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## Technical requirements for web accessibility

网站设计无障碍技术要求

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## Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

YD/T 1761 “Technical requirements for web accessibility” and YD/T 1822 “Testing specification for web content accessibility evaluation” form a series of standards for website accessibility design.

This standard replaces YD/T 1761-2008 “Information accessibility for people with physical disabilities technical requirements for web accessibility”. AND in addition to the editorial changes the main technical changes are as follows:

- CHANGE the standard name from “Information accessibility for people with physical disabilities technical requirements for web accessibility” into “Technical requirements for web accessibility”;
- ADD the “perceptible principle” (SEE clause 4.1);
- MODIFY the requirements for non-textual links (level 1) (SEE clause 4.2.3; clause 4.1.1.1, clause 5.4.2.3 and 5.4.3.4 of the 2008 version);
- MODIFY the requirements for operable non-text controls (level 1) (SEE clause 4.2.4; clause 4.1.1.1, clause 5.4.2.3 and 5.4.3.4 of the 2008 version);
- MODIFY the requirements for non-text content (level 3) (SEE clause 4.2.5; clause 4.1.1 of the 2008 version);
- ADD the “text size adjustment (level 3)”, “text size adjustment (level 4)”, and “accessibility text form (level 5)” (SEE clause 4.3.1, clause 4.3.2 and 4.3.3);
- MODIFY the requirements for text comparison (level 4) (SEE clause 4.3.4; clause 4.4.2.1 of the 2008 version);
- MODIFY the requirements for text comparison (level 5) (SEE clause 4.3.5; clause 4.4.3.1 of the 2008 version);
- MODIFY the requirements for multimedia (level 2) (SEE clause 4.4.1; clause 4.1.1.1 of the 2008 version);
- MODIFY the processing requirements for information that must rely on visual and auditory perception (SEE clause 4.4.3; clause 4.2 of the 2008 version);
- ADD the “operability principle” (SEE clause 5.1);

- MODIFY the requirements for keyboard operation (level 3) and keyboard operation (level 5) (SEE clause 5.2.1 and clause 5.2.2; clause 5.1.1 of the 2008 version);
- MODIFY the requirements for keyboard focus in (level 1) (SEE clause 5.2.3; clause 7.2.1.2 of the 2008 version);
- ADD the “skip navigation bar (level 3)”, “section skip (level 3)” and “multimedia playback control (level 3)” (SEE clause 5.2.6, clause 5.2.7 and clause 5.2.8);
- MODIFY the requirements for sufficient operation time (level 2) and sufficient operation time (level 5) (SEE clause 5.2.10 and clause 5.2.11; clause 5.2.1 of the 2008 version);
- ADD the “no floating windows (level 1)” (SEE clause 5.2.14);
- ADD the requirements for input prompt (level 2) (SEE clause 5.3.1);
- MODIFY the requirements for error cause prompt (level 3) (SEE clause 5.3.3; clause 5.5.1 of the 2008 version);
- MODIFY the requirements for error correction proposal (level 4) (SEE clause 5.3.5; clause 5.5.2.1 of the 2008 version);
- ADD the “error prevention (level 5)” (SEE clause 5.3.7);
- ADD the “understandability principle” (SEE clause 6.1);
- MODIFY the requirements for Chinese characters (level 4) (SEE clause 6.2.3; clause 6.1.3.5 of the 2008 version);
- ADD the “chapter title (level 4)” (SEE clause 6.3.2);
- MODIFY the requirements for site search function and site map (level 3) (SEE clause 6.3.3; clause 5.4.2.1 of the 2008 version);
- ADD the “help information (level 2)” (SEE clause 6.4.1);
- ADD the “compatibility principle” (SEE clause 7.1);
- MODIFY the requirements for the accessibility content version (level 1) and accessibility content link location (level 1) (SEE clause 7.2.1 and 7.2.2; clause 7.2.1.1, clause 7.2.2 and clause 7.2.3 of 2008 version);
- ADD the “accessibility content version link form (level 1)” (SEE clause 7.2.3);
- ADD the “user interaction compatibility” (SEE clause 7.3).

