
**Information technology — Coding of
audio-visual objects —**

**Part 27:
3D Graphics conformance**

**AMENDMENT 4: Conformance for efficient
representation of 3D meshes with multiple
attributes**

*Technologie de l'information — Codage des objets audio-visuels —
Partie 27: Conformité aux graphiques 3D*

*AMENDEMENT 4: Conformité pour une représentation efficace de
mailles en 3D avec attributs multiples*



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2012

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

Amendment 4 to ISO/IEC 14496-27:2009 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information Technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

IECNORM.COM : Click to view the full PDF of ISO/IEC 14496-27:2009/Amd 4:2012

Information technology — Coding of audio-visual objects —

Part 27:

3D Graphics conformance

AMENDMENT 4: Conformance for efficient representation of 3D meshes with multiple attributes

Before 4.2.4 "Animation bitstreams", add:

4.2.3.4 Region-based representation of 3D meshes with multiple attributes

4.2.3.4.1 Introduction

The **IndexedRegionSet (IRS)** node is based on the classic IndexedFaceSet (IFS) one but, thanks to its associated **Region** node, it allows to group the faces of an IFS into subsets, or *regions*, to represent more naturally and code more efficiently 3D meshes of which some vertices have multiple attributes (colors, normal vectors or texture coordinates).

4.2.3.4.2 Conformance points

4.2.3.4.2.1 Covered functionalities

The single conformance point for IRS covers the decoding of the BIFS-encoded IRS and Region nodes and their fields. The following Subclauses specify the normative tests for verifying conformance of IRS bitstreams and decoder. These normative tests make use of test data (bitstream test suites) provided as an electronic annex to this document.

4.2.3.4.3 Bitstream conformance

4.2.3.4.3.1 Conformance requirements

BIFS streams containing IRS and Region nodes shall comply with the specifications in 4.3.6.2 and 4.3.6.3 of ISO/IEC 14496-16:2011/Amd.1:2011.

4.2.3.4.3.2 Measurement procedure

The syntax of BIFS streams containing IRS and Region nodes shall meet the requirements of 4.3.6.2 and 4.3.6.3 of ISO/IEC 14496-16: 2011/Amd.1:2011. The rendering functionality must be observed visually.

4.2.3.4.3.3 Tolerance

There is no tolerance for bitstream syntax checking. The diagnosis is pass or fail.

4.2.3.4.4 Terminal conformance

4.2.3.4.4.1 Conformance requirements

A compliant decoder for IRS and Region nodes shall implement a decoding process equivalent to the one specified in ISO/IEC 14496-16:2011/Amd.1:2011.

4.2.3.4.4.2 Test bitstreams

Name	Description	Bitstream (.mp4)	Reference files (.{wrl,scr})
Barrel	Simple scene containing a single 3D object (a barrel) represented with a single IRS with 12 regions, with references to a texture coded with JPEG 2000.	barrel_region	barrel_region
Chair	Simple scene containing a single 3D object (a chair) represented with a single IRS with 220 regions, with references to a texture coded with JPEG 2000.	chair_region	chair_region
Earth	Simple scene containing a single 3D object (a geodesic sphere) represented with a single IRS with 46 regions, with references to a texture coded with JPEG 2000.	earth_region	earth_region