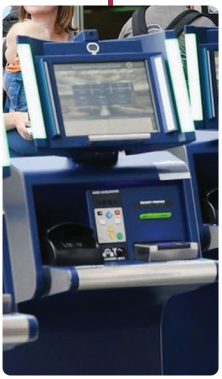
Guide On Accessible Automated Teller Machines/ Electronic Kiosks

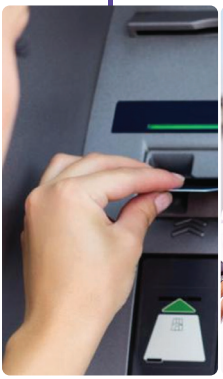
mada
assistive technology center

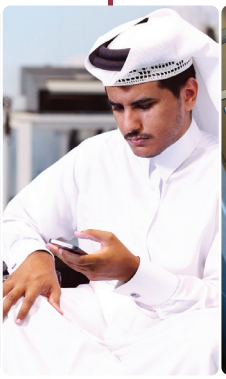
madaQATC madacenter
www.mada.org.qa


mada
assistive technology center

TABLE OF CONTENTS







Self-service machines make it possible for people to perform actions without human help. They can be widely found in businesses, public places, and governmental buildings. Some common types are ticket, registration and healthcare kiosks, ATM/cash machines or automated passport check terminals. However, there are no limits to the functionalities of these devices. Every day, new industries are thinking, designing and developing new kinds of machines to fulfill new necessities for customers.

Electronic kiosks and ATMs make it possible to access information relating to commerce, travel, financial and governmental services without limits of time and space bringing great advantage for business and organizations since by providing services to a greater number of people at lower costs.

Access to ATMs and electronic kiosks is a right of persons with disabilities as defined in the United Nations Convention on the Rights of Persons with Disabilities, which Qatar ratified in 2008. From this point of view, the Assistive Technology Center "Mada "has worked to prepare a comprehensive guide showing the importance of providing ATMs and electronic kiosks that can be accessed by all. The guide also demonstrates how to create an accessible ATM/ electronic kiosk with reference to the expertise of other countries in the world and internationally adopted standards for accessible ATM and electronic kiosk.

INTRODUCTION

BARRIERS TO ACCESS ATM / ELECTRONIC KIOSKS

Despite the increased number of machines, a lot of people find barriers when accessing ATMs and Electronic Kiosks. People with disabilities find difficulties in handling controls, understanding information given in a difficult way or, in case of blind or deaf people, they may find it impossible to get information in video or audio respectively. Barriers also affect people without disabilities who find it difficult to understand how the machine works or do not feel confident and comfortable when performing actions. These difficulties lead some people to avoid using ATMs and electronic kiosks, preferring to use a traditional human interaction (e.g., choosing to visit a physical bank branch to perform money transactions) or to rely on the knowledge and wisdom of other people (e.g., asking relatives to perform financial transactions or governmental procedures). They think they can't do things by themselves but still they have the right to equal access to essential services.

Accessibility of ATMs and electronic kiosks has become an important part of information and communication technology, and accessibility policies are now part of the political agenda of most developed countries and national organizations. To avoid inequality regarding access to self-service machines, most advanced nations in the field of equal rights for people with disabilities have developed their standards, reports, guidelines, and legislation. In a broader and general range of application, the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), adopted on 2006, set up the principles to ensure rights and freedoms of persons with disabilities. However, national legislation on accessibility is more specific to ATM and electronic kiosk. Two of the most important reference legislations are American with Disabilities Act (ADA) and European Accessibility Act. They establish a framework for accessibility requirements and give a precise definition of the legal obligations. There are other references from different countries worth referring to such as integrated Accessibility Standards Regulation (IASR) from Canada and the National Policy for Persons with Disabilities from India.

REGULATIONS AND TECHNICAL STANDARDS

THE IMPORTANCE OF IMPLEMENTING ACCESSIBLE ATMS / ELECTRONIC KIOSKS AS A NATIONAL STRATEGIC OBJECTIVE

At the beginning of the new millennium, many persons with disabilities have difficulties to access electronic services avoiding them for withdrawing money, travel, or administrations sector through self-service terminals. Many times, they are not able to do it.

