

# Smartphones for all



**A**ndroid smartphones are now accessible by switch or joystick via Bluetooth thus opening up the world of smart phones to people with limited hand and arm movement. This means that someone who can use a switch or a joystick can access all the functions of their smartphone without any assistance at all.

### What is a smartphone?

A smartphone is a mobile phone with the advanced capabilities of a computer. Smartphones are essentially phones, which means they can make and receive telephone calls and texts. In addition to these traditional functions, smartphones can also be used to surf the internet and run small computer programs called apps. Furthermore, smartphones have various multimedia capabilities which means they can be used as music and video players, as well as cameras and voice recorders. Having a smartphone means that you have mobile access to the internet, your email, your phone and to multimedia device.<sup>1</sup>

### What is an app?

An app is a small computer program that performs a specific function on your smartphone. For example the Kindle app allows you to use your smartphone to read digital books and the YouTube mobile app

allows you to watch videos on your phone. Apps are downloaded from the android app store and in doing so you customise the functions of your phone. The price of apps ranges from free to several Euro.

### What is Android?

Android is an open source operating system committed to universal design for mobile devices, including smartphones and tablets. This means that all android devices and applications are universal and can be integrated. Android is not restricted to one specific manufacturer, software company or designer. Thus the user has the choice of multiple brands such as Samsung, Motorola, and HTC. All device and android applications are designed to be compatible increasing the choice available to the consumer.

### Is the iPhone a smartphone?

The iPhone is a type of smartphone that uses Apple's own operating system iOS and not Android, therefore this article is not applicable to the iPhone or any of Apple's products. To my knowledge, full functioning of the iPhone is not accessible using a switch or a joystick as it is not an android device.

### How does one access a smartphone?

Using a smartphone is generally done with

the touch of a finger. Some users are able to access smartphones using mouthsticks but this proves to be much trickier and may involve covering the mouthstick with tinfoil or using a stylus sock to ensure that it works. It is now possible though to access a smart phone using a joystick or a switch via Bluetooth and using an android app called the Tekla.

### The Tekla app

The Tekla app is a free download at the android marketplace and only requires that you download the app onto a smartphone phone. The Tekla keyboard is then selected as an input instead of a standard touch screen keyboard. The phone screen appears as normal with an added Tekla keyboard at the bottom the screen. There are two appearances of this keyboard - a navigation keyboard or an alphabetical keyboard. The navigation keyboard offers a choice of back, up down left right, ok and switch to alphabetical keyboard. The alphabetical keyboard offers an onscreen QWERTY keyboard for imputing text it too.

The Tekla Keyboard can be accessed using the entire phone as a switch or by either a joystick or a switch. To use a switch or joystick requires the purchase of a Tekla shield.

<sup>1</sup> Having a smartphone means being tied into a data contract with a mobile phone service provider. These contracts start from around 35 euro per month.

<sup>2</sup> The Tekla app and Tekla Sheild will not work on the iPad.

### Tekla Shield

The Tekla shield is a Bluetooth-adaptor for a switch and joystick. It connects to any android smart phone via Bluetooth. If using a joystick (such as the chin control of a wheelchair) the user can navigate between the icons in the toolbar by accessing the toolbar by simply moving the joystick up, down, left and right. If using a switch the user needs to enable the scanning feature, thus allowing the individual buttons to be highlighted one at a time. The user can then select a highlighted icon using a switch. This is then used to navigate between the existing icons on the phone and to access the individual functions.

The speed of the scanning can of course be made faster or slower depending on an individual's preference and efficiency. If a user would like to try the app without using a switch or joystick they can use the entire phone screen as a single switch. This requires selecting full screen switch mode (see pic 1). The scanning across the toolbar is activated by touching the phone anywhere on the screen which may be useful for someone who might have some limited arm movement but is not able to accurately select small phone icons.

### Does the Tekla work with an iPhone?

No, the iPhone is not an android.

### What does this cost?

The Tekla app is free of charge. The Tekla shield is expected to be commercially available by the end of the year. The shield is expected to retail for less than €300.

### Who will install and maintain this?

The Tekla app is not designed as a specialised product that requires a technician to manage. It is intended to be user friendly. Users should be able to download it and adjust the settings themselves. The app itself will be maintained and modified by the developers who will make updates available for free at the Android marketplace.

