proposals (CfP) may be issued in preparation for starting a formal standardization project.

Companies and organizations who have developed compression technology that they believe to be superior over the Main 10 Profile of the VVC standard regarding the aforementioned aspects are kindly invited to bring such information to the JVET in response to this CfE. Additionally, contributions are also welcome regarding technology that better supports newly emerging application areas of video coding by additional functionality (see section 5 of this document).

The basic test case for providing evidence on improved compression capability is described in section 2. It is encouraged but not required to provide a detailed description of a technology submitted for testing in the context of the CfE. To perform a rough assessment of implementation complexity, encoding and decoding run time shall be reported relative to VTM anchors. It is preferred to receive submissions via bitstreams and decoder binary executables which will only be used to generate the reconstructed video sequences in the subjective viewing described in section 4.

For the additional test case of providing evidence about fast encoding capability described in section 3, it is encouraged but not required to submit a binary encoder executable which runs in a single-thread processing environment for demonstration purposes. The information about encoding and decoding run time increase relatively to the anchor, measured using the same simulation environment must be reported. Information about multi-threading capability and runtime reduction achievable by multi-thread processing is encouraged to be reported with necessary explanation (such as number of threads, description of parallelized modules).

Beyond objective quality criteria such as PSNR and SSIM, the performance will be assessed based on expert viewing tests conducted during the October 2025 meeting. Rate points that are intended to be tested have been determined on a per-sequence basis such that visual quality should remain distinguishable between different technologies. For this purpose, encodings using VTM reference software [3] as well as the ECM software [4] developed by JVET within an exploration effort have been used. Rate-matched encoded bitstreams of both VTM and ECM will be included in the viewing tests, obeying the same coding conditions as the submissions.

It is noted that JVET intends to conduct a dry-run to assess the feasibility of the CfE tests at its 39th meeting held during 26 June – 4 July 2025 in Daejeon, KR. Parties interested to participate with own technology in this dry-run test should contact the test coordinators in section 6. Updates of this draft could be expected when the final CfE is issued from that meeting.

## Timeline

* Test sequences available: 2025-04-15[[1]](#footnote-1)
* Preliminary VTM 23.9 anchor bitstreams related to section 2 available: 2025-05-06
* Preliminary VTM 23.9 anchor bitstreams related to section 3 and ECM 16.1 bitstreams available:   
  2025-06-03
* Dry-run test of CfE conditions during 26 June – 04 July 2025 (at the 39th JVET meeting)
* Final Call for Evidence issued 2025-07-04
* Final VTM anchors and VTM encoder configuration files available: TBD in final CfE
* Expression of interest to submit a response: 2025-09-05
* Submission of contributions (descriptive document): 2025-09-26
* Materials for preparation of visual testing available: TBD
* Evaluation of responses: 3-12 October 2025 at the 40th JVET meeting (expected to be attended by submitters)
* Depending on the outcome of the Call for Evidence, a Draft Call for Proposals may be issued by the end of the October 2025 meeting.

# Test cases for evidence on improved compression

The following categories are considered as test cases. Each category name includes a characterization of the content type, the suggested encoder configuration and an indication of the resolution.

* **SDR RA UHD/4K**: Representing the use case of distribution of standard dynamic range UHD/4K video content e.g. in a streaming scenario, using a random-access configuration.
* **SDR RA HD**: Representing the use case of distribution of standard dynamic range HD video content e.g. in a streaming scenario, using a random-access configuration.
* **SDR LB HD**: Representing the use case of conversational and other low delay applications at HD resolution, correspondingly using a low-delay configuration.
* **HDR RA 4K**: Representing the use case of distribution of high dynamic range UHD/4K video content e.g. in a streaming scenario, using a random-access configuration.
* **HDR RA Cropped 8K**: Representing the use case of distribution of high dynamic range 8K video content e.g. in a streaming scenario, using a random-access configuration. In order to reduce the encoding workload for assessment of this category and allow investigation on 4K displays, cropped regions of 3840×2160 resolution are used.
* **Gaming LB HD**: Representing the use case of online gaming with a low-delay configuration.
* **UGC RA**: Representing the use case of user generated content at 1080×1920 or 1920x1080 resolution using a random-access configuration.

