RP 228-2008
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SMPTE RECOMMENDED PRACTICE

VC-1 Decoder and Bitstream Conformance

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Foreword

SMPTE (the Society of Motion Picture and Television Engineers) is an internationally-recognized standards developing organization. Headquartered and incorporated in the United States of America, SMPTE has members in over 80 countries on six continents. SMPTE's Engineering Documents, including Standards, Recommended Practices and Engineering Guidelines, are prepared by SMPTE's Technology Committees. Participation in these Committees is open to all with a bona fide interest in their work. SMPTE cooperates closely with other standards-developing organizations, including ISO, IEC and ITU.

SMPTE Engineering Documents are drafted in accordance with the rules given in Part XIII of its Administrative practices.

This SMPTE Recommended Practice was prepared by Technology Committee C24.

Introduction

This section is entirely informative and does not form an integral part of this Recommended Practice.

This conformance document was initiated by C24 in response to the need to test conformance to the VC-1 bitstream syntax and the need for reference decoder software and test bitstreams to ensure proper interpretation of the SMPTE 421M standard.

VC-1 Decoder and Bitstream Conformance

1 Scope

This document specifies the materials, procedures and criteria for verifying conformance of SMPTE VC-1 video decoders and bitstreams.

2 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this recommended practice. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this recommended practice are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below.

SMPTE Standard 421M-2006 and Amendment 1-2007, VC-1 Compressed Video Bitstream Format and Decoding Process

SMPTE VC-1 Reference Decoder Software Material

SMPTE VC-1 Test Bitstream Material

3 Conformance Notation

Normative text is text that describes elements of the design that are indispensable or contains the conformance language keywords: "shall", "should", or "may". Informative text is text that is potentially helpful to the user, but not indispensable, and can be removed, changed, or added editorially without affecting interoperability. Informative text does not contain any conformance keywords.

All text in this document is, by default, normative, except: the Introduction, any section explicitly labeled as "Informative" or individual paragraphs that start with "Note:"

The keywords "shall" and "shall not" indicate requirements strictly to be followed in order to conform to the document and from which no deviation is permitted.

The keywords, "should" and "should not" indicate that, among several possibilities, one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required; or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited.

The keywords "may" and "need not" indicate courses of action permissible within the limits of the document.

The keyword “reserved” indicates a provision that is not defined at this time, shall not be used, and may be defined in the future. The keyword “forbidden” indicates “reserved” and in addition indicates that the provision will never be defined in the future.

4 Description of materials

4.1 Reference Decoder Software

The reference decoder shall be used for testing bitstream conformance and shall implement the complete decoding process specified in SMPTE 421M. The reference decoder in the form of an ANSI C utility together with associated documentation (instructions for installing, building and running the software) are available from SMPTE (http://store.smpte.org/VC-1-Test-Material-p/vc-1.htm). The output format for the reference decoder is a header-less binary file of YC_bC_r 4:2:0, with the separate planes written in 8-bit sample order (Y, then C_b, then C_r). For interlaced decoded frames, the output comprises full-height frames with interleaved fields.

Because the decoding process is mathematically lossless, the output data from the reference decoder shall be the reference output for any given input bitstream as described in Section 5.1.1 below.

4.2 Test bitstreams

The set of bitstreams to be used for testing decoder conformance is specified in Annex A and is available from SMPTE (http://store.smpte.org/VC-1-Test-Material-p/vc-1.htm). All of the bitstreams shall conform to SMPTE 421M as defined in Section 5.2 below. The encoding parameters shown in Tables A.1 – A.11 and metadata shown in Tables A.12 – A.13 are defined in SMPTE 421M. The set of test bitstreams is not intended to represent all possible combinations of encoding parameters and tools specified in SMPTE 421M. Rather, the set of bitstreams was developed according to the following guidelines:

- Encoding parameters and tools normative to the decoding process are tested.
- Parameters and tools specific to the display process are not tested, as the display process is outside the scope of the SMPTE 421M standard.
- Carriage of metadata is tested. Interpretation of metadata is not tested, as post-processing and the display process are outside the scope of the SMPTE 421M standard (see SMPTE 421M Figure 5).
- Parameters and tools are tested in isolation to allow for error diagnosis.
- Combinations of parameters and tools that represent edge conditions for the decoder are tested.
- Parameters and tools that have been thoroughly tested at lower levels of a particular profile are not tested as conformance is already guaranteed by testing at the lower level of the profile.

The Comments column in each table contains notes explaining the general purpose of individual bitstreams.

Simple and Main Profile bitstreams are provided in Bitstream Metedata Serialization format, details of which can be found in Annex L of SMPTE 421M. Advanced Profile bitstreams are provided as elementary bitstreams as defined in SMPTE 421M.

4.3 Sample Encoder Software (Informative)

A sample encoder in the form of an ANSI C utility together with associated documentation (instructions for installing, building and running the software) is available from SMPTE (http://store.smpte.org/VC-1-Test-Material-p/vc-1.htm). The sample encoder is included with the test materials described above for informational purposes only and is not used for any of the normative conformance tests described in this document.

5 Conformance Testing Procedure

The following sub-sections specify the normative tests for verifying conformance of a VC-1 video bitstream or decoder to SMPTE 421M. These tests make use of the bitstream test suite (specified in Annex A of this document) and of the reference software decoder available from SMPTE (http://store.smpte.org/VC-1-Test-Material-p/vc-1.htm).

5.1 Decoder Testing Procedure

Decoder Testing is a process intended to verify that a candidate decoder implementation is conformant to the decoding process as specified in SMPTE 421M. Although a failure of any of the following tests is sufficient to identify the candidate decoder as non-conformant, successful completion of all tests represents a high confidence of conformance but not absolute certainty.

5.1.1 Order conformance testing

When processing the set of test bitstreams specified in Annex A, a decoder that outputs reconstructed samples and associated display metadata identical to those output by the reference software decoder will be considered order conformant (as specified in Section 5.4 of SMPTE 421M). Order conformance testing is performed statically on the candidate implementation (i.e., with no time restriction on the completion of decoding the test material). Testing is performed by binary comparison of the data output by the candidate decoder at the conformance point to the data output by the reference decoder. Any binary mismatch is considered a failure.

Note: Order conformance testing is intended to verify the algorithmic correctness of a candidate decoder. Such testing is normally performed during the design or development process of an implementation, and as such access to the data required for such testing may not be available in a fully-productized decoder implementation (e.g. a finished product with ancillary support functionality).

Note: Because VC-1 is specified as a bit-exact decoding process, full binary matching of the outputs of the candidate decoder and the reference decoder provides both the highest possible confidence in the comparison and useful troubleshooting information in the event of a failure. Other techniques, such as generating some type of mathematical summary of the decoded output for comparison, have generally been found to be less reliable or excessively computationally intensive.

5.1.2 Time conformance testing

When processing the set of test bitstreams specified in Annex A, a decoder that conforms to the specification of Section C.6 of SMPTE 421M will be considered time-conformant.

Note: Most modern digital video systems implement timing and synchronization at the transport level. Elementary bitstreams, as processed by the decoding process specified in SMPTE 421M, have no intrinsic timing information. Although it may be a natural response to infer a time deadline for the decoding process based on common usage, because such constraints are actually placed on the system by the transport layer, they are outside the scope of the conformance testing process described in this document.

5.1.3 Recommendations (Informative)

Following the loss or corruption of part of a bitstream, it is recommended that a conformant decoder resume the decoding process as soon as possible, for example at the following start code or slice header. In the event that all coded data for a macroblock or video packet is not received, it is further recommended that a conformant decoder perform concealment.

5.2 Bitstream Testing Procedure

A bitstream shall be conformant if and only if all three of the conditions below are satisfied:

- The bitstream conforms to the syntax and semantics specified in SMPTE 421M and

- The reference software decoder completes the decoding process for the bitstream without reporting any warnings and / or errors and

- The reference software decoder successfully and completely produces the following items for the bitstream:

    a. 4:2:0 YC_bC_r output for all pictures in the bitstream and

    b. Display metadata output.

