

ACCESSING IDEVICES

An overview of the current state of affairs in accessing iPads, iPods
and iPhones

Will Wade, Occupational Therapist,
Kent Childrens Communication & Assistive Technology Service

State of the scene

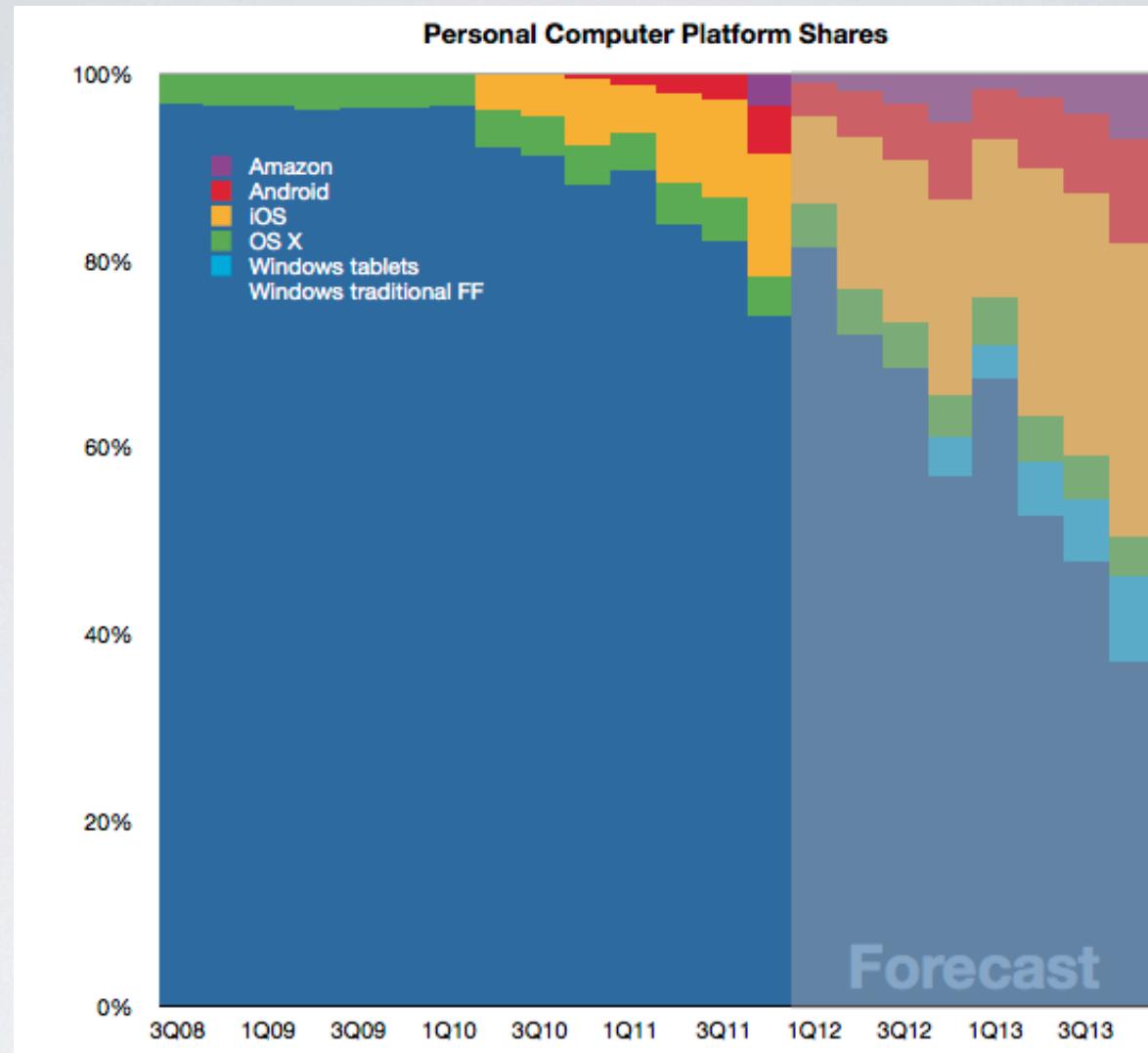
Direct access:

Supporting direct touch
Voice Input

In-Direct access:

Supporting keyboards
Joysticks
Switches

(not covering cases, mounting!)



