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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

Infrastructure of audiovisual services – Coding of moving video

Conformance specification for ITU-T H.264 advanced video coding

Recommendation ITU-T H.264.1

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For further details, please refer to the list of ITU-T Recommendations.

Recommendation ITU-T H.264.1

Conformance specification for ITU-T H.264 advanced video coding

Summary

Recommendation ITU-T H.264.1 | International Standard ISO/IEC 14496-4 specifies tests designed to verify whether bitstreams and decoders meet the normative requirements specified in Rec. ITU-T H.264 | ISO/IEC 14496-10:

- An encoder can claim conformance to Rec. ITU-T H.264 | ISO/IEC 14496-10 if the bitstreams that it generates are conforming bitstreams.
- A decoder can claim conformance to a specified profile and level of Rec. ITU-T H.264 if it can properly decode all bitstreams obeying constraints specified in Rec. ITU-T H.264 | ISO/IEC 14496-10.

The tests specified in this Recommendation provide methods for (non-exhaustive) testing of whether encoders and decoders meet these requirements.

This twin text with ISO/IEC has been jointly developed in the context of the ITU-T/ISO/IEC Joint Video Team (JVT) and has been submitted to ISO/IEC JTC 1/SC 29/WG 11 (MPEG) as ISO/IEC 14496-4:2002/Amendment 6 (2005 E), ISO/IEC 14496-4:2004/Amendment 9, ISO/IEC 14496-4:2004/Amendment 30, ISO/IEC 14496-4:2004/Amendment 31, ISO/IEC 14496-4:2004/Amendment 38, ISO/IEC 14496-4:2004/Amendment 41, ISO/IEC 14496-4:2004/Amendment 42, ISO/IEC 14496-4:2004/Amendment 43 and ISO/IEC 14496-4:2004/Amendment 45.

The first approved version of Recommendation ITU-T H.264.1 (03/2005) included the specification of bitstreams for the testing of decoders for conformance to the Baseline, Extended, Main, High, High 10, and High 4:2:2 profiles specified in Rec. ITU-T H.264 | ISO/IEC 14496-10.

Corrigendum 1 to Recommendation H.264.1 (09/2005), which was integrated into the first published edition of Rec. ITU-T H.264.1, provided improved synchronization with the technically-aligned twin text in ISO/IEC, removed some errors, and added tests for some required features that were not tested in the previous version.

The second edition of Recommendation ITU-T H.264.1 (06/2008) provided corrections relative to the previous version of Rec. ITU-T H.264.1 and added additional bitstreams for the testing of decoders for conformance to the High 4:4:4 Predictive, High 10 Intra, High 4:2:2 Intra, High 4:4:4 Intra, and CAVLC 4:4:4 Intra profiles specified in Rec. ITU-T H.264 | ISO/IEC 14496-10.

The third edition of Recommendation ITU-T H.264.1 (04/2010) adds additional bitstreams for the testing of decoders for conformance to the Constrained Baseline, Scalable Baseline, Scalable High, Scalable High Intra, Multiview High, and Stereo High profiles specified in Rec. ITU-T H.264 | ISO/IEC 14496-10. Some of these added bitstreams are also specified for the testing of decoders for conformance to the previously-existing profiles.

The fourth edition of Recommendation ITU-T H.264.1 (01/2012) corrects minor errors in the bitstreams and associated text specification.

The fifth edition of Recommendation ITU-T H.264.1 (10/2014) adds additional bitstreams for the testing of decoders for conformance to the Multiview Depth High and MFC (Multi-resolution Frame Compatible) High profiles specified in Rec. ITU-T H.264 | ISO/IEC 14496-10).

The sixth edition of Recommendation ITU-T H.264.1 (02/2016) adds additional bitstreams for the testing of decoders for conformance to the Enhanced Multiview Depth High and MFC (Multi-resolution Frame Compatible) Depth High profiles specified in Rec. ITU-T H.264 | ISO/IEC 14496-10).

The conformance bitstreams identified in Recommendation ITU-T H.264.1 are available as an electronic attachment to this Recommendation and can be downloaded from the ITU-T Test Signal Database at http://itu.int/net/ITU-T/sigdb/spevideo/Hseries-s.htm#H.264.1.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T H.264.1	2005-03-01	16	11.1002/1000/2209
1.1	ITU-T H.264.1 (2005) Cor. 1	2005-09-13	16	11.1002/1000/8573
2.0	ITU-T H.264.1	2008-06-13	16	11.1002/1000/9486
3.0	ITU-T H.264.1	2010-04-13	16	11.1002/1000/10636
4.0	ITU-T H.264.1	2012-01-13	16	11.1002/1000/11467
5.0	ITU-T H.264.1	2014-10-14	16	11.1002/1000/12294
6.0	ITU-T H.264.1 (V6)	2016-02-13	16	11.1002/1000/12643

* To access the Recommendation, type the URL http://handle.itu.int/ in the address field of your web browser, followed by the Recommendation's unique ID. For example, http://handle.itu.int/11.1002/1000/11830-en.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure, e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU had received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at http://www.itu.int/ITU-T/ipr/.

CONTENTS

Electronic attachment: Conformance bitstreams for ITU-T H.264.1 (02/2016).

Introduction

This introduction does not form an integral part of this Recommendation | International Standard.

This Recommendation | International Standard has been jointly developed by ITU-T Video Coding Experts Group (VCEG) and the ISO/IEC Moving Picture Experts Group (MPEG). It is published as technically-aligned twin text in both organizations (ITU-T and ISO/IEC).

This Recommendation | International Standard specifies a set of tests designed to indicate whether bitstreams and decoders meet the normative requirements specified in ITU-T H.264 | ISO/IEC 14496-10. An encoder can claim conformance to ITU-T H.264 | ISO/IEC 14496-10 if the bitstreams that it generates are conforming bitstreams.

Characteristics of coded bitstreams and decoders are specified for ITU-T H.264 | ISO/IEC 14496-10. The characteristics of a bitstream specify the subset of the standard that is exploited in the bitstream. Examples are the applied values or range of the picture size and bit rate parameters. Decoder characteristics specify the properties and capabilities of the applied decoding process. The capabilities of a decoder specify which bitstreams the decoder can decode by specifying the subset of ITU-T H.264 | ISO/IEC 14496-10 that may be exploited in the bitstreams that it will decode. A bitstream can be decoded by a conforming decoder if the characteristics of the bitstream are within the subset of the standard specified by the decoder capabilities.

Procedures are specified for testing conformance of bitstreams and decoders to the requirements specified in ITU-T H.264 | ISO/IEC 14496-10. Given the set of characteristics claimed, the requirements that shall be met are fully determined by ITU-T H.264 | ISO/IEC 14496-10. This Recommendation | International Standard summarizes the requirements, cross references them to characteristics, and specifies how conformance with them can be tested. Guidelines are given on constructing tests to verify bitstream and decoder conformance. This Recommendation | International Standard gives guidelines on how to construct bitstream test suites to check or verify decoder conformance. In addition, the test bitstreams implemented according to those guidelines are provided as an electronic attachment to this Recommendation | International Standard. When the decoder under test does not satisfy the requirements of the tests, the decoder is not conforming to ITU-T H.264 | ISO/IEC 14496-10.

These conformance tests make use of test data (bitstream test suites) provided as an electronic attachment to this Recommendation | International Standard, and the reference software decoder specified in ITU-T H.264.2 | ISO/IEC 14496-5 with source code available in electronic format.

The bitstream files accompanying this Recommendation | International Standard, which require a substantial amount of disk space, can be purchased in physical medium (DVD) from the ITU-T bookshop, or can be directly downloaded from the ITU-T Test Signal Database at http://itu.int/net/ITU-T/sigdb/spevideo/Hseries-s.htm#H.264.1.

Recommendation ITU-T H.264.1

Conformance specification for ITU-T H.264 advanced video coding

1 Scope

This Recommendation | International Standard[1] specifies a set of tests and procedures designed to indicate whether encoders or decoders meet the normative requirements specified in ITU-T H.264 | ISO/IEC 14496-10.

NOTE – This edition includes the text approved 03/2005, its Corrigendum 1 approved 09/2005, conformance tests for professional profiles (approved 06/2008), conformance tests for the Constrained Baseline, Scalable and Multiview profiles (approved 04/2010), conformance tests for the Multiview Depth High and Multi-resolution Frame Compatible High profiles (approved 10/2014), and conformance tests for the Enhanced Multiview Depth High and MFC (Multi-resolution Frame Compatible) Depth High profiles (approved 02/2016).

2 Normative references

2.1 General

The following Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. At the time of publication, the editions indicated were valid. All Recommendations and Standards are subject to revision, and parties to agreements based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent edition of the Recommendations and Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau of the ITU maintains a list of currently valid ITU-T Recommendations.

2.2 Identical Recommendations | International Standards

– None.

2.3 Paired Recommendations | International Standards equivalent in technical content

– ITU-T H.264 (in force), *Advanced video coding for generic audiovisual services*.

ISO/IEC 14496-10: in force, *Information technology – Coding of audio-visual objects – Part 10: Advanced Video Coding*.

– ITU-T H.264.2 (in force), *Reference software for H.264 advanced video coding*.

ISO/IEC 14496-5: in force, *Information technology – Coding of audio-visual objects – Part 5: Reference software*.

2.4 Additional references

– None.

3 Definitions

For the purposes of this Recommendation | International Standard, the terms, definitions, abbreviations and symbols specified in ITU-T H.264 | ISO/IEC 14496-10 (particularly in clauses 3, G.3, and H.3) apply. The following terms are further clarified for purposes herein as follows.

3.1 bitstream: An ITU-T H.264 | ISO/IEC 14496-10 video bitstream. A bitstream may contain IDR, I, P, B, SI, SP, EI, EP, and EB slices.

3.2 decoder: An ITU-T H.264 | ISO/IEC 14496-10 video decoder, i.e., an embodiment of the decoding process specified by ITU-T H.264 | ISO/IEC 14496-10. The decoder does not include the display process, which is outside the scope of this Recommendation | International Standard.

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[1] This Recommendation | International Standard includes an electronic attachment containing the conformance bitstreams identified within the text. The bitstreams can also be downloaded from the ITU-T Test Signal Database.

3.3 **reference software decoder**: The software decoder contained in ITU-T H.264.2 | ISO/IEC 14496-5.

3.4 **TemporalIdMax**: Maximum value of temporal_id in the NAL unit header extension for SVC of the coded slice NAL units or prefix NAL units of an ITU-T H.264 | ISO/IEC 14496-10 video bitstream.

4 Abbreviations and acronyms

For the purposes of this Recommendation | International Standard, relevant abbreviations and acronyms are specified in clause 4 of ITU-T H.264 | ISO/IEC 14496-10.

5 Conventions

For the purposes of this Recommendation | International Standard, relevant conventions are specified in clause 5 in ITU-T H.264 | ISO/IEC 14496-10.

6 Conformance for ITU-T H.264 | ISO/IEC 14496-10

6.1 Introduction

The following clauses specify the normative tests for verifying conformance of video bitstreams as well as decoders. Those normative tests make use of test data (bitstream test suites) provided as an electronic annex to this Recommendation | International Standard and the reference software decoder with source code included in electronic format.

6.2 Bitstream conformance

The bitstream conformance of ITU-T H.264 | ISO/IEC 14496-10 is specified by clause C.3, G.12, or H.12 of ITU-T H.264 | ISO/IEC 14496-10.

6.3 Decoder conformance

The decoder conformance of ITU-T H.264 | ISO/IEC 14496-10 is specified by clause C.4, G.12, or H.12 of ITU-T H.264 | ISO/IEC 14496-10.

6.4 Procedure to test bitstreams

A bitstream that claims conformance with ITU-T H.264 | ISO/IEC 14496-10 shall pass the following normative test:

The bitstream shall be decoded by processing it with the reference software decoder. When processed by the reference software decoder, the bitstream shall not cause any error or non-conformance messages to be reported by the reference software decoder. This test should not be applied to bitstreams that are known to contain errors introduced by transmission, as such errors are highly likely to result in bitstreams that lack conformance to ITU-T H.264 | ISO/IEC 14496-10.

Successfully passing the reference software decoder test provides only a strong presumption that the bitstream under test is conforming to the video layer, i.e., that it does indeed meet all the requirements for the video layer (except Annexes C, D and E and clauses G.12, H.12, I.12 and J.12) specified in ITU-T H.264 | ISO/IEC 14496-10 that are tested by the reference software decoder.

Additional tests may be necessary to more thoroughly check that the bitstream properly meets all the requirements specified in ITU-T H.264 | ISO/IEC 14496-10 including the hypothetical reference decoder (HRD) conformance (based on Annexes C, D and E and clauses G.12, H.12, I.12 and J.12). These complementary tests may be performed using other video bitstream verifiers that perform more complete tests than those implemented by the reference software decoder.

ITU-T H.264 | ISO/IEC 14496-10 contains several informative recommendations that are not an integral part of that Recommendation | International Standard. When testing a bitstream for conformance, it may also be useful to test whether or not the bitstream follows those recommendations.

To check correctness of a bitstream, it is necessary to parse the entire bitstream and to extract all the syntax elements and other values derived from those syntactic elements and used by the decoding process specified in ITU-T H.264 | ISO/IEC 14496-10.

A verifier may not necessarily perform all stages of the decoding process specified in ITU-T H.264 | ISO/IEC 14496-10 in order to verify bitstream correctness. Many tests can be performed on syntax elements in a state prior to their use in some processing stages.

6.5 Procedure to test decoder conformance

6.5.1 Conformance bitstreams

A bitstream has values of profile_idc, level_idc, and constraint_setX_flag (where X is a number in the range of 0 to 6, inclusive) corresponding to a set of specified constraints on a bitstream for which a decoder conforming to a specified profile and level is required in Annex A, clause G.10, clause H.10, clause I.10, or clause J.10 of ITU-T H.264 | ISO/IEC 14496-10 to properly perform the decoding process.

6.5.2 Contents of the bitstream file

The conformance bitstreams are included in this Recommendation | International Standard as an electronic attachment. The following information is included in a single zipped file for each such bitstream.

- bitstream;
- decoded pictures or hashes of decoded pictures (may not be present);
- short description of the bitstream;
- trace file (the bitstream in ASCII format).

In cases where the decoded pictures or hashes of decoded pictures are not available, the reference software decoder shall be used to generate the necessary reference decoded pictures from the bitstream.

6.5.3 Requirements on output of the decoding process and timing

Two classes of decoder conformance are specified:

- output order conformance; and
- output timing conformance.

The output of the decoding process is specified in clauses 8, G.8, G.12, H.8, H.12, I.8, I.12, J.8, J.12 and Annex C of ITU-T H.264 | ISO/IEC 14496-10.

For output order conformance, it is a requirement that all of the decoded pictures specified for output in Annex C, clause G.12, clause H.12, clause I.12, or clause J.12 of ITU-T H.264 | ISO/IEC 14496-10 shall be output by a conforming decoder in the specified order and that the values of the decoded samples in all of the pictures that are output shall be (exactly equal to) the values specified in clause 8, clause G.8, clause H.8, clause I.8, or clause J.12 of ITU-T H.264 | ISO/IEC 14496-10.

For output timing conformance, it is a requirement that a conforming decoder shall also output the decoded samples at the rates and times specified in Annex C, clause G.12, clause H.12, clause I.12, or clause J.12 of ITU-T H.264 | ISO/IEC 14496-10.

The display process, which ordinarily follows the output of the decoding process, is outside the scope of this Recommendation | International Standard.

6.5.4 Recommendations (informative)

This clause does not form an integral part of this Recommendation | International Standard.

In addition to the requirements, it is desirable that conforming decoders implement various informative recommendations specified in ITU-T H.264 | ISO/IEC 14496-10 that are not an integral part of that Recommendation | International Standard. This clause lists some of these recommendations.

It is recommended that a conforming decoder be able to resume the decoding process as soon as possible after the loss or corruption of part of a bitstream. In most cases it is possible to resume decoding at the next start code or slice header. It is recommended that a conforming decoder be able to perform concealment for the macroblocks or video packets for which all the coded data has not been received.

6.5.5 Static tests for output order conformance

Static tests of a video decoder require testing of the decoded samples. This clause will explain how this test can be accomplished when the decoded samples at the output of the decoding process are available. It may not be possible to perform this type of test with a production decoder (due to the lack of an appropriate accessible interface in the design at which to perform the test). In that case this test should be performed by the manufacturer during the design and

development phase. Static tests are used for testing the decoding process. The test will check that the values of the samples decoded by the decoder under test shall be identical to the values of the samples decoded by the reference decoder. When a hash of the values of the samples of the decoded pictures is attached to the bitstream file, a corresponding hash operation performed on the values of the samples of the decoded pictures produced by the decoder under test shall produce the same results.

6.5.6 Dynamic tests for output timing conformance

Dynamic tests are applied to check that all the decoded samples are output and that the timing of the output of the decoder's decoded samples conforms to the specification of clauses 8, G.8, G.12, H.8, H.12, I.8, I.12, J.12 and Annex C of ITU-T H.264 | ISO/IEC 14496-10, and to verify that the HRD models (as specified by the CPB and DPB specification in Annex C, clause G.12, clause H.12, clause I.12, or clause J.12 of ITU-T H.264 | ISO/IEC 14496-10) are not violated when the bits are delivered at the proper rate.

The dynamic test is often easier to perform on a complete decoder system, which may include a systems decoder, a video decoder and a display process. It may be possible to record the output of the display process and to check that display order and timing of fields or frames are correct at the output of the display process. However, since the display process is not within the normative scope of ITU-T H.264 | ISO/IEC 14496-10, there may be cases where the output of the display process differs in timing or value even though the video decoder is conforming. In this case, the output of the video decoder itself (before the display process) would need to be captured in order to perform the dynamic tests on the video decoder. In particular, the field or frame order and timing shall be correct.

If buffering period SEI and picture timing SEI are included in the test bitstream, HRD conformance shall be verified using the values of initial_cpb_removal_delay, initial_cpb_removal_delay_offset, cpb_removal_delay and dpb_removal_delay that are included in the bitstream.

If buffering period SEI and picture timing SEI are not included in the bitstream, the following inferences shall be made to generate the missing parameters:

- fixed_frame_rate_flag shall be inferred to be 1.
- low_delay_hrd_flag shall be inferred to be 0.
- cbr_flag shall be inferred to be 0.
- The frame rate of the bitstream shall be inferred to be the frame rate value specified in the corresponding table of clause 6.7, where the bitstream is listed. If this is missing, then a frame rate of either 25 or 30000 ÷ 1001 can be inferred.
- time_scale shall be set to 90,000 and the value of num_units_in_tick shall be computed based on field rate (twice the frame rate).
- The bit rate of the bitstream shall be inferred to be the maximum value for the level specified in Table A-1 in ITU-T H.264 | ISO/IEC 14496-10.
- CPB and DPB sizes shall be inferred to be the maximum value for the level specified in Table A-1 in ITU-T H.264 | ISO/IEC 14496-10.

With the above inferences, the HRD shall be operated as follows.

- The CPB is filled starting at time t = 0, until it is full, before removal of the first access unit. This means that the initial_cpb_removal_delay shall be inferred to be equal to the total CPB buffer size divided by the bit rate divided by 90000 (rounded downwards) and initial_cpb_removal_delay_offset shall be inferred to be equal to zero.
- The first access unit is removed at time t = initial_cpb_removal_delay ÷ 90000 and subsequent access units are removed at intervals based on the frame distance, i.e., 2 * (90000 ÷ num_units_in_tick) or the field distance, i.e., (90000 / num_units_in_tick), depending on whether the access unit is coded as a frame picture or field picture.
- Using these inferences, the CPB will not overflow or underflow and the DPB will not overflow.

6.5.7 Decoder conformance test of a particular profile-and-level

In order for a decoder of a particular profile-and-level to claim output order conformance to ITU-T H.264 | ISO/IEC 14496-10 as specified by this Recommendation | International Standard, the decoder shall successfully pass the static test specified in clause 6.5.5 with all the bitstreams of the normative test suite specified for testing decoders of this particular profile-and-level.

In order for a decoder of a particular profile and level to claim output timing conformance to ITU-T H.264 | ISO/IEC 14496-10 as specified by this Recommendation | International Standard, the decoder shall successfully pass both the static test specified in clause 6.5.5 and the dynamic test specified in clause 6.5.6 with all the

bitstreams of the normative test suite specified for testing decoders of this particular profile-and-level. Tables 1 through 5 specify the normative test suites for each profile-and-level combination. The test suite for a particular profile-and level combination is the list of bitstreams that are marked with an 'X' in the column corresponding to that profile-and-level combination.

'X' indicates that the bitstream is designed to test both the dynamic and static conformance of the decoder.

The bitstream column specifies the bitstream used for each test.

A decoder that conforms to the Constrained Baseline profile at a specific level shall be capable of decoding the specified bitstreams in Tables 1 and 4.

A decoder that conforms to the Baseline, Extended, or Main profile at a specific level shall be capable of decoding the specified bitstreams in Table 1. A decoder that conforms to the Baseline, Extended, or Main profile shall also be capable of decoding all bitstreams that are required to be decoded by a Constrained Baseline profile decoder of the same level. In addition to the specified bitstreams in Table 1, a decoder that conforms to the Baseline, Extended, or Main profile shall be capable of decoding the bitstreams in Table 4 that correspond to this requirement.

A decoder that conforms to the High, High 10, or High 4:2:2 profile at a specific level shall be capable of decoding the specified bitstreams in Table 2. A decoder that conforms to the High, High 10, or High 4:2:2 profile shall also be capable of decoding all bitstreams that are required to be decoded by a Constrained Baseline or Main profile decoder of the same level. A decoder that conforms to the High 10 or High 4:2:2 profile shall also be capable of decoding all bitstreams that are required to be decoded by a High 10 Intra profile decoder of the same level. A decoder that conforms to the High 4:2:2 profile shall also be capable of decoding all bitstreams that are required to be decoded by a High 4:2:2 Intra profile decoder of the same level. In addition to the specified bitstreams in Table 2, a decoder that conforms to the High, High 10, or High 4:2:2 profile shall be capable of decoding the bitstreams in Tables 1, 3 and 4 that correspond to these requirements.

A decoder that conforms to the High 10 Intra profile at a specific level shall be capable of decoding the specified bitstreams in Tables 3 and 4.

A decoder that conforms to the High 4:2:2 Intra, High 4:4:4 Intra, High 4:4:4 Predictive, or CAVLC 4:4:4 Intra profile at a specific level shall be capable of decoding the specified bitstreams in Table 3. A decoder that conforms to the High 4:2:2 Intra, High 4:4:4 Intra, or High 4:4:4 Predictive profile shall also be capable of decoding all bitstreams that are required to be decoded by a High 10 Intra profile decoder of the same level. A decoder that conforms to the High 4:4:4 Predictive profile shall also be capable of decoding all bitstreams that are required to be decoded by a Constrained Baseline, Main, or High profile decoder of the same level. In addition to the specified bitstreams in Table 3, a decoder that conforms to the High 4:2:2 Intra, High 4:4:4 Intra, or High 4:4:4 Predictive profile shall be capable of decoding the bitstreams in Tables 1, 2, and 4 that correspond to these requirements.

A decoder that conforms to the Scalable Baseline profile at a specific level shall be capable of decoding the specified bitstreams in Table 4. A decoder that conforms to the Scalable Baseline profile shall also be capable of decoding all bitstreams that are required to be decoded by a Constrained Baseline profile decoder of the same level. In addition to the specified bitstreams in Table 4, a decoder that conforms to the Scalable Baseline profile shall be capable of decoding the bitstreams in Table 1 that correspond to this requirement.

A decoder that conforms to the Scalable High profile at a specific level shall be capable of decoding the specified bitstreams in Table 4. A decoder that conforms to the Scalable High profile shall also be capable of decoding all bitstreams that are required to be decoded by a Constrained Baseline, Main, or High profile decoder of the same level. In addition to the specified bitstreams in Table 4, a decoder that conforms to the Scalable High profile shall be capable of decoding the bitstreams in Tables 1 and 2 that correspond to this requirement.

A decoder that conforms to the Scalable High Intra profile at a specific level shall be capable of decoding the specified bitstreams in Table 4.

A decoder that conforms to the Multiview High or Stereo High profile at a specific level shall be capable of decoding the specified bitstreams in Table 5. A decoder that conforms to the Multiview High or Stereo High profile shall also be capable of decoding all bitstreams that are required to be decoded by a Constrained Baseline profile decoder of the same level. A decoder that conforms to the Stereo High profile shall also be capable of decoding all bitstreams that are required to be decoded by a Main or High profile decoder of the same level. In addition to the specified bitstreams in Table 5, a decoder that conforms to the Multiview High or Stereo High profile shall be capable of decoding the bitstreams in Tables 1, 2 and 4 that correspond to these requirements.

A decoder that conforms to the Multiview Depth High profile at a specific level shall be capable of decoding the specified bitstreams in Table 6. A decoder that conforms to the Multiview Depth High profile shall also be capable of decoding all bitstreams that are required to be decoded by a Main, High or Stereo High profile decoder of the same level. In addition to the specified bitstreams in Table 6, a decoder that conforms to the Multiview Depth High profile shall be capable of decoding the bitstreams in Tables 1, 2 and 5 that correspond to these requirements.

A decoder that conforms to the MFC High profile at a specific level shall be capable of decoding all bitstreams in which all active MVC sequence parameter sets have any of the following:

- profile_idc equal to 134
- profile_idc equal to 128
- profile_idc is equal to 118 and constraint_set5_flag is equal to 1
- profile_idc equal to 100 or 77
- profile_idc equal to 88 and constraint_set1_flag equal to 1
- profile_idc equal to 66 and constraint_set1_flag equal to 1

and in which level_idc or the combination of level_idc and constraint_set3_flag for all active MVC sequence parameter sets represent a level less than or equal to the specific level. In addition to the bitstreams defined in Table 7, a decoder that conforms to the MFC High profile shall be capable of decoding the Main profile bitstreams specified in Tables 1 and 2.

A decoder that conforms to the Enhanced Multiview Depth High profile at a specific level shall be capable of decoding the specified bitstreams in Table 8. A decoder that conforms to the Enhanced Multiview Depth High profile shall also be capable of decoding all bitstreams that are required to be decoded by a Main or High profile decoder of the same level. In addition to the specified bitstreams in Table 8, a decoder that conforms to the Enhanced Multiview Depth High profile shall be capable of decoding the bitstreams in Tables 1, 2 and 4 that correspond to these requirements.

A decoder that conforms to the MFC Depth High profile at a specific level shall be capable of decoding the specified bitstreams in Table 9. A decoder that conforms to the MFC Depth High profile shall also be capable of decoding all bitstreams that are required to be decoded by a Main, High, Stereo High and MFC High profile decoder of the same level. In addition to the specified bitstreams in Table 9, a decoder that conforms to the MFC Depth High profile shall be capable of decoding the bitstreams in Tables 1, 2, 5 and 7 that correspond to these requirements.

6.6 Specification of the test bitstreams

Some characteristics of each bitstream listed in Tables 1 through 5 are specified in this clause. In Tables 1 through 5, the value "29.97" shall be interpreted as an approximation of an exact value of 30000 ÷ 1001 and the value "59.94" shall be interpreted as an approximation of an exact value of 60000 ÷ 1001.

6.6.1 Test bitstreams – General

6.6.1.1 Test bitstreams AVCNL-1, AVCNL-2

Specification: All slices are coded as I slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices.

Purpose: Check that the decoder can properly decode I slices.

6.6.1.2 Test bitstreams AVCNL-3, AVCNL-4

Specification: All slices are coded as I or P slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices.

Purpose: Check that the decoder can properly decode P slices.

6.6.1.3 Test bitstream AVCBA-1

Specification: All slices are coded as I slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices with the deblocking filter process enabled.

Purpose: Check that the decoder can properly decode I slices with the deblocking filter process enabled.

6.6.1.4 Test bitstream AVCBA-2

Specification: All slices are coded as I slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices with the deblocking filter process enabled.

Purpose: Check that the decoder can properly decode I slices with the deblocking filter process enabled.

6.6.1.5 Test bitstream AVCBA-3

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices with the deblocking filter process enabled.

Purpose: Check that the decoder can properly decode P slice with the deblocking filter process enabled.

6.6.1.6 Test bitstream AVCBA-4

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices with the deblocking filter process enabled.

Purpose: Check that the decoder can properly decode P slices with the deblocking filter process enabled.

6.6.1.7 Test bitstreams AVCBA-5, AVCBA-6

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices with the deblocking filter process enabled.

Purpose: Check that the decoder can properly decode P slices with the deblocking filter process enabled.

6.6.1.8 Test bitstream AVCBA-7

Specification: All slices are coded as I or P slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. Macroblock/sub-macroblock partition size is limited to 8x8 and above. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices with the deblocking filter process enabled.

Purpose: Check that the decoder can properly decode P slices with the deblocking filter process enabled.

6.6.1.9 Test bitstream AVCMQ-1

Specification: All slices are coded as I slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 1. mb_qp_delta is equal to a non-zero value to change the quantizer scale at each MB. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices with mb_qp_delta not equal to 0.

Purpose: Check that the decoder can properly decode I slices with mb_qp_delta not equal to 0.

6.6.1.10 Test bitstream AVCMQ-2

Specification: All slices are coded as I or P slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 1. mb_qp_delta is equal to a non-zero value to change the quantizer scale at each MB. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices with mb_qp_delta not equal to 0.

Purpose: Check that the decoder can properly decode P slices with mb_qp_delta not equal to 0.

6.6.1.11 Test bitstream AVCMQ-3

Specification: All slices are coded as I slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 1. Spatial direct prediction is used for direct prediction. mb_qp_delta is equal to a non-zero value to change the quantizer scale at each MB. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices with mb_qp_delta not equal to 0.

Purpose: Check that the decoder can properly decode I slices with mb_qp_delta not equal to 0.

6.6.1.12 Test bitstream AVCMQ-4

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 1. Spatial direct prediction is used for direct prediction. mb_qp_delta is equal to a non-zero value to change the quantizer scale at some MBs. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices with mb_qp_delta not equal to 0.

Purpose: Check that the decoder can properly decode P slices with mb_qp_delta not equal to 0.

6.6.1.13 Test bitstream AVCSL-1

Specification: All slices are coded as I or P slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I and P slices.

Purpose: Check that the decoder can properly decode pictures with multiple slices.

6.6.1.14 Test bitstream AVCSL-2

Specification: All slices are coded as I or P slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I and P slices.

Purpose: Check that the decoder can properly decode pictures with multiple slices.

6.6.1.15 Test bitstream AVCSQ-1

Specification: All slices are coded as I slices. Each picture contains 20 slices. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices with non-zero values of slice_qp_delta.

Purpose: Check that the decoder can properly decode I slices with non-zero values of slice_qp_delta.

6.6.1.16 Test bitstream AVCFM-1

Specification: All slices are coded as I or P slices. The number of slices and slice groups is greater than 1 in each picture. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. Multiple parameter sets are included in the bitstream.

Functional stage: Slice groups.

Purpose: Check that the decoder handles multiple slice groups and parameter sets.