Annex A (Normative)
Test Bitstream Summary

A.1 Simple Profile @ Low Level and Simple Profile @ Medium Level – Coding Tools

Bitstream Name	Profile@Level	Video Type	Bitrate (kbps)	Source Width	Source Height	Frame Rate	Transform Switching	Overlap Transform	Quantizer Specifier	Range Reduction	Range Mapping (see note below)	Loop Filter	B-Frames	Macroblock Quantization	Intensity Compensation	Long Motion Vectors	Multi-Resolution	Picture vs. Display	Start Codes (see note below)	End of Sequence Code	Slice Coding	User Data	Byte Stuffing	Field Start Code	Field Order	Comments
SSL0013	SP@LL	Prog	20	128	96	10	1	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Check bitrate/framerate/resolution combinations with default settings
SSL0014	SP@LL	Prog	30	160	120	10	1	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SSL0015	SP@LL	Prog	60	176	144	15	1	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SSL0016	SP@LL	Prog	30	128	96	10	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Check transform switching and overlap transform
SSL0017	SP@LL	Prog	30	160	120	10	0	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SSL0018	SP@LL	Prog	30	176	144	12.5	1	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SSL0019	SP@LL	Prog	30	160	120	10	0	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Check quantizer specifier
SSL0020	SP@LL	Prog	20	160	120	10	0	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SSL0021	SP@LL	Prog	60	176	144	12.5	1	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Check multiple modes
SSL0022	SP@LL	Prog	30	100	100	10	1	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SSM0010	SP@ML	Prog	120	320	240	15	1	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Check bitrate/framerate/resolution combinations with default settings
SSM0011	SP@ML	Prog	80	176	144	10	1	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SSM0012	SP@ML	Prog	250	352	288	12.5	1	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SSM0013	SP@ML	Prog	120	320	240	15	1	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Check transform switiching and overlap transform
SSM0014	SP@ML	Prog	120	352	288	12.5	0	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SSM0015	SP@ML	Prog	80	320	240	10	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SSM0016	SP@ML	Prog	250	352	288	12.5	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SSM0017	SP@ML	Prog	250	176	144	10	1	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Check quantizer specifier
SSM0018	SP@ML	Prog	80	320	240	15	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SSM0019	SP@ML	Prog	120	220	180	15	1	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

A.2 Main Profile @ Low Level – Coding Tools

Bitstream Name	Profile@Level	Video Type	Bitrate (kbps)	Source Width	Source Height	Frame Rate	Transform Switching	Overlap Transform	Quantizer Specifier	Range Reduction	Range Mapping (see note below)	Loop Filter	B-Frames	Macroblock Quantization	Intensity Compensation	Extended Motion Vectors	Start Codes (see note below)	End of Sequence Code	Closed Entry Point	Broken Link	Slice Coding	Byte Stuffing	Field Start Code	Field Order	Comments
SML0000	MP@LL	Prog	700	320	240	15	1	1	0	0	-	1	0	0	1	0	-	-	-	-	-	-	-	-	Check bitrate/framerate/resolution combinations with default settings
SML0001	MP@LL	Prog	400	176	144	24	1	1	0	0	-	1	0	0	1	0	-	-	-	-	-	-	-	-	
SML0002	MP@LL	Prog	1,200	352	288	25	1	1	0	0	-	1	0	0	1	0	-	-	-	-	-	-	-	-	
SML0003	MP@LL	Prog	700	220	180	15	1	1	0	0	-	1	0	0	1	0	-	-	-	-	-	-	-	-	
SML0004	MP@LL	Prog	700	320	240	24	1	1	0	0	-	0	0	0	1	0	-	-	-	-	-	-	-	-	Check B frames and loop filter
SML0005	MP@LL	Prog	1,200	320	240	24	1	1	0	0	-	0	1	0	1	0	-	-	-	-	-	-	-	-	
SML0006	MP@LL	Prog	700	352	288	25	1	1	0	0	-	1	1	0	1	0	-	-	-	-	-	-	-	-	
SML0007	MP@LL	Prog	1,200	352	288	25	1	1	0	0	-	1	2	0	1	0	-	-	-	-	-	-	-	-	
SML0008	MP@LL	Prog	700	320	240	24	1	1	0	0	-	1	0	1	1	0	-	-	-	-	-	-	-	-	Check macroblock quantization
SML0009	MP@LL	Prog	700	352	288	25	1	1	0	0	-	1	0	2	1	0	-	-	-	-	-	-	-	-	
SML0010	MP@LL	Prog	1,200	352	288	25	1	1	0	0	-	1	0	0	0	0	-	-	-	-	-	-	-	-	Check with individual modes
SML0011	MP@LL	Prog	700	320	240	24	1	1	0	0	-	1	0	0	1	1	-	-	-	-	-	-	-	-	
SML0012	MP@LL	Prog	1,200	320	240	24	1	1	0	1	-	1	0	0	1	0	-	-	-	-	-	-	-	-	
SML0013	MP@LL	Prog	1,200	352	288	25	1	1	0	0	-	1	1	1	1	0	-	-	-	-	-	-	-	-	Check with multiple modes
SML0014	MP@LL	Prog	1,200	320	240	24	1	1	0	1	-	1	2	2	1	1	-	-	-	-	-	-	-	-	

A.3 Main Profile @ Medium Level – Coding Tools

Bitstream Name	Profile@Level	Video Type	Bitrate (kbps)	Source Width	Source Height	Frame Rate	Transform Switching	Overlap Transform	Quantizer Specifier	Range Reduction	Range Mapping (see note below)	Loop Filter	B-Frames	Macroblock Quantization	Intensity Compensation	Extended Motion Vectors	Start Codes (see note below)	End of Sequence Code	Closed Entry Point	Broken Link	Slice Coding	Byte Stuffing	Field Start Code	Field Order	Comments
SMM0000	MP@ML	Prog	2,000	720	480	24	1	1	0	0	-	1	0	0	1	0	-	-	-	-	-	-	-	-	Check bitrate/framerate/resolution combinations with default settings
SMM0001	MP@ML	Prog	800	352	288	25	1	1	0	0	-	1	0	0	1	0	-	-	-	-	-	-	-	-	
SMM0002	MP@ML	Prog	6,000	720	576	25	1	1	0	0	-	1	0	0	1	0	-	-	-	-	-	-	-	-	
SMM0003	MP@ML	Prog	2,000	640	480	30	1	1	0	0	-	1	0	0	1	0	-	-	-	-	-	-	-	-	
SMM0004	MP@ML	Prog	2,000	720	480	24	1	1	0	0	-	0	0	0	1	0	-	-	-	-	-	-	-	-	Check B frames and loop filter
SMM0005	MP@ML	Prog	6,000	720	480	24	1	1	0	0	-	0	1	0	1	0	-	-	-	-	-	-	-	-	
SMM0006	MP@ML	Prog	2,000	720	576	25	1	1	0	0	-	1	1	0	1	0	-	-	-	-	-	-	-	-	
SMM0007	MP@ML	Prog	6,000	720	576	25	1	1	0	0	-	1	2	0	1	0	-	-	-	-	-	-	-	-	
SMM0008	MP@ML	Prog	2,000	720	480	24	1	1	0	0	-	1	0	1	1	0	-	-	-	-	-	-	-	-	Check macroblock quantization
SMM0009	MP@ML	Prog	6,000	720	480	24	1	1	0	0	-	1	0	2	1	0	-	-	-	-	-	-	-	-	
SMM0010	MP@ML	Prog	6,000	720	576	25	1	1	0	0	-	1	0	0	0	0	-	-	-	-	-	-	-	-	Check with individual modes
SMM0011	MP@ML	Prog	2,000	720	480	24	1	1	0	0	-	1	0	0	1	1	-	-	-	-	-	-	-	-	
SMM0012	MP@ML	Prog	6,000	720	480	24	1	1	0	1	-	1	0	0	1	0	-	-	-	-	-	-	-	-	
SMM0013	MP@ML	Prog	6,000	720	576	25	1	1	0	0	-	1	1	1	1	0	-	-	-	-	-	-	-	-	Check with multiple modes
SMM0014	MP@ML	Prog	6,000	720	480	24	1	1	0	1	-	1	2	2	1	1	-	-	-	-	-	-	-	-	

A.4 Main Profile @ High Level – Coding Tools

Bitstream Name	Profile@Level	Video Type	Bitrate (kbps)	Source Width	Source Height	Frame Rate	Transform Switching	Overlap Transform	Quantizer Specifier	Range Reduction	Range Mapping (see note below)	Loop Filter	B-Frames	Macroblock Quantization	Intensity Compensation	Extended Motion Vectors	Start Codes (see note below)	End of Sequence Code	Closed Entry Point	Broken Link	Slice Coding	Byte Stuffing	Field Start Code	Field Order	Comments
SMH0000	MP@HL	Prog	4,000	640	480	24	1	1	0	0	-	1	0	0	1	0	-	-	-	-	-	-	-	-	Check bitrate/framerate/resolution combinations with default settings
SMH0001	MP@HL	Prog	4,000	704	480	24	1	1	0	0	-	1	0	0	1	0	-	-	-	-	-	-	-	-	
SMH0002	MP@HL	Prog	7,000	720	480	24	1	1	0	0	-	1	0	0	1	0	-	-	-	-	-	-	-	-	
SMH0003	MP@HL	Prog	7,000	720	576	50	1	1	0	0	-	1	0	0	1	0	-	-	-	-	-	-	-	-	
SMH0004	MP@HL	Prog	7,000	720	480	60	1	1	0	0	-	1	0	0	1	0	-	-	-	-	-	-	-	-	
SMH0005	MP@HL	Prog	7,000	1440	1080	25	1	1	0	0	-	1	0	0	1	0	-	-	-	-	-	-	-	-	
SMH0006	MP@HL	Prog	7,000	1920	1080	30	1	1	0	0	-	1	0	0	1	0	-	-	-	-	-	-	-	-	
SMH0007	MP@HL	Prog	12,000	1440	1080	25	1	1	0	0	-	1	0	0	1	0	-	-	-	-	-	-	-	-	
SMH0008	MP@HL	Prog	12,000	1920	1080	30	1	1	0	0	-	1	0	0	1	0	-	-	-	-	-	-	-	-	
SMH0009	MP@HL	Prog	12,000	1440	1080	25	1	1	0	0	-	1	1	1	1	0	-	-	-	-	-	-	-	-	Check with multiple modes
SMH0010	MP@HL	Prog	12,000	1920	1080	30	1	1	0	1	-	1	2	2	1	1	-	-	-	-	-	-	-	-	