Submitters are encouraged (but not required) to submit results for all test cases. However, submitters are required to provide results for all sequences in a given test case.

## General coding conditions

### Coding conditions for VVC anchors

VVC anchors are generated using the VTM 23.9 software package. A static quantization parameter (QP) setting is applied for generation of the anchors, though a one-time change of the quantization parameter from value QP to value QP+1 may be applied in order to meet the defined target bit rates. The quantization parameter settings applied for the anchors will be reported.

### Coding conditions for submissions and ECM

Submissions to the Call for Evidence shall obey the following rules:

* Encoded bitstreams shall not exceed the target bit rates defined for each of the test cases.
* Sequences are expected to be encoded at full input resolution at all rate points. If coding at reduced resolution is implicit part of the algorithmic concept, it shall be described.
* Quantization settings should be kept static. When a change of quantization is used it shall be described.
* A one-time change of the quantization settings to meet the target bit rate is allowed and must be documented.
* Optimizing encoding parameters using non-automatic means as well as optimizing encoding parameters on a per sequence basis within a class is discouraged. When any such optimization is employed, it shall be described.
* No part of the video coding test set shall be used as a training set or part of a training set for training entropy coding tables, VQ codebooks, transforms, predictors, filters, neural network models, etc.
* Use of preprocessing and/or postprocessing shall be described.
* Use of perceptual optimization shall be described.
* Use of multi-pass encoding shall be described.

## SDR RA UHD/4K

### Sequence formats and target bit rates

All sequences have a picture size of 3840×2160, chroma format 4:2:0 YCbCr according to ITU-R BT.2020, and bit depth 10. Further information can be found in Table 1.

Table : Test sequences

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sequence ID (SID)** | **Sequence name** | **Bit depth** | **Frame count** | **Frame rate** | **MD5Sum** |
| SRU1 | CrowdRun | 10 | 500 | 50 | 17282413c9a523a02e0c8463c097221f |
| SRU2 | DrivingPOV3 | 10 | 600 | 60 | e81b65724c4235128b2749ccb3b0fb4a |
| SRU3 | FireDance | 10 | 250 | 25 | bfcfc333924835aaf4ed89efa8428a36 |
| SRU4 | HallwayScene | 10 | 250 | 25 | b0c8718579998060e375fcdb77243013 |

Target bit rates for the encoding of the sequences are listed in Table 2.

Table : Target bit rates

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **Target bit rates [kbit/s]** | | | |
| **SID** | **Sequences name** | **Rate 1** | **Rate 2** | **Rate 3** | **Rate 4** |
| SRU1 | CrowdRun | 700 | 1500 | 3200 | 7000 |
| SRU2 | DrivingPOV3 | 300 | 600 | 1200 | 2400 |
| SRU3 | FireDance | 300 | 700 | 1300 | 2500 |
| SRU4 | HallwayScene | 100 | 250 | 500 | 1000 |

### Coding conditions for VVC anchors

The general description in section 2.1.1 applies.

Specifically, in this test case, a random-access scenario (RA) is used for evaluation and follows the JVET common test conditions and software reference configurations [5]. The intra refresh period is dependent on the frame rate of the source: A value 32 shall be used for sequences with a frame rate equal to 24fps, 25fps or 30fps, 64 for 50fps and 60fps.

### Coding conditions for submissions and ECM

Submissions to the Call for Evidence shall obey the following rules:

* The general rules as described in section 2.1.2.
* Allow for random access at intervals not larger than the intra refresh period of the respective anchor.

## SDR RA HD

### Sequence formats and frame rates

All sequences have a picture size of 1920×1080, chroma format 4:2:0 YCbCr according to ITU-R BT.709. Further information can be found in Table 3.