TABLETS AREN'T GOING AWAY

Estimated date that tablets outsell laptop/desktops: 2013.

Estimated date of death: approx 2015.

“There's nothing on the iPhone or iPad that you can do that I can't do.”

Stevie Wonder

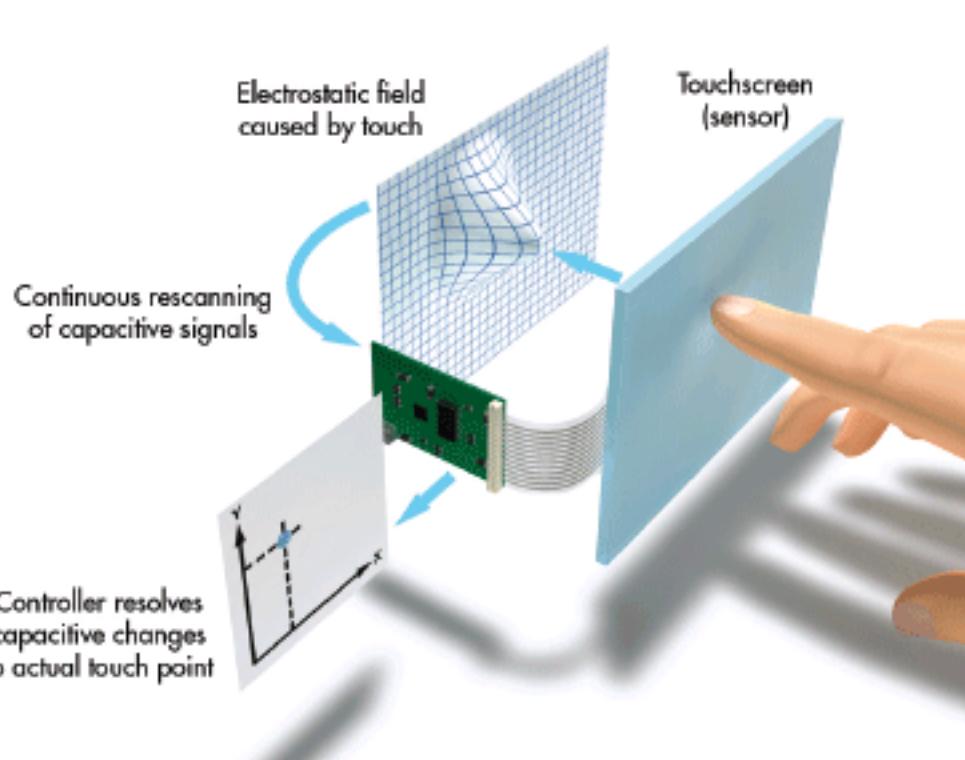
“The on-screen keyboard is fully speech enabled and supposedly accessible, but how much skill in my fingertips am I going to need to use this thing?”

Hugh Huddy (InclusiveSociety)

The iDevices have shown to be a great asset for the VI community.

