



# Information Kiosk AUDIT (Version 1.1)

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## BACKGROUND

Universal design (UD) is a process that ensures that a newly created product is useful to the broadest possible array of people, particularly those with disabilities. UD of information kiosks allows all students, staff and visitors to have equal access and usability.

## DIRECTIONS

This AUDIT has been tested for compatibility with Excel 2004 in Mac OS X and Excel 2003 in Windows XP and Windows Vista.

**Note:** If you are a PC user turn the "Macro security" down in Excel to "Warn", or the spreadsheets won't work. The AUDITs will run on a Mac system without needing this adjustment.

To perform an AUDIT:

- Open the Excel file: click on "enable macros".
- The AUDIT will open in "Page Break Preview" view. You may change to another view mode if you wish.
- Save your file with a new name.
- Identify the kiosk (or bank of kiosks) for audit and clearly label it (along with your name and date) at the top of the worksheet by double clicking on "AUDIT Target", "AUDIT Date", and "Auditor" to enter data in these cells.
- In any kiosk setting, if only one kiosk is present, it must be accessible. In a bank of kiosks, one or more kiosks may be marked as accessible. This AUDIT applies to the accessible kiosk/s only.
- (The AUDIT Target, in this case, could be "Student Union by coffee bar".)
- Print a copy of both the Accessibility and Usability worksheets,  
(or, you may enter scores into the AUDIT directly on your computer).
- You may use the print features of Excel, or you may click on the buttons at the bottom of the page to print individual sheets or the entire workbook.

- Carefully observe all features of the elevator, making measurements as needed to complete the AUDIT. Remember that the AUDIT is a screening tool, not a legal document. It is intended to identify possible accessibility issues which will then be formally evaluated for action. When in doubt, err on the side of accessibility.
- Score the AUDIT/enter data.
- You can move from sheet-to-sheet by using the buttons across the top or by clicking on the Excel worksheet tabs at the bottom.
- Examine and interpret the graphical data.
- Write comments about the elevator, or specific issues related to the Kiosk AUDIT, in the comments section.

For most AUDITs (e.g. doing an AUDIT of an architectural feature) it is easiest to print a paper copy of both the accessibility and usability worksheets. Take the paper copy to the location, score the items, and then transfer your scores to the computerized spreadsheet. Some AUDITs may be scored directly on the spreadsheet. The method you use depends on the item you are auditing and the computer you use.

The AUDITs are formatted in an Excel workbook with 3 spreadsheets. You may use arrow keys to facilitate the entering of data. Double click on the boxes where you will enter text (e.g. “Comments”, “Auditor”). The spreadsheets for both the accessibility and usability sections will tally the scores and provide a numerical score based on the degree of demonstrated accessibility or usability. Graphical data are presented on the 3<sup>rd</sup> sheet.

Trichotomous scoring (e.g. “Yes”, “Partial”, “No”) is used to rate each item in the AUDIT. The spreadsheet converts these to numerical scores.

A **“Yes”** score indicates the item is present and effective  
This should not be selected if there is any doubt if the item is present.

A “**Partial**” score indicates that the item is present to some extent. If the item is only present in some cases, or is present but not in an effective way, you mark “Partial”.

A “**No**” score indicates that the specified item is not present. If a feature is present, but not readily “discoverable,” the typical user will not benefit from it. If you are not sure that an item is present, it should be marked “No.”

“**NA**” will remove the item from scoring.

The Accessibility and Usability scores compute the “demonstrated” levels of accessibility and usability. Thus, items that are not scored are considered not to have been demonstrated. If you do not score all items the final score will be lower because the spreadsheet will interpret any unscored items as zero.

## **CLARIFICATION ON INDIVIDUAL ITEM SCORING**

### ***Accessibility Items***

**Accessibility Section 1, item 2:** Either the kiosk accommodates both standing and seated users, or there are two kiosks in each location, one for standing users, and one positioned for seated users.

