INTERNATIONAL STANDARD

ISO/IEC 14478-1

First edition
1998-12-15

Information technology — Computer graphics and image processing — Presentation Environment for Multimedia Objects (PREMO) —

Part 1:
Fundamentals of PREMO

Technologies de l'information — Infographie et traitement d'images — Environnement de présentation d'objets multimédia (PREMO) —

Partie 1: Principes fondamentaux de PREMO

Reference number
ISO/IEC 14478-1:1998(E)

Contents

Page

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, government 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 JTC1. Draft International Standards adopted by the joint technical committees are circulated to the national bodies for voting. Publication as an International Standard requires approval by at least 75% of the national bodies casting a vote.

ISO/IEC 14478–1 was prepared by Joint Technical Committee ISO/IEC JTC1, *Information technology*, Subcommittee SC24, *Computer graphics and image processing*.

ISO/IEC 14478consists of the following parts under the general title *Information technology — Computer graphics and image processing — Presentation Environment for Multimedia Objects (PREMO):*

- *Part 1: Fundamentals of PREMO*
- *Part 2: Foundation Component*
- *Part 3: Multimedia Systems Services*
- *Part 4: Modelling, Rendering, and Interaction Component*

Additional parts may be defined as this work progresses.

Annexes A and B form an integral part of this part of ISO/IEC 14478. Annex C is for information only.

Introduction

The need for a coordinated method for addressing all aspects of the construction of, presentation of, and interaction with multimedia objects has led to the standardization of this Presentation Environment for Multimedia Objects. Multimedia means objects consisting of still computer graphics, moving computer graphics (animation), synthetic graphics of all types, audio, still images, moving images (including video), images coming from imaging operations, and any other content type or combination of content types that can be "presented". ISO/IEC 14478 is extensible and configurable, and allows the separate, incremental development of additional standardized and non–standardized components to meet the needs of application communities.

PREMO currently consists of the following parts:

Part 1: Fundamentals of PREMO

Contains a motivational overview of PREMO giving its scope, justification, and an explanation of key concepts, describes the overall architecture of PREMO, and specifies the common semantics for specifying the externally visible characteristics of PREMO objects in an implementation-independent way.

Part 2: Foundation component

This component lists an initial set of object types and non–object types useful for the construction of, presentation of, and interaction with multimedia information. Any conforming PREMO implementation shall support these object types.

Part 3: Multimedia Systems Services Component

Describes objects that provide an infrastructure for building multimedia computing platforms that support interactive multimedia applications dealing with synchronized, time-based media in a heterogeneous distributed environment.

Part 4: Modelling, Presentation, and Interaction Component

Describes objects which are needed for advanced computer systems using graphics, video, audio, or other types of presentable media enhanced by time aspects.

NOTE — Further internationally standardized components are expected to be developed within ISO/IEC JTC1/SC24 and by other subcommittees.

Information technology — Computer graphics and image processing — Presentation Environment for Multimedia Objects (PREMO) — Part 1: Fundamentals of PREMO

1 Scope

ISO/IEC 14478 specifies techniques for supporting interactive single, and multiple media applications which recognize and emphasize the interrelationships among user interfaces, multimedia applications, and multimedia information interchange.

ISO/IEC 14478 defines a flexible environment to encompass modular functionality and is extensible through the creation of future components, both within and outside of standards committees. It supports a wide range of multimedia applications in a consistent way, from simple drawings up to full motion video, sound, and virtual reality environments.

ISO/IEC 14478 is independent of any particular implementation language, development environment, or execution environment. For integration into a programming environment, the standard shall be embedded in a system dependent interface following the particular conventions of that environment. ISO/IEC 14478 provides versatile packaging techniques beyond the capabilities of monolithic single–media systems. This allows rearranging and extending functionality to satisfy requirements specific to particular application areas. ISO/IEC 14478 is developed incrementally with parts 1 through 4 initially available. Other components are expected to be standardized by ISO/IEC JTC1 SC24 or other subcommittees.

ISO/IEC 14478 provides a framework within which application–defined ways of interacting with the environment can be integrated. Methods for the definition, presentation, and manipulation of both input and output objects are described. Application–supplied structuring of objects is also allowed and can, for example, be used as a basis for the development of toolkits for the creation of, presentation of, and interaction with multimedia and hyper–media documents and product model data.

ISO/IEC 14478 is able to support construction, presentation, and interaction with multiple simultaneous inputs and outputs using multiple media. Several such activities may occur simultaneously, and the application program can adapt its behaviour to make best use of the capabilities of its environment.

ISO/IEC 14478 includes interfaces for external storage, retrieval and interchange of multimedia objects.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 14478. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 14478 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO/IEC 14478-2:1998, *Information technology — Computer graphics and image processing — Presentation Environment for Multimedia Objects (PREMO) — Part 2: Foundation Component.*

ISO/IEC 14478-3:1998, *Information technology — Computer graphics and image processing — Presentation Environment for Multimedia Objects (PREMO) — Part 3: Multimedia Systems Services.*

ISO/IEC 14478-4:1998, *Information technology — Computer graphics and image processing — Presentation Environment for Multimedia Objects (PREMO) — Part 4: Modelling, Rendering, and Interaction Component.*