# ASSISTIVE TECHNOLOGY FOR THE
# PEOPLE WITH DISABILITIES

Assistive Technology is a generic term that covers systems that enable people with disabilities to overcome barriers to active and safe participation in society. Through a variety of user-friendly interfaces listed below, people with disabilities can be encouraged to productively engage with their environment.

# VISUALLY IMPAIRED

## Screen Magnifiers

A screen magnifier is software that interacts with a computer to present enlarged screen content.

## Speech Recognition Software

Speech recognition software allows people to operate their computer and enter data using voice rather than a mouse or a keyboard. Text-to-speech software converts written text such as text files, web pages, PDFs and emails into audio files that can play on a wide range of devices, such as computers, MP3 players, iPods and CD players.

## Scanners

Scanners convert images from printed material to a computer file. The type of scanner used in the context of assistive technology is a flatbed scanner, which scans at a high resolution and can be accessed by a wide range of other assistive technology devices.

## Standalone Reading Machines

Standalone reading machines integrate a scanner, optical character recognition (OCR) software, and speech software and functions without the need for a computer. Users place printed material or an object that they would like to read into the device, which scans it, coverts it into text and then reads the text out loud.

## Braille Technology

There are several different types of devices that utilize Braille technology and provide discrete outcomes based on user needs. Refreshable Braille displays are electronic devices that connect to computers and produce tactile Braille output from what is on-screen. Braille notetakers are mobile devices that use either a Braille or QWERTY keyboard for input and voice and/or refreshable Braille for output.

## Alternative Keyboards

A standard keyboard may not be suitable for people who have low vision. Many people who have low vision use either large print keyboards with high contrast colours or large print adhesive keyboard stickers in high contrast colours than are affixed to a standard keyboard.

## Audio Description

Audio description is the provision of an additional narration track for audio visual content displayed on a television, video, computer or cinema screen, for viewers who wish to access it. It describes what is happening on-screen and utilises the natural pauses in the audio in order to be unobtrusive.

## Audio Players

There are devices available for VI people using a variety of formats, but the main formats that are being promoted are the DAISY (Digital Accessible Information System) format, which requires a DAISY Player, and the mp3 format, which is the standard format for digital audio for music, podcasts and audio books.

## Digital Books

Digital books are available via handheld devices or tablets and use a variety of formats, many of which are specific to the device being used.

## Did You Know?

If the person's blindness has occurred in the first 7 years of their life, dreams will consist of no visual experience. If the blindness occurred after the age of 7, there's a big chance the dream will consist of lively visual experiences. However, the images seen by people, whose blindness has occurred after their 7th year, will later become unclear and blurry.

# PHYSICALLY IMPAIRED

### ▶ Alternative Keyboards and Mice

A standard keyboard and mouse configuration is not suitable for everyone and there are plenty of alternatives available to suit users' varying needs and abilities. These include keyboards with lowercase keys, keyboards with fewer but multifunctional keys, which are used with companion software, large print keyboards with high contrast colors, or a foot mouse, wherein the mouse is operated by the users' feet rather than their hands.

### ▶ Electronic Pointing Devices

Electronic pointing devices provide a way for people to control the cursor on-screen without having to use their hands. These devices use different techniques and technologies for users to control their computers, through ultrasound, infrared beams, eye movement tracking, nerve signals, and brain waves.

### ▶ Switch Access

Switch access refers to the range of switches that respond to specific actions used to activate them, such as sip-and-puff, pushing, pulling, pressing, blinking or squeezing, as well as the software that is used to facilitate these activations and, in some instances, enhance them. Switches can be used to access a range of computing functionality without the need for a keyboard or mouse. Many people will use one or more switches, depending on their abilities.

### ▶ Wands and Joysticks

There are different types of wands and sticks. Some are worn on the head, held in the mouth or strapped to the chin. They are all designed to enable people to press keys on a keyboard. Joysticks are used to replicate the functionality of a mouse and people primarily use their hands, feet or chins to control the cursor on-screen.

### ▶ Trackballs

Trackballs are used to replicate the functionality of a mouse. They have a movable ball contained in a flat base and are manipulated by hand to move the cursor on-screen.

### ▶ Touch Screens

Touch screens allow people to select or activate the functions of their computer through touch, rather than by using a mouse or keyboard. The advent of tablet devices in mainstream technology can be used instead of AT (assistive technology) specific touch screens.

### ▶ On-Screen Keyboards

On-screen keyboards display an image of a keyboard on-screen, allowing people to access it using a standard mouse or a variety of electronic pointing devices.

### ▶ Did You Know?

- The prevalence rate of disability rises with age — around 1 in 20 children is disabled, compared to around 1 in 5 working age adults, and almost 1 in 2 people over state pension age.

- There are hundreds of sign language dialects used around the world. Each culture has developed its own form of sign language to be compatible with the language spoken in that country.

# ITC HOTELS
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# HEARING
# IMPAIRED

## ▶ Assistive Listening Devices

Assistive listening devices (ALDs) help people hear more clearly in a variety of environments. ALDs can amplify audio output from other devices such as TVs, radios, doorbells and PA systems and can also be used in conjunction with hearing aids.

## ▶ Teletypewriter (TTY) and Telecommunications Device for the Deaf (TDD)

TTY/TDD devices are standalone terminals that use a keyboard for input and either a printer or display for output.  Using a modem and a standard phone line, TTY/TDD users can communicate directly with other TTY/TDD users or can dial a relay service that either relays the typed messages or calls the recipients and speak the messages to them, as needs dictate. They then relay the responses back to the TTY/TDD user.

## ▶ Audio Frequency Induction Loops (AFILs)

AFILs are a loop of cables around a designated area, usually a room or a building, which generates a magnetic field that can be picked up by people using hearing aids.

## ▶ Amplification Systems

There are a wide variety of amplification systems for use with TV, radio and telephones. These include devices that are clipped to other devices' speakers, as well as technology that is integrated into hearing aids.

## ▶ Teletext

Teletext is a television information retrieval service that offers a range of text-based information.

## ▶ Closed Captioning

Closed captioning enables transcribed text of audio visual content to be displayed on a television, video, computer or cinema screen for viewers who wish to access it.

## ▶ Did You Know?

- People with hearing loss wait an average of seven years before seeking help.
- Former President Bill Clinton was wearing hearing aids in both ears five years after he entered the White House.
- The hearing aid is the second most widely used assistive technological device after the walking cane.