- ✓ It is not required that each kiosk be able to serve all users. It is required that services provided by kiosk be provided with equal degrees of accessibility to all users. In order to meet the needs of both standing and seated users, either a single kiosk must be provided that adjusts to the height needs of a range of users, or different kiosks be provided at the same location for standing and seated users.

**Accessibility Section 2, item 1:** The features, services, and on-screen controls of the kiosk can be selected directly using a touch screen or a visible cursor and cursor control device (e.g. mouse or trackball) or can be selected using keyboard commands.

- ✓ Unless a kiosk allows or requires the entry of more than a few selections at a time, it is not required to provide a full keyboard. However, provision of a standard set of command keys, such as those suggested by EZ Access is recommended for all kiosks, as the conventional touch screen is not accessible for many individuals with disabilities. Ideally, the kiosk should automatically connect to keyboard controls that the user brings into the vicinity, using a technology like Bluetooth or infrared, with standard protocols for control.

**Accessibility Section 2, item 3:** At least one means of feature selection and control can be operated using one hand.

- ✓ In order to accommodate the wide range of potential users, a kiosk may provide multiple user control options. For example, a touch-screen may be paired with a keyboard input device. At least one of the input options must allow access to all available features using only one hand, to accommodate individuals who can only work with one hand.

**Accessibility Section 2, item 5:** All feature selection systems (joystick, arrow keys, selection keys) can be depressed with a force of no greater than 100 grams. (This is approximately the bending strength of a standard drinking straw extended horizontally three inches from the hand.)

See Figure 1. [EqTDFigure1](#)

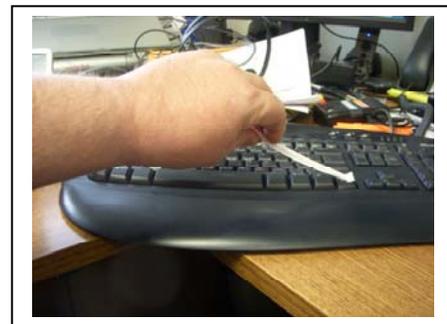


Figure 1: Example of the “drinking straw force evaluation” of a keyboard

- ✓ If controls are too hard to push, they can be a barrier to those who cannot generate high forces. This limitation can be due to muscle weakness or working through a headstick or mouthstick. In general, a force of around 100 grams will be manageable by most users.

- ✓ A force of approximately 100 grams can be generated using a standard plastic drinking straw. If the straw is held with approximately three inches extending from the fingers, and this extension pressed against the control, it should be possible to activate the control without buckling the straw. If the straw buckles before the control activates, the control should be more formally evaluated for compliance with this requirement.

**Accessibility Section 2, item 6:** If the kiosk controls are mounted in a way that the surrounding surface does provide support (horizontal mounting, for example) the controls are positioned from 30 to 40 inches from the floor, and no more than 10 inches from the user edge of the surface.

- ✓ When a kiosk provides a keyboard for entry of information or selection that keyboard must be accessible to the potential user. For a seated user, a “desktop” surface or keyboard shelf may be desirable, but the shelf must be at a height that accommodates the user. The lower edge of the shelf should not be below 29 inches (30 inches to the surface), nor should the shelf be mounted higher than 40 inches above the floor, to allow comfortable use by a wheelchair user.
- ✓ When a shelf is used, the controls should be mounted within reach of the user. To assure easy reach, the edge closest to the user should be no more than 10 inches from the leading edge of the shelf, and the farthest control no more than 20 inches from the edge of the shelf.

**Accessibility Section 2, item 8:** The cursor control device may be operated without direct physical contact by a body part (e.g. while wearing gloves or through a prosthetic hand).

- ✓ Some types of control device depend on body conductivity or capacitance to operate and will not work unless they have direct contact with the skin of the user. Such controls cannot be used by a person wearing gloves, or by a person who uses a prosthetic limb.
- ✓ This feature can be readily assessed by operating the controls through a pen or pencil (the non-marking end) or while wearing gloves.

**Accessibility Section 2, item 12:** The kiosk allows users of assistive technology to use preferred input devices for cursor control (e.g. allows the use of a personal device through USB or other standard interface).

