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Information Technology — User Interface Icons — Part 1: Introduction to and overview of icon standards

Technologies de l'information — Icônes d'interfaces utilisateurs — Partie 1: Normes d'icônes, introduction et généralités

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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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.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

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ISO/IEC TR 11581-1 was prepared by Technical Committee ISO/TC JTC1, *Information Technology*, Subcommittee SC SC35, *User Interfaces*.

This second edition cancels and replaces the first edition ISO/IEC 11581-1:2000.

ISO/IEC TR 11581 consists of the following parts, under the general title *Information Technology — User Interface Icons*:

- *Part 1: Introduction and overview of icon standards*
- *Part 2: Object icons*
- *Part 3: Pointer icons*
- *Part 5: Tool icons*
- *Part 6: Action icons*
- *Part 10: Framework and general guidance*
- *Part 40: Management of icon registration*

Introduction

Icons are used on Information and Communications Technology (ICT) products to facilitate interaction with their users. Icons can provide a language-independent means of communicating information to the user. They can facilitate the user's ability to learn, understand, and remember functional elements of the system, and aid in the manipulation of these elements. They are especially suitable for elements that are frequently used and where the meaning of the icon can be easily understood.

Typically, icons draw on a user's environment to provide a metaphorical representation of the user's tasks, objects, actions, and attributes. A metaphor provides an analogy to concepts already familiar to the user, from which the user can deduce the system's use and behaviour. Icons can express the metaphor directly, as graphical representations of the metaphorical objects. They may also directly represent a physical object.

Icons are distinguished from other user interface symbols by the fact that they represent underlying system functions. Icons represent the objects, pointers, controls and tools making up the domain of an application that users manipulate in doing their jobs. They can also represent status indicators used by the computer system to give information to the user and to mediate user interactions with software applications.

While the most common form of icons is as a graphical icon, icons can also be rendered in auditory or tactile modalities.

Information Technology — User Interface Icons — Part 1: Introduction to and overview of icon standards

1 Scope

ISO/IEC TR 11581-1 introduces the ISO/IEC 11581 series and provides developers and other icon standards users with an overview of currently available and future anticipated icon standards.

ISO/IEC TR 11581-1:

- describes the structure of parts that will be used to encompass all present and future icon standards
- introduces currently existing icon standards, whether they are parts of 11581 or they have their own separate numbers
- recognizes that currently existing standards will eventually be replaced by new parts
- will be revised as new parts ISO/IEC 11581 series become available, adding to or replacing the set of existing parts

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

icon

user interface symbol representing a function of the computer system

[ISO/ISC 11581-10, definition 3.1]

3 Applicability of icons

Icons can be used to represent user interface objects, actions, and/or attributes. While icons are often graphically (visually) presented in a user interface, they can also be presented aurally or tactilely.

The use of icons is most applicable to common user interface objects, actions, and/or attributes that are used repeatedly within an application and across multiple applications.

Icons can be used to:

- aid in immediate recognition of the user interface object, action, and/or attributes;
- to save presentation space or time;
- provide representation of the user interface object, actions, and/or attributes that is culturally and linguistically independent and thus accessible to the widest possible range of users.

The ISO/IEC 11581 series of standards deals with icons that are generally applicable to a wide range of applications.

4 Overview of current icon standards

4.1 ISO/IEC 11581-2 Object icons

ISO/IEC 11581-2 addresses only object icons, which are icons that represent functions by association with an object and that can be moved and opened.

Specific icons in ISO/IEC 11581-2 include:

- Document
- Folder
- Filing cabinet
- Mail
- Printer
- Telephone
- Facsimile
- Diskette
- Wastepaper can
- Calendar
- Calculator
- Clock
- Display
- Keyboard
- Mouse
- Network
- Audio device

4.2 ISO/IEC 11581-3 Pointer icons

ISO/IEC 11581-3 addresses pointer icons that are logically attached to a physical input device, and that the user manipulates to interact with other screen elements. It describes user interaction with and appearance of pointer icons on the screen. It also specifies how pointer icons on a screen change appearance to give users feedback.

Specific icons in ISO/IEC 11581-3 include:

- Text pointer

- Border control pointer
- Cross hair pointer
- Busy indicator (actually a Busy pointer)

4.3 ISO/IEC 11581-5 Tool icons

ISO/IEC 11581-5 addresses tool icons that represent functions by association with real life tools. ISO/IEC 11581-5 describes user interaction with and appearance of tools on the screen. It also specifies the relationship between tools and pointers.