POINT OF VIEW OF PEOPLE WITH DISABILITIES AND USER ORGANIZATIONS

From the perspective of people with disabilities and user organizations, the importance of information and communication technologies (ICTs) transcends the equal access to goods in the market. ICTs access is the entryway to everyday life processes, from employment to social relationships, so, any barrier to access to digital technology increases the gap between citizens. Until now, actions have been limited and unsuccessful.

POINT OF VIEW OF BUSINESSES

From a business perspective, access to ATMs and electronic kiosks allows:

1. Increase in customer base
The customer numbers can increase by enabling people with disabilities to use different services through self-service terminals such as ATMs and electronic kiosks.

2. Reduce service costs
Costs related to customer service at physical locations may be reduced by deriving the simplest operations to self-service devices.

3. Companies to meet Corporate Social Responsibility (CSR)
Commercial organizations are aware of the necessity to balance profit-making benefits with social activities suitable for the context they operate.

4. Organizations to comply with international legislation and mandatory requirements
It is crucial to any organization to be prepared for future regulations convergence.

POINT OF VIEW OF GOVERNMENTS

Political action is crucial but usually goes slower in comparison with technological advances. This combination of the rapid advance of ICT and slow regulation does not help to fulfill accessibility requirements for people with disabilities. Indeed, correct and flexible legislation could support the implementation of standard solutions. In this respect, some steps have already been taken in Qatar. Based on the ADA standards, the eAccessibility Policy sets the basis for an accessible ICT ecosystem which entails a step towards accessibility of ATM and electronic kiosks since policy provisions encourage accessible electronic kiosks and ATMs for people with different disabilities.

APPROACH TO ACCESSIBLE ATMS / ELECTRONIC KIOSKS

The provision of accessible ATMs and electronic kiosks can be approached from the following three points:

"UNIVERSAL DESIGN" AND "DESIGN FOR ALL"

Advocate for a unique design concept that can be equally used by people with or without disabilities. Several international standards and guidelines adopt universal design as a general approach (e.g., CEN-CENELEC Guide 2014 ,6).

INTERFACE PERSONALIZATION

This approach is about providing interfaces that adapt to the specific needs and preferences of each user. An example of this approach is that followed in the European project APSIS4 all.

INDIRECT INTERACTION

This approach is about shifting the user interaction to the Internet so that users can use their laptop or smartphone previously configured according to their needs. In this way, Spanish bank BBVA, in collaboration with ILUNION Technology and accessibility, developed an accessible, easy to use and intuitive mobile application to withdraw money from ATMs.

THE CONTRIBUTION OF ADVANCES IN TECHNOLOGY TO ATM / ELECTRONIC KIOSK ACCESSIBILITY

As technology advances rapidly through time, the following innovation can be applied to increase accessibility of ATMs and Electronic kiosks.

1. Contactless cards

contactless systems use radio-frequency identification (RFID) or near field communication (NFC) for making payments. With a compact thin chip, consumers can make a safe payment or withdrawal by simply placing their cards near the card reader at the point-of-sale.

2. Indoor navigation and wayfinding

wayfinding is the process by which people navigate an environment using information support systems. It gives People with visual disabilities the ability to move safely to detect and avoid obstacles and dangers. It can help people to find a near ATM or electronic Kiosk independently.

3. Artificial Intelligence (AI)

the personalization of self-service machines allows users to customize the interaction to solve their disability-related access problems. Through a website, a web application or directly in the device, it adapts the user interfaces according to their preferences.

4. Tactile guidance

tactile maps are “images” that use raised surfaces and textures that represent an indoor or outdoor environment. Those raised images help to create for people with disabilities their cognitive map of terminals, therefore, make it easier to find the accessible ATM

5. Touchscreen accessibility

Touchscreens arise as a ubiquitous interaction method for self-service terminals. It is increasingly becoming the primary way for interacting with ATMs and electronic kiosk, and there is no sign of it diminishing. Although great progress has been made to improve touchscreen accessibility on personal mobile devices, there are additional challenges in the self-service context.