This standard was proposed by AND shall be under the jurisdiction of the China Communications Standardization Association.

The drafting organizations of this standard: China Disabled Persons Federation, China CDPF Information Center, Ministry of Industry and Information Technology Telecommunications Research Institute, China Blind Association, China Deaf Association, "China Shanghai" Portal Editorial Department, China Braille Publishing House, Zhejiang University, China Internet Association, National Elderly Work Commission Office, Harbin Billion Times Digital Technology Development Co., Ltd., Zhejiang University Network Technology Co., Ltd., Shanghai Wonder Information Technology Co., Ltd.

The drafters of this standard: Cui Huiping, Wu Yinghua, Sun Yongge, Wu Yushao, Yang Kun, He Chuan, Chen Xiaohai, Li Wehong, Yang Yang, Chen Chun, Tan Yumei, Zhu Shuangliu, Fu Minghui, Bu Jiajun, Chen Weigang, Huang Chang, Li Li, Zhu Qingyi, Shao Lei, Xu Jie.

# Technical requirements for web accessibility

## 1 Scope

This standard specifies the technical requirements for web design that meet the web accessibility requirements, including the perception requirements of web content, the operational requirements of interface components, the understandability of web content and controls, the requirements for the ability of content to support existing and future technologies, and so on.

This standard is applicable to the design, development and management of web-based accessibility service.

## 2 Terms and definitions

The following terms and definitions apply to this document.

### 2.1

#### Information accessibility

It means all peoples, whether healthy or disabled, whether young or old, can benefit from information technology, AND anyone in any case can obtain and use the information in an equal, convenient, and accessible manner.

### 2.2

#### Link

It is also known as hyperlinks, which is the connection relation from a web page to a target. The target may be another page, or the different location on the same page, or the image, an email address, a file, or even an application. And the object to be hyperlinked in a web page may be a section of text or a picture. When a viewer had single clicked a linked text or image, the link target will be displayed on the browser AND will be opened or run depending on the type of the target. In accordance with the link path, hyperlinks in the web page are generally divided into the following three types: internal links, anchor links and external links. In accordance with the object of use, the links in the web page can be divided into: text hyperlinks, image hyperlinks, E-mail links, anchor links, multimedia file links, and empty links, etc.

### 2.3

#### Assistive technology

It refers to the hardware and/or software of the user agent. In order to meet the needs of special populations (such as disabled persons) where there is

a difference in physical function, they provide some special functions in addition to the functions as provided by mainstream user agents, AND they can also provide special functions together with mainstream user agents. Special functions as provided by assistive technology include alternative representations (such as synthetic voice or enlarged content), alternative input methods (such as voice input), additional browsing and navigation mechanisms, content conversion (such as making tables easier to access), and so on.

Assistive technology is usually exchanging data and information with the mainstream user agents through the use and monitoring API. There is no absolute difference between the mainstream user agent and the assistive technology, AND many mainstream user agents provide some special functions that support the use of disabled people. The basic difference is that the service targets of the mainstream user agent are more broadly different types of people, usually including healthy people and people with disabilities.

Important assistive technologies involved in this standard include:

- Screen magnifier, which is used by people with visual impairments AND can zoom in on the font on the screen and change the color, to improve the visual readability of the changed text and images;
- Screen reader, which is used by persons with visual impairment or dyslexia AND can read text information by synchronizing voice or braille display;
- Voice recognition software, which is used people who have some physical impairments;
- Alternative keyboard, which is used by people with some physical impairment AND can simulate the function of the keyboard;
- Alternative pointing device, which is used by people with some physical impairment AND can simulate mouse positioning and button movements.

## 2.4

### **User agent**

It refers to the software which can retrieve AND present the web content to the users, such as web browsers, media players, plug-ins, and other programs (including assistive technologies), that help retrieve and display the web content.

## 2.5

### **Multimedia**

It refers to the audio or video that is synchronized with another media and/or time-based interactive component.

## 2.6

### **Captions**

It refers to the text alternative that displays and synchronizes with the multimedia to provide speech information.

## 2.7

### **Text**

It refers to the character sequence, wherein the character is the character in the Unicode/ISO/IEC 106464 library.