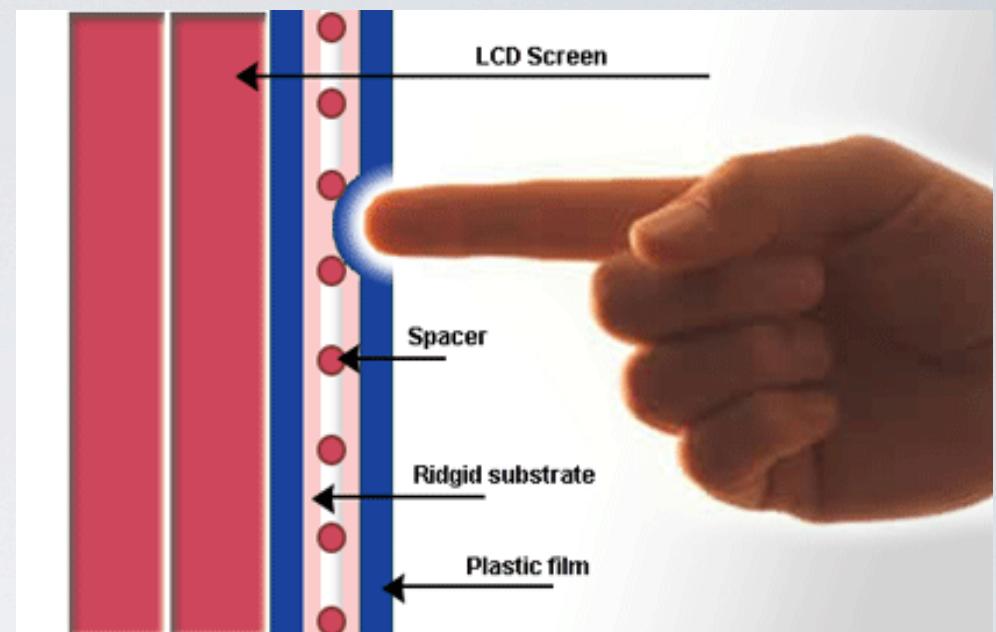


But for the PI community its not always as successful



Resistive touch

- Multitouch
- Highly sensitive
- 90% optical transparency
- Requires contact from something that conducts



Capacitive touch

- Norm not multitouch
 - Can require recalibration
 - Fingers require more pressure
 - 75% optical transparency
- Requires pressure



SUPPORTING DIRECT TOUCH

STYLUS

- Not traditional stylus - needs to be **capactive**
- e.g. Pogo Stylus, Griffin
- Shapedad (etsy)



STYLUS

- Two main methods for making your own stylus:
 1. DIY conductive rubber
(Liquid Tape rubber or DAP Contact Cement with Graphite Powder)
 2. Anti-static Foam often with electrical components



STYLUS/ REMOVING MULTITOUCH

- Also available: Capactive fabric in numerous shapes and sizes.. Sample pack £9. Useful for making stylus'
- NB: It needs to conduct from the hand/mouth/ holding body part to the nib. Some plastics conduct enough to do this.Trial & Error!



REMOVING MULTITOUCH

- TapCaps - stick-on capacitive stickers for gloves - \$25 Not currently available..