6.6.1.17 Test bitstream AVCFM-2

Specification: All slices are coded as I or P slices. The number of slices and slice groups is greater than 1 in each picture. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Slice groups.

Purpose: Check that the decoder handles multiple slice groups and parameter sets.

6.6.1.18 Test bitstream AVCFM-3

Specification: All slices are coded as I or P slices. The number of slices and slice groups is greater than 1 in each picture. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. Recovery point SEI is included in this bitstream. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Slice groups.

Purpose: Check that the decoder handles multiple slice groups and parameter sets.

6.6.1.19 Test bitstream AVCCI-1

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. constrained_intra_pred_flag is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Constrained intra prediction.

Purpose: Check that the decoder handles constrained intra prediction.

6.6.1.20 Test bitstream AVCCI-2

Specification: All slices are coded as I or P slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. constrained_intra_pred_flag is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Constrained intra prediction.

Purpose: Check that the decoder handles constrained intra prediction.

6.6.1.21 Test bitstream AVCCI-3

Specification: All slices are coded as I or P slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. constrained_intra_pred_flag is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Constrained intra prediction.

Purpose: Check that the decoder handles constrained intra prediction.

6.6.1.22 Test bitstream AVCFC-1

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Decoded pictures are cropped with frame_croping_flag equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I and P slices with frame cropping.

Purpose: Check that the decoder can properly decode I and P slices with frame cropping.

6.6.1.23 Test bitstream AVCAUD-1

Specification: All slices are coded as I slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Access unit delimiter NAL units are included in the bitstream. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices with Access unit delimiter NAL units.

Purpose: Check that the decoder can properly decode I slices with Access unit delimiter NAL units.

6.6.1.24 Test bitstream AVCMIDR-1

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. IDR is inserted in every two frames. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices and more than one IDR.

Purpose: Check that the decoder can properly decode I slices with more than IDR in bitstream.

6.6.1.25 Test bitstream AVCNRF-1

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Two non-reference pictures are present. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I and P slices with non-reference pictures.

Purpose: Check that the decoder can properly decode I and P slices with non-reference pictures.

6.6.1.26 Test bitstream AVCMPS-1

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Multiple parameter sets are included in this bitstream. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I and P slices with multiple parameter set.

Purpose: Check that the decoder can properly decode I and P slices with multiple parameter set.

6.6.1.27 Test bitstream AVCBS-1

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices with temporal direct prediction.

Purpose: Check that the decoder can properly decode B slices with temporal direct prediction.

6.6.1.28 Test bitstream AVCBS-2

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices with spatial direct prediction.

Purpose: Check that the decoder can properly decode B slices with spatial direct prediction.

6.6.1.29 Test bitstream AVCBS-3

Specification: All slices are coded as I, P or B slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices with temporal direct prediction.

Purpose: Check that the decoder can properly decode B slices with temporal direct prediction.

6.6.1.30 Test bitstream AVCBS-4

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices with spatial direct prediction.

Purpose: Check that the decoder can properly decode B slices with spatial direct prediction.

6.6.1.31 Test bitstream AVCBS-5

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices with spatial direct prediction.

Purpose: Check that the decoder can properly decode B slices with spatial direct prediction.

6.6.2 Test bitstreams – I_PCM

6.6.2.1 Test bitstreams AVCPCM-1, AVCPCM-2

Specification: All slices are coded as I slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. mb_type is equal to I_PCM for some macroblocks. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of macroblocks with mb_type equal to I_PCM.

Purpose: Check that the decoder can properly decode macroblocks with mb_type equal to I_PCM.

6.6.3 Test bitstreams – Memory management control operation

6.6.3.1 Test bitstream AVCMR-1

Specification: All slices are coded as I or P slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 1. Reference picture list reordering and memory management control operations are used. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering and memory management control operations.

Purpose: Check that the decoder handles reference picture list reordering and memory management control operations.

6.6.3.2 Test bitstream AVCMR-2

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering and memory management control operations.

Purpose: Check that the decoder handles reference picture list reordering and memory management control operations.

6.6.3.3 Test bitstream AVCMR-3

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. gaps_in_frame_num_value_allowed_flag is equal to 1. Reference picture list reordering and various memory management control operations are used. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering and memory management control operations.

Purpose: Check that the decoder handles gaps in frame_num, reference picture list reordering and memory management control operations.

6.6.3.4 Test bitstream AVCMR-4

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. gaps_in_frame_num_value_allowed_flag is equal to 1. Reference picture list reordering and various memory management control operations are used. The decoding order is different from the output order. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations and non-increasing PicOrderCnt values.

Purpose: Check that the decoder handles reference picture list reordering and memory management control operations. Test output order conformance for non-increasing PicOrderCnt values.

6.6.3.5 Test bitstream AVCMR-5

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 1. gaps_in_frame_num_value_allowed_flag is equal to 1. Reference picture list reordering and various memory management control operations are used. The decoding order is different from the output order. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operation and non-increasing PicOrderCnt values.

Purpose: Check that the decoder handles gaps_in_frame_num_value_allowed_flag equal to 1, reference picture list reordering and memory management control operation. Test output order conformance for non-increasing PicOrderCnt values.

6.6.3.6 Test bitstream AVCMR-6

Specification: All slices are coded as I or P slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering is used. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering.

Purpose: Check that the decoder handles reference picture list reordering.

6.6.3.7 Test bitstream AVCMR-7

Specification: All slices are coded as I or P slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Memory management control operations are used. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Memory management control operations.

Purpose: Check that the decoder handles memory management control operations.

6.6.3.8 Test bitstreams AVCMR-8, AVCMR-9

Specification: All slices are coded as I or P slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 1. Reference picture list reordering and memory management control operations are used. direct_8x8_inference_flag is equal to 1. Each slice is a coded field. VUI is included in the bitstream. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering and memory management control operations.

Purpose: Check that the decoder handles reference picture list reordering and memory management control operations.

6.6.3.9 Test bitstream AVCMR-10

Specification: All slices are coded as I, P or B slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 1. Reference picture list reordering and memory management control operations are used. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. Each slice is a coded field. VUI is included in the bitstream. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering and memory management control operations.

Purpose: Check that the decoder handles reference picture list reordering and memory management control operations.

6.6.3.10 Test bitstreams AVCMR-11, AVCMR-12

Specification: All slices are coded as I or P slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering

and memory management control operations are used. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering and memory management control operations.

Purpose: Check that the decoder handles reference picture list reordering and memory management control operations.

6.6.4 Test bitstreams – Weighted sample prediction process

6.6.4.1 Test bitstream AVCWP-1

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. weighted_pred_flag is equal to 1. Plural reference indices are assigned to each reference picture. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Weighted sample prediction process for P slices with plural reference indices.

Purpose: Check that the decoder handles weighted sample prediction for P slices with plural reference indexes.

6.6.4.2 Test bitstream AVCWP-2

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. weighted_pred_flag is equal to 1. All NAL units are encapsulated into the byte stream specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Weighted sample prediction process for P slices.

Purpose: Check that the decoder handles weighted sample prediction for P slices.

6.6.4.3 Test bitstream AVCWP-3

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. weighted_bipred_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Weighted sample prediction process for B slices with temporal direct prediction.

Purpose: Check that the decoder handles weighted sample prediction for B slices with temporal direct prediction.

6.6.4.4 Test bitstream AVCWP-4

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. weighted_bipred_idc is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Weighted sample prediction process for B slices with temporal direct prediction.

Purpose: Check that the decoder handles weighted sample prediction for B slices with temporal direct prediction.

6.6.5 Test bitstreams – Slice of coded field

6.6.5.1 Test bitstream AVCFI-1

Specification: All slices are coded as I or P slices. Each picture contains only one slice. Each slice is a coded field. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Slices of coded fields.

Purpose: Check that the decoder handles I and P slices of coded fields.

6.6.5.2 Test bitstream AVCFI-2

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. Each slice is a coded field. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Slices of coded fields with spatial direct prediction.

Purpose: Check that the decoder handles B slices of coded fields with spatial direct prediction.

6.6.5.3 Test bitstream AVCFI-3

Specification: All slices are coded as I or P slices. Each picture contains only one slice. Each slice is a coded field. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Slices of coded fields.

Purpose: Check that the decoder handles I and P slices of coded fields.

6.6.5.4 Test bitstream AVCFI-4

Specification: All slices are coded as I or P slices. Each picture contains only one slice. Each slice is a coded field. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Slices of coded fields.

Purpose: Check that the decoder handles I and P slices of coded fields.

6.6.5.5 Test bitstream AVCFI-5

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. Each slice is a coded field. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 1. Spatial direct prediction is used for direct prediction. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Slices of coded fields.

Purpose: Check that the decoder handles B slices of coded fields.

6.6.5.6 Test bitstream AVCFI-6

Specification: All slices are coded as I or P slices. Each picture contains more than one slice. Each slice is a coded field. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Slices of coded fields.

Purpose: Check that the decoder handles I and P slices of coded fields.

6.6.5.7 Test bitstream AVCFI-7

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. Each slice is a coded field. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Slices of coded fields with temporal direct prediction.

Purpose: Check that the decoder handles B slices of coded fields with temporal direct prediction.

6.6.5.8 Test bitstream AVCFI-8

Specification: All slices are coded as I slices. Only one slice is contained in each picture. Each slice is a coded field. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Slices of coded fields.

Purpose: Check that the decoder handles I slices of coded fields.

6.6.5.9 Test bitstream AVCFI-9

Specification: All slices are coded as I or P slices. Each picture contains only one slice. Each slice is a coded field. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Slices of coded fields.

Purpose: Check that the decoder handles I and P slices of coded fields.

6.6.5.10 Test bitstream AVCFI-10

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. Each slice is a coded field. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Slices of coded fields with temporal direct prediction.

Purpose: Check that the decoder handles B slices of coded fields with temporal direct prediction.

6.6.5.11 Test bitstream AVCFI-11

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. Each slice is a coded field. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Slices of coded fields with spatial direct prediction.

Purpose: Check that the decoder handles B slices of coded fields with spatial direct prediction.

6.6.5.12 Test bitstream AVCFI-12

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. The number of motion vectors per two consecutive MBs is equal to the maximum value specified in item m in clause A.3.1 in ITU-T H.264 | ISO/IEC 14496-10. No intra, skip and direct MBs are included in P and B slices. Each slice is a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Slices of coded fields.

Purpose: Check that the decoder can properly decode slices of coded fields with maximum number of motion vectors per consecutive MBs.

6.6.6 Test bitstreams – Frame/field coding

6.6.6.1 Test bitstream AVCPA-1

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 1. Spatial direct prediction is used for direct prediction. Each slice is either a coded frame or a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Slices of coded frames/fields.

Purpose: Check that the decoder can properly decode slices of coded frames and fields.

6.6.6.2 Test bitstream AVCPA-2

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. Each slice is either a coded frame or a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Slices of coded frames/fields.

Purpose: Check that the decoder can properly decode slices of coded frames and fields.

6.6.6.3 Test bitstream AVCPA-3

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. Each slice is either a coded frame or a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Slices of coded frames/fields.

Purpose: Check that the decoder can properly decode slices of coded frames and fields.

6.6.7 Test bitstreams – Macroblock adaptive frame/field coding

6.6.7.1 Test bitstream AVCMA-1

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1.

6.6.7.2 Test bitstream AVCMA-2

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1.

6.6.7.3 Test bitstream AVCMA-3

Specification: All slices are coded as I slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1.

6.6.7.4 Test bitstream AVCMA-4

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1.

6.6.7.5 Test bitstream AVCMA-5

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. mb_adaptive_frame_field_coding is equal to 1. mb_qp_delta is equal to a non-zero value to change the quantizer scale at some MBs. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1.

6.6.7.6 Test bitstream AVCMA-6

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. mb_adaptive_frame_field_coding is equal to 1. mb_qp_delta is equal to a non-zero value to change the quantizer scale at some MBs. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1.

6.6.7.7 Test bitstream AVCMA-7

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. Some slices are coded as a coded field. mb_adaptive_frame_field_coding is equal to 1 in the rest of the frames. mb_qp_delta is equal to a non-zero value to change the quantizer scale at some MBs. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding and slices of a coded field.

Purpose: Check that the decoder can properly decode both slices of a coded frame with mb_adaptive_frame_field_flag=1 and slices of a coded field.

6.6.7.8 Test bitstream AVCMA-8

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1.

6.6.7.9 Test bitstream AVCMA-9

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. The number of motion vectors per two consecutive MBs is equal to the maximum value specified in item m of clause A.3.1 in ITU-T H.264 | ISO/IEC 14496-10. No intra, skip and direct MBs are included in P and B slices. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1 and with maximum number of motion vectors per consecutive MBs.

6.6.8 Test bitstreams – S picture

6.6.8.1 Test bitstream AVCSP-1

Specification: All slices are coded as I, P and SP slices. Each picture contains more than one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 1. memory_management_operation is set to 5 on SP slice. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of SP slices.

Purpose: Check that the decoder can properly decode SP slices.

6.6.8.2 Test bitstream AVCSP-2

Specification: All slices are coded as I, P and SP slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 1. memory_management_operation is set to 5 on SP slice. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of SP slices.

Purpose: Check that the decoder can properly decode SP slices with deblocking filter.

6.6.9 Test bitstreams – Long sequence

6.6.9.1 Test bitstream AVCLS-1

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of picture order count for long sequence.

Purpose: Check that the decoder can properly decode picture order count for long sequence.

6.6.10 Test bitstreams – SEI/VUI

6.6.10.1 Test bitstream AVCSE-1

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. SEI (Buffering period SEI and Picture timing SEI with pic_struct) and VUI are included in the bitstream. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of SEI/VUI.

Purpose: Check that the decoder can properly decode SEI/VUI.

6.6.10.2 Test bitstream AVCSE-2

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. SEI (Buffering period SEI and Picture timing SEI with pic_struct) and VUI are included in the bitstream. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of SEI/VUI.

Purpose: Check that the decoder can properly decode SEI/VUI.

6.6.10.3 Test bitstream AVCSE-3

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. SEI (Buffering period SEI and Picture timing SEI with pic_struct) and VUI are included in the bitstream. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of SEI/VUI.

Purpose: Check that the decoder can properly decode SEI/VUI.

6.6.11 Test bitstreams – CABAC: Basic features

6.6.11.1 Test bitstream AVCCANL-1

Specification: All slices are coded as I slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices with CABAC parsing.

Purpose: Check that the decoder can properly decode I slices with CABAC parsing.

6.6.11.2 Test bitstream AVCCANL-2

Specification: All slices are coded as I slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices with CABAC parsing.

Purpose: Check that the decoder can properly decode I slices with CABAC parsing.

6.6.11.3 Test bitstream AVCCANL-3

Specification: All slices are coded as I or P slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices with CABAC parsing.

Purpose: Check that the decoder can properly decode P slices with CABAC parsing.

6.6.11.4 Test bitstream AVCCANL-4

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices with CABAC parsing.

Purpose: Check that the decoder can properly decode B slices with CABAC parsing.

6.6.11.5 Test bitstream AVCCANL-5

Specification: All slices are coded as I slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices with CABAC parsing.

Purpose: Check that the decoder can properly decode I slices with CABAC parsing.

6.6.11.6 Test bitstream AVCCANL-6

Specification: All slices are coded as I slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices with CABAC parsing.

Purpose: Check that the decoder can properly decode I slices with CABAC parsing.

6.6.11.7 Test bitstream AVCCANL-7

Specification: All slices are coded as I or P slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices with CABAC parsing.

Purpose: Check that the decoder can properly decode P slices with CABAC parsing.

6.6.11.8 Test bitstream AVCCANL-8

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices with CABAC parsing.

Purpose: Check that the decoder can properly decode B slices with CABAC parsing.

6.6.11.9 Test bitstream AVCCABA-1

Specification: All slices are coded as I slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices with the deblocking filter process enabled and CABAC.

Purpose: Check that the decoder can properly decode I slices with CABAC parsing.

6.6.11.10 Test bitstream AVCCABA-2

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices with CABAC parsing.

Purpose: Check that the decoder can properly decode P slices with CABAC parsing.

6.6.11.11 Test bitstream AVCCABA-3

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices with CABAC parsing.

Purpose: Check that the decoder can properly decode B slices with CABAC parsing.

6.6.11.12 Test bitstream AVCCABA-4

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices with CABAC parsing.

Purpose: Check that the decoder can properly decode P slices with CABAC parsing.

6.6.11.13 Test bitstream AVCCABA-5

Specification: All slices are coded as I slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices with the deblocking filter process enabled and CABAC.

Purpose: Check that the decoder can properly decode I slices with CABAC parsing.

6.6.11.14 Test bitstream AVCCABA-6

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices with CABAC parsing.

Purpose: Check that the decoder can properly decode P slices with CABAC parsing.

6.6.11.15 Test bitstream AVCCABA-7

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices with CABAC parsing.

Purpose: Check that the decoder can properly decode B slices with CABAC parsing.

6.6.11.16 Test bitstream AVCCABA-8

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices with CABAC parsing.

Purpose: Check that the decoder can properly decode B slices with CABAC parsing.

6.6.12 Test bitstreams – CABAC: Initialization

6.6.12.1 Test bitstream AVCCAIN-1

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 0. cabac_init_idc is equal to 0, 1, or 2 at slice header. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Initialization of CABAC.

Purpose: Check that the decoder can initialize CABAC with cabac_init_idc=0, 1, or 2.

6.6.13 Test bitstreams – CABAC: MB QP Delta

6.6.13.1 Test bitstream AVCCAQP-1

Specification: All slices are coded as I slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 1. mb_qp_delta is equal to non-zero value to change the quantizer scale at each MB. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices with mb_qp_delta not equal to 0.

Purpose: Check that the decoder can properly decode I slices with mb_qp_delta not equal to 0.

6.6.13.2 Test bitstream AVCCAQP-2

Specification: All slices are coded as I, P or B slices. Each picture contains more than one slice. Each slice has a different size. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. mb_qp_delta is equal to non-zero value to change the quantizer scale at each MB. disable_deblocking_filter_idc is equal to 2. chroma_qp_index_offset is equal to non-zero value. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I, P, and B slices with mb_qp_delta not equal to 0.

Purpose: Check that the decoder can properly decode I slices with mb_qp_delta not equal to 0, disable_deblocking_filter_idc equal to 2, and non-zero chroma_qp_index_offset.

6.6.14 Test bitstreams – CABAC: Slice

6.6.14.1 Test bitstream AVCCASL-1

Specification: All slices are coded as I, P or B slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 0. Each picture contains more than one slice. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of different slice types in a picture with CABAC parsing.

Purpose: Check that the decoder can properly decode different slice types in a picture with CABAC parsing.

6.6.14.2 Test bitstream AVCCASL-2

Specification: All slices are coded as I, P or B slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 0. Slices with different slice types are included in a picture. Stored B slices are included in the bitstream. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of different slice types in a picture with CABAC parsing.

Purpose: Check that the decoder can properly decode different slice types in a picture with CABAC parsing.

6.6.15 Test bitstreams – CABAC: I_PCM

6.6.15.1 Test bitstream AVCCAPCM-1

Specification: All slices are coded as I slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. mb_type is equal to I_PCM at some Macroblocks. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of Macroblock with mb_type equal to I_PCM.

Purpose: Check that the decoder can properly decode Macroblock with mb_type equal to I_PCM.

6.6.15.2 Test bitstream AVCCAPCM-2

Specification: All slices are coded as I slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. mb_type is equal to I_PCM at some Macroblocks. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of Macroblock with mb_type equal to I_PCM.

Purpose: Check that the decoder can properly decode Macroblock with mb_type equal to I_PCM.

6.6.15.3 Test bitstream AVCCAPCM-3

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. mb_type is equal to I_PCM at some Macroblocks. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of Macroblock with mb_type equal to I_PCM.

Purpose: Check that the decoder can properly decode macroblocks with mb_type equal to I_PCM.

6.6.16 Test bitstreams – CABAC: Memory management control operation

6.6.16.1 Test bitstream AVCCAMR-1

Specification: All slices are coded as I, P or B slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 1. Reference picture list reordering and memory management control operations are used. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. Each slice is a coded frame. mb_adaptive_frame_field_coding is equal to 1. VUI is included in the bitstream. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering and memory management control operations.

Purpose: Check that the decoder handles reference picture list reordering and memory management control operations.

6.6.16.2 Test bitstream AVCCAMR-2

Specification: All slices are coded as I, P or B slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering and memory management control operations are used. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering and memory management control operations.

Purpose: Check that the decoder handles reference picture list reordering and memory management control operations.

6.6.17 Test bitstreams – CABAC: Weighted sample prediction process

6.6.17.1 Test bitstream AVCCAWP-1

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 2. weighted_pred_flag is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Weighted sample prediction process for P slices.

Purpose: Check that the decoder handles weighted sample prediction for P slices.

6.6.17.2 Test bitstream AVCCAWP-2

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 2. weighted_pred_flag is equal to 1. Plural reference indices are assigned to each reference picture. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Weighted sample prediction process for P slices with plural reference indices.

Purpose: Check that the decoder handles weighted sample prediction for P slices with plural reference indexes.

6.6.18 Test bitstreams – CABAC: Field coding

6.6.18.1 Test bitstream AVCCAFI-1

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. Each slice is a coded field. Stored B slices are included in the bitstream. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of coded fields.

Purpose: Check that the decoder can properly decode slices of coded fields including stored B slices.

6.6.18.2 Test bitstream AVCCAFI-2

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 0. Each slice is a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of coded fields.

Purpose: Check that the decoder can properly decode slices of coded fields.

6.6.18.3 Test bitstream AVCCAFI-3

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. Each slice is a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of coded fields.

Purpose: Check that the decoder can properly decode slices of coded fields.

6.6.19 Test bitstreams – CABAC: Frame/field decoding

6.6.19.1 Test bitstream AVCCAPA-1

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 1. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. Each slice is either a coded frame or a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Picture adaptive frame/field decoding.

Purpose: Check that the decoder can properly decode slices of coded frames and fields with direct_8x8_inference_flag=1.

6.6.19.2 Test bitstream AVCCAPA-2

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. Each slice is either a coded frame or a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Picture adaptive frame/field decoding.

Purpose: Check that the decoder can properly decode slices of coded frames and fields with direct_8x8_inference_flag=1.

6.6.19.3 Test bitstream AVCCAPA-3

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. Each slice is either a coded frame or a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Picture adaptive frame/field decoding.

Purpose: Check that the decoder can properly decode slices of coded frames and fields with direct_8x8_inference_flag=1.

6.6.20 Test bitstreams – Macroblock adaptive frame/field decoding

6.6.20.1 Test bitstream AVCCAMA-1

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1.

6.6.20.2 Test bitstream AVCCAMA-2

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1.

6.6.20.3 Test bitstream AVCCAMA-3

Specification: All slices are coded as I or P slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. num_ref_frames is equal to 1. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1.

6.6.20.4 Test bitstream AVCCAMA-4

Specification: All slices are coded as I or P slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1.

6.6.20.5 Test bitstream AVCCAMA-5

Specification: All slices are coded as I slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1.

6.6.20.6 Test bitstream AVCCAMA-6

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1.

6.6.20.7 Test bitstream AVCCAMA-7

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1.

6.6.20.8 Test bitstream AVCCAMA-8

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1.

6.6.20.9 Test bitstream AVCCAMA-9

Specification: All slices are coded as I, P or B slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1.

6.6.20.10 Test bitstream AVCCAMA-10

Specification: All slices are coded as I, P or B slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. direct_8x8_inference_flag is equal to 1. mb_adaptive_frame_field_coding is equal to 1. constrained_intra_pred_flag is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can handle constrained intra prediction with mb_adaptive_frame_field_flag=1.

6.6.20.11 Test bitstream AVCCAMA-11

Specification: All slices are coded as I, P or B slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. direct_8x8_inference_flag is equal to 1. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1.

6.6.20.12 Test bitstreams AVCCAMA-12 and AVCCAMA-13

Specification: All slices are coded as I, P or B slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. The number of motion vectors per two consecutive MBs is equal to the maximum value specified in item m in clause A.3.1 in ITU-T H.264 | ISO/IEC 14496-10. No intra, skip and direct MBs are included in P and B slices. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1 and with maximum number of motion vectors per consecutive MBs.

6.6.20.13 Test bitstream AVCCAPAMA-1

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. Both coded frames and coded fields are included in the bitstream. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding and slices of a coded field.

Purpose: Check that the decoder can properly decode both slices of a coded frame with mb_adaptive_frame_field_flag=1 and slices of a coded field.

6.6.20.14 Test bitstream AVCCAPAMA-2

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. The first field of the first frame only contains I slice and the second field only contains P slice. mb_adaptive_frame_field_coding is equal to 1 in the rest of the frames. The indicated display of this bitstream is bottom field first. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding and slices of a coded field.

Purpose: Check that the decoder can properly decode both slices of a coded frame with mb_adaptive_frame_field_flag=1 and slices of a coded field.

6.6.20.15 Test bitstream AVCCAPAMA-3

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. The first field of the first frame only contains I slice and the second field only contains P slice. mb_adaptive_frame_field_coding is equal to 1 in the rest of the frames. The indicated display of this bitstream is top field first. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding and slices of a coded field.

Purpose: Check that the decoder can properly decode both slices of a coded frame with mb_adaptive_frame_field_flag=1 and slices of a coded field.

6.6.20.16 Test bitstream AVCCAPAMA-4

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. The first field of the first frame only contains I slice and the second field only contains P slice. mb_adaptive_frame_field_coding is equal to 1 in the rest of the frames. The indicated display of this bitstream is top field first. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding and slices of a coded field.

Purpose: Check that the decoder can properly decode both slices of a coded frame with mb_adaptive_frame_field_flag=1 and slices of a coded field.

6.6.20.17 Test bitstream AVCCAMV-1

Specification: The bitstream conforms to MP@L3. Frame size is 720x480. All slices are coded as I, P or B slices. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. In P slices, each macroblock is coded as sixteen 4x4 blocks. Each block has one motion vector in 1/4 sample position. In B slices, each macroblock is coded as eight 8x4 blocks. Each block has two motion vectors, one for list0 the other for list1. Both vectors are in 1/4 sample position. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Prediction bandwidth.

Purpose: Check that the decoder handles the worst case of prediction bandwidth. Prediction bandwidth is at maximum due to largest number of motion vectors (in 1/4 sample position) per macroblock pair (32 as specified in standard). Non-integer position motion vectors require using 6-tap filter always.

6.6.20.18 Test bitstream AVCCVCANLMA-1

Specification: All slices are coded as I or P slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. Both entropy_coding_mode_flag equal to 0, specifying the CAVLC parsing process, and entropy_coding_mode_flag equal to 1, specifying the CABAC parsing process are present within the bitstream. pic_order_cnt_type is equal to 0. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding using both CAVLC and CABAC.

Purpose: Check that the decoder can properly decode slices with mb_adaptive_frame_field_flag=1. Check that the decoder can properly decode both CABAC and CAVLC.

6.6.21 Test bitstreams – Fidelity Range Extensions: 4:2:0 8 bit

6.6.21.1 Test bitstreams FREH-1, FREH-28

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 0. Transform mode is set to 8x8 block size only. seq_scaling_matrix_present_flag and pic_scaling_matrix_flag are set to 1. Scaling lists are included in the sequence parameter set and the picture parameter set. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests loading of scaling list in the sequence parameter set and the picture parameter set. Tests 8x8 block size transform mode. Tests decoding of level prefix more than 16 bits in CAVLC entropy coding. Tests deblocking for 8x8 transform.

Purpose: Check that a decoder can properly decode slices of coded frames with 8x8 block size transform for CAVLC and check that scaling list is implemented correctly for frame only coding.

6.6.21.2 Test bitstreams FREH-2, FREH-29

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 0. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag and pic_scaling_matrix_flag are set to 1. Scaling lists are included in the sequence parameter set and the picture parameter set. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CABAC entropy coding. Tests loading of scaling list in the sequence parameter set and the picture parameter set. Tests deblocking for 4x4 and 8x8 transform.

Purpose: Check that a decoder can properly decode slices of coded frames with both 4x4 and 8x8 block size transform modes and check that scaling list is implemented correctly for CABAC entropy coding for frame only coding.

6.6.21.3 Test bitstreams FREH-3, FREH-30

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. The value of cabac_init_idc is adaptively changed in slice header. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1 and default scaling lists are used. Each slice is a coded frame or a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CABAC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded frames and fields with both 4x4 and 8x8 block size transform modes.

6.6.21.4 Test bitstreams FREH-4, FREH-31

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. The value of cabac_init_idc is adaptively changed in slice header. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1 and default scaling lists are used. Each slice is either a coded frame or a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CABAC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded frames and fields with both 4x4 and 8x8 block size transform modes.

6.6.21.5 Test bitstreams FREH-5, FREH-32

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. The value of cabac_init_idc is adaptively changed in slice header. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1 and default scaling lists are used. Each slice is a coded frame. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Macroblock adaptive frame field decoding and slices of a coded frame with both 4x4 and 8x8 block size transform modes in CABAC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded frames with mb_adaptive_frame_field_flag=1 and with both 4x4 and 8x8 block size transform modes.

6.6.21.6 Test bitstreams FREH-6, FREH-33

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. Transform mode is set to 8x8 block size only. seq_scaling_matrix_present_flag and pic_scaling_matrix_flag are set to 1. Scaling lists are included in the sequence parameter set and the picture parameter set. Each slice is either a coded frame or a coded field. mb_adaptive_frame_field_coding is equal to 1 in coded frames. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests loading of scaling list in the sequence parameter set and the picture parameter set. Tests 8x8 block size transform mode. Tests decoding of level prefix more than 16 bits in CAVLC entropy coding. Tests deblocking for 8x8 transform.

Purpose: Check that a decoder can properly decode slices of coded frames with 8x8 block size transform for CAVLC and check that scaling list is implemented correctly for both slices of a coded frame with mb_adaptive_frame_field_flag=1 and slices of a coded field.

6.6.21.7 Test bitstreams FREH-7, FREH-34

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag and pic_scaling_matrix_flag are set to 1. Scaling lists are included in the sequence parameter set and the picture parameter set. Each slice is either a coded frame or a coded field. mb_adaptive_frame_field_coding is equal to 1 in coded frames. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CABAC entropy coding. Tests loading of scaling list in the sequence parameter set and the picture parameter set. Tests deblocking for 4x4 and 8x8 transform.

Purpose: Check that a decoder can properly decode slices of coded frames with both 4x4 and 8x8 block size transform modes and check that scaling list is implemented correctly for CABAC entropy coding for both slices of a coded frame with mb_adaptive_frame_field_flag=1 and slices of a coded field.

6.6.21.8 Test bitstream FREH-8

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. Both seq_scaling_matrix_present_flag and pic_scaling_matrix are set to 0. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CABAC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded frames with both 4x4 and 8x8 block size transform modes.

6.6.21.9 Test bitstream FREH-9

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. Both seq_scaling_matrix_present_flag and pic_scaling_matrix are set to 0. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CABAC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded frames with both 4x4 and 8x8 block size transform modes.

