KIOSK MANUFACTURER ASSOCIATION

KIOSK TECHNOLOGY MOVING FORWARD

Addendums

October 20, 2019

Compiled and prepared by the Kiosk Manufacturer Association (KMA) ADA and Accessibility Committee). Members include Olea Kiosks, KioWare, Kiosk Group, Storm Interface, Frank Mayer & Associates, Inc., Vispero, Peerless AV, Mimo Monitors, KIOSK Information Systems, TurnKey Kiosks, DynaTouch, AudioEye and Tech For All Consulting. **Chairpersons** Randy Amundsun of Frank Mayer and Associates, Inc. and Laura Miller of Vispero and originally Laura Miller with KioWare.

Contributing KMA sponsors - Olea Kiosks, KioWare, Nanonation, Pyramid, Frank Mayer, Vispero, ZIVELO, KIOSK Information Systems, DynaTouch, TurnKey Kiosks, 22 Miles, Peerless AV, Parabit Systems, Qwick Media, LG-MRI, Lexmark, Intel Corporation, AudioEye, PROVISIO, Kiosk Group, OptConnect, CSA Self-Service, Storm Interface, Tech For All, Mimo Monitors, UCP Unattended Payments, OTI Global and Evoke.

Additional Consulted - IMPRESA, TouchPay, Acquire Digital, Self Service Networks, Panel Brite, TTCE, SEKO MedTec, Marathon, CUSTOM, TOKENWORKS, Insight Touch, Microcom, TECA, STEGO, Practical Automation, Ingenico, Esper. IO, Axiohm, TDS TOUCH, Evolis, BOCA Systems, URway Holdings, Alveni, Kiosk Innovations and Apriva. We also recognize multiple retailers, the RNIB (via proxy), NCR Dundee and the University of Maryland for their contributions.

TABLE OF CONTENTS

1. Next Steps & Questions for USAB

1.1.1. Consider separate USAB regs section for purely Kiosk-related "ICT"
1.1.2. Change the ICT definition for kiosk and use a new one (SSK or interactive self-service kiosk and informational kiosk)
1.1.3. Explore certification program options. Needs to be fast, economical, probably multitiered (ie application level). No ransom or hostage aspects. Professional service, not extraction service.
1.1.4. Guidance on private/corporate versus state/local/federal
1.1.5. Consider an over-arching "Self Serve & Self Operate" top category. Underneath would come kiosks, ATMs, toll booths, turnstiles, POS, hybrid POS (supermarkets), and other self-service electronics. *That's Craig opinion.*
1.1.6. Continue to work with the KMA on the initial CoP we have delivered
1.1.7. Adoption of a Universal Symbol for Speech Command functionality
1.1.8. For Kiosk Manufacturers specifically - Audio accessibility needs to be higher focus. **Considerations for language both audible and presented**.
1.1.9. Clarification by USAB when WCAG is relevant and not relevant

1.2. Contributors to KMA Accessibility Code of Practice

1.2.1. United States Access Board
1.2.2. Storm Interface
1.2.3. Olea Kiosks, Inc.
1.2.4. Frank Mayer and Associates, Inc.
1.2.5. KIOSK Information Systems [KIOSK]
1.2.6. Pyramid Computers
1.2.7. KioWare
1.2.8. DynaTouch
1.2.9. Tech For All Consulting
1.2.10. Vispero
1.2.11. MimoMonitors
1.2.12. NCR Dundee
1.2.13. Multiple Retailers
1.2.14. University of Maryland
1.2.15. Proxy input from the RNIB

1.3. Recognized and Accredited Organizations

1.3.1. National Federation for the Blind
1.3.2. Royal National Institute for Blind People
1.3.3. United States Access Board
1.3.4. ATMIA
1.3.5. Canadian Standards Group
1.3.6. European EN301-549
1.3.7. VPAT

1.4. Device Addendum

1.4.1. Help button
1.4.2. Onscreen navigation circle
1.4.3. NavBar
1.4.4. Amber Pole Light
1.4.5. Storm AudioPad
1.4.6. EZY Pad (manufactured by Storm)

1.5. Viewpoints (see included text at end of outline)

1.5.1. Misperceptions and Hindrances + Guidelines PDF - Frank Mayer commentary
1.5.2. Notes: TPG five points and software recommendations
1.5.3. Notes: Mimo comments
1.5.4. Retailer 5 points & interview comments
1.5.5. Notes: PROVISIO deployment example
1.5.6. Notes: Olea Kiosks test kiosk
1.5.7. Notes: Olea Kiosks - general notes

1.5.8. Definition of kiosk -- Self-contained, interactive, self-service, can be freestanding, wall mounted, countertop, tabletop or drive thru or detachable user-manipulated tablet. Not necessary for an ATM or airline check-in kiosk (already virtually defined). Screen application can be any of following: dedicated gui interface, modified web interface, web interface or mobile application.

1.6. Reference Sources

1.6.1. Revised 508 the Final Rule
1.6.2. European EN 301 549 V2.1.2
1.6.3. 308 Reach Ranges
1.6.4. 309 Operable Parts
1.6.5. 402 Closed Functionality – Link
1.6.6. 407 Operable Parts – Links
1.6.7. DOT – kiosks and websites – DOT standard for airport kiosks (see pages 35+36 of PDF)
1.6.8. 502 Interoperability with Assistive Technology – Link
1.6.9. 227 Transportation Percentages – Link
1.6.10. Part CFR 27.71 – Airports and Shared Use – Link
1.6.11. ANSI Process
1.6.12. ANSI-Essential-Requirements-2018
1.6.13. FINAL DRAFT Whitepaper. The Use of Voice Recognition and Speech Command Technology as an Assistive Interface for ICT in Public Spaces

-- END BASIC DOC --

VIEWPOINT ADDENDA

ADA Misperceptions and Hindrances by Frank Mayer and Associates, Inc.