Table : Test sequences

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sequence ID (SID)** | **Sequence name** | **Bit depth** | **Frame count** | **Frame rate** | **MD5Sum** |
| SRH1 | DucksTakeOff | 8 | 500 | 50 | 3504582275e36e310fae72ffa6a0f8aa |
| SRH2 | DrivingPOV4 | 10 | 600 | 60 | 4724c33b6b27669a406587bdb8d43dc8 |
| SRH3 | Seeking | 8 | 500 | 50 | 0f26ad79d085895299860530e145a8c9 |
| SRH4 | Umbrella | 8 | 500 | 50 | 87572379ef39bedf55f9c9d8152086e7 |

Target bit rates for the encoding of the sequences are listed in Table 4.

Table : Target bit rates

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **Target bit rates [kbit/s]** | | | |
| **SID** | **Sequences name** | **Rate 1** | **Rate 2** | **Rate 3** | **Rate 4** |
| SRH1 | DucksTakeOff | 300 | 1000 | 4000 | 15000 |
| SRH2 | DrivingPOV4 | 150 | 300 | 650 | 1400 |
| SRH3 | Seeking | 200 | 400 | 800 | 1600 |
| SRH4 | Umbrella | 300 | 700 | 1600 | 3500 |

### Coding conditions for VVC anchors

The description in Section 2.2.2 applies.

### Coding conditions for submissions and ECM

The description in Section 2.2.3 applies.

## SDR LB HD

### Sequence formats and frame rates

All sequences have a picture size of 1920×1080 (landscape orientation, ***L***) or 1080×1920 (portrait orientation ***P***), chroma format 4:2:0 YCbCr according to ITU-R BT.709. Further information can be found in Table 5.

Table : Test sequences

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sequence ID (SID)** | **Sequence name** | **Bit depth** | **Frame count** | **Frame rate** | **MD5Sum** |
| SLH1 | Beatriz ***L*** | 8 | 500 | 50 | fe74cd5046fa033b4f743f42b29e69cd |
| SLH2 | GregoryCactus2 ***P*** | 10 | 300 | 30 | 4fb703c30a3fb06bacef461c69908b93 |
| SLH3 | GregoryScarf2 ***P*** | 10 | 300 | 30 | 7608f5bf81b4f3f11d0c7a489a5ff26c |
| SLH4 | OfficeWalkAtWall ***L*** | 8 | 300 | 30 | 529c15491ea8e1eb0320244a6ff902bb |

Target bit rates for the encoding of the sequences are listed in Table 6.

Table : Target bit rates

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **Target bit rates [kbit/s]** | | | |
| **SID** | **Sequences name** | **Rate 1** | **Rate 2** | **Rate 3** | **Rate 4** |
| SLH1 | Beatriz | 100 | 200 | 350 | 700 |
| SLH2 | GregoryCactus2 | 200 | 600 | 1800 | 5000 |
| SLH3 | GregoryScarf2 | 200 | 600 | 1800 | 5000 |
| SLH4 | OfficeWalkAtWall | 100 | 200 | 400 | 900 |

### Coding conditions for VVC anchors

The general description in section 2.1.1 applies.

Specifically, in this test case, a low-delay scenario with B pictures (LB) is used for evaluation and follows the JVET common test conditions and software reference configurations [5]. No picture reordering is applied between decoder processing and output.

### Coding conditions for submissions and ECM

Submissions to the Call for Evidence shall obey the following rules:

* The general rules as described in section 2.1.2.
* Overall structural delay shall not be larger than that of the respective anchor.

## HDR RA 4K

### Sequence formats and frame rates

All sequences have a picture size of 3840×2160, chroma format 4:2:0 YCbCr, bit depth 10bit, according to ITU-R BT.2020, with the applicable transfer function indicated. Further information can be found in Table 7.