6.6.21.10 Test bitstream FREH-10

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. Both seq_scaling_matrix_present_flag and pic_scaling_matrix are set to 0. Each slice is a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CABAC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded fields with both 4x4 and 8x8 block size transform modes.

6.6.21.11 Test bitstream FREH-11

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. Both seq_scaling_matrix_present_flag and pic_scaling_matrix are set to 0. Each slice is a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CABAC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded fields with both 4x4 and 8x8 block size transform modes.

6.6.21.12 Test bitstreams FREH-12, FREH-39

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 0. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1 and default scaling lists are used. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CABAC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded frames with both 4x4 and 8x8 block size transform modes.

6.6.21.13 Test bitstreams FREH-13, FREH-14, FREH-15

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1 and default scaling lists are used. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CABAC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded frames with both 4x4 and 8x8 block size transform modes.

6.6.21.14 Test bitstream FREH-16

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. 8x8 block size transform mode is used. seq_scaling_matrix_present_flag is set to 1. Scaling lists are included in the sequence parameter set. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests loading of scaling list in the sequence parameter set. Tests 8x8 block size transform mode.

Purpose: Check that a decoder can properly decode slices of a coded frame with 8x8 block size transform for CABAC. Check that scaling list is implemented correctly for frame only coding. Check that a decoder can handle temporal direct mode with direct_8x8_inference_flag=1 for coded frames with 8x8 block size transform.

6.6.21.15 Test bitstream FREH-17

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. 8x8 block size transform mode is used. seq_scaling_matrix_present_flag is set to 1. Scaling lists are included in the sequence parameter set. Each slice is either a coded frame or a coded field. mb_adaptive_frame_field_coding is equal to 1 in coded frames. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests loading of scaling list in the sequence parameter set. Tests 8x8 block size transform mode.

Purpose: Check that a decoder can properly decode slices of a coded frame with 8x8 block size transform for CABAC. Check that scaling list is implemented correctly for field coding and MBAFF. Check that a decoder can handle temporal direct mode with direct_8x8_inference_flag=1 for coded frames with 8x8 block size transform.

6.6.21.16 Test bitstream FREH-18

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. Both seq_scaling_matrix_present_flag and pic_scaling_matrix are set to 0. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CAVLC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded frames with both 4x4 and 8x8 block size transform modes.

6.6.21.17 Test bitstream FREH-19

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. Both seq_scaling_matrix_present_flag and pic_scaling_matrix are set to 0. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CAVLC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded frames with both 4x4 and 8x8 block size transform modes.

6.6.21.18 Test bitstream FREH-20

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. Both seq_scaling_matrix_present_flag and pic_scaling_matrix are set to 0. Each slice is a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CAVLC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded fields with both 4x4 and 8x8 block size transform modes.

6.6.21.19 Test bitstream FREH-21

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. Both seq_scaling_matrix_present_flag and pic_scaling_matrix are set to 0. Each slice is a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CAVLC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded fields with both 4x4 and 8x8 block size transform modes.

6.6.21.20 Test bitstream FREH-22

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1 and default scaling lists are used. Each slice is a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CAVLC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded fields with both 4x4 and 8x8 block size transform modes.

6.6.21.21 Test bitstream FREH-23

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1 and default scaling lists are used. Each slice is either a coded frame or a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CAVLC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded fields with both 4x4 and 8x8 block size transform modes.

6.6.21.22 Test bitstream FREH-24

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1 and default scaling lists are used. mb_adaptive_frame_field_coding is equal to 1. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CAVLC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded frames with both 4x4 and 8x8 block size transform modes.

6.6.21.23 Test bitstream FREH-25

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1. Scaling lists are included in the sequence parameter set. Each slice is a coded frame. chroma_format_idc is equal to 0, specifying monochrome chroma format. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests monochrome chroma format in CAVLC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded frame for monochrome chroma format.

6.6.21.24 Test bitstream FREH-26

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1. Scaling lists are included in the sequence parameter set. Each slice is a coded frame. chroma_format_idc is equal to 0, specifying monochrome chroma format. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests monochrome chroma format in CABAC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded frame for monochrome chroma format.

6.6.21.25 Test bitstream FREH-27

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1. Scaling lists are included in the sequence parameter set. Each slice is a coded frame. second_chroma_qp_index_offset is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests second_chroma_qp_index_offset.

Purpose: Check that a decoder can properly decode slices of coded frame with second_chroma_qp_index_offset.

6.6.21.26 Test bitstream FREH-35

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. Both seq_scaling_matrix_present_flag and pic_scaling_matrix_flag are set to 1. Scaling lists are included in the sequence parameter set and the picture parameter set. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CABAC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded frames with both 4x4 and 8x8 block size transform modes.

6.6.21.27 Test bitstream FREH-36

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. Both seq_scaling_matrix_present_flag and pic_scaling_matrix_flag are set to 1. Scaling lists are included in the sequence parameter set and the picture parameter set. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CABAC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded frames with both 4x4 and 8x8 block size transform modes.

6.6.21.28 Test bitstream FREH-37

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. Both seq_scaling_matrix_present_flag and pic_scaling_matrix_flag are set to 1. Scaling lists are included in the sequence parameter set and the picture parameter set. Each slice is a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CABAC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded fields with both 4x4 and 8x8 block size transform modes.

6.6.21.29 Test bitstream FREH-38

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Temporal direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. Both seq_scaling_matrix_present_flag and pic_scaling_matrix_flag are set to 1. Scaling lists are included in the sequence parameter set and the picture parameter set. Each slice is a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CABAC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded fields with both 4x4 and 8x8 block size transform modes.

6.6.21.30 Test bitstreams FREH-40, FREH-41

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. Both seq_scaling_matrix_present_flag and pic_scaling_matrix_flag are set to 0. Reference picture list reordering and memory management control operations are used. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering and memory management control operations.

Purpose: Check that a decoder handles reference picture list reordering and memory management control operations.

6.6.21.31 Test bitstream FREH-42

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. Both seq_scaling_matrix_present_flag and pic_scaling_matrix_flag are set to 0. Reference picture list reordering and memory management control operations are used. mb_adaptive_frame_field_coding is equal to 1. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering and memory management control operations.

Purpose: Check that a decoder handles reference picture list reordering and memory management control operations.

6.6.21.32 Test bitstream FREH-43

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. Both seq_scaling_matrix_present_flag and pic_scaling_matrix_flag are set to 0. mb_adaptive_frame_field_coding is equal to 1. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CABAC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded frames with both 4x4 and 8x8 block size transform modes.

6.6.21.33 Test bitstream FREH-44

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. Both seq_scaling_matrix_present_flag and pic_scaling_matrix_flag are set to 0. mb_adaptive_frame_field_coding is equal to 1. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Tests 4x4 and 8x8 block size transform modes in CAVLC entropy coding.

Purpose: Check that a decoder can properly decode slices of coded frames with both 4x4 and 8x8 block size transform modes.

6.6.21.34 Test bitstream FREH-45

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is set equal to 1. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1 and pic_scaling_matrix_flag is set to 0. Memory management control operations are used. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Memory management control operations.

Purpose: Check that a decoder handles memory management control operations.

6.6.22 Test bitstreams – Fidelity Range Extensions: 4:2:0 10 bit

6.6.22.1 Test bitstream FREH10-1

Specification: All slices are coded as I slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. frame_mbs_only_flag is equal to 1. chroma_format_idc is equal to 1. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices for 4:2:0 10-bit.

Purpose: Check that a decoder can properly decode I slices for 4:2:0 10-bit.

6.6.22.2 Test bitstream FREH10-2

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. frame_mbs_only_flag is equal to 1. chroma_format_idc is equal to 1. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I, P, and B slices for 4:2:0 10-bit.

Purpose: Check that a decoder can properly decode I, P and B slices for 4:2:0 10-bit.

6.6.23 Test bitstreams – Fidelity Range Extensions: 4:2:2

6.6.23.1 Test bitstream FREH422-1

Specification: All slices are coded as I or P slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices for 4:2:2 8 bit.

Purpose: Check that a decoder can properly decode P slices for 4:2:2 8 bit.

6.6.23.2 Test bitstream FREH422-2

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Direct prediction is not used in this bitstream. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices for 4:2:2 8 bit.

Purpose: Check that a decoder can properly decode B slices for 4:2:2 8 bit.

6.6.23.3 Test bitstream FREH422-3

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices for 4:2:2 8 bit.

Purpose: Check that a decoder can properly decode P slices with deblocking filter for 4:2:2 8 bit.

6.6.23.4 Test bitstream FREH422-4

Specification: All slices are coded as I slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices for 4:2:2 8 bit.

Purpose: Check that a decoder can properly decode I slices for 4:2:2 8 bit without deblocking filter.

6.6.23.5 Test bitstream FREH422-5

Specification: All slices are coded as I or P slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices for 4:2:2 8 bit.

Purpose: Check that a decoder can properly decode P slices for 4:2:2 8 bit without deblocking filter.

6.6.23.6 Test bitstream FREH422-6

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices for 4:2:2 8 bit.

Purpose: Check that a decoder can properly decode B slices for 4:2:2 8 bit without deblocking filter.

6.6.23.7 Test bitstream FREH422-7

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices for 4:2:2 8 bit.

Purpose: Check that a decoder can properly decode P slices for 4:2:2 8 bit with deblocking filter.

6.6.23.8 Test bitstream FREH422-8

Specification: All slices are coded as I slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 2, specifying 10 bit video. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices for 4:2:2 10 bit.

Purpose: Check that a decoder can properly decode I slices for 4:2:2 10 bit without deblocking filter.

6.6.23.9 Test bitstream FREH422-9

Specification: All slices are coded as I or P slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 2, specifying 10 bit video. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices for 4:2:2 10 bit.

Purpose: Check that a decoder can properly decode P slices for 4:2:2 10 bit without deblocking filter.

6.6.23.10 Test bitstream FREH422-10

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 1. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 2, specifying 10 bit video. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices for 4:2:2 10 bit.

Purpose: Check that a decoder can properly decode B slices for 4:2:2 10 bit without deblocking filter.

6.6.23.11 Test bitstream FREH422-11

Specification: All slices are coded as I or P slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 2, specifying 10 bit video. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices for 4:2:2 10 bit.

Purpose: Check that a decoder can properly decode P slices for 4:2:2 10 bit with deblocking filter.

6.6.23.12 Test bitstream FREH422-12

Specification: All slices are coded as I slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 0. Both 4x4 and 8x8 block size

transform modes are used. seq_scaling_matrix_present_flag is set to 1 and default scaling lists are used. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices for 4:2:2 8 bit.

Purpose: Check that a decoder can properly decode I slices for 4:2:2 8 bit without deblocking filter.

6.6.23.13 Test bitstream FREH422-13

Specification: All slices are coded as I or P slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 0. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1 and default scaling lists are used. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices for 4:2:2 8 bit.

Purpose: Check that a decoder can properly decode P slices for 4:2:2 8 bit without deblocking filter.

6.6.23.14 Test bitstream FREH422-14

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_Filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 0. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1 and default scaling lists are used. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices for 4:2:2 8 bit.

Purpose: Check that a decoder can properly decode B slices for 4:2:2 8 bit without deblocking filter.

6.6.23.15 Test bitstream FREH422-15

Specification: All slices are coded as I slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 2, specifying 10 bit video. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1 and default scaling lists are used. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I slices for 4:2:2 10 bit.

Purpose: Check that a decoder can properly decode I slices for 4:2:2 10 bit without deblocking filter.

6.6.23.16 Test bitstream FREH422-16

Specification: All slices are coded as I or P slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 2, specifying 10 bit video. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1 and default scaling lists are used. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of P slices for 4:2:2 10 bit.

Purpose: Check that a decoder can properly decode P slices for 4:2:2 10 bit without deblocking filter.

6.6.23.17 Test bitstream FREH422-17

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 2, specifying 10 bit video. Both 4x4 and 8x8

block size transform modes are used. seq_scaling_matrix_present_flag is set to 1 and default scaling lists are used. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices for 4:2:2 10 bit.

Purpose: Check that a decoder can properly decode B slices for 4:2:2 10 bit without deblocking filter.

6.6.23.18 Test bitstream FREH422-18

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 2, specifying 10 bit video. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1. Scaling lists are included in the sequence parameter set and the picture parameter set. Each slice is a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices for 4:2:2 10 bit.

Purpose: Check that a decoder can properly decode B slices of coded fields for 4:2:2 10 bit.

6.6.23.19 Test bitstream FREH422-19

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 2, specifying 10 bit video. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1. Scaling lists are included in the sequence parameter set and the picture parameter set. Each slice is a coded frame. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices for 4:2:2 10 bit.

Purpose: Check that a decoder can properly decode B slices of coded frames for 4:2:2 10 bit.

6.6.23.20 Test bitstream FREH422-20

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 2, specifying 10 bit video. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1. Scaling lists are included in the sequence parameter set and the picture parameter set. Each slice is either a coded frame or a coded field. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices for 4:2:2 10 bit.

Purpose: Check that a decoder can properly decode B slices of coded frames and fields for 4:2:2 10 bit.

6.6.23.21 Test bitstream FREH422-21

Specification: All slices are coded as I, P or B slices. Each picture contains only one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Spatial direct prediction is used for direct prediction. direct_8x8_inference_flag is equal to 0. chroma_format_idc is equal to 2, specifying 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are set equal to 2, specifying 10 bit video. Both 4x4 and 8x8 block size transform modes are used. seq_scaling_matrix_present_flag is set to 1. Scaling lists are included in the sequence parameter set and the picture parameter set. Each slice is a coded frame. mb_adaptive_frame_field_coding is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of B slices for 4:2:2 10 bit.

Purpose: Check that a decoder can properly decode B slices with mb_adaptive_frame_field_flag=1 for 4:2:2 10 bit.

6.6.24 Auxiliary coded picture

6.6.24.1 Test bitstream FREAUX-1

Specification: Coded slices of an auxiliary coded picture are included in this bitstream. The rest of the slices are coded as either an I slice or a P slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of coded slices of an auxiliary coded picture.

Purpose: Check that the decoder can properly handle coded slices of an auxiliary coded picture.

6.6.25 Test bitstreams – Professional Profiles: High 4:4:4 Predictive Profile

6.6.25.1 Test bitstream PPH444P-1

Specification: All slices are coded as I or P slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma sample bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I and P slices for 4:4:4 14 bit frames with separate_colour_plane_flag equal to 0, using CAVLC.

Purpose: Check that a decoder can properly decode I and P slices of 4:4:4 14 bit coded frames with separate_colour_plane_flag equal to 0, using CAVLC.

6.6.25.2 Test bitstream PPH444P-2

Specification: All slices are coded as I or P slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma sample bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I and P slices for 4:4:4 14 bit frames with separate_colour_plane_flag equal to 0, using CABAC.

Purpose: Check that a decoder can properly decode I and P slices of 4:4:4 14 bit coded frames with separate_colour_plane_flag equal to 0, using CABAC.

6.6.25.3 Test bitstream PPH444P-3

Specification: All slices are coded as I, P or B slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma sample bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I, P and B slices for 4:4:4 14 bit frames with separate_colour_plane_flag equal to 0, using CAVLC.

Purpose: Check that a decoder can properly decode I, P and B slices of 4:4:4 14 bit coded frames with separate_colour_plane_flag equal to 0, using CAVLC.

6.6.25.4 Test bitstream PPH444P-4

Specification: All slices are coded as I, P or B slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma sample bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I, P and B slices for 4:4:4 14 bit frames with separate_colour_plane_flag equal to 0, using CABAC.

Purpose: Check that a decoder can properly decode I, P and B slices of 4:4:4 14 bit coded frames with separate_colour_plane_flag equal to 0, using CABAC.

6.6.25.5 Test bitstream PPH444P-5

Specification: All slices are coded as I, P or B slices. Each picture contains more than one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma sample bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I, P and B slices for 4:4:4 14 bit frames with separate_colour_plane_flag equal to 0, without deblocking filter.

Purpose: Check that a decoder can properly decode I, P and B slices of 4:4:4 14 bit coded frames with separate_colour_plane_flag equal to 0, without deblocking filter.

6.6.25.6 Test bitstream PPH444P-6

Specification: All slices are coded as I or P slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma sample bit depths. separate_colour_plane_flag is equal to 1. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I and P slices for 4:4:4 14 bit frames with separate_colour_plane_flag equal to 1, using CAVLC.

Purpose: Check that a decoder can properly decode I and P slices of coded frames for 14 bit 4:4:4 coded frames with separate_colour_plane_flag equal to 1, using CAVLC.

6.6.25.7 Test bitstream PPH444P-7

Specification: All slices are coded as I or P slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma sample bit depths. separate_colour_plane_flag is equal to 1. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I and P slices for 4:4:4 14 bit frames with separate_colour_plane_flag equal to 1, using CABAC.

Purpose: Check that a decoder can properly decode I and P slices of 4:4:4 14 bit coded frames with separate_colour_plane_flag equal to 1, using CABAC.

6.6.25.8 Test bitstream PPH444P-8

Specification: All slices are coded as I, P or B slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma sample bit depths. separate_colour_plane_flag is equal to 1. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I, P and B slices for 4:4:4 14 bit frames with separate_colour_plane_flag equal to 1, using CAVLC.

Purpose: Check that a decoder can properly decode I, P and B slices of 4:4:4 14 bit coded frames with separate_colour_plane_flag equal to 1, using CAVLC.

6.6.25.9 Test bitstream PPH444P-9

Specification: All slices are coded as I, P or B slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma sample bit depths. separate_colour_plane_flag is equal to 1. pic_order_cnt_type is

equal to 0. direct_8x8_inference_flag is equal to 1. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I, P and B slices for 4:4:4 14 bit frames with separate_colour_plane_flag equal to 1, using CABAC.

Purpose: Check that a decoder can properly decode I, P and B slices of 4:4:4 14 bit coded frames with separate_colour_plane_flag equal to 1, using CABAC.

6.6.25.10 Test bitstream PPH444P-10

Specification: All slices are coded as I, P or B slices. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma sample bit depths. qpprime_y_zero_transform_bypass_flag is equal to 1, specifying transform-bypass coding for macroblocks having QP'_Y equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of I, P and B slices for 4:4:4 14 bit frames with qpprime_y_zero_transform_bypass_flag equal to 1.

Purpose: Check that a decoder can properly decode I, P and B slices of 4:4:4 14 bit coded frames with qpprime_y_zero_transform_bypass_flag equal to 1.

6.6.26 Test bitstreams – Professional Profiles: High 10 Intra Profile

6.6.26.1 Test bitstream PPH10I-1

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_format_idc is equal to 1, specifying the 4:2:0 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 2, specifying 10 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:2:0 10 bit IDR frames with separate_colour_plane_flag equal to 0, using CAVLC.

Purpose: Check that a decoder can properly decode 4:2:0 10 bit IDR frames with separate_colour_plane_flag equal to 0, using CAVLC.

6.6.26.2 Test bitstream PPH10I-2

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 1, specifying the 4:2:0 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 2, specifying 10 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:2:0 10 bit IDR frames with separate_colour_plane_flag equal to 0, using CABAC.

Purpose: Check that a decoder can properly decode 4:2:0 10 bit IDR frames with separate_colour_plane_flag equal to 0, using CABAC.

6.6.26.3 Test bitstream PPH10I-3

Specification: All pictures are IDR pictures. deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 1, specifying the 4:2:0 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 2, specifying 10 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:2:0 10 bit IDR frames with separate_colour_plane_flag equal to 0, using CABAC.

Purpose: Check that a decoder can properly decode 4:2:0 10 bit IDR frames with separate_colour_plane_flag equal to 0, using CABAC.

6.6.26.4 Test bitstream PPH10I-4

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_format_idc is equal to 1, specifying the 4:2:0 chroma format.

Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 2, specifying 10 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Some pictures are coded frames and some are coded fields. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:2:0 10 bit IDR frames and fields with separate_colour_plane_flag equal to 0, using CAVLC.

Purpose: Check that a decoder can properly decode 4:2:0 10 bit IDR frames and fields with separate_colour_plane_flag equal to 0, using CAVLC.

6.6.26.5 Test bitstream PPH10I-5

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 1, specifying the 4:2:0 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 2, specifying 10 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Some pictures are coded frames and some are coded fields. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:2:0 10 bit IDR frames and fields with separate_colour_plane_flag equal to 0, using CABAC.

Purpose: Check that a decoder can properly decode 4:2:0 10 bit IDR frames and fields with separate_colour_plane_flag equal to 0, using CABAC.

6.6.26.6 Test bitstream PPH10I-6

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_format_idc is equal to 1, specifying the 4:2:0 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 2, specifying 10 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame with mb_adaptive_frame_field_flag equal to 1. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:2:0 10 bit IDR frames with macroblock adaptive frame/field coding.

Purpose: Check that a decoder can properly decode 4:2:0 10 bit IDR frames with macroblock adaptive frame/field coding.

6.6.26.7 Test bitstream PPH10I-7

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 1, specifying the 4:2:0 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 2, specifying 10 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame with mb_adaptive_frame_field_flag equal to 1. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:2:0 10 bit IDR frames with macroblock adaptive frame/field coding.

Purpose: Check that a decoder can properly decode 4:2:0 10 bit IDR frames with macroblock adaptive frame/field coding.

6.6.27 Test bitstreams – Professional Profiles: High 4:2:2 Intra Profile

6.6.27.1 Test bitstream PPH422I-1

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_format_idc is equal to 2, specifying the 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 2, specifying 10 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:2:2 10 bit IDR frames with separate_colour_plane_flag equal to 0, using CAVLC.

Purpose: Check that a decoder can properly decode 4:2:2 10 bit IDR frames with separate_colour_plane_flag equal to 0, using CAVLC.

6.6.27.2 Test bitstream PPH422I-2

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 2, specifying the 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 2, specifying 10 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:2:2 10 bit IDR frames with separate_colour_plane_flag equal to 0, using CABAC.

Purpose: Check that a decoder can properly decode 4:2:2 10 bit IDR frames with separate_colour_plane_flag equal to 0, using CABAC.

6.6.27.3 Test bitstream PPH422I-3

Specification: All pictures are IDR pictures. deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 2, specifying the 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 2, specifying 10 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:2:2 10 bit IDR frames with separate_colour_plane_flag equal to 0, using CABAC.

Purpose: Check that a decoder can properly decode 4:2:2 10 bit IDR frames with separate_colour_plane_flag equal to 0, using CABAC.

6.6.27.4 Test bitstream PPH422I-4

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_format_idc is equal to 2, specifying the 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 2, specifying 10 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Some pictures are coded frames and some are coded fields. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:2:2 10 bit IDR frames and fields with separate_colour_plane_flag equal to 0, using CAVLC.

Purpose: Check that a decoder can properly decode 4:2:2 10 bit IDR frames and fields with separate_colour_plane_flag equal to 0, using CAVLC.

6.6.27.5 Test bitstream PPH422I-5

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 2, specifying the 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 2, specifying 10 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Some pictures are coded frames and some are coded fields. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:2:2 10 bit IDR frames and fields with separate_colour_plane_flag equal to 0, using CABAC.

Purpose: Check that a decoder can properly decode 4:2:2 10 bit IDR frames and fields with separate_colour_plane_flag equal to 0, using CABAC.

6.6.27.6 Test bitstream PPH422I-6

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_format_idc is equal to 2, specifying the 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 2, specifying 10 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame with mb_adaptive_frame_field_flag equal to 1. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:2:2 10 bit IDR frames with macroblock adaptive frame/field coding.

Purpose: Check that a decoder can properly decode 4:2:2 10 bit IDR frames with macroblock adaptive frame/field coding.

6.6.27.7 Test bitstream PPH422I-7

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 2, specifying the 4:2:2 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 2, specifying 10 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame with mb_adaptive_frame_field_flag equal to 1. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:2:2 10 bit IDR frames with macroblock adaptive frame/field coding.

Purpose: Check that a decoder can properly decode 4:2:2 10 bit IDR frames with macroblock adaptive frame/field coding.

6.6.28 Test bitstreams – Professional Profiles: High 4:4:4 Intra Profile

6.6.28.1 Test bitstream PPH444I-1

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 0.

Purpose: Check that a decoder can properly decode 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 0.

6.6.28.2 Test bitstream PPH444I-2

Specification: All pictures are IDR pictures. deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 0, without deblocking filter.

Purpose: Check that a decoder can properly decode 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 0, without deblocking filter.

6.6.28.3 Test bitstream PPH444I-3

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Both seq_scaling_matrix_present_flag and pic_scaling_matrix_present_flag are equal to 1. A different scaling matrix is applied to each colour plane. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 0, applying a different scaling matrix for each colour plane.

Purpose: Check that a decoder can properly decode 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 0, applying a different scaling matrix for each colour plane.

6.6.28.4 Test bitstream PPH444I-4

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 1. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 1.

Purpose: Check that a decoder can properly decode 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 1.

6.6.28.5 Test bitstream PPH444I-5

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 1. seq_scaling_matrix_present_flag is equal to 1 and pic_scaling_matrix_present_flag is equal to 0. A different scaling matrix is applied to each colour plane. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 1, applying a different scaling matrix for each colour plane.

Purpose: Check that a decoder can properly decode 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 1, applying a different scaling matrix for each colour plane.

6.6.28.6 Test bitstream PPH444I-6

Specification: All pictures are IDR pictures. Each picture contains more than one slice. Slices having different values of colour_plane_id are interleaved with each other. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 1. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 1, using slice-level interleaving of colour_plane_id values within an access unit.

Purpose: Check that a decoder can properly decode 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 1, using slice-level interleaving of colour_plane_id values within an access unit.

6.6.28.7 Test bitstream PPH444I-7

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma bit depths. qpprime_y_zero_transform_bypass_flag is equal to 1, specifying transform-bypass coding for macroblocks having QP'_Y equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:4:4 14 bit IDR frames with qpprime_y_zero_transform_bypass_flag equal to 1.

Purpose: Check that a decoder can properly decode 4:4:4 14 bit IDR frames with qpprime_y_zero_transform_bypass_flag equal to 1.

6.6.29 Test bitstreams – Professional Profiles: CAVLC 4:4:4 Intra Profile

6.6.29.1 Test bitstream PPCV444I-1

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 0, using CAVLC.

Purpose: Check that a decoder can properly decode 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 0, using CAVLC.

6.6.29.2 Test bitstream PPCV444I-2

Specification: All pictures are IDR pictures. deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 0, without deblocking filter, using CAVLC.

Purpose: Check that a decoder can properly decode 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 0, without deblocking filter, using CAVLC.

6.6.29.3 Test bitstream PPCV444I-3

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 0. Both seq_scaling_matrix_present_flag and pic_scaling_matrix_present_flag are

equal to 1. A different scaling matrix is applied to each colour plane. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 0, applying a different scaling matrix for each colour plane, using CAVLC.

Purpose: Check that a decoder can properly decode 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 0, applying a different scaling matrix for each colour plane, using CAVLC.

6.6.29.4 Test bitstream PPCV444I-4

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 1. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 1, using CAVLC.

Purpose: Check that a decoder can properly decode 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 1, using CAVLC.

6.6.29.5 Test bitstream PPCV444I-5

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 1. seq_scaling_matrix_present_flag is equal to 1 and pic_scaling_matrix_present_flag is equal to 0. A different scaling matrix is applied to each colour plane. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 1, applying a different scaling matrix for each colour plane, using CAVLC.

Purpose: Check that a decoder can properly decode 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 1, applying a different scaling matrix for each colour plane, using CAVLC.

6.6.29.6 Test bitstream PPCV444I-6

Specification: All pictures are IDR pictures. Each picture contains more than one slice. Slices having different values of colour_plane_id are interleaved with each other. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma bit depths. separate_colour_plane_flag is equal to 1. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 1, using slice-level interleaving of colour_plane_id values within an access unit, using CAVLC.

Purpose: Check that a decoder can properly decode 4:4:4 14 bit IDR frames with separate_colour_plane_flag equal to 1, using slice-level interleaving of colour_plane_id values within an access unit, using CAVLC.

6.6.29.7 Test bitstream PPCV444I-7

Specification: All pictures are IDR pictures. Each picture contains more than one slice. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_format_idc is equal to 3, specifying the 4:4:4 chroma format. Both bit_depth_luma_minus8 and bit_depth_chroma_minus8 are equal to 6, specifying 14 bit luma and chroma bit depths. qpprime_y_zero_transform_bypass_flag is equal to 1, specifying transform-bypass coding for macroblocks having QP'_Y equal to 0. Each picture is a coded frame. The NAL units are encapsulated in the byte stream format specified in Annex B of ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of 4:4:4 14 bit IDR frames with qpprime_y_zero_transform_bypass_flag equal to 1, using CAVLC.

Purpose: Check that a decoder can properly decode 4:4:4 14 bit IDR frames with qpprime_y_zero_transform_bypass_flag equal to 1, using CAVLC.

6.6.30 Test bitstreams – SVC Profiles: Scalable Baseline Profile 4:2:0 8 bit

6.6.30.1 Test bitstream SVCBC-1

Specification: All slices are coded as I, P, EI, EP or EB slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0 for layer representations with dependency_id equal to 0, specifying the CAVLC parsing process; and entropy_coding_mode_flag is equal to 1 for layer representations with dependency_id equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. gaps_in_frame_num_value_allowed_flag is equal to 1. Reference picture list reordering and memory management control operations are used. transform_8x8_mode_flag is equal to 1 for layer representations with dependency_id equal to 1, specifying that 8x8 transform decoding process may be in use. DependencyIdMax is equal to 1, TemporalIdMax is equal to 4 and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 0. no_inter_layer_pred_flag is equal to 0. use_ref_base_pic_flag is equal to 0, specifying that reference base pictures are not used as reference pictures for the inter prediction process. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 0 and store_ref_base_pic_flag is equal to 0, specifying that the reference base picture are not stored. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying that inter-layer motion and inter-layer intra prediction are enabled. adaptive_motion_prediction_flag is equal to 1, specifying that inter-layer motion prediction is enabled. adaptive_residual_prediction_flag is equal to 1, specifying that inter-layer residual prediction is enabled. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Gaps in frame_num, reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of a quality enhancement layer, 8x8 transform size with inter-layer motion, intra and residual prediction and CABAC parsing.

Purpose: Check that the decoder can properly handle gaps in frame_num, reference picture list reordering, memory management control operations and EI, EP and EB coded slices of a quality enhancement layer, 8x8 transform size with inter-layer motion, intra and residual prediction and CABAC parsing.

6.6.30.2 Test bitstream SVCBM-1

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. DependencyIdMax is equal to 0, TemporalIdMax is equal to 0, and DQIdMax is equal to 1. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 0, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. no_inter_layer_pred_flag is equal to 0, slice_header_restriction_ flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 0 (with default_base_mode_flag equal to 1), adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI and EP coded slices of a quality enhancement layer.

Purpose: Check that the decoder can properly handle EI and EP coded slices of a quality enhancement layer.