In the past kiosk manufacturers and their customers have focused on meeting the ADA standards only for wheelchair access. While not intentional, the kiosk industry was ignoring a segment of the population with other disabilities, i.e. sight impaired, motor control impaired, hearing impaired, cognitively impaired. Recently there has been litigation brought about by these other groups of impaired people citing that kiosks are not addressing their accessibility needs. Conscientious kiosk manufacturers have taken it upon themselves to add technology to allow access to their kiosks for a broader range of disabled people. This includes adding alternate touchscreen navigation devices, audio jacks, text to speech options, voice recognition and alternate display formats. However, these enhancements have not been fully embraced by the end customer for the following reasons- They assume that the ADA regulation only applies to wheelchair access, that revising their software to incorporate text to speech is cost prohibitive, they feel that if there are store personnel available to help the disabled person then they do not need to fully comply.

There is confusion as to if braille decals need to be added to kiosks. ATM's have braille indicators but are other types of kiosks required to have braille instructions and callouts? Certain state and municipal entities say yes. They are requiring that every kiosk in their jurisdiction be labeled with braille. And some want to dictate what the braille actually says. This requires the creation of non-standard braille decals. Many manufacturers of braille decals do not want to produce custom decals and those that are willing have very high manufacturing costs. There is also confusion by the manufactures about BRF files, used for publishing braille but not common for laying out braille decals.

We have clients that are unfamiliar with the protruding objects requirements. When a kiosk is mounted to a wall, they follow the wheelchair assess guidelines but ignore the standards that limit the protrusion of objects into circulation paths. They are unaware of the hazards a wall mounted kiosk can pose to a sight impaired person if not properly deployed. There is confusion about which department's accessibility standard for kiosks should apply. Is it the DOJ, DOT or 508 version?

In order to comply with the ADA standard as it pertains to kiosks, multiple sections of the regulation must be referenced which can cause some sections to be overlooked.
Some clients and software companies don't realize that an audio jack by itself doesn't satisfy ADA access for the sight impaired. They need to be educated in the fact that the audio jack is just one of the components that must be integrated with a tactile navigation device and software interface in order to allow access to the kiosk.

International accessibility requirements differ from US requirements which complicates the development of a kiosk that will be deployed in different countries besides the US. There are no independent companies that can certify a kiosk to be ADA compliant.

FRANK MAYER and ASSOCIATES, INC. GUIDELINES PDF FOLLOWS

Frank Mayer & Associates 2013 Design Guide booklet for ADA compliance

***in accordance with the 2010 ADA standards for Accesible Design**

ADA guidelines regarding alterations to floor or ground surfaces including display features such as carpeting or base plates

302.2 Carpet.

Carpet or carpet tile shall be securely attached and shall have a firm cushion, pad, or backing or no cushion or pad. Carpet or carpet tile shall have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. Pile height shall be ½ inch (13 mm) maximum. Exposed edges of carpet shall be fastened to floor surfaces and shall have trim on the entire length of the exposed edge. Carpet edge trim shall comply with 303.

Advisory 302.2 Carpet.

Carpets and permanently affixed mats can significantly increase the amount of force (roll resistance) needed to propel a wheelchair over a surface. The firmer the carpeting and backing, the lower the roll resistance. A pile thickness up to ½ inch (13 mm) (measured to the backing, cushion, or pad) is allowed, although a lower pile provides easier wheelchair maneuvering. If a backing, cushion or pad is used, it must be firm. Preferably, carpet pad should not be used because the soft padding increases roll resistance.

303.3 Beveled.

Changes in level between ¼ inch (6.4 mm) high minimum and ½ inch (13 mm) high maximum shall be beveled with a slope not steeper than 1:2.

Advisory 303.3 Beveled.

A change in level of ½ inch (13 mm) is permitted to be ¼ inch (6.4 mm) vertical plus ¼ inch (6.4 mm) beveled. However, in no case may the combined change in level exceed ½ inch (13 mm). Changes in level exceeding ½ inch (13 mm) must comply with 405 (Ramps) or 406 (Curb Ramps).

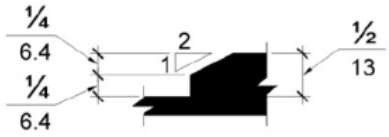


Figure 303.3
Beveled Change in Level

303.4 Ramps.

Changes in level greater than ½ inch (13 mm) high shall be ramped, and shall comply with 405 or 406.

Protruding Objects

307.2 Protrusion Limits.

Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. (Figure 307.2)
EXCEPTION: Handrails shall be permitted to protrude 4½ inches (115 mm) maximum.

Advisory 307.2 Protrusion Limits. When a cane is used and the element is in the detectable range, it gives a person sufficient time to detect the element with the cane before there is body contact. Elements located on circulation paths, including operable elements, must comply with requirements for protruding objects. For example, awnings and their supporting structures cannot reduce the minimum required vertical clearance. Similarly, casement windows, when open, cannot encroach more than 4 inches (100 mm) into circulation paths above 27 inches (685 mm).

