Assessing the usability of web content for blind and partially blind people

Proposal for attribute/feature construction for web content representation

# Introduction

In order to include educational resources in recommendation system attribute representation of these resources has to be defined. The following proposal is based on ISO 40500:2012 standard. According to the standard the main attribute categories are:

* Perception
* Operability
* Understandability
* Robustness

# Perception

Section of attributes describing perception assesses the ability of the user to perceive presented information. In the first stage of development these attributes are mainly focused on blind/partially blind users but they can be expended to also include attributes focused on other disabilities (such as deaf users).

Attributes from this group are:

* Text alternatives
  + All non-text content has text alternatives
  + AAA: all non-text content has text alternatives
  + AA: majority of non-text content has text alternatives
  + A: some non-text content has text alternatives
  + Non-compliant: no text alternatives are provided
* Time-based media
  + Text alternatives for time-based media
  + Criteria is the same as for text alternatives
* Adaptability
  + Content is presented in a simplified way that is compatible with a screen reader
  + Criteria is the same as for text alternatives
* Distinguishability
  + Viewing of web content is simplified for the user
  + Foreground and background are separated
  + Colors do not carry information (information is not communicated only with color)
  + Sound management (pausing, playing and stopping) mechanism is separated from system for web site navigation
  + AAA: foreground and background colors can be modified

# Operability

Users have to be capable of using the user interface – user interface should require minimal interaction from the user.

* Keyboard accessibility
  + AAA: the whole web site is accessible with the keyboard
  + AA: most of the web site is accessible with the keyboard
  + A: main parts of web site are accessible with the keyboard
* Time limitation for accessing web content
  + AAA: web site contains no time limited content
  + AA: user has the possibility to set speed of time limited content for all time limited content
  + A: user has the possibility to set speed for most of time limited content
* Navigation
  + Web content supports easy navigation.
  + AAA: purpose and location (inside the same web site/outside) is clear from the name of the link
  + AA: web content supports different ways to navigate to it
  + A: navigation sequence between web contents is logical and intuitive

# Understandability

Users have to understand how to use the user interface.

* Readability
  + The content has to be readable and understandable
  + AAA: the content has support for different levels of reading (simplified versions of content are available)
  + AA: All parts of web content (if applicable) have marked the language in which they are written
  + A: It is marked in which language the web site is written
* Predictability
  + Web sites are organized in logical and predictable way
  + AAA: Bigger changes to the user interface that happen automatically can be disabled
  + AA: Navigation of the website is consistent across all parts of the website
  + A: Changes to the user interface do not happen automatically
* Help with input
  + Web site automatically detects and corrects input mistakes from the user
  + AAA: Web site provides context aware help with instructions and recommendations for input
  + AA: In case the user makes an input mistake web site automatically suggests corrections
  + A: Web site automatically detects input mistake

# Robustness

Content (web site) has to stay the same even if the technology that was used to build it changes. This part of ISO standard refers primarily to long trem availability of web content so it is not directly relevant for proposed application.