Specific icons in ISO/IEC 11581-5 include:

- Text input
- Straight Line Draw
- Freehand Draw
- Arc draw
- Circle draw
- Rectangle draw
- Polygon draw
- Flood fill
- Color pick-up
- Erase
- Brush paint
- Gradation fill
- Spray Paint
- Rectangular area select
- Irregular area select
- Rotate
- Flip
- Group
- Ungroup
- Background move
- Zoom

4.4 ISO/IEC 11581-6 Action icons

ISO/IEC 11581-6 addresses action icons that represent actions by association with objects that prompt the user to recall the intended actions. ISO/IEC 11581-6 describes user interaction with and appearance of action icons on the screen.

Specific icons in ISO/IEC 11581-6 include:

- Help
- Find
- Save
- Create new (document)
- Open
- Save
- Print preview
- Print
- Cut
- Copy
- Paste
- Undo
- Redo
- Increase indent
- Decrease indent
- Enumerate/Number
- Itemize/bullet
- Make bold
- Italicize
- Underline
- Align left
- Align right
- Center
- Full justify

4.5 ISO/IEC 18035 Multimedia control icons

ISO/IEC 18035 applies to icons that are shown on a computer screen, that users can manipulate and interact with, and that represent computer system functions. ISO/IEC 18035 describes user interaction with and the appearance of multimedia control icons on the screen.

ISO/IEC 18035 defines a consistent set of icons and related functions that are presented by multimedia applications on a computer screen and that users interact with to control such applications. These control icons typically represent actions by association with conventional controls on hardware devices (for example video recorders and compact disk players) that prompt the user to recall the intended actions.

Specific icons in ISO/IEC 18035 include:

- Play
- Stop
- Pause
- Replay
- Play backward
- Scan backward
- Scan forward
- Fast forward
- Rewind
- Step forward
- Step backward
- Record
- Loop
- Set volume
- Mute
- Speaker on
- Go to beginning
- Go to previous
- Go to next
- Go to end
- Main menu
- Eject

- Help
- Snapshot
- Save

4.6 ISO/IEC 18036 Web browser icons

ISO/IEC 18036 applies to icons that are shown on a computer screen, that users can manipulate and interact with, and that represent data or computer system functions. ISO/IEC 18036 describes user interaction with and the appearance of World Wide Web toolbar icons on the screen.

ISO/IEC 18036 defines a consistent set of icons and related functions that are presented by World Wide Web browser applications on a computer screen and that users interact with to control such applications. These toolbar icons typically represent actions by association with objects in the real world and conventional controls on hardware, and that prompt the user to recall the intended actions.

Specific icons in ISO/IEC 18036 include:

- Back
- Forward
- Reload/refresh
- Home
- Search
- Print
- Stop
- Bookmark/favorites
- Save (page)

4.7 ISO/IEC 24738 Multimedia link attribute icons

ISO/IEC 24738 defines a consistent set of icon symbols and related attributes that are presented on a computer screen and with which users interact to decide whether or not to take the associated link. These symbols represent attributes of the link and/or destination of the link.

ISO/IEC 24738 applies to icons that are shown on a computer screen in conjunction with a link also shown on that screen. It describes user interaction with and the appearance of link attribute icons on the screen.

Specific attributes of links described in ISO/IEC 24738 include:

- Fixed / temporal links
- On-page / off-page links
- Ongoing links
- Computed links
- Link load

- Link history

4.8 ISO/IEC 24755 Icons for mobile computing

ISO/IEC 24755 defines a consistent set of screen icons and symbols – together with their related functions – that are presented by personal mobile communications devices (e.g. mobile phones and personal digital assistants). Those devices have an accessible touch screen by stylus pen or finger, or button access with personalized application, that users interact with to control the information presented by these devices.

ISO/IEC 24755 provides a consistent set of icon graphics for performing personal information management-related applications and controlling the device. These icons and symbols represent typical functions and statuses by their association with conventional controls and functions on real world objects.

Specific icons in ISO/IEC 24755 include:

- System setting
- Address book application
- Still picture application
- Movie application
- Audio application
- Television application
- Web browser application
- Dictionary application
- Note book application
- Game application
- Scheduler application
- Mail application
- Wireless carrier connection
- Wireless network connection
- Keypad lock
- Data security lock
- Message
- Microphone
- Vibration
- Ringing
- Battery status indicator

5 Proposed future structure of Icon standards

5.1 ISO/IEC TR 11581-1

The previous part 1 of the ISO/IEC 11581 series is being merged into the new Part 10. The new Part 1 is now a Technical Report that will be updated regularly so that it contains current information on the existing and proposed set of icon standards. It is intended to be a first resource for people wanting to understand the state and content of these icon standards.