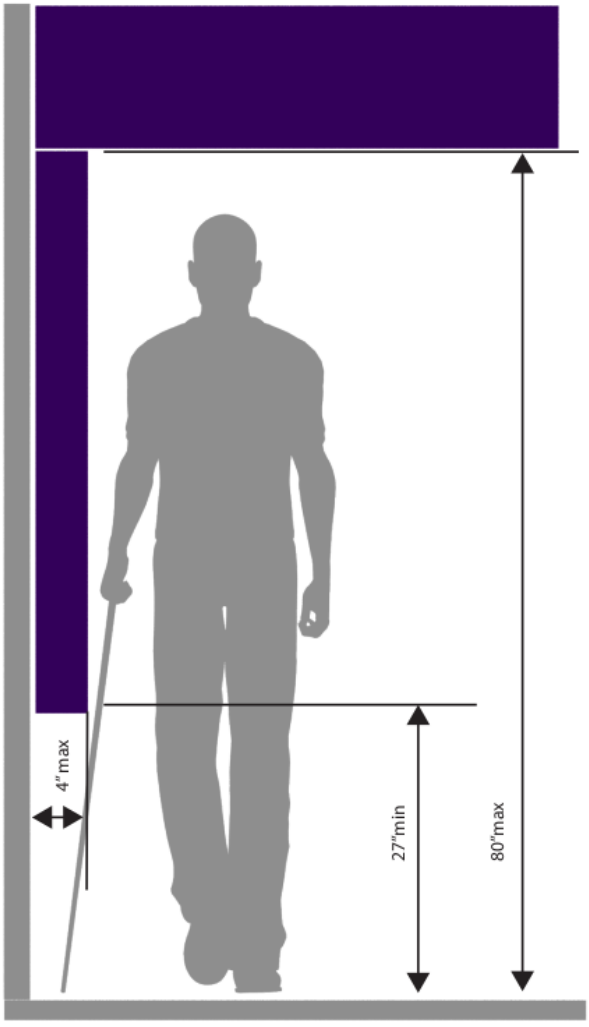
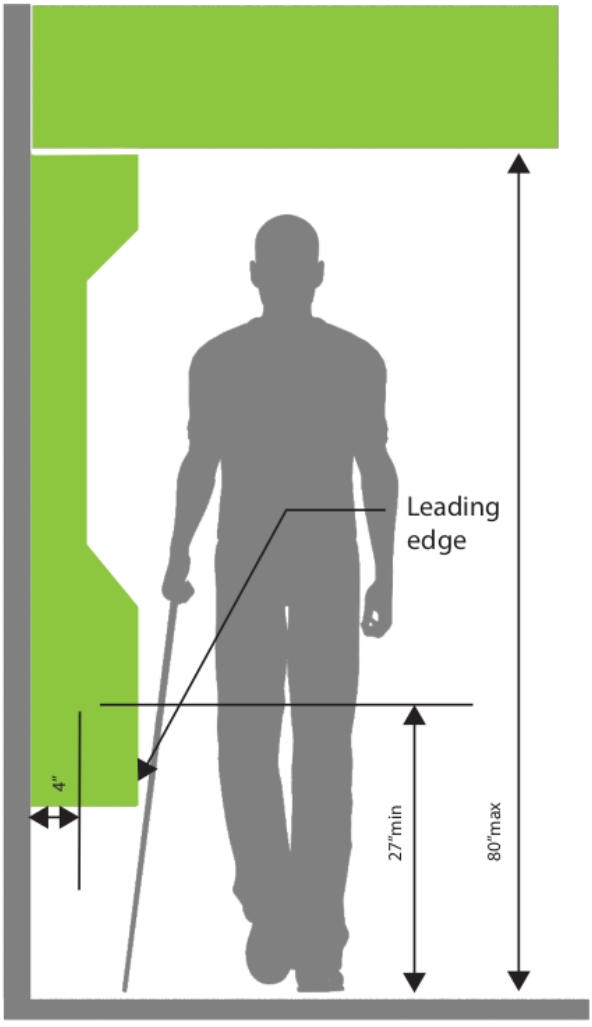


Figure 307.2
Limits of Protruding Objects



Ex. The greater protrusion depth in this case is acceptable because the leading edge of the display begins below the 27" lower limit

Protruding Objects

307.3 Post-Mounted Objects. Free-standing objects mounted on posts or pylons shall overhang circulation paths 12 inches (305 mm) maximum when located 27 inches (685 mm) minimum and 80 inches (2030 mm) maximum above the finish floor or ground. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (305 mm), the lowest edge of such sign or obstruction shall be 27 inches (685 mm) maximum or 80 inches (2030 mm) minimum above the finish floor or ground.

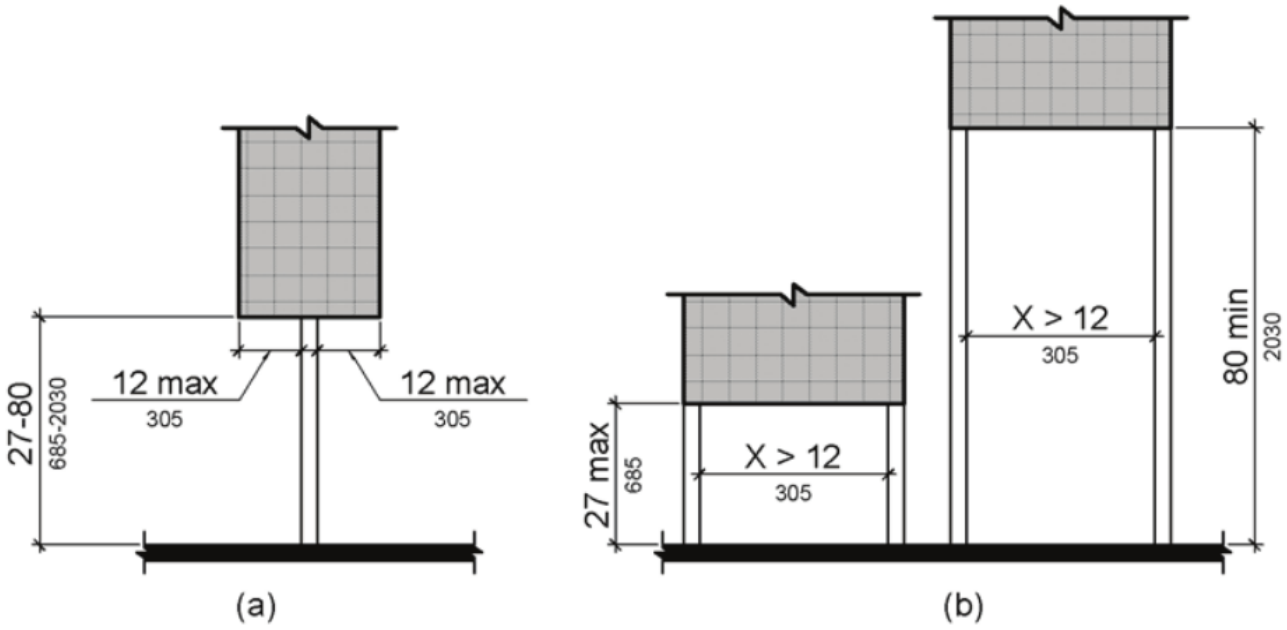


Figure 307.3
Post-Mounted Protruding

Excerpt taken from **2010 ADA Standards for Accesible Design**

U.S. Department of Justice 9/15/2010

308.2 Forward Reach.

308.2.1 Unobstructed. Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the finish floor or ground.

Ex. 1 In the case of an interactive kiosk with a touch-screen, any portion of a screen that will need to be touched in order to operate said kiosk will need to fall within these height parameters. This is done to allow full operation by anyone bound to a wheelchair. Screen heights may exceed this limit but the excess screen portion may be used for the purpose of displaying information or imagery only.

