JIS WCAG and International Standard Harmonization

Takayuki Watanabe and Tatuo Seki

CSUN 2005 (March 16-19 2005, Los Angeles, USA)
19 March, 2005

http://www.comm.twcu.ac.jp/~nabe/data/CSUN2005/

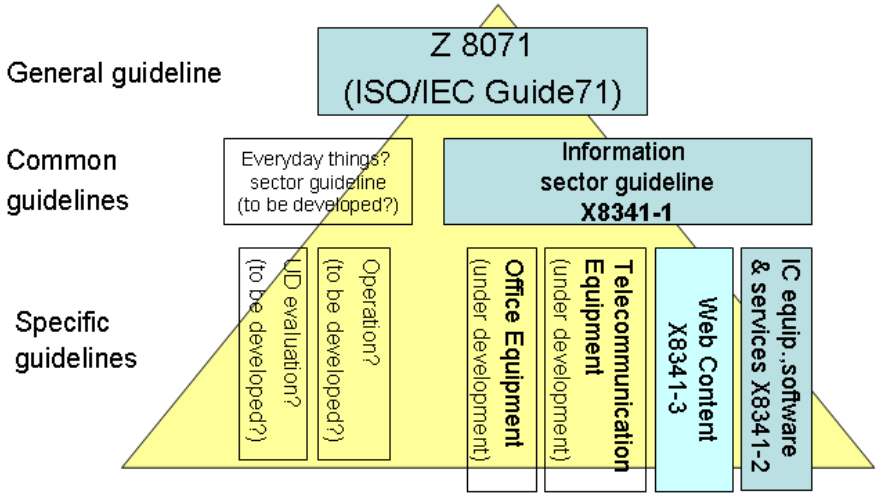
Table of Contents

Note: This HTML file was created with the "xsltSlidemaker" and is prepared for the CSS2 "projection" mode. :-)

© 2004, Takayuki Watanabe (Creative Commons)

1. Outline of JIS X 8341 guidelines

Outline of JIS and JIS X 8341 is presented by Mr. SEKI (INSTAC)



© 2004, Takayuki Watanabe (Creative Commons)

2. Outline of JIS X 8341-3, Japanese WCAG

JIS X 8341-3 was published on 20 June 2004.

1. It is WCAG 1.5 +- something.
   It regards WCAG 1.0 and 2.0 WD in mind. Comparison between JIS and WCAG was presented at CSUN 2004: "JIS Web Content Accessibility Guideline"
2. It is mainly for public use.
3. It considered Web accessibility problems obvious in Japanese language.
4. It considered currently available assistive technologies in Japan.
5. It mentions the importance of process: plan, design, development, production, evaluation, operation, and maintenance.
6. It includes a lot of examples.

The section 67 of the **Industrial Standardization Law** says that "When the nation and local public bodies determine standards, they must pay attention to JIS." Therefore JIS X 8341 guidelines will affect national and public sectors in Japan.

© 2004, Takayuki Watanabe (Creative Commons)

2.1 Contents of JIS X 8341-3

Introduction
1. Scope
2. Normative references
3. Definition
4. General principles
5. Specific requirements for development and production
6. General requirements for assurance and improvement of information accessibility

Annex 1 (informative) Examples related to Web content
Annex 2 (informative) Related standards

- **Clause 4** defines general principles that must be considered in all process of Web Content.
- **Clause 5** and **clause 6** define requirements that need to be met in order to comply with the general principles in **clause 4**.
- Informative **Annex 1** provides a lot of examples for **clause 5**.

© 2004, Takayuki Watanabe (Creative Commons)

2.2 JIS X 8341-3: Clause 5

- **Clause 5, Specific requirements for development and production** defines technical requirements taken into account in development and production.
- Some requirements are "shall" level, others are "should" level, and there also are mix of "shall" and "should" level.

5.1 Standard and specifications
5.2 Structure and display style
5.3 Operation and input
5.4 Non-text information
5.5 Colour and shape
5.6 Character
5.7 Sound
5.8 Speed
5.9 Language

List of all 39 requirements

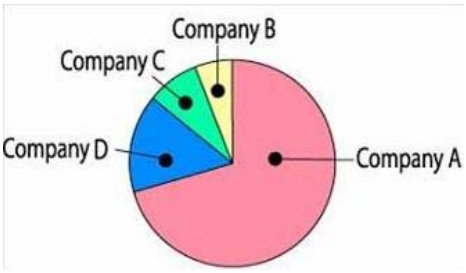
© 2004, Takayuki Watanabe (Creative Commons)

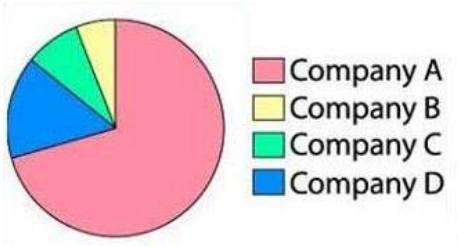
2.3 Example of Clause 5

To facilitate easy understanding of these requirements, each requirement has informative information and examples.