A.5 Advanced Profile @ Level 0 – Coding Tools

Bitstream Name	Profile@Level	Video Type	Bitrate (kbps)	Source Width	Source Height	Frame Rate	Transform Switching	Overlap Transform	Quantizer Specifier	Range Reduction	Range Mapping (see note below)	Loop Filter	B-Frames	Macroblock Quantization	Intensity Compensation	Extended Motion Vectors	Start Codes (see note below)	End of Sequence Code	Closed Entry Point	Broken Link	Slice Coding	Byte Stuffing	Field Start Code	Field Order	Comments
SA00080	AP@L0	Prog	60	176	144	15	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	Check bitrate/framerate/resolution combinations with default settings
SA00081	AP@L0	Prog	120	160	120	10	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA00082	AP@L0	Prog	60	176	144	12.5	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA00083	AP@L0	Prog	250	176	144	10	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA00084	AP@L0	Prog	700	320	240	30	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA00085	AP@L0	Prog	1,200	352	288	25	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA00086	AP@L0	Prog	400	220	180	30	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA00087	AP@L0	Prog	1,200	352	288	25	0	0	0	-	0	0	0	0	0	0	1	0	0	0	0	0	-	-	All modes off
SA00088	AP@L0	Prog	400	220	180	30	1	1	0	-	1	1	0	0	1	0	1	0	0	0	0	0	-	-	Check range mapping
SA00089	AP@L0	Prog	1,200	320	240	30	1	1	0	-	0	1	0	0	1	0	1	1	0	0	1	0	-	-	All startcodes
SA00090	AP@L0	Prog	700	320	240	30	0	1	0	-	0	0	0	0	0	0	1	0	0	0	0	0	-	-	Check transform switching and overlap transform
SA00091	AP@L0	Prog	400	352	288	25	1	0	0	-	0	0	0	0	0	0	1	0	0	0	0	0	-	-	
SA00092	AP@L0	Prog	400	320	240	30	0	0	3	-	0	0	0	0	0	0	1	0	0	0	0	0	-	-	Check quantizer specifier
SA00093	AP@L0	Prog	700	352	288	25	0	0	2	-	0	0	0	0	0	0	1	0	0	0	0	0	-	-	
SA00094	AP@L0	Prog	400	320	240	30	1	1	0	-	1	1	0	0	1	0	1	1	0	0	1	0	-	-	All startcodes + range mapping
SA00095	AP@L0	Prog	700	320	240	30	1	1	0	-	0	0	1	0	1	0	1	0	0	0	0	0	-	-	Check B frames and loop filter
SA00096	AP@L0	Prog	700	352	288	25	1	1	0	-	0	1	1	0	1	0	1	0	0	0	0	0	-	-	
SA00097	AP@L0	Prog	1,200	352	288	25	1	1	0	-	0	1	2	0	1	0	1	0	0	0	0	0	-	-	
SA00098	AP@L0	Prog	400	160	240	24	1	1	0	-	0	1	0	0	1	0	1	1	0	0	1	0	-	-	All start codes
SA00099	AP@L0	Prog	700	352	288	25	1	1	0	-	0	1	1	1	1	0	1	1	0	0	1	1	-	-	Check with multiple modes
SA00100	AP@L0	Prog	400	176	144	25	1	1	0	-	1	1	2	2	1	1	1	1	0	0	1	0	-	-	
SA00101	AP@L0	Prog	700	352	288	25	1	1	0	-	0	1	1	1	1	0	1	0	0	0	0	0	-	-	Check macroblock quantization
SA00102	AP@L0	Prog	1,200	352	288	25	1	1	0	-	0	1	1	2	1	0	1	0	0	0	0	0	-	-	
SA00103	AP@L0	Prog	700	352	288	25	1	1	0	-	0	1	1	0	0	0	1	0	0	0	0	0	-	-	Check other modes
SA00104	AP@L0	Prog	1,200	352	288	25	1	1	0	-	0	1	1	0	0	0	1	0	0	0	0	0	-	-	
SA00105	AP@L0	Prog	700	320	240	30	1	1	0	-	0	0	0	0	1	0	1	0	0	0	0	0	-	-	
SA00106	AP@L0	Prog	700	352	288	25	1	1	0	-	0	0	0	0	0	0	1	0	1	0	0	0	-	-	Check closed entry point
SA00107	AP@L0	Prog	700	320	240	30	1	1	0	-	0	0	0	0	0	0	1	0	0	1	0	0	-	-	Check broken link

A.6 Advanced Profile @ Level 1 – Coding Tools (Part 1)

Bitstream Name	Profile@Level	Video Type	Bitrate (kbps)	Source Width	Source Height	Frame Rate	Transform Switching	Overlap Transform	Quantizer Specifier	Range Reduction	Range Mapping (see note below)	Loop Filter	B-Frames	Macroblock Quantization	Intensity Compensation	Extended Motion Vectors	Start Codes (see note below)	End of Sequence Code	Closed Entry Point	Broken Link	Slice Coding	Byte Stuffing	Field Start Code	Field Order	Comments
SA10182	AP@L1	Prog	1,000	720	480	30	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	Check bitrate/framerate/resolution combinations with default settings
SA10183	AP@L1	Prog	2,500	720	480	30	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA10184	AP@L1	Prog	2,500	720	576	25	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA10185	AP@L1	Prog	6,000	720	576	25	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA10186	AP@L1	Prog	1,000	600	280	30	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA10187	AP@L1	Prog	6,000	720	576	25	0	0	0	-	0	0	0	0	0	0	1	0	0	0	0	0	-	-	All modes off
SA10188	AP@L1	Prog	1,000	720	480	30	1	1	0	-	1	1	0	0	1	0	1	0	0	0	0	0	-	-	Check range mapping
SA10189	AP@L1	Prog	2,500	720	480	30	1	1	0	-	0	1	0	0	1	0	1	1	0	0	1	0	-	-	All startcodes
SA10190	AP@L1	Prog	2,500	720	480	30	0	1	0	-	0	0	0	0	0	0	1	0	0	0	0	0	-	-	Check transform switching and overlap transform
SA10191	AP@L1	Prog	1,000	720	576	25	1	0	0	-	0	0	0	0	0	0	1	0	0	0	0	0	-	-	
SA10192	AP@L1	Prog	1,000	720	480	30	0	0	3	-	0	0	0	0	0	0	1	0	0	0	0	0	-	-	Check quantizer specifier
SA10193	AP@L1	Prog	2,500	720	576	25	0	0	2	-	0	0	0	0	0	0	1	0	0	0	0	0	-	-	
SA10194	AP@L1	Prog	1,000	720	576	25	1	1	0	-	1	1	0	0	1	0	1	1	0	0	1	0	-	-	All startcodes + range mapping
SA10195	AP@L1	Prog	2,500	540	480	30	1	1	0	-	0	1	0	0	1	0	1	1	0	0	1	0	-	-	All start codes
SA10196	AP@L1	Prog	6,000	720	480	30	1	1	0	-	0	1	1	1	1	0	1	1	0	0	1	1	-	-	Check with multiple modes
SA10197	AP@L1	Prog	2,500	360	576	25	1	1	0	-	1	1	2	2	1	1	1	1	0	0	1	0	-	-	

A.7 Advanced Profile @ Level 1 – Coding Tools (Part 2)

