**COMMITTEE DRAFT AMENDMENT****© ISO/IEC 2021 – All rights reserved****Text of ISO/IEC 23090-15/CDAM 1** **63****Part 15: Conformance testing for versatile video coding, AMENDMENT 1: Operation range extensions****Information technology — Coded representation of immersive media****Élément introductif — Élément central — Partie 15: Titre de la partie****Information technology — Coded representation of immersive media — Part 15: Conformance testing for versatile video coding, AMENDMENT 1: Operation range extensions****E****2021-11-12****(30) Committee****ISO/IEC****ISO/IEC J****202x****1****Amendment****International Standard****202x****86****ISO/IEC 23090‑****ISO/IEC 23090‑15****ISO/IEC 23090-15/CDAM 1****JISC****Coding of audio, picture, multimedia and hypermedia information****Information technology****5****29****1** **2****見出し 2****見出し 1****0****2****STD Version 2.1c2****30** **4** **ISO/IEC JTC 1/SC 29 /WG 5 N 86**

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Secretariat:  JISC

**Information technology — Coded representation of immersive media — Part 15: Conformance testing for versatile video coding, AMENDMENT 1: Operation range extensions**

*Élément introductif — Élément central — Partie 3: Titre de la partie*

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Information technology — Coded representation of immersive media — Part 15: Conformance testing for versatile video coding, AMENDMENT 1: Operation range extensions

[Editors’ note: A set of conformance test set data files is included as an integral part of this amendment.

Due to the size of the electronic attachments, the associated conformance test set data files are provided separately, at the following location:

<ftp://ftp3.itu.int/jvet-site/bitstream_exchange/VVCv2/under_test/VTM-14.0/>

(user id: avguest, password: Avguest201007)

For ftp access, it is suggested to use FileZilla, for which the site manager feature should be used and ftp encryption should be set to “Require implicit ftp over TLS” (see Annex A of this document).

Alternatively, the same files are available by http at:

<https://www.itu.int/wftp3/av-arch/jvet-site/bitstream_exchange/VVCv2/under_test/VTM-14.0/>

End of editors’ note]

*Clause 4*

In clause 4 (Abreviations and acronyms), add the following abreviation terms:

EPP: Extended Precision Processing

ERRC: Extended Regular Residual Coding

ETSRC: Extended Transform Skip Residual Coding

PRRC: Persistent Regular Residual Coding

RA: Random Access

RLSCP: Reversed last significant coefficient position

RRC: Regular Residual Coding

WPP: Wavefront Parallel Processing

*6.6*

In clause 6.6, add subclauses as follows:

### Test bitstreams – Main 12 profile

#### VVCv1 tools set

##### Test bitstream 12b420vvc1\_A\_Alibaba

**Specification**: The bitstream is 12-bit 4:2:0 video data being coded with various random access picture types, VVCv1 tools set is enabled and no VVCv2 tools are enabled.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 12-bit 4:2:0 content.

### Test bitstreams – Main 12 Intra profile

#### VVCv1 tools set

##### Test bitstream 12b420Ivvc1\_A\_Interdigital

**Specification**: The bitstream is 12-bit 4:2:0, in all intra mode, VVCv1 tools set is enabled and no VVCv2 tools are enabled.

**Functional stage**: Decoder.

Purpose: Check that the decoder can properly decode 12-bit 4:2:0 content.

### Test bitstreams – Main 12 Still Picture profile

#### VVCv1 tools set

##### Test bitstream 12b420SPvvc1\_A\_KDDI

**Specification**: The bitstream contains a single picture in 12-bit 4:2:0 chroma format and exercises MinCr restriction for level 2.0, VVCv1 tools set is enabled and no VVCv2 tools are enabled.

**Functional stage**: Still picture.

**Purpose**: Check that the decoder can properly decode bitstreams conforming to the still picture profiles.

### Test bitstreams – Main 12 4:4:4 profile

#### VVCv1 tools set

##### Test bitstream 12b444vvc1\_A\_Sony

**Specification**: The bitstream is 12-bit 4:4:4 video data being coded with various random access picture types, VVCv1 tools set is enabled and no VVCv2 tools are enabled, Level 2.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 12-bit 4:4:4 content.