Ex. 2 In the case of a kiosk or display that generates a printed output of any kind, graspable portions of the printed material must be accessible within these limits.

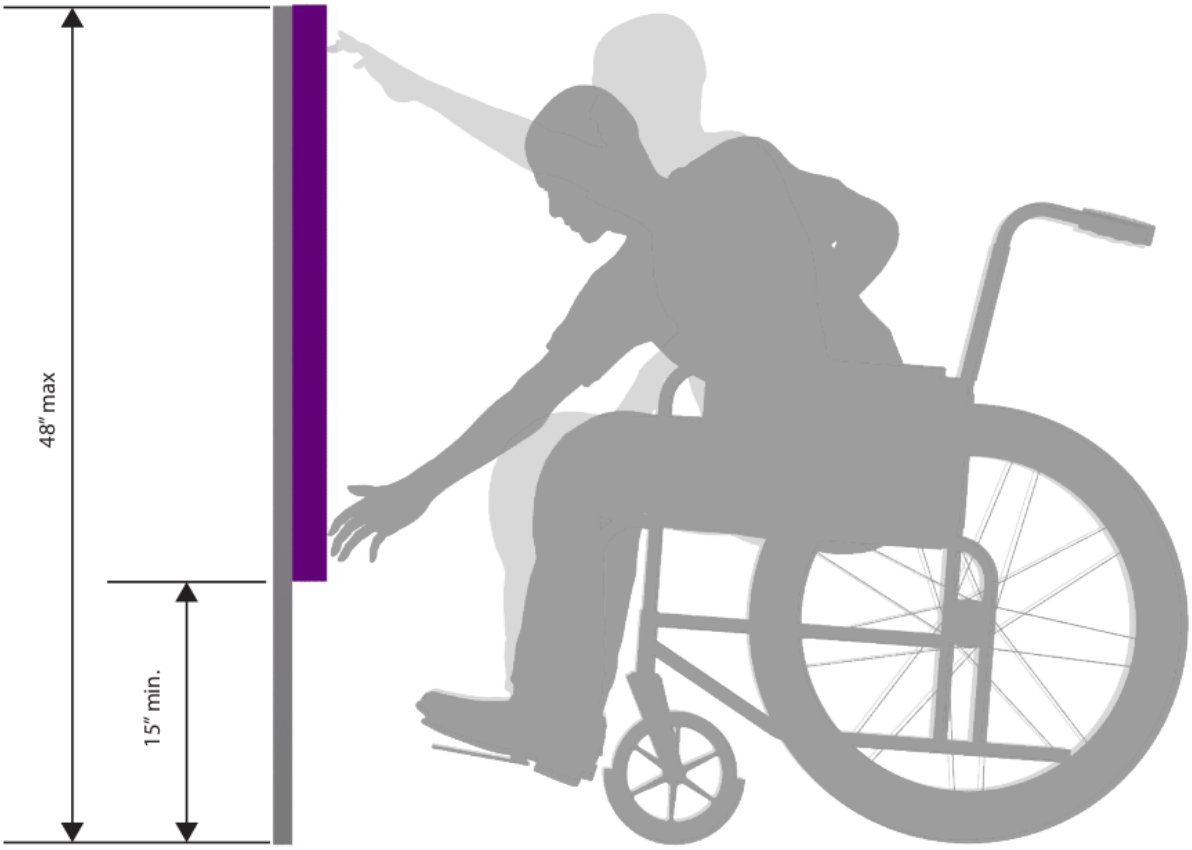


Figure 308.2.1

1

Excerpt taken from **2010 ADA Standards for Accesible Design**

U.S. Department of Justice 9/15/2010

308.2 Forward Reach.

308.2.2 Obstructed High Reach. Where a high forward reach is over an obstruction,

***the clear floor space shall extend beneath the element for a distance not less than the required reach depth over the obstruction.**

The high forward reach shall be 48 inches (1220 mm) maximum where the reach depth is 20 inches (510 mm) maximum. **Figure 308.2.2a**

Where the reach depth exceeds 20 inches (510 mm), the high forward reach shall be 44 inches (1120 mm) maximum and the reach depth shall be 25 inches (635 mm) maximum. **Figure 308.2.2b**

* Where depth of an obstruction is less than or equal to 20" kiosk controls can not be more than 48" above the floor.