Table : Test sequences

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sequence ID (SID)** | **Sequence name** | **Transfer fct.** | **Frame count** | **Frame rate** | **MD5Sum** |
| HRU1 | AMS06 | HLG10 | 600 | 60 | d1f11c771febbb8a2bbb7faadc13cbbb |
| HRU2 | MeridianHDR2 | P3 PQ 4000nits | 600 | 60 | 9e889c7d78b1b5a0fdebb88871a362dd |
| HRU3 | NeptuneFountain3R1 | HDR10 PQ | 600 | 60 | 4d7aa4113ddbf6de8a3a9856168f6d5c |
| HRU4 | SparksWelding | HDR10 PQ 1000nits | 600 | 60 | 7e0c6bd867c370dde9b11c76ed93409f |

Target bit rates for the encoding of the sequences are listed in Table 8.

Table : Target bit rates

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **Target bit rates [kbit/s]** | | | |
| **SID** | **Sequences name** | **Rate 1** | **Rate 2** | **Rate 3** | **Rate 4** |
| HRU1 | AMS06 | 500 | 1300 | 3500 | 8000 |
| HRU2 | MeridianHDR2 | 150 | 300 | 600 | 1200 |
| HRU3 | NeptuneFountain3R1 | 350 | 850 | 2000 | 5000 |
| HRU4 | SparksWelding | 400 | 1000 | 2600 | 7000 |

### Coding conditions for VVC anchors

In this test case, the random-access scenario is used for evaluation. The description in Section 2.2.2 applies, with the common testing conditions for HDR/WCG content being used [6].

### Coding conditions for submissions and ECM

The description in Section 2.5.2 applies.

## HDR RA Cropped 8K

### Sequence formats and frame rates

All sequences have been cropped from 8K resolution to a picture size of 3840×2160, chroma format 4:2:0 YCbCr, bit depth 10bit, according to ITU-R BT.2020, with the applicable transfer function indicated. Further information can be found in Table 9.

Table : Test sequences

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SID** | **Sequence name** | **Transfer fct.** | **Frame count** | **Frame rate** | **MD5Sum** |
| HRC1 | ChandelierCropBR | HDR10 PQ | 360 | 60 | bb42a5d627330c652f19aca4b184b47f |
| HRC2 | FashionLadyCrop1 | HDR10 PQ | 380 | 60 | d8546edaa260468f027c0e1c28d422b0 |
| HRC3 | WaterfallForest | HLG10 | 500 | 50 | 54abb97e78a7255885fc283d02f9c964 |
| HRC4 | WomenFootball | HLG10 | 500 | 50 | 94bb484ab23ac900d1f417c52972535f |

Target bit rates for the encoding of the sequences are listed in Table 10.

Table : Target bit rates

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **Target bit rates [kbit/s]** | | | |
| **SID** | **Sequences name** | **Rate 1** | **Rate 2** | **Rate 3** | **Rate 4** |
| HRC1 | ChandelierCropBR | 300 | 650 | 1300 | 2800 |
| HRC2 | FashionLadyCrop1 | 200 | 500 | 1000 | 2000 |
| HRC3 | WaterfallForest | 1000 | 2500 | 6000 | 14000 |
| HRC4 | WomenFootball | 300 | 600 | 1100 | 2000 |

### Coding conditions for VVC anchors

The description in Section 2.5.2 applies.

### Coding conditions for submissions and ECM

The description in Section 2.5.3 applies.

## Gaming LB HD

### Sequence formats and frame rates

All sequences have a picture size of 1920×1080, chroma format 4:2:0 YCbCr according to ITU-R BT.709. Further information can be found in Table 11.

Table : Test sequences

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sequence ID (SID)** | **Sequence name** | **Bit depth** | **Frame count** | **Frame rate** | **MD5Sum** |
| GLH1 | DOTA2s360 | 8 | 550 | 60 | 999ae67b022892a7b70ab4dcc70f1043 |
| GLH2 | GTAVs090 | 8 | 600 | 60 | 43643d686a91a51758c63346fab7eca3 |
| GLH3 | Level1 | 10 | 600 | 60 | 87c7055771366d16b0d69cb56f6c66fb |
| GLH4 | Minecraft | 8 | 600 | 60 | 4f1055d558284e789fcae7686f3419bc |

Target bit rates for the encoding of the sequences are listed in Table 12.