##### Test bitstream 12b444vvc1\_B\_Sony

**Specification**: The bitstream is 12-bit 4:4:4 video data being coded with various random access picture types, VVCv1 tools set is enabled and no VVCv2 tools are enabled, Level 4.1, Main Tier.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 12-bit 4:4:4 content.

##### Test bitstream 12b444vvc1\_C\_Sony

**Specification**: The bitstream is 12-bit 4:4:4 video data being coded with various random access picture types, VVCv1 tools set is enabled and no VVCv2 tools are enabled, Level 5.1, Main Tier.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 12-bit 4:4:4 content.

##### Test bitstream 12b444vvc1\_D\_Sony

**Specification**: The bitstream is 12-bit 4:4:4 video data being coded with various random access picture types, VVCv1 tools set is enabled and no VVCv2 tools are enabled, Level 4.1, High Tier.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 12-bit 4:4:4 content.

##### Test bitstream 12b444vvc1\_E\_Sony

**Specification**: The bitstream is 12-bit 4:4:4 video data being coded with various random access picture types, VVCv1 tools set is enabled and no VVCv2 tools are enabled, Level 5.1, High Tier.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 12-bit 4:4:4 content.

#### Extended Precision Processing (EPP)

##### Test bitstream 12b444epp\_A\_Sharp

**Specification**: The bitstream is 12-bit 4:4:4 video data being coded with various random access picture types and EPP enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with EPP enabled.

#### Extended RRC (ERRC)

##### Test bitstream 12b444errc\_A\_Qualcomm

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded with random access picture types, testing of the ERRC functionality, PRRC is enabled, Level 4.1.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ERRC enabled.

##### Test bitstream 12b444errc\_B\_Qualcomm

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded with random access picture types, testing of the ERRC functionality, PRRC is disabled, Level 4.1.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ERRC enabled.

##### Test bitstream 12b444errc\_C\_Qualcomm

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded with random access picture types, testing of the ERRC functionality, PRRC is enabled, Level 5.1.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ERRC enabled.

#### Persistent RRC (PRRC)

##### Test bitstream 12b444prrc\_A\_Qualcomm

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded with random access picture types, testing of the PRRC functionality, ERRC is enabled, Level 6.2.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with PRRC enabled.

#### Extended TSRC (ETSRC)

##### Test bitstream 12b444etsrc\_A\_Kwai

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded with various random access picture types and ETSRC enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

#### Reversed Last Significant Coefficient Position (RLSCP)

##### Test bitstream 12b444rlscp\_A\_OPPO

**Specification**: The bitstream is 12-bit 4:4:4 video data being coded with various random access picture types and RLSCP enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with RLSCP enabled.

#### Wavefront Parallel Process (WPP)

##### Test bitstream 12b444wpp\_A\_OPPO

**Specification**: The bitstream is 12-bit 4:4:4 video data being coded with various random access picture types and WPP enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with WPP enabled.

### Test bitstreams – Main 12 4:4:4 Intra profile

#### VVCv1 tools set

##### Test bitstream 12b444Ivvc1\_A\_Alibaba

**Specification**: The bitstream is 12-bit 4:4:4, in all intra mode, VVCv1 tools set is enabled and no VVCv2 tools are enabled.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 12-bit 4:4:4 content.

#### Extended Precision Processing (EPP)

##### Test bitstream 12b444Iepp\_A\_Sharp

**Specification**: The bitstream is 12-bit 4:4:4, in all intra mode and EPP enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with EPP enabled.

#### Extended RRC (ERRC)

##### Test bitstream 12b444Ierrc\_A\_Qualcomm

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded in all intra configuration, testing of the ERRC functionality, PRRC is enabled, Level 6.2.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ERRC enabled.

##### Test bitstream 12b444Ierrc\_B\_Qualcomm

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded in all intra configuration, testing of the ERRC functionality, PRRC is disabled, Level 6.2.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ERRC enabled.

