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Information technology — User interface component accessibility —

Part 11: Guidance for alternative text for images

Technologies de l'information — Accessibilité du composant interface utilisateur —

Partie 11: Lignes directrices pour le texte alternatif pour images

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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.

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.

In other circumstances, particularly when there is an urgent market requirement for such documents, the joint technical committee may decide to publish an ISO/IEC Technical Specification (ISO/IEC TS), which represents an agreement between the members of the joint technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/IEC TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/IEC TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

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

ISO/IEC TS 20071-11 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 35, *User interfaces*.

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Introduction

The saying that "A picture is worth a thousand words" recognizes that images can present a wealth of information. It is important that alternative textual descriptions or representations be used to present the user with a comprehensive account of the purpose and content of images to people unable to see or interpret them.

Text alternatives help people who cannot see the images to understand what the image is of or the purpose it serves by providing the same information in textual form. Text alternatives can be useful to those with visual impairments, those who turned images off in order to improve webpage loading speeds, and those who cannot understand the image being displayed. This document provides guidance for web and document developers to help them create informative descriptions for various types of illustrations.

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Information technology — User interface component accessibility —

Part 11: Guidance for alternative text for images

1 Scope

This part of ISO/IEC 20071 applies to all static images that are used in any type of electronic document. It also applies to individual images within a slide show of electronic images.

NOTE While text alternatives can be implemented via various mechanisms in various types of electronic documents, the contents of this technical report are not dependent on the choice of implementation mechanism or of electronic document type.

This part of ISO/IEC 20071 does not apply to moving images (e.g. movies).

The guidance contained in this part of ISO/IEC 20071 is intended to be used by the person who creates content to be placed in an electronic document. There is no expectation that this person will have any additional expertise beyond understanding the contents of the document and why an image was chosen to be placed within the document.

While the main intent of the guidance within this part of ISO/IEC 20071 is the creation of text alternatives, the information identified in this guidance could be placed in the main document text, reducing the length of the resulting text alternatives. However, placing information in the main document text does not fully replace the function of having some text alternatives for each image.

2 Terms and definitions

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

2.1 Text alternatives and related definitions

2.1.1
text alternative
a textual description or representation of an image

NOTE 1 By storing this description or representation in text format, it is able to be rendered in any available modality.

NOTE 2 The main audience of text alternatives is the users of screen reading features.

NOTE 3 Text alternatives are often provided to screen reader users in the form of primary and secondary alternative texts of an image.

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2.1.2
primary alternative text
main text alternative provided to users of screen readers

NOTE Different technologies and platforms provide various mechanisms for containing and presenting primary alternative text.

EXAMPLE In XHTML, HTML4, and HTML5, primary alternative text is provided in the “alt” attribute of the img tag.

EXAMPLE In Flash™, primary alternative text is provided through the “Name” field.

EXAMPLE In PDF, primary alternative text is provided through the /Alt entry in a structure element’s dictionary.

2.1.3
secondary alternative text
additional text alternative provided to users of screen readers beyond primary alternative text

NOTE Different technologies and platforms provide various mechanisms for containing and presenting secondary alternative text.

EXAMPLE In XHTML and HTML4, secondary alternative text is provided in the “longdesc” attribute of the img tag.

EXAMPLE In Flash™, secondary alternative text is provided through the “Description” field.

EXAMPLE In EPUB, secondary alternative text is provided through the “describedAt” attribute.

2.1.4
main document text
textual content of a document that is always presented to the users

2.2 Image and related definitions

2.2.1
image
<digital> graphical content intended to be presented visually

NOTE This includes graphics that are encoded in any electronic format, including, but not limited to) formats that are comprised of individual pixels (e.g. those produced by paint programs or by photographic means) and formats that comprised of formulas (e.g. those produced as scalable vector drawings).

2.2.2
static image
image where the set of image components and their relationships to one another do not change over time

NOTE 1 This includes images where the content/representation of individual image components might change over time, e.g. indicators where the value they are indicating changes in real time.

NOTE 2 The concept of static image is used for all images that are not slide shows or moving images.

NOTE 3 This use of static image is similar to the ISO/IEC 13249-5 use of “still image”. However, it differs in that a static image might have moving components. ISO/IEC 13249-5 states “A still image user-defined type is generic to image handling. It addresses the need to store, manage, and retrieve information based on aspects of inherent image characteristics such as height, width, and format and based on image features such as average color, color histogram, positional color, and texture. It also addresses the need to employ manipulation such as rotation, scaling as well as similarity assessment.”

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2.2.3
slide show
set of images that replace one another periodically

NOTE 1 The replacement of one static image by another static image can be controlled automatically by the system (in which case the timing for each image is usually predetermined) or manually by the user (where the timing for each image is determined on a case by case basis).

NOTE 2 Slide shows are usually composed of static images, but might include short movies. The interval between static images in a slide show are considered longer than in a movie, such that the motion being portrayed by the slide show would appear staggered instead of smooth like in a movie.

2.2.4
moving image
image where the contents are dynamically changing

NOTE This includes realistic moving images (often referred to as movies), abstract moving images (often referred to as cartoons), and even non-representational moving images (often referred to as light shows).

2.2.5
component
<image> logical part of an image that provides important content that the user should be aware of

NOTE 1 Types of image component include (but not limited to) shapes, objects, persons, areas, and text.

NOTE 2 Text components can include natural and/or formal languages (such as mathematical equations).

