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Information technology — Coding of audio-visual objects —

Part 4: Conformance testing

AMENDMENT 26: Conformance levels and bitstreams for Open Font Format

Technologies de l'information — Codage des objets audiovisuels —

Partie 4: Essai de conformité

AMENDEMENT 26: Niveaux de conformité et bitstreams pour format de police ouvert

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Foreword

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

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member 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 shall not be held responsible for identifying any or all such patent rights.

Amendment 26 to ISO/IEC 14496-4:2004 was prepared by Technical Committee ISO/IEC/TC , *Information Technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

It defines the conformance test procedures for implementations compliant with ISO/IEC 14496-22 “Open Font Format” and ISO/IEC 14496-18 “Font compression and streaming”.

Information technology — Coding of audio-visual objects —

Part 4: Conformance testing

AMENDMENT 26: Conformance levels and bitstreams for Open Font Format

After 4.15, add the following subclause:

4.16 Font data conformance

4.16.1 Font data conformance levels

4.16.1.1 Open Font conformance levels

ISO/IEC 14496-22 "Open Font Format" (OFF) defines an extensible mechanism for font data representation that is based on the industry standard OpenType®[1] font format. The standard allows representation of font data with outline information encoded in one of the two basic formats – with TrueType™[2] outlines, and with outlines encoded using Compact Font Format (CFF, a compressed representation of Adobe PostScript®[3] Type 1 fonts) developed by Adobe Systems Incorporated.

Font data may be represented using collections of tables, which include a set of required tables, a set of tables that are related to TrueType outlines, a set of tables that are related to CFF outlines, and a set of relevant optional tables, e.g. the tables that support advanced typographic features and advanced text layout for complex scripts. The five different OFF conformance levels are defined, which correspond to the following functionality of fonts:

1) Fonts that contain only required tables and the subset of tables related to TrueType outlines with no hints (i.e. unhinted TrueType outlines only). Conformance at this level shall be claimed if the following set of tables is supported: 'cmap', 'head', 'hhea', 'hmtx', 'maxp', 'name', 'OS/2', 'post', 'loca' and 'glyf' (where hint instructions that may be part of glyph outline data should be ignored).

2) Fonts that contain only required tables and the full set of tables related to TrueType outlines (including TrueType hints). Conformance at this level shall be claimed only if the following set of tables is supported: 'cmap', 'head', 'hhea', 'hmtx', 'maxp', 'name', 'OS/2', 'post', 'cvt', 'fpgm' 'prep', 'loca' and 'glyf'.

3) Fonts that contain only required tables and the tables related to CFF outlines. Conformance at this level shall be claimed if the following set of tables is supported: 'cmap', 'head', 'hhea', 'hmtx', 'maxp', 'name', 'OS/2', 'post', 'CFF' and 'VORG'. Please note that this level may include OFF TTC fonts with CFF outlines, however, support for TTC font collections is not required for terminals claiming compliance at this level.

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1) OpenType is a registered trademark of Microsoft Corporation.

2) TrueType is a trademark of Apple Inc.

3) PostScript is a registered trademark of Adobe Systems Incorporated.

4) Fonts supporting embedded bitmaps. Conformance at this level shall be claimed if a font supports any of the previously identified subsets of tables (Levels 1 – 3), plus the tables related to bitmap glyphs 'EBDT', 'EBLC' and 'EBSC'.

5) Fonts supporting complex languages scripts. Conformance at this level shall be claimed if a font supports any of the previously identified subsets of tables (Levels 1 – 3), plus additional optional advanced typographic tables: 'BASE', 'GDEF', 'GPOS', 'GSUB' and 'JSTF'.

4.16.1.2 Font compression and streaming conformance levels

Clause 6 of ISO/IEC 14496-18 defines MPEG-4 Text profiles and levels. Simple and Advanced Simple text profiles limit font capabilities to using fonts with TrueType outlines only, while Main text profile provides for full-featured font data supporting either TrueType or CFF outlines.

MPEG terminals that claim compliance with Simple text profile SHALL be able to render OFF font data conformant to Level 1 defined in 4.16.1.1. MPEG terminals claim compliance with Advanced Simple text profile SHALL be able to render OFF font data conformant to Levels 1, 2, 4 and 5. MPEG terminals that claim compliance to Main text profile SHALL be able to render OFF font data conformant with all five OFF conformance levels.