Bitstream Name	Profile@Level	Video Type	Bitrate (kbps)	Source Width	Source Height	Frame Rate	Transform Switching	Overlap Transform	Quantizer Specifier	Range Reduction	Range Mapping (see note below)	Loop Filter	B-Frames	Macroblock Quantization	Intensity Compensation	Extended Motion Vectors	Start Codes (see note below)	End of Sequence Code	Closed Entry Point	Broken Link	Slice Coding	Byte Stuffing	Field Start Code	Field Order	Comments
SA10198																									Check bitrate/framerate/resolution combinations with default settings in interlace mode
	AP@L1	Auto	1,000	720	480	29.97	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	T	
SA10199	AP@L1	Auto	2,500	720	480	29.97	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	T	
SA10200	AP@L1	Auto	2,500	720	576	25	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	T	
SA10201	AP@L1	Auto	6,000	720	576	25	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	T	
SA10202	AP@L1	Auto	2,500	720	480	29.97	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	B	Check bottom field first
SA10203	AP@L1	Auto	2,500	720	576	25	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	B	
SA10204	AP@L1	Auto	2,500	720	480	29.97	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	1	T	Check field start code
SA10205	AP@L1	Auto	2,500	720	576	25	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	1	T	
SA10206	AP@L1	Auto	2,500	720	480	29.97	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	1	B	
SA10207	AP@L1	Auto	2,500	720	576	25	1	1	0	-	0	1	0	0	1	0	1	0	1	0	0	0	1	T	Check closed entry point
SA10208	AP@L1	Auto	2,500	720	480	29.97	1	1	0	-	0	1	0	0	1	0	1	0	0	1	0	0	1	T	Check broken link
SA10209	AP@L1	Auto	2,500	720	576	25	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	1	B	
SA10210	AP@L1	Field	2,500	720	480	29.97	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	T	Check field interlace
SA10211	AP@L1	Field	2,500	720	576	25	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	T	
SA10212	AP@L1	Field	2,500	720	480	29.97	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	B	
SA10213	AP@L1	Field	2,500	720	576	25	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	B	
SA10214	AP@L1	Frame	2,500	720	480	29.97	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	T	Check frame interlace
SA10215	AP@L1	Frame	2,500	720	576	25	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	T	
SA10216	AP@L1	Frame	2,500	720	480	29.97	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	B	
SA10217	AP@L1	Frame	2,500	720	576	25	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	B	
SA10218	AP@L1	FFAuto	2,500	720	480	29.97	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	T	Check frame/field auto
SA10219	AP@L1	FFAuto	2,500	720	576	25	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	T	

A.8 Advanced Profile @ Level 1 – Coding Tools (Part 3)

Bitstream Name	Profile@Level	Video Type	Bitrate (kbps)	Source Width	Source Height	Frame Rate	Transform Switching	Overlap Transform	Quantizer Specifier	Range Reduction	Range Mapping (see note below)	Loop Filter	B-Frames	Macroblock Quantization	Intensity Compensation	Extended Motion Vectors	Start Codes (see note below)	End of Sequence Code	Closed Entry Point	Broken Link	Slice Coding	Byte Stuffing	Field Start Code	Field Order	Comments
SA10220	AP@L1	Auto	2,500	720	480	29.97	1	1	0	-	0	0	1	0	1	0	1	0	0	0	0	0	0	T	Check B frames and loop filter
SA10221	AP@L1	Auto	2,500	720	576	25	1	1	0	-	0	1	1	0	1	0	1	0	0	0	0	0	0	T	
SA10222	AP@L1	Auto	2,500	720	480	29.97	1	1	0	-	0	1	2	0	1	0	1	0	0	0	0	0	0	T	
SA10223	AP@L1	Frame	2,500	720	576	25	1	1	0	-	0	0	1	0	1	0	1	0	0	0	0	0	0	T	
SA10224	AP@L1	Frame	2,500	720	576	25	1	1	0	-	0	1	1	0	1	0	1	0	0	0	0	0	0	T	
SA10225	AP@L1	Frame	2,500	720	480	29.97	1	1	0	-	0	1	2	0	1	0	1	0	0	0	0	0	0	T	
SA10226	AP@L1	Field	2,500	720	480	29.97	1	1	0	-	0	0	1	0	1	0	1	0	0	0	0	0	0	T	
SA10227	AP@L1	Field	2,500	720	576	25	1	1	0	-	0	1	1	0	1	0	1	0	0	0	0	0	0	T	
SA10228	AP@L1	Field	2,500	720	480	29.97	1	1	0	-	0	1	2	0	1	0	1	0	0	0	0	0	0	T	
SA10229	AP@L1	Auto	2,500	480	480	29.97	1	1	0	-	0	1	0	0	1	0	1	1	0	0	1	0	1	T	All start codes
SA10230	AP@L1	Auto	6,000	720	480	29.97	1	1	0	-	0	1	1	1	1	0	1	1	0	0	1	1	1	T	Check with multiple modes
SA10231	AP@L1	Auto	2,500	352	576	25	1	1	0	-	1	1	2	2	1	0	1	1	0	0	1	0	1	T	
SA10232	AP@L1	Frame	2,500	480	480	29.97	1	1	0	-	0	1	0	0	1	0	1	1	0	0	1	0	1	T	All start codes
SA10233	AP@L1	Frame	6,000	720	480	29.97	1	1	0	-	0	1	1	1	1	0	1	1	0	0	1	1	1	T	Check with multiple modes
SA10234	AP@L1	Frame	6,000	720	576	25	1	1	0	-	1	1	2	2	1	1	1	1	0	0	1	0	1	T	
SA10235	AP@L1	Field	2,500	480	480	29.97	1	1	0	-	0	1	0	0	1	0	1	1	0	0	1	0	1	T	All start codes
SA10236	AP@L1	Field	6,000	720	480	29.97	1	1	0	-	0	1	1	1	1	0	1	1	0	0	1	1	1	T	Check with multiple modes
SA10237	AP@L1	Field	2,500	352	576	25	1	1	0	-	1	1	2	2	1	1	1	1	0	0	1	0	1	T	
SA10238	AP@L1	Frame	2,500	720	576	25	1	1	0	-	0	1	1	0	0	0	1	0	0	0	0	0	1	T	Check other modes
SA10239	AP@L1	Frame	2,500	720	576	25	1	1	0	-	0	1	1	0	0	0	1	0	0	0	0	0	1	T	
SA10240	AP@L1	Frame	2,500	720	480	29.97	1	1	0	-	0	0	0	0	1	0	1	0	0	0	0	0	1	T	
SA10241	AP@L1	Field	2,500	720	480	29.97	1	1	0	-	0	1	1	0	0	0	1	0	0	0	0	0	1	T	
SA10242	AP@L1	Field	2,500	720	576	25	1	1	0	-	0	1	1	0	0	0	1	0	0	0	0	0	1	T	
SA10243	AP@L1	Field	2,500	720	480	29.97	1	1	0	-	0	0	0	0	1	0	1	0	0	0	0	0	1	T	

A.9 Advanced Profile @ Level 2 – Coding Tools

Bitstream Name	Profile@Level	Video Type	Bitrate (kbps)	Source Width	Source Height	Frame Rate	Transform Switching	Overlap Transform	Quantizer Specifier	Range Reduction	Range Mapping (see note below)	Loop Filter	B-Frames	Macroblock Quantization	Intensity Compensation	Extended Motion Vectors	Start Codes (see note below)	End of Sequence Code	Closed Entry Point	Broken Link	Slice Coding	Byte Stuffing	Field Start Code	Field Order	Comments
SA20031	AP@L2	Prog	1,500	704	480	59.94	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	Check bitrate/framerate/resolution combinations with default settings
SA20032	AP@L2	Prog	4,500	704	480	60	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA20033	AP@L2	Prog	4,500	1280	720	30	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA20034	AP@L2	Prog	12,000	1280	720	30	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA20035	AP@L2	Prog	12,000	900	900	30	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA20036	AP@L2	Prog	4,500	704	480	59.94	1	1	0	-	0	1	0	0	1	0	1	1	0	0	1	0	-	-	All start codes
SA20037	AP@L2	Prog	4,500	1280	720	30	1	1	0	-	0	1	1	1	1	0	1	1	0	0	1	1	-	-	Check with multiple modes
SA20038	AP@L2	Prog	12,000	1280	720	30	1	1	0	-	1	1	2	2	1	1	1	1	0	0	1	0	-	-	