6.6.30.3 Test bitstream SVCBM-2

Specification: All slices are coded as I, P, EI or EP slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. DependencyIdMax is equal to 0, TemporalIdMax is equal to 0 and DQIdMax is equal to 1. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 0. no_inter_layer_pred_flag is equal to 0. adaptive_tcoeff_level_prediction_flag is equal to 0, specifying that an alternative inter-layer prediction process is applied for the whole sequence. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. default_base_mode_flag is equal to 1, specifying inter-layer motion and intra prediction. default_residual_prediction_flag is equal to 0. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI and EP coded slices of a quality enhancement layer, using an alternative inter-layer prediction process for translation to an AVC bitstream.

Purpose: Check that the decoder can properly handle EI and EP coded slices of a quality enhancement layer, using an alternative inter-layer prediction process for translation to an AVC bitstream.

6.6.30.4 Test bitstream SVCBM-3

Specification: All slices are coded as I, P or EP slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. DependencyIdMax is equal to 0, TemporalIdMax is equal to 0 and DQIdMax is equal to 1. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 0. no_inter_layer_pred_flag is equal to 0. tcoeff_level_prediction_flag is equal to 1, specifying that an alternative inter-layer prediction process is applied on a macroblock basis. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. default_base_mode_flag is equal to 1, specifying inter-layer motion and intra prediction. default_residual_prediction_flag is equal to 0. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI and EP coded slices of a quality enhancement layer, enabling an alternative inter-layer prediction process by macroblock for translation to an AVC bitstream.

Purpose: Check that the decoder can properly handle EI and EP coded slices of a quality enhancement layer, enabling an alternative inter-layer prediction process by macroblock for translation to an AVC bitstream.

6.6.30.5 Test bitstream SVCBM-4

Specification: All slices are coded as I, P, EI or EP slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. DependencyIdMax is equal to 0, TemporalIdMax is equal to 0 and DQIdMax is equal to 2. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 0. no_inter_layer_pred_flag is equal to 0. tcoeff_level_prediction_flag is equal to 1 for the layer representation with quality_id equal to 1, specifying that an alternative inter-layer prediction process is applied on a macroblock basis. For the layer representation with quality_id equal to 2 tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. default_base_mode_flag is equal to 1, specifying inter-layer motion and intra prediction. default_residual_prediction_flag is equal to 0. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI and EP coded slices of a quality enhancement layer and of a quality enhancement layer enabling an alternative inter-layer prediction process by macroblock for translation to an AVC bitstream.

Purpose: Check that the decoder can properly handle EI and EP coded slices of a quality enhancement layer and of a quality enhancement layer enabling an alternative inter-layer prediction process by macroblock for translation to an AVC bitstream.

6.6.30.6 Test bitstream SVCBM-5

Specification: All slices are coded as I, P, EI, or EP slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0 for layer representations with quality_id equal to 0, specifying the CAVLC parsing process. entropy_coding_mode_flag is equal to 1 for layer representations with quality_id greater than 0, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. gaps_in_frame_num_value_allowed_flag is equal to 1. Reference picture list reordering and memory management control operations are used. transform_8x8_mode_flag is equal to 1 for layer representation with quality_id greater than 0, specifying that 8x8 transform decoding process may be in use. mb_qp_delta is equal to 0. DependencyIdMax is equal to 0, TemporalIdMax is equal to 4 and DQIdMax is equal to 3. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 0. no_inter_layer_pred_flag is equal to 0. use_ref_base_pic_flag is equal to 1 for access units with temporal_id equal to 0, specifying that reference base pictures may be used as reference pictures for the inter prediction process. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 0 and store_ref_base_pic_flag is equal to 1 for access units with temporal_id equal to 0, specifying that reference base pictures are stored for these access units. slice_skip_flag is equal to 0. default_base_mode_flag is equal to 1 for layer representations with quality_id greater than 1, specifying inter-layer motion and intra prediction. default_residual_prediction_flag is equal to 1 for layer representations with quality_id greater than 1. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Gaps in frame_num, reference picture list reordering, memory management control operations and decoding of EI and EP slices of quality enhancement layers, using key pictures and transform coefficient fragmentation, 8x8 transform size with inter-layer motion and intra prediction.

Purpose: Check that the decoder can properly handle gaps in frame_num, reference picture list reordering, memory management control operations and EI and EP coded slices of quality enhancement layers, using key pictures and transform coefficient fragmentation, 8x8 transform size with inter-layer motion and intra prediction.

6.6.30.7 Test bitstream SVCBCT-1

Specification: All slices are coded as I, P, EI, EP or EB slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 0. entropy_coding_mode_flag is equal to 0 for layer representation with dependency_id equal to 0, specifying the CAVLC parsing process, and entropy_coding_mode_flag is equal to 1 for layer representation with dependency_id equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. gaps_in_frame_num_value_allowed_flag is equal to 1. Reference picture list reordering and memory management control operations are used. transform_8x8_mode_flag is equal to 1 for layer representation with dependency_id equal to 1, specifying that 8x8 transform decoding process may be in use. DependencyIdMax is equal to 1, TemporalIdMax is equal to 4 and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 0. no_inter_layer_pred_flag is equal to 0. use_ref_base_pic_flag is equal to 1, specifying that reference base pictures are not used as reference pictures for the inter prediction process. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 0 and store_ref_base_pic_flag is equal to 0, specifying that reference base picture are not stored. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying that inter-layer motion and inter-layer intra prediction is enabled. adaptive_motion_prediction_flag is equal to 1, specifying that inter-layer motion prediction is enabled. adaptive_residual_prediction_flag is equal to 1, specifying that inter-layer residual prediction is enabled. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Gaps in frame_num, reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of a quality and temporal enhancement layer, 8x8 transform size with inter-layer motion, intra and residual prediction and CABAC parsing.

Purpose: Check that the decoder can properly handle gaps in frame_num, reference picture list reordering, memory management control operations and EI, EP and EB coded slices of a quality and temporal enhancement layer, 8x8 transform size with inter-layer motion, intra and residual prediction and CABAC parsing.

6.6.30.8 Test bitstream SVCBMT-1

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering is used. DependencyIdMax is equal to 0, TemporalIdMax is equal to 3, and DQIdMax is equal to 1. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 0, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 0 (with default_base_mode_flag equal to 1), adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering and decoding of EI and EP coded slices of a quality enhancement layer.

Purpose: Check that the decoder can properly handle reference picture list reordering and EI and EP coded slices of a quality enhancement layer.

6.6.30.9 Test bitstream SVCBMT-2

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. DependencyIdMax is equal to 0, TemporalIdMax is equal to 3, and DQIdMax is equal to 1. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 0, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 0 (with default_base_mode_flag equal to 1), adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of EI and EP coded slices of a quality enhancement layer.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, and EI and EP coded slices of a quality enhancement layer.

6.6.30.10 Test bitstream SVCBMT-3

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. DependencyIdMax is equal to 0, TemporalIdMax is equal to 3, and DQIdMax is equal to 1. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 0, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 0 (with default_base_mode_flag equal to 1), adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of EI and EP coded slices of a quality enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, and EI and EP coded slices of a quality enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta.

6.6.30.11 Test bitstream SVCBMT-4

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 2, specifying enabling of deblocking filter process (without slice boundary deblocking). Additionally, slice_alpha_c0_offset_div2 and slice_beta_offset_div2 are not equal to 0. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. DependencyIdMax is equal to 0, TemporalIdMax is equal to 3, and DQIdMax is equal to 1. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 0, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 0 (with default_base_mode_flag equal to 1), adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of EI and EP coded slices of a quality enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, and EI and EP coded slices of a quality enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter.

6.6.30.12 Test bitstream SVCBMT-5

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice and slice groups greater than 1. disable_deblocking_filter_idc is equal to 2, specifying enabling of deblocking filter process (without slice boundary deblocking). Additionally, slice_alpha_c0_offset_div2 and slice_beta_offset_div2 are not equal to 0. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering is used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. DependencyIdMax is equal to 0, TemporalIdMax is equal to 3, and DQIdMax is equal to 1. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 0, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 0 (with default_base_mode_flag equal to 1), adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag

equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of EI and EP coded slices of a quality enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter and slice groups.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, and EI and EP coded slices of a quality enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter and slice groups.

6.6.30.13 Test bitstream SVCBMT-6

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 2, specifying enabling of deblocking filter process (without slice boundary deblocking). Additionally, slice_alpha_c0_offset_div2 and slice_beta_offset_div2 are not equal to 0. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering is used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. DependencyIdMax is equal to 0, TemporalIdMax is equal to 3, and DQIdMax is equal to 1. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 0, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 1 (with adaptive_tcoeff_level_prediction_flag equal to 0). slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 0 (with default_base_mode_flag equal to 1), adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of EI and EP coded slices of a quality enhancement layer, using an alternative inter-layer prediction process for translation to an AVC bitstream, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, and EI and EP coded slices of a quality enhancement layer, using an alternative inter-layer prediction process for translation to an AVC bitstream, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter.

6.6.30.14 Test bitstream SVCBMT-7

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 2, specifying enabling of deblocking filter process (without slice boundary deblocking). Additionally, slice_alpha_c0_offset_div2 and slice_beta_offset_div2 are not equal to 0. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering is used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. DependencyIdMax is equal to 0, TemporalIdMax is equal to 3, and DQIdMax is equal to 1. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 0, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 1 (with adaptive_tcoeff_level_prediction_flag equal to 1). slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 0 (with default_base_mode_flag equal to 1), adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of EI and EP coded slices of a quality enhancement layer, enabling an alternative inter-layer prediction process by macroblock for translation to an AVC bitstream, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, and EI and EP coded slices of a quality enhancement layer, enabling an alternative inter-layer prediction process by macroblock for translation to an AVC bitstream, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter.

6.6.30.15 Test bitstream SVCBMT-8

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 2, specifying enabling of deblocking filter process (without slice boundary deblocking). Additionally, slice_alpha_c0_offset_div2 and slice_beta_offset_div2 are not equal to 0. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. chroma_qp_index_offset is not equal to 0. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. DependencyIdMax is equal to 0, TemporalIdMax is equal to 3, and DQIdMax is equal to 1. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 0, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 0 (with default_base_mode_flag equal to 1), adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of EI and EP coded slices of a quality enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter, and non-zero chroma_qp_index_offset.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, and EI and EP coded slices of a quality enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter, and non-zero chroma_qp_index_offset.

6.6.30.16 Test bitstream SVCBMT-9

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 2, specifying enabling of deblocking filter process (without slice boundary deblocking). Additionally, slice_alpha_c0_offset_div2 and slice_beta_offset_div2 are not equal to 0. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. DependencyIdMax is equal to 0, TemporalIdMax is equal to 3, and DQIdMax is equal to 1. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 0, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 0 (with default_base_mode_flag equal to 1), adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of EI and EP coded slices of a quality enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter with CABAC parsing.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, and EI and EP coded slices of a quality enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter with CABAC parsing.

6.6.30.17 Test bitstream SVCBMT-10

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 2, specifying enabling of deblocking filter process (without slice boundary deblocking). Additionally, slice_alpha_c0_offset_div2 and slice_beta_offset_div2 are not equal to 0. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. DependencyIdMax is equal to 0, TemporalIdMax is equal to 3, and DQIdMax is equal to 1. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 0, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of EI and EP skipped slices of a quality enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, and EI and EP skipped slices of a quality enhancement layer with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter.

6.6.30.18 Test bitstream SVCBMT-11

Specification: All slices are coded as I, P, EI or EP slices. The first frame and some other frames are coded as IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 2, specifying enabling of deblocking filter process (without slice boundary deblocking). Additionally, slice_alpha_c0_offset_div2 and slice_beta_offset_div2 are not equal to 0. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. DependencyIdMax is equal to 0, TemporalIdMax is equal to 3, and DQIdMax is equal to 1. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 0, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 0 (with default_base_mode_flag equal to 1), adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of EI and EP coded slices of a quality enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter and more than one IDR.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, and EI and EP coded slices of a quality enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter and more than one IDR.

6.6.30.19 Test bitstream SVCBMT-12

Specification: All slices are coded as I, P, EI or EP slices. The first frame and some other frames are coded as IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 2, specifying enabling of deblocking filter process (without slice boundary deblocking). Additionally, slice_alpha_c0_offset_div2 and slice_beta_offset_div2 are not equal to 0. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. DependencyIdMax is equal to 0, TemporalIdMax is equal to 3, and DQIdMax is equal to 1. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 0, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. use_ref_base_pic_flag is equal to 1 and store_ref_base_pic_flag is equal to 1. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 0 (with default_base_mode_flag equal to 1), adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of EI and EP coded slices of a quality enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter, more than one IDR and key pictures.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, and EI and EP coded slices of a quality enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter, more than one IDR and key pictures.

6.6.30.20 Test bitstream SVCBMT-13

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering is used. DependencyIdMax is equal to 0, TemporalIdMax is equal to 3, and DQIdMax is equal to 2. extended_spatial_scalability is equal to 0,

SpatialResolutionChangeFlag is equal to 0, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 0 (with default_base_mode_flag equal to 1), adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of EI and EP coded slices of two quality enhancement layers.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, and EI and EP coded slices of two quality enhancement layers.

6.6.30.21 Test bitstream SVCBS-1

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. DependencyIdMax is equal to 1, TemporalIdMax is equal to 0, and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 0, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI and EP coded slices of a spatial enhancement layer.

Purpose: Check that the decoder can properly handle EI and EP coded slices of a spatial enhancement layer.

6.6.30.22 Test bitstream SVCBS-2

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. DependencyIdMax is equal to 1, TemporalIdMax is equal to 0, and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 0, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI and EP coded slices of a spatial enhancement layer.

Purpose: Check that the decoder can properly handle EI and EP coded slices of a spatial enhancement layer.

6.6.30.23 Test bitstream SVCBS-3

Specification: All slices are coded as I, P, EI or EP slices. Each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. num_ref_frames is equal to 1. DependencyIdMax is equal to 1, TemporalIdMax is equal to 0 and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 1. no_inter_layer_pred_flag is equal to 0. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying enabling inter-layer motion and intra prediction. adaptive_motion_prediction_flag is equal to 1, specifying enabling an alternative motion vectors prediction process. adaptive_residual_prediction_flag is equal to 1, specifying enabling inter-layer residual prediction. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI and EP coded slices of a spatial enhancement layer, using inter-layer motion, intra and residual prediction.

Purpose: Check that the decoder can properly handle EI and EP coded slices of a spatial enhancement layer in the bitstream, using inter-layer motion, intra and residual prediction.

6.6.30.24 Test bitstream SVCBS-4

Specification: All slices are coded as I, P, EI or EP slices. Each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. num_ref_frames is equal to 1. DependencyIdMax is equal to 1, TemporalIdMax is equal to 0 and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 1. no_inter_layer_pred_flag is equal to 0. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying enabling inter-layer motion and intra prediction. adaptive_motion_prediction_flag is equal to 1, specifying enabling an alternative motion vectors prediction process. adaptive_residual_prediction_flag is equal to 1, specifying enabling inter-layer residual prediction. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI and EP coded slices of a spatial enhancement layer, using inter-layer motion, intra and residual prediction.

Purpose: Check that the decoder can properly handle EI and EP coded slices of a spatial enhancement layer in the bitstream, using inter-layer motion, intra and residual prediction.

6.6.30.25 Test bitstream SVCBS-5

Specification: All slices are coded as I, P, EI or EP slices. Each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. num_ref_frames is equal to 1. DependencyIdMax is equal to 1, TemporalIdMax is equal to 0 and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 1. no_inter_layer_pred_flag is equal to 0. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying enabling inter-layer motion and intra prediction. adaptive_motion_prediction_flag is equal to 1, specifying enabling an alternative motion vectors prediction process. adaptive_residual_prediction_flag is equal to 1, specifying enabling inter-layer residual prediction. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI and EP coded slices of a spatial enhancement layer, using inter-layer motion, intra and residual prediction.

Purpose: Check that the decoder can properly handle EI and EP coded slices of a spatial enhancement layer in the bitstream, using inter-layer motion, intra and residual prediction.

6.6.30.26 Test bitstream SVCBS-6

Specification: All slices are coded as I, P, EI or EP slices. Each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. num_ref_frames is equal to 1. DependencyIdMax is equal to 2, TemporalIdMax is equal to 0 and DQIdMax is equal to 32. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 1. no_inter_layer_pred_flag is equal to 0. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying enabling inter-layer motion and intra prediction. adaptive_motion_prediction_flag is equal to 1, specifying enabling an alternative motion vectors prediction process. adaptive_residual_prediction_flag is equal to 1, specifying enabling inter-layer residual prediction. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI and EP coded slices of two spatial enhancement layers, using inter-layer motion, intra and residual prediction.

Purpose: Check that the decoder can properly handle EI and EP coded slices of two spatial enhancement layers in the bitstream, using inter-layer motion, intra and residual prediction.

6.6.30.27 Test bitstream SVCBS-7

Specification: All slices are coded as I, P, EI or EP slices. Each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. pic_order_cnt_type is equal to 0. num_ref_frames is equal to 1. DependencyIdMax is equal to 1, TemporalIdMax is equal to 0 and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 1.

no_inter_layer_pred_flag is equal to 1, specifying disabling inter-layer prediction. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 1. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI and EP coded slices of a spatial enhancement layer without inter-layer prediction.

Purpose: Check that the decoder can properly handle EI and EP coded slices of a spatial enhancement layer without inter-layer prediction.

6.6.30.28 Test bitstream SVCBS-8

Specification: All slices are coded as I, P, EI, EP or EB slices. Each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 0. entropy_coding_mode_flag is equal to 0 for dependency layer with dependency_id equal to 0, specifying the CAVLC parsing process, and entropy_coding_mode_flag is equal to 1 for dependency layer with dependency_id equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. gaps_in_frame_num_value_allowed_flag is equal to 1. Reference picture list reordering and memory management control operations are used. transform_8x8_mode_flag is equal to 1 for dependency layer with dependency_id equal to 1, specifying that 8x8 transform decoding process may be in use. DependencyIdMax is equal to 1, TemporalIdMax is equal to 4 and DQIdMax is equal to 16. extended_spatial_scalability is equal to 1. SpatialResolutionChangeFlag is equal to 1. no_inter_layer_pred_flag is equal to 0. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 0. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying that inter-layer motion and inter-layer intra prediction are enabled. adaptive_motion_prediction_flag is equal to 1, specifying that inter-layer motion prediction is enabled. adaptive_residual_prediction_flag is equal to 1, specifying that inter-layer residual prediction is enabled. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Gaps in frame_num, reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of a spatial enhancement layer, using 8x8 transform size with inter-layer motion, intra and residual prediction and CABAC parsing.

Purpose: Check that the decoder can properly handle gaps in frame_num, reference picture list reordering, memory management control operations and EI, EP and EB coded slices of a spatial enhancement layer, using 8x8 transform size with inter-layer motion, intra and residual prediction and CABAC parsing.

6.6.30.29 Test bitstream SVCBST-1

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. SEI messages are included in the bitstream. DependencyIdMax is equal to 1, TemporalIdMax is equal to 3, and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 0, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of SEI messages, EI and EP coded slices of a spatial enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of a spatial enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta.

6.6.30.30 Test bitstream SVCBST-2

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. SEI messages are included in the bitstream.

DependencyIdMax is equal to 1, TemporalIdMax is equal to 3, and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 0, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 1, and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of SEI messages, EI and EP coded slices of a spatial enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using adaptive inter-layer motion prediction.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of a spatial enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using adaptive inter-layer motion prediction.

6.6.30.31 Test bitstream SVCBST-3

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. SEI messages are included in the bitstream. DependencyIdMax is equal to 1, TemporalIdMax is equal to 3, and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 1, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of SEI messages, EI and EP coded slices of a spatial enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, and constrained_intra_resampling_flag equal to 1.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of a spatial enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, and constrained_intra_resampling_flag equal to 1.

6.6.30.32 Test bitstream SVCBST-4

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. SEI messages are included in the bitstream. DependencyIdMax is equal to 1, TemporalIdMax is equal to 3, and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 1, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of SEI messages, EI and EP coded slices of a spatial enhancement layer, with CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, and constrained_intra_resampling_flag equal to 1.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of a spatial enhancement layer, with CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, and constrained_intra_resampling_flag equal to 1.

6.6.30.33 Test bitstream SVCBST-5

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. SEI messages are included in the bitstream. DependencyIdMax is equal to 1, TemporalIdMax is equal to 3, and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 1, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of SEI messages, EI and EP skipped slices of a spatial enhancement layer, with CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, and constrained_intra_resampling_flag equal to 1.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, SEI messages, EI and EP skipped slices of a spatial enhancement layer, with CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, and constrained_intra_resampling_flag equal to 1.

6.6.30.34 Test bitstream SVCBST-6

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 2, specifying enabling of the deblocking filter process (without slice boundary deblocking). entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. SEI messages are included in the bitstream. DependencyIdMax is equal to 1, TemporalIdMax is equal to 3, and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 1, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of SEI messages, EI and EP coded slices of a spatial enhancement layer, with CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter and constrained_intra_resampling_flag equal to 1.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of a spatial enhancement layer, with CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter and constrained_intra_resampling_flag equal to 1.

6.6.30.35 Test bitstream SVCBST-7

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 0, specifying enabling of the deblocking filter process (with slice boundary deblocking). entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. SEI messages are included in the bitstream. DependencyIdMax is equal to 1, TemporalIdMax is equal to 3, and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 0, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1.

disable_inter_layer_deblocking_filter_idc is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of SEI messages, EI and EP coded slices of a spatial enhancement layer, with CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, and use of deblocking filter.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of a spatial enhancement layer, with CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter.

6.6.30.36 Test bitstream SVCBST-8

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 3, specifying enabling of the deblocking filter process (with second pass slice boundary deblocking). Additionally, slice_alpha_c0_offset_div2 and slice_beta_offset_div2 are not equal to 0. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. SEI messages are included in the bitstream. DependencyIdMax is equal to 1, TemporalIdMax is equal to 3, and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 1, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 2. disable_inter_layer_deblocking_filter_idc is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of SEI messages, EI and EP coded slices of a spatial enhancement layer, with CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, using two pass deblocking filter and constrained_intra_resampling_flag equal to 1.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of a spatial enhancement layer, with CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, using two pass deblocking filter and constrained_intra_resampling_flag equal to 1.

6.6.30.37 Test bitstream SVCBST-9

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 6, specifying enabling of the deblocking filter process for the luma samples (with second pass slice boundary deblocking). Additionally, slice_alpha_c0_offset_div2 and slice_beta_offset_div2 are not equal to 0. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. SEI messages are included in the bitstream. DependencyIdMax is equal to 1, TemporalIdMax is equal to 3, and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 1, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 2. disable_inter_layer_deblocking_filter_idc is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of SEI messages, EI and EP coded slices of a spatial enhancement layer, with CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, using two pass deblocking filter for luma samples and constrained_intra_resampling_flag equal to 1.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of a spatial enhancement layer, with CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, using two pass deblocking filter for luma samples and constrained_intra_resampling_flag equal to 1.

6.6.30.38 Test bitstream SVCBST-10

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 2, specifying enabling of the deblocking filter process (without slice boundary deblocking). entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. transform_8x8_mode_flag is equal to 1, specifying that 8x8 transform decoding process may be in use. SEI messages are included in the bitstream. DependencyIdMax is equal to 1, TemporalIdMax is equal to 3, and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 1, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of SEI messages, EI and EP coded slices of a spatial enhancement layer, using 8x8 transform size, with non-zero values of slice_qp_delta and mb_qp_delta, and also using deblocking filter and constrained_intra_resampling_flag equal to 1.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of a spatial enhancement layer, using 8x8 transform size, with non-zero values of slice_qp_delta and mb_qp_delta, and also using deblocking filter and constrained_intra_resampling_flag equal to 1.

6.6.30.39 Test bitstream SVCBST-11

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 2, specifying enabling of the deblocking filter process (without slice boundary deblocking). entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. weighted_pred_flag is equal to 1. SEI messages are included in the bitstream. DependencyIdMax is equal to 1, TemporalIdMax is equal to 3, and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 1, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Weighted sample prediction process for EP slices, reference picture list reordering, memory management control operations, and decoding of SEI message, EI and EP coded slices of a spatial enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter and constrained_intra_resampling_flag equal to 1.

Purpose: Check that the decoder can properly handle weighted sample prediction process for EP slices, reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of a spatial enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter and constrained_intra_resampling_flag equal to 1.

6.6.30.40 Test bitstream SVCBST-12

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice and slice groups greater than 1. disable_deblocking_filter_idc is equal to 3, specifying enabling of the deblocking filter process (with second pass slice boundary deblocking). Additionally, slice_alpha_c0_offset_div2 and slice_beta_offset_div2 are not equal to 0. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering is used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. SEI messages are included in the bitstream. DependencyIdMax is equal to 1, TemporalIdMax is equal to 3, and DQIdMax is equal to 16. extended_spatial_scalability

is equal to 0, SpatialResolutionChangeFlag is equal to 1, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 1, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 2. disable_inter_layer_deblocking_filter_idc is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of SEI messages, EI and EP coded slices of a spatial enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter, constrained_intra_resampling_flag equal to 1, and slice groups.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of a spatial enhancement layer, with non-zero values of slice_qp_delta and mb_qp_delta, using deblocking filter, constrained_intra_resampling_flag equal to 1, and slice groups.

6.6.30.41 Test bitstream SVCBST-13

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering is used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. SEI messages are included in the bitstream. DependencyIdMax is equal to 1, TemporalIdMax is equal to 3, and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 1, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 1, and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of SEI messages, EI and EP coded slices of a spatial enhancement layer with SpatialResolutionChangeFlag equal to 3, CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, and constrained_intra_resampling_flag equal to 1.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of a spatial enhancement layer with SpatialResolutionChangeFlag equal to 3, CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, and constrained_intra_resampling_flag equal to 1.

6.6.30.42 Test bitstream SVCBST-14

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering is used. DependencyIdMax is equal to 2, TemporalIdMax is equal to 3, and DQIdMax is equal to 32. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1 for the dependency layer with dependency_id equal to 1, and SpatialResolutionChangeFlag is equal to 1 for the dependency layer with dependency_id equal to 2. chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 0, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10

Functional stage: Reference picture list reordering, memory management control operations, and decoding of EI and EP coded slices of spatial enhancement layers with SpatialResolutionChangeFlag equal to 1 and 3.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, EI and EP coded slices of spatial enhancement layers with SpatialResolutionChangeFlag equal to 1 and 3.

6.6.30.43 Test bitstream SVCBST-15

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. SEI messages are included in the bitstream. DependencyIdMax is equal to 2, TemporalIdMax is equal to 3, and DQIdMax is equal to 32. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1 for the enhancement layers, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 0, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 1 for the dependency layer with dependency_id equal to 1, adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1) for the dependency layer with dependency_id equal to 2, and adaptive_residual_prediction_flag equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations and decoding of SEI messages, EI and EP coded slices of spatial enhancement layers, with non-zero values of slice_qp_delta and mb_qp_delta, using adaptive inter-layer motion prediction for layer 1.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of spatial enhancement layers, with non-zero values of slice_qp_delta and mb_qp_delta, using adaptive inter-layer motion prediction for layer 1.

6.6.30.44 Test bitstream SVCBST-16

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 3, specifying enabling of the deblocking filter process (with second pass slice boundary deblocking). entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. SEI messages are included in the bitstream. DependencyIdMax is equal to 2, TemporalIdMax is equal to 3, and DQIdMax is equal to 32. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1 for the enhancement layers, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 0, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 1, and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of SEI messages, EI and EP coded slices of spatial enhancement layers, with non-zero values of slice_qp_delta and mb_qp_delta, using two pass deblocking filter and adaptive inter-layer motion prediction.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of spatial enhancement layers, with non-zero values of slice_qp_delta and mb_qp_delta, using two pass deblocking filter and adaptive inter-layer motion prediction.

6.6.30.45 Test bitstream SVCBST-17

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 3, specifying enabling of the deblocking filter process (with second pass slice boundary deblocking). entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. SEI messages are included in the bitstream. DependencyIdMax is equal to 2, TemporalIdMax is equal to 3, and DQIdMax is equal to 32. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1 for the enhancement layers, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 0, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 0 (with

default_motion_prediction_flag equal to 1) for the dependency layer with dependency_id equal to 1, adaptive_motion_prediction_flag is equal to 1 for the dependency layer with dependency_id equal to 2, and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of SEI messages, EI and EP coded slices of spatial enhancement layers, with CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, using two pass deblocking filter and adaptive inter-layer motion prediction for layer 2.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of spatial enhancement layers, with CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, two pass deblocking filter and adaptive inter-layer motion prediction for layer 2.

6.6.30.46 Test bitstream SVCBST-18

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 3, specifying enabling of the deblocking filter process (with second pass slice boundary deblocking). entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice and mb_qp_delta is equal to a non-zero value to change the quantizer scale at some macroblocks. weighted_pred_flag is equal to 1 and base_pred_weight_table_flag is equal to 1. SEI messages are included in the bitstream. DependencyIdMax is equal to 2, TemporalIdMax is equal to 3, and DQIdMax is equal to 32. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1 for the enhancement layers, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 0, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1) for the dependency layer with dependency_id equal to 1, adaptive_motion_prediction_flag is equal to 1 for the dependency layer with dependency_id equal to 2, and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Weighted sample prediction process for EP slices, inference of weighted prediction variables for EP slices, reference picture list reordering, memory management control operations, and decoding of SEI messages, EI and EP coded slices of spatial enhancement layers, with CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, using two pass deblocking filter and adaptive inter-layer motion prediction for layer 2.

Purpose: Check that the decoder can properly handle weighted sample prediction process for EP slices, inference of weighted prediction variables for EP slices, reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of spatial enhancement layers, with CABAC parsing, non-zero values of slice_qp_delta and mb_qp_delta, using two pass deblocking filter and adaptive inter-layer motion prediction for layer 2.

6.6.30.47 Test bitstream SVCBST-19

Specification: All slices are coded as I, P, EI, EP or EB slices. Each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 0. entropy_coding_mode_flag is equal to 0 for dependency layer with dependency_id equal to 0, specifying the CAVLC parsing process, and entropy_coding_mode_flag is equal to 1 for dependency layer with dependency_id equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. gaps_in_frame_num_value_allowed_flag is equal to 1. Reference picture list reordering and memory management control operations are used. transform_8x8_mode_flag is equal to 1 for dependency layer with dependency_id equal to 1, specifying that 8x8 transform decoding process may be in use. DependencyIdMax is equal to 1, TemporalIdMax is equal to 4 and DQIdMax is equal to 16. extended_spatial_scalability is equal to 1. SpatialResolutionChangeFlag is equal to 1. no_inter_layer_pred_flag is equal to 0. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 0. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying that inter-layer motion and inter-layer intra prediction are enabled. adaptive_motion_prediction_flag is equal to 1, specifying that inter-layer motion prediction is enabled. adaptive_residual_prediction_flag is equal to 1, specifying that inter-layer residual prediction is enabled. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Gaps in frame_num, reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of a spatial and temporal enhancement layer, using 8x8 transform size with inter-layer motion, intra and residual prediction and CABAC parsing.