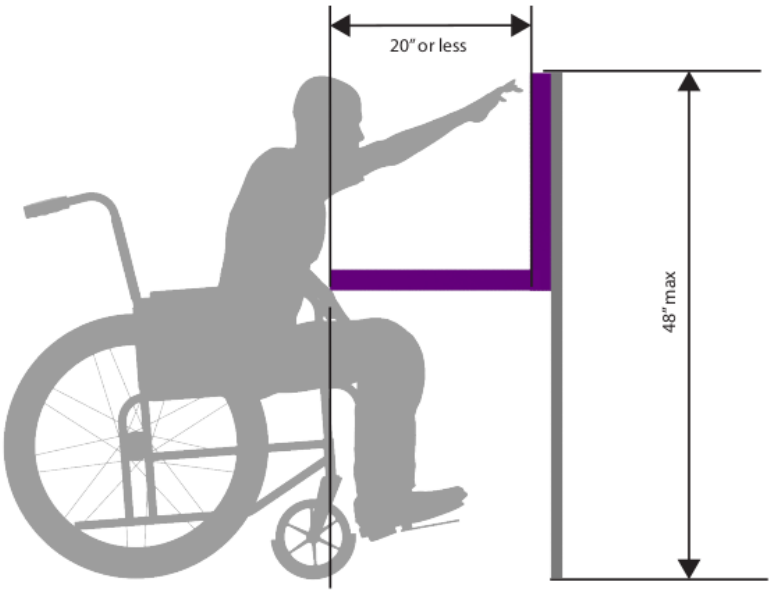
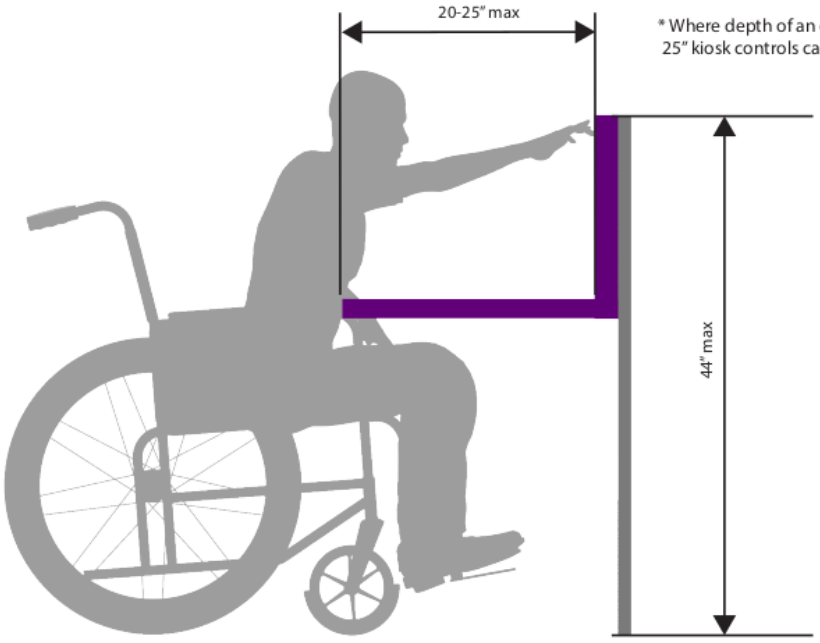


Figure 308.2.2 a

For Forward Reach compliance, the clearance underneath an obstruction must be greater than or equal to the reach distance.



* Where depth of an obstruction is greater than 20" but less than 25" kiosk controls can not be more than 44" above the floor.

Figure 308.2.2 b

Excerpt taken from **2010 ADA Standards for Accesible Design**

U.S. Department of Justice 9/15/2010

308.3 Side Reach.

308.3.1 Unobstructed. Where a clear floor or ground space allows a parallel approach to an element and the side reach is unobstructed, the high side reach shall be 48 inches (1220 mm)maximum and the low side reach shall be 15 inches (380 mm) minimum above the finish floor or ground.

Figure 308.3.1 a

EXCEPTIONS: 1. An obstruction shall be permitted between the clear floor or ground space and the element where the depth of the obstruction is 10 inches (255 mm) maximum.

Figure 308.3.1 b

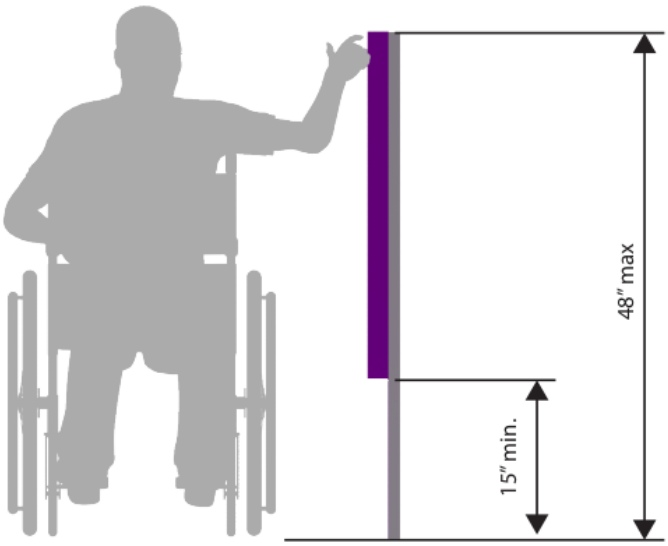


Figure 308.3.1 a

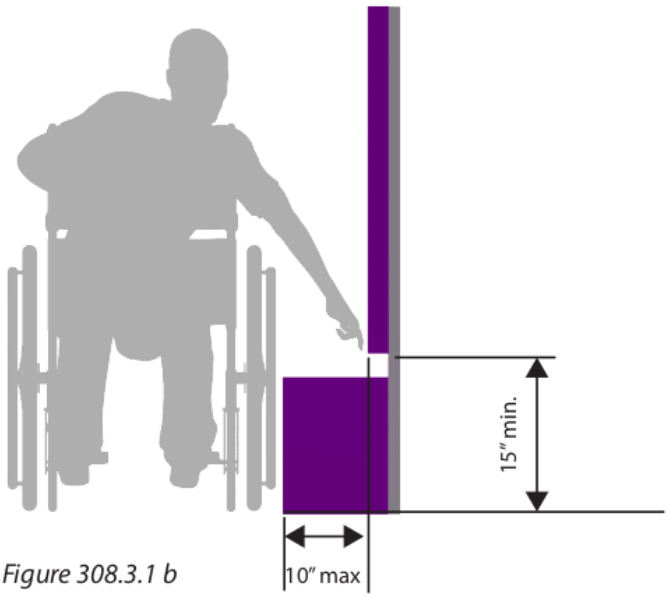


Figure 308.3.1 b

Excerpt taken from **2010 ADA Standards for Accesible Design**

U.S. Department of Justice 9/15/2010

(Obstructed High Side Reach)

308.3.2 Obstructed High Reach. Where a clear floor or ground space allows a parallel approach to an element and the high side reach is over an obstruction, the height of the obstruction shall be 34 inches (865 mm) maximum and the depth of the obstruction shall be 24 inches (610 mm) maximum. The high side reach shall be 48 inches (1220 mm) maximum for a reach depth of 10 inches (255mm) maximum.
Figure 308.3.2 a

Where the reach depth exceeds 10 inches (255 mm), the high side reach shall be 46 inches (1170 mm) maximum for a reach depth of 24 inches (610 mm) maximum.
Figure 308.3.2 b

