

# American National Standard

INCITS/ISO/IEC 9541-4:2009[R2014]

(ISO/IEC 9541-4:2009, IDT)

Reaffirmed as  
INCITS/ISO/IEC 9541-4:2009 (R2019)

*Information technology - Font information  
interchange - Part 4: Harmonization to Open  
Font Format*

**Developed by**



*Where IT all begins*



## INCITS/ISO/IEC 9541-4:2009[R2014]

### PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

**Adopted by INCITS (InterNational Committee for Information Technology Standards) as an American National Standard.**

Date of ANSI Approval: 11/21/2014

Published by American National Standards Institute,  
25 West 43rd Street, New York, New York 10036

Copyright 2014 by Information Technology Industry Council  
(ITI). All rights reserved.

These materials are subject to copyright claims of International Standardization Organization (ISO), International Electrotechnical Commission (IEC), American National Standards Institute (ANSI), and Information Technology Industry Council (ITI). Not for resale. No part of this publication may be reproduced in any form, including an electronic retrieval system, without the prior written permission of ITI. All requests pertaining to this standard should be submitted to ITI, 1101 K Street NW, Suite 610, Washington DC 20005.  
Printed in the United States of America

This is a preview of "INCITS/ISO/IEC 9541-...". Click here to purchase the full version from the ANSI store.

## Contents

Page

Foreword .....	iv
Introduction.....	v
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions .....	2
4 Harmonization to Open Font Format.....	2
4.1 Harmonization of the elements in OFF "head" table.....	2
4.2 Harmonization of the elements in OFF "name" table.....	5
4.3 Harmonization of the elements in OFF "hhea" table.....	6
4.4 Harmonization of the elements in OFF "hmtx" table.....	7
4.5 Harmonization of the elements in OFF "vhea" table.....	8
4.6 Harmonization of the elements in OFF "vmtx" table.....	9
4.7 Harmonization of the elements in OFF "maxp" table.....	10
4.8 Harmonization of the elements in OFF "kern" table.....	10
4.9 Harmonization of the elements in OFF "post" table.....	12
4.10 Harmonization of the elements in OFF "CFF" table.....	12
4.11 Harmonization of the elements in OFF "OS/2" table.....	17
4.12 Harmonization of the elements in OFF "PCLT" table.....	21
4.13 Harmonization of the elements in OFF "VORG" table.....	22
4.14 Harmonization of the elements in OFF "VDMX" table.....	23
5 Harmonization to the glyph names in OFF file.....	23
6 Layout Tag Registry and ISO/IEC 10036.....	23
Annex A (informative) Harmonization of numerical properties to OFFS.....	24
A.1 General.....	24
A.2 Comparison of the definitions of metric properties in OFFS and ISO/IEC 9541.....	24
A.2.1 Horizontal metric properties.....	24
A.2.2 Vertical metric properties.....	25
A.3 Harmonization of the numerical elements in OFF tables.....	26
A.3.1 Harmonization of the elements in OFF "head" table.....	26
A.3.2 Harmonization of the elements in OFF "hhea" table.....	26
A.3.3 Harmonization of the elements in OFF "hmtx" table.....	27
A.3.4 Harmonization of the elements in OFF "vhea" table.....	28
A.3.5 Harmonization of the elements in OFF "vmtx" table.....	29
A.3.6 Harmonization of the elements in OFF "kern" table.....	30
A.3.7 Harmonization of the elements in OFF "post" table.....	30
A.3.8 Harmonization of the elements in OFF "CFF" table.....	31
A.3.9 Harmonization of the elements in OFF "OS/2" table.....	31
A.3.10 Harmonization of the elements in OFF "PCLT" table.....	33
A.3.11 Harmonization of the elements in OFF "VORG" table.....	35
Bibliography.....	36

## 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.

ISO/IEC 9541-4 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 34, *Document description and processing languages*.

ISO/IEC 9541 consists of the following parts, under the general title *Information technology — Font information interchange*:

- *Part 1: Architecture*
- *Part 2: Interchange format*
- *Part 3: Glyph shape representation*
- *Part 4: Harmonization to Open Font Format*

This is a preview of "INCITS/ISO/IEC 9541-...". [Click here to purchase the full version from the ANSI store.](#)

## Introduction

ISO/IEC 9541 is a font information interchange standard and is designed to be independent of any concrete font file format. The Open Font Format (ISO/IEC 14496-22) is a font file format specification that is based on the TrueType font file format. With regard to the handling and utilization of the typographic properties stored in OFF file, ISO/IEC 14496-22 describes the implementations on Microsoft Windows or IBM OS/2 only. Therefore, ISO/IEC 14496-22 does not specify the method for defining a font resource in ISO/IEC 9541 architectures from a given OFF file, because it is out of the scope. ISO/IEC 9541-4 fills the gap between OFF file and font resource in ISO/IEC 9541.

This is a preview of "INCITS/ISO/IEC 9541-...". [Click here to purchase the full version from the ANSI store.](#)

This is a preview of "INCITS/ISO/IEC 9541-...". Click here to purchase the full version from the ANSI store.

# Information technology — Font information interchange —

## Part 4: Harmonization to Open Font Format

### 1 Scope

ISO/IEC 9541 specifies the architecture of font resources, as well as the formats for font interchange among information processing systems. It also specifies the architecture and formats that can be used to construct font references in general electronic document interchange.

This part of ISO/IEC 9541 specifies the correspondences between ISO/IEC 9541 font resource and ISO/IEC 14496-22 Open Font Format file (OFF), to define ISO/IEC 9541 font resource from a given OFF file. The classification (required or optional), syntax, and possible values of the properties are defined in ISO/IEC 9541-1 and ISO/IEC 9541-2. The glyph shape representation and its interpretation are defined in ISO/IEC 9541-3.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 9541-1, *Information technology — Font information interchange — Part 1: Architecture*

ISO/IEC 9541-2, *Information technology — Font information interchange — Part 2: Interchange format*

ISO/IEC 9541-3, *Information technology — Font information interchange — Part 3: Glyph shape representation*

ISO/IEC 10036, *Information technology — Font information interchange — Procedures for registration of font-related identifiers*

ISO/IEC 10180, *Information technology — Processing languages — Standard Page Description Language (SPDL)*

ISO/IEC 14496-18, *Information technology — Coding of audio-visual objects — Part 18: Font compression and streaming*

ISO/IEC 14496-22, *Information technology — Coding of audio-visual objects — Part 22: Open Font Format*