Purpose: Check that the decoder can properly handle gaps in frame_num, reference picture list reordering, memory management control operations and EI, EP and EB coded slices of a spatial and temporal enhancement layer, using 8x8 transform size with inter-layer motion, intra and residual prediction and CABAC parsing.

6.6.30.48 Test bitstream SVCBST-20

Specification: All slices are coded as I, P, EI, EP or EB slices. Each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 0, specifying enabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice. DependencyIdMax is equal to 1, TemporalIdMax is equal to 1 and DQIdMax is equal to 16. extended_spatial_scalability is equal to 1, specifying sending geometrical parameters in the sequence parameter set. SpatialResolutionChangeFlag is equal to 1. no_inter_layer_pred_flag is equal to 0. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying enabling inter-layer motion and intra prediction. adaptive_motion_prediction_flag is equal to 1, specifying enabling an alternative motion vectors prediction process. adaptive_residual_prediction_flag is equal to 1, specifying enabling inter-layer residual prediction. disable_inter_layer_deblocking_filter_idc is equal to 0, specifying enabling of the deblocking filter process for inter-layer intra prediction. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI, EP and EB coded slices of a spatial enhancement layer, using inter-layer motion, intra and residual prediction, sequence level geometrical parameters, deblocking filter for inter-layer intra prediction, non-zero values of slice_qp_delta.

Purpose: Check that the decoder can properly handle decoding of EI, EP and EB coded slices of a spatial enhancement layer, using inter-layer motion, intra and residual prediction, sequence level geometrical parameters, deblocking filter for inter-layer intra prediction, non-zero values of slice_qp_delta.

6.6.30.49 Test bitstream SVCBMST-1

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 3. entropy_coding_mode_flag is equal to 0. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. SEI messages are included in the bitstream. DependencyIdMax is equal to 1, TemporalIdMax is equal to 3, and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 0, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1), and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of SEI messages, EI and EP coded slices of quality and spatial enhancement layers, using deblocking filter.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of quality and spatial enhancement layers, using deblocking filter.

6.6.30.50 Test bitstream SVCBMST-2

Specification: All slices are coded as I, P, EI or EP slices. Only the first frame is coded as an IDR access unit and each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 3. entropy_coding_mode_flag is equal to 1. pic_order_cnt_type is equal to 2. Reference picture list reordering and memory management control operations are used. SEI messages are included in the bitstream. DependencyIdMax is equal to 1, TemporalIdMax is equal to 3, and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0, SpatialResolutionChangeFlag is equal to 1, chroma_phase_x_plus1_flag is equal to 1, and chroma_phase_y_plus1 is equal to 1. constrained_intra_resampling_flag is equal to 0, no_inter_layer_pred_flag is equal to 0, slice_header_restriction_flag is equal to 0, scan_idx_start is equal to 0, and scan_idx_end is equal to 15. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0, adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 0 (with default_motion_prediction_flag equal to 1) for the DQ layer with dq_id equal to 1, adaptive_motion_prediction_flag is equal to 1 for the DQ layer with dq_id equal to 16, and adaptive_residual_prediction_flag is equal to 1. disable_inter_layer_deblocking_filter_idc is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, and decoding of SEI messages, EI and EP coded slices of a quality enhancement layer and a spatial enhancement layer, using CABAC parsing, deblocking filter, and adaptive inter-layer motion prediction for the spatial enhancement layer.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations, SEI messages, EI and EP coded slices of a quality enhancement layer and a spatial enhancement layer, using CABAC parsing, deblocking filter, and adaptive inter-layer motion prediction for the spatial enhancement layer.

6.6.30.51 Test bitstream SVCBMST-3

Specification: All slices are coded as I, P, EI, EP or EB slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 0. entropy_coding_mode_flag is equal to 0 for layer representation with DQId equal to 0, specifying the CAVLC parsing process. entropy_coding_mode_flag is equal to 1 for layer representation with DQId equal to 1 and 16, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. transform_8x8_mode_flag is equal to 1 for layer representation with DQId equal to 1 and 16, specifying that 8x8 transform decoding process may be in use. DependencyIdMax is equal to 1, TemporalIdMax is equal to 4 and DQIdMax is equal to 16. extended_spatial_scalability is equal to 1. SpatialResolutionChangeFlag is equal to 1 for dependency representation with dependency_id equal to 1. no_inter_layer_pred_flag is equal to 0. use_ref_base_pic_flag is equal to 1 for layer representation with dependency_id equal to 0 in access units with temporal_id equal to 0, specifying that reference base pictures may be used as reference pictures for the inter prediction process. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 0. store_ref_base_pic_flag is equal to 1 for layer representation with dependency_id equal to 0 in access units with temporal_id equal to 0, specifying that the reference base pictures are stored. slice_skip_flag is equal to 0. slice_header_restriction_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying that inter-layer motion and inter-layer intra prediction are enabled. adaptive_motion_prediction_flag is equal to 1, specifying that inter-layer motion prediction is enabled. adaptive_residual_prediction_flag is equal to 1, specifying that inter-layer residual prediction is enabled. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI, EP and EB coded slices of a quality enhancement layer using key pictures and a spatial enhancement layer, with inter-layer motion, intra and residual prediction, using CABAC parsing.

Purpose: Check that the decoder can properly handle EI, EP and EB coded slices of a quality enhancement layer using key pictures and a spatial enhancement layer, with inter-layer motion, intra and residual prediction, using CABAC parsing.

6.6.30.52 Test bitstream SVCBCTS-1

Specification: All slices are coded as I, P, EI, EP or EB slices. Each layer representation contains only one slice. deblocking_filter_idc is equal to 0. entropy_coding_mode_flag is equal to 0 for dependency representation with dependency_id equal to 0 and 1, specifying the CAVLC parsing process. entropy_coding_mode_flag is equal to 1 for dependency representation with dependency_id equal to 2, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. transform_8x8_mode_flag is equal to 1 for dependency representation with dependency_id equal to 2, specifying that 8x8 transform decoding process may be in use. DependencyIdMax is equal to 2, TemporalIdMax is equal to 1 and DQIdMax is equal to 32. extended_spatial_scalability is equal to 0 for dependency representation with dependency_id equal to 1. extended_spatial_scalability is equal to 1 for dependency representation with dependency_id equal to 2. SpatialResolutionChangeFlag is equal to 0 for dependency representation with dependency_id equal to 1. SpatialResolutionChangeFlag is equal to 1 for dependency representation with dependency_id equal to 2. no_inter_layer_pred_flag is equal to 0. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 1 and adaptive_residual_prediction_flag is equal to 1 for dependency representation with dependency_id equal to 1 and 2, specifying enabling inter-layer motion, intra and residual prediction. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI, EP and EB coded slices of spatial enhancement layers, with inter-layer motion, residual and intra prediction, using CAVLC and CABAC parsing, 8x8 transform size.

Purpose: Check that the decoder can properly handle EI, EP and EB coded slices of spatial enhancement layers, with inter-layer motion, residual and intra prediction, using CAVLC and CABAC parsing, 8x8 transform size.

6.6.30.53 Test bitstream SVCBCTS-2

Specification: All slices are coded as I, P, EI, EP or EB slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 0. entropy_coding_mode_flag is equal to 0 for dependency representation with dependency_id equal to 0 and 1, specifying the CAVLC parsing process. entropy_coding_mode_flag is equal to 1 for dependency representation with dependency_id equal to 2, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. transform_8x8_mode_flag is equal to 1 for dependency representation with dependency_id equal to 2, specifying that 8x8 transform decoding process may be in use. DependencyIdMax is equal to 2, TemporalIdMax is equal to 1 and DQIdMax is equal to 32. extended_spatial_scalability is equal to 0 for dependency representation with

dependency_id equal to 1. extended_spatial_scalability is equal to 1 for dependency representation with dependency_id equal to 2. SpatialResolutionChangeFlag is equal to 0 for dependency representation with dependency_id equal to 1. SpatialResolutionChangeFlag is equal to 1 for dependency representation with dependency_id equal to 2. no_inter_layer_pred_flag is equal to 0. discardable_flag is equal to 1 for dependency representation with dependency_id equal to 1. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, adaptive_motion_prediction_flag is equal to 1 and adaptive_residual_prediction_flag is equal to 1 for dependency representation with dependency_id equal to 1 and 2, specifying enabling inter-layer motion, intra and residual prediction. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI, EP and EB coded slices of spatial enhancement layers, with inter-layer motion, residual and intra prediction, using CAVLC and CABAC parsing, 8x8 transform size, with discardable_flag equal to 1.

Purpose: Check that the decoder can properly handle EI, EP and EB coded slices of spatial enhancement layers, with inter-layer motion, residual and intra prediction, using CAVLC and CABAC parsing, 8x8 transform size, with discardable_flag equal to 1.

6.6.30.54 Test bitstream SVCBCTS-3

Specification: All slices are coded as I, P, EI, EP or EB slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. DependencyIdMax is equal to 2, TemporalIdMax is equal to 3 and DQIdMax is equal to 32. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 0 for dependency representation with dependency_id equal to 1. SpatialResolutionChangeFlag is equal to 1 for dependency representation with dependency_id equal to 2. no_inter_layer_pred_flag is equal to 0. tcoeff_level_prediction_flag is equal to 1 for dependency representation with dependency_id equal to 1, specifying that an alternative inter-layer prediction process is applied on a macroblock basis. seq_tcoeff_level_prediction_flag is equal to 0 for dependency representation with dependency_id equal to 2. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. slice_header_restriction_flag is equal to 1. default_base_mode_flag is equal to 1, specifying inter-layer motion and intra prediction. default_residual_prediction_flag is equal to 0. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI, EP and EB coded slices of spatial enhancement layers, enabling either an alternative inter-layer prediction process by macroblock for translation to an AVC bitstream or inter-layer motion and intra prediction.

Purpose: Check that the decoder can properly handle EI, EP and EB coded slices of spatial enhancement layers, enabling either an alternative inter-layer prediction process by macroblock for translation to an AVC bitstream or inter-layer motion and intra prediction.

6.6.30.55 Test bitstream SVCBSTC-1

Specification: All slices are coded as I, P, EI, EP or EB slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. pic_order_cnt_type is equal to 0. DependencyIdMax is equal to 2, TemporalIdMax is equal to 3 and DQIdMax is equal to 32. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 1 for dependency representation with dependency_id equal to 1. SpatialResolutionChangeFlag is equal to 0 for dependency representation with dependency_id equal to 2. no_inter_layer_pred_flag is equal to 0. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. slice_header_restriction_flag is equal to 1. default_base_mode_flag is equal to 1, specifying inter-layer motion and intra prediction. adaptive_residual_prediction_flag is equal to 1, specifying enabling inter-layer residual prediction. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI, EP and EB coded slices of spatial enhancement layers, using inter-layer motion and intra prediction and inter-layer residual prediction in transform and spatial domain.

Purpose: Check that the decoder can properly handle EI, EP and EB coded slices of spatial enhancement layers, using inter-layer motion and intra prediction and inter residual prediction in transform and spatial domain.

6.6.31 Test bitstreams – SVC Profiles: Scalable High Profile 4:2:0 8 bit

6.6.31.1 Test bitstream SVCHM-1

Specification: All slices are coded as I, P, EI, EP or EB slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 0. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. gaps_in_frame_num_value_allowed_flag is equal to 1. Reference picture list reordering and memory management control operations are used. mb_qp_delta is equal to 0. transform_8x8_mode_flag is equal to 1, specifying that 8x8 transform decoding process may be in use. DependencyIdMax is equal to 0, TemporalIdMax is equal to 4 and DQIdMax is equal to 3. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 0. no_inter_layer_pred_flag is equal to 0. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 0. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1 for layer representations with quality_id equal to 1, specifying that inter-layer motion and inter-layer intra prediction are enabled. adaptive_motion_prediction_flag is equal to 1 for layer representation with quality_id equal to 1, specifying that an alternative motion vectors prediction process is enabled. default_base_mode_flag is equal to 1 for layer representations with quality_id equal to 2 and 3, specifying inter-layer motion and intra prediction. adaptive_residual_prediction_flag is equal to 1 for layer representation with quality_id equal to 1, specifying enabling inter-layer residual prediction. default_residual_prediction_flag is equal to 1 for layer representations with quality_id equal to 2 and 3. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Gaps in frame_num, reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of quality enhancement layers, using key pictures, transform coefficient fragmentation and either an alternative motion vectors prediction process with inter-layer residual prediction or inter-layer motion and intra prediction, with non-zero values of mb_qp_delta, using 8x8 transform size CABAC parsing.

Purpose: Check that the decoder can properly handle gaps in frame_num, reference picture list reordering, memory management control operations, EI, EP and EB coded slices of quality enhancement layers, using key pictures, transform coefficient fragmentation and either an alternative motion vectors prediction process with inter-layer residual prediction or inter-layer motion and intra prediction, with non-zero values of mb_qp_delta, using 8x8 transform size and CABAC parsing.

6.6.31.2 Test bitstream SVCHM-2

Specification: All slices are coded as I, P, EI, EP or EB slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering and memory management control operations are used. transform_8x8_mode_flag is equal to 1, specifying that 8x8 transform decoding process may be in use. DependencyIdMax is equal to 0, TemporalIdMax is equal to 2 and DQIdMax is equal to 1. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 0. no_inter_layer_pred_flag is equal to 0. adaptive_tcoeff_level_prediction_flag is equal to 0, specifying that an alternative inter-layer prediction process is applied for the whole sequence. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. default_base_mode_flag is equal to 1, specifying inter-layer motion and intra prediction. default_residual_prediction_flag is equal to 0. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of a quality enhancement layer, using an alternative inter-layer prediction process for translation to an AVC bitstream, with 8x8 transform size CABAC parsing.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of a quality enhancement layer, using an alternative inter-layer prediction process for translation to an AVC bitstream, with 8x8 transform size CABAC parsing.

6.6.31.3 Test bitstream SVCHM-3

Specification: All slices are coded as I, P, EI, EP or EB slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering and memory management control operations are used. transform_8x8_mode_flag is equal to 1, specifying that 8x8 transform decoding process may be in use. DependencyIdMax is equal to 0, TemporalIdMax is equal to 2 and DQIdMax is equal to 1. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 0. no_inter_layer_pred_flag is equal to 0. tcoeff_level_prediction_flag is equal to 1, specifying that an alternative inter-layer prediction process is applied on a macroblock basis. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. default_base_mode_flag is equal to 1, specifying

inter-layer motion and intra prediction. default_residual_prediction_flag is equal to 0. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of a quality enhancement layer, enabling an alternative inter-layer prediction process by macroblock for translation to an AVC bitstream, with 8x8 transform size CABAC parsing.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of a quality enhancement layer, enabling an alternative inter-layer prediction process by macroblock for translation to an AVC bitstream, with 8x8 transform size CABAC parsing.

6.6.31.4 Test bitstream SVCHM-4

Specification: All slices are coded as I, P, EI, EP or EB slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering and memory management control operations are used. transform_8x8_mode_flag is equal to 1, specifying that 8x8 transform decoding process may be in use. DependencyIdMax is equal to 0, TemporalIdMax is equal to 2 and DQIdMax is equal to 2. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 0. no_inter_layer_pred_flag is equal to 0. tcoeff_level_prediction_flag is equal to 1 for layer representation with quality_id equal to 1, specifying that an alternative inter-layer prediction process is applied on a macroblock basis. seq_tcoeff_level_prediction_flag is equal to 0 for layer representation with quality_id equal to 2. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. default_base_mode_flag is equal to 1, specifying inter-layer motion and intra prediction. default_residual_prediction_flag is equal to 0. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of quality enhancement layers, either enabling an alternative inter-layer prediction process by macroblock for translation to an AVC bitstream or using inter-layer motion and intra prediction, with 8x8 transform size CABAC parsing.

Purpose: Check that the decoder can properly handle reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of quality enhancement layers, either enabling an alternative inter-layer prediction process by macroblock for translation to an AVC bitstream or using inter-layer motion and intra prediction, with 8x8 transform size CABAC parsing.

6.6.31.5 Test bitstream SVCHS-1

Specification: All slices are coded as I, P, EI, EP or EB slices. Each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 0, specifying enabling of the deblocking filter process. entropy_coding_mode_flag is equal to 0 for the dependency representation with dependency_id equal to 0, specifying the CAVLC parsing process. entropy_coding_mode_flag is equal to 1 for the dependency representation with dependency_id equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering and memory management control operations are used. transform_8x8_mode_flag is equal to 1 for the dependency representation with dependency_id equal to 1, specifying that 8x8 transform decoding process may be in use. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice. DependencyIdMax is equal to 1, TemporalIdMax is equal to 3 and DQIdMax is equal to 16. extended_spatial_scalability is equal to 2, specifying sending geometrical parameters in slice headers. SpatialResolutionChangeFlag is equal to 1. no_inter_layer_pred_flag is equal to 0. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying enabling inter-layer motion and intra prediction. adaptive_residual_prediction_flag is equal to 1, specifying enabling of inter-layer residual prediction. disable_inter_layer_deblocking_filter_idc is equal to 0, specifying enabling of the deblocking filter process for inter-layer intra prediction. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations, decoding of EI, EP and EB coded slices of a spatial enhancement layer, using inter-layer motion, intra and residual prediction, picture level geometrical parameters, deblocking filter for inter-layer intra prediction, with CABAC parsing, 8x8 transform size and non-zero values of slice_qp_delta.

Purpose: Check that the decoder can properly handle decoding of reference picture list reordering, memory management control operations, EI, EP and EB coded slices of a spatial enhancement layer, using inter-layer motion, intra and residual prediction, picture level geometrical parameters, deblocking filter for inter-layer intra prediction, with CABAC parsing, 8x8 transform size and non-zero values of slice_qp_delta.

6.6.31.6 Test bitstream SVCHS-2

Specification: All slices are coded as I, P, B, EI, EP or EB slices. Each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 0, specifying enabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering and memory management control operations are used. transform_8x8_mode_flag is equal to 1, specifying that 8x8 transform decoding process may be in use. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice. mb_adaptive_frame_field_coding is equal to 1 for dependency representation with dependency_id equal to 1. DependencyIdMax is equal to 1, TemporalIdMax is equal to 3 and DQIdMax is equal to 16. extended_spatial_scalability is equal to 1, specifying sending geometrical parameters in the sequence parameter set. SpatialResolutionChangeFlag is equal to 1. no_inter_layer_pred_flag is equal to 0. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying enabling inter-layer motion and intra prediction. adaptive_residual_prediction_flag is equal to 1, specifying enabling of inter-layer residual prediction. disable_inter_layer_deblocking_filter_idc is equal to 0, specifying enabling of the deblocking filter process for inter-layer intra prediction. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Progressive-to-interlace inter-layer prediction with mb_adaptive_frame_field_coding=1, reference picture list reordering, memory management control operations, decoding of EI, EP and EB coded slices of a spatial enhancement layer, using inter-layer motion, intra and residual prediction, sequence level geometrical parameters, deblocking filter for inter-layer intra prediction, with CABAC parsing, 8x8 transform size and non-zero values of slice_qp_delta.

Purpose: Check that the decoder can properly handle decoding of progressive-to-interlace inter-layer prediction with mb_adaptive_frame_field_coding=1, reference picture list reordering, memory management control operations, EI, EP and EB coded slices of a spatial enhancement layer, using inter-layer motion, intra and residual prediction, sequence level geometrical parameters, deblocking filter for inter-layer intra prediction, with CABAC parsing, 8x8 transform size and non-zero values of slice_qp_delta.

6.6.31.7 Test bitstream SVCHST-1

Specification: All slices are coded as I, P, EI, EP or EB slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 0. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. gaps_in_frame_num_value_allowed_flag is equal to 1. Reference picture list reordering and memory management control operations are used. transform_8x8_mode_flag is equal to 1, specifying that 8x8 transform decoding process may be in use. DependencyIdMax is equal to 2, TemporalIdMax is equal to 2 and DQIdMax is equal to 32. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 1. no_inter_layer_pred_flag is equal to 0. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying enabling inter-layer motion and intra prediction. adaptive_residual_prediction_flag is equal to 1, specifying enabling inter-layer residual prediction. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Gaps in frame_num, reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of spatial and temporal enhancement layers, enabling inter-layer motion, intra and residual prediction, using 8x8 transform size with CABAC parsing.

Purpose: Check that the decoder can properly handle gaps in frame_num, reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of spatial and temporal enhancement layers, enabling inter-layer motion, intra and residual prediction, using 8x8 transform size with CABAC parsing.

6.6.31.8 Test bitstream SVCHST-2

Specification: All slices are coded as I, P, EI, EP or EB slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 0. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. gaps_in_frame_num_value_allowed_flag is equal to 1. Reference picture list reordering and memory management control operations are used. transform_8x8_mode_flag is equal to 1, specifying that 8x8 transform decoding process may be in use. DependencyIdMax is equal to 2, TemporalIdMax is equal to 2 and DQIdMax is equal to 32. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 0. no_inter_layer_pred_flag is equal to 0. discardable_flag is equal to 1 for dependency representation with dependency_id equal to 1. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1 for dependency representation with dependency_id equal to 1, specifying enabling inter-layer motion and intra prediction. adaptive_residual_prediction_flag is equal to 1 for dependency representation with dependency_id equal to 1, specifying enabling inter-layer residual prediction. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Gaps in frame_num, reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of spatial enhancement layers, enabling inter-layer motion, intra and residual prediction, using 8x8 transform size with CABAC parsing, with discardable_flag equal to 1.

Purpose: Check that the decoder can properly handle gaps in frame_num, reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of spatial enhancement layers, enabling inter-layer motion, intra and residual prediction, using 8x8 transform size with CABAC parsing, with discardable_flag equal to 1.

6.6.31.9 Test bitstream SVCHST-3

Specification: All slices are coded as I, P, B, EI, EP or EB slices. Each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 0, specifying enabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering and memory management control operations are used. transform_8x8_mode_flag is equal to 1, specifying that 8x8 transform decoding process may be in use. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice. mb_adaptive_frame_field_coding is equal to 1 for dependency representation with dependency_id equal to 0. DependencyIdMax is equal to 2, TemporalIdMax is equal to 4 and DQIdMax is equal to 32. extended_spatial_scalability is equal to 1. SpatialResolutionChangeFlag is equal to 1. no_inter_layer_pred_flag is equal to 0. discardable_flag is equal to 1 for dependency representation with dependency_id equal to 1. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying enabling inter-layer motion and intra prediction. adaptive_motion_prediction_flag is equal to 1, specifying enabling inter-layer motion prediction. adaptive_residual_prediction_flag is equal to 1, specifying enabling inter-layer residual prediction. inter_layer_deblocking_filter_idc is equal to 0, specifying enabling of the deblocking filter process for inter-layer intra prediction. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Interlace-to-progressive inter-layer prediction with mb_adaptive_frame_field_coding=1, reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of spatial enhancement layers, enabling inter-layer motion, intra and residual prediction, sequence level geometrical parameters, deblocking filter for inter-layer intra prediction, using 8x8 transform size with CABAC parsing and non-zero values of slice_qp_delta.

Purpose: Check that the decoder can properly handle interlace-to-progressive inter-layer prediction with mb_adaptive_frame_field_coding=1, reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of spatial enhancement layers, enabling inter-layer motion, intra and residual prediction, sequence level geometrical parameters, deblocking filter for inter-layer intra prediction, using 8x8 transform size with CABAC parsing and non-zero values of slice_qp_delta.

6.6.31.10 Test bitstream SVCHST-4

Specification: All slices are coded as I, P, B, EI, EP or EB slices. Each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 0, specifying enabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering and memory management control operations are used. transform_8x8_mode_flag is equal to 1, specifying that 8x8 transform decoding process may be in use. slice_qp_delta is equal to a non-zero value to change the quantizer scale at each slice. mb_adaptive_frame_field_coding is equal to 1 for dependency representation with dependency_id equal to 0. DependencyIdMax is equal to 2, TemporalIdMax is equal to 2 and DQIdMax is equal to 32. extended_spatial_scalability is equal to 1. SpatialResolutionChangeFlag is equal to 1. no_inter_layer_pred_flag is equal to 0. discardable_flag is equal to 1 for dependency representation with dependency_id equal to 1. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying enabling inter-layer motion and intra prediction. adaptive_motion_prediction_flag is equal to 1, specifying enabling inter-layer motion prediction. adaptive_residual_prediction_flag is equal to 1, specifying enabling inter-layer residual prediction. inter_layer_deblocking_filter_idc is equal to 0, specifying enabling of the deblocking filter process for inter-layer intra prediction. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Interlace-to-progressive inter-layer prediction with mb_adaptive_frame_field_coding=1, reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of spatial enhancement layers, enabling inter-layer motion, intra and residual prediction, sequence level geometrical parameters, deblocking filter for inter-layer intra prediction, using 8x8 transform size with CABAC parsing and non-zero values of slice_qp_delta.

Purpose: Check that the decoder can properly handle interlace-to-progressive inter-layer prediction with mb_adaptive_frame_field_coding=1, reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of spatial enhancement layers, enabling inter-layer motion, intra and residual prediction, sequence level geometrical parameters, deblocking filter for inter-layer intra prediction, using 8x8 transform size with CABAC parsing and non-zero values of slice_qp_delta.

6.6.31.11 Test bitstream SVCHMTS-1

Specification: All slices are coded as I, P, EI, EP or EB slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 0. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. gaps_in_frame_num_value_allowed_flag is equal to 1. Reference picture list reordering and memory management control operations are used. transform_8x8_mode_flag is equal to 1, specifying that 8x8 transform decoding process may be in use. SEI messages are included in the bitstream. DependencyIdMax is equal to 1, TemporalIdMax is equal to 2 and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 0 for layer representations with dependency_id equal to 0 and quality_id equal to 1 and 2, and for layer representation with dependency_id equal to 1 and quality_id equal to 1. SpatialResolutionChangeFlag is equal to 1 for layer representations with dependency_id equal to 1 and quality_id equal to 0. no_inter_layer_pred_flag is equal to 0. use_ref_base_pic_flag may be equal to 1, specifying that reference base pictures may be used as reference pictures for the inter prediction process. discardable_flag is equal to 1 for layer representations with dependency_id equal to 1 and quality_id equal to 1 and for layer representations with dependency_id equal to 0 and quality_id equal to 2. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 0 and store_ref_base_pic_flag may be equal to 1, specifying that the reference base picture may be used for inter prediction of following pictures in decoding order. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying enabling inter-layer motion and intra prediction. adaptive_residual_prediction_flag is equal to 1, specifying enabling inter-layer residual prediction. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Gaps in frame_num, reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of quality, spatial and temporal enhancement layers, with quality layer information SEI messages and key pictures, enabling inter-layer motion, intra and residual prediction, using 8x8 transform size with CABAC parsing, with discardable_flag equal to 1.

Purpose: Check that the decoder can properly handle gaps in frame_num, reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of quality, spatial and temporal enhancement layers, with quality layer information SEI messages and key pictures, enabling inter-layer motion, intra and residual prediction, using 8x8 transform size with CABAC parsing, with discardable_flag equal to 1.

6.6.31.12 Test bitstream SVCHMTS-2

Specification: All slices are coded as I, P, EI, EP or EB slices. Each layer representation contains only one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering and memory management control operations are used. transform_8x8_mode_flag is equal to 1, specifying that 8x8 transform decoding process may be in use. DependencyIdMax is equal to 1, TemporalIdMax is equal to 2 and DQIdMax is equal to 16. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 0 for layer representation with dependency_id equal to 0 and quality_id equal to 1. SpatialResolutionChangeFlag is equal to 1 for layer representation with dependency_id equal to 1 and quality_id equal to 0. no_inter_layer_pred_flag is equal to 0. seq_tcoeff_level_prediction_flag is equal to 0. tcoeff_level_prediction_flag is equal to 1, specifying that an alternative inter-layer prediction process is applied on a macroblock basis. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 0. default_base_mode_flag is equal to 1, specifying inter-layer motion and intra prediction. default_residual_prediction_flag is equal to 0. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of quality and spatial enhancement layers, using either an alternative inter-layer prediction process by macroblock for translation to an AVC bitstream or inter-layer motion and intra prediction, using 8x8 transform size with CABAC parsing.

Purpose: Check that the decoder can properly handle gaps in frame_num, reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of quality and spatial enhancement layers, using either an alternative inter-layer prediction process by macroblock for translation to an AVC bitstream or inter-layer motion and intra prediction, using 8x8 transform size with CABAC parsing.

6.6.31.13 Test bitstream SVCHCTS-1

Specification: All slices are coded as I, P, EI, EP or EB slices. Each dependency representation contains only one slice. disable_deblocking_filter_idc is equal to 0. entropy_coding_mode_flag is equal to 1 for dependency_id representations with dependency_id greater than 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. Reference picture list reordering and memory management control operations are used. transform_8x8_mode_flag is equal to 1 for dependency_id representations with dependency_id greater than 1, specifying that 8x8 transform decoding process may be in use. DependencyIdMax is equal to 5, TemporalIdMax is equal to 2 and DQIdMax is equal to 80. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 0 for dependency_id representations with dependency_id equal to 1, 2 and 4. SpatialResolutionChangeFlag is equal to 1 for dependency representations with dependency_id equal to 5. no_inter_layer_pred_flag is equal to 1 for dependency representations with dependency_id equal to 3. discardable_flag is equal to 1 for dependency representations with dependency_id equal to 2, 4 and 5. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 1. slice_skip_flag is equal to 1 for dependency_id representations with dependency_id equal to 1. Adaptive_base_mode_flag is equal to 1, enabling inter-layer motion and intra prediction. adaptive_residual_prediction_flag is equal to 1, specifying enabling inter-layer residual prediction. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of spatial enhancement layers, using inter-layer motion, intra and residual prediction, using 8x8 transform size with CABAC parsing, no_inter_layer_pred_flag and discardable_flag equal to 1.

Purpose: Check that the decoder can properly handle gaps in frame_num, reference picture list reordering, memory management control operations and decoding of EI, EP and EB coded slices of spatial enhancement layers, using inter-layer motion, intra and residual prediction, using 8x8 transform size with CABAC parsing, no_inter_layer_pred_flag and discardable_flag equal to 1.

6.6.31.14 Test bitstream SVCHSTC-1

Specification: All slices are coded as I, P, EI, EP or EB slices. Each layer representation contains only one slice. deblocking_filter_control_present_flag is equal to 0. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. DependencyIdMax is equal to 2, TemporalIdMax is equal to 3 and DQIdMax is equal to 32. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 1 for dependency representation with dependency_id equal to 1. SpatialResolutionChangeFlag is equal to 0 for dependency representation with dependency_id equal to 2. no_inter_layer_pred_flag is equal to 0. seq_tcoeff_level_prediction_flag is equal to 0. slice_header_restriction_flag is equal to 0. slice_skip_flag is equal to 0. default_base_mode_flag is equal to 1, specifying inter-layer motion and intra prediction. adaptive_residual_prediction_flag is equal to 1, specifying enabling inter-layer residual prediction. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EI, EP and EB coded slices of spatial enhancement layers, using inter-layer motion and intra prediction and inter-layer residual prediction in transform and spatial domain, with 8x8 transform size and CABAC parsing.