#### Persistent RRC (PRRC)

##### Test bitstream 12b444Iprrc\_A\_Qualcomm

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded in all intra configuration, testing of the PRRC functionality, ERRC is enabled, Level 6.2.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with PRRC enabled.

#### Extended TSRC (ETSRC)

##### Test bitstream 12b444Ietsrc\_A\_Kwai

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded in all intra configuration and ETSRC enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

#### Reversed Last Significant Coefficient Position (RLSCP)

##### Test bitstream 12b444Irlscp\_A\_OPPO

**Specification**: The bitstream is 12-bit 4:4:4, in all intra mode and RLSCP enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with RLSCP enabled.

#### Wavefront Parallel Process (WPP)

##### Test bitstream 12b444Iwpp\_A\_OPPO

**Specification**: The bitstream is 12-bit 4:4:4, in all intra mode and WPP enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with WPP enabled.

### Test bitstreams – Main 12 4:4:4 Still Picture profile

#### VVCv1 tools set

##### Test bitstream 12b444SPvvc1\_A\_Alibaba

**Specification**: The bitstream contains a single picture in 12-bit 4:4:4 chroma format, VVCv1 tools set is enabled and no VVCv2 tools are enabled.

**Functional stage**: Still picture.

**Purpose**: Check that the decoder can properly decode bitstreams conforming to the still picture profiles.

#### Extended Precision Processing (EPP)

##### Test bitstream 12b444SPepp\_A\_Sharp

**Specification**: The bitstream contains a single picture in 12-bit 4:4:4 chroma format and EPP enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with EPP enabled.

#### Extended RRC (ERRC)

##### Test bitstream 12b444SPerrc\_A\_Qualcomm

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded in still image profile configuration, testing of the ERRC functionality, PRRC is enabled, Level 5.1.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ERRC enabled.

#### Persistent RRC (PRRC)

##### Test bitstream 12b444SPprrc\_A\_Qualcomm

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded in still image profile configuration, testing of the PRRC functionality, ERRC is enabled, Level 5.1.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with PRRC enabled.

#### Extended TSRC (ETSRC)

##### Test bitstream 12b444SPetsrc\_A\_Kwai

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded in still image profile configuration, ETSRC is enabled, and its Rice is set to 1.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

##### Test bitstream 12b444SPetsrc\_B\_Kwai

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded in still image profile configuration, ETSRC is enabled, and its Rice is set to 2.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

##### Test bitstream 12b444SPetsrc\_C\_Kwai

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded in still image profile configuration, ETSRC is enabled, and its Rice is set to 3.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

##### Test bitstream 12b444SPetsrc\_D\_Kwai

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded in still image profile configuration, ETSRC is enabled, and its Rice is set to 4.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

##### Test bitstream 12b444SPetsrc\_E\_Kwai

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded in still image profile configuration, ETSRC is enabled and its Rice is set to 5.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

##### Test bitstream 12b444SPetsrc\_F\_Kwai

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded in still image profile configuration, ETSRC is enabled and its Rice is set to 6.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

##### Test bitstream 12b444SPetsrc\_G\_Kwai

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded in still image profile configuration, ETSRC is enabled and its Rice is set to 7.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

##### Test bitstream 12b444SPetsrc\_H\_Kwai

**Specification**: 12 bits video data with 4:4:4 chroma format is being coded in still image profile configuration, ETSRC is enabled and its Rice is set to 8.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

#### Reversed Last Significant Coefficient Position (RLSCP)

##### Test bitstream 12b444SPrlscp\_A\_OPPO

**Specification**: The bitstream contains a single picture in 12-bit 4:4:4 chroma format and RLSCP enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with RLSCP enabled.

#### Wavefront Parallel Process (WPP)

##### Test bitstream 12b444SPwpp\_A\_OPPO

**Specification**: The bitstream contains a single picture in 12-bit 4:4:4 chroma format and WPP enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with WPP enabled.