Table : Target bit rates

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **Target bit rates [kbit/s]** | | | |
| **SID** | **Sequences name** | **Rate 1** | **Rate 2** | **Rate 3** | **Rate 4** |
| GLH1 | DOTA2s360 | 300 | 550 | 1000 | 2000 |
| GLH2 | GTAVs090 | 600 | 1100 | 2000 | 3600 |
| GLH3 | Level1 | 500 | 1200 | 3000 | 7000 |
| GLH4 | Minecraft | 300 | 600 | 1200 | 2400 |

### Coding conditions for VVC

The general description in section 2.1.1 applies.

Specifically, in this test case, a low-delay scenario with B pictures (LB) is used for evaluation and follows the JVET common test conditions and software reference configurations for gaming applications [7]. No picture reordering is applied between decoder processing and output.

### Coding conditions for submissions and ECM

The description in Section 2.4.3 applies.

## UGC RA

### Sequence formats and frame rates

All sequences have a picture size of 1920×1080 (landscape orientation, ***L***) or 1080×1920 (portrait orientation ***P***), chroma format 4:2:0 YCbCr according to ITU-R BT.709. Further information can be found in Table 13.

Table : Test sequences

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sequence ID (SID)** | **Sequence name** | **Bit depth** | **Frame count** | **Frame rate** | **MD5Sum** |
| URH1 | Camellia ***P*** | 8 | 600 | 60 | 6e5413666e42d3c24db9b81b5db641ff |
| URH2 | Hobby-w5xz-backpack ***P*** | 8 | 240 | 24 | b8ee8e98b5d34afcfc24a9d02d8f3a43 |
| URH3 | NightLandscapeRunning ***L*** | 8 | 300 | 30 | 8eed52f009ed4ca2d31abe9e61b30432 |
| URH4 | Sports-76a2-iceball ***L*** | 8 | 600 | 60 | 3030f3760f34ce97e67d7e1a02eedd3b |
| URH5 | VerticalVideo-3709-snow ***P*** | 8 | 300 | 30 | 3db32dc2c295dc25622ebc516420c63b |
| URH6 | VerticalVideo-3d96-walk ***P*** | 8 | 300 | 30 | 5eb532977244f8be48591bf06592579a |

Target bit rates for the encoding of the sequences are listed in Table 14.

Table : Target bit rates

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **Target bit rates [kbit/s]** | | | |
| **SID** | **Sequences name** | **Rate 1** | **Rate 2** | **Rate 3** | **Rate 4** |
| URH1 | Camellia | 500 | 1000 | 2000 | 4000 |
| URH2 | Hobby-w5xz-backpack | 90 | 160 | 280 | 500 |
| URH3 | NightLandscapeRunning | 100 | 250 | 600 | 1200 |
| URH4 | Sports-76a2-iceball | 100 | 160 | 250 | 400 |
| URH5 | VerticalVideo-3709-snow | 100 | 160 | 250 | 400 |
| URH6 | VerticalVideo-3d96-walk | 100 | 200 | 350 | 600 |

### Coding conditions for VVC anchors

The description in Section 2.2.2 applies.

### Coding conditions for submissions and ECM

The description in Section 2.2.3 applies.

# Test cases for evidence on improved compression with runtime-constrained encoding

The same categories as listed in section 2 are considered as test cases.

Submitters are strongly encouraged (but not required) to submit results for all test cases. However, submitters are required to provide results for all sequences in a given test case.

It is to be noted that, due to the possible large amount of complexity/rate combinations, it is likely that not all points can be included in viewing tests. This can only be determined after the number of submissions is known. Complexity/rate combinations for which no visual test can be performed will be assessed by objective criteria, e.g. as shown in the example figure at the end of section 3.

## General

### Sequence formats and frame rates

For each category, sequence formats and frame rates are identical to those defined in Section 2.

### Coding conditions for anchors

For each category, the coding conditions for the anchor are identical to those defined in the corresponding part of section 2 except as noted below.

