INTERNATIONAL STANDARD

# ISO/IEC 10641

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# Information technology — Computer graphics and image processing — Conformance testing of implementations of graphics standards

*Technologies de l'information — Traitement informatisé de l'image et des graphiques — Essais de conformité de la mise en application des normes graphiques*


Reference number
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## 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. 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.

International Standard ISO/IEC 10641 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Sub-Committee SC 24, *Computer graphics and image processing*.

Annexes A and B of this International Standard are for information only.

## Introduction

This International Standard addresses conformance testing of implementations of graphics standards. Conformance testing is the method used to determine the adherence or non-adherence of an implementation under test (IUT) to a standard.

This International Standard specifies an approach for testing the conformance to computer graphics standards of products that claim to implement these standards. It addresses the conformance testing processes for all classes of graphics standards.

This International Standard defines a general framework of procedures and guidelines for conformance testing, together with definitions of terms and concepts.

The framework given in this International Standard, together with the Test Requirements document for a particular graphics standard, provides a description of the procedures to be followed to achieve successful conformance testing of products for conformance to a particular graphics standard.

The concept of conformance is central to every standard. The aims and benefits of a standard can be realized if there is a means of testing for conformance.

The main reasons for introducing a document on conformance testing in the area of computer graphics are:

- To promote standards that are developed in a way such that products can be tested for conformance to the standards' requirements;
- To promote that conformance is addressed in each standard;
- To promote test suites that are appropriately defined for testing products for conformance to all areas of the standard, and are of high quality;
- To promote test methods for similar standards that are developed in a consistent way;
- To promote conformance testing that is carried out in a consistent way throughout the international graphics community.

Users of this International Standard include:

- Developers of graphics standards;
- Implementors of graphics standards;
- Developers of graphics test suites;
- Testing laboratories;
- Certification bodies;
- Accreditation bodies.

Annexes A and B contain diagrams illustrating the relationships among the users of this International Standard and the information shared by them.

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## 1 Scope

This International Standard specifies a general framework for testing conformance to a computer graphics standard. The general framework described in this International Standard addresses the following six components:

- Conformance in the standard itself;
- Test Requirements document, defining what shall be tested for a computer graphics standard;
- Test Specifications document, addressing the test technique and the content of each test;
- Test method, defining the implementation of the Test Specification document, including the test software;
- Test procedures, defining the application of the test software, which consists of the procedures to be used in conformance testing;
- The establishment of test services.

This International Standard is applicable to all standards within the scope of the subcommittee within ISO/IEC JTC1 responsible for computer graphics and image processing.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard 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 7942:1985, *Information processing systems - Computer graphics - Graphical Kernel System (GKS) functional description.*

ISO/IEC 8632-1:1992, *Information technology - Computer graphics - Metafile for the storage and transfer of picture description information -Part 1: Functional specification.*

ISO/IEC 8632-2:1992, *Information technology - Computer graphics - Metafile for the storage and transfer of picture description information -Part 2: Character encoding.*

ISO/IEC 8632-3:1992, *Information technology - Computer graphics - Metafile for the storage and transfer of picture description information -Part 3: Binary encoding.*

ISO/IEC 8632-4:1992, *Information technology - Computer graphics - Metafile for the storage and transfer of picture description information -Part 4: Clear text encoding.*

ISO/IEC 8651-1:1988, *Information processing systems - Computer graphics - Graphical Kernel System (GKS) language bindings - Part 1: FORTRAN.*

ISO/IEC 8651-2:1988, *Information processing systems - Computer graphics - Graphical Kernel System (GKS) language bindings - Part 2: Pascal.*

ISO/IEC 8651-3:1988, *Information processing systems - Computer graphics - Graphical Kernel System (GKS) language bindings - Part 3: Ada.*

ISO/IEC 8651-4:1991, *Information technology - Computer graphics - Graphical Kernel System (GKS) language bindings - Part 4: C.*