### Test bitstreams – Main 16 4:4:4 profile

#### VVCv1 tools set

##### Test bitstream 16b444vvc1\_A\_Alibaba

**Specification**: The bitstream is 16-bit 4:4:4 video data being coded with various random access picture types, VVCv1 tools set is enabled and no VVCv2 tools are enabled.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 16-bit 4:4:4 content.

#### Extended Precision Processing (EPP)

##### Test bitstream 16b444epp\_A\_Sharp

**Specification**: 16 bits video data with 4:4:4 chroma format is being coded with various random access picture types and EPP enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with EPP enabled.

#### Extended RRC (ERRC)

##### Test bitstream 16b444errc\_A\_Qualcomm

**Specification**: 16 bits RGB video data with is being coded with random access picture types, testing of the ERRC functionality, PRRC is enabled, Level 6.2.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ERRC enabled.

##### Test bitstream 16b444errc\_B\_Qualcomm

**Specification**: 16 bits RGB video data with is being coded with random access picture types, testing of the ERRC functionality, PRRC is disabled, Level 6.2.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ERRC enabled.

##### Test bitstream 16b444errc\_C\_Qualcomm

**Specification**: 16 bits RGB video data with is being coded with random access picture types, testing of the ERRC functionality, PRRC is enabled, Level 6.2.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ERRC enabled.

#### Persistent RRC (PRRC)

##### Test bitstream 16b444prrc\_A\_Qualcomm

**Specification**: 16 bits RGB video data with is being coded with random access picture types, testing of the PRRC functionality, ERRC is enabled, Level 6.2.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with PRRC enabled.

#### Extended TSRC (ETSRC)

##### Test bitstream 16b444etsrc\_A\_Kwai

**Specification**: 16 bits RGB video data is being coded with various random access picture types and ETSRC enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

#### Reversed Last Significant Coefficient Position (RLSCP)

##### Test bitstream 16b444rlscp\_A\_OPPO

**Specification**: 16 bits video data with 4:4:4 chroma format is being coded with various random access picture types and RLSCP enabled.

**Functional stage**: Reconstruction process

**Purpose**: Check that the decoder can properly decode slices with RLSCP enabled.

#### Wavefront Parallel Process (WPP)

##### Test bitstream 16b444wpp\_A\_OPPO

**Specification**: 16 bits video data with 4:4:4 chroma format is being coded with various random access picture types and WPP enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with WPP enabled.

#### Chroma format and bit depth

##### Test bitstream 10b444P16\_A\_Sony

**Specification**: A random access sequence of 10-bit 4:4:4 data encoded in the Main 16 4:4:4 profile, VVCv1 tools set is enabled and no VVCv2 tools are enabled, Level 2.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 10-bit 4:4:4 content.

##### Test bitstream 10b444P16\_B\_Sony

**Specification**: A random access sequence of 10-bit 4:4:4 data encoded in the Main 16 4:4:4 profile, VVCv1 tools set is enabled and no VVCv2 tools are enabled, Level 4.1, Main Tier.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 10-bit 4:4:4 content.

##### Test bitstream 10b444P16\_C\_Sony

**Specification**: A random access sequence of 10-bit 4:4:4 data encoded in the Main 16 4:4:4 profile, VVCv1 tools set is enabled and no VVCv2 tools are enabled, Level 5.1, Main Tier.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 10-bit 4:4:4 content.

##### Test bitstream 10b444P16\_D\_Sony

**Specification**: A random access sequence of 10-bit 4:4:4 data encoded in the Main 16 4:4:4 profile, VVCv1 tools set is enabled and no VVCv2 tools are enabled, Level 4.1, High Tier.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 10-bit 4:4:4 content.

##### Test bitstream 10b444P16\_E\_Sony

**Specification**: A random access sequence of 10-bit 4:4:4 data encoded in the Main 16 4:4:4 profile, VVCv1 tools set is enabled and no VVCv2 tools are enabled, Level 5.1, High Tier.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 10-bit 4:4:4 content.

##### Test bitstream 12b400P16\_A\_Sony

**Specification**: A random access sequence of 12-bit 4:0:0 data encoded in the Main 16 4:4:4 profile, VVCv1 tools set is enabled and no VVCv2 tools are enabled, Level 2.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 12-bit 4:0:0 content.

