INTERNATIONAL STANDARD

ISO/IEC 20060

Second edition
2010-07-01

Information technology — Open Terminal Architecture (OTA) — Virtual machine

Technologies de l'information — Architecture des terminaux ouverte (OTA) — Machine virtuelle

Reference number
ISO/IEC 20060:2010(E)

© ISO/IEC 2010

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.

COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2010

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

Contents

Page

© ISO/IEC 2010 – All rights reserved

 © ISO/IEC 2010 – All rights reserved

© ISO/IEC 2010 – All rights reserved

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 20060 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Cards and personal identification*.

This second edition cancels and replaces the first edition (ISO/IEC 20060:2001), which has been technically revised.

© ISO/IEC 2010 – All rights reserved

Introduction

This International Standard specifies the Open Terminal Architecture (OTA) consistent with requirements and capabilities defined by documents [1] thru [8] in the Bibliography.

The overall architecture of the OTA is described in Annex F and is based on a virtual machine (VM) that can be programmed using high-level languages such as Forth or C. For compactness and efficiency, a tokenised form has been developed for delivering compiled programs to terminals of all CPU types. This and other virtual machine related issues are explained in Clause 5.

This International Standard defines a set of functions to be implemented in terminals in terms of instructions for a virtual machine. With these functions the application programmer is able to generate application software that is compact, portable and certifiable on all OTA terminals.

The inclusion of a function is determined by three main criteria:

— core compactness,

— execution speed,

— security requirements.

In this International Standard, the word “shall” indicates mandatory behaviour. The word “will” indicates predicted or consequential behaviour. The word “may” indicates permitted behaviour. The phrase “may not” indicates prohibited behaviour.

© ISO/IEC 2010 – All rights reserved

Information technology — Open Terminal Architecture (OTA) — Virtual machine

1 Scope

This International Standard provides the specifications for the standard Open Terminal Architecture (OTA) kernel in several layers:

— definition of the virtual machine (VM);

— description of the services provided by the VM to terminal programmers;

— specification of a set of tokens representing the native machine language of the VM;

— specification of the format in which token modules are delivered to an OTA kernel for processing.

OTA defines a standard software kernel whose functions and programming interface are common across all terminal types. This kernel is based on a standard “virtual machine,” which is implemented on each CPU type and which provides drivers for the terminal's I/O and all low-level CPU-specific logical and arithmetic functions. High-level libraries, terminal programs and payment applications may be developed using these standard kernel functions.

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.

None.

© ISO/IEC 2010 – All rights reserved