5.5.a) Information required to understand and operate Web content shall not rely on colour alone.

Example 2: To make pie chart understandable, use leading lines to indicate the area. Figure 21 shows this example. In figure 21 a), leading lines are used to associate text labels with each area.





a) An example with leading lines

b) Distinction is difficult as it relies on colours alone

Figure 21: Display of a chart

© 2004, Takayuki Watanabe (Creative Commons)

2.4 JIS X 8341-3: Clause 6

- **Clause 6. General requirements for assurance and improvement of information accessibility** defines Specific requirements which must be taken into account all over a life-cycle of a Web site.
- Unique clause because it mentions the importance of process.

6.1 Requirement for planning and production
6.2 Requirement for maintenance and operation
6.3 Requirement for verification
6.4 Requirement for feedback
6.5 Requirement for user support

© 2004, Takayuki Watanabe (Creative Commons)

2.5 How to obtain JIS documents

Online purchase:
JSA Web Store (Japanese and English PDF files are available)
View Japanese JIS online:
JISC

© 2004, Takayuki Watanabe (Creative Commons)

3. Web accessibility problems obvious in Japanese

- JIS X 8341-3 includes some requirements which are not included in WCAG.
- Problems obvious in Japanese and other Han character languages are some of these.
- Although these problems are obvious in Japanese, there are same problems in English.
- Therefore, we (JIS WG) submitted these problems as review comments to WCAG WG in September 2004.

© 2004, Takayuki Watanabe (Creative Commons)

3.1 Misuse of similar looking characters

- ASCII: '**0**' & '**O**', '**1**' & '**l**'.
- Han characters: '**一**', '**—**', '**-**', '**ー**'
  (HPR reads these characters as "Tyouon (Prolonged Sound Mark)", "Hyphen", "Bar", and "minus", respectively)
- A Japanese word "リード" is a correct word that means "lead" in English, while "リ—ド" makes no sense.
- Sighted users even do not notice this mistake, while users who use a screen reader cannot understand that word.

3.2 Complicated characters

- "聾" consists of many strokes.
- Characters consisting of large number of strokes may require larger size to be recognized by a user with low-vision.
- Font which is easy-to-read considering size and typeface should be specified.
- This problem can be compensated by an appropriate font design.

© 2004, Takayuki Watanabe (Creative Commons)

3.3 Words with difficult pronunciation

- Some words have various pronunciations or difficult pronunciations.
- Japanese proper noun "**三田**": "みた" (Mi ta) or "さんだ" (Sa n da).
- English also has similar examples because screen readers do not know pronunciation of every word.
- A sighted user suffers little problem even if he/she cannot identify the correct pronunciation.
- A user with visual disability may have difficulty in understanding content because pronunciation is an only clue for him/her.

3.4 Vertical writing

- Some Japanese books are written totally in vertical.
- It should be prohibited to write vertically by inserting a
 between every character because a user agent cannot recognize these characters as one word. Only a sighted user can recognize these characters as one word.

© 2004, Takayuki Watanabe (Creative Commons)

3.5 Other issues

Other problems Japanese users often encounter arise from the following facts.

3.5.1 Multiple and unclear character encoding schemes

- Japanese: Shift_JIS, EUC-JP, ISO-2022-JP (JIS), and UTF-8 (Unicode).
- Encoding scheme is not always obvious by the encoded binary data.
- This is also true in European languages.

3.5.2 Multiple and non standard coded character sets

- Character sets of MS Windows = JIS X 0201 + JIS X 0208 + non standard characters (such as ①)
- This kind of non standard but commonly used character set causes "Mozi Bake" problems.

© 2004, Takayuki Watanabe (Creative Commons)

3.5.3 Multiple kinds of characters

- Pronunciation of Japanese name can be written in either Hiragana or Katakana characters because both are phonograms: 'あ' and 'ア'
- Digits can be expressed in an ASCII (single byte) character, '1', or a Fullwidth (double bytes) character, '１'.
- This kind of ambiguity may cause problems when a user enters pronunciation of his name or some numerals in a form when a script that processes inputted text can not treat all possible input character types.

3.5.4 Notation of time and date

- "2005/07/19" is ambiguous format.
- Many Japanese screen readers do not notice this data as date but combination of figures and slash characters.

3.5.5 Obscure Japanese symbol characters

- Japanese has a lot of symbols: ☆, ★, ※, ＊
- These Japanese symbols are ideograms and their meaning is obscure.