##### Test bitstream 12b400P16\_B\_Sony

**Specification**: A random access sequence of 12-bit 4:0:0 data encoded in the Main 16 4:4:4 profile, VVCv1 tools set is enabled and no VVCv2 tools are enabled, Level 4.1, Main Tier.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 12-bit 4:0:0 content.

##### Test bitstream 12b400P16\_C\_Sony

**Specification**: A random access sequence of 12-bit 4:0:0 data encoded in the Main 16 4:4:4 profile, VVCv1 tools set is enabled and no VVCv2 tools are enabled, Level 5.1, Main Tier.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 12-bit 4:0:0 content.

##### Test bitstream 12b400P16\_D\_Sony

**Specification**: A random access sequence of 12-bit 4:0:0 data encoded in the Main 16 4:4:4 profile, VVCv1 tools set is enabled and no VVCv2 tools are enabled, Level 4.1, High Tier.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 12-bit 4:0:0 content.

##### Test bitstream 12b400P16\_E\_Sony

**Specification**: A random access sequence of 12-bit 4:0:0 data encoded in the Main 16 4:4:4 profile, VVCv1 tools set is enabled and no VVCv2 tools are enabled, Level 5.1, High Tier.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 12-bit 4:0:0 content.

### Test bitstreams – Main 16 4:4:4 Intra profile

#### VVCv1 tools set

##### Test bitstream 16b444Ivvc1\_A\_Alibaba

**Specification**: The bitstream is 16-bit 4:4:4, in all intra mode, VVCv1 tools set is enabled and no VVCv2 tools are enabled.

**Functional stage**: Decoder.

**Purpose**: Check that the decoder can properly decode 16-bit 4:4:4 content.

#### Extended Precision Processing (EPP)

##### Test bitstream 16b444Iepp\_A\_Sharp

**Specification**: The bitstream is 16-bit 4:4:4, in all intra mode and EPP enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with EPP enabled.

#### Extended RRC (ERRC)

##### Test bitstream 16b444Ierrc\_A\_Qualcomm

**Specification**: 16 bits RGB video data with is being coded with intra picture types, testing of the ERRC functionality, PRRC is enabled, Level 6.2.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ERRC enabled.

#### Persistent RRC (PRRC)

##### Test bitstream 16b444Iprrc\_A\_Qualcomm

**Specification**: 16 bits RGB video data with is being coded with intra picture types testing of the PRRC functionality, ERRC is enabled, Level 6.2.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with PRRC enabled.

#### Extended TSRC (ETSRC)

##### Test bitstream 16b444Ietsrc\_A\_Kwai

**Specification**: 16 bits RGB video data is being coded in all intra configuration and ETSRC enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

#### Reversed Last Significant Coefficient Position (RLSCP)

##### Test bitstream 16b444Irlscp\_A\_OPPO

**Specification**: The bitstream is 16-bit 4:4:4, in all intra mode and RLSCP enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with RLSCP enabled.

#### Wavefront Parallel Process (WPP)

##### Test bitstream 16b444Iwpp\_A\_OPPO

**Specification**: The bitstream is 16-bit 4:4:4, in all intra mode and WPP enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with WPP enabled.

### Test bitstreams – Main 16 4:4:4 Still Picture profile

#### VVCv1 tools set

##### Test bitstream 16b444SPvvc1\_A\_Alibaba

**Specification**: The bitstream contains a single picture in 16-bit 4:4:4 chroma format, VVCv1 tools set is enabled and no VVCv2 tools are enabled.

**Functional stage**: Still picture.

**Purpose**: Check that the decoder can properly decode bitstreams conforming to the still picture profiles.

#### Extended Precision Processing (EPP)

##### Test bitstream 16b444SPepp\_A\_Sharp

**Specification**: The bitstream contains a single picture in 16-bit 4:4:4 chroma format and EPP enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with EPP enabled.

#### Extended RRC (ERRC)

##### Test bitstream 16b444SPerrc\_A\_Qualcomm

**Specification**: 16 bits RGB video data with is being coded with still picture profile configuration, testing of the ERRC functionality, PRRC is enabled, Level 6.2.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ERRC enabled.

