TYPE 1 – ACCESS ESSENTIALS
(July 2001- REV 2008)
Trace R&D Center

Usable WITHOUT VISION: Some users must be able to:
- Perceive all information non-visually including **all** non-decorative info, labels, **status,** etc**.** **Speech output** is usually required for all textual or graphic information (Braille good too but Braille alone is not sufficient.)
- Tactilely discern all parts **necessary to operate full functionality** of device**.** (Not necessarily all controls, just all needed for full operation)
- Tell non-visually when controls are activated (sound and/or tactile feedback)
- Explore without activating things accidentally (nothing triggered accidentally when lightly feeling around for controls)

(see also "GENERAL and PUBLIC guidelines for all disabilities - below)

Usable With LOW VISION (even if poor/no hearing) : Some users must be able to:
- Perceive all information w/ low vision without using sound or Braille - including **all** non-decorative info, labels, **status**
- Discern operating parts w/ low vision. Only parts needed for low vision operation must be visually discernable from background.
- Tell w/low vision when controls are activated, (not via sound only).

(see also "GENERAL and PUBLIC guidelines for all disabilities - below)

Usable WITHOUT HEARING: Some users must be able to:
- Perceive all info via vision or touch (including all non-decorative information and graphics, alerts, etc). Synchronized.
- Tell without hearing when controls are activated **(**all mechanisms) (e.g. good visual feedback)

If Product Support Conversation (e.g. speech)
- Need means to converse in real time text. (sign lang good too but sign alone not sufficient). If phone related, then need text format that is compatible.

(see also "GENERAL and PUBLIC guidelines for all disabilities - below)

Usable if HARD OF HEARING: Some users must be able to:
- Perceive all info w/ residual hearing - all non-decorative audio. (clear audio, reduce background and noise)
- Be able to connect Assistive Listening Devices (ALDs) via standard audio jack.
- If device is held to the ear in standard operation – then need to connect to hearing aids inductively (via T-coil).
- No interference w/ hearing devices. **(**No electromagnetic noise or jamming of hearing devices)

(see also "GENERAL and PUBLIC guidelines for all disabilities - below)

Usable with PHYSICAL DISABILITY: Some need:
- **A means to xxxx all operable parts** needed for **full use** of product. (Substitute each of the following words for xxxx)
  - View - even if short or wheelchair, includes all displayed info
  - Reach - even if short, wheelchair, weakness, not using arm
  - Manipulate - even if low/no pinch, grasp, no twist, no simultaneous
  - Operate with remain strength - force and stamina issues
  - Avoid mis-operation - or have easy recovery
  - Use manipulators they have (and not require human touch) - usable with prosthetic hands, hooks, headsticks, etc

(see also "GENERAL and PUBLIC guidelines for all disabilities - below)

Usable with COGNITIVE, LEARNING: Some users need:
- Information to be understandable with limited cognition, memory and/or attention
- Operation must be understandable too (Actions required, sequence, etc). (Must be able to figure out, remember or be cued)
- Need to recognize & recover from errors -

(see also "GENERAL and PUBLIC guidelines for all disabilities - below)

Usable by these people as well:

People with speech disabilities need:
- a means to operate products without speech

People with visually-induced seizures
- products that do not induce siezures.

GENERAL – Also usable by those with ANY disability who…

must use speech output need:
- a means to listen privately (when information is confidential in nature)

who have trouble finding, reading or responding quickly (a wide variety of disabilties including Blindness, Low Vision, Deafness, Physical Disabilities, Cognitive, Learning) need:
- a means of stopping or greatly extending any time limits on reading or responding
- a means of stopping any moving text

whose disabilites are too severe or multiple to be able to use built in accessibility need:
- a means of connecting special interfaces to standard products including public devices.

who see color differently:
- a means of understanding all information presented through color. (Also presented in a non-color dependent way)

who do not have all parts of body intact:
- need an alternative method of identification, if a biometric form of user identification that relies on a person possessing one unique biological characteristic that some people may not have.

IF PUBLIC or SHARED (not Personal device): Users need:
- To easily discover how to turn on and use any special access modes or features
- Product must not require what user will not have with them - Requiring use of AT to achieve accessibility is OK only if (essentially all users) will have the AT with them (or it will be present) and they have permission to install/use the AT.

TYPE 2 – ACCESS IMPORTANT ***(July 2001, Rev 2008)***
Short List with cues
(See also Type 2 and 3 Access Features)

GENERAL

If any significant data entry (This may be a T1)
- Make it more **efficient to enter data**
- Make it faster / more efficient to read / hear

1st time users (Esp. important for Public Systems where no instruction usually provided)
- Make it easier to **find** controls/mechanisms
- Make it easier to **identify** controls/mechanisms
- Make it easier to **understand** what controls/mechanisms do
- Make it easy to **determine the status** of controls
- Make it **harder to make mistakes**
- Provide **better error recovery** (than is usually provided)
- Make it hard to miss important info temporarily displayed

Repeat users (in addition to above…)
- Make it **easier to remembe**r…
- … **where controls/mechanisms are**
- … **which control is which**
- Make it **faster to identify controls** if **they don't membe**r

Personal Devices
- **Facilitate Customization / Modification** for Accessibility

ALL
- Make it easy to connect AT

Usable WITHOUT VISION
- **See GENERAL above**
- Make it faster / more efficient to listen to text
- Make it **easy to understand speech** output

Usable WITH LOW VISION
- **See GENERAL above**
- Enhance visual environment and reading skills of users

Usable WITHOUT HEARING
- **See GENERAL above**
- Control the language demands for readers who's natural language is not that of the text (e.g. natural language is ASL)
- Provide a means to operate the product without requiring user speech. (already a Type 1 for people who cannot speak for any reason)
- Do not present two streams of important (but different) information simultaneously to the same sense (vision).

Usable if HARD OF HEARING
- **See GENERAL above**
- Provide volume control over a wide range
- Maximize signal to background noise ratio
- Providing private means to play audio information since the user who may have to use high volume levels that would disturb others
- Ensure that messages important to operation are not missed - especially if not understood the first time.

Usable with PHYSICAL DISABILITY
- **See GENERAL above**
- Include provisions that would increase their motor control
- Reduce the strength – stamina required
- Reduce the control needed
- Include ways to ignore erratic unwanted movements
- Provide prosthetic compatibility

Usable with COGNITIVE, LEARNING
- **See GENERAL above**
- (Eliminate need to read)
- Reduce the memory required
- Layer the interface elements
- Avoid nesting or dual purposing controls
- Robust UNDO