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Information technology — User system interfaces and symbols — Icon symbols and functions —

Part 3: Pointer icons

Technologies de l'information — Interfaces pour système utilisateur et symboles — Symboles et fonctions d'icônes —

Partie 3: Icônes de pointeurs

Reference number
ISO/IEC 11581-3:2000(E)

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

Attention is drawn to the possibility that some of the elements of this part of ISO/IEC 11581 may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 11581-3 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 35, *User interfaces*.

ISO/IEC 11581 consists of the following parts, under the general title *Information technology — User system interfaces and symbols — Icon symbols and functions*:

— *Part 1: Icons — General*

— *Part 2: Object icons*

— *Part 3: Pointer icons*

— *Part 4: Control icons*

— *Part 5: Tool icons*

— *Part 6: Action icons*

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Introduction

Pointers are those icons that are used to indicate a focus within a system or application. Subsequent actions at the focus may position, select or manipulate other screen objects. Users typically manipulate pointer icons by controlling a mouse or other input device, but keyboard input may also be used to control the pointer icon. Systems also use pointer icons to reflect a change in status. This part of ISO/IEC 11581 specifies the presentation and operation of pointer icons for indicating, selecting, or manipulating objects on a screen.

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Information technology — User system interfaces and symbols — Icon symbols and functions —

Part 3:
Pointer icons

1 Scope

ISO/IEC 11581 applies to icons that are shown on a screen, that users can manipulate and interact with, and that represent data or computer system functions. This part of ISO/IEC 11581 addresses only pointer icons. Pointers are icons that are logically attached to a physical input device, and that the user manipulates to interact with other screen elements, see ISO/IEC 11581-1. This part 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. Other types of icons are covered in other parts of the standard that are listed in the Foreword.

2 Conformance

A system, application, or set of one or more icons conforms to this part of ISO/IEC 11581 if all pointer icons available to the user in the system or application conform to 6.1 and clause 7 of this part of ISO/IEC 11581, and to clause 5 and subclause 6.1 of ISO/IEC 11581-1:2000.

3 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 11581. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO/IEC 11581 are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO/IEC 11581-1:2000, *Information technology — User system interfaces and symbols — Icon symbols and functions — Part 1: Icons — General.*

4 Terms and definitions

For the purposes of this part of ISO/IEC 11581, the terms and definitions given in ISO/IEC 11581-1 and ISO/IEC 11581-2, and the following apply.

4.1
cursor
special indicator used for text manipulation to mark the active position

NOTE 1 ISO/IEC 10741-1, *Information technology — User system interfaces — Dialogue interaction — Part 1: Cursor control for text editing*, deals with cursor control.

NOTE 2 A cursor is not a pointer icon, and both a cursor and a pointer icon can be available and visible at the same time.

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4.2
gain
ratio of absolute motion of the pointer icon on the screen to absolute motion of the input device as applied by the user

4.3
hot spot
portion of a pointer icon, typically a single pixel, that identifies for both the system and the user where on the screen the next action may occur, and that allows interaction with other system objects

4.4
pointing device
input device that enables user control of the pointer icon

NOTE It may be an indirect pointing device such as a mouse or a track ball, or a direct pointing device such as a stylus or a touch screen.

5 Pointer icon functions

Pointer icon functions include indicating, selecting, and manipulating. Mechanisms to differentiate among these functions include clicking on a mouse button, and pressing a keyboard key. Cancellation of the selection may be implemented by similar actions.

5.1 Indicating function

The indicating function provides the user with the capability of indicating a location on the screen. The purpose of the indicating function is to identify for the user and the system where the next user interaction, such as selecting an icon or choosing an option from a menu, could occur.

5.2 Selecting function

The selecting function provides the user with the capability of explicitly identifying an object(s) that is intended as a target(s) for subsequent action. Selecting functions include selecting a single object, selecting multiple objects, and selecting an area.

NOTE When a mouse is used the selecting function is typically activated by clicking once on a mouse button.

5.3 Manipulating function

The manipulating function provides the user with the capability to further control the objects selected, including editing areas of text and graphics.

NOTE When a mouse is used as the input device, the manipulating function is typically activated by holding down a mouse button while moving the pointer icon across the screen.

6 Pointer requirements and recommendations

6.1 Requirements

The pointer shall be logically attached to one or more physical pointing devices available to the user for interaction with other screen elements. Pointer icons can have many shapes. The shape of the pointer icon shall indicate to the user the function available in the current state of the system. All pointers shall have at least one of the following functions: indicating, selecting, and manipulating.

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6.1.1 Display

The pointer icon, whether stationary or moving, shall always be clearly visible on the screen against the current background. No other screen element shall overlay the pointer.

Changes in colour, highlighting, shading, or outlining may be used to enhance pointer icon appearance when the background changes or to indicate a change in state or mode. However, a change in colour alone shall not be used to indicate a change in state or mode.

NOTE Changes in the state of a pointer icon without change in shape may be indicated by easily distinguishable changes in contrast, such as filling or outlining.

Only one pointer icon shall be available for use at any given time.

NOTE This does not preclude a system where several pointer icons are displayed for cooperative working.

6.1.2 Focus

The pointer icon shall indicate to the system the user's focus, that is, where the next user action would occur if taken.

NOTE There are two contemporary means of indicating the user's focus to the system. Firstly by the user moving the pointer icon followed by an explicit user action, such as clicking a mouse button, and secondly by the user moving the pointer icon without any further user action is sufficient to move the system's focus.

6.1.3 Hot spot

Pointer icons shall have a hot spot. The hot spot is typically a single pixel that provides:

— a visible indication to the user of the point of focus, that is, the point at which the next user-selected action (interaction) will occur,

— a reference point so that the system can track where the pointer icon is located on the display screen, and

— interaction of the user and the system by superimposing the hot spot of the pointer icon onto the sensitive area of a screen element.