### What does this all mean?

This means that you can purchase any one of several smart phones - a Tekla shield and a suitable switch or joystick. Users will then be able to download the Tekla app and have instant access to their entire smartphone. If the phone needs to be replaced any commercially

available android smartphone will be suitable. The advantage of an app like this is that you use your phone as you would normally, but through the means of a switch or joystick instead of your finger. This means you have access to your telephone, your photographs, your email, your text messaging and any apps you may choose. The user can watch videos, surf the internet, and even take a photograph. Using an app like the Tekla in combination with a Tekla Shield enables full access to a smartphone.

provide "good enough" accessibility, it is not very sustainable and, most importantly, it undermines the efforts and thus the interest that device manufacturers and platform developers may have in making sure accessibility is built into their products from the beginning. By showing that it is possible to control a smartphone without creating a separate segregated environment, we are trying to motivate others to design inclusively." George Silva CEO Komodo Labs.



### Universal design vs. assistive technology

The Tekla has been developed using universal design principles rather than assistive technology principles. The project has been funded by the Inclusive Design Research Centre. Their work aims to make a mainstream device (in this instance, a phone) fully accessible rather than turning the existing device into a specialised piece of assistive technology with limited functionality.

This development is an exciting development that optimises the flexibility of the android platform. Other accessible applications are likely to follow, but, few will offer full access to the entire selection of smartphones. Some specialised assistive technology apps such as a communication device for people who have lost the ability to speak (the Alexicom or TactoTalk) tend to be stand alone specific assistive technology apps that are available on a phone rather than to control the entire phone.

"We think that although in the short term this segregated environment may

### The future - Tablets

Tablets are small light portable computers the size of a notebook. They have the basic functionality of a normal PC with integrated touch screens. The market for tablets has expanded rapidly recently and is no longer restricted to Apple iPads<sup>2</sup>. You can now purchase devices that use the android operating platform such as the Blackberry Playbook, Motorola Zoom, HTC Flyer or the Samsung Galaxy to name a few. These android tablets will in the near future be accessible by switch and joystick via Bluetooth devices such as the Tekla Shield.

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### Resources

<http://komodoopenlab.com/portfolio/tekla/> - <http://scyp.idrc.ocad.ca/projects/tekla>  
Stylus socks <http://www.etsy.com/listing/63452391/stylus-socks-gold-2-pack>

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and medical equipment and expenses. One set of figures calculated by reference to the Claimant's reports and a second set calculated by reference to the Defendant's reports. The reports are often not exchanged between the parties until proceedings are at an advanced stage and a date for the hearing of the case is close at hand. The Claimant's figures will often be higher than the Defendant's figures. The question then arises as to which set of figures are to be favoured by the Judge. A Judge will rely on the expert evidence in order to provide guidance on what he/she thinks is an appropriate figure. The Judge will read the reports and the experts may be required to give evidence in Court. An expert can be examined by both the Claimant's and the Defendant's legal team so that their evidence can be tested.

The Judge, after weighing the appropriate evidence, ultimately decides what figure to use in relation to care and medical aids and equipment. Similar criteria are used by a Judge in relation to deciding what figure to award for other categories of special damages such as loss of earnings. Before a Judge decides what compensation to award a Claimant, the Claimant must prove that the Defendant is responsible for the injuries suffered by the Claimant. In some instances liability will already be admitted by the Defendant and the Judge will only have to make a decision as to the value of the case.

Many cases are settled before they are heard in Court before a Judge. However cases do not usually settle until proceedings are at an advanced stage. The question is often asked as to why cases settle? The answer to this is that there is always a degree of uncertainty as to what decision a Judge will make. A settlement meeting gives the parties an opportunity to take the matter out of a Judge's hands and to reach a settlement that they are comfortable with. A Claimant might agree to a settlement if there is a reasonable possibility that a Judge would award less than at a hearing of the action. Another influencing factor might be as to whether liability is disputed or not. A Defendant will be interested in settling a case in order to save on costs. If a Claimant is successful in his/her case it is usually the case that the Defendant will have to pay for the Claimant's legal costs. The actual



hearing of a case runs up a large amount of costs and a Defendant will seek to avoid this expense by settling if possible.

The Claimant's legal team will have to carefully consider the care report and the occupational therapist's report in order to be satisfied that any settlement offer takes into consideration (and gives adequate weight) to the expenses that a Claimant will incur in relation to his/her future welfare.

If appropriate provision is provided for care, this will hopefully give an individual who has suffered a spinal injury a degree of comfort in relation to his/her future welfare.

Prudent investment of any settlement/award is also significant in terms of future security and should be of paramount importance.

**If there are any particular legal topics of interest to you please email [Spinal Injuries at info@spinalinjuries.ie](mailto:info@spinalinjuries.ie) or contact **McMahon Goldrick Solicitors at 01-8898580 or mobile 087-2854007 Ralph McMahon.****

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