DEFINING DISABILITY

Prior to establishing any action-oriented to increase accessibility, it is necessary to define as precisely as possible the nature of the disability. This will help to understand the functional requirements and needs of people with disabilities related to ATMs and electronic kiosks. In this way, five categories have been established:

People with Physical Mobility disabilities

People with learning disabilities

People with communication disabilities

People with hearing impairment

People with visual impairment

MAKING ATM/KIOSK ACCESSIBLE

Location & Space

Hardware

Software

People with Physical / Mobility disabilities

Physical and mobility disabilities affect people who are not able to move by themselves or to operate objects, or that have difficulties to do so. Characteristics that could impact accessibility for people with physical and mobility disabilities are variability in body size, differences in upper and lower body movement and differences in strength and endurance. However, they can also be classified taking into account the different abilities related to mobility such as changing and maintaining body position, carrying, moving and handling objects, and walking and moving. In this way, the requirements for their needs and function are related to the provision of a suitable space to operate, a comfortable reach to and comfortable handling, facilitated by the proper adjustment regarding weight, shape, texture and force resistance of controls.

These are some of the main issues to be taken into account when providing accessible ATM and electronic kiosks for people with physical/mobility disabilities:

Location and Space

1. Be able to access, move inside and approach the place where the ATM / electronic kiosk is located
2. Be able to see the screen correctly and reach the device controls whether standing up or seated
3. Floor and ground surfaces around should be stable, firm, and slip resistant
4. The floor or ground space should be 30 inches (760 mm) minimum by 48 inches (1220 mm) minimum.

Hardware

1. The inserted card, the receipts, and money retrieved protrudes at least 3-2 cm from the entry or exit slot.
2. Control buttons form, size, and space allow access by someone with one hand and reduced manual dexterity.

Software

1. The height of active areas in touchscreens should be 1200-800mm and have an inactive space of 1mm around them.

People with Learning disabilities

People with learning disabilities may have a reduced intellectual ability and difficulty with everyday activities like household tasks, studying or managing money, which affects someone for their whole life. These conditions may impair the ability to perform mental tasks (including problems with reading, writing, memory, problem solving, attention span, calculations and non-verbal learning). People who have difficulty in any of these areas may also have difficulty acquiring new skills. Therefore, to avoid stress and frustration of users with learning disabilities information and choices should be tailored in anticipation of expected user requirements, clearly displayed with ample time allowed for selection. This will help to facilitate independent development of skills and choice making.

These are some of the main issues to be taken into account when providing accessible ATMs and electronic kiosks for people with learning disabilities:

Location and Space

1. ATMs / electronic kiosks are easily located within the facility, and it is easy to distinguish accessible from non-accessible devices (e.g., through an icon or mark)

Software

1. Detection of disability when the credit/debit card is introduced to minimize the number of options to be displayed (i.e., only withdraw money) or different difficulty levels.
2. Easiest language (i.e. "take money" instead of "withdraw").
3. Easy correction of input errors.
4. Standard, meaningful and simple icons are used.

Hardware

1. Numeric keys shall be arranged in a -12key ascending or descending telephone keypad layout.
2. Easy identification of the different parts and controls of the machine in terms of shape, color and stickers.
3. Machine accepts money in any direction.
4. Groups of keys are distinguished by different colors.
5. Existing color conventions are adhered too, e.g., red for stop.

People with Communication Disabilities

People with communication disabilities may have limitations in their use of or understanding of speech and language. Disabilities that can affect communication may include aphasia, apraxia, cerebral palsy, autism, cognitive impairments, acquired brain injury, dementia, Parkinson's disease, or other conditions. People with communication disabilities commonly use alternative communication methods, such as gestures, writing or drawing, communication boards and ICT devices. In this respect, provision of alternative forms of communication beyond voice as well as consideration of augmentative and alternative ways of communication and support to assistive products of communication would benefit people with this disability.