For VVC, bitstreams are generated for the following configurations documented in [5][[2]](#footnote-2):

* Default (equivalent to the one used in common test conditions)
* High performance (encoding times are approximately 2 times more than for the default)
* Reduced encoding time (3 variants, encoding times are approximately 2 to 6 times less than for the default)

VTM with default configurations is the sole anchor with respect to which relative compression performance and run times are calculated.

### Coding conditions for submissions

Submissions to the Call for Evidence shall obey the following rules:

* For each category, the rules defined in in the corresponding part of section 2 apply.
* Encoder run times must be in the range of targets defined below, and should match the runtime of targets as close as possible.
* No target is defined for decoder run times. However, decoder run times are to be reported and may be considered in the evaluation of this Call.
* Code optimization beyond what is typically done for reference software such as VTM is discouraged. The level of code optimization shall be described.

Three encoder run time targets are defined as:

* 5 times (500%) the encoder runtime of the VTM anchor
* Same (100%) as the encoder runtime of the VTM anchor
* 0.2 times (20%) the encoder runtime of the VTM anchor

For each bitstream, run time is defined to be the total processing time to generate the bitstream and includes processing time for any pre-processing operations. Where multithreading is used, the run time is the sum of the run times of each individual thread. Design parts affected by multithreading must be described.

Matching the run time targets exactly is not necessary. Run times should be sufficiently close to the target to be able to plot an encoder run time vs compression performance curve for each submission and have this curve cover a range similar to the one obtained for the VTM anchor and supplemental reference points.

It is strongly encouraged to include a set of bitstreams and results for each of the three targets in a response. Additional run time vs compression trade-offs may be included in a response such as to have a more densely sampled curve. For example, results for run times approximately 2 times more or 2 times less than for the VTM anchor may be included.

An example of an encoder run time vs compression performance curve is shown in the subsequent figure:

***BD-rate***

***EncT\_test/EncT\_anchor***

0.0%

1/5 1/2 1 2 5

* Anchor (different operation points of VTM)
* Best in unrestricted encoder category
* Best trade-off

For the dry run planned at the 39th meeting, bitstreams will be generated for the following software packages to serve as supplemental reference points:

* ECM 16.1 encodings with a configuration featuring reduced multitree partitioning depth
* NNVC 12.0 using the low operating point (LOP) [8]

# Evaluation Methodology

Evaluation of the submissions in response to the Call for Evidence will be performed at the October 2025 JVET meeting in Geneva, CH.

Respondents are asked to make submissions preferably by including bitstreams and binary decoders, and, as much as possible[[3]](#footnote-3), documentation of the compression technology. Submissions must provide bitstreams for all sequences for all test cases submitted for evaluation of the proposal, and the binary decoder must be capable of decoding the bitstreams and storing the decoded data in the same format as the uncompressed test sequence. For evaluation by objective metrics, PSNR values (at least average of frame PSNR for each test sequence and encoding point, separate for luma and chroma components, as well as Bjøntegaard Delta-Rate and Delta-PSNR [1] compared to the anchors). For additional reporting of SSIM results, the test coordinators (section 6) will provide information.

The evaluation methodologies to visually assess the quality of the received submissions are described below, detailing the assessment of SDR and HDR video content. Please note that some changes to the methodology may be employed in order to complete the evaluation by the end of the October meeting. For example, the evaluation may be modified if a large number of submissions are received.

## SDR Video evaluation

The evaluation of the submissions to the Call for Evidence for SDR content (both UHD and HD formats) will be done by assessing a set of representative video clips that are selected from the submissions and determined by the JVET experts to properly represent a SDR content compression use case. The subjective assessment of the received submissions will be done by an expert panel either before or during the October meeting. The method used will tentatively be the DCR method as described in Recommendation ITU-T P.910. A panel of at least 15 experts will be selected among the available volunteers to participate in the evaluations.