#### Persistent RRC (PRRC)

##### Test bitstream 16b444SPprrc\_A\_Qualcomm

**Specification**: 16 bits RGB video data with is being coded with still picture profile configuration, testing of the PRRC functionality, ERRC is enabled, Level 6.2.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with PRRC enabled.

#### Extended TSRC (ETSRC)

##### Test bitstream 16b444SPetsrc\_A\_Kwai

**Specification**: 16 bits RGB video data is being coded in still image profile configuration, ETSRC is enabled, and its Rice is set to 1.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

##### Test bitstream 16b444SPetsrc\_B\_Kwai

**Specification**: 16 bits RGB video data is being coded in still image profile configuration, ETSRC is enabled, and its Rice is set to 2.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

##### Test bitstream 16b444SPetsrc\_C\_Kwai

**Specification**: 16 bits RGB video data is being coded in still image profile configuration, ETSRC is enabled, and its Rice is set to 3.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

##### Test bitstream 16b444SPetsrc\_D\_Kwai

**Specification**: 16 bits RGB video data is being coded in still image profile configuration, ETSRC is enabled, and its Rice is set to 4.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

##### Test bitstream 16b444SPetsrc\_E\_Kwai

**Specification**: 16 bits RGB video data is being coded in still image profile configuration, ETSRC is enabled, and its Rice is set to 5.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

##### Test bitstream 16b444SPetsrc\_F\_Kwai

**Specification**: 16 bits RGB video data is being coded in still image profile configuration, ETSRC is enabled, and its Rice is set to 6.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

##### Test bitstream 16b444SPetsrc\_G\_Kwai

**Specification**: 16 bits RGB video data is being coded in still image profile configuration, ETSRC is enabled, and its Rice is set to 7.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

##### Test bitstream 16b444SPetsrc\_H\_Kwai

**Specification**: 16 bits RGB video data is being coded in still image profile configuration, ETSRC is enabled, and its Rice is set to 8.

**Functional stage**: Reconstruction process

**Purpose**: Check that the decoder can properly decode slices with ETSRC enabled.

#### Reversed Last Significant Coefficient Position (RLSCP)

##### Test bitstream 16b444SPrlscp\_A\_OPPO

**Specification**: The bitstream contains a single picture in 16-bit 4:4:4 chroma format and RLSCP enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with RLSCP enabled.

#### Wavefront Parallel Process (WPP)

##### Test bitstream 16b444SPwpp\_A\_OPPO

**Specification**: The bitstream contains a single picture in 16-bit 4:4:4 chroma format and WPP enabled.

**Functional stage**: Reconstruction process.

**Purpose**: Check that the decoder can properly decode slices with WPP enabled.

*6.7*

In clause 6.7 (Conformance test suites for Rec. ITU-T H.266 | ISO/IEC 23090-3), add subclauses as follows:

### Bitstreams for Main 12 profile

Table 11: Bitstreams for Main 10 profile

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Profile** | **Category** | **Tool**  **description** | **Feature**  **Name** | **Bitstream features** |
| Main 12 | VVC1 tools | VVC1 tools | 12b420vvc1 | 12-bit 4:2:0, VVCv1 tools set |

### Bitstreams for Main 12 Intra profile

Table 12: Bitstreams for Main 12 Intra profile

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Profile** | **Category** | **Tool**  **description** | **Feature**  **Name** | **Bitstream features** |
| Main 12 Intra | VVC1 tools | VVC1 tools | 12b420Ivvc1 | 12-bit 4:2:0, VVCv1 tools set |

### Bitstreams for Main 12 Still Picture profile

Table 13: Bitstreams for Main 12 Still Picture profile

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Profile** | **Category** | **Tool**  **description** | **Feature**  **Name** | **Bitstream features** |
| Main 12 Still Picture | VVC1 tools | VVC1 tools | 12b420SPvvc1 | 12-bit 4:2:0, VVCv1 tools set |