These are some of the main issues to be taken into account when providing accessible ATMs and electronic kiosks for people with communication disabilities:

Location and Space

1. ATMs / electronic kiosks are placed in quiet locations avoiding noisy environments

Software

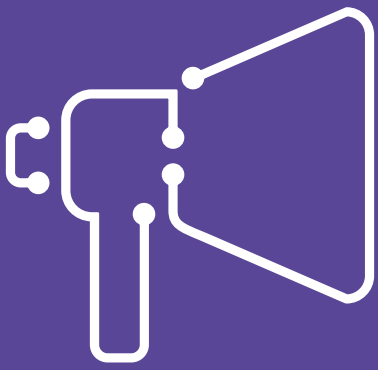
1. There is an alternative method of speech for communication (e.g., with service support personnel)
2. If audio input is needed, there is an adjustable sensitive microphone that can be used by people in wheelchairs as well as by people standing

Hardware

1. If the ATM / electronic kiosk supports human-to-human speech communication (e.g., to contact a human operator in case of emergency), the system should provide an alternative method such as text or video relay services.

People with Hearing impairment

Hearing impairments are characterized by a total or serious loss of hearing (mild, moderate, severe or profound loss). This disability is related not only to ear impairments but also the structures and functions associated with hearing. The degree of hearing loss and age of acquisition influence significantly the consequences of hearing impairment, so it is possible to find people who use hearing aids or cochlear implants or people who have lost their hearing with age or accident that can communicate through oral language; or deaf people whose mother tongue is sign language. It can be stated that this population has a common feature: they face daily communication barriers that affect both the environment in which they operate and the way they communicate with other people. Therefore, an alternative to audio information, adjustable volume control based on background and compatibility with assistive technology become the main issues to be taken into account with people with hearing impairment.



These are some of the main issues to be taken into account when providing accessible ATMs and electronic kiosks for people with hearing impairments:

Location and Space

1. ATMs / electronic kiosks are placed in proper acoustic environments that maximize the sonority of the important sound of speech to be heard

Hardware

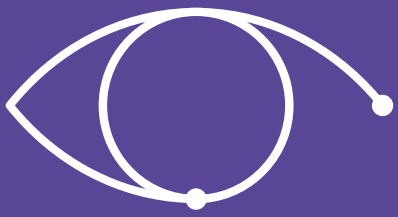
1. There are a standard audio connector and a way to adjust sound volume.
2. There is a Visual alarm to remind the user to take the credit/debit card.

Software

1. Provide visual alternatives to the audio information (e.g., using text transcripts, visual feedback or captions)
2. Provide sign language videos and avatar animations for the most relevant contents and instructions
3. Audio feedback (such as beeps confirming actions or warning signals) should have an alternative visual format (such as flashing light or red color warnings)
4. Where ATMs/electronic kiosks primarily display materials containing video with associated audio content, user controls to activate subtitling, and audio description shall be provided to the user at the same level of interaction (i.e., the number of steps to complete the task) as the primary media controls.
5. When pre-recorded auditory information is needed to enable the use of closed functions of the machine, it shall provide equivalent visual details.

People with Visual Impairment

Visual impairments can be of very different nature, depending on the level of loss of vision. While blind people are those who are not able to perceive any or very slight information, people with low vision are those who need correction to see at least some object at close range. Therefore, it is necessary to provide objects of a suitable size, contrast, and form together with appropriate lighting conditions or, at least the possibility to adjust it. Also, using tactile marks and Braille help users to distinguish controls and device parts by touch. Provision of alternatives to visual information is essential to substitute or supplement visual details as well as conveying relevant information by alternate methods and to allow compatibility with assistive technologies.



These are some of the main issues to be taken into account when providing accessible ATMs and electronic kiosks for people with visual impairments:

Location and Space

1. The machine is situated in a clearly signed and accessible location.

Hardware

1. There is a headphone socket for auditory output
2. Audio alarm to remind the user to take the credit/debit card
3. Buttons with letters and numbers written in Braille
4. There is auditory output for key presses and feedback
5. All the important functions can be operated through the keyboard and not only through the touchscreen
6. The display screen should be visible from a point located 40 inches (1015 mm) above the center of the clear floor space in front of the machine.