## 2.8

### **Natural language**

It refers to the language used for human communication, including verbal language, written language, and sign language, which is a language that naturally evolves with culture.

## 2.9

### **Non-text content**

It refers to any contents in which the order of characters cannot be programmably determined OR for which the order cannot be expressed in natural language.

Note: Includes ASCII graphics (a character pattern), emoticons, leetspeak (replaced with other characters), and graphics used to represent text.

## 2.10

### **Text alternative**

It refers to the text which is used to replaces the non-text content, such as providing a textual interpretation of the image, AND is mainly intended to facilitate visually impaired people to understand the non-text content with aid, such as reading the picture using the reading software.

## 2.11

### **Pure decoration**

It refers to the part which only meets the purpose of beauty BUT neither provide information nor execute function.

## 2.12

### **Video**

- May not be able to see, hear, move, or inconveniently or completely unable to handle certain types of information:
- May be difficult to read and understand the text;
- May not be able to use the keyboard or mouse:
- May use a display that can only display text, a small display, or a low-speed Internet connection:
- May not be able to speak fluently or understand the language in which the document is written:
- Eyes, ears or hands are busy doing other things (such as driving, working in a noisy environment, etc.);
- May use different user agents (such as earlier versions of browsers, speech browsers, etc.).

The purpose of the information accessibility service is to help anyone access the network information under any conditions. The web page design shall comply with the following 4 requirements to ensure that the web page can be accessed by any person directly or by means of aids:

- The content of the web page must be perceptible;
- The interface components in the web content must be operational;
- The web content and controls must be understandable;
- The web content must be compatible.

These 4 principles provide the necessary foundation for anyone to access and use the content of the web page, AND provide support for improving the ability of people with disabilities and those who have special needs to perceive, operate and understand the content of web pages. There are many specific specifications under each principle to achieve this principle. And under each specific specification there are a number of qualification criteria to assess compliance with that particular specification.

The qualification criteria of the specification under each principle are classified as follows:

- Level 1 qualification criteria: Achieve basic accessibility service functions;
- Level 2 qualification criteria: Achieve improved accessibility service functions;
- Level 3 qualification criteria: Achieve relative high difficulty accessibility service functions;

- Level 4 qualification criteria: Achieve high difficulty accessibility service functions;
- Level 5 qualification criteria: Achieve additional accessibility service functions;

Web site shall first achieve a lower level of accessibility, AND then achieve the higher level of accessibility based on this.

The following chapters of this standard specify the development and design requirements of the accessibility web page, so that the populations of different physical function AND the healthy people under special environmental conditions can access the web information directly or through the aids.

Note: This standard specifies the issues that need to be addressed in the construction of an information accessibility web site, BUT does not address the specific use of the technology, that is, not for HTML or any other specific technology. This approach facilitates the application of the provisions of the standard to multiple occasions and technologies, including those that are not yet present.

## **4 Perception**

### **4.1 Principles of perception**

The information and user interface components shall be presented to the user in a user-perceivable manner.

### **4.2 Non-text processing**

#### **4.2.1 Verification code (level 1)**

If there is a non-text verification code on the web page, it shall provide the alternative forms of expression for a variety of people with disabilities and those with special needs.

#### **4.2.2 Verification code (level 2)**

If there is a non-text verification code on the web page, it shall provide the alternative forms of expression (such as speech verification codes) that do not leave the current user interface for a variety of people with disabilities and those who have special needs.

#### **4.2.3 Non-text link (level 1)**

It shall provide the text alternative to the non-text links in the web page, AND it shall describe the link purposes or link use for the text alternative.

#### **4.2.4 Operable non-text controls (level 1)**

If the non-text content is a control OR accepts user input, there shall be a name that can indicate its purpose.

#### **4.2.5 Non-text content (level 3)**

It shall provide a text alternative of the same purpose for all non-text content which is presented to the user, subject to the following requirements:

- If the non-text content is a test or exercise AND is not valid in the form of a text expression, the text alternative shall at least provide a descriptive description of this non-text content;
- If the main purpose of non-text content is to create a particular sensory experience, the text alternative shall at least provide a descriptive description of the non-text content;
- If non-text content belongs to pure decoration, OR is used only in visual format, OR does not shown to the user, it shall be implemented in a manner that can be ignored by the assistive technology.