In addition to three different text profiles, ISO/IEC 14496-18 also defines different levels of text profile. In each Text Profile, Level 1 supports rendering of resident fonts only presented in OFF, while Level 2 and Level 3 provide additional support for streaming of uncompressed and compressed font data, correspondingly, in the format defined in Clause 5 of ISO/IEC 14496-18.

4.16.2 Bitstream conformance

4.16.2.1 Conformance requirements

Each font data bitstream shall comply with the syntactic and semantic requirements specified in ISO/IEC 14496-22 and ISO/IEC 14496-18 (where applicable).

4.16.2.2 Tolerance

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

4.16.3 Terminal conformance

4.16.3.1 Conformance requirements

This subclause defines procedures to verify conformance of terminals. Each decoder that claims compliance to one of the conformance levels specified in 4.16.1 shall be able to decode all required and optional tables that are relevant to that conformance level.

4.16.3.2 Conformance test procedure

Tests are performed using error free input test sequences (bitstreams). Terminals shall test and verify the presence of necessary font tables and the validity of data within those tables. Should a test bitstream contain any additional (optional) tables that are not covered by the specific conformance level, the table should be ignored for the purpose of terminal conformance testing.

4.16.4 Test sequences

Tables AMD26.1 and AMD 26.2 describe the test sequences to be used for terminal conformance testing.

Table AMD26.1 — OFF Test Suite Information

Bitstream name	Number of glyphs	Character set	Supported tables	Conformance levels
courier_min.ttf	94	Latin 1 (partial subset)	OS/2 cmap glyf head hhea hmtx loca maxp name post	This bitstream shall be used for terminal conformance tests of Open Font solutions at OFF level 1: Unhinted TrueType outlines only.
courier_complex.ttf	1127	Latin 1 Latin 1 supplement Latin Ext. A Greek Cyrillic Hebrew Arabic Arabic Presentation Forms A Arabic Presentation Forms B (partial subsets)	EBDT EBLC GDEF GSUB OS/2 VDMX cmap cvt fpgm gasp glyf head hhea hmtx loca maxp name post prep	This bitstream shall be used for terminal conformance tests of Open Font solutions at OFF levels 2, 4 and 5: Hinted TrueType outlines and advanced typographic features (tables related to advanced typographic features shall be ignored when testing OFF level 2 and OFF level 4 compliance).

courier_cff.otf	94	Latin 1 (partial subset)	CFF OS/2 cmap head hhea hmtx maxp name post	This bitstream shall be used for terminal conformance tests of Open Font solutions at OFF level 3: CFF outlines only.

Table AMD26.2 — Test Suite Information for MPEG-4 Text profiles

Bitstream name	Name of the font file encoded within the bitstream	Content description and relevant conformance levels
courier_min_ttf.mp4	courier_min.ttf	This bitstream contains uncompressed font with TrueType outlines and shall be used for conformance testing of MPEG terminals claiming compliance to Simple, Advanced Simple and Main text profiles at Levels 2 and 3.
courier_min_cmp.mp4	courier_min.ttf	This bitstream contains compressed font with TrueType outlines (only 'glyf' table has been compressed) and shall be used for conformance testing of MPEG terminals claiming compliance to Simple, Advanced Simple and Main text profiles at Level 3.
courier_complex_ttf.mp4	courier_complex.ttf	This bitstream contains uncompressed font with TrueType outlines and shall be used for conformance testing of MPEG terminals claiming compliance to Advanced Simple and Main text profile at Levels 2 and 3.
courier_complex_cmp.mp4	courier_complex.ttf	This bitstream contains compressed font with TrueType outlines (only 'glyf' table has been compressed) and shall be used for conformance testing of MPEG terminals claiming compliance to Advanced Simple and Main text profile at Level 3.
courier_cff.mp4	courier_cff.otf	This bitstream contains uncompressed font with CFF outlines and shall be used for conformance testing of MPEG terminals claiming compliance to Main text profile at Levels 2 and 3.

NOTE The conformance testing of MPEG terminals claiming compliance to Level 1 of corresponding Text profiles should be done using the original font files defined in **Table AMD26.1.**