2.3 Importance and related definitions

2.3.1
importance
<information about an image> level of need for users to know information about an image (or image component)

2.3.2
essential
<information about an image> information that is necessary to understand the image and/or its function within the document

2.3.3
significant
<information about an image> information that is needed for a more detailed understanding of the image within the document to most users most of the time

2.3.4
helpful
<information about an image> information that provides a thorough understanding to target audiences regarding the image within the document

2.3.5
not important
<information about an image> information that does not help provide additional understanding about the image within the document to users

2.4 Information relationship definitions

2.4.1
relationship type
information about an association between entities

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2.4.2
logical
<relationship> information about what entities are interacting and how they interact

2.4.3
temporal
<relationship> information about when some action or entity occurs

2.4.4
physical
spatial
<relationship> information about where one entity is in relation to another entity

2.5 Image content and related definitions

2.5.1
content
<image> data, information, objects, relationships, and/or concepts to be communicated from the originator to the user according to certain communication goals

NOTE 1 Adapted from ISO 14915-1 definition 3.1.

NOTE 2 Content can be presented in realistic, abstract, or even non-representational manners. The distinction between these types of presentation is how closely they represent the natural world.

2.5.2
realistic
<type of image> image perceived by the user to faithfully represent data, information, objects, relationships, and/or concepts in the natural world

NOTE Adapted from ISO 14915-3 definition 3.7.5.

EXAMPLE Photographic images, pictures intended to be true-to-life, diagrams used to illustrate how to assemble a set of parts.

2.5.3
abstract
<type of image> image intended to present important major data, information, object, relationship, and/or conceptual components, without faithfully representing them as they occur in the natural world

EXAMPLE Cartoons, abstract art (where the basis for abstraction can be recognized), graphs and charts.

2.5.4
non-representational
<type of image> image intended for decorative purposes without the intent to represent any particular natural world data, information, objects, relationships, and/or concepts

EXAMPLE Art presenting colors and textures (without any recognizable objective contents).

2.6 Image sources and related definitions

2.6.1
source
<image> means of obtaining an image (or image component)

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2.6.2
photograph
<image> electronic copy of an image of something that has its own independent existence in the real world

NOTE While the photograph is a true rendering of the object(s) that it illustrates, those objects can themselves be realistic, abstract, or even non-representational.

2.6.3
electronic drawing
<image> image created as an original work to be rendered on the computer

NOTE Electronic drawings can be realistic, abstract/non-representational and can contain realistic, abstract/non-representational components. They can even contain embedded photographs as components.

2.7 Information type definitions

2.7.1
physical
<information within an image> information about phenomena which have a concrete existence; objects, agents, or scenes that have a physical existence

[14915-3 definition 3.6.7]

NOTE This can include states and histories of objects.

2.7.2
value
<information within an image> quantitative information describing properties of an object

[14915-3 definition 3.6.12]

2.7.3
quantitative
<information within an image> statistical information or numerical data and the relationships between the numbers

NOTE 1 Quantitative information is often presented in a graphical manner.

NOTE 2 Quantitative images are often used for comparison between related sets of data, such as comparing net profit over a period of time.

NOTE 3 Examples of quantitative images include charts and graphs.

2.7.4
control
<information within an image> information that can be used to take some action which manipulates data, other objects or their attributes

NOTE Adapted from ISO 14915-2 definition 3.8.

2.7.5
event
<information within an image> information about a state change, message indicating the occurrence of an action, or conveying a significant change in the world

[14915-3 definition 3.6.6]

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2.7.6
state
<information within an image> properties of the environment, objects or agents that remain constant during a period of time

[14915-3 definition 3.6.11]

3 Framework for describing images and creating text alternatives

3.1 Uses of text alternatives

Images are often used to convey a large amount of information quickly, whether it is a diagram for constructing a desk or a photo of what happened at a birthday party. In one glance, a person can retrieve a large amount of information and have a general understanding about the remaining content in the document in which the image resides.

Images are sometimes used to supplement or complement the document content or can be another representation of the same content. However, sometimes the image stands alone or adds information that is not part of the other document content. The information that is present in the image but not the other document content does not get conveyed to those who are unable to see the image. Text alternatives are needed to convey that information.

There are many reasons why a person might need text alternatives, including (but not limited to)

a) the person has a visual impairment;

b) the person is using a program that aurally reads the document content while doing something else (such as driving or cooking);

c) the device being used to view the image is unable to properly display the image or the image is difficult to see, (such as on a mobile device);

d) the person turned off images on their Web browser to increase loading speed; and

e) the person cannot understand and/or interpret the image.

Tools (such as screen readers) exist that can read aloud text that appears on a document to those who cannot or are not looking at the screen. If an image can be described and represented textually, then the tools can also read the text alternatives aloud.

Text alternatives might include a description of what the image looks like and/or an interpretation of what the image represents or its function. Different text alternatives might exist for the same image, differing in length and (as a result) information. Technology often allows for a primary alternative text as well as a secondary alternative text. Providing both primary alternative text and secondary alternative text can give the user a choice in the amount of detail they wish to receive about an image.

3.2 Structure of descriptions

In order to write informative text alternatives for an image, it is important to first know the information being represented in the image. It is difficult to share knowledge about an image with others when the writer does not have knowledge of what the image is. Therefore, it is important to gather or identify as much information as possible about an image.

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