Purpose: Check that the decoder can properly handle EI, EP and EB coded slices of spatial enhancement layers, using inter-layer motion and intra prediction and inter residual prediction in transform and spatial domain, with 8x8 transform size and CABAC parsing.

6.6.32 Test bitstreams – SVC Profiles: Scalable High Intra Profile 4:2:0 8 bit

6.6.32.1 Test bitstream SVCHIS-1

Specification: All slices are coded as IDR, or EIDR slices. Each dependency representation can contain more than one slice. disable_deblocking_filter_idc is equal to 1, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. transform_8x8_mode_flag is equal to 1, specifying that 8x8 transform decoding process may be in use. pic_order_cnt_type is equal to 0. DependencyIdMax is equal to 2, TemporalIdMax is equal to 0 and DQIdMax is equal to 32. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 1. no_inter_layer_pred_flag is equal to 0. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying enabling inter-layer motion and intra prediction. adaptive_motion_prediction_flag is equal to 1, specifying enabling inter-layer motion prediction. adaptive_residual_prediction_flag is equal to 1, specifying enabling inter-layer residual prediction. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EIDR coded slices of spatial enhancement layers, 8x8 transform size with inter-layer intra prediction, using CABAC parsing.

Purpose: Check that the decoder can properly handle EIDR coded slices of spatial enhancement layers, 8x8 transform size with inter-layer intra prediction, using CABAC parsing.

6.6.32.2 Test bitstream SVCHIS-2

Specification: All slices are coded as IDR, or EIDR slices. Each dependency representation can contain more than one slice. deblocking_filter_control_present_flag is equal to 0. entropy_coding_mode_flag is equal to 0, specifying the CAVLC parsing process. transform_8x8_mode_flag is equal to 1, specifying that 8x8 transform decoding process may be in use. pic_order_cnt_type is equal to 0. DependencyIdMax is equal to 2, TemporalIdMax is equal to 0 and DQIdMax is equal to 32. extended_spatial_scalability is equal to 1, specifying sending geometrical parameters in the sequence parameter set. SpatialResolutionChangeFlag is equal to 1 for the dependency representation with dependency_id equal to 1. SpatialResolutionChangeFlag is equal to 1 for the dependency representation with dependency_id equal to 2. no_inter_layer_pred_flag is equal to 0. seq_tcoeff_level_prediction_flag is equal to 0. slice_skip_flag is equal to 0. adaptive_base_mode_flag is equal to 1, specifying enabling inter-layer motion and intra prediction. adaptive_motion_prediction_flag is equal to 1, specifying enabling inter-layer motion prediction. adaptive_residual_prediction_flag is equal to 1, specifying enabling inter-layer residual prediction. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EIDR coded slices of spatial enhancement layers, 8x8 transform size with inter-layer intra and residual prediction, sequence level geometrical parameters, with CAVLC parsing.

Purpose: Check that the decoder can properly handle EIDR coded slices of spatial enhancement layers, 8x8 transform size with inter-layer intra, sequence level geometrical parameters, with CAVLC parsing.

6.6.32.3 Test bitstream SVCHIS-3

Specification: All slices are coded as IDR, or EIDR slices. Each dependency representation can contain more than one slice. deblocking_filter_control_present_flag is equal to 0, specifying disabling of the deblocking filter process. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. transform_8x8_mode_flag is equal to 1, specifying that 8x8 transform decoding process may be in use. pic_order_cnt_type is equal to 0. DependencyIdMax is equal to 2, TemporalIdMax is equal to 0 and DQIdMax is equal to 32. extended_spatial_scalability is equal to 1, specifying sending geometrical parameters in the sequence parameter set. SpatialResolutionChangeFlag is equal to 1 for the dependency representation with dependency_id equal to 1. SpatialResolutionChangeFlag is equal to 1 for the dependency representation with dependency_id equal to 2. no_inter_layer_pred_flag is equal to 1, specifying disabling inter-layer prediction. seq_tcoeff_level_prediction_flag is equal to 0. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EIDR coded slices of spatial enhancement layers, without inter-layer prediction, sequence level geometrical parameters using 8x8 transform size with CABAC parsing.

Purpose: Check that the decoder can properly handle EIDR coded slices of spatial enhancement layers, without inter-layer prediction, sequence level geometrical parameters using 8x8 transform size with CABAC parsing.

6.6.32.4 Test bitstream SVCHICS-1

Specification: All slices are coded as IDR, or EIDR slices. Each dependency representation contains only one slice. deblocking_filter_control_present_flag is equal to 0. entropy_coding_mode_flag is equal to 1, specifying the CABAC parsing process. pic_order_cnt_type is equal to 0. DependencyIdMax is equal to 2, TemporalIdMax is equal to 0 and DQIdMax is equal to 32. extended_spatial_scalability is equal to 0. SpatialResolutionChangeFlag is equal to 0 for dependency representations with dependency_id equal to 1 and 3. SpatialResolutionChangeFlag is equal to 1 for the dependency representation with dependency_id equal to 2. no_inter_layer_pred_flag is equal to 0. tcoeff_level_prediction_flag is equal to 1 for dependency representation with dependency_id equal to 1, specifying that an alternative inter-layer prediction process is applied on a macroblock basis. seq_tcoeff_level_prediction_flag is equal to 1 for dependency representation with dependency_id equal to 2 and 3. slice_header_restriction_flag is equal to 0. slice_skip_flag is equal to 0. default_base_mode_flag is equal to 1, specifying inter-layer intra prediction. adaptive_residual_prediction_flag is equal to 1, specifying inter-layer residual prediction. inter_layer_deblocking_filter_control_present_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of EIDR coded slices of quality enhancement layers, using an alternative inter-layer prediction process by macroblock for translation to an AVC bitstream, and spatial enhancement layers, using inter-layer intra and residual prediction, with deblocking filter for inter-layer intra prediction and CABAC parsing.

Purpose: Check that the decoder can properly handle EIDR coded slices of quality enhancement layers, using an alternative inter-layer prediction process by macroblock for translation to an AVC bitstream, and spatial enhancement

layers, using inter-layer intra and residual prediction, with deblocking filter for inter-layer intra prediction and CABAC parsing.

6.6.33 Test bitstreams – Multiview High Profile

6.6.33.1 Test bitstream MVCDS-1

Specification: All slices are coded as I slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. num_anchor_refs_lX and num_non_anchor_refs_lX are equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of two views without inter-prediction or inter-view prediction.

Purpose: Check that the decoder can properly decode multiple view components.

6.6.33.2 Test bitstream MVCDS-2

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. num_anchor_refs_lX and num_non_anchor_refs_lX are equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of two views with inter-prediction, but without inter-view prediction.

Purpose: Check that the decoder can properly decode multiple view components with inter-prediction.

6.6.33.3 Test bitstream MVCDS-3

Specification: All slices are coded as I or P slices. Only the first picture is coded as an IDR access unit with all subsequent pictures coded as anchor access units. Each view component contains only one slice. num_views_minus1 is equal to 1. num_anchor_refs_l0 is equal to 1, num_anchor_refs_l1 is equal to 0, and num_non_anchor_refs_lX is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of two views with inter-view prediction in anchor pictures, but without inter-prediction within views.

Purpose: Check that the decoder can properly decode multiple view components with inter-view prediction in anchor pictures.

6.6.33.4 Test bitstream MVCDS-4

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. num_anchor_refs_l0 is equal to 1, and num_non_anchor_refs_l0 is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of two views with inter-prediction, and inter-view prediction in anchor pictures.

Purpose: Check that the decoder can properly decode multiple view components with inter-prediction, as well as inter-view prediction in anchor pictures.

6.6.33.5 Test bitstream MVCDS-5

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. num_anchor_refs_l0 and num_non_anchor_refs_l0 are equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of two views with inter-prediction, and inter-view prediction in both anchor pictures and non-anchor pictures.

Purpose: Check that the decoder can properly decode multiple view components with inter-prediction, as well as inter-view prediction in both anchor and non-anchor access units.

6.6.33.6 Test bitstream MVCDS-6

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. num_anchor_refs_l0 and num_non_anchor_refs_l0 are equal to 1. inter_view_flag is equal to 0 for a subset of non-anchor view components of the base view. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of two views with inter-prediction, and inter-view prediction in both anchor pictures and non-anchor pictures.

Purpose: Check that the decoder can properly decode multiple view components with inter-prediction, as well as inter-view prediction in both anchor and non-anchor access units, with different settings of inter_view_flag in different view components.

6.6.33.7 Test bitstream MVCNV-1

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 2, and the views are denoted as A, B, and C, where view A is the base view, and views B and C are non-base views. View B refers to view A, and view C refers to view B. num_anchor_refs_l0 and num_non_anchor_refs_l0 for view B and C are equal to 1, respectively. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of three views with inter-prediction and inter-view prediction in anchor access units and non-anchor pictures.

Purpose: Check that the decoder can properly decode three views with inter-prediction, as well as inter-view prediction in anchor access units.

6.6.33.8 Test bitstream MVCNV-2

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 7, and the views are denoted as A, B, C, D, E, F, G, H, where view A is the base view, and other views are non-base views. View C refers to view A, view B refers to view A and view C, view E refers to view C, view D refers to view C and view E, view G refers to view E, view F refers to view E and view G, and view H refers to view G. num_anchor_refs_l0 and num_non_anchor_refs_l0 for view C, E, G, and H are equal to 1, respectively, and num_anchor_refs_lX (X=0,1) and num_non_anchor_refs_lX (X=0,1) for view B, D, and F are equal to 1, respectively. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of eight views with inter-prediction and inter-view prediction in anchor access units and non-anchor pictures.

Purpose: Check that the decoder can properly decode eight views with inter-prediction, as well as inter-view prediction in anchor access units.

6.6.33.9 Test bitstream MVCNV-3

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 2, and the views are denoted as A, B, and C, where view A is the base view, and views B and C are non-base views. View B refers to view A, and view C does not refer to either view A or B, i.e., it is an independently coded non-base view. num_anchor_refs_l0 and num_non_anchor_refs_l0 for view C is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of three views including a base view with inter-prediction, a non-base view with inter-prediction but no inter-view prediction, and a non-base view with inter-view prediction from the base view and non-base view without inter-view prediction.

Purpose: Check that the decoder can properly decode a bitstream including a mix of non-base views with and without inter-view prediction.

6.6.33.10 Test bitstream MVCNV-4

Specification: All slices are coded as I or P slices. Only the first picture is coded as an IDR access unit with all subsequent pictures coded as anchor access units. Each view component contains only one slice. num_views_minus1 is equal to 3, and the views are denoted as A, B, C, and D, where view A is the base view, and views B, C and D are non-base views. View B refers to view A, view C refers to view B, and view D refers to view C. num_anchor_refs_l0 is equal to 1, num_anchor_refs_l1 is equal to 0, and num_non_anchor_refs_lX is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of four views with inter-view prediction in anchor pictures and subsequent predictions over the views, but without inter-prediction within views.

Purpose: Check that the decoder can properly decode multiple view components with inter-view prediction in anchor pictures for a higher number of views.

6.6.33.11 Test bitstream MVCRP-1

Specification All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. pic_order_cnt_type is equal to 0. Reference picture list reordering is used without reordering_of_pic_nums_idc equal to 4 or 5. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering of reference pictures used for inter-prediction.

Purpose: Check that the decoder handles reference picture list reordering of reference pictures used for inter-prediction.

6.6.33.12 Test bitstream MVCRP-2

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. pic_order_cnt_type is equal to 0. Memory management control operations are used. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Memory management control operations in context of decoding multiple view components.

Purpose: Check that the decoder handles memory management control operations.

6.6.33.13 Test bitstream MVCRP-3

Specification All slices are coded as I or P slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. pic_order_cnt_type is equal to 0. Reference picture list reordering is used including reordering_of_pic_nums_idc equal to 4 and 5. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering of reference pictures used for both inter-prediction and inter-view prediction.

Purpose: Check that the decoder handles reference picture list reordering of reference pictures used for both inter-prediction and inter-view prediction.

6.6.33.14 Test bitstream MVCRP-4

Specification All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. pic_order_cnt_type is equal to 2. Reference picture list reordering including reordering_of_pic_nums_idc equal to 4 and 5, and memory management control operations, are used. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering for both inter-prediction and inter-view prediction, and memory management control operations.

Purpose: Check that the decoder handles reference picture list reordering and memory management control operations.

6.6.33.15 Test bitstream MVCRP-5

Specification All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. pic_order_cnt_type is equal to 2. gaps_in_frame_num_value_allowed_flag is equal to 1. Reference picture list reordering including reordering_of_pic_nums_idc equal to 4 and 5, and memory management control operations, are used. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering and memory management control operations.

Purpose: Check that the decoder handles gaps in frame_num, reference picture list reordering and memory management control operations.

6.6.33.16 Test bitstream MVCRP-6

Specification: All slices are coded as I or P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. pic_order_cnt_type is equal to 0. gaps_in_frame_num_value_allowed_flag is equal to 1. Reference picture list reordering including reordering_of_pic_nums_idc equal to 4 and 5, and memory management control operations, are used. The decoding order is different from the output order. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Reference picture list reordering, memory management control operations and non-increasing PicOrderCnt values.

Purpose: Check that the decoder handles reference picture list reordering and memory management control operations. Test output order conformance for non-increasing PicOrderCnt values.

6.6.33.17 Test bitstream MVCSPS-1

Specification: All slices are coded as I or P slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. Value of syntax elements in sequence parameter sets for each view vary. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of multiple views with different values of syntax elements in sequence parameter sets.

Purpose: Check that the decoder handles variation in sequence parameter sets for each view.

6.6.33.18 Test bitstream MVCSPS-2

Specification: All slices are coded as I or P slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 7, but only two views in the bitstream. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of sub-bitstream where num_views_minus1 does not correspond to actual number of views in bitstream.

Purpose: Check that the decoder handles bitstreams that have undergone sub-bitstream extraction process.

6.6.34 Test bitstreams – Stereo High Profile

6.6.34.1 Test bitstream MVCICT-1

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. num_anchor_refs_l0 and num_non_anchor_refs_l0 are equal to 1. field_pic_flag is equal to 1 for each picture. Reference picture list reordering is used with reordering_of_pic_nums_idc equal to 4 or 5. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of two views with inter-prediction, and each view component is coded as a field picture.

Purpose: Check that the decoder handles reference picture list reordering for field pictures.

6.6.34.2 Test bitstream MVCICT-2

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. num_anchor_refs_l0 and num_non_anchor_refs_l0 are equal to 1. mb_adaptive_frame_field_flag is equal to 1. field_pic_flag is equal to 0 for each picture. Reference picture list reordering is used with reordering_of_pic_nums_idc equal to 4 or 5. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of two views with inter-prediction, and each view component is coded as a mbaff frame picture.

Purpose: Check that the decoder handles reference picture list reordering for mbaff frame pictures.

6.6.35 Test bitstreams – Multiview Depth High Profile

6.6.35.1 Test bitstreams MVDDR-1, MVDDR-2

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. NumDepthViews is equal to 2. The width and the height of depth view components are half of the texture view components. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of texture view component and depth view component.

Purpose: Check that the decoder can properly decode lower resolution depth view component.

6.6.35.2 Test bitstreams MVDDR-3, MVDDR-4

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. NumDepthViews is equal to 2. The width and the

height of depth view components are equal to the texture view components. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of texture view component and depth view component.

Purpose: Check that the decoder can properly decode the same resolution depth view component.

6.6.35.3 Test bitstreams MVDVC-1, MVDVC-2

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. NumDepthViews is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of texture view component and depth view component.

Purpose: Check that the decoder can properly decode various view configurations.

6.6.35.4 Test bitstreams MVDVC-3, MVDVC-4

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 2. NumDepthViews is equal to 3. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of texture view component and depth view component.

Purpose: Check that the decoder can properly decode various view configurations.

6.6.35.5 Test bitstreams MVDIV-1, MVDIV-2

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 2. NumDepthViews is equal to 3. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of texture view component and depth view component.

Purpose: Check that the decoder can properly decode texture and depth view components with interview prediction.

6.6.35.6 Test bitstreams MVDIV-3, MVDIV-4

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 2. NumDepthViews is equal to 3. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of texture view component and depth view component.

Purpose: Check that the decoder can properly decode texture and depth view components with inter frame prediction.

6.6.35.7 Test bitstream MVDIL-1

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. NumDepthViews is equal to 2. field_pic_flag is equal to 1 for texture view components. field_pic_flag is equal to 0 for depth view components. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of texture view component and depth view component.

Purpose: Check that the decoder can properly decode interlace texture view components and progressive depth components.

6.6.35.8 Test bitstream MVDIL-2

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. NumDepthViews is equal to 2. field_pic_flag is equal to 1 for both texture and depth view components. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of texture view component and depth view component.

Purpose: Check that the decoder can properly decode interlace texture and depth view components.

6.6.35.9 Test bitstream MVDRS-1

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 2. NumDepthViews is equal to 2. The width and the height of depth view components are half of the texture view components. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. The byte stream consists of supplemental enhancement information (SEI) metadata describing texture and depth acquisition information and depth representation.

Functional stage: Decoding of texture and depth components, number of texture views is not equal to a number of depth views.

Purpose: Check that the decoder can properly decode MVD with non-equal numbers of views for texture and depth components and decode relevant SEI messages.

6.6.35.10 Test bitstream #MVPCT-1

Specification: All slices are coded as I, P or B slices with coding tools specified in the Multiview Depth High profile of ITU-T H.264 | ISO/IEC 14496-10. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 2. NumDepthViews is equal to 3. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. Multiview video plus depth (MVD) data is coded with an IPP inter-view prediction structure, with a central view being predicted from a left view (put in list 0), and a right view being predicted from the left and central views (both put in list 0), which utilizes prediction of dependent views from multiple inter-view references.

Functional stage: Decoding of texture and depth view components with coding tools specified in the Multiview Depth High profile of ITU-T H.264 | ISO/IEC 14496-10 with IPP inter-view prediction.

Purpose: Check that the decoder can properly decode bitstreams with dependent views which are coded with prediction from multiple inter-view references.

6.6.35.11 Test bitstream #MVPCT-2

Specification: All slices are coded as I, P or B slices with coding tools specified in the Multiview Depth High profile of ITU-T H.264 | ISO/IEC 14496-10. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 2. NumDepthViews is equal to 3. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. Multiview video plus depth (MVD) data is coded with an IBP inter-view prediction structure, with a right view being predicted from a left view, and a central view being bi-predicted from the left (put in list 0) and right views (put in list 1).

Functional stage: Decoding of texture and depth view components with coding tools specified in the Multiview Depth High profile of ITU-T H.264 | ISO/IEC 14496-10 with IBP inter-view prediction.

Purpose: Check that the decoder can properly decode bitstreams with an IBP inter-view prediction structure.

6.6.36 Test bitstreams – MFC High Profile

6.6.36.1 Test bitstream MFCRFT-1

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. mfc_format_idc is equal to 0. default_grid_position_flag is equal to 1. rpu_filter_enabled_flag is equal to 1. rpu_field_processing_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of the base and enhancement view components and reconstruction of the enhanced resolution stereo views with RPU Filter mode, using side-by-side base layer and default grid position.

Purpose: Check that the decoder can properly decode the base and enhancement view components and reconstruct the enhanced resolution stereo views with RPU filter mode.

6.6.36.2 Test bitstream MFCRFT-2

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. mfc_format_idc is equal to 0. default_grid_position_flag is equal to 1. rpu_filter_enabled_flag is equal to 0. rpu_field_processing_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of the base and enhancement view components and reconstruction of the enhanced resolution stereo views with RPU DC mode, using side-by-side base layer and default grid position.

Purpose: Check that the decoder can properly decode the base and enhancement view components and reconstruct the enhanced resolution stereo views with RPU DC mode.

6.6.36.3 Test bitstream MFCFLD-1

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. field_pic_flag is equal to 1. mfc_format_idc is equal to 0. default_grid_position_flag is equal to 1. rpu_filter_enabled_flag is equal to 1. rpu_field_processing_flag is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of the base and enhancement view components and reconstruction of the enhanced resolution stereo views with RPU field processing, using side-by-side base layer, default grid position, RPU filter mode, and each view component is coded as a field picture.

Purpose: Check that the decoder can properly decode the base and enhancement view components and reconstruct the enhanced resolution stereo views with RPU field processing for field pictures.

6.6.36.4 Test bitstream MFCFLD-2

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. mb_adaptive_frame_field_flag is equal to 1. field_pic_flag is equal to 0. mfc_format_idc is equal to 0. default_grid_position_flag is equal to 1. rpu_filter_enabled_flag is equal to 1. rpu_field_processing_flag is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of the base and enhancement view components and reconstruction of the enhanced resolution stereo views with RPU field processing, using side-by-side base layer, default grid position, RPU filter mode, and each view component is coded as an mbaff frame picture.

Purpose: Check that the decoder can properly decode the base and enhancement view components and reconstruct the enhanced resolution stereo views with RPU field processing for mbaff frame pictures.

6.6.36.5 Test bitstream MFCFLD-3

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. mb_adaptive_frame_field_flag is equal to 1. mfc_format_idc is equal to 0. default_grid_position_flag is equal to 1. rpu_filter_enabled_flag is equal to 1. rpu_field_processing_flag is equal to 1. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of the base and enhancement view components and reconstruction of the enhanced resolution stereo views with RPU field processing, using side-by-side base layer, default grid position, RPU filter mode, and each view component is coded as an mbaff frame or a field picture.

Purpose: Check that the decoder can properly decode the base and enhancement view components and reconstruct the enhanced resolution stereo views with RPU field processing for mbaff frame or a field picture.

6.6.36.6 Test bitstream MFCMFM-1

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. mfc_format_idc is equal to 1. default_grid_position_flag is equal to 1. rpu_filter_enabled_flag is equal to 1. rpu_field_processing_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of the base and enhancement view components and reconstruction of the enhanced resolution stereo views with top-and-bottom base layer MFC format configuration, using default grid position and RPU filter mode.

Purpose: Check that the decoder can properly decode the base and enhancement view components and reconstruct the enhanced resolution stereo views with top-and-bottom MFC format configuration.

6.6.36.7 Test bitstream MFCGRD-1

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. mfc_format_idc is equal to 0. default_grid_position_flag is equal to 0. rpu_filter_enabled_flag is equal to 1. rpu_field_processing_flag is equal to 0. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10.

Functional stage: Decoding of the base and enhancement view components and reconstruction of the enhanced resolution stereo views with non-default grid position configuration, using side-by-side base layer and RPU filter mode.

Purpose: Check that the decoder can properly decode the base and enhancement view components and reconstruct the enhanced resolution stereo views with non-default grid positions.

6.6.37 Test bitstreams – 3D-AVC Profiles

6.6.37.1 Test bitstream MVDDR3D-1

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. NumDepthViews is equal to 2. The width and the height of the depth view components are a quarter of those of the texture view components. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. The tools specified for the Enhanced Multiview Depth High profile are enabled, including depth-based MVP, VSP, adaptive luminance compensation, run-length encoded skip and slice header prediction.

Functional stage: Decoding of texture and depth view components.

Purpose: Check that the decoder can properly decode lower resolution depth view components.

6.6.37.2 Test bitstream MVDDR3D-2

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. NumDepthViews is equal to 2. The width and the height of the depth view components are equal to those of the texture view components. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. The tools specified for the Enhanced Multiview Depth High profile are enabled, including depth-based MVP, VSP, adaptive luminance compensation, run-length encoded skip and slice header prediction.

Functional stage: Decoding of texture and depth view components.

Purpose: Check that the decoder can properly decode the same resolution depth view components.

6.6.37.3 Test bitstream MVDCT-1

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 2. NumDepthViews is equal to 3. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. View synthesis prediction (VSP) for dependent texture views is enabled.

Functional stage: Decoding of texture and depth view components.

Purpose: Check that the decoder can properly decode bitstreams when VSP is utilized.

6.6.37.4 Test bitstream MVDCT-2

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 2. NumDepthViews is equal to 3. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. Depth-based motion vector prediction (DMVP) is enabled.

Functional stage: Decoding of texture and depth view components.

Purpose: Check that the decoder can properly decode bitstreams when DMVP is utilized.

6.6.37.5 Test bitstream MVDCT-3

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 2. NumDepthViews is equal to 3. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. Adaptive luminance compensation (ALC) is enabled for coded texture views.

Functional stage: Decoding of texture and depth view components.

Purpose: Check that the decoder can properly decode bitstreams when ALC is utilized.

6.6.37.6 Test bitstream MVDCT-4

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 2. NumDepthViews is equal to 3. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. Non-linear depth representation (NLDR) is enabled for coded depth views.

Functional stage: Decoding of texture and depth view components.

Purpose: Check that the decoder can properly decode bitstreams when NLDR is utilized.

6.6.37.7 Test bitstream MVDCT-5

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 2. NumDepthViews is equal to 3. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. Slice header prediction (SHP) is enabled for the texture component of dependent views and depth component of the base texture view.

Functional stage: Decoding of texture and depth view components.

Purpose: Check that the decoder can properly decode bitstreams when SHP is utilized.

6.6.37.8 Test bitstream MVDCT-6

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. NumDepthViews is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. Multiview video plus depth (MVD) data is coded in an order in which the texture component precedes the depth component of the same view. The NBDV disparity derivation method is utilized for coding of texture components of dependent views.

Functional stage: Decoding of texture and depth view components.

Purpose: Check that the decoder can properly decode bitstreams when texture precedes the depth component and NBDV is used for disparity derivation of dependent texture views.

6.6.37.9 Test bitstream MVDCT-7

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. NumDepthViews is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. Multiview video plus depth (MVD) data is coded in an order in which the texture component precedes the depth component of the same view. The depth oriented NBDV (DoNBDV) disparity derivation method is utilized for the coding of the texture component of dependent views.

Functional stage: Decoding of texture and depth view components.

Purpose: Check that the decoder can properly decode bitstreams when the texture component precedes the depth component and DoNBDV is used for disparity derivation of dependent texture views.

6.6.37.10 Test bitstream MVDCT-8

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 2. NumDepthViews is equal to 3. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. Multiview video plus depth (MVD) data is coded with an IPP inter-view prediction structure, with a central view being predicted from a left view (put in list 0), and a right view being predicted from the left and central views (both put in list 0), which utilizes prediction of dependent views from multiple inter-view references.

Functional stage: Decoding of texture and depth view components with IPP inter-view prediction.

Purpose: Check that the decoder can properly decode bitstreams with dependent views which are coded with prediction from multiple inter-view references.

6.6.37.11 Test bitstream MVDCT-9

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 2. NumDepthViews is equal to 3. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. Multiview video plus depth (MVD) data is coded with utilization of run-based arithmetic coding of the skip flag (RSAC) for dependent views.

Functional stage: Decoding of texture and depth view components with RSAC enabled.

Purpose: Check that the decoder can properly decode bitstreams with dependent views which are coded with RSAC enabled.

6.6.37.12 Test bitstream MVDCT-10

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 2. NumDepthViews is equal to 3. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. Multiview video plus depth (MVD) data is coded with an IBP inter-view prediction structure, with a right view being predicted from a left view, and a central view being bi-predicted from the left view (put in list 0) and right view (put in list 1).

Functional stage: Decoding of texture and depth view components with IBP inter-view prediction.

Purpose: Check that the decoder can properly decode bitstreams with IBP inter-view prediction structure.

6.6.38 Test bitstreams – MFC Depth High Profile

6.6.38.1 Test bitstream MFCDDR-1

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. NumDepthViews is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. The base layer texture view is in side-by-side frame compatible format. field_pic_flag is equal to 0 for both the texture and depth view components. The coding order of the texture and depth views are structured as "T0D0D1T1", i.e., texture for view 0, followed by depth for view 0, followed by depth for view 1, and followed by texture for view 1. The width and the height of the depth view components are equal to those of the texture view components.

Functional stage: Decoding of the base and enhancement texture and depth view components and reconstruction of the enhanced resolution stereo texture views.

Purpose: Check that the decoder can properly decode the base and enhancement texture view components and the same resolution depth view components and reconstruct the enhanced resolution stereo texture views.

6.6.38.2 Test bitstream MFCDDR-2

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. NumDepthViews is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. The base layer texture view is in side-by-side frame compatible format. field_pic_flag is equal to 0 for both the texture and depth view components. The coding order of the texture and depth views are structured as "T0D0D1T1", i.e., texture for view 0, followed by depth for view 0, followed by depth for view 1, and followed by texture for view 1. The width and the height of the depth view components are half of those of the texture view components.

Functional stage: Decoding of the base and enhancement texture and depth view components and reconstruction of the enhanced resolution stereo texture views.

Purpose: Check that the decoder can properly decode the base and enhancement texture view components and lower resolution depth view components and reconstruct the enhanced resolution stereo texture views.

6.6.38.3 Test bitstream MFCDFLD-1

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. NumDepthViews is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. The base layer texture view is in side-by-side frame compatible format. The coding order of the texture and depth views are structured as "T0D0D1T1", i.e., texture for view 0, followed by depth for view 0, followed by depth for view 1, and followed by texture for view 1. field_pic_flag is equal to 1 for texture view components. field_pic_flag is equal to 0 for depth view components.

Functional stage: Decoding of the base and enhancement field-coded texture view components and frame-coded depth view components and reconstruction of the enhanced resolution stereo texture views.

Purpose: Check that the decoder can properly decode the field-coded base and enhancement texture view components and frame-coded depth components and reconstruct the enhanced resolution stereo texture views.

6.6.38.4 Test bitstream MFCDFLD-2

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. NumDepthViews is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. The base layer texture view is in side-by-side frame compatible format. The coding order of the texture and depth views are structured as

"T0D0D1T1", i.e., texture for view 0, followed by depth for view 0, followed by depth for view 1, and followed by texture for view 1. field_pic_flag is equal to 1 for both the texture and depth view components.

Functional stage: Decoding of the base and enhancement field-coded texture and depth view components and reconstruction of the enhanced resolution stereo texture views.

Purpose: Check that the decoder can properly decode the field-coded base and enhancement texture and depth view components and reconstruct the enhanced resolution stereo texture views.

6.6.38.5 Test bitstream MFCDTDC-1

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. NumDepthViews is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. The base layer texture view is in side-by-side frame compatible format. field_pic_flag is equal to 0 for both the texture and depth view components. The coding order of the texture and depth views are structured as "T0D0T1D1", i.e., texture for view 0, followed by depth for view 0, followed by texture for view 1, followed by depth for view 1.

Functional stage: Decoding of the base and enhancement texture and depth view components and reconstruction of the enhanced resolution stereo texture views.

Purpose: Check that the decoder can properly decode the base and enhancement texture and depth view components with various coding orders and reconstruct the enhanced resolution stereo texture views.

6.6.38.6 Test bitstream MFCDTDC-2

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. NumDepthViews is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. The base layer texture view is in side-by-side frame compatible format. field_pic_flag is equal to 0 for both the texture and depth view components. The coding order of the texture and depth views are structured as "T0T1D0D1", i.e., texture for view 0, followed by texture for view 1, followed by depth for view 0, followed by depth for view 1.

Functional stage: Decoding of the base and enhancement texture and depth view components and reconstruction of the enhanced resolution stereo texture views.

