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AMENDMENT 3
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Information technology — Coding of audio-visual objects —

Part 4: Conformance testing

AMENDMENT 3: Visual new levels and tools

Technologies de l'information — Codage des objets audiovisuels —

Partie 4: Essai de conformité

AMENDEMENT 3: Nouveaux niveaux et outils visuels

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Foreword

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Amendment 3 to ISO/IEC 14496-4:2004 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

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Information technology — Coding of audio-visual objects —

Part 4:
Conformance testing

AMENDMENT 3: Visual new levels and tools

Add the following subclause at the end of Clause 5:

5.9 Conformance for New Levels of Video Profiles

5.9.1 Specification of the test bitstreams

5.9.1.1 Test Bitstreams — General

As the bitstreams related to Simple Scalable Profile Level 0 and Advanced Simple Profile Level 3b only invoke tools already defined in ISO/IEC 14496-2:2001, reference is made to bitstream definitions of ISO/IEC 14496-4 Visual bitstream specifications.

5.9.1.2 Test Bitstreams

5.9.1.2.1 #SCS-12

Bitstream: Base layer: pv_scs12.bits, enhancement layer: pv_scs12_e.bits

Specification: Temporal scalability with P-VOP in the enhancement layer. There is one P-VOP between every two base layer VOPs with ref_select_code == 1.

Functional stage: P-VOP temporal prediction from the base layer.

Purpose: Verify that the decoder handles P-VOP based temporal scalability.

5.9.1.2.2 #SCS-13

Bitstream: Base layer: pv_scs13.bits, enhancement layer: pv_scs13_e.bits

Specification: Spatial scalability with temporally corresponding P-VOP in the enhancement layer, with ref_select_code == 3.

Functional stage: P-VOP spatial prediction from the base layer.

Purpose: Verify that the decoder handles P-VOP based spatial scalability.

5.9.1.2.3 #SCS-14

Bitstream: base layer: pv_scs14.bits, enhancement layer: pv_scs14_e.bits

Specification: Temporal scalability with B-VOP in the enhancement layer. There is one B-VOP between every two base layer VOPs with ref_select_code == 3.

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Functional stage: B-VOP temporal prediction from the base layer.

Purpose: Verify that the decoder handles B-VOP based temporal scalability.

5.9.1.2.4 #SCS-15

Bitstream: Base layer: pv_scs15.bits, enhancement layer: pv_scs15_e.bits

Specification: Spatial scalability with temporally corresponding B-VOP in the enhancement layer, with ref_select_code == 0.

Functional stage: B-VOP spatial prediction from the base layer.

Purpose: Verify that the decoder handles B-VOP based spatial scalability.

5.9.1.2.5 #A1GE-10

Bitstream: mobile_a1ge10.bits

Specification: A series of consecutive progressively coded P-VOPs. As many quarter-sample components as possible in both the horizontal and vertical directions, luminance and chrominance blocks. Number of MB/s and bitrate are the maximum allowed for the profile-and-level combination. Maximize number of prediction blocks required to reconstruct a macroblock.

Functional stage: Prediction bandwidth.

Purpose: Check that decoder handles largest prediction bandwidth with progressively coded P-VOPs including quarter-sample interpolation. This test is similar to Test bitstream GEQ#3, except that it uses progressive VOPs.

5.9.1.2.6 #A1GE-11

Bitstream: stefan_a1ge11.bits

Specification: A series of consecutive progressively coded S(GMC)-VOPs. As many affine warping transformations (no_of_sprite_warping_points==3) with 1/16 pixel accuracy (sprite_warping_accuracy==3) as possible, luminance and chrominance blocks. Number of MB/s and bitrate are the maximum allowed for the profile-and-level combination. Maximize number of prediction blocks required to reconstruct a macroblock.

Functional stage: Prediction bandwidth.

Purpose: Check that decoder handles largest prediction bandwidth with progressively coded S(GMC)-VOPs. This test is similar to Test bitstream GEG#3, except that it uses progressive VOPs.

5.9.1.2.7 #A1GE-12

Bitstream: mobile_a1ge12.bits

Specification: A bitstream with a series of consecutive progressively coded B-VOPs with bi-directional macroblock motion compensation. Sequence contains many consecutive B-VOPs. Number of MB/s and bitrate are the maximum allowed for the profile-and-level combination. Use quarter-sample prediction in both the horizontal and vertical directions, for all luminance and chrominance blocks. Maximize number of prediction blocks required to reconstruct a macroblock.

Functional stage: Prediction bandwidth.

Purpose: Check that decoder can cope with this case of worst case bandwidth including quarter-sample interpolation. This test is similar to Test bitstream GEQ#1, except that it uses progressive VOPs.

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5.9.1.2.8 #A1GE-13

Bitstream: stefan_a1ge13.bits

Specification: A bitstream with I-, P- and B-VOPs, with quarter-sample motion vectors that are as large as permitted by the profile-and-level combination.

Functional stage: Reconstruction of motion vectors, MCP, control.

Purpose: Check that decoder implements motion compensation especially for quarter-sample interpolation properly when motion vectors are very large.

5.9.2 Normative Test Suites for Simple Scalable Profile Level 0 and Advanced Simple Profile Level 3b

NOTE Each row represents a single bitstream. A single bitstream is prepared independently of level for static test, while a single bitstream is prepared for each level @ a profile for dynamic test.

Legend:

S — Bitstream is intended for functional test

D — Bitstream is intended for dynamic test

X — Bitstream is for functional and dynamic test

Categories	Bitstream	Donated by	Bitstream Name	Profile Name	
				Simple Scalable	Advanced Simple
				L0	L3b
General	SCS-12	PacketVideo	pv_scs12.bits	X	
	SCS-12_e	PacketVideo	pv_scs12_e.bits	X	
	SCS-13	PacketVideo	pv_scs13.bits	X	
	SCS-13_e	PacketVideo	pv_scs13_e.bits	X	
	SCS-14	PacketVideo	pv_scs14.bits	X	
	SCS-14_e	PacketVideo	pv_scs14_e.bits	X	
	SCS-15	PacketVideo	pv_scs15.bits	X	
	SCS-15_e	PacketVideo	pv_scs15_e.bits	X	
	A1GE-10	Philips	mobile_a1ge10.bits		X
	A1GE-11	Philips	stefan_a1ge11.bits		X
	A1GE-12	Philips	mobile_a1ge10.bits		X
	A1GE-13	Philips	stefan_a1ge13.bits		X

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