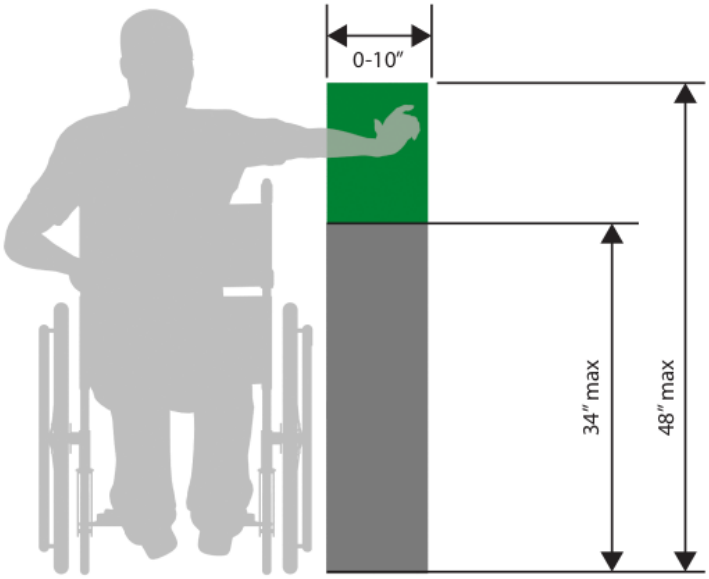


Figure 308.3.2 a

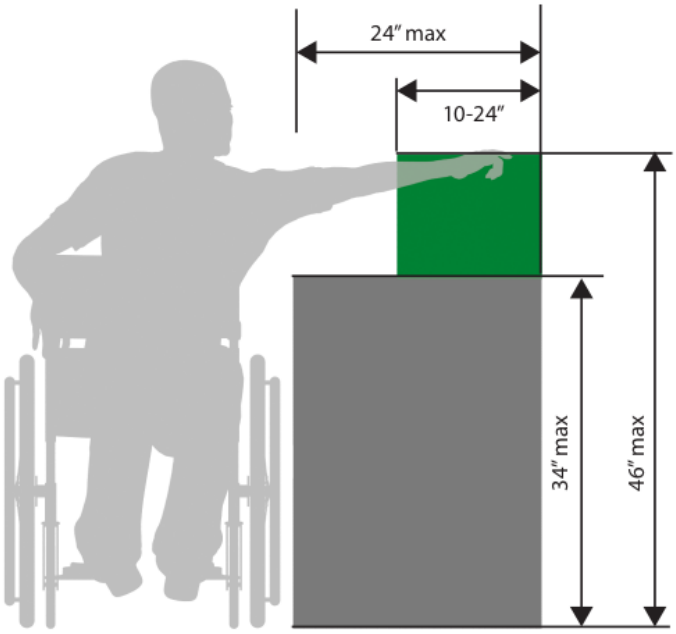


Figure 308.3.2 b

4

NOTES - TPG

Software for Kiosks:
WCAG 2.1, Section 508, and other software related recommendations/regulations offer a wide range of options for creating web content that is accessible. These guidelines apply to web content for desktops, laptops, tablets, and mobile devices. When web content is used in a secure kiosk or purposed device environment, factors such as size, device, accessories, and screen orientation are controlled. This allows for usability testing to be done on specific deployment instances rather than across a range of situations and hardware.

1. Equalization not just accessibility
    a. Kiosk deployers are responsible for creating a kiosk experience for people with disabilities (including people with varying levels of visual or hearing impairment) that allows them to perform the same functions as a non-disabled person.
    b. Providing an alternative option via an attendant is not an equal experience and therefore is not an adequate accommodation. A user who is blind or deaf should be able to conduct the same functions/tasks as sighted and hearing users.
    c. There is a wide range (as outlined in WCAG 2.0 and WCAG 2.1) between sufficient and advisory. Sufficient techniques cover the bare minimum, while “advisory” are those recommended for an equalized experience.

2. Guidelines for Text Alternatives. In general, kiosk app developers should provide text alternatives for any buttons, content, video, audio, and functionality. The text alternatives should be readable by assistive technology.
    a. Non-text content
        i. All non-text content that is presented to the user has a text alternative that serves the equivalent purpose.
    1. Controls, Input, Time-Based media, Test, Sensory, CAPTCHA, Decoration/Formatting, Invisible
    b. Time-based media
        i. When audio-only and video-only content are being shared, an alternative should be provided for those that cannot hear and/or see.
    c. Captions should be provided for all images, audio, and video.
    d. An alternative for time-based media, audio, or video should be provided. Background sounds should be optional (with the ability to turn off) or there should be no background sound in the audio.

3. Sequence for Assistive technology.
    a. The sequence should be correct when read by screen reading technology. This can be done programmatically, using screen readers.

4. Input fields must be readable by assistive technology and there must be support for data input for those without vision.
5. Color contrast must not be the only way to distinguish between options for those that do not have color perception.
6. A kiosk playing audio must allow for volume control, pausing, and stopping the audio.
7. Contrast
    a. The recommended minimum contrast ratio is 4.5:1 though large-scale text and images can have a reduced contrast ratio of 3:1. The kiosk can provide a contrast option to increase contrast rather than default to high contrast.

8. Text
    a. Text properties should include adequate buffer so that when enlarged using a screen reader, there is no loss of readability. Line heights should be 1.5 times the font size, the paragraph spacing (spacing after paragraphs) should be 2 times or more the font size, letter spacing should have .12x the font size, and word spacing should go to at least .16x the font size. Accessibility software such as screen magnifiers can and should be used to zoom in on text to improve readability.
    b. All functionality should be available from a keyboard/physical controls. The keyboard does not have to be a standard alphanumeric keyboard but can be an accessibility keypad.
    c. The audible navigation should have the ability to bypass blocks of content that are repeated on multiple web pages. This includes logos, content, etc. repeated from page to page.
    d. The language and description of text should be clear regarding link content and purpose.
    e. Headings and labels should describe topic or purpose.
9. Time limited sessions. Kiosks often have time-limited sessions which reset when the device is inactive or idle for a preset period of time or when time expires. When accessibility components are engaged, the time limit should include a single button prompt to extend the session.
10. Content should not be designed or used in such a way that is known to cause seizures or physical reactions.
    a. Max threshold of three flashes or below per second.
    b. Motion animation triggered by interaction needs to be able to be disabled and/or avoided completely.