Software

1. Text-to-speech (TTS) or sound feedback helping the navigation through the interfaces
2. Inform about the initial change of interface
3. Controls: There is volume control for the auditory output
4. Audio Input: Speech recognition: The user is given the opportunity to undo incorrect inputs
5. Security settings are not set so that they interfere with screen readers
6. Graphics, links and form fields have alternate texts
7. It is possible to pause, restart and interrupt the audio output
8. There is a high contrast between touch areas, text and background color
9. Touchscreens: Labels are easily distinguishable from controls
10. Touchscreens: An inactive space of at least 1mm is provided around each target

RECOMMENDATION

Qatar regulation (Ministry of transport and communications "ictQATAR") stated that new or upgraded ATMs and electronic Kiosks of government agencies and banking institutions must accommodate the accessibility requirements, forcing, since 2013, public banks to make available one fully accessible ATM at different strategically located branches. In the same way, since 2015 government agencies providing services via electronic kiosks should ensure that at least one kiosk deployed at different strategic locations is fully accessible. Other important recommendations include:

1. All ATMs and electronic kiosks should satisfy the accessibility requirements regardless of the public or private nature of the responsible organization.

2. The responsible organization must be able to provide user-centered and personalized interfaces according to their needs, that is, screen reading, high contrast themes, sign language avatars, adjustable font and button sizes, simplified text, etc.

3. The year 2015 was established as a milestone for Qatar regulation to encourage all ATMs and Electronic Kiosk provider to implement a machine that can read user's needs extracted from contact/contactless smart cards.

4. All websites developed to provide information or services to the consumer, should meet the international standards for web accessibility.

Following the standards of different international guidelines (ictQATAR) based on ADA standards for accessibility, from an accessibility point of view, recommendations are summarized as follows:

Language

Languages of use should be Arabic and English. However, other languages (international) are recommended.

Software

1. Design of interfaces should be intuitive and feasible.

2. They may include the following:

- Screen Reader
- High Contrast
- Sign Language
- Simplified Texts

3. Simplified Texts should entail options such as large font, size controls, and enough contrast. Information should not only base on color, but an identified clickable button is a must.

4. Symbols, icons or screen graphics should be concise and familiar so users can understand it. Moreover, they should be accompanied by text.

5. Simple, short sentences (without losing content), logical and focused on the operation.

6. Machines should allow navigation through voice recognition/screen reader or allow interaction with voice recognition/screen reader software.

7. Operating the screen should not require two simultaneous movements of the hands.

8. All fields in forms should be linked to a descriptive label placed near the field.

Hardware

1. Machines should have a variety of heights and mechanisms (e.g., cursors, keyboards and tactile screens) to operate oriented to different user profiles.

2. Large font and size controls.

3. Enough contrast between font and background elements .

4. Placed the screen in a suitable position for a person standing and sitting in a wheelchair, moreover, the interface shall have good lighting.

5. A keyboard/keypad with tactile signals to support its configuration (e.g., ascending or descending numbering) and a suitable size of touch buttons.

6. Contactless interaction is recommended while the collection of cards, tickets, bank notes, coins, receipts or any other items should not require fine motor skills or opening of hatches from the machine.

7. Slots to insert/remove cards, tickets, bank notes, coins, receipts or any other items should have differentiating elements that indicate the position (e.g., an indentation/ notch) so users can find them.

8. Operating the screen should not require two simultaneous movements of the hands. When contactless cards are used operate machines, they should incorporate Braille or an alternative sign, so all users could be able to identify them (e.g., an indentation).

9. Signage and lighting systems for locating machines should be implemented (e.g., tactile pavement, iBeacons, etc.) as well as appropriate signage.

10. Labels placed on the machine should be readable and easy to understand. Such labels include Braille or raised typography.

11. Slots to receive tickets, entry and exit controls must be labeled with Braille and also illuminated so that they can be identified.