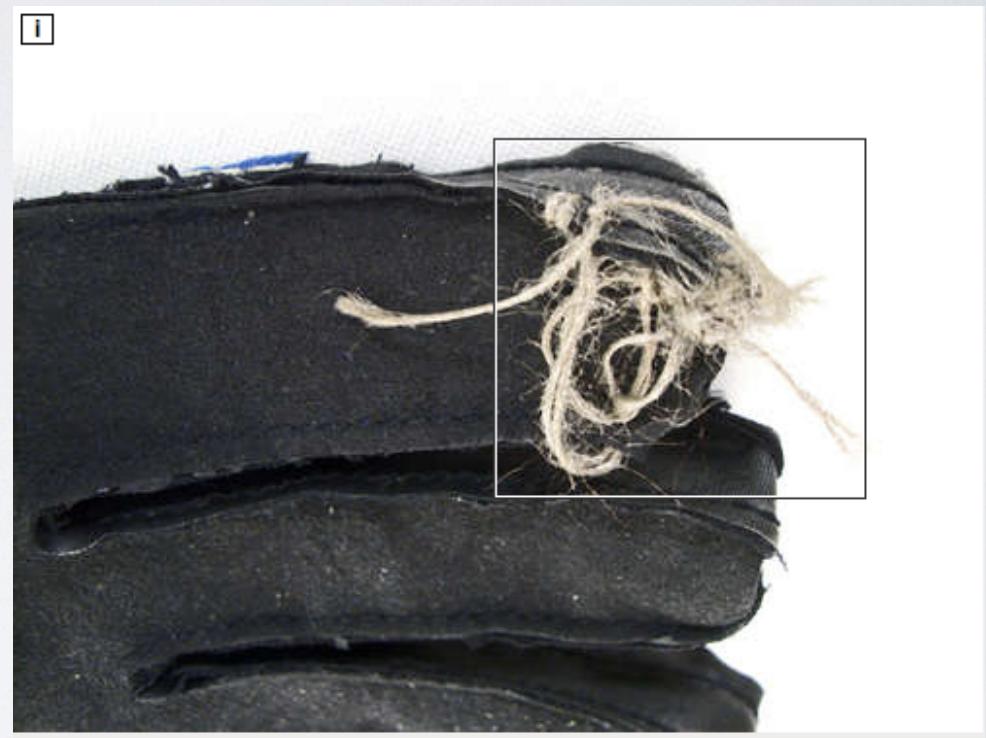
REMOVING MULTITOUCH

- E-Tip Gloves (North face eg) - TBox and other suppliers approx £30



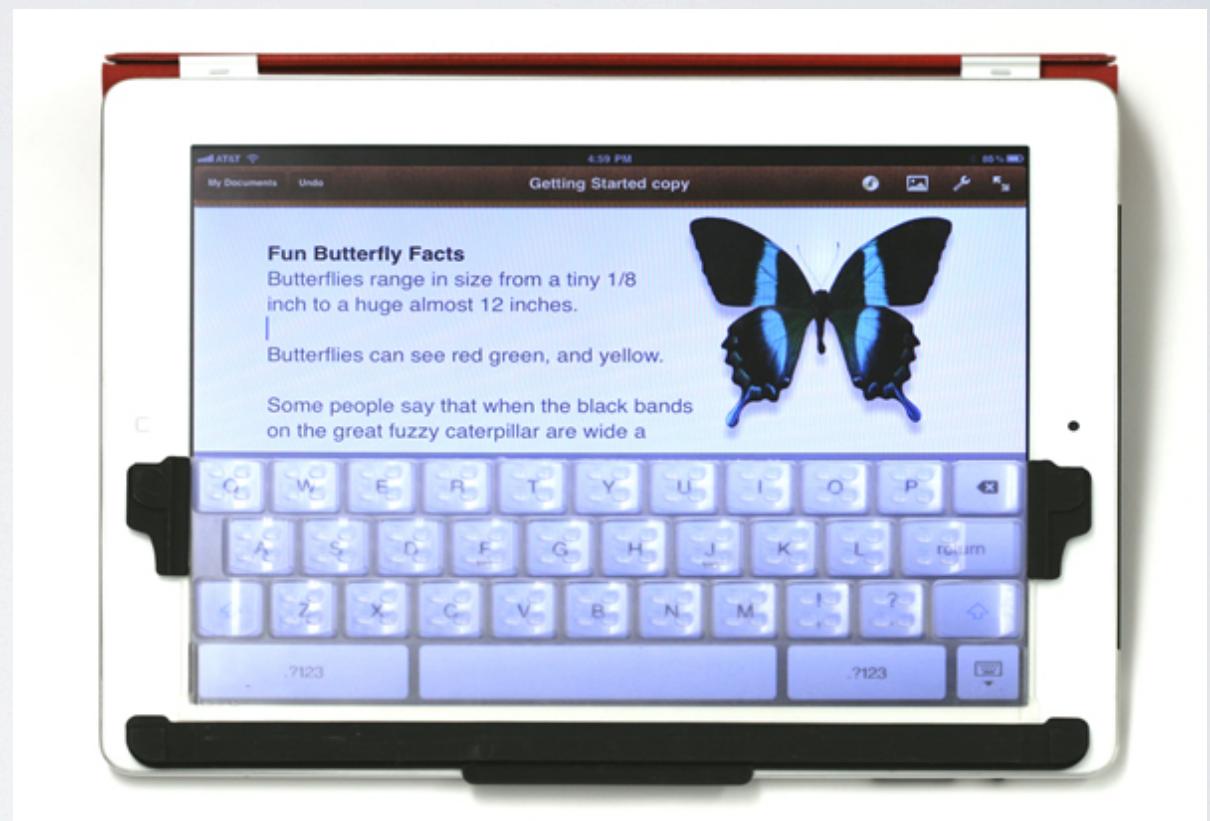
REMOVING MULTITOUCH

- DIY Capacitive Gloves -
buy some capacitive
thread and get creative



KEYBOARD SUPPORT

- TouchFire - provide rubber keys \$49.99



KEYBOARD SUPPORT

- SpeedDots - Protective overlay for iPhone (soon iPad) but with some markers for key locations (each letter and raised further on F/J) €10.



KEYGUARDS

- Logan-Tech and Smartbox sell keyguards
- £30-85. Do make sure you are also state what case you are using if any!