11. Pointer Gestures
a.
12. Touch screens vs mouse controls. Touch screens without external navigation devices are inherently more difficult for users with visual impairments. That being said, touchscreens are a viable option when external navigation devices are included. Even...

Not sure where this goes:
Instructions for the location and use of input devices (such as barcode scanners, camera, credit card readers etc.) should be explicit and audible for those that can not see the location of the input device. Prompts should provide those instructions. Examples: Insert your credit card in the card reader at the 5 o'clock position below the kiosk screen.

KMA: Section "h" Physical location of major functions and hardware devices". The touchscreen functions on the kiosk must be no higher than X (see the height limitations). Because some functionality of the website appears higher on the screen, modifications to the software can be made to drop the electronic display (by adding an accessibility button) or dropping the navigation/menu from the top of the screen to the bottom. This is a software adjustment/option that should be considered when the top of the hardware exceeds the reach of someone in a sitting position.

New Section: Application/website flow with data entry requirements should include Review, Confirm, and Retract navigation with screen by screen questions.

Tabbing through the entire site in order to circle around is also not recommended. Back tab options should be available.

Vispero Top Three Recommendations Going Forward

1. Text to speech (Screen reader) with audio output (Headphone jack)

2. Application coded for accessibility (WCAG or Section 508)
3. Alternative entry for touchscreen interaction

MIMO Monitors Comments

General comments -

3.2.6 to 3.2.12 are not about tactility, and should be moved to the audio section.

I'd add these sections from the ICT -

407.3.2 Alphabetic Keys. Where provided, individual alphabetic keys shall be arranged in a QWERTY-based keyboard layout and the “F” and “J” keys shall be tactilely distinct from the other keys.

407.3.3 Numeric Keys. Where provided, numeric keys shall be arranged in a 12-key ascending or descending keypad layout. The number five key shall be tactilely distinct from the other keys. Where the ICT provides an alphabetic overlay on numeric keys, the relationships between letters and digits shall conform to ITU-T Recommendation E.161 (incorporated by reference, see 702.7.1).

I'd add this from ADA 2010 -

707.6.1 Input Controls. At least one tactilely discernible input control shall be provided for each function. Where provided, key surfaces not on active areas of display screens, shall be raised above surrounding surfaces. Where membrane keys are the only method of input, each shall be tactilely discernable from surrounding surfaces and adjacent keys.

This is a modification of ADA 2010 that I rewrote - it's more general than the actual specification
707.6.3.2 Tactile Symbols. Function key surfaces shall have tactilely distinct symbols for the following keys: Correct key, Cancel key, Add Value key, and Decrease Value key.

RETAILER COMMENTS

From Retailers interviewed by Vispero

Here are our top five learnings from our ADA implementation work so far:

1. Is imperative that the user know exactly where they are in the transaction process at all times. This means giving them a clear path forward and back in any transaction flow.
2. Offer language translations – for both voiceovers and screen text.
3. Ensure the User Interface has adequate contrast so as to easily differentiate between buttons and actions.
4. Provide the user with initial guidance on the usage and functionality of the keypad at the start of any transaction – meaning what buttons provide what functionality.
5. Keep all keypad button functionality consistent throughout the customer transaction.

==========

From Retailers

1. The biggest "aha!" was the message that a **phase 2 is needed** because there is always something that can be done better and should be done better from an accessibility and usability standpoint. Even if being accessible is a requirement included in the RFP, unless the vendor is knowledgeable and focuses on the spirit of the law, not just the letter of the law, there are decisions made without consulting the deployer, and the standards that are out there aren't actually usable/accessible (doing the bare minimum is not enough).
2. The decision making process as to "**how far is far enough**" from an accessibility standpoint is difficult because cost is always a factor and can be prohibitive. Modifying a kiosk to be accessible is not always an option – or, modifying it to be "equally" accessible seems to go too far beyond what should be considered reasonable accommodations.
3. Because the rules change, no matter what you do today the kiosk may be out of **compliance in the future**.
4. It is much easier and more cost effective to make the application and **hardware accessible from the start.** Retrofitting and/or redesigning because it was built without accessibility in mind is always more expensive and creates a less seamless user experience
5. It seems to be difficult to pull out the user groups that are in need of accessibility because of disability vs those that fit in various other "higher need" or "modified content" groups. Example: Multiple languages (for non English speakers) or image-based content using visual queues for those that are illiterate (or can't read English). . . Image-heavy apps are easier for this group to use, but cause difficulty for those that are blind or visually impaired. How do you realistically adjust for most users without ending up with an application that doesn't suit anyone's needs? How do you adjust for most needs but not go down a rabbit hole to be accessible for even the most random of disabilities? Also, how can you show a kiosk's ROI using purchase data, not "how much is it going to cost you not to be compliant" but purchases increased by X% due to accommodating disabilities. . . How many disabled users would not have purchased from this facility or would not have returned in future because of a non-accessible kiosk experience?
6. Kiosks are sometimes not preferred by those customers that are "regulars" because they can just walk up to the counter and the attendant knows what they want. This means that some of the target group for usage are unlikely to use the kiosk as an alternative to stepping up to the front desk. This had nothing to do with disabled vs able users, but was an interesting point – people don't always CHOOSE the kiosk.
7. Usability for all people must be a strong consideration in everything that is done. Accessibility doesn't start and stop with the kiosk, but starts with structural/building accessibility, a good experience in the restroom, usable food packaging, and so on. Working on accessibility only at the kiosk is limited and shows that the organization isn't truly worried about accessibility from a broader viewpoint, but from a legal and mandated perspective. So is it worth doing if you aren't doing it everywhere and in everything you do? Yes, but how well/how far do you go?

PROVISIO EXAMPLE CASE

From H. Horstmann, Managing Director US

Hello Craig,

occasionally, customers ask us whether our software can address certain ADA requirements.