12. Visual and sound warnings should be used to give feedback to operations performed by users, as well as to inform users that they can pick up cards, tickets, bank notes, receipts or any other items. Avoid flashing lights and glare from bright lights.

REFERENCES

A list of references used in the report and links to external resources.

• Access ON (2014). A Guide to the Integrated Accessibility Standards Regulation

• Anni Veijalainen (2017) Breaking barriers: Accessible self-service kiosks for everyone. JAMK University of Applied Sciences

• Apsis4all (2014) Accessible Personalised Services in PDTs for All

• Australian Bankers Association (2007). Guiding principles for accessible authentication. New South Wales: ABA.

• Canadian Disability Policy Alliance (2010) A canadians with disabilities act? Queen s University Centre for Health Services & Policy Research

• Canadian Transportation Agency (2016) Removing Communication Barriers for Travellers with Disabilities.

• Canadian Transportation Agency (2014) Implementation Guide Regarding Automated Self-Service Kiosks

• European Commission (2008). MeAC - Measuring Progress of eAccessibility in Europe. Final project summary report - D10

• European Comission (2013). Study on assessing and promoting e-accessibility

• EN 549 301 V2015) 1.1.2) Accessibility requirements suitable for public procurement of ICT products and services in Europe. *http://www.etsi.org/deliver/etsi_en/01./301549/301599_30150060_01.02/en_301549v010102p.pdf*

• Erlandson, R. F. (2008). Universal and accessible design for products, services, and processes. Boca Raton, Fl: CRC press.

Gill, J. (2009) The Markets for the Adaptation of Self-Service Terminals to be Accessible by People with Disabilities. European Commission.

• G3ict (2012). Benefits and costs of e-accessibility. Atlanta: 3Gict.

• G3ict (2015). Inclusive Financial Services For Seniors and Persons with Disabilities: Global Trends in Accessibility Requirements. G3ict Publications and Reports.

• G3ict (2014) Model ICT accessibility policy report. ITU.

• G3ict (2015) Promoting Global Digital Inclusion through ICT Procurement Policies & Accessibility Standards. G3ict Publications and Reports.

• Jokisuu, McKenna, Smith and Phil Day (2016) Touchscreen Accessibility in Self-Service Terminals. Journal on Technology and Persons with Disabilities. California State University.

• Msimang, M. (Ed.) (2014). Model ICT accessibility policy report. Atlanta: 3Gict.

• Narashimhan, N. (2010). e-Accessibility policy handbook for persons with disabilities.

• Qatar General Secretariat for Development Planning (2011). Qatar National Development Strategy 2016~2011. Towards Qatar National Vision 2030.

• Swedish Post and Telecom Agency (2014). How accessible are automated teller machines for people with disabilities and the elderly?

• Swedish Post and Telecom Agency (2015). Checklist for improved automated teller machine accessibility.

• The Supreme Council of Information & Communication Technology. ictQATAR (Sep 2011). Qatar's eAccessibility Policy

• Union Bank of India (2013) Handbook of truly accessible Sampurna ATM
http://www.unionbankofindia.co.in/pdf/ACCESSIBLE/Union_Bank_Talking_ATM_Manual_Version2_English.pdf

• U.S. Department of Justice (2010). ADA Standards for accessible design
https://www.ada.gov/pubs/adastatute08.htm

• US Deparment of Transportation. Nondiscrimination on the basis of disability in Air travel: Accessibility of web sites and automated kiosks at U.S. airports

SOME RELEVANT TECHNICAL STANDARDS

- CEN-CENELEC GUIDE 12-6:2014. Guide for addressing accessibility in standards

- CEN/TS 15291:2006 - Identification Card Systems: - Man-machine interface: Technical Specification: Guidance on design of accessible card systemst

- CEN/CLC/ETSI TR 101550:2014 - Documents relevant to EN 301 549 "Accessibility requirements suitable for public procurement of ICT products and services in Europe".

- NS-EN 1:2009-1332 - Identification card systems - Man-machine interface - Part 1: Design principles for the user interface.