A.10 Advanced Profile @ Level 3 – Coding Tools

Bitstream Name	Profile@Level	Video Type	Bitrate (kbps)	Source Width	Source Height	Frame Rate	Transform Switching	Overlap Transform	Quantizer Specifier	Range Reduction	Range Mapping (see note below)	Loop Filter	B-Frames	Macroblock Quantization	Intensity Compensation	Extended Motion Vectors	Start Codes (see note below)	End of Sequence Code	Closed Entry Point	Broken Link	Slice Coding	Byte Stuffing	Field Start Code	Field Order	Comments
SA30056	AP@L3	Prog	2,000	1280	720	50	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	Check bitrate/framerate/resolution combinations with default settings
SA30057	AP@L3	Prog	8,000	1280	1080	25	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA30058	AP@L3	Prog	8,000	1280	720	59.94	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA30059	AP@L3	Prog	27,000	1920	1080	23.976	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA30060	AP@L3	Prog	8,000	1280	720	60	1	1	0	-	0	1	0	0	1	0	1	1	0	0	1	0	-	-	All start codes
SA30061	AP@L3	Prog	8,000	1280	1080	25	1	1	0	-	0	1	1	1	1	0	1	1	0	0	1	1	-	-	Check with multiple modes
SA30062	AP@L3	Prog	27,000	2048	1024	30	1	1	0	-	1	1	2	2	1	1	1	1	0	0	1	0	-	-	
SA30063	AP@L3	Auto	27,000	1920	1080	30	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	T	
SA30064	AP@L3	Frame	27,000	1920	1080	30	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	T	
SA30065	AP@L3	Field	27,000	1920	1080	30	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	T	
SA30066	AP@L3	Auto	8,000	1920	1080	30	1	1	0	-	0	1	0	0	1	0	1	1	0	0	1	0	1	T	All start codes
SA30067	AP@L3	Auto	8,000	1920	1080	30	1	1	0	-	0	1	1	1	1	0	1	1	0	0	1	1	1	T	Check with multiple modes
SA30068	AP@L3	Auto	27,000	1920	1080	30	1	1	0	-	1	1	2	2	1	0	1	1	0	0	1	0	1	T	
SA30069	AP@L3	Auto	8,000	1920	1080	30	1	1	0	-	0	1	0	0	1	0	1	1	0	0	1	0	1	B	All start codes
SA30070	AP@L3	Auto	8,000	1920	1080	30	1	1	0	-	0	1	1	1	1	0	1	1	0	0	1	1	1	B	Check with multiple modes
SA30071	AP@L3	Auto	27,000	1920	1080	30	1	1	0	-	1	1	2	2	1	0	1	1	0	0	1	0	1	B	
SA30072	AP@L3	Frame	8,000	1920	1080	30	1	1	0	-	0	1	0	0	1	0	1	1	0	0	1	0	1	T	All start codes
SA30073	AP@L3	Frame	8,000	1920	1080	30	1	1	0	-	0	1	1	1	1	0	1	1	0	0	1	1	1	T	Check with multiple modes
SA30074	AP@L3	Frame	27,000	1920	1080	30	1	1	0	-	1	1	2	2	1	0	1	1	0	0	1	0	1	T	
SA30075	AP@L3	Field	8,000	1920	1080	30	1	1	0	-	0	1	0	0	1	0	1	1	0	0	1	0	1	T	All start codes
SA30076	AP@L3	Field	8,000	1920	1080	30	1	1	0	-	0	1	1	1	1	0	1	1	0	0	1	1	1	T	Check with multiple modes
SA30077	AP@L3	Field	27,000	1920	1080	30	1	1	0	-	1	1	2	2	1	0	1	1	0	0	1	0	1	T	
SA30078	AP@L3	FF Auto	8,000	1920	1080	30	1	1	0	-	0	1	0	0	1	0	1	1	0	0	1	0	1	T	All start codes
SA30079	AP@L3	FF Auto	8,000	1920	1080	30	1	1	0	-	0	1	1	1	1	0	1	1	0	0	1	1	1	T	Check with multiple modes
SA30080	AP@L3	FF Auto	27,000	1920	1080	30	1	1	0	-	1	1	2	2	1	1	1	1	0	0	1	0	1	T	

A.11 Advanced Profile @ Level 4 – Coding Tools

Bitstream Name	Profile@Level	Video Type	Bitrate (kbps)	Source Width	Source Height	Frame Rate	Transform Switching	Overlap Transform	Quantizer Specifier	Range Reduction	Range Mapping (see note below)	Loop Filter	B-Frames	Macroblock Quantization	Intensity Compensation	Extended Motion Vectors	Start Codes (see note below)	End of Sequence Code	Closed Entry Point	Broken Link	Slice Coding	Byte Stuffing	Field Start Code	Field Order	Comments
SA40019	AP@L4	Auto	3,000	1920	1080	59.94	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	0	T	Check bitrate/framerate/resolution combinations with default settings
SA40020	AP@L4	Prog	16,000	1920	1080	50	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA40021	AP@L4	Prog	16,000	2048	1536	24	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA40022	AP@L4	Prog	80,000	2048	2048	30	1	1	0	-	0	1	0	0	1	0	1	0	0	0	0	0	-	-	
SA40023	AP@L4	Prog	16,000	1920	1080	50	1	1	0	-	0	1	0	0	1	0	1	1	0	0	1	0	-	-	All start codes
SA40024	AP@L4	Prog	16,000	2048	1536	23.976	1	1	0	-	0	1	1	1	1	0	1	1	0	0	1	1	-	-	Check with multiple modes
SA40025	AP@L4	Prog	80,000	2048	2048	30	1	1	0	-	1	1	2	2	1	1	1	1	0	0	1	0	-	-	
SA40026	AP@L4	Auto	80,000	1920	1080	60	1	1	0	-	1	1	2	2	1	1	1	1	0	0	1	0	1	T	

Notes:

1. When Range Mapping is enabled, encoder steps through all possible values, 0 – 7.
2. Start Codes includes Sequence, Entry Point and Frame start codes.

A.12 Metadata (Part 1)

Bitstream Name	Profile@Level	Video Type	Bitrate (kbps)	Source Width	Source Height	Frame Rate	Postprocessing Frame Rate	Postprocessing Bitrate (kbps)	Frame Interpolation	Multi-Resolution	Postprocessing	Display Width	Display Height	Display Frame Rate	Color Format (see note below)	Aspect Ratio	User Data	Repeat Frame	Repeat First Field	Top Field First	Pan Scan	UV Sampling Format	Comments
SSL0023	SP@LL	Prog	30	160	120	10	10	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	Check postprocessing frame rate
SSL0024	SP@LL	Prog	30	160	120	10	0	32	0	-	-	-	-	-	-	-	-	-	-	-	-	-	Check postprocessing bitrate
SSL0025	SP@LL	Prog	30	160	120	10	0	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	Check frame interpolation
SML0015	MP@LL	Prog	700	320	240	24	30	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	Check postprocessing frame rate
SML0016	MP@LL	Prog	700	352	288	25	0	800	0	0	-	-	-	-	-	-	-	-	-	-	-	-	Check postprocessing bitrate
SML0017	MP@LL	Prog	700	320	240	24	0	0	1	0	-	-	-	-	-	-	-	-	-	-	-	-	Check frame interpolation
SML0018	MP@LL	Prog	700	352	288	25	0	0	0	1	-	-	-	-	-	-	-	-	-	-	-	-	Check multi-resolution coding
SMM0015	MP@ML	Prog	2,000	720	576	25	0	0	0	1	-	-	-	-	-	-	-	-	-	-	-	-	Check multi-resolution coding
SA00068	AP@L0	Prog	700	320	240	30	30	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	Check postprocessing frame rate
SA00069	AP@L0	Prog	700	352	288	25	0	800	0	-	0	0	0	0	0	0	0	0	0	0	0	-	Check postprocessing bitrate
SA00070	AP@L0	Prog	700	320	240	30	0	0	1	-	0	0	0	0	0	0	0	0	0	0	0	-	Check frame interpolation
SA00071	AP@L0	Prog	700	352	288	25	0	0	0	-	1	0	0	0	0	0	0	0	0	0	0	-	Check postprocessing flag
SA00072	AP@L0	Prog	400	160	240	24	0	0	0	-	0	320	240	0	0	0	0	0	0	0	0	-	Check display re-sizing
SA00073	AP@L0	Prog	400	176	144	25	0	0	0	-	0	352	288	0	0	0	0	0	0	0	0	-	
SA00074	AP@L0	Prog	700	320	240	30	0	0	0	-	0	0	0	1	0	0	0	0	0	0	0	-	Display frame rate is 24
SA00075	AP@L0	Prog	700	352	288	25	0	0	0	-	0	0	0	1	0	0	0	0	0	0	0	-	Check transmission of frame rate numerator and denominator, display frame rate is 24
SA00076	AP@L0	Prog	700	352	288	25	0	0	0	-	0	0	0	0	1	0	0	0	0	0	0	-	Check color format
SA00077	AP@L0	Prog	700	320	240	30	0	0	0	-	0	0	0	0	0	5	0	0	0	0	0	-	Check aspect ratio
SA00078	AP@L0	Prog	700	352	288	25	0	0	0	-	0	0	0	0	0	15	0	0	0	0	0	-	Check transmission of aspect width and height, aspect ratio is 16:9
SA00079	AP@L0	Prog	1,200	320	240	30	0	0	0	-	0	0	0	0	0	0	1	0	0	0	0	-	Check user data
SA10146	AP@L1	Auto	2,500	720	576	25	30	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	Check postprocessing frame rate
SA10147	AP@L1	Auto	2,500	720	480	29.97	0	2016	0	-	0	0	0	0	0	0	0	0	0	0	0	0	Check postprocessing bitrate
SA10148	AP@L1	Auto	2,500	720	576	25	0	0	1	-	0	0	0	0	0	0	0	0	0	0	0	0	Check frame interpolation
SA10149	AP@L1	Auto	2,500	720	480	29.97	0	0	0	-	1	0	0	0	0	0	0	0	0	0	0	0	Check postprocessing flag