APPS WITH TOUCH ACCESSIBILITY OPTIONS

- e.g. Dwell time, Touch on release. Have started to appear
- Proloquo2go, Grid Player, Predictable, iTalker, SoundingBoard, TapSpeak range, TapToTalk, Alexicom, TouchChat, all have some access options for touch/switch
 - NB: Turning on voiceover can (if the app been developed correctly) provide auditory cuing
 - <http://appsforaac.net/access-options>

TO AVOID MIS-HITTING HOME BUTTON

- Apple don't allow developers to control home button
- Reverse a case, Use a corn-plaster or buy a BubCap



TO AVOID MIS-HITTING APPS

- Remove Un-Necessary Apps
- Bury un-deletable apps in a folder several pages deep
- Put essential apps on the dock
- Enable Restrictions
- Use iconProject to create apps to shortcut contacts or setting options (e.g Bluetooth On/Off)





SUPPORTING ACCESS TO REAL KEYBOARDS

USB KEYBOARDS

- Camera Connection Kit. Look for USB not SD Card one.
- Allows USB devices to run on iDevices
- NB: You may need keyboard stickers
 - Mac Keyboard layout (£, # “)
- Also allows USB Mic/Headsets
- Also allows some switch boxes (e.g Hitch, Don Johnston Switch Box)





- Maxess sell keyguard (£50) for Apple “Docked” keyboard (£56)
- Portrait only



- Bluetooth Keyboards are all supported



- Wide range available
- Some have media shortcuts



BUILT-IN SUPPORT FOR READING/WRITING

- Keyboard settings.
- Shortcuts - Abbrev Expansion



BUILT-IN SUPPORT FOR READING/WRITING

- Zoom (3 fingers)
- Large Text (not system wide)
- Speak Selection
- Speak Auto-Text





VOICE INPUT

SIRI

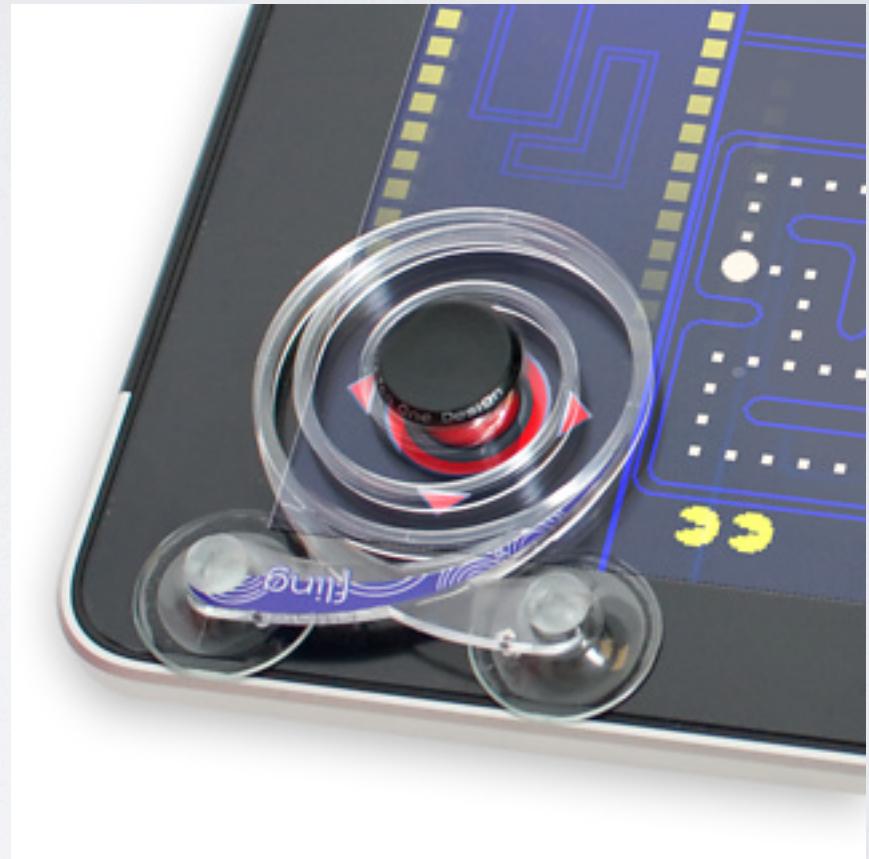
- Only available on iPhone 4s. Pre 4s
 - simple voice control which was very hit and miss
- Utilises many licensed components of Nuance's systems
- Allows numerous different languages to be used
- Does need to have a net connection
- Allows for text dictation with punctuation (like Dragon) - but not all components and not in all apps (is in Apple Apps e.g. Mail, Notes, Calendar, iTunes)
 - Mileage may vary
 - Dragon Dictation also available for free on pre-iPhone 4s/iPad devices
 - Also Vlingo for messaging etc on non-iPhone 4s