- EN 2:1998-1332 - Identification Card Systems: - Man-machine interface Part 2: Dimensions and location of a tactile identifier for ID1-cards.

- EN 549:2015 301 - Accessibility requirements suitable for public procurement of ICT products and services in Europe.

- ETSI EG 848:2011 202 - Human Factors (HF); Inclusive eServices for all: Optimizing the accessibility and the use of upcoming user-interaction technologies.

- NS-EN 3:2008-1332 - Identification Card Systems: - Man-machine interface Part 3: Keypads.

- NS-EN 4:2007-1332 - Identification Card Systems: - Man-machine interface Part 4: Coding of user requirements for people with special needs.

- NS-EN 5:2006-1332 - Identification Card Systems: - Man-machine interface Part 5: Raised tactile symbols for differentiation of application on ID1- cards.

- NS-EN ISO 20:2009-9241 - Ergonomics of human-system interaction -- Part 20: Accessibility guidelines for information/communication technology (ICT) equipment and services.

- ISO 1:2006-20282 - Ease of operation of everyday products -- Part 1: Context of use and user characteristics.

- ISO/TS 2:2006-20282 - Ease of operation of everyday products -- Part 2: Test method.

- ISO/TR 22411:2008 - Ergonomics data and guidelines for the application of ISO/IEC Guide 71 to products and services to address the needs of older persons and persons with disabilities.

ACCESSIBILITY AUDIT CHECKLIST

Language

- Uses Arabic Language
- Uses English Language
- Uses Other international language:_____

Software Approach

- Screen Readers is available
- High contrast is available
- Sign language is available

Simplified Texts

- Controls and large font sizes are 4.8mm minimum
- There is enough contrast between font and background elements
- Displayed Information is not only based on the colour
- Active buttons (clickable) are clearly identified and clearly marked when selected
- Symbols, icons or screen graphics are concise and familiar for users
- Symbols, icons or screen graphics are accompanied by text
- Sentences are simple, short, logical and focused on the operation (even they do not lose content)
- Navigation through voice recognition/screen reader is allowed
- Interaction with voice recognition/screen reader software is allowed
- Operating the screen do not require two simultaneous movements of the hands.
- Fields in forms are linked to a descriptive label placed near the field

Checklist compiled and extracted from sources such as ictQATAR, American with Disabilities Act (ADA) Standards for Accessibility Design 2010, European Accessibility Act.

Hardware Approach

- A variety of heights and mechanisms (e.g. cursors, keyboards and tactile screens) are available for different user profiles
- Font and controls sizes are large (minimum height 4.8 mm based on the letter "I")
- Displayed Information is not only based on colour
- There is enough contrast between font and background elements.
- The screen is placed in a position that is perceptible from the perspective of a person standing and sitting in a wheelchair (angle between °15 and °30).
- Interface has good lighting (minimum 200 lux)
- The keyboard/keypad must have tactile signals that help determine its configuration (e.g. ascending or descending numbering)
- Size of touch buttons is around 22-20 mm
- Contactless interaction is available
- The collection of cards, tickets, bank notes, coins, receipts or any other items does not require fine motor skills or to open hatches from the machine
- Slots to insert/remove cards, tickets, bank notes, coins, receipts or any other items have differentiated elements that indicate the position (e.g. an indentation/notch) so users could be able to find them
- Operating the screen does not require two simultaneous movements of the hands
- Contactless cards, if available, incorporate Braille or an alternative sign, so all users could be able to identify them (e.g. an indentation)

Signage and Lighting

- Systems for locating machines are implemented (e.g. tactile pavement, iBeacons, etc.) as well as an appropriate signage
- Labels placed in the machine are in Arabic and English and readable and easy to understand.
- Labels include Braille or raised typography.
- Slots to obtain tickets, as well as entry and exit controls are with Braille, illuminated and they can be easily indentified
- Visual and sound warnings are used to give feedback to operations performed by users, as well as to inform users that they can pick up cards, tickets, bank notes, receipts or any other items.
- There are no flashing lights or glare from bright lights.