A.13 Metadata (Part 2)

Bitstream Name	Profile@Level	Video Type	Bitrate (kbps)	Source Width	Source Height	Frame Rate	Postprocessing Frame Rate	Postprocessing Bitrate (kbps)	Frame Interpolation	Multi-Resolution	Postprocessing	Display Width	Display Height	Display Frame Rate	Color Format (see note below)	Aspect Ratio	User Data	Repeat Frame	Repeat First Field	Top Field First	Pan Scan	UV Sampling Format	Comments
SA10150	AP@L1	Prog	2,500	540	480	30	0	0	0	-	0	720	480	0	0	0	0	0	0	0	0	-	Check display resizing
SA10151	AP@L1	Prog	2,500	360	576	25	0	0	0	-	0	720	576	0	0	0	0	0	0	0	0	-	
SA10152	AP@L1	FFAuto	2,500	480	480	29.97	0	0	0	-	0	720	480	0	0	0	0	0	0	0	0	0	
SA10153	AP@L1	FFAuto	2,500	352	576	25	0	0	0	-	0	720	576	0	0	0	0	0	0	0	0	0	
SA10154	AP@L1	Auto	2,500	720	576	25	0	0	0	-	0	0	0	1	0	0	0	0	0	0	0	0	Display frame rate is 24
SA10155	AP@L1	Auto	2,500	720	480	29.97	0	0	0	-	0	0	0	1	0	0	0	0	0	0	0	0	Check transmission of frame rate numerator and denominator, display frame rate is 24
SA10156	AP@L1	Auto	2,500	720	576	25	0	0	0	-	0	0	0	0	1	0	0	0	0	0	0	0	Check color format
SA10157	AP@L1	Auto	2,500	720	480	29.97	0	0	0	-	0	0	0	0	0	5	0	0	0	0	0	0	Check aspect ratio
SA10158	AP@L1	Auto	2,500	720	576	25	0	0	0	-	0	0	0	0	0	15	0	0	0	0	0	0	Check transmission of aspect width and height, aspect ratio is 16:9
SA10244	AP@L1	Auto	2,500	720	480	29.97	0	0	0	-	0	0	0	0	0	0	1	0	0	0	0	0	Check user data
SA10160	AP@L1	Prog	2,500	720	576	24	0	0	0	-	0	0	0	0	0	0	0	1	0	0	0	-	Check pulldown
SA10161	AP@L1	Prog	2,500	720	480	24	0	0	0	-	0	0	0	0	0	0	0	0	0	1	0	-	
SA10162	AP@L1	Prog	2,500	720	576	24	0	0	0	-	0	0	0	0	0	0	0	0	1	0	0	-	
SA10163	AP@L1	Prog	2,500	720	480	24	0	0	0	-	0	0	0	0	0	0	0	0	1	1	0	-	
SA10164	AP@L1	FFAuto	2,500	720	480	29.97	0	0	0	-	0	0	0	0	0	0	0	0	0	0	1	0	Check pan scan
SA10165	AP@L1	Prog	2,500	720	576	24	0	0	0	-	0	0	0	0	0	0	0	1	0	0	1	-	
SA10166	AP@L1	Prog	2,500	720	480	24	0	0	0	-	0	0	0	0	0	0	0	0	1	0	1	-	
SA10167	AP@L1	FFAuto	2,500	720	576	25	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	1	Check chroma upsampling
SA20024	AP@L2	Prog	4,500	704	480	24	0	0	0	-	0	0	0	0	0	0	0	1	0	0	0	-	Check pulldown
SA20025	AP@L2	Prog	4,500	704	480	24	0	0	0	-	0	0	0	0	0	0	0	0	0	1	0	-	
SA20026	AP@L2	Prog	4,500	704	480	24	0	0	0	-	0	0	0	0	0	0	0	0	1	0	0	-	
SA20027	AP@L2	Prog	4,500	704	480	24	0	0	0	-	0	0	0	0	0	0	0	0	1	1	0	-	
SA20028	AP@L2	Prog	4,500	704	480	60	0	0	0	-	0	0	0	0	0	0	0	0	0	0	1	-	Check pan scan
SA20029	AP@L2	Prog	4,500	704	480	60	0	0	0	-	0	0	0	0	0	0	0	1	0	0	1	-	
SA20030	AP@L2	Prog	4,500	704	480	60	0	0	0	-	0	0	0	0	0	0	0	0	1	0	1	-	
SA30051	AP@L3	FF Auto	8,000	1920	1080	30	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	1	Check chroma upsampling

Notes:

1. All coding tool parameters are set to their default values.
2. When Color Format is enabled, the values of Color Primaries, Transfer Characteristics and Matrix Coefficients are all equal to 1.

Annex B (Informative)
Decoder Output Metadata

Output of metadata carried in a bitstream is controlled by the DebugMask option of the reference decoder. If the DebugMask option is used, the metadata is output in the form of plain text. For example, a metadata field in an Advanced Profile sequence header would be output as:

SEQ: PULLDOWN: 1

Further details can be found in the Reference Decoder Technical Reference Manual.

Annex C (Informative)
Test Materials Inventory

This annex contains a list of the test materials provided on DVD (available at http://store.smpte.org/VC-1-Test-Material-p/vc-1.htm). The DVD whose contents are listed below supercedes the files on the previous DVD and update CD.