- ✓ UD can accommodate most users with mild to moderate disabilities, but it is unreasonable (and possibly impossible) to design a kiosk that accommodates the full range of disabilities. To make the services provided by an information kiosk accessible to all, the kiosk should provide a means for an individual with a severe disability to use a preferred form of access to operate the controls. This can be accomplished through a USB port that allows connection of HID (human interface device) compliant access systems, or other standard interface technology that supports keyboard and mouse-like inputs.

**Accessibility Section 3, item 3:** For kiosks with cable connected keyboards or controls, the keyboard can be easily moved for comfortable use. For kiosks with fixed keyboards, the space for approach and use allows the user to approach so that the keyboard is directly before either the right or the left hand.

- ✓ To accommodate users who work with their left or right hands, the controls should be reachable by the preferred hand. This can be done by using a cable-connected keyboard and cursor control, though in many areas, such keyboards will be victims of vandalism. If the keyboard is permanently fixed to the kiosk, it must be possible for the user to position him/herself in front of the keyboard. This means that there must be sufficient space provided to position a wheelchair to the left or the right of the fixed keyboard.

**Accessibility Section 4, item 1:** On-screen text and controls are displayed at a size of at least 1/6 inch for each foot of viewing distance (i.e. displays that require greater viewing distances provide larger fonts as well).

- ✓ When evaluating viewing distance, it is important to consider that some users will be viewing the screen from a seated position.

**Accessibility Section 5, item 2:** For kiosks, which require text entry, the keyboard support is sufficiently large and strong to provide hand/forearm support.

- ✓ Some people who have limited strength will require a forearm support for keyboard entry. Others with limited endurance will lean on the keyboard shelf. To assure that the keyboard shelf is sufficiently strong, a 10 lb. barbell can be balanced on the edge. If there is not sufficient room for the barbell, the shelf is not large enough to function as a support. If the shelf moves noticeably when the weight is positioned at its outer edge, it is not sufficiently strong.

**Accessibility Section 5, item 4:** When a kiosk is to be used in a seated position (e.g. when it is adjustable or the lower of paired workstations), it provides a chair and a place where the chair can be located when a wheelchair user is at the workstation.

- ✓ People who walk with forearm crutches or canes may need to sit to work effectively, but will not bring a seat with them. An accessible kiosk intended to be used from a seated position should provide a seat for those who need added stability, but also allow the seat to be quickly stored when a wheelchair user accesses the kiosk.

**Accessibility Section 5, item 5:** Workstation support surfaces and/or mounts avoid unintended movement of text-entry and cursor control devices without hindering use.

- ✓ Although the text entry and cursor control devices should be movable by the user for ease of access, they should not move while being used. A potential user with poorly controlled arm movement may swipe at the controls inadvertently, and should not, in doing so, knock them out of position.

**Accessibility Section 6, item 1:** Information provided by the kiosk is provided in both visual and auditory formats, and the means of accessing each format is readily discoverable.

- ✓ In order to accommodate sensory limitations, the information provided by the kiosk should allow both blind and deaf users access. However, in many settings, the distraction of audio feedback can be a barrier. To accommodate the widest range

of users, the audio information must be available on demand, and the means of accessing clear.

## ***Usability Items***

**Usability Section 1, item 1:** The noise level around the web kiosk space does not exceed 90 decibels (equivalent to the noise level of a lawn mower, motorcycle, or a passing subway train).

- ✓ If the kiosk is placed street-side, or in a busy mall, the ambient noise may make using the features difficult or impossible. If the ambient noise level is greater than 90 decibels, a sound-deadening enclosure should be provided at the kiosk to provide access.

**Usability Section 2, item 1:** The user interface provides "sticky" or "snap-to" controls that facilitate selection with a pointing device (e.g. when the cursor moves over a control, small movements do not move it away from the control. A larger control movement continues the cursor movement).

- ✓ A person with limited motor control may find it difficult to select small targets with the cursor control device. If the controls are designed to "hold" the cursor in spite of small movements, they can be made easier to use without expanding their size.

