iOS Accessibility Features

1. Introduction

Apple, since the birth of iOS in 2007, has quietly been adding more and more sophisticated accessibility features to its mobile operating system. All of the following features are built in; there is nothing else to buy other than an Apple device.

This document is intended as a short introduction to the Accessibility functions of iOS. For some of the features, such as VoiceOver and Switch Control, more in depth tutorials can be found on the Apple Website.

1.1. Where are the Features?
The largest part of the accessibility features that Apple have incorporated into the system are located within the Settings App. To find them:

Open the Settings App > Tap General and then Tap Accessibility.

1.2. Accessibility Shortcut
There are many Accessibility features in iOS and some of them can only be enabled or disabled by going through the Settings App as previously demonstrated.
However, Apple has given us a very quick method to turn these features on and off:

Open the Settings App > Tap General > Tap Accessibility and then scroll to Accessibility Shortcut.

Tap this and then tick any or all of the features you wish to use. Once this has been set up just triple tap the Home button and the Accessibility Shortcut menu will appear.

2. Blind Users

Probably one of the most powerful and widely used accessibility features in iOS is Voiceover. When touch screen phones arrived may people saw them as being a difficult challenge for Blind individuals to use due to the reliance on pointing and tapping on areas of the screen. Previously mobile phones were generally inaccessible in any case to most blind users unless they installed expensive software on a limited number of models of phone. Voiceover is Apple's built-in screen reader, it's always there, it's fantastically powerful and it's the most popular choice for the majority of blind phone users.

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Voiceover is enabled within the Accessibility settings and once turned on the device is operated in an entirely different way. A synthesized voice guides and informs the user around the interface, reads alerts and calls out incoming callers, read emails, sms messages and even webpages.
**Go to Settings > General > Accessibility > Voiceover**

Apple have very cleverly used the touchscreen as a flexible and intuitive way of operating the phone with a number of swipes, taps and even a "Rotor" virtual knob gestures to change settings and inter-actions.

2.2. Siri
Many iPhone users use Apple's voice activated helper, Siri, but it also has a wealth of accessibility features built in for a blind or visually impaired user.
To Activate Siri press and hold the Home button. Then simply ask or tell Siri whatever you choose!
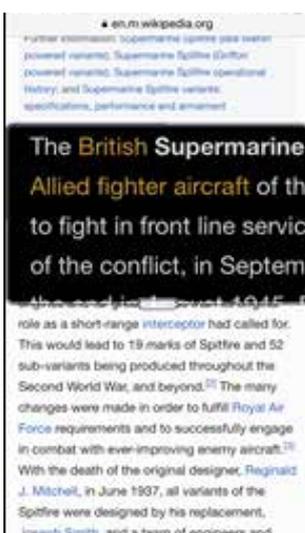

3.1 Zoom
The screen of any iOS device is incredible clear and detailed but some may find that certain elements are far too small for them to see easily. With this in mind iOS includes a screen magnifier, much like the ones that are available for desktop systems that allow the screen content to be magnified and then navigated around using gestures. This can be called up when need by triple tapping the home button and then can be set with different configurations such as a full screen magnification mode, a moveable lens and colour enhancing features. A three-finger drag is then used to pan around the contents of the screen.
Go to Settings > General > Accessibility > Zoom

### 3.2. Magnifer

Historically visually impaired individuals would use a glass handheld magnifier, or some an electronic CCTV based device to read small text or any other detail that they could not easily see. With the High Definition camera and screen of the iPhone Apple have very cleverly incorporated a fully featured CCTV magnifier right into the iOS. This allows for text or objects to be magnified at any chosen level, the colour palette and contrast to be set to a compatible level and the screen image to be captured and read without constantly holding the phone over the item.
Go to Settings > General > Accessibility > Magnifier
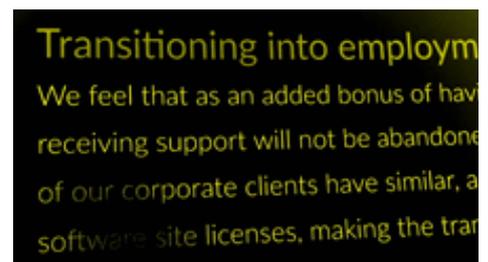
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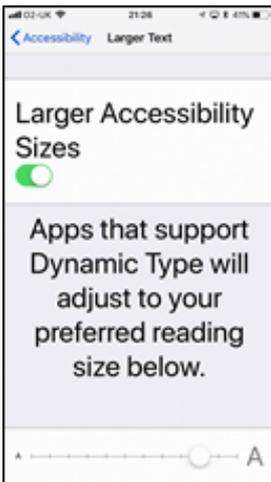
3.3. Text Changes
iOS allow the general look of all applications to be changed to suit an individuals vision:

3.3.1. Bold
All on-screen text can be made bolder for all applications:
Go to Settings > General > Accessibility, then turn on Bold Text.