The location of the hot spot shall be distinguishable by the user through its logical placement within the shape of the pointer icon, but it does not need to be specifically identified. For example, for a cross-hair pointer icon the hot spot is at the intersection of the lines, while for the default pointer icon graphic, the hotspot is at the tip of the arrow (see Figure 1).

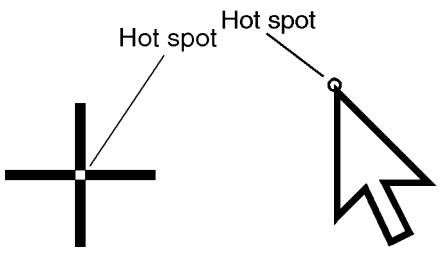


Figure 1 — Indication of hot spots

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6.1.4 Pointer icon movement

Pointer icon movement shall reflect user control accomplished through use of a pointing device. The gain may change in response to a magnification of the screen image. The capability to change the default gain shall be provided for the user.

6.1.5 Feedback

The system shall provide feedback to reflect a change in system state or to indicate a different function available to the user.

When the system or application is busy and therefore temporarily unavailable, the pointer icon shall change to indicate that state.

When the user selects an object, the pointer icon and/or object shall change to confirm the selection.

NOTE For example, the default pointer icon may change to a pencil or a paintbrush.

When the user invokes an action on an object, the pointer icon and/or the object shall change to confirm the action.

The pointer icon shape shall change consistently and should be implemented for the user in a predictable manner.

6.2 Recommendations

6.2.1 Colour

The pointer icon should be filled black (or filled white on a black background).

6.2.2 Feedback

When the user moves the pointer icon over different areas of the screen, the pointer icon should change to reflect new functions as they become available.

NOTE For example, the default pointer icon may change to a border control pointer icon (see 8.2) when the hotspot is superimposed on a window border.

7 Default pointer icon specification

The default pointer icon shall be available at the first time start-up of the graphical user interface and at other appropriate times.

Functions:

The following functions shall be available with the default pointer icon:

— indicating,

— selecting,

— opening, and

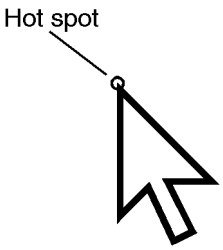
— manipulating.

Specific instance:

An outlined, single headed arrow.

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Graphic:



Specific variations:

left, right, up or down orientated, and
outline, with an opaque fill colour, or solid. The outline should be continuous and contrast with its fill colour.

8 Recommendations for other pointer icon graphics

The system may use many variations in pointer icon graphic to provide feedback. The new state may be user-controllable or may indicate that the pointer icon is not currently available for user invoked functions. If the system or application uses any graphic in this section it should be used for the function specified.

If a system or application uses a pointer icon that serves a function specified in this clause it is highly recommended that it should have the appearance of the pointer icon graphic specified in this clause.

8.1 Text pointer icon

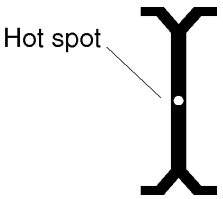
Function:

To indicate that the pointer icon is within an area where text can be typed, selected, or manipulated.

Specific instance:

An “I” bar

Graphic:



Specific variation:

— The vertical shaft should change angle to support italic text.

8.2 Border control pointer icons

Function:

To select and move a window border or corner.

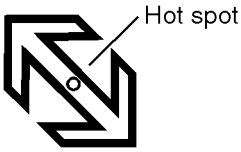
Specific instance:

Double headed arrows.

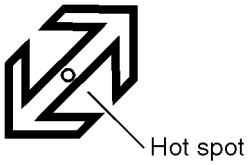
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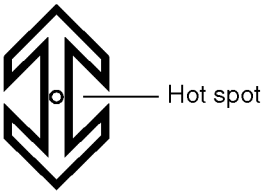
Graphics:



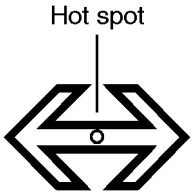
Horizontal and vertical re-sizing
(upper left and lower right window corners).



Horizontal and vertical re-sizing
(upper right and lower left window corners).



Vertical re-sizing
(upper or lower window borders).



Horizontal re-sizing
(left or right window borders).

Specific variation:

— May be outline or solid. The outline should be continuous and contrast with it's fill colour.

8.3 Cross-hair pointer icon

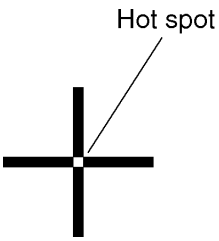
Function:

To make fine point indication, selection and manipulation, for example, indicating the location to start drawing a line.

Specific instance:

Cross hairs as in a gun sight.

Graphic:



Specific variation:

At the junction of the lines may be a gap several pixels wide.

8.4 Busy indicator

The system may use a change in pointer icon shape to indicate a "busy" state where the user must wait for the application or system to finish processing before continuing work and resets to it's original shape upon completion.

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This pointer icon is sometimes called a “status indicator”. However, there are other system graphics called status indicators that are not pointer icons because they are not logically connected to a user-input device and have no hotspots. Such status indicators include progress indicators, thermometers, and volume indicators.

If a “busy” state can be interrupted by the user, the presented pointer icon should be clearly distinguishable as capable of accepting an interruption or otherwise.

Function:

To indicate a “busy” state.

Specific instances:

Objects used to show the passage of time.

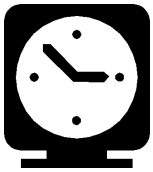
Graphics:



Hour glass



Wrist watch



Desk clock

Specific variations:

— Graphics may be animated representations to indicate the passage of time.

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