**Usability Section 2, item 2:** The interface provides a means of directly selecting each interface control using the keyboard (e.g. accessKeys).

- ✓ Some users will not be able to use a navigation system that depends on cursor positioning. For such users, a switch-based system should be provided. This may involve unique key commands (able to be entered with one hand) for each control, or a means of moving serially through the available controls, such as that provided by the EZ Access standard.

**Usability Section 2, item 3:** The kiosk interface allows the keyboard to step through controls and features both forward and backward.

- ✓ When controls are accessed by stepping through, it should be possible to step back to accommodate overshooting a control without requiring stepping through all controls again.

**Usability Section 3, item 1:** Where a kiosk provides a physical keyboard for language entry, it also provides an alternative method (e.g. on-screen keyboard) that can be readily accessed and used with the provided cursor controls or user supplied control system.

- ✓ If the kiosk allows/requires language entries (e.g. search terms) and provides a physical keyboard for such entry, an alternative means of entry should be provided for those who cannot use a physical keyboard. This can be in the form of an on-screen keyboard, or a port that allows the user-provided access system to be connected.

**Usability Section 4, item 1:** Text size can be easily adjusted by the user over a range of at least 1/8 inch to 1/4 inch for each foot of expected viewing distance. The controls to effect the font size change are displayed at the largest available font size.

- ✓ In order to accommodate users with differing levels of visual acuity, a kiosk should allow adjustment of font sizes and contrast. However, such controls are not useful unless they can be located by the person who needs them. To assure that text size controls can be seen when required, they must be displayed in the size required by the least capable user and not be hidden from the user.

**Usability Section 4, item 5:** Display angle offers vertical adjustment by the user to accommodate user eye-height and preferred viewing angle.

- ✓ Background lights or other reflections can obscure screen contents from some viewing angles. To accommodate different viewing heights, the user should be able to adjust the vertical angle of the display to remove such reflections.

**Usability Section 4, item 6:** Kiosk display includes privacy shields or narrow viewing angle option to preserve user confidentiality.

- ✓ Many kiosks are used to access personal information such as medical, banking, or academic records, or to apply for services that the user would not want generally known. To maintain personal privacy, information kiosks should be equipped with a means of limiting access to output to the intended recipient. This may include privacy shields or narrow viewing angles for visual information, and headphones for audible information. However, the privacy measures must be adjustable to assure that the intended user can receive the information. This may include volume controls on headphones and adjustable angles on screens or shields.

## AUDIT SCORE SHEET

The AUDIT summary graphs display the accessibility and usability scores for both parts of the AUDIT. The graphs help determine the perceived levels of accessibility and usability for the item under review based on the percentage of possible points. Behind the scenes a score of “Y” = 2 points, a score of “P” = 1 point and a score of “N” = 0 points. A score of “NA” removes the item from consideration, reducing the total number of possible points for the section of the AUDIT.

**Accessibility interpretation:** A one hundred percent score suggests full, basic access to people with disabilities. Any "no" or "partial" scores indicate that some people with disabilities will not be able to use the AUDIT target. They flag major problems.

**Usability interpretation:** The usability scores illustrate the "friendliness" of the AUDIT target. This usability affects all users, including people without disabilities, but difficulties are often amplified for people with disabilities. The higher the "yes" and "partial" scores, the more usable the AUDIT target is for everyone. "No" responses signify less access for everybody.

The score sheet “**comments**” section is provided for your notes and/or recommendations.

The ACCESS-ed Project considers all AUDITs to be live/working documents. Please share any comments, feedback or suggestions that you may have through the “Contact Us” feature of our website.

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EqTD Figure 1

**Brief Description:** Figure 1: Example of the “drinking straw force evaluation” of a keyboard.

**Essential Description:** The picture shows a hand holding a drinking straw to depress a key of a traditional computer keyboard.

Continue to detailed description or [return to text](#)

**Detailed Description:** The user’s hand (holding the drinking straw), keyboard and tabletop are all in the foreground. The background shows a cluttered workspace.

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