### Bitstreams for Main 12 4:4:4 profile

Table 14: Bitstreams for Main 12 4:4:4 profile

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Profile** | **Category** | **Tool**  **description** | **Feature**  **Name** | **Bitstream features** |
| Main 12 4:4:4 | VVC1 tools | VVC1 tools | 12b444vvc1 | 12-bit 4:4:4, VVCv1 tools set |
| ERRC | ERRC | 12b444errc | 12-bit 4:4:4, VVCv2 set, ERRC test |
| PRRC | PRRC | 12b444prrc | 12-bit 4:4:4, VVCv2 set, PRRC test |
| ETSRC | ETSRC | 12b444etsrc | 12-bit 4:4:4, VVCv2 set, ETSRC test |
| EPP | EPP | 12b444epp | 12-bit 4:4:4, VVCv2 set, EPP test |
| RLSCP | RLSCP | 12b444rlscp | 12-bit 4:4:4, VVCv2 set, RLSCP test |
| WPP | WPP | 12b444wpp | 12-bit 4:4:4, VVCv2 set, WPP test |
| Chroma format and bit depth | 10b 4:4:4 | 10b444P12 | 10-bit 4:4:4, VVCv1 tools set, RA |
| 12b 4:0:0 | 12b400P12 | 12-bit 4:0:0, VVCv2 tools set, RA |
| 12b 4:2:0 | 12b420P12 | 12-bit 4:2:0, VVCv2 tools set, RA |
| 12b 4:2:2 | 12b422P12 | 12-bit 4:2:2, VVCv2 tools set, RA |

### Bitstreams for Main 12 4:4:4 Intra profile

Table 15: Bitstreams for Main 12 4:4:4 Intra profile

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Profile** | **Category** | **Tool**  **description** | **Feature**  **Name** | **Bitstream features** |
| Main 12 4:4:4 Intra | VVC1 tools | VVC1 tools | 12b444Ivvc1 | 12-bit 4:4:4, VVCv1 tools set |
| ERRC | ERRC | 12b444Ierrc | 12-bit 4:4:4, VVCv2 set, ERRC test |
| PRRC | PRRC | 12b444Iprrc | 12-bit 4:4:4, VVCv2 set, PRRC test |
| ETSRC | ETSRC | 12b444Ietsrc | 12-bit 4:4:4, VVCv2 set, ETSRC test |
| EPP | EPP | 12b444Iepp | 12-bit 4:4:4, VVCv2 set, EPP test |
| RLSCP | RLSCP | 12b444Irlscp | 12-bit 4:4:4, VVCv2 set, RLSCP test |
| WPP | WPP | 12b444Iwpp | 12-bit 4:4:4, VVCv2 set, WPP test |

### Bitstreams for Main 12 4:4:4 Still Picture profile

Table 16: Bitstreams for Main 12 4:4:4 Still Picture profile

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Profile** | **Category** | **Tool**  **description** | **Feature**  **Name** | **Bitstream features** |
| Main 12 4:4:4 Still Picture | VVC1 tools | VVC1 tools | 12b444SPvvc1 | 12-bit 4:4:4, VVCv1 tools set |
| ERRC | ERRC | 12b444SPerrc | 12-bit 4:4:4, VVCv2 set, ERRC test |
| PRRC | PRRC | 12b444SPprrc | 12-bit 4:4:4, VVCv2 set, PRRC test |
| ETSRC | ETSRC | 12b444SPetsrc | 12-bit 4:4:4, VVCv2 set, ETSRC test |
| EPP | EPP | 12b444SPepp | 12-bit 4:4:4, VVCv2 set, EPP test |
| RLSCP | RLSCP | 12b444SPrlscp | 12-bit 4:4:4, VVCv2 set, RLSCP test |
| WPP | WPP | 12b444SPwpp | 12-bit 4:4:4, VVCv2 set, WPP test |