## HDR Video evaluation

In addition to the evaluation methodology described in Section 3 and Section 4.1, respondents to the Call for Evidence for HDR content are further asked to make submissions including the following metrics: weighted PSNR values (at least average of frame wPSNR for each sequence and encoding point, separate for luma and chroma components), deltaE100 and PSNR-L100, as well as to provide the Bjøntegaard Delta-Rate and Delta-PSNR for each metric. Metric definitions are provided in the JVET common test conditions and evaluation procedures for HDR/WCG video [6].

# Evidence on other functionality

Companies and organizations who have developed compression technology that provides additional functionality with a better compression tradeoff than existing standards are also invited to submit such information in the context of this Call for Evidence. Proposals how the benefit of such functionality could be assessed in the context of a Call for Proposals or during the development of a video compression standard would also be welcome. For examples of such additional functionality, you may refer to [2].

# Logistics

Prospective contributors of responses to the Call for Evidence should contact the test coordinators:

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Expressions of interest to submit a response shall be made by contacting the test coordinators on or before September 12, 2025. Interested parties are kindly invited to express their intent as early as possible.

Details on how to format and submit documents, bitstreams, and other required data will be communicated directly to those who express an interest of participation. Additionally, the JVET chair will provide assistance to submitters from outside JVET in order to attend the JVET meeting.

Test sequences, anchors, and configuration files will also be made available by contacting the test coordinators.

# References

1. ITU-T, Working practices using objective metrics for evaluation of video coding efficiency experiments, Doc. [HSTP-VID-WPOM](https://www.itu.int/dms_pub/itu-t/opb/tut/T-TUT-ASC-2020-HSTP1-PDF-E.pdf), 2020.
2. “Draft of use cases and requirements for potential next-generation video coding standard beyond VVC capability”, ISO/IEC SC 29/WG 2 document [N 448](https://dms.mpeg.expert/doc_end_user/current_document.php?id=99247&id_meeting=202) and ITU-T Q6/21 document XXX, April 2025
3. “Algorithm description for Versatile Video Coding and Test Model 22 (VTM 22)”, Joint Video Experts Team (JVET), 34th Meeting, Rennes, April 2024, Doc. [JVET-AH2002](https://jvet-experts.org/doc_end_user/current_document.php?id=14265).
4. “Algorithm description of Enhanced Compression Model 16 (ECM 16)”, Joint Video Experts Team (JVET), 37th Meeting, Geneva, January 2025, Doc. [JVET-AK2025](https://jvet-experts.org/doc_end_user/current_document.php?id=15340).
5. “VTM and HM common test conditions and software reference configurations for SDR 4:2:0 10 bit video”, Joint Video Experts Team (JVET), 38th Meeting, by Teleconference, March/April 2025, Doc. [JVET-AL2010](https://jvet-experts.org/doc_end_user/current_document.php?id=15680).
6. “VTM and HM common test conditions and evaluation procedures for HDR/WCG video”, Joint Video Experts Team (JVET), 29th Meeting, by Teleconference, January 2023, Doc. [JVET-AC2011](https://jvet-experts.org/doc_end_user/current_document.php?id=12575).
7. “Common test conditions for gaming applications”, Joint Video Experts Team (JVET), 36th Meeting, Kemer, November 2024, Doc. [JVET-AJ2027](https://jvet-experts.org/doc_end_user/current_document.php?id=15005).
8. “Description of algorithms version 10 and software version 12 in neural network-based video coding (NNVC)”, Joint Video Experts Team (JVET), 37th Meeting, Geneva, January 2025, Doc. [JVET-AK2019](https://jvet-experts.org/doc_end_user/current_document.php?id=15338).

1. Test sequences are currently available to JVET members. Other parties interested in obtaining the test sequences should send a request to the test coordinators in section 6. [↑](#footnote-ref-1)
2. Configurations for high performance and reduced encoding time are not described for HDR test cases in [6], but can be configured by using equivalent settings as in [5]. [↑](#footnote-ref-2)
3. Though it is not mandatory to describe the underlying technology in detail, the description should allow an assessment to understand its relevance for prospective standardization, e.g. in terms of processing complexity, memory usage, encoding/decoding delay, relation with existing video compression technology, licensing conditions, etc. [↑](#footnote-ref-3)