5.2 ISO/IEC 11581-3

Because of the unique nature of pointers, it is likely that the current ISO/IEC 11581-3 will continue to have its own unique role within the ISO/IEC 11581 series. It is expected that the area of pointers will be revisited and possibly expanded when this part comes up for renewal.

5.3 Other currently existing icon standards

It is the intent that all icon standards (other than those specifically discussed in clause 6 of ISO/IEC TR 11581-1), when they come up for renewal, be transformed from their existing parts into the new structure described in this clause.

5.4 Proposed 11581-10 – Framework and general guidance on icons

ISO/IEC 11581-10 recognizes that icons are more than just symbols used on computer screens. Icons are interaction objects used by computer interfaces to accomplish various purposes. While icons are generally rendered graphically, other textual, auditory, and tactile renderings can provide greater accessibility to their underlying functionalities.

ISO/IEC 11581-10 provides a framework as a basis for organizing information related to the creation and use of user interface icons.

ISO/IEC 11581-10 provides guidance for developers and designers creating and/or using icons and provides a basis for the standardization of icons. It also provides a framework for creating future icon standards as parts of ISO/IEC 11581 and for identifying icon related information to be used in any accompanying icon registries.

NOTE ISO/IEC 11581-10 is currently being developed in parallel with ISO/IEC TR 11581-1.

5.5 Proposed 11581-20 – Guidance on families of icons

11581-20 will provide guidance to handle various issues related to creating families of icons. This will include variations of one or more icons intended to represent

- states information in an icon
- combinations or specializations of icons

5.6 Proposed 11581-30 – Developing and evaluating icons

11581-30 will provide guidance on developing and evaluating prospective icons. This will include

- a procedure for determining compliance of implemented icons with the various parts of the icon standard
- criteria for accepting "equivalent" icons as being in compliance

5.7 Proposed 11581-40 – Icon registration and icon libraries

11581-40 will provide a basis for establishing an icon registry that would consolidate all standardized icons in a single location. This will include

- all relevant information on each standardized icon
- a procedure for generating unique identifiers to be assigned to standardized icons
- a basis for individual icon developers to develop sets of icons that users could obtain for one or more platforms

NOTE Once the icon registry is established, it is the intent that all current and future icons will be moved into the icon registry, and that individual parts and standards dealing with specific icons will be withdrawn.

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Secretariat of ISO/IEC JTC 1/SC 35 AFNOR — Philippe Magnabosco
11 rue Francis de Pressensé 93571 - La Plaine Cedex Saint-Denis - France
Telephone: +33 1 41 62 85 02; Facsimile: 33 1 49 17 90 00;
e-mail: philippe.magnabosco@afnor.org

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MB¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment²	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
DE			ge	<p>Nothing is said about any specific circumstances WHEN to use icons and how this issue will be treated in any of the future icon standards.</p> <p>This comment does address a general issue which should be part of any of the intended future icon standards. It could be placed in the 11581-10, framework and general guidance.</p> <p>Nevertheless it should be mentioned in the overview, if the issue is treated. Icons are very useful under certain circumstances, conditions or context of use. E. g, if the user will activate a function rather frequently, an icon in a toolbar would be quite reasonable. Icons for functions which are not often used would be not helpful.</p>	Preconditions describing when to implement an icon should be considered – and therefore part of this TR.	<p>Approved.</p> <p>1. Material will be added to the introduction to indicate that the PDTR will address this matter</p> <p>2. Material will also be added to the introduction to make it clear that the 11581 series is not confined to visual icons, but includes icons in all modalities.</p> <p>3. A new clause will be inserted between the existing clauses 2 and 3 to present some information on the appropriateness of using icons.</p>
	throughout		ed	Clause numbers were missing from the PDTR.		The document format will be checked to ensure that it complies with the ISO template.
	3.1		te	The definition of "icon" is being changed based on comment US-1 from the CD ballot on 11581-10 (SC35N1273)	Need to make the definition in 11581-1 consistent	The new part 10 definition will be inserted in part 1

¹ **MB** = Member body (enter the ISO 3166 two-letter country code, e.g. CA for Canada; comments from the ISO/CS editing unit are identified by **)

² **Type of comment:** **ge** = general **te** = technical **ed** = editorial

NOTE Columns 1, 2, 4, 5 are compulsory.