IN-DIRECT ACCESS

Joysticks, Switches and all sorts of meddling

- Some “Joysticks” available for games
- Fling Joystick, £19.99



- Some “Joysticks” available for games
- Joystick-IT, £19.99



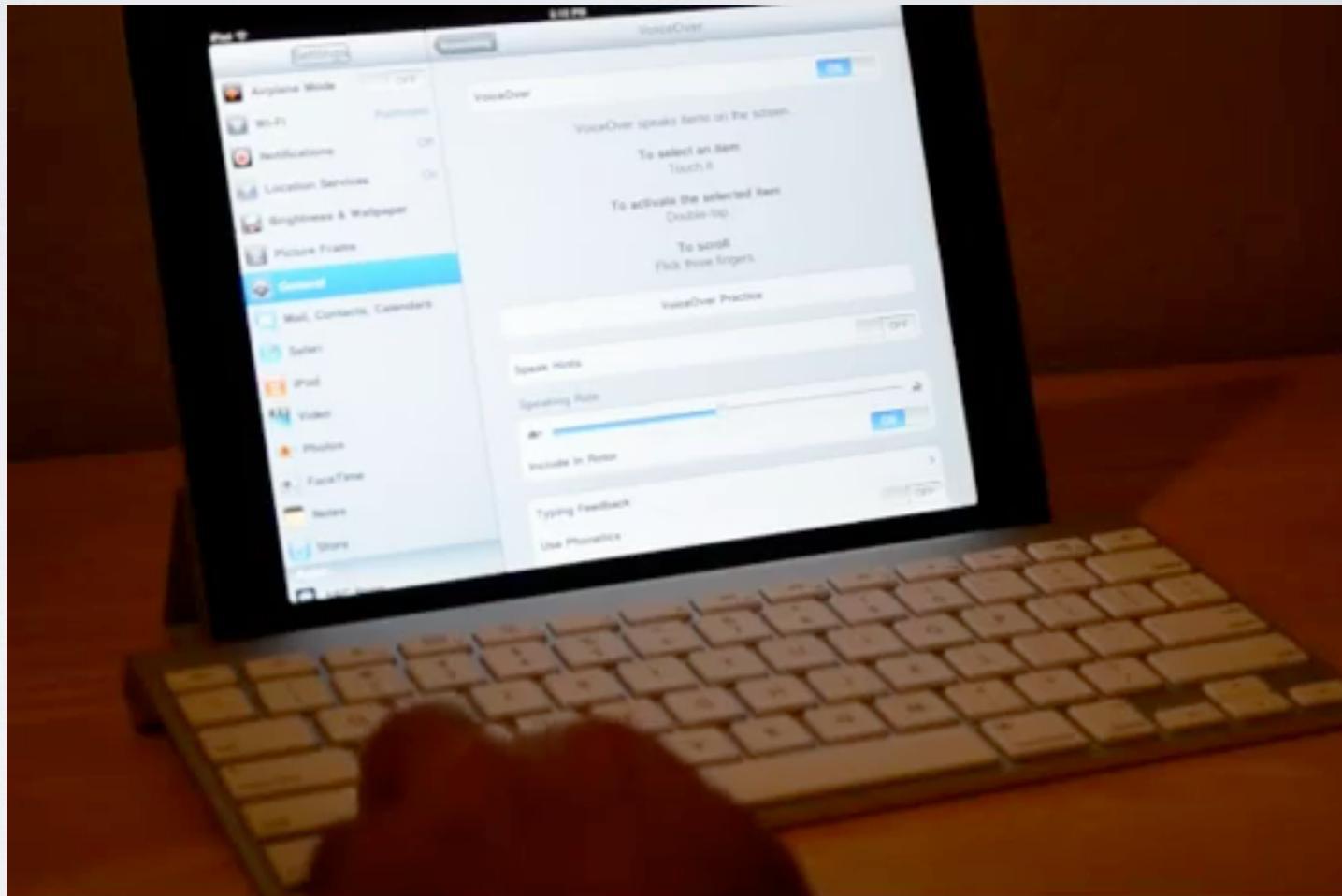
- Some “Joysticks” available for games
- iCade, £79.99
- OK maybe for leisure.. Not many apps have controller in the way these games do