The following is a list of the test material files provided on DVD:

```
Directory of D:\

07/10/2008  12:05 PM    <DIR>          Bitstreams
07/10/2008  11:19 AM         1,153,551 VC-1-SourceCode-2008.zip
07/10/2008  12:27 PM            15,358 listing.txt
               2 File(s)      1,169,389 bytes

 Directory of D:\Bitstreams

07/10/2008  12:05 PM    <DIR>          .
07/10/2008  12:26 PM    <DIR>          ..
07/10/2008  12:03 PM    <DIR>          AP@L0
07/10/2008  12:04 PM    <DIR>          AP@L1
07/10/2008  12:04 PM    <DIR>          AP@L2
07/10/2008  12:04 PM    <DIR>          AP@L3
07/10/2008  12:05 PM    <DIR>          AP@L4
07/10/2008  12:05 PM    <DIR>          MP@HL
07/10/2008  12:05 PM    <DIR>          MP@LL
07/10/2008  12:05 PM    <DIR>          MP@ML
07/10/2008  12:05 PM    <DIR>          SP@LL
07/10/2008  12:05 PM    <DIR>          SP@ML
               0 File(s)         13,672 bytes

 Directory of D:\Bitstreams\AP@L0

07/10/2008  12:03 PM    <DIR>          .
07/10/2008  12:05 PM    <DIR>          ..
04/10/2005  10:00 PM           165,616 SA00068.vc1
04/10/2005  10:00 PM           157,475 SA00069.vc1
04/10/2005  10:00 PM           165,622 SA00070.vc1
04/10/2005  10:00 PM           157,480 SA00071.vc1
04/10/2005  10:00 PM            94,064 SA00072.vc1
04/10/2005  10:00 PM            95,314 SA00073.vc1
04/10/2005  10:00 PM           165,616 SA00074.vc1
04/10/2005  10:00 PM           157,475 SA00075.vc1
04/10/2005  10:00 PM           157,475 SA00076.vc1
04/10/2005  10:00 PM           165,616 SA00077.vc1
04/10/2005  10:00 PM           157,475 SA00078.vc1
04/10/2005  10:00 PM           287,572 SA00079.vc1
07/07/2008  03:25 PM            16,130 SA00080.vc1
07/07/2008  03:25 PM            29,397 SA00081.vc1
07/07/2008  03:25 PM            16,683 SA00082.vc1
07/07/2008  03:25 PM            45,851 SA00083.vc1
07/07/2008  03:26 PM           106,092 SA00084.vc1
07/07/2008  03:26 PM           187,455 SA00085.vc1
07/07/2008  03:26 PM            59,468 SA00086.vc1
07/07/2008  03:26 PM           432,337 SA00087.vc1
07/07/2008  03:26 PM            58,154 SA00088.vc1
07/07/2008  03:26 PM           160,116 SA00089.vc1
07/07/2008  03:26 PM           111,449 SA00090.vc1
```

```
07/07/2008  03:26 PM            72,892 SA00091.vc1
07/07/2008  03:26 PM            68,487 SA00092.vc1
07/07/2008  03:26 PM           106,695 SA00093.vc1
07/07/2008  03:26 PM         1,407,613 SA00094.vc1
07/07/2008  03:27 PM           135,396 SA00095.vc1
07/07/2008  03:27 PM           160,552 SA00096.vc1
07/07/2008  03:27 PM           216,643 SA00097.vc1
07/07/2008  03:27 PM            59,902 SA00098.vc1
07/07/2008  03:27 PM         2,380,505 SA00099.vc1
07/07/2008  03:27 PM            67,628 SA00100.vc1
07/07/2008  03:27 PM           160,555 SA00101.vc1
07/07/2008  03:27 PM           224,906 SA00102.vc1
07/07/2008  03:27 PM           160,552 SA00103.vc1
07/07/2008  03:27 PM           223,930 SA00104.vc1
07/07/2008  03:27 PM           106,416 SA00105.vc1
07/07/2008  03:27 PM           118,289 SA00106.vc1
07/07/2008  03:28 PM           106,416 SA00107.vc1
              40 File(s)      8,929,909 bytes

 Directory of D:\Bitstreams\AP@L1

07/10/2008  12:04 PM    <DIR>          .
07/10/2008  12:05 PM    <DIR>          ..
04/04/2005  04:19 PM           596,900 SA10146.vc1
04/04/2005  04:19 PM           574,471 SA10147.vc1
04/04/2005  04:19 PM           596,900 SA10148.vc1
04/04/2005  04:19 PM           570,769 SA10149.vc1
04/04/2005  04:20 PM           591,982 SA10150.vc1
04/04/2005  04:20 PM           581,168 SA10151.vc1
04/04/2005  04:20 PM           584,897 SA10152.vc1
04/04/2005  04:20 PM           594,845 SA10153.vc1
04/04/2005  04:20 PM           585,013 SA10154.vc1
04/04/2005  04:20 PM           593,718 SA10155.vc1
04/04/2005  04:20 PM           585,013 SA10156.vc1
04/04/2005  04:21 PM           593,718 SA10157.vc1
04/04/2005  04:21 PM           585,013 SA10158.vc1
04/04/2005  04:21 PM           557,486 SA10160.vc1
04/04/2005  04:22 PM           580,426 SA10161.vc1
04/04/2005  04:22 PM           557,486 SA10162.vc1
04/04/2005  04:22 PM           580,426 SA10163.vc1
04/04/2005  04:22 PM           570,766 SA10164.vc1
04/04/2005  04:22 PM           557,488 SA10165.vc1
04/04/2005  04:22 PM           580,428 SA10166.vc1
04/04/2005  04:22 PM           585,013 SA10167.vc1
07/07/2008  03:28 PM           189,793 SA10182.vc1
07/07/2008  03:28 PM           390,333 SA10183.vc1
07/07/2008  03:28 PM           399,341 SA10184.vc1
07/07/2008  03:28 PM           835,911 SA10185.vc1
07/07/2008  03:28 PM           163,167 SA10186.vc1
07/07/2008  03:28 PM           878,234 SA10187.vc1
07/07/2008  03:28 PM           171,600 SA10188.vc1
07/07/2008  03:28 PM           394,700 SA10189.vc1
07/07/2008  03:29 PM           392,797 SA10190.vc1
07/07/2008  03:29 PM           191,191 SA10191.vc1
07/07/2008  03:29 PM           190,692 SA10192.vc1
07/07/2008  03:29 PM           269,605 SA10193.vc1
07/07/2008  03:29 PM         3,986,608 SA10194.vc1
07/07/2008  03:29 PM           325,921 SA10195.vc1
07/07/2008  03:30 PM        20,454,544 SA10196.vc1
07/07/2008  03:30 PM           400,986 SA10197.vc1
```

```
07/07/2008  03:30 PM           269,694 SA10198.vc1
07/07/2008  03:30 PM           378,320 SA10199.vc1
07/07/2008  03:30 PM           399,652 SA10200.vc1
07/07/2008  03:30 PM           891,993 SA10201.vc1
07/07/2008  03:30 PM           378,320 SA10202.vc1
07/07/2008  03:31 PM           399,652 SA10203.vc1
07/07/2008  03:31 PM           378,320 SA10204.vc1
07/07/2008  03:31 PM           399,652 SA10205.vc1
07/07/2008  03:31 PM           378,320 SA10206.vc1
07/07/2008  03:31 PM           399,652 SA10207.vc1
07/07/2008  03:31 PM           378,320 SA10208.vc1
07/07/2008  03:31 PM           399,652 SA10209.vc1
07/07/2008  03:31 PM           421,148 SA10210.vc1
07/07/2008  03:31 PM           402,688 SA10211.vc1
07/07/2008  03:31 PM           421,148 SA10212.vc1
07/07/2008  03:31 PM           402,688 SA10213.vc1
07/07/2008  03:31 PM           395,980 SA10214.vc1
07/07/2008  03:32 PM           451,397 SA10215.vc1
07/07/2008  03:32 PM           395,980 SA10216.vc1
07/07/2008  03:32 PM           451,397 SA10217.vc1
07/07/2008  03:32 PM           378,320 SA10218.vc1
07/07/2008  03:32 PM           399,652 SA10219.vc1
07/07/2008  03:32 PM           498,279 SA10220.vc1
07/07/2008  03:32 PM         9,940,094 SA10221.vc1
07/07/2008  03:32 PM           485,677 SA10222.vc1
07/07/2008  03:32 PM           549,771 SA10223.vc1
07/07/2008  03:32 PM           547,994 SA10224.vc1
07/07/2008  03:33 PM           514,311 SA10225.vc1
07/07/2008  03:33 PM           470,168 SA10226.vc1
07/07/2008  03:33 PM           451,577 SA10227.vc1
07/07/2008  03:33 PM           453,350 SA10228.vc1
07/07/2008  03:33 PM           392,826 SA10229.vc1
07/07/2008  03:33 PM        22,662,253 SA10230.vc1
07/07/2008  03:34 PM           351,811 SA10231.vc1
07/07/2008  03:34 PM           421,252 SA10232.vc1
07/07/2008  03:34 PM           959,027 SA10233.vc1
07/07/2008  03:34 PM         1,051,978 SA10234.vc1
07/07/2008  03:34 PM           433,623 SA10235.vc1
07/07/2008  03:34 PM         1,009,578 SA10236.vc1
07/07/2008  03:34 PM           375,625 SA10237.vc1
07/07/2008  03:34 PM           547,994 SA10238.vc1
07/07/2008  03:34 PM           547,994 SA10239.vc1
07/07/2008  03:34 PM           397,397 SA10240.vc1
07/07/2008  03:35 PM           469,354 SA10241.vc1
07/07/2008  03:35 PM           451,577 SA10242.vc1
07/07/2008  03:35 PM           422,088 SA10243.vc1
07/07/2008  03:35 PM           631,317 SA10244.vc1
              84 File(s)     96,053,097 bytes

 Directory of D:\Bitstreams\AP@L2

07/10/2008  12:04 PM    <DIR>          .
07/10/2008  12:05 PM    <DIR>          ..