ISO/IEC 8805:1988, *Information processing systems - Computer graphics - Graphical Kernel System for Three Dimensions (GKS-3D) functional description.*

ISO/IEC 8806-1:1988, *Information processing - Computer graphics - Graphical Kernel System for Three Dimensions (GKS-3D) language bindings - Part 1: FORTRAN.*

ISO/IEC 8806-4:-[1], *Information technology - Computer graphics - Graphical Kernel System for Three Dimensions (GKS-3D) language bindings - Part 4: C.*

ISO/IEC 9592-1:1989/Amd.1:1992, *Information processing systems - Computer graphics - Programmer's Hierarchical Interactive Graphics System (PHIGS) - Part 1: Functional description Amendment 1.*

ISO/IEC 9592-2:1989/Amd.1:1992, *Information processing systems - Computer graphics - Programmer's Hierarchical Interactive Graphics System (PHIGS) - Part 2: Archive file format Amendment 1.*

ISO/IEC 9592-3:1989/Amd.1:1992, *Information processing systems - Computer graphics - Programmer's Hierarchical Interactive Graphics System (PHIGS) - Part 3: Clear text encoding of archive file Amendment 1.*

ISO/IEC 9592-4:1992, *Information processing systems - Computer graphics - Programmer's Hierarchical Interactive Graphics System (PHIGS) - Part 4: Plus Lumiere und Surfaces, PHIGS PLUS.*

1) To be published.

ISO/IEC 9593-1:1990, *Information processing systems - Computer graphics - Programmer's Hierarchical Interactive Graphics System (PHIGS) language bindings - Part 1: FORTRAN.*

ISO/IEC 9593-3:1990, *Information technology - Computer graphics - Programmer's Hierarchical Interactive Graphics System (PHIGS) language bindings - Part 3: Ada.*

ISO/IEC 9593-4:1992, *Information technology - Computer graphics - Programmer's Hierarchical Interactive Graphics System (PHIGS) language bindings - Part 4: C.*

ISO/IEC 9636-1:1991, *Information technology - Computer graphics - Interfacing techniques for dialogues with graphical devices (CGI) - Functional specification - Part 1: Overview, profiles and conformance.*

ISO/IEC 9636-2:1991, *Information technology - Computer graphics - Interfacing techniques for dialogues with graphical devices (CGI) -Functional specification - Part 2: Control.*

ISO/IEC 9636-3:1991, *Information technology - Computer graphics - Interfacing techniques for dialogues with graphical devices (CGI) - Functional specification - Part 3: Output.*

ISO/IEC 9636-4:1991, *Information technology - Computer graphics - Interfacing techniques for dialogues with graphical devices (CGI) - Functional specification - Part 4: Segments.*

ISO/IEC 9636-5:1991, *Information technology - Computer graphics - Interfacing techniques for dialogues with graphical devices (CGI) - Functional specification - Part 5: Input and echoing.*

ISO/IEC 9636-6:1991, *Information technology - Computer graphics - Interfacing techniques for dialogues with graphical devices (CGI) - Functional specification - Part 6: Raster.*

ISO/IEC 9637-1:-[2], *Information technology - Computer graphics - Interfacing techniques for dialogues with graphical devices (CGI) - Data stream binding - Part 1: Character encoding.*

ISO/IEC 9637-2:1992, *Information technology - Computer graphics - Interfacing techniques for dialogues with graphical devices (CGI) - Data stream binding - Part 2: Binary encoding.*

ISO/IEC 11072:1992, *Information technology - Computer graphics - Computer Graphics Reference Model.*

ISO/IEC Guide 2:1991, *General terms and their definitions concerning standardization and related activities.*

ISO/IEC Guide 23:1982, *Methods of indicating conformity with standards for third-party certification systems.*

ISO/IEC Guide 25:1990, *General requirements for the competence of calibration and testing laboratories.*

ISO/IEC Guide 28:1982, *General rules for a model third-party certification system for products.*

ISO/IEC Guide 45:1985, *Guidelines for the presentation of test results.*



2) To be published.