© 2004, Takayuki Watanabe (Creative Commons)

4. International standard harmonization

Japan:
JIS X 8341-3
International de facto standard:
W3C/WCAG. (WCAG is national standard in some European countries)
ISO:
no Web accessibility guidelines

strange relationship between national and international standards

© 2004, Takayuki Watanabe (Creative Commons)

4.1 Relationship between JIS X 8341 and ISO

- ISO/IEC Guide 71 was proposed by Japan in 1998 and became ISO in 2001.
- ISO/IEC Guide71 was then translated into Japanese and became JIS Z 8071 in 2003.
- The committee, organized in 2001, developed JIS X 8341-1, 8341-2, and 8341-3 according to JIS Z 8071 in 2004.
- JIS X 8341-1, common guidelines, was proposed to ISO in 2004.

Strong relationship between JIS X 8341 and ISO.

© 2004, Takayuki Watanabe (Creative Commons)

4.2 Relationship between JIS X 8341-3 and WCAG

- JIS X 8341-3 was developed paying full attention to WCAG 1.0 and 2.0 WD. Comparison between JIS and WCAG was presented at CSUN 2004: "JIS Web Content Accessibility Guideline"
- INSTAC organized "Web Accessibility International Standards Research Working Group" (WG2) in 2004.
  - One objective of WG2 is international standard harmonization.
  - The WG2 submitted a review to WCAG WG in September 2004.
  - As a chair of WG2 and a member of WCAG WG, I want to facilitate communication between two working groups.
  - It might be good that ISO has a Web accessibility guideline under the framework of ISO/IEC Guide 71.
  - It also might be good that W3C, supported by Japan, submits WCAG 2.0 to ISO.
  - When ISO has a Web accessibility guideline under the framework of ISO/IEC Guide 71, it will be translated into Japanese and become a new version of JIS X 8341-3.
  - Thus, we must contribute to WCAG 2.0 Working Draft.

© 2004, Takayuki Watanabe (Creative Commons)

4.3 Korean WCAG

I exchanged information with Korea at Joint Workshop of Core-NGI/ITRC (November 25-27, 2004, Daejong, Korea). Presented talks are:

Web accessibility standards and policies in Japan
Takayuki Watanabe

Korean policies for improving web accessibility
Doo Jin Choi (Digital Opportunity Research Center, KADO).
- Enacting"Recommendable Guidelines to improve Accessibility for the handicapped and the elderly to the IT services and IT products" (Recommendation, not obligation)

Korean Web Content Accessibility Guidelines and Future Extensions
Sukil Kim (Chair of Korean WCAG WG, Chungbuk National University).
- KWCAG version 1.0 was released in November 2003.
- KWCAG 1.0 consists of 14 Guidelines: perceivable 3, operable 6, understandable 3, and robustness : 2 guidelines
- Comparison between KWCAG 1.0 & Section 508

Social understanding of Web accessibility is still poor in Korea.

© 2004, Takayuki Watanabe (Creative Commons)

4.4 Points in international standard harmonization

International standard harmonization may be achieved by the following points:

- cope with different technology levels among countries (User agent problems)
- cope with language oriented problems
- cope with poor social understanding of Web accessibility
- should be developed under the Framework of ISO/IEC Guide 71
  - Scope: older persons as well as persons with disabilities
  - Usability and accessibility
  - standalized process of guideline development
- pay attention to process of Web: plan, design, development, production, evaluation, operation, and maintenance

© 2004, Takayuki Watanabe (Creative Commons)

5. Activities of JIS WG2

- Working group that developed JIS X 8341-3 was dissolved in fiscal year 2003 and a new working group, "Web Accessibility International Standards Research Working Group" (WG2), was organized in 2004.
- The objective of a new working group:
  1. International standard harmonization with W3C and other countries.
  2. National promotion of JIS X 8341-3.
- Japanese translation of WCAG 2.0 WD is put on the Web.
- Other documents such as Techniques for WCAG 2.0 will be translated into Japanese.
- The current WG is developing "Technical manual and solutions" to show what is good and what is not good. (We pay attention to WCAG's Techniques documents.)

© 2004, Takayuki Watanabe (Creative Commons)

6. Concluding Remarks

Web accessibility in Japan

- There are many activities in private companies to enhance Web accessibility using JIS X 8341-3.
- Ministry of Internal Affairs and Communications (MIC) launched a study group to help Web accessibility in a public sector.

Guideline is not enough!

- Education materials are needed to promote JIS X 8341-3.
- Guideline is not enough to promote accessible Web pages. Authoring softwares or CMS and good templates, good check tools, and good process models are needed.
- User agent is another problem. In Japan, we cannot use Java applications.