3.3.2. Larger Text
All text can be displayed at a higher point size than standard :
Go to Settings > General > Accessibility > Larger Text, then turn on Larger Accessibility Sizes.

3.4. Display Accommodations
Many low vision users or users with colour deficiencies find that changing the colour palette and contrast is a good way of seeing the screen more easily. A colour inversion is a popular colour scheme that takes away the white, bright backgrounds, that some people find difficult to look at, and turn this into a black background with white text that is often easier to look at.

Display Accommodations > then turn on Invert Colours.
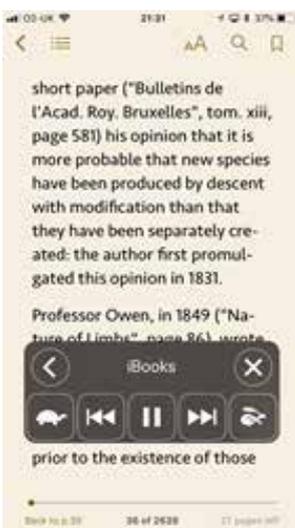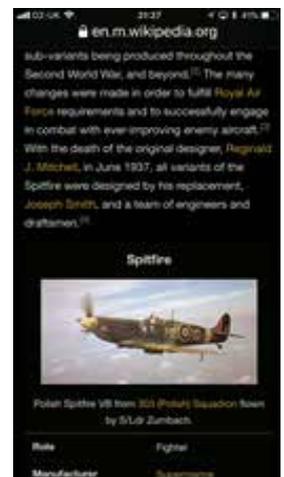
3.5. Speech
A low vision user may not need the full screen reading features that VoiceOver gives but just needs help from time to time when reading text from the screen.
This can be achieved very easily in a couple of useful ways:
To enable text that is selected to be read aloud first:

Go to Settings > General > Accessibility > Speech and turn on Speak Selection

Now, within your application, select the text and then from the menu that appears tap Speak.
To enable the contents of the screen to be read out:

Go to Settings > General > Accessibility > Speech and turn on Speak Screen

Now, within your application use a two finger swipe down gesture from the top of the screen and iOS will begin to read to you. A small control panel also opens to allow you to skip sections and change the reading speed.

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4. Motor

4.1. Touch Accommodations

If an individual finds that touching the screen is difficult, for example someone with a tremor that would mean they often touch the screen multiple times when they don't want to activating undesired elements of the system, Touch Accommodations allow the user to set functions such as Touch Duration that will mean the iOS will only respond to touches if they are of a certain duration and will ignore repeat touches. Touch Accommodations will also allow the system to remember either the first or last touch location to help someone that finds accurately tapping in one position difficult.

Go to Settings > General > Accessibility > Touch Accommodations and change the various settings to suit.

4.2. Assistive Touch

Assistive Touch is a system that enables a set of menus that will perform any gestures that are difficult for a user by selecting relevant on-screen icons, either by a short touch or by using a connected joystick. This can include things like multi finger gestures such as a pinch and zoom or multi-tap gestures such as calling up the multitasking screen and many others.

Go to Settings > General > Accessibility > Assistive Touch and turn on Assistive Touch

4.3. Switch Control

Switch Control allows use of iOS without having to touch the screen at all but instead use any number of connected switches to move through and interact with the screen. This uses a scanning based system that is often seen in many AAC (Assistive Augmentative Control) devices. When enabled a focus indicator moves around the elements of the screen and when the desired function or item is highlighted the switch can be pressed to activate it or interact with it. Multiple switches can be programmed perform specific actions and there are a myriad of customisations that make this a very powerful, built-in system for any individual.

Go to Settings > General > Accessibility > Assistive Touch and turn on Assistive Touch

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5. Reading & Writing

For individuals have have difficulties with reading and writing iOS includes many features help.