Out of the box, SiteKiosk allows our customers to
- Implement external programs e.g. screen reader solutions
- Add various input devices
- Completely change the UI of SiteKiosk without having access to the source code
- Reprogram functions of the software using the SiteKiosk ObjectModel

With that being said, the attached case study is a good example:

PROVISIO's SiteKiosk Software Provides an ADA-Compliant Solution

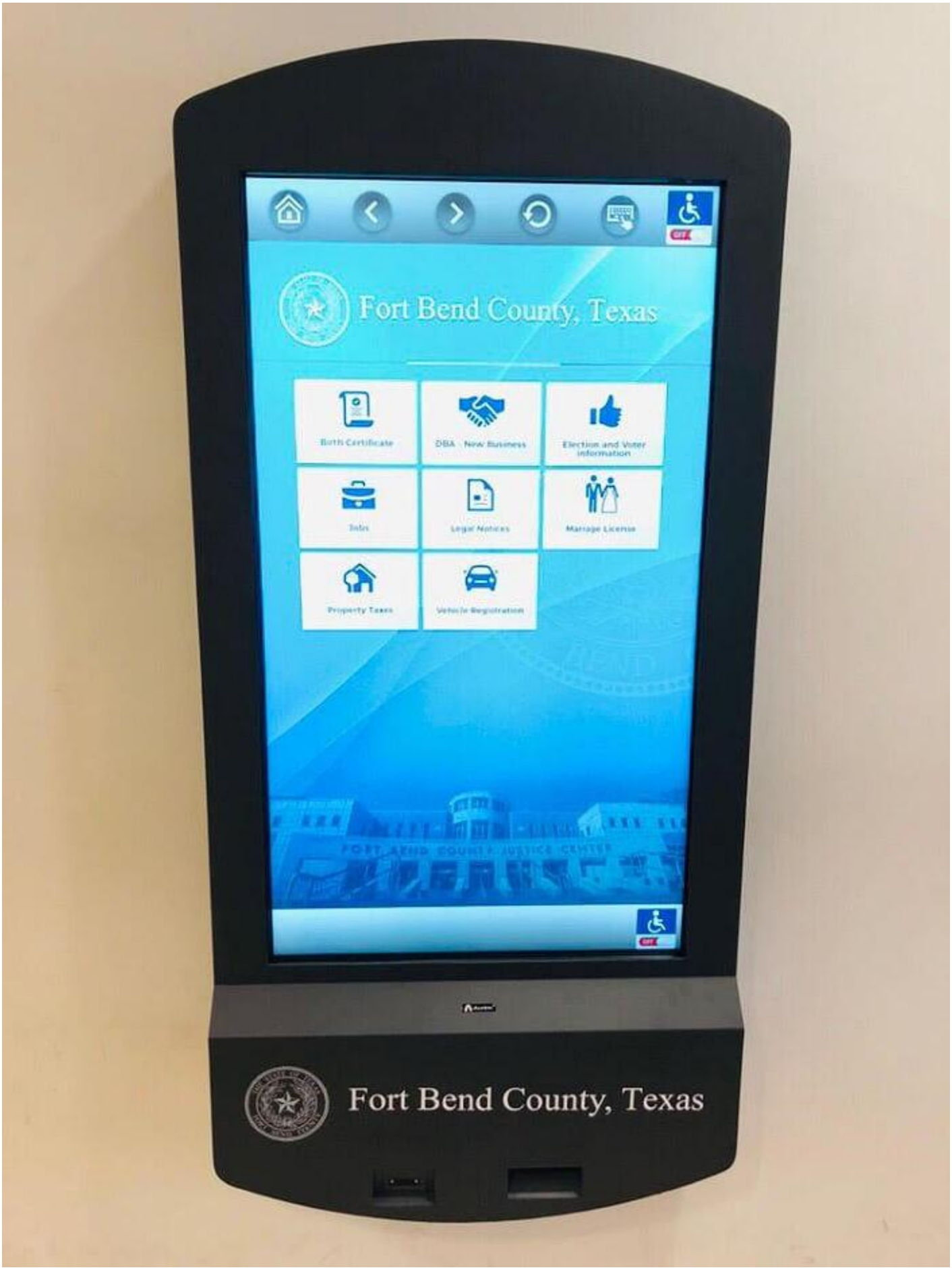
A project done under a partnership between PROVISIO and kiosk provider Alveni is assisting a Texas county in providing government services to all users.

Wheelchair users have the option of moving the browser toolbar to the bottom of the screen by pressing the blue button with the wheelchair image located in the lower right corner of the screen.

Any web developer could accomplish this with just using the canned SiteKiosk download software since all visual elements of SiteKiosk are accessible and can be changed using web technologies.

This keeps custom developments simple and inexpensive.

See image on next page


Fort Bend County, Texas
Birth Certificate
DBA - New Business
Election and Voter Information
Jobs
Legal Notices
Marriage License
Property Taxes
Vehicle Registration
Fort Bend County, Texas

EXAMPLE OLEA TEST KIOSK

Frank Olea CEO, Olea Kiosks Inc.

This is a fixture we created for a client to test the angle of the LCD in a kiosk at ADA height. We had 25 people, 4'-11" to 6'-4" tell us their steepest, shallowest and ideal angle while standing and seated in a wheelchair. The results of the focus group gave us the ideal angle to incorporate in the Kiosk we later created.

And then there is the poor example of a perfectly fine kiosk mounted poorly. See following image.


EXIT
ORDER HERE
ORDER HERE

OLEA Kiosks, Inc. - General Notes

From CraigK -- Items that should be looked at and included are:

- POS Self-Order - typically restaurant
- Smart City Outdoor units (NYLink eg.)
- Beacons and RTLS systems used in restaurants, hospitals, etc.
- Employees versus customers
- Augmented & Virtual Reality and impact on employees and customers
- Privacy and collecting demographics and foot traffic - includes smart floors that measure steps and tracks
- Charging systems including safety aspect of lithium batteries
- Common accessibility module API that would be modeled after JavaPOS or other “open” standards though generally Open means controlled by a couple of companies for their advantage. Legacy primary suppliers may have the largest installed base but they are also the systems most often replaced by other systems more cost-effective and customized to current customers.
- Discussion of to whom USAB expect this Code of Practice will apply. How it should be adopted and distributed. Give us your input