04/03/2005  10:00 PM         1,061,715 SA20024.vc1
04/03/2005  10:00 PM         1,061,715 SA20025.vc1
04/03/2005  10:00 PM         1,061,715 SA20026.vc1
04/03/2005  10:00 PM         1,061,715 SA20027.vc1
04/03/2005  10:00 PM         1,064,246 SA20028.vc1
04/03/2005  10:00 PM         1,064,246 SA20029.vc1
04/03/2005  10:00 PM         1,064,246 SA20030.vc1
```

```
07/07/2008  03:35 PM           281,024 SA20031.vc1
07/07/2008  03:35 PM           700,736 SA20032.vc1
07/07/2008  03:35 PM           699,178 SA20033.vc1
07/07/2008  03:35 PM         1,880,787 SA20034.vc1
07/07/2008  03:35 PM         1,619,546 SA20035.vc1
07/07/2008  03:36 PM           705,868 SA20036.vc1
07/07/2008  03:36 PM        17,121,208 SA20037.vc1
07/07/2008  03:37 PM        39,198,266 SA20038.vc1
              15 File(s)     69,647,511 bytes

 Directory of D:\Bitstreams\AP@L3

07/10/2008  12:04 PM    <DIR>          .
07/10/2008  12:05 PM    <DIR>          ..
04/04/2005  05:08 PM         1,928,810 SA30051.vc1
07/07/2008  03:38 PM           439,009 SA30056.vc1
07/07/2008  03:38 PM         1,055,931 SA30057.vc1
07/07/2008  03:38 PM         1,253,229 SA30058.vc1
07/07/2008  03:39 PM         2,748,462 SA30059.vc1
07/07/2008  03:39 PM         1,263,626 SA30060.vc1
07/07/2008  03:40 PM        34,408,858 SA30061.vc1
07/07/2008  03:42 PM        36,477,351 SA30062.vc1
07/07/2008  03:42 PM         4,573,504 SA30063.vc1
07/07/2008  03:42 PM         3,495,756 SA30064.vc1
07/07/2008  03:42 PM         4,573,504 SA30065.vc1
07/07/2008  03:43 PM         1,276,659 SA30066.vc1
07/07/2008  03:44 PM        30,389,675 SA30067.vc1
07/07/2008  03:44 PM         3,597,600 SA30068.vc1
07/07/2008  03:44 PM         1,276,659 SA30069.vc1
07/07/2008  03:44 PM         1,782,938 SA30070.vc1
07/07/2008  03:46 PM        52,603,047 SA30071.vc1
07/07/2008  03:48 PM         1,223,876 SA30072.vc1
07/07/2008  03:48 PM         1,960,331 SA30073.vc1
07/07/2008  03:48 PM         4,317,364 SA30074.vc1
07/07/2008  03:48 PM         1,276,659 SA30075.vc1
07/07/2008  03:48 PM         1,782,938 SA30076.vc1
07/07/2008  03:48 PM         3,597,600 SA30077.vc1
07/07/2008  03:49 PM         1,276,659 SA30078.vc1
07/07/2008  03:49 PM         1,782,938 SA30079.vc1
07/07/2008  03:49 PM         3,606,950 SA30080.vc1
              26 File(s)    203,971,805 bytes

 Directory of D:\Bitstreams\AP@L4

07/10/2008  12:05 PM    <DIR>          .
07/10/2008  12:05 PM    <DIR>          ..
07/07/2008  03:49 PM         1,311,422 SA40019.vc1
07/07/2008  03:49 PM         2,243,655 SA40020.vc1
07/07/2008  03:49 PM         1,321,384 SA40021.vc1
07/07/2008  03:49 PM         7,567,481 SA40022.vc1
07/07/2008  03:51 PM        77,472,921 SA40023.vc1
07/07/2008  03:51 PM         1,106,242 SA40024.vc1
07/07/2008  03:51 PM         6,720,088 SA40025.vc1
07/07/2008  03:54 PM       164,019,352 SA40026.vc1
               8 File(s)    261,763,481 bytes

 Directory of D:\Bitstreams\MP@HL

07/10/2008  12:05 PM    <DIR>          .
07/10/2008  12:05 PM    <DIR>          ..
```

```
04/05/2005  10:00 PM           620,888 SMH0000.rcv
04/05/2005  10:00 PM           616,190 SMH0001.rcv
04/05/2005  10:00 PM         1,091,858 SMH0002.rcv
04/05/2005  10:00 PM         1,087,864 SMH0003.rcv
04/05/2005  10:00 PM         1,085,776 SMH0004.rcv
04/05/2005  10:00 PM         1,344,275 SMH0005.rcv
04/05/2005  10:00 PM         1,782,212 SMH0006.rcv
04/05/2005  10:00 PM         1,842,736 SMH0007.rcv
04/05/2005  10:00 PM         2,027,318 SMH0008.rcv
04/05/2005  10:00 PM        43,456,172 SMH0009.rcv
04/05/2005  10:00 PM        47,060,545 SMH0010.rcv
              11 File(s)    102,016,926 bytes

 Directory of D:\Bitstreams\MP@LL

07/10/2008  12:05 PM    <DIR>          .
07/10/2008  12:05 PM    <DIR>          ..
04/05/2005  10:00 PM           115,821 SML0000.rcv
04/05/2005  10:00 PM            62,490 SML0001.rcv
04/05/2005  10:00 PM           185,858 SML0002.rcv
04/05/2005  10:00 PM           113,705 SML0003.rcv
04/05/2005  10:00 PM           126,474 SML0004.rcv
04/05/2005  10:00 PM           195,616 SML0005.rcv
04/05/2005  10:00 PM           178,144 SML0006.rcv
04/05/2005  10:00 PM           272,738 SML0007.rcv
04/05/2005  10:00 PM           126,261 SML0008.rcv
04/05/2005  10:00 PM           109,108 SML0009.rcv
04/05/2005  10:00 PM           185,858 SML0010.rcv
04/05/2005  10:00 PM           126,228 SML0011.rcv
04/05/2005  10:00 PM           186,556 SML0012.rcv
04/05/2005  10:00 PM         2,804,571 SML0013.rcv
04/05/2005  10:00 PM         1,570,199 SML0014.rcv
04/05/2005  10:00 PM           164,502 SML0015.rcv
04/05/2005  10:00 PM           158,785 SML0016.rcv
04/05/2005  10:00 PM           164,505 SML0017.rcv
04/05/2005  10:00 PM           158,792 SML0018.rcv
              19 File(s)      7,007,719 bytes

 Directory of D:\Bitstreams\MP@ML

07/10/2008  12:05 PM    <DIR>          .
07/10/2008  12:05 PM    <DIR>          ..
04/05/2005  10:00 PM           388,061 SMM0000.rcv
04/05/2005  10:00 PM           149,976 SMM0001.rcv
04/05/2005  10:00 PM           932,853 SMM0002.rcv
04/05/2005  10:00 PM           412,720 SMM0003.rcv
04/05/2005  10:00 PM           388,940 SMM0004.rcv
04/05/2005  10:00 PM           934,005 SMM0005.rcv
04/05/2005  10:00 PM           592,059 SMM0006.rcv
04/05/2005  10:00 PM         1,009,068 SMM0007.rcv
04/05/2005  10:00 PM           387,973 SMM0008.rcv
04/05/2005  10:00 PM           527,878 SMM0009.rcv
04/05/2005  10:00 PM           932,853 SMM0010.rcv
04/05/2005  10:00 PM           388,158 SMM0011.rcv
04/05/2005  10:00 PM           945,181 SMM0012.rcv
04/05/2005  10:00 PM        14,538,597 SMM0013.rcv
04/05/2005  10:00 PM         4,531,785 SMM0014.rcv
04/05/2005  10:00 PM           437,351 SMM0015.rcv
              16 File(s)     27,498,810 bytes
```

```
 Directory of D:\Bitstreams\SP@LL

07/10/2008  12:05 PM    <DIR>          .
07/10/2008  12:05 PM    <DIR>          ..
04/05/2005  10:00 PM             9,108 SSL0013.rcv
04/05/2005  10:00 PM            15,817 SSL0014.rcv
04/05/2005  10:00 PM           258,787 SSL0015.rcv
04/05/2005  10:00 PM            11,454 SSL0016.rcv
04/05/2005  10:00 PM            15,357 SSL0017.rcv
04/05/2005  10:00 PM            16,520 SSL0018.rcv
04/05/2005  10:00 PM            16,403 SSL0019.rcv
04/05/2005  10:00 PM             9,352 SSL0020.rcv
04/05/2005  10:00 PM            27,375 SSL0021.rcv
04/05/2005  10:00 PM            10,260 SSL0022.rcv
04/05/2005  10:00 PM             6,996 SSL0023.rcv
04/05/2005  10:00 PM             6,996 SSL0024.rcv
04/05/2005  10:00 PM             6,996 SSL0025.rcv
              13 File(s)        412,617 bytes

 Directory of D:\Bitstreams\SP@ML

07/10/2008  12:05 PM    <DIR>          .
07/10/2008  12:05 PM    <DIR>          ..
04/05/2005  10:00 PM           371,723 SSM0010.rcv
04/05/2005  10:00 PM            24,550 SSM0011.rcv
04/05/2005  10:00 PM           959,613 SSM0012.rcv
04/05/2005  10:00 PM            65,799 SSM0013.rcv
04/05/2005  10:00 PM            52,381 SSM0014.rcv
04/05/2005  10:00 PM            37,129 SSM0015.rcv
04/05/2005  10:00 PM            78,925 SSM0016.rcv
04/05/2005  10:00 PM            41,224 SSM0017.rcv
04/05/2005  10:00 PM            42,267 SSM0018.rcv
04/05/2005  10:00 PM            44,092 SSM0019.rcv
              10 File(s)      1,718,743 bytes

     Total Files Listed:
             244 File(s)    780,203,679 bytes
              33 Dir(s)   3,911,440,384 bytes free
```

Revision Notes

This revision corrects the filenames of the test bitstreams, as summarized below:

1. Annex A: Tables A.5 through A.11 and A.13 have been revised to correct the filenames of the test bitstreams.

2. Annex C has been revised to reflect the contents of the new test materials DVD.