5.1. Speech and Highlighting
Having text read aloud is an alternative to visually reading on the screen and is proven to help many with reading difficulties. This can be achieved very easily in a couple of useful ways:
To enable text that is selected to be read aloud first:

Go to Settings > General > Accessibility > Speech and turn on Speak Selection

Now, within your application, select the text and then from the menu that appears tap Speak. To enable the contents of the screen to be read out:

Go to Settings > General > Accessibility > Speech and turn on Speak Screen

Now, within your application use a two finger swipe down gesture from the top of the screen and iOS will begin to read to you. A small control panel also opens to allow you to skip sections and change the reading speed.
Both of these functions also include the option to have the text highlighted in a number of ways as text is being spoken aloud. This helps the individual to follow along visually which allows for a more "multi-sensory" method of reading.

Go to Settings > General > Accessibility > Speech > Highlight Content and choose your preferred options.

5.2. Definitions
When a user is reading text they may encounter words that they do not understand. iOS makes it very easy to find a dictionary definition of any word on screen.

Tap to select a word > tap once more to open the small menu > tap "Look Up"
A short definition now appears; if you tap this once more a more detailed definition will appear. This can be red aloud using the speech function previously described.

5.3. Colour Filters
Changing the background colour or using a colour filter across the item to be read has be proven to help many people with reading difficulties such as Dyslexia. iOS enables a filter to be put across the entire screen with any chosen colour.

Go to Settings > General > Accessibility > Display Accommodations > Colour Filters > Turn colour Filters on and chose Colour Tint > You can now select the colour Hue and Intensity
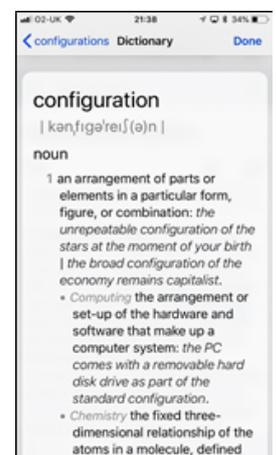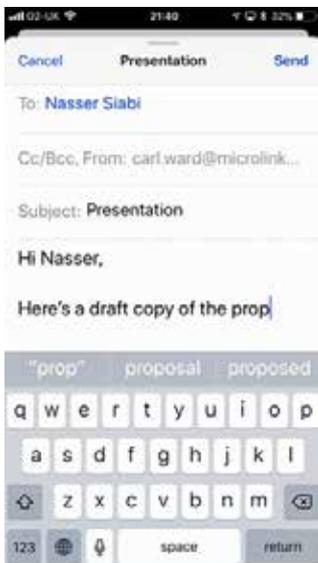
5.4. Quick Type

iOS has a built-in predictive text system that suggests words as you start to type them. A number of suggestions will appear along the top of the keyboard and you can chose one just by tapping the one you want.

Go to Settings > General > Keyboard > Predictive

5.5. Typing Feedback

When typing with iOS typing feedback in the form of the text to speech voice can be enable to hear the words as you type them. Additionally auto-corrected words will be read out and predictive suggestions can be read aloud by touching and holding each suggested word.

Go to Settings > General > Accessibility > Speech > Typing Feedback and select the options you require.

5.6. Voice Recognition

As an alternative to typing, Voice Recognition can be used within iOS. The user's dictation can be recognised and appear in a chosen application by just pressing the microphone symbol on the bottom row of the keyboard and speaking
To enable this feature:

Go to Settings > General > Keyboard > Enable Dictation

6. Hearing

6.1. Direct Hearing Aid Connection

iOS allows a direct connection from the device to a compatible hearing aid. This will allow the streaming of audio from Apps, setting adjustments on the hearing aids and even the facility to use the iPhone or iPad as a remote microphone.

6.2. Custom Vibrations

Custom vibrations can be set for individual callers or specific alerts.

Go to Settings > Sounds > Ringtone > Vibration

6.3. LED Flash

The iPhone's built in LED flash can be used as a visual alert for things such as incoming calls and alarms.

Go to Settings > General > Accessibility > LED Flash for Alerts

6.4. Mono Audio

For individuals with monaural hearing iOS provides a setting to combine both sides of a stereo audio signal to a mono one with a balance control provided between left and right.

Go to Settings > General > Accessibility > Mono Audio

6.5. Subtitles and Closed Captions

When viewing media based content on the iOS closed captioning or subtitles can be enabled.

Go to Settings > General > Accessibility > Subtitles and Captioning