### Bitstreams for Main 16 4:4:4 profile

Table 17: Bitstreams for Main 16 4:4:4 profile

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Profile** | **Category** | **Tool**  **description** | **Feature**  **Name** | **Bitstream features** |
| Main 16 4:4:4 | VVC1 tools | VVC1 tools | 16b444vvc1 | 16-bit 4:4:4, VVCv1 tools set |
| ERRC | ERRC | 16b444errc | 16-bit 4:4:4, VVCv2 set, ERRC test |
| PRRC | PRRC | 16b444prrc | 16-bit 4:4:4, VVCv2 set, PRRC test |
| ETSRC | ETSRC | 16b444etsrc | 16-bit 4:4:4, VVCv2 set, ETSRC test |
| EPP | EPP | 16b444epp | 16-bit 4:4:4, VVCv2 set, EPP test |
| RLSCP | RLSCP | 16b444rlscp | 16-bit 4:4:4, VVCv2 set, RLSCP test |
| WPP | WPP | 16b444wpp | 16-bit 4:4:4, VVCv2 set, WPP test |
| Chroma format and bit depth | 10b 4:4:4 | 10b444P16 | 10-bit 4:4:4, VVCv1 tools set, RA |
| 12b 4:0:0 | 12b400P16 | 12-bit 4:0:0, VVCv2 tools set, RA |
| 12b 4:2:0 | 12b420P16 | 12-bit 4:2:0, VVCv2 tools set, RA |
| 12b 4:2:2 | 12b422P16 | 12-bit 4:2:2, VVCv2 tools set, RA |
| 12b 4:4:4 | 12b444P16 | 12-bit 4:4:4, VVCv2 tools set, RA |
| 16b 4:0:0 | 16b400P16 | 16-bit 4:0:0, VVCv2 tools set, RA |
| 16b 4:2:0 | 16b420P16 | 16-bit 4:2:0, VVCv2 tools set, RA |
| 16b 4:2:2 | 16b422P16 | 16-bit 4:2:2, VVCv2 tools set, RA |

### Bitstreams for Main 16 4:4:4 Intra profile

Table 18: Bitstreams for Main 16 4:4:4 Intra profile

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Profile** | **Category** | **Tool**  **description** | **Feature**  **Name** | **Bitstream features** |
| Main 16 4:4:4 Intra | VVC1 tools | VVC1 tools | 16b444Ivvc1 | 16-bit 4:4:4, VVCv1 tools set |
| ERRC | ERRC | 16b444Ierrc | 16-bit 4:4:4, VVCv2 set, ERRC test |
| PRRC | PRRC | 16b444Iprrc | 16-bit 4:4:4, VVCv2 set, PRRC test |
| ETSRC | ETSRC | 16b444Ietsrc | 16-bit 4:4:4, VVCv2 set, ETSRC test |
| EPP | EPP | 16b444Iepp | 16-bit 4:4:4, VVCv2 set, EPP test |
| RLSCP | RLSCP | 16b444Irlscp | 16-bit 4:4:4, VVCv2 set, RLSCP test |
| WPP | WPP | 16b444Iwpp | 16-bit 4:4:4, VVCv2 set, WPP test |

### Bitstreams for Main 16 4:4:4 Still Picture profile

Table 19: Bitstreams for Main 16 4:4:4 Still Picture profile

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Profile** | **Category** | **Tool**  **description** | **Feature**  **Name** | **Bitstream features** |
| Main 16 4:4:4 Still Picture | VVC1 tools | VVC1 tools | 16b444SPvvc1 | 16-bit 4:4:4, VVCv1 tools set |
| ERRC | ERRC | 16b444SPerrc | 16-bit 4:4:4, VVCv2 set, ERRC test |
| PRRC | PRRC | 16b444SPprrc | 16-bit 4:4:4, VVCv2 set, PRRC test |
| ETSRC | ETSRC | 16b444SPetsrc | 16-bit 4:4:4, VVCv2 set, ETSRC test |
| EPP | EPP | 16b444SPepp | 16-bit 4:4:4, VVCv2 set, EPP test |
| RLSCP | RLSCP | 16b444SPrlscp | 16-bit 4:4:4, VVCv2 set, RLSCP test |
| WPP | WPP | 16b444SPwpp | 16-bit 4:4:4, VVCv2 set, WPP test |