Purpose: Check that the decoder can properly decode the base and enhancement texture and depth view components with various coding orders and reconstruct the enhanced resolution stereo texture views.

6.6.38.7 Test bitstream MFCDMFC-1

Specification: All slices are coded as I, P or B slices. Only the first picture is coded as an IDR access unit. Each view component contains only one slice. num_views_minus1 is equal to 1. NumDepthViews is equal to 2. All NAL units are encapsulated into the byte stream format specified in Annex B in ITU-T H.264 | ISO/IEC 14496-10. field_pic_flag is equal to 0 for both the texture and depth view components. The coding order of the texture and depth views are structured as "T0D0D1T1", i.e., texture for view 0, followed by depth for view 0, followed by depth for view 1, and followed by texture for view 1. mfc_format_idc is set to 1, i.e., the base layer texture view is in top-and-bottom frame compatible format.

Functional stage: Decoding of the base and enhancement texture and depth view components and reconstruction of the enhanced resolution stereo texture views.

Purpose: Check that the decoder can properly decode the base and enhancement texture and depth view components with various base layer texture frame compatible format and reconstruct the enhanced resolution stereo texture views.

6.7 Normative test suites for ITU-T H.264 | ISO/IEC 14496-10

Legend:

X – Bitstream is for static and dynamic test

Table 1 – Bitstreams for the Constrained Baseline, Baseline, Extended and Main profiles

Categories	Bitstream	Donated by	File name	Constrained Baseline	Baseline	Extended	Main	Level	Frame rate (Frames/sec)
General	AVCNL-1	Sony	NL1_Sony_D	X	X	X	X	1.2 and higher	15
	AVCNL-2	SVA	SVA_NL1_B	X	X	X	X	2.1 and higher	29.97
	AVCNL-3	Sony	NL2_Sony_H	X	X	X	X	3.1 and higher	15
	AVCNL-4	SVA	SVA_NL2_E	X	X	X	X	2.1 and higher	29.97
	AVCBA-1	Sony	BA1_Sony_D	X	X	X	X	1.2 and higher	15
	AVCBA-2	SVA	SVA_BA1_B	X	X	X	X	2.1 and higher	29.97
	AVCBA-3	Sony	BA2_Sony_F	X	X	X	X	3.1 and higher	15
	AVCBA-4	SVA	SVA_BA2_D	X	X	X	X	2.1 and higher	29.97
	AVCBA-5	MCubeworks	BA_MW_D	X	X	X	X	1 and higher	15
	AVCBA-6	MCubeworks	BANM_MW_D	X	X	X	X	1 and higher	15
	AVCBA-7	France Telecom	BA1_FT_C	X	X	X	X	2 and higher	25
	AVCMQ-1	JVC	NLMQ1_JVC_C	X	X	X	X	2 and higher	25
	AVCMQ-2	JVC	NLMQ2_JVC_C	X	X	X	X	2 and higher	25
	AVCMQ-3	JVC	BAMQ1_JVC_C	X	X	X	X	2 and higher	25
	AVCMQ-4	JVC	BAMQ2_JVC_C	X	X	X	X	2 and higher	25
	AVCSL-1	SVA	SVA_Base_B	X	X	X	X	2.1 and higher	29.97
	AVCSL-2	SVA	SVA_FM1_E	X	X	X	X	2.1 and higher	29.97
	AVCSQ-1	Sony	BASQP1_Sony_C	X	X	X	X	2.1 and higher	15
	AVCFM-1	British Telecom	FM1_BT_B		X	X		1 and higher	5
	AVCFM-2	SVA	FM2_SVA_C		X	X		2.1 and higher	15
	AVCFM-3	France Telecom	FM1_FT_E		X	X		2 and higher	25
	AVCCI-1	MCubeworks	CI_MW_D	X	X	X	X	1 and higher	15
	AVCCI-2	SVA	SVA_CL1_E	X	X	X	X	2.1 and higher	29.97
	AVCCI-3	France Telecom	CI1_FT_B	X	X	X	X	2 and higher	25
	AVCFC-1	Sony	CVFC1_Sony_C	X	X	X	X	3.1 and higher	29.97
	AVCAUD-1	Mcubeworks	AUD_MW_E	X	X	X	X	1 and higher	15

Table 1 – Bitstreams for the Constrained Baseline, Baseline, Extended and Main profiles

Categories	Bitstream	Donated by	File name	Constrained Baseline	Baseline	Extended	Main	Level	Frame rate (Frames/sec)
	AVCMIDR-1	Mcubeworks	MIDR_MW_D	X	X	X	X	1 and higher	15
	AVCNRF-1	Mcubeworks	NRF_MW_E	X	X	X	X	1 and higher	15
	AVCMPS-1	Mcubeworks	MPS_MW_A	X	X	X	X	1.1 and higher	15
	AVCBS-1	Sony	CVBS3_Sony_C			X	X	1.2 and higher	15
	AVCBS-2	SVA	BA3_SVA_C			X	X	2.1 and higher	29.97
	AVCBS-3	SVA	SL1_SVA_B				X	2.1 and higher	29.97
	AVCBS-4	SVA	NL3_SVA_E			X	X	1.1 and higher	29.97
	AVCBS-5	Motorola	cavlc_mot_frm0_full_B			X	X	3 and higher	29.97
I_PCM	AVCPCM-1	SVA	CVPCMNL1_SVA_C	X	X	X	X	4 and higher	29.97
	AVCPCM-2	SVA	CVPCMNL2_SVA_C	X	X	X	X	4 and higher	60
MMCO	AVCMR-1	British Telecom	MR1_BT_A	X	X	X	X	1.1 and higher	20
	AVCMR-2	Tandberg	MR2_Tandberg_E		X	X		3.1 and higher	29.97
	AVCMR-3	Tandberg	MR3_Tandberg_B		X	X		3.1 and higher	29.97
	AVCMR-4	Tandberg	MR4_Tandberg_C		X	X		3.1 and higher	29.97
	AVCMR-5	Tandberg	MR5_Tandberg_C		X	X		3.1 and higher	29.97
	AVCMR-6	Mcubeworks	MR1_MW_A	X	X	X	X	1.1 and higher	15
	AVCMR-7	Mcubeworks	MR2_MW_A	X	X	X	X	1.1 and higher	15
	AVCMR-8	British Telecom	MR6_BT_B			X	X	2.1 and higher	25
	AVCMR-9	British Telecom	MR7_BT_B			X	X	2.1 and higher	25
	AVCMR-10	British Telecom	MR8_BT_B			X	X	2.1 and higher	25
	AVCMR-11	HHI	HCBP1_HHI_A	X	X	X	X	3.1 and higher	29.97
	AVCMR-12	HHI	HCBP2_HHI_A	X	X	X	X	3.1 and higher	29.97
WP	AVCWP-1	Toshiba	CVWP5_TOSHIBA_E			X	X	2 and higher	7.5
	AVCWP-2	Toshiba	CVWP1_TOSHIBA_E				X	2 and higher	7.5
	AVCWP-3	Toshiba	CVWP2_TOSHIBA_E				X	2 and higher	7.5
	AVCWP-4	Toshiba	CVWP3_TOSHIBA_E				X	2 and higher	7.5

Table 1 – Bitstreams for the Constrained Baseline, Baseline, Extended and Main profiles

Categories	Bitstream	Donated by	File name	Constrained Baseline	Baseline	Extended	Main	Level	Frame rate (Frames/sec)
Field coding	AVCFI-1	Sony	CVNLFI1_Sony_C			X	X	3.1 and higher	29.97
	AVCFI-2	Sony	CVNLFI2_Sony_H			X	X	3.1 and higher	29.97
	AVCFI-3	Sharp Labs	Sharp_MP_Field1_B			X	X	3 and higher	29.97
	AVCFI-4	Sharp Labs	Sharp_MP_Field2_B			X	X	3 and higher	29.97
	AVCFI-5	Sharp Labs	Sharp_MP_Field3_B			X	X	3 and higher	29.97
	AVCFI-6	Sony	CVFI1_Sony_D			X	X	3.1 and higher	29.97
	AVCFI-7	Sony	CVFI2_Sony_H				X	3.1 and higher	29.97
	AVCFI-8	Sony	FI1_Sony_E			X	X	2.1 and higher	29.97
	AVCFI-9	SVA	CVFI1_SVA_C				X	3 and higher	29.97
	AVCFI-10	SVA	CVFI2_SVA_C			X	X	3 and higher	29.97
	AVCFI-11	Motorola	cavlc_mot_fld0_full_B			X	X	2.2 and higher	29.97
	AVCFI-12	Motorola	CVMP_MOT_FLD_L30_B			X	X	3 and higher	29.97
Frame/field coding	AVCPA-1	Sharp Labs	Sharp_MP_PAFF_1r2			X	X	3 and higher	29.97
	AVCPA-2	Toshiba	CVPA1_TOSHIBA_B			X	X	2.1 and higher	25
	AVCPA-3	Motorola	cavlc_mot_picaff0_full_B			X	X	2.2 and higher	29.97
MBAFF	AVCMA-1	Toshiba	CVMANL1_TOSHIBA_B			X	X	2.1 and higher	25
	AVCMA-2	Toshiba	CVMANL2_TOSHIBA_B			X	X	2.1 and higher	25
	AVCMA-3	Sony	CVMA1_Sony_D			X	X	3.1 and higher	29.97
	AVCMA-4	Toshiba	CVMA1_TOSHIBA_B			X	X	2.1 and higher	25
	AVCMA-5	Sony	CVMAQP2_Sony_G			X	X	3.1 and higher	29.97
	AVCMA-6	Sony	CVMAQP3_Sony_D			X	X	2.1 and higher	29.97
	AVCMA-7	Sony	CVMAPAQP3_Sony_E			X	X	3.1 and higher	29.97
	AVCMA-8	Motorola	cavlc_mot_mbaff0_full_B			X	X	2.2 and higher	29.97
	AVCMA-9	Motorola	CVMP_MOT_FRM_L31_B			X	X	3.1 and higher	29.97
S Picture	AVCSP-1	British Telecom	SP1_BT_A			X		1 and higher	10
	AVCSP-2	British Telecom	SP2_BT_B			X		1 and higher	20

Table 1 – Bitstreams for the Constrained Baseline, Baseline, Extended and Main profiles

Categories	Bitstream	Donated by	File name	Constrained Baseline	Baseline	Extended	Main	Level	Frame rate (Frames/sec)
Long sequence	AVCLS-1	SVA	LS_SVA_D	X	X	X	X	1.3 and higher	29.97
SEI/VUI	AVCSE-1	Sony	CVSE2_Sony_B			X	X	2.1 and higher	15
	AVCSE-2	Sony	CVSE3_Sony_H			X	X	2.1 and higher	15
	AVCSE-3	Sony	CVSEFDFT3_Sony_E			X	X	2.1 and higher	15
CABAC	AVCCANL-1	Toshiba	CANL1_TOSHIBA_G				X	1.2 and higher	29.97
	AVCCANL-2	Sony	CANL1_Sony_E				X	2.1 and higher	15
	AVCCANL-3	Sony	CANL2_Sony_E				X	2.1 and higher	15
	AVCCANL-4	Sony	CANL3_Sony_C				X	1.2 and higher	15
	AVCCANL-5	SVA	CANL1_SVA_B				X	2.1 and higher	29.97
	AVCCANL-6	SVA	CANL2_SVA_B				X	2.1 and higher	29.97
	AVCCANL-7	SVA	CANL3_SVA_B				X	2.1 and higher	29.97
	AVCCANL-8	SVA	CANL4_SVA_B				X	2.1 and higher	29.97
	AVCCABA-1	Sony	CABA1_Sony_D				X	2.1 and higher	15
	AVCCABA-2	Sony	CABA2_Sony_E				X	2.1 and higher	15
	AVCCABA-3	Sony	CABA3_Sony_C				X	1.2 and higher	15
	AVCCABA-4	Toshiba	CABA3_TOSHIBA_E				X	1.2 and higher	29.97
	AVCCABA-5	SVA	CABA1_SVA_B				X	2.1 and higher	29.97
	AVCCABA-6	SVA	CABA2_SVA_B				X	2.1 and higher	29.97
	AVCCABA-7	SVA	CABA3_SVA_B				X	2.1 and higher	29.97
	AVCCABA-8	Motorola	cabac_mot_frm0_full				X	3 and higher	29.97
CABAC: Initialization	AVCCAIN-1	Sony	CABACI3_Sony_B				X	2.1 and higher	15
CABAC: MB QP Delta	AVCCAQP-1	Sony	CAQP1_Sony_B				X	1.2 and higher	15
	AVCCAQP-2	Sony	CACQP3_Sony_D				X	2.1 and higher	15
CABAC: Slice	AVCCASL-1	Sony	CABAST3_Sony_E				X	2.1 and higher	29.97
	AVCCASL-2	Sony	CABASTBR3_Sony_B				X	2.1 and higher	29.97

Table 1 – Bitstreams for the Constrained Baseline, Baseline, Extended and Main profiles

Categories	Bitstream	Donated by	File name	Constrained Baseline	Baseline	Extended	Main	Level	Frame rate (Frames/sec)
CABAC: I_PCM	AVCCAPCM-1	Broadcom	CAPCMNL1_Sand_E				X	4 and higher	29.97
	AVCCAPCM-2	Broadcom	CAPCM1_Sand_E				X	4 and higher	29.97
	AVCCAPCM-3	Sony	CAPM3_Sony_D				X	2.1 and higher	15
CABAC: MMCO	AVCCAMR-1	British Telecom	MR9_BT_B				X	2.1 and higher	25
	AVCCAMR-2	HHI	HCMP1_HHI_A				X	3 and higher	29.97
CABAC: WP	AVCCAWP-1	Toshiba	CAWP1_TOSHIBA_E				X	2 and higher	7.5
	AVCCAWP-2	Toshiba	CAWP5_TOSHIBA_E				X	2 and higher	7.5
CABAC: Field coding	AVCCAFI-1	Broadcom	CABREF3_Sand_D				X	4 and higher	29.97
	AVCCAFI-2	SVA	CAFI_SVA_C				X	3 and higher	29.97
	AVCCAFI-3	Motorola	cabac_mot_fld0_full				X	2.2 and higher	29.97
CABAC: Frame/field coding	AVCCAPA-1	Sharp Labs	Sharp_MP_PAFF_2r				X	3 and higher	29.97
	AVCCAPA-2	Toshiba	CAPA1_TOSHIBA_B				X	2.1 and higher	25
	AVCCAPA-3	Motorola	cabac_mot_paff0_full				X	2.2 and higher	29.97
CABAC: MBAFF	AVCCAMA-1	Toshiba	CAMANL1_TOSHIBA_B				X	2.1 and higher	25
	AVCCAMA-2	Toshiba	CAMANL2_TOSHIBA_B				X	2.1 and higher	25
	AVCCAMA-3	Sony	CANLMA2_Sony_C				X	3.1 and higher	29.97
	AVCCAMA-4	Sony	CANLMA3_Sony_C				X	3.1 and higher	29.97
	AVCCAMA-5	Sony	CAMA1_Sony_C				X	3.1 and higher	29.97
	AVCCAMA-6	Toshiba	CAMA1_TOSHIBA_B				X	2.1 and higher	25
	AVCCAMA-7	Broadcom	CAMANL3_Sand_E				X	4 and higher	29.97
	AVCCAMA-8	Broadcom	CAMA3_Sand_E				X	4 and higher	29.97
	AVCCAMA-9	Sony	CAMASL3_Sony_B				X	2.1 and higher	29.97
	AVCCAMA-10	Sony	CAMACI3_Sony_C				X	2.1 and higher	29.97
	AVCCAMA-11	Motorola	cabac_mot_mbaff0_full				X	2.2 and higher	29.97
	AVCCAMA-12	Motorola	CAMP_MOT_MBAFF_L30				X	3 and higher	29.97
	AVCCAMA-13	Motorola	CAMP_MOT_MBAFF_L31				X	3.1 and higher	29.97

Table 1 – Bitstreams for the Constrained Baseline, Baseline, Extended and Main profiles

Categories	Bitstream	Donated by	File name	Constrained Baseline	Baseline	Extended	Main	Level	Frame rate (Frames/sec)
	AVCCAPAMA-1	Broadcom	CAPAMA3_Sand_F				X	4 and higher	29.97
	AVCCAPAMA-2	VideoTele.com	CAMA1_VTC_C				X	3 and higher	29.97
	AVCCAPAMA-3	VideoTele.com	CAMA2_VTC_B				X	3 and higher	25
	AVCCAPAMA-4	VideoTele.com	CAMA3_VTC_B				X	3 and higher	25
CABAC: Prediction bandwidth	AVCCAMV-1	Broadcom	MV1_BRCM_D				X	3 and higher	29.97
CABAC/ CAVLC	AVCCVCANLMA-1	Sony	CVCANLMA2_Sony_C				X	3.1 and higher	29.97

Table 2 – Bitstreams for the High, High 10, and High 4:2:2 profiles

Categories	Bitstream	Donated by	File name	High	High 10	High 4:2:2	Level	Frame rate (Frames/sec)
4:2:0 8 bit	FREH-1	Panasonic Singapore Lab.	FRExt1_Panasonic_D	X	X	X	2.1 and higher	29.97
	FREH-2	Panasonic Singapore Lab.	FRExt3_Panasonic_E	X	X	X	2.1 and higher	29.97
	FREH-3	HHI	HCAFR1_HHI_C	X	X	X	3 and higher	15
	FREH-4	HHI	HCAFF1_HHI_B	X	X	X	3 and higher	15
	FREH-5	HHI	HCAMFF1_HHI_B	X	X	X	3 and higher	15
	FREH-6	Panasonic Singapore Lab.	FRExt2_Panasonic_C	X	X	X	2.1 and higher	29.97
	FREH-7	Panasonic Singapore Lab.	FRExt4_Panasonic_B	X	X	X	2.1 and higher	29.97
	FREH-8	Broadcom	HPCANL_BRCM_C	X	X	X	4 and higher	29.97
	FREH-9	Broadcom	HPCA_BRCM_C	X	X	X	4 and higher	29.97
	FREH-10	Broadcom	HPCAFLNL_BRCM_C	X	X	X	4 and higher	29.97
	FREH-11	Broadcom	HPCAFL_BRCM_C	X	X	X	4 and higher	29.97
	FREH-12	HHI	HCAFR2_HHI_A	X	X	X	2 and higher	15
	FREH-13	HHI	HCAFR3_HHI_A	X	X	X	3 and higher	15

Table 2 – Bitstreams for the High, High 10, and High 4:2:2 profiles

Categories	Bitstream	Donated by	File name	High	High 10	High 4:2:2	Level	Frame rate (Frames/sec)
	FREH-14	HHI	HCAFR4_HHI_A	X	X	X	3 and higher	15
	FREH-15	Broadcom	HPCADQ_BRCM_B	X	X	X	4 and higher	29.97
	FREH-16	Broadcom	HPCALQ_BRCM_B	X	X	X	4 and higher	29.97
	FREH-17	Broadcom	HPCAMAPALQ_BRCM_B	X	X	X	4 and higher	29.97
	FREH-18	Broadcom	HPCV_BRCM_A	X	X	X	4 and higher	29.97
	FREH-19	Broadcom	HPCVNL_BRCM_A	X	X	X	4 and higher	29.97
	FREH-20	Broadcom	HPCVFL_BRCM_A	X	X	X	4 and higher	29.97
	FREH-21	Broadcom	HPCVFLNL_BRCM_A	X	X	X	4 and higher	29.97
	FREH-22	Sony	HVLCFI0_Sony_B	X	X	X	3.1 and higher	29.97
	FREH-23	Sony	HVLCPFF0_Sony_B	X	X	X	3.1 and higher	29.97
	FREH-24	Sony	HVLCMFF0_Sony_A	X	X	X	3.1 and higher	29.97
	FREH-25	Broadcom	HPCVMOLQ_BRCM_B	X	X	X	4 and higher	29.97
	FREH-26	Broadcom	HPCAMOLQ_BRCM_B	X	X	X	4 and higher	29.97
	FREH-27	Broadcom	HPCAQ2LQ_BRCM_B	X	X	X	4 and higher	29.97
	FREH-28	Broadcom	brcm_freh1_B	X	X	X	3 and higher	29.97
	FREH-29	Broadcom	brcm_freh2_B	X	X	X	3 and higher	29.97
	FREH-30	Broadcom	brcm_freh3	X	X	X	3 and higher	29.97
	FREH-31	Broadcom	brcm_freh4	X	X	X	3 and higher	29.97
	FREH-32	Broadcom	brcm_freh5	X	X	X	3 and higher	29.97
	FREH-33	Broadcom	brcm_freh6	X	X	X	3 and higher	29.97
	FREH-34	Broadcom	brcm_freh7_B	X	X	X	3 and higher	29.97
	FREH-35	Broadcom	brcm_freh8	X	X	X	3 and higher	29.97
	FREH-36	Broadcom	brcm_freh9	X	X	X	3 and higher	29.97
	FREH-37	Broadcom	brcm_freh10	X	X	X	3 and higher	29.97
	FREH-38	Broadcom	brcm_freh11	X	X	X	3 and higher	29.97
	FREH-39	Broadcom	brcm_freh12_B	X	X	X	3 and higher	29.97

Table 2 – Bitstreams for the High, High 10, and High 4:2:2 profiles

Categories	Bitstream	Donated by	File name	High	High 10	High 4:2:2	Level	Frame rate (Frames/sec)
	FREH-40	HHI	HCHP1_HHI_B	X	X	X	2.1 and higher	29.97
	FREH-41	HHI	HCHP2_HHI_A	X	X	X	3.1 and higher	29.97
	FREH-42	HHI	HCHP3_HHI_A	X	X	X	4.1 and higher	29.97
	FREH-43	JVC	FREXT01_JVC_D	X	X	X	3.1 and higher	29.97
	FREH-44	JVC	FREXT01_JVC_C	X	X	X	3.1 and higher	29.97
	FREH-45	Sony	FREXT_MMCO4_Sony_B	X	X	X	3.1 and higher	29.97
4:2:0 10 bit	FREH10-1	Dolby	FREH10-1		X	X	4 and higher	24
	FREH10-2	Dolby	FREH10-2		X	X	4 and higher	24
4:2:2 10 bit	FREH422-1	Tandberg	FREXT1_TANDBERG_A			X	2.1 and higher	29.97
	FREH422-2	Tandberg	FREXT2_TANDBERG_A			X	2.1 and higher	29.97
	FREH422-3	Tandberg	FREXT3_TANDBERG_A			X	2.1 and higher	29.97
	FREH422-4	Sony	Hi422FREXT1_Sony_A			X	3.1 and higher	29.97
	FREH422-5	Sony	Hi422FREXT2_Sony_A			X	3.1 and higher	29.97
	FREH422-6	Sony	Hi422FREXT3_Sony_A			X	3.1 and higher	29.97
	FREH422-7	Sony	Hi422FREXT4_Sony_A			X	3.1 and higher	29.97
	FREH422-8	Sony	Hi422FREXT6_Sony_A			X	3.1 and higher	29.97
	FREH422-9	Sony	Hi422FREXT7_Sony_A			X	3.1 and higher	29.97
	FREH422-10	Sony	Hi422FREXT8_Sony_A			X	3.1 and higher	29.97
	FREH422-11	Sony	Hi422FREXT9_Sony_A			X	3.1 and higher	29.97
	FREH422-12	Sony	Hi422FREXT10_Sony_A			X	3.1 and higher	29.97
	FREH422-13	Sony	Hi422FREXT11_Sony_A			X	3.1 and higher	29.97
	FREH422-14	Sony	Hi422FREXT12_Sony_A			X	3.1 and higher	29.97
	FREH422-15	Sony	Hi422FREXT13_Sony_A			X	3.1 and higher	29.97
	FREH422-16	Sony	Hi422FREXT14_Sony_A			X	3.1 and higher	29.97
	FREH422-17	Sony	Hi422FREXT15_Sony_A			X	3.1 and higher	29.97

Table 2 – Bitstreams for the High, High 10, and High 4:2:2 profiles

Categories	Bitstream	Donated by	File name	High	High 10	High 4:2:2	Level	Frame rate (Frames/sec)
	FREH422-18	Sony	Hi422FREXT16_Sony_A			X	4 and higher	29.97
	FREH422-19	Sony	Hi422FREXT17_Sony_A			X	4 and higher	29.97
	FREH422-20	Sony	Hi422FREXT18_Sony_A			X	4 and higher	29.97
	FREH422-21	Sony	Hi422FREXT19_Sony_A			X	4 and higher	29.97
Auxiliary coded picture	FREAUX-1	Apple	alphaconformanceG	X	X	X	2.1 and higher	29.97

Table 3 – Bitstreams for the High 10 Intra, High 4:2:2 Intra, High 4:4:4 Intra, High 4:4:4 Predictive, and CAVLC 4:4:4 Intra profile

Categories	Bitstream	Donated by	File name	High 10 Intra	High 4:2:2 Intra	High 4:4:4 Intra	High 4:4:4 Predictive	CAVLC 4:4:4 Intra	Level	Frame rate (Frames/sec)
4:4:4 14 bit Predictive	PPH444-P1	Thomson	PPH444P1_2008				X		4.1 and higher	29.97
	PPH444-P2	Thomson	PPH444P2_2008				X		4.1 and higher	29.97
	PPH444-P3	Thomson	PPH444P3_2008				X		4.1 and higher	29.97
	PPH444-P4	Thomson	PPH444P4_2008				X		3.2 and higher	59.94
	PPH444-P5	Thomson	PPH444P5_2008				X		3.2 and higher	59.94
	PPH444-P6	Mitsubishi	PPH444P6_Mitsubishi_A				X		4.1 and higher	29.97
	PPH444-P7	Mitsubishi	PPH444P7_Mitsubishi_A				X		4.1 and higher	29.97
	PPH444-P8	Mitsubishi	PPH444P8_Mitsubishi_A				X		4.1 and higher	29.97
	PPH444-P9	Mitsubishi	PPH444P9_Mitsubishi_A				X		4.1 and higher	59.94
	PPH444-P10	Sejong Univ	PPH444P10_SejongUniv_A				X		3.2 and higher	59.94

Table 3 – Bitstreams for the High 10 Intra, High 4:2:2 Intra, High 4:4:4 Intra, High 4:4:4 Predictive, and CAVLC 4:4:4 Intra profile

Categories	Bitstream	Donated by	File name	High 10 Intra	High 4:2:2 Intra	High 4:4:4 Intra	High 4:4:4 Predictive	CAVLC 4:4:4 Intra	Level	Frame rate (Frames/sec)
4:2:0 10 bit Intra	PPH10-1	Panasonic	PPH10I1_Panasonic_A	X	X	X	X	X	3.2 and higher	59.94
	PPH10-2	Panasonic	PPH10I2_Panasonic_A	X	X	X	X		3.2 and higher	59.94
	PPH10-3	Panasonic	PPH10I3_Panasonic_A	X	X	X	X		3.2 and higher	59.94
	PPH10-4	Panasonic	PPH10I4_Panasonic_A	X	X	X	X	X	4.1 and higher	29.97
	PPH10-5	Panasonic	PPH10I5_Panasonic_A	X	X	X	X		4.1 and higher	29.97
	PPH10-6	Panasonic	PPH10I6_Panasonic_A	X	X	X	X	X	4.1 and higher	29.97
	PPH10-7	Panasonic	PPH10I7_Panasonic_A	X	X	X	X		4.1 and higher	29.97
4:2:2 10 bit Intra	PPH422I-1	Panasonic	PPH422I1_Panasonic_A		X	X	X	X	3.2 and higher	59.94
	PPH422I-2	Panasonic	PPH422I2_Panasonic_A		X	X	X		3.2 and higher	59.94
	PPH422I-3	Panasonic	PPH422I3_Panasonic_A		X	X	X		3.2 and higher	59.94
	PPH422I-4	Panasonic	PPH422I4_Panasonic_A		X	X	X	X	4.1 and higher	29.97
	PPH422I-5	Panasonic	PPH422I5_Panasonic_A		X	X	X		4.1 and higher	29.97
	PPH422I-6	Panasonic	PPH422I6_Panasonic_A		X	X	X	X	4.1 and higher	29.97
	PPH422I-7	Panasonic	PPH422I7_Panasonic_A		X	X	X		4.1 and higher	29.97
4:4:4 14 bit Intra	PPH444I-1	Thomson	PPH444I1_2008			X	X		3.2 and higher	59.94
	PPH444I-2	Thomson	PPH444I2_2008			X	X		3.2 and higher	59.94
	PPH444I-3	Thomson	PPH444I3_2008			X	X		3.2 and higher	59.94

Table 3 – Bitstreams for the High 10 Intra, High 4:2:2 Intra, High 4:4:4 Intra, High 4:4:4 Predictive, and CAVLC 4:4:4 Intra profile

Categories	Bitstream	Donated by	File name	High 10 Intra	High 4:2:2 Intra	High 4:4:4 Intra	High 4:4:4 Predictive	CAVLC 4:4:4 Intra	Level	Frame rate (Frames/sec)
	PPH444I-4	Mitsubishi	PPH444I4_Mitsubishi_A			X	X		4.1 and higher	29.97
	PPH444I-5	Mitsubishi	PPH444I5_Mitsubishi_A			X	X		4.1 and higher	29.97
	PPH444I-6	Mitsubishi	PPH444I6_Mitsubishi_A			X	X		4.1 and higher	29.97
	PPH444I-7	Sejong Univ	PPH444I7_SejongUniv_A			X	X		3.2 and higher	59.94
CAVLC 4:4:4 14 bit Intra	PPCV444I-1	Thomson	PPCV444I1_2008				X	X	3.2 and higher	59.94
	PPCV444I-2	Thomson	PPCV444I2_2008				X	X	3.2 and higher	59.94
	PPCV444I-3	Thomson	PPCV444I3_2008				X	X	3.2 and higher	59.94
	PPCV444I-4	Mitsubishi	PPCV444I4_Mitsubishi_A				X	X	4.1 and higher	29.97
	PPCV444I-5	Mitsubishi	PPCV444I5_Mitsubishi_A				X	X	4.1 and higher	29.97
	PPCV444I-6	Mitsubishi	PPCV444I6_Mitsubishi_A				X	X	4.1 and higher	29.97
	PPCV444I-7	Sejong Univ	PPCV444I7_SejongUniv_A				X	X	3.2 and higher	59.94

Table 4 – Bitstreams for the Constrained Baseline, High, High 10 Intra, Scalable Baseline, Scalable High, and Scalable High Intra profiles

