Support Personalization

Notes and a proposal from a a meeting with a small group of interested people (Kirkpatrick, Foliot, Gower, McMeeking) to try to move the personalization proposal forward in WCAG 2.1.

## The Vision

End users will have the ability, using built-in browser functionality, browser plug-ins or extensions, assistive technologies, or functionality built into a web page, to have the content adapt in response to a preferred mode of viewing content. The adaptations may include:

* Adding familiar icons to text to aid in understanding, replacing text with familiar icons, or replacing icons with text.
* Reducing the number of options for a set of navigation buttons, or other items in a set that users need to choose from. This includes allowing content owners to identify level of importance for content on a site, to aid in the adaptation.
* Replacing complex or unfamiliar words with simpler language, or providing a mechanism to allow the user to view a simpler version or definition on the fly.
* Rendering numbers as words, or the opposite, at the user’s preference.
* Remove user-input controls that are optional, or replace a long form with a multi-step form input process.
* Re-label elements for familiar purposes to use the terms that a user expects.
* User customization of color, font-family, text size, line spacing, border colors, visual layout, and other display attributes
* User customization of keyboard assignments, event timing, audio controls.
* Far more is possible – as we know we are just getting started with personalization.

## Current Support

* Existing semantics
  + Some aspects of personalization can be accomplished using established semantics
    - H1-6, Lists, paragraphs, tables, and other elements
    - HTML5 form elements include a richer set of specific form control types (e.g. month, date, time, range, tel, email)
    - ARIA landmark roles and landmark elements
  + When these semantics are implemented properly, tools to adapt content can perform a wide variety of transformations
* Textual content adaptations
  + Tools for the intelligent replacement or augmentation of text can offer some improvements on existing strings of text, including providing definitions, icon substitutions, and text simplification, without requiring that the author provide code for each change.
* In both cases above, the tools available to provide the adaptations are not as widely available or used as we would hope. There is a need for further development.

## The Challenges

* Additional semantics are needed, for example to provide prioritization information for content when a page is to be simplified.
  + E.g. A navigation list with 10 items can be simplified to any smaller number of items with existing semantics, but without prioritization information to guide the process.
  + Standardization work on semantics focused on COGA needs is in process, but has not reached W3C recommendation status. Other semantic schema exist but are not incorporated into standards or browser user agents.
  + Without a standard taxonomy of terms for authors to use when creating content, authors will need to either use a draft taxonomy (which might change and then create implementation problems, potentially for years down the road) or invent or adopt a different taxonomy (which won’t benefit users as widely since the tools to support it may not exist, and which can similarly create implementation challenges for years down the road).
* Testing challenges – even with a standard taxonomy, there are some challenges with testing.
  + A web page that needs to establish a prioritization of user interface options might select a few items to be high importance, a few to be medium, and a few to be low, but there is no way for anyone other than the page author to evaluate whether the established priorities are incorrect since it is a subjective judgment.
  + A web page author that feels that all navigation items are critical, might set them each to the highest priority, or since they are all equal might accomplish the same thing by omitting all prioritization. As an evaluator, it would be impossible to say that they were incorrect – an evaluator might offer a different perspective, but both could be valid.
* Selling additional semantics to developers and user agents. Successful implementation of new semantics will be more likely if paired with benefits for developers and user agents.
  + Developers asked to add aria-importance=”high” to many items are likely to be concerned about code weight.
  + Working with developers to use COGA semantics or to co-develop semantics that can be used for page breakpoints on different size devices and also for COGA personalization may accelerate wide implementation.

## Proposed Approach

1. Review existing SC for new techniques and/or add COGA-impacting examples to existing techniques to clarify the extent that existing semantics provide benefits to COGA users.
2. Add clarifications to the Understanding document for existing SC, to clarify the importance of the connection between current semantics and COGA needs.
3. Develop a Level AAA Success Criteria that addresses the need to use cognitive semantics as available. By including it at AAA we will be raising awareness, highlighting the need for further work, and preparing developers for the SC to move to A or AA in the upcoming rounds of WCAG development.
4. Develop a substantial section in the supplemental document that clarifies the needs, the existing support, and the gaps to encourage research and development in this area. The COGA user needs document will provide a lot of content for this.

## Proposed SC

Current:

For pages that contain interactive controls, one of the following is true:

* a mechanism is available for personalization of content that enables the user to add symbols to [common form elements](https://rawgit.com/w3c/wcag21/support-personalization_ISSUE-6/guidelines/#dfn-common-form-elements), [common navigation elements](https://rawgit.com/w3c/wcag21/support-personalization_ISSUE-6/guidelines/#dfn-common-navigation-elements) and [common interactive controls](https://rawgit.com/w3c/wcag21/support-personalization_ISSUE-6/guidelines/#dfn-common-interactive-controls) OR
* [contextual information](https://rawgit.com/w3c/wcag21/support-personalization_ISSUE-6/guidelines/#dfn-contextual-information) is available for common form elements, common navigation elements and common interactive controls is programmatically available.

Proposed:

Personalization Metadata (AAA)

For pages that contain user interface components, personalization metadata is used to provide contextual information for content, except where the technologies being used do not support personalization metadata.

Contextual information:

Information which provides additional meaning for an object, such as the object’s purpose, level of importance for page comprehension and use, position in a process, relationship to other objects and processes, etc.