CONTROLLING THE DEVICE FROM THE KEYBOARD ONLY

- **VoiceOver**

- Can be used to control the keyboard
- VO+H
- VO+HH
- VO+LArrow
- VO+Space



iPORTAL

- See Dynamics!
- In short; iPortal replicates a BT Keyboard in one instance - but then makes use of AssistiveTouch in the other
- Compatible with Shark, DX, DX2 controllers
 - You install a new module (bluetooth)
 - Basic iPortal app - Dashboard to see stats on the wheelchair.
 - iPortal Accessibility is a separate purchase.
 - With Voiceover (standard)
 - With AssitiveTouch

- With VoiceOver



- With AssistiveTouch. More like traditional joystick



Device menu



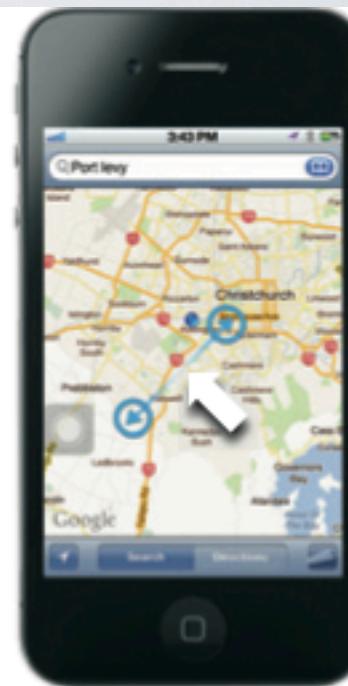
Gestures menu



Cursor



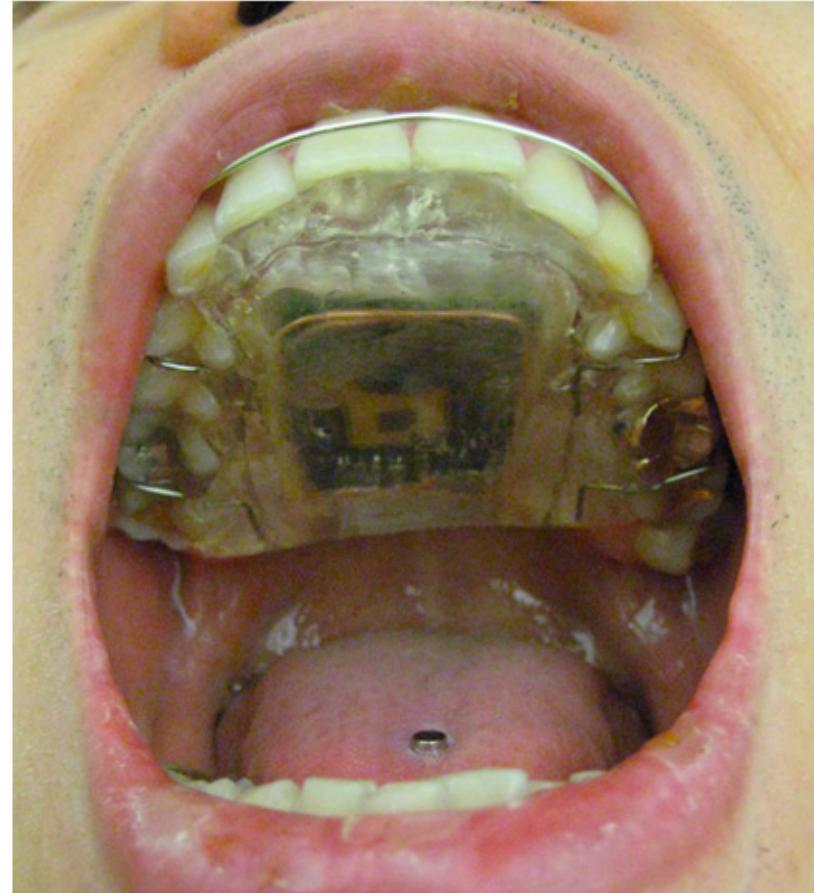