Research based Web accessibility is needed!

© 2004, Takayuki Watanabe (Creative Commons)

Appendix A: Clause 5 of JIS X 8341-3

5. Specific requirements for development and production:

5.1 Standard and specifications
- a) Web content shall be created in conformance to related standards and specifications following the syntax they define.
- b) Accessible object and such technology should be used in Web content.

5.2 Structure and display style
- a) Web content shall define document structure using heading, paragraph, list, and other elements.
- b) Display style of Web content should be separated from the structure of document, and font, size, colour, line spacing, background colour, etc. should be described by stylesheet. Web content, however, shall be provided so that users who cannot, or choose not to, use stylesheet have no difficulty browsing and understanding the content.
- c) A table must have an intelligible and explicit caption, and a structure as simple as possible which is specified by appropriate markup.
- d) Table elements should not be used for layout.
- e) A page shall have a title which enables users to identify content of the page.
- f) Frames should not be used more than necessary. Purpose of each frame shall be made clear when frames are used.
- g) Information which indicates the structure such as the hierarchy should be provided to enable users to understand the location of current page displayed within the Web site structure.

© 2004, Takayuki Watanabe (Creative Commons)

5.3 Operation and input

- a) Web content shall not assume operation with certain, single device, and at least all operations shall be possible by keyboard.
- b) When using input fields, what needs to be entered shall be made clear and consideration for easy operation shall be taken.
- c) There should not be a timeout for input. Users shall be notified when there is a timeout.
- d) Users should be able to extend or remove the timeout when it is set. When this is not possible, an alternative shall be provided.
- e) An update of a page, entirely or partially, a redirection to another page, or an opening of a new page shall not be performed automatically against intention of users, or in a form in which it is difficult for users to detect, or predict them.
- f) The basic operation component should be consistent in its location, display style, and notation throughout the Web site.
- g) Hyperlinks and buttons should be easy to be distinguished and operated.
- h) Users should be able to skip reading commonly used hyperlinks and menus for navigation.
- i) There shall be a mean to recover the original state when users performed an unintended operation on the Web content.

© 2004, Takayuki Watanabe (Creative Commons)

5.4 Non-text information

- a) Images shall have alternative information such as text information so that users can appropriately understand content of the image.
- b) Alternative information such as text which describes the linked content shall be provided when an image is used as a hyperlink.
- c) Auditory information which is required to understand and operate the Web content shall be accompanied by alternative information such as text, which can be understood without hearing ability.
- d) Time-based non-text information, such as animated video, should be accompanied by synchronized alternative information, by adding caption, descriptive tracks, etc. Description of the content shall be provided in some form when synchronized alternative information cannot be provided.
- e) Alternative information such as text shall be provided with inaccessible objects and programs to enable proper understanding and operation by users. Also, descriptive text should be provided for accessible objects and programs.

5.5 Colour and shape

- a) Information required to understand and operate Web content shall not rely on colour alone.
- b) Information required to understand and operate Web content shall not rely on shape and location alone.
- c) Background and foreground colors of images should have high contrast to make it easier for users to distinguish.

© 2004, Takayuki Watanabe (Creative Commons)

5.6 Character
- a) Character size and font shall be able to be adjusted by users as needed.
- b) Font which is easy to read considering size and typeface should be specified.
- c) Font colour, which makes the characters easy to read should be specified considering the background colour.

5.7 Sound
- a) Sound should not be played automatically. It shall be indicated that sound is being played if sound is played automatically. If sound is played using the bgsound element, users cannot detect that sound is being played, or cannot stop the sound, or control the volume of the sound.
- b) Sound should be controllable by users.

5.8 Speed
- a) Image or text which changes or moves should be created with consideration for its speed, colour, and change of brightness.
- b) Blinking of display in high frequency shall be avoided.

© 2004, Takayuki Watanabe (Creative Commons)

5.9 Language
- a) Where language can be specified, language code associated with the natural language shall be specified.
- b) In Japanese pages, foreign terms that may not be understood by assumed audience should not be used. When using such words, explanation shall be provided when the word first appears on the page.
- c) Abbreviations, technical terms, words in vogue, slang, etc. which may not be understood by assumed audience should not be used. When such words are used, they shall be defined at their first appearance in the page.
- d) Extensible use of words that may be difficult for assumed audience to read (such as proper nouns) should be avoided. When such words are used, the pronunciation shall be specified at the first appearance of the word.
- e) Whitespace or linebreak shall not be inserted in the middle of a word for presentation purpose.
- f) Web content should (shall?) be prepared not just with text, but also with intelligible icons, illustrations, and audio content.

© 2004, Takayuki Watanabe (Creative Commons)