Note: Where it is difficult to define whether non-text content is decorative or not, the requirements for non-decorative non-text content are processed.

### **4.3 Text processing**

#### **4.3.1 Text size adjustment (level 3)**

It shall be able to adjust the font size of the web page without using the assistive technology (except for the captions text and picture text), zooming in to 200%; the display result of the font after zooming in does not exceed the left or right border of the screen, AND the enlarged character shall not overlap each other.

#### **4.3.2 Text size adjustment (level 4)**

It shall be able to adjust the font size of each block of the web page without using the assistive technology (except for the captions text and picture text), zooming in to 200%; the display result of the font after zooming in does not exceed the left or right border of the screen, AND the enlarged character shall not overlap each other.

#### **4.3.3 Accessibility text form (level 5)**

For visual presentation of text blocks, it may provide a mechanism to achieve the following effects:

- Foreground color and background color can be selected by the user;
- No more than 80 characters or symbols (if it is China, Japan and South Korea unified ideographic text, it is no more than 40 characters);

away from the component; if it requires other operations in addition to clicking on the unaltered direction key, the tab key, or other standard exit mode, it shall inform the user of the method to move the focus away.

#### **5.2.5 Focus (level 5)**

When any component is focused, it shall not cause the change of context.

#### **5.2.6 Skip navigation bar (level 3)**

It shall provide a mechanism to skip the recurring content blocks in multiple web pages, providing direct access to the main content of the web page.

#### **5.2.7 Section skip (level 3)**

It shall provide a mechanism to enable the user to skip between the content sections by means of keyboard operation.

#### **5.2.8 Multimedia playback control (level 3)**

The video, audio, and multimedia information can be played through the keyboard control, AND such operations as play, stop, pause, fast forward, fast backward, increase or decrease the volume through keyboard.

#### **5.2.9 Multimedia playback control (level 4)**

If the video, audio, and multimedia on the web page are automatically playing for more than 3 seconds, it shall provide a mechanism to pause or turn it off.

#### **5.2.10 Sufficient operation time (level 2)**

If the timing is not a necessary part or a key element of the activity AND does not result in a legal commitment or financial transaction of the user, it shall provide sufficient operation time for the user.

#### **5.2.11 Sufficient operation time (level 5)**

It shall provide sufficient time for the user's web page interaction.

#### **5.2.12 Interruption delayed or blocked (level 4)**

Except for the interruption due to an emergency, the interruption shall be able to be delayed or blocked by the user. It may provide the following mechanism to ensure this:

- PROVIDE a mechanism for delaying any updates of the content;
- UPDATE the content in accordance with the user's request, rather than automatically update the content.

#### **5.2.13 Session recovery (level 4)**

When the authenticated session expires, the data shall not be loss after the re-authentication of the user, the previously entered information can be read, AND the activity can continue.

#### **5.2.14 No floating window (level 1)**

Floating windows shall not appear on the web page.

### **5.3 Information input processing**

#### **5.3.1 Enter prompt (level 2)**

When the content requires user input, it shall provide a description in the specific way as follows:

- For the input field which requires the user input information, PROVIDE the prompt information in the web page;
- For text that needs to be entered in a specific format, PROVIDE the format description in the web page

#### **5.3.2 Error cause prompt (level 2)**

If the input error is automatically detected, it shall describe the error information in the text form to the user, AND the error information may be closed.

#### **5.3.3 Error cause prompt (level 3)**

If the input error is automatically detected, it shall describe the error information in the text form to the user, AND the error information may be closed. AND the user may select not to prompt the error information thereafter.

#### **5.3.4 Error correction proposal (level 3)**

If an input error is automatically detected AND the correction proposal is known, it shall provide the correction proposal in the text form to the user, prompting that the information can be closed.

#### **5.3.5 Error correction proposal (level 4)**

If an input error is automatically detected AND the correction proposal is known, it shall provide the correction proposal in the text form to the user, prompting that the information can be closed, AND the user may select not to prompt the error information thereafter.

#### **5.3.6 Error prevention (level 3)**

For web pages that would result in a user's legal commitment or financial transaction, at least one of the following conditions shall be met:

- The submission action is reversible:
- It may make input error inspection against the data as input by the user, AND the user has the opportunity to correct the data;
- PROVIDE a mechanism of information inspection, confirmation and correction before finishing the final submission.

Note: For those financial industry users who have special requirements, this standard may not apply, AND it shall be dealt with based on actual conditions.

### **5.3.7 Error prevention (level 5)**

For web pages that require users to submit, at least one of the following conditions is met:

- The submission action is reversible:
- It may make input error inspection against the data as input by the user, AND the user has the opportunity to correct the data;
- PROVIDE a mechanism of information inspection, confirmation and correction before finishing the final submission.

## **6 Understandability**

### **6.1 Principles of understandability**

The text content of web page shall be readable and understandable, AND the layout and function of the content shall be easy for users to understand and use.

### **6.2 Information content processing**

#### **6.2.1 Not commonly used words (level 4)**

It shall provide a mechanism to determine the specific definitions of words or phrases (including idioms and terms) used in an unconventional or restricted manner.

#### **6.2.2 Abbreviations (level 4)**

It shall provide a mechanism to determine the expansion form or meaning of the abbreviation.

#### **6.2.3 Chinese characters (level 4)**

It shall provide a mechanism to add the spelling AND explain the meaning of the rarely used Chinese characters.

#### **6.2.4 Consistent navigation (level 4)**

The web navigation mechanism appears in a consistent order, unless otherwise the user initiates a change.

#### **6.2.5 Consistent recognition (level 4)**

Components that have the same functionality in a set of web pages can be identified by a consistent method.

### **6.3 Web page guidance mechanism**

#### **6.3.1 Web page title (level 2)**

The web page shall have a title that describes the subject or purpose.

#### **6.3.2 Chapter title (level 4)**

Web pages shall organize information content through chapter titles.

#### **6.3.3 Site search function and site map (level 3)**

Unless otherwise a certain web page is the result of a process OR a step, it shall provide at least one method to find the page in a set of web pages, such as providing a site search function or providing a textual site map.

#### **6.3.4 User location (level 4)**

It shall provide the information of the location of the user in a set of web pages.

### **6.4 Help information**

#### **6.4.1 Help information (level 2)**

The use of shortcut keys can get the help information related to accessibility.

#### **6.4.2 Help information (level 5)**

It shall provide the context-sensitive help to the text input.

## **7 Compatibility**

### **7.1 Principles of compatibility**

Compatibility principles include:

- The content of the web page shall be strong enough to be reliably resolved by various types of user agents (including assistive technology);
- Web pages shall take into account the different needs of different groups AND maintain a good compatibility relationship.

## **7.2 Accessible web compatibility**

### **7.2.1 Accessibility content version (level 1)**

The website shall have at least one content version that meets the requirements of the corresponding level of this standard.

### **7.2.2 Accessibility content version link location (level 1)**

If an accessible version needs to be entered through a normal version, a link is provided before the content in the normal version that does not meet the accessibility requirements, which points to an accessible alternative version that meets the requirements of this standard.

### **7.2.3 Accessibility content version link form (level 1)**

The access link to the accessible versions shall be easy to discover and use.

## **7.3 User interaction compatibility**

### **7.3.1 User interaction compatibility (level 1)**

The contact method as reserved in the web site shall support the use of different types of people to help users complete the operation of the follow-up information interaction.

### **7.3.2 User interaction compatibility (level 2)**

The contact method as reserved in the web site shall support the use of different types of people to help users complete the operation of the follow-up, Internet-based, real-time and direct information interaction.

### **7.3.3 Feedback contact (level 1)**

Websites shall reserve the contact method to help users reflect problems which occur in the process of accessible site use.

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Accountable person and shareholder: Wayne Zheng

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Contact: Wayne Zheng, [Sales@ChineseStandard.net](mailto:Sales@ChineseStandard.net)

Linkin: <https://www.linkedin.com/in/waynezhengwenrui/>

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