Categories	Bitstream	Donated by	File name	Constrained Baseline	High	High 10 Intra	Scalable Baseline	Scalable High	Scalable High Intra	Level	Frame rate (Frames/sec)
CGS	SVCBC-1	HHI	SVCBC-1-L0	X	X		X	X		1.3 and higher	29.97
	SVCBC-1	HHI	SVCBC-1-L1				X			2.1 and higher	29.97
MGS	SVCBM-1	Vidyo	SVCBM-1-L0	X	X		X	X		1.3 and higher	29.97
	SVCBM-1	Vidyo	SVCBM-1-L1				X			1.3 and higher	29.97
	SVCBM-2	Sharp	SVCBM-2-L0	X	X		X	X		1.3 and higher	29.97
	SVCBM-2	Sharp	SVCBM-2-L1				X			1.3 and higher	29.97
	SVCBM-3	Sharp	SVCBM-3-L0	X	X		X	X		1.3 and higher	29.97
	SVCBM-3	Sharp	SVCBM-3-L1				X			1.3 and higher	29.97
	SVCBM-4	Sharp	SVCBM-4-L0	X	X		X	X		1.3 and higher	29.97
	SVCBM-4	Sharp	SVCBM-4-L1				X			1.3 and higher	29.97
	SVCBM-4	Sharp	SVCBM-4-L2				X			2.1 and higher	29.97
	SVCBM-5	HHI	SVCBM-5-L0	X	X		X	X		1.3 and higher	29.97
	SVCBM-5	HHI	SVCBM-5-L1				X			2.1 and higher	29.97
	SVCBM-5	HHI	SVCBM-5-L2				X			3 and higher	29.97
	SVCBM-5	HHI	SVCBM-5-L3				X			3 and higher	29.97
	SVCBCT-1	HHI	SVCBCT-1-L0	X	X		X	X		1.3 and higher	29.97
CGS/ Temporal	SVCBCT-1	HHI	SVCBCT-1-L1				X			2.1 and higher	29.97
MGS/ Temporal	SVCBMT-1	Vidyo	SVCBMT-1-L0	X	X		X	X		1.3 and higher	29.97
	SVCBMT-1	Vidyo	SVCBMT-1-L1				X			1.3 and higher	29.97
	SVCBMT-2	Vidyo	SVCBMT-2-L0	X	X		X	X		1.3 and higher	29.97
	SVCBMT-2	Vidyo	SVCBMT-2-L1				X			1.3 and higher	29.97
	SVCBMT-3	Vidyo	SVCBMT-3-L0	X	X		X	X		1.3 and higher	29.97
	SVCBMT-3	Vidyo	SVCBMT-3-L1				X			1.3 and higher	29.97
	SVCBMT-4	Vidyo	SVCBMT-4-L0	X	X		X	X		1.3 and higher	29.97
	SVCBMT-4	Vidyo	SVCBMT-4-L1				X			1.3 and higher	29.97

Table 4 – Bitstreams for the Constrained Baseline, High, High 10 Intra, Scalable Baseline, Scalable High, and Scalable High Intra profiles

Categories	Bitstream	Donated by	File name	Constrained Baseline	High	High 10 Intra	Scalable Baseline	Scalable High	Scalable High Intra	Level	Frame rate (Frames/sec)
	SVCBMT-5	Vidyo	SVCBMT-5-L0	X	X		X	X		1.3 and higher	29.97
	SVCBMT-5	Vidyo	SVCBMT-5-L1				X			1.3 and higher	29.97
	SVCBMT-6	Vidyo	SVCBMT-6-L0	X	X		X	X		1.3 and higher	29.97
	SVCBMT-6	Vidyo	SVCBMT-6-L1				X			1.3 and higher	29.97
	SVCBMT-7	Vidyo	SVCBMT-7-L0	X	X		X	X		1.3 and higher	29.97
	SVCBMT-7	Vidyo	SVCBMT-7-L1				X			1.3 and higher	29.97
	SVCBMT-8	Vidyo	SVCBMT-8-L0	X	X		X	X		1.3 and higher	29.97
	SVCBMT-8	Vidyo	SVCBMT-8-L1				X			1.3 and higher	29.97
	SVCBMT-9	Vidyo	SVCBMT-9-L0	X	X		X	X		1.3 and higher	29.97
	SVCBMT-9	Vidyo	SVCBMT-9-L1				X			2.2 and higher	29.97
	SVCBMT-10	Vidyo	SVCBMT-10-L0	X	X		X	X		1.3 and higher	29.97
	SVCBMT-10	Vidyo	SVCBMT-10-L1				X			1.3 and higher	29.97
	SVCBMT-11	Vidyo	SVCBMT-11-L0	X	X		X	X		1.3 and higher	29.97
	SVCBMT-11	Vidyo	SVCBMT-11-L1				X			1.3 and higher	29.97
	SVCBMT-12	Vidyo	SVCBMT-12-L0	X	X		X	X		1.3 and higher	29.97
	SVCBMT-12	Vidyo	SVCBMT-12-L1				X			1.3 and higher	29.97
	SVCBMT-13	Vidyo	SVCBMT-13-L0	X	X		X	X		1.3 and higher	29.97
	SVCBMT-13	Vidyo	SVCBMT-13-L1				X			1.3 and higher	29.97
	SVCBMT-13	Vidyo	SVCBMT-13-L2				X			2.1 and higher	29.97
Spatial	SVCBS-1	Vidyo	SVCBS-1-L0	X	X		X	X		1.3 and higher	29.97
	SVCBS-1	Vidyo	SVCBS-1-L1				X			1.3 and higher	29.97
	SVCBS-2	Vidyo	SVCBS-2-L0	X	X		X	X		1.3 and higher	29.97
	SVCBS-2	Vidyo	SVCBS-2-L1				X			3 and higher	29.97
	SVCBS-3	ETRI	SVCBS-3-L0	X	X		X	X		1.3 and higher	29.97
	SVCBS-3	ETRI	SVCBS-3-L1				X			3 and higher	29.97

Table 4 – Bitstreams for the Constrained Baseline, High, High 10 Intra, Scalable Baseline, Scalable High, and Scalable High Intra profiles

Categories	Bitstream	Donated by	File name	Constrained Baseline	High	High 10 Intra	Scalable Baseline	Scalable High	Scalable High Intra	Level	Frame rate (Frames/sec)
	SVCBS-4	ETRI	SVCBS-4-L0	X	X		X	X		1.3 and higher	29.97
	SVCBS-4	ETRI	SVCBS-4-L1				X			3 and higher	29.97
	SVCBS-5	ETRI	SVCBS-5-L0	X	X		X	X		1.3 and higher	29.97
	SVCBS-5	ETRI	SVCBS-5-L1				X			3 and higher	29.97
	SVCBS-6	ETRI	SVCBS-6-L0	X	X		X	X		1.1 and higher	29.97
	SVCBS-6	ETRI	SVCBS-6-L1				X			1.3 and higher	29.97
	SVCBS-6	ETRI	SVCBS-6-L2				X			3 and higher	29.97
	SVCBS-7	ETRI	SVCBS-7-L0	X	X		X	X		1.1 and higher	29.97
	SVCBS-7	ETRI	SVCBS-7-L1				X			1.3 and higher	29.97
	SVCBS-8	HHI	SVCBS-13-L0	X	X		X	X		1.3 and higher	29.97
	SVCBS-8	HHI	SVCBS-13-L1				X			3 and higher	29.97
Spatial/ Temporal	SVCBST-1	Vidyo	SVCBST-1-L0	X	X		X	X		1.3 and higher	29.97
	SVCBST-1	Vidyo	SVCBST-1-L1				X			4 and higher	29.97
	SVCBST-2	Vidyo	SVCBST-2-L0	X	X		X	X		1.3 and higher	29.97
	SVCBST-2	Vidyo	SVCBST-2-L1				X			4 and higher	29.97
	SVCBST-3	Vidyo	SVCBST-3-L0	X	X		X	X		1.3 and higher	29.97
	SVCBST-3	Vidyo	SVCBST-3-L1				X			4 and higher	29.97
	SVCBST-4	Vidyo	SVCBST-4-L0	X	X		X	X		1.3 and higher	29.97
	SVCBST-4	Vidyo	SVCBST-4-L1				X			4 and higher	29.97
	SVCBST-5	Vidyo	SVCBST-5-L0	X	X		X	X		1.3 and higher	29.97
	SVCBST-5	Vidyo	SVCBST-5-L1				X			4 and higher	29.97
	SVCBST-6	Vidyo	SVCBST-6-L0	X	X		X	X		1.3 and higher	29.97
	SVCBST-6	Vidyo	SVCBST-6-L1				X			4 and higher	29.97
	SVCBST-7	Vidyo	SVCBST-7-L0	X	X		X	X		1.3 and higher	29.97
	SVCBST-7	Vidyo	SVCBST-7-L1				X			4 and higher	29.97

Table 4 – Bitstreams for the Constrained Baseline, High, High 10 Intra, Scalable Baseline, Scalable High, and Scalable High Intra profiles

Categories	Bitstream	Donated by	File name	Constrained Baseline	High	High 10 Intra	Scalable Baseline	Scalable High	Scalable High Intra	Level	Frame rate (Frames/sec)
	SVCBST-8	Vidyo	SVCBST-8-L0	X	X		X	X		1.3 and higher	29.97
	SVCBST-8	Vidyo	SVCBST-8-L1				X			4 and higher	29.97
	SVCBST-9	Vidyo	SVCBST-9-L0	X	X		X	X		1.3 and higher	29.97
	SVCBST-9	Vidyo	SVCBST-9-L1				X			4 and higher	29.97
	SVCBST-10	Vidyo	SVCBST-10-L0	X	X		X	X		1.3 and higher	29.97
	SVCBST-10	Vidyo	SVCBST-10-L1				X			4 and higher	29.97
	SVCBST-11	Vidyo	SVCBST-11-L0	X	X		X	X		1.3 and higher	29.97
	SVCBST-11	Vidyo	SVCBST-11-L1				X			4 and higher	29.97
	SVCBST-12	Vidyo	SVCBST-12-L0	X	X		X	X		1.3 and higher	29.97
	SVCBST-12	Vidyo	SVCBST-12-L1				X			4 and higher	29.97
	SVCBST-13	Vidyo	SVCBST-13-L0	X	X		X	X		4 and higher	29.97
	SVCBST-13	Vidyo	SVCBST-13-L1				X			5 and higher	29.97
	SVCBST-14	Vidyo	SVCBST-14-L0	X	X		X	X		3 and higher	29.97
	SVCBST-14	Vidyo	SVCBST-14-L1				X			4 and higher	29.97
	SVCBST-14	Vidyo	SVCBST-14-L2				X			5 and higher	29.97
	SVCBST-15	Vidyo	SVCBST-15-L0	X	X		X	X		1.3 and higher	29.97
	SVCBST-15	Vidyo	SVCBST-15-L1				X			3 and higher	29.97
	SVCBST-15	Vidyo	SVCBST-15-L2				X			4 and higher	29.97
	SVCBST-16	Vidyo	SVCBST-16-L0	X	X		X	X		1.3 and higher	29.97
	SVCBST-16	Vidyo	SVCBST-16-L1				X			3 and higher	29.97
	SVCBST-16	Vidyo	SVCBST-16-L2				X			4 and higher	29.97
	SVCBST-17	Vidyo	SVCBST-17-L0	X	X		X	X		1.3 and higher	29.97
	SVCBST-17	Vidyo	SVCBST-17-L1				X			3 and higher	29.97
	SVCBST-17	Vidyo	SVCBST-17-L2				X			4 and higher	29.97
	SVCBST-18	Vidyo	SVCBST-18-L0	X	X		X	X		1.3 and higher	29.97

Table 4 – Bitstreams for the Constrained Baseline, High, High 10 Intra, Scalable Baseline, Scalable High, and Scalable High Intra profiles

Categories	Bitstream	Donated by	File name	Constrained Baseline	High	High 10 Intra	Scalable Baseline	Scalable High	Scalable High Intra	Level	Frame rate (Frames/sec)
	SVCBST-18	Vidyo	SVCBST-18-L1				X			3 and higher	29.97
	SVCBST-18	Vidyo	SVCBST-18-L2				X			4 and higher	29.97
	SVCBST-19	HHI	SVCBST-19-L0	X	X		X	X		1.3 and higher	29.97
	SVCBST-19	HHI	SVCBST-19-L1				X			3 and higher	29.97
	SVCBST-20	Thomson	SVCBST-20-L0	X	X		X	X		1.1 and higher	14.98
	SVCBST-20	Thomson	SVCBST-20-L1				X			3 and higher	29.97
MGS/ Spatial/ Temporal	SVCBMST-1	Vidyo	SVCBMST-1-L0	X	X		X	X		1.3 and higher	29.97
	SVCBMST-1	Vidyo	SVCBMST-1-L1				X			1.3 and higher	29.97
	SVCBMST-1	Vidyo	SVCBMST-1-L2				X			4 and higher	29.97
	SVCBMST-2	Vidyo	SVCBMST-2-L0	X	X		X	X		1.3 and higher	29.97
	SVCBMST-2	Vidyo	SVCBMST-2-L1				X			1.3 and higher	29.97
	SVCBMST-2	Vidyo	SVCBMST-2-L2				X			4 and higher	29.97
	SVCBMST-3	HHI	SVCBMST-3-L0	X	X		X	X		1.3 and higher	29.97
	SVCBMST-3	HHI	SVCBMST-3-L1				X			2.1 and higher	29.97
	SVCBMST-3	HHI	SVCBMST-3-L2				X			3.1 and higher	29.97
	SVCBCTS-1	Orange	SVCBCTS-1-L0	X	X		X	X		1.2 and higher	12.5
	SVCBCTS-1	Orange	SVCBCTS-1-L1				X			1.3 and higher	25
	SVCBCTS-1	Orange	SVCBCTS-1-L2				X			3 and higher	25
	SVCBCTS-2	Orange	SVCBCTS-2-L0	X	X		X	X		1.2 and higher	12.5
	SVCBCTS-2	Orange	SVCBCTS-2-L1				X			1.3 and higher	25
	SVCBCTS-2	Orange	SVCBCTS-2-L2				X			3 and higher	25
	SVCBCTS-3	Sharp	SVCBCTS-3-L0	X	X		X	X		1.3 and higher	25
	SVCBCTS-3	Sharp	SVCBCTS-3-L1				X			1.3 and higher	25
	SVCBCTS-3	Sharp	SVCBCTS-3-L2				X			3 and higher	25

Table 4 – Bitstreams for the Constrained Baseline, High, High 10 Intra, Scalable Baseline, Scalable High, and Scalable High Intra profiles

Categories	Bitstream	Donated by	File name	Constrained Baseline	High	High 10 Intra	Scalable Baseline	Scalable High	Scalable High Intra	Level	Frame rate (Frames/sec)
	SVCBSTC-1	Sharp	SVCBSTC-1-L0	X	X		X	X		1.3 and higher	25
	SVCBSTC-1	Sharp	SVCBSTC-1-L1				X			3 and higher	25
	SVCBSTC-1	Sharp	SVCBSTC-1-L2				X			3.1 and higher	25
MGS	SVCHM-1	HHI	SVCHM-1-L0		X			X		1.3 and higher	29.97
	SVCHM-1	HHI	SVCHM-1-L1					X		1.3 and higher	29.97
	SVCHM-1	HHI	SVCHM-1-L2					X		3 and higher	29.97
	SVCHM-1	HHI	SVCHM-1-L3					X		3 and higher	29.97
	SVCHM-2	Sharp	SVCHM-2-L0		X			X		3 and higher	25
	SVCHM-2	Sharp	SVCHM-2-L1					X		3 and higher	25
	SVCHM-3	Sharp	SVCHM-3-L0		X			X		3 and higher	25
	SVCHM-3	Sharp	SVCHM-3-L1					X		3 and higher	25
	SVCHM-4	Sharp	SVCHM-4-L0		X			X		3 and higher	25
	SVCHM-4	Sharp	SVCHM-4-L1					X		3 and higher	25
	SVCHM-4	Sharp	SVCHM-4-L2					X		3.1 and higher	25
Spatial	SVCHS-1	Thomson	SVCHS-1-L0	X	X		X	X		2.1 and higher	25
	SVCHS-1	Thomson	SVCHS-1-L1					X		3.1 and higher	25
	SVCHS-2	Thomson	SVCHS-2-L0		X			X		1.3 and higher	25
	SVCHS-2	Thomson	SVCHS-2-L1					X		3.1 and higher	25
Spatial/ Temporal	SVCHST-1	Orange	SVCHST-1-L0		X			X		3 and higher	25
	SVCHST-1	Orange	SVCHST-1-L1					X		3.2 and higher	50
	SVCHST-1	Orange	SVCHST-1-L2					X		5 and higher	50
	SVCHST-2	Orange	SVCHST-2-L0		X			X		3 and higher	25
	SVCHST-2	Orange	SVCHST-2-L1					X		3.2 and higher	50
	SVCHST-2	Orange	SVCHST-2-L2					X		4.2 and higher	50
	SVCHST-3	Thomson	SVCHST-3-L0		X			X		3.1 and higher	25

Table 4 – Bitstreams for the Constrained Baseline, High, High 10 Intra, Scalable Baseline, Scalable High, and Scalable High Intra profiles

Categories	Bitstream	Donated by	File name	Constrained Baseline	High	High 10 Intra	Scalable Baseline	Scalable High	Scalable High Intra	Level	Frame rate (Frames/sec)
	SVCHST-3	Thomson	SVCHST-3-L1					X		5 and higher	50
	SVCHST-4	Thomson	SVCHST-4-L0		X			X		3 and higher	25
	SVCHST-4	Thomson	SVCHST-4-L1					X		3.1 and higher	50
MGS/ Temporal/ Spatial	SVCHMTS-1	Orange	SVCHMTS-1-L0		X			X		3 and higher	25
	SVCHMTS-1	Orange	SVCHMTS-1-L1					X		3 and higher	25
	SVCHMTS-1	Orange	SVCHMTS-1-L2					X		3.1 and higher	25
	SVCHMTS-1	Orange	SVCHMTS-1-L3					X		3.1 and higher	50
	SVCHMTS-1	Orange	SVCHMTS-1-L4					X		3.1 and higher	50
	SVCHMTS-1	Orange	SVCHMTS-1-L5					X		4.2 and higher	25
	SVCHMTS-2	Sharp	SVCHMTS-2-L0		X			X		1.3 and higher	29.97
	SVCHMTS-2	Sharp	SVCHMTS-2-L1					X		1.3 and higher	29.97
	SVCHMTS-2	Sharp	SVCHMTS-2-L2					X		3.1 and higher	29.97
CGS/ Temporal/ Spatial	SVCHCTS-1	Orange	SVCHCTS-1-L0		X			X		1.2 and higher	12.5
	SVCHCTS-1	Orange	SVCHCTS-1-L1					X		1.3 and higher	25
	SVCHCTS-1	Orange	SVCHCTS-1-L2					X		3 and higher	25
	SVCHCTS-1	Orange	SVCHCTS-1-L3					X		3 and higher	25
	SVCHCTS-1	Orange	SVCHCTS-1-L4					X		3.1 and higher	50
	SVCHCTS-1	Orange	SVCHCTS-1-L5					X		3.1 and higher	50
	SVCHCTS-1	Orange	SVCHCTS-1-L6					X		4 and higher	50
	SVCHCTS-1	Orange	SVCHCTS-1-L7					X		4 and higher	50
Spatial/ Temporal/ CGS	SVCHSTC-1	Sharp	SVCHSTC-1-L0		X			X		1.3 and higher	29.97
	SVCHSTC-1	Sharp	SVCHSTC-1-L1					X		1.3 and higher	29.97
	SVCHSTC-1	Sharp	SVCHSTC-1-L2					X		3.1 and higher	29.97

Table 4 – Bitstreams for the Constrained Baseline, High, High 10 Intra, Scalable Baseline, Scalable High, and Scalable High Intra profiles

Categories	Bitstream	Donated by	File name	Constrained Baseline	High	High 10 Intra	Scalable Baseline	Scalable High	Scalable High Intra	Level	Frame rate (Frames/sec)
Spatial	SVCHIS-1	Thomson	SVCHIS-1-L0		X	X		X	X	2.1 and higher	25
	SVCHIS-1	Thomson	SVCHIS-1-L1					X	X	3.1 and higher	25
	SVCHIS-1	Thomson	SVCHIS-1-L2					X	X	4 and higher	25
	SVCHIS-2	Thomson	SVCHIS-2-L0		X	X		X	X	3 and higher	25
	SVCHIS-2	Thomson	SVCHIS-2-L1					X	X	3.1 and higher	25
	SVCHIS-2	Thomson	SVCHIS-2-L2					X	X	4.2 and higher	25
	SVCHIS-3	Thomson	SVCHIS-3-L0		X	X		X	X	3 and higher	25
	SVCHIS-3	Thomson	SVCHIS-3-L1					X	X	3.1 and higher	25
	SVCHIS-3	Thomson	SVCHIS-3-L2					X	X	4 and higher	25
CGS/ Spatial	SVCHICS-1	Sharp	SVCHICS-1-L0		X	X		X	X	1.3 and higher	29.97
	SVCHICS-1	Sharp	SVCHICS-1-L1					X	X	1.3 and higher	29.97
	SVCHICS-1	Sharp	SVCHICS-1-L2					X	X	3.1 and higher	29.97
	SVCHICS-1	Sharp	SVCHICS-1-L3					X	X	3.1 and higher	29.97

Table 5 – Bitstreams for the Multiview High and Stereo High profiles

Categories	Bitstream	Donated by	File name	Multiview High	Stereo High	Level	Frame rate (Frame/Sec)
Dependency Structure	MVCDS-1	NTT	MVCDS-1	X	X	3 and higher	29.97
	MVCDS-2	NTT	MVCDS-2	X	X	3 and higher	29.97
	MVCDS-3	NTT	MVCDS-3	X	X	3 and higher	29.97
	MVCDS-4	Mitsubishi	MVCDS-4	X	X	3.1 and higher	25
	MVCDS-5	Mitsubishi	MVCDS-5	X	X	3.1 and higher	25
	MVCDS-6	Mitsubishi	MVCDS-6	X	X	3.1 and higher	25
Number of Views	MVCNV-1	NTT	MVCNV-1	X		3 and higher	29.97
	MVCNV-2	Mitsubishi	MVCNV-2	X		4 and higher	25
	MVCNV-3	Mitsubishi	MVCNV-3	X		3.1 and higher	25
	MVCNV-4	NTT	MVCNV-4	X		3 and higher	29.97
Reference Picture List Construction	MVCRP-1	Qualcomm	MVCRP-1	X	X	3 and higher	25
	MVCRP-2	Qualcomm	MVCRP-2	X	X	3 and higher	25
	MVCRP-3	Qualcomm	MVCRP-3	X	X	3 and higher	25
	MVCRP-4	Qualcomm	MVCRP-4	X	X	3 and higher	25
	MVCRP-5	Qualcomm	MVCRP-5	X	X	3 and higher	25
	MVCRP-6	Qualcomm	MVCRP-6	X	X	3 and higher	25
Subset SPS	MVCSPS-1	Mitsubishi	MVCSPS-1	X	X	3.1 and higher	25
	MVCSPS-2	Mitsubishi	MVCSPS-2	X		3.1 and higher	25
Interlaced Coding Tools	MVCICT-1	Panasonic	MVCICT-1		X	3.1 and higher	29.97
	MVCICT-2	Panasonic	MVCICT-2		X	3.1 and higher	29.97

Table 6 – Bitstreams for the Multiview Depth High profiles

Categories	Bitstream	Donated by	File name	Multi-view Depth High	Level	Frame rate (Frame/Sec)
Depth Resolution	MVDDR-1	Nokia	MVDDR-1_r2	X	3 and higher	30
	MVDDR-2	Nokia	MVDDR-2_r2	X	4 and higher	25
	MVDDR-3	Sony	MVDDR-3_r1	X	3 and higher	30
	MVDDR-4	Sony	MVDDR-4_r1	X	4 and higher	25
Views Configuration	MVDVC-1	Sony	MVDVC-1_r1	X	3 and higher	30
	MVDVC-2	Sony	MVDVC-2_r2	X	4 and higher	25
	MVDVC-3	Nokia	MVDVC-3_r1	X	3 and higher	30
	MVDVC-4	Nokia	MVDVC-4_r1	X	4 and higher	25
Inter View Prediction / temporal inter prediction	MVDIV-1	Nokia	MVDIV-1_r1	X	4 and higher	25
	MVDIV-2	Sony	MVDIV-2_r1	X	3 and higher	30
	MVDIV-3	MERL, Qualcomm	MVDIV-3_r1	X	5.1 and higher	25
	MVDIV-4	MERL, Qualcomm	MVDIV-4_r1	X	5.1 and higher	30
Interlaced Coding Tools	MVDIL-1	ITRI, Sony	MVDIL-1_r1	X	3.1 and higher	30
	MVDIL-2	ITRI	MVDIL-2_r1	X	4.1 and higher	15
MVD representation and SEI	MVDRS-1	Nokia	MVDRS-1_r1	X	3 and higher	30
Three view prediction structure	MVPCT-1	MERL	MVPCT-1_r1	X	3 and higher	30
	MVPCT-2	LGE	MVPCT-2	X	4 and higher	25

Table 7 – Bitstreams for the MFC High profiles

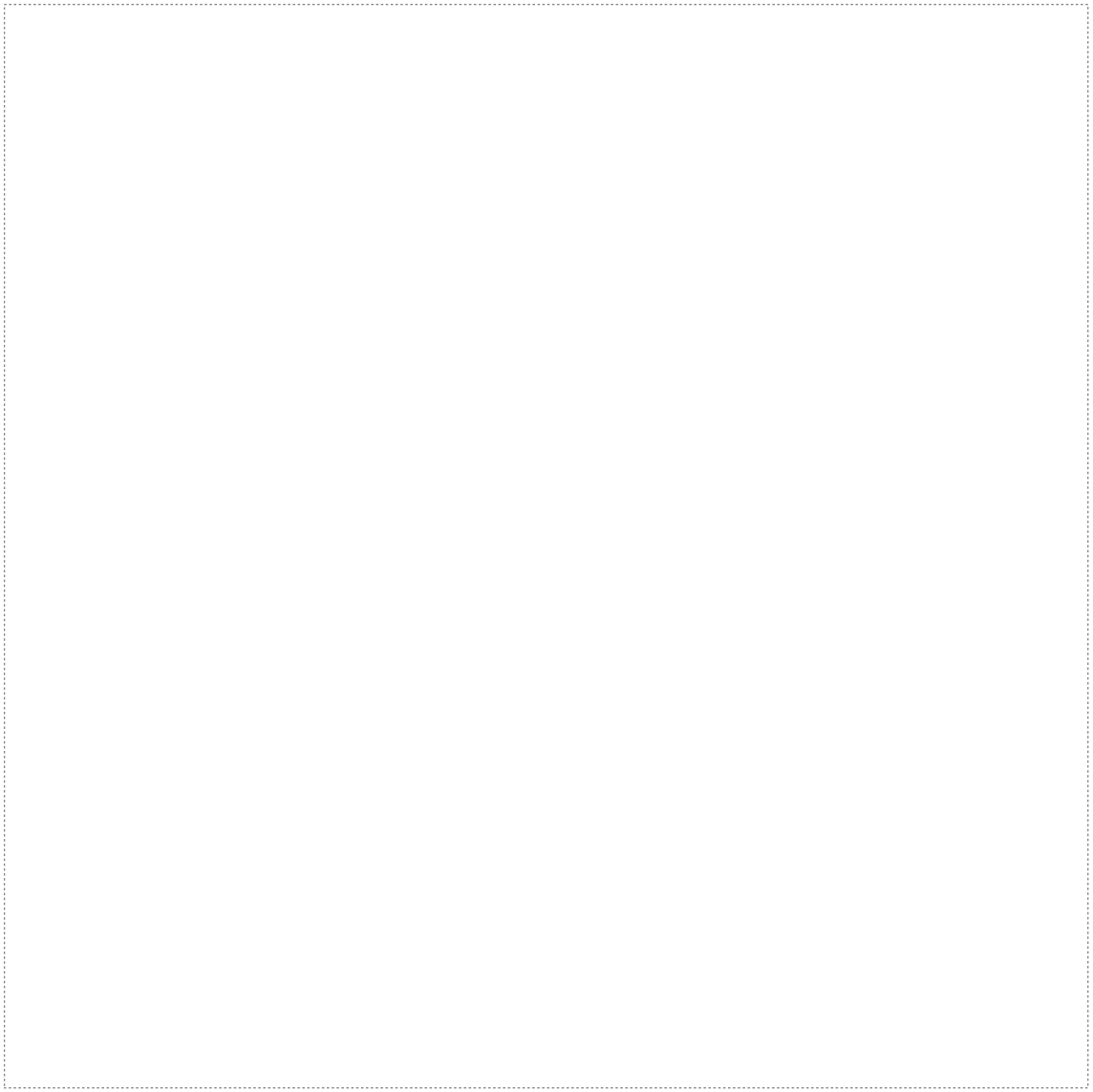
Categories	Bitstream	Donated by	File name	MFC High	Level	Frame rate (Frame/Sec)
RPU Operational Modes	MFCRFT-1	Dolby	MFCRFT-1	X	4.1	24p
	MFCRFT-2	Dolby	MFCRFT-2	X	4.1	24p
RPU Interlaced Coding Tools	MFCFLD-1	Dolby	MFCFLD-1	X	4.1	50i
	MFCFLD-2	Dolby	MFCFLD-2	X	4.1	50i
	MFCFLD-3	Dolby	MFCFLD-3	X	4.1	50i
MFC Format	MFCMFM-1	Dolby	MFCMFM-1	X	4.1	24p
Grid Position	MFCGRD-1	Dolby	MFCGRD-1	X	4.1	24p

Table 8 – Bitstreams for the 3D-AVC High profiles

Categories	Bitstream	Donated by	File Name	Enhanced Multiview Depth High	Level	Frame Rate (Frame/Sec)
Depth Resolution	MVDDR3D-1	Nokia	MVDDR3D-1_r1	X	3 and higher	30
	MVDDR3D-2	Nokia	MVDDR3D-2_r1	X	4 and higher	25
Coding tools	MVDCT-1	MERL	MVDCT-1_r2	X	3 and higher	30
	MVDCT-2	Mediatek	MVDCT-2_r2	X	4 and higher	25
	MVDCT-3	Samsung	MVDCT-3_r1	X	3 and higher	30
	MVDCT-4	Poznan	MVDCT-4_r2	X	4 and higher	25
	MVDCT-5	Qualcomm	MVDCT-5_r1	X	4 and higher	25
	MVDCT-6	Qualcomm	MVDCT-6_r1	X	3 and higher	30
	MVDCT-7	Qualcomm	MVDCT-7_r1	X	4 and higher	25
	MVDCT-8	Qualcomm	MVDCT-8_r2	X	3 and higher	30
	MVDCT-9	Samsung	MVDCT-9_r1	X	4 and higher	25
	MVDCT-10	Qualcomm	MVDCT-10_r2	X	4 and higher	25

Table 9 – Bitstreams for the MFC Depth High profiles

Categories	Bitstream	Donated by	File Name	MFC Depth High	Level	Frame Rate (Frame/Sec)
Depth Resolution	MFCDDR-1	Dolby	MFCDDR-1	X	4.1	25p
	MFCDDR-2	Dolby	MFCDDR-2	X	4.1	25p
Interlaced Coding Tools	MFCDFLD-1	Dolby	MFCDFLD-1	X	4.1	50i
	MFCDFLD-2	Dolby	MFCDFLD-2	X	4.1	50i
Texture and Depth Coding Order	MFCDTDC-1	Dolby	MFCDTDC-1	X	4.1	25p
	MFCDTDC-2	Dolby	MFCDTDC-2	X	4.1	25p
MFC format	MFCDMFC-1	Dolby	MFCDMFC-1	X	4.1	25p



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