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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

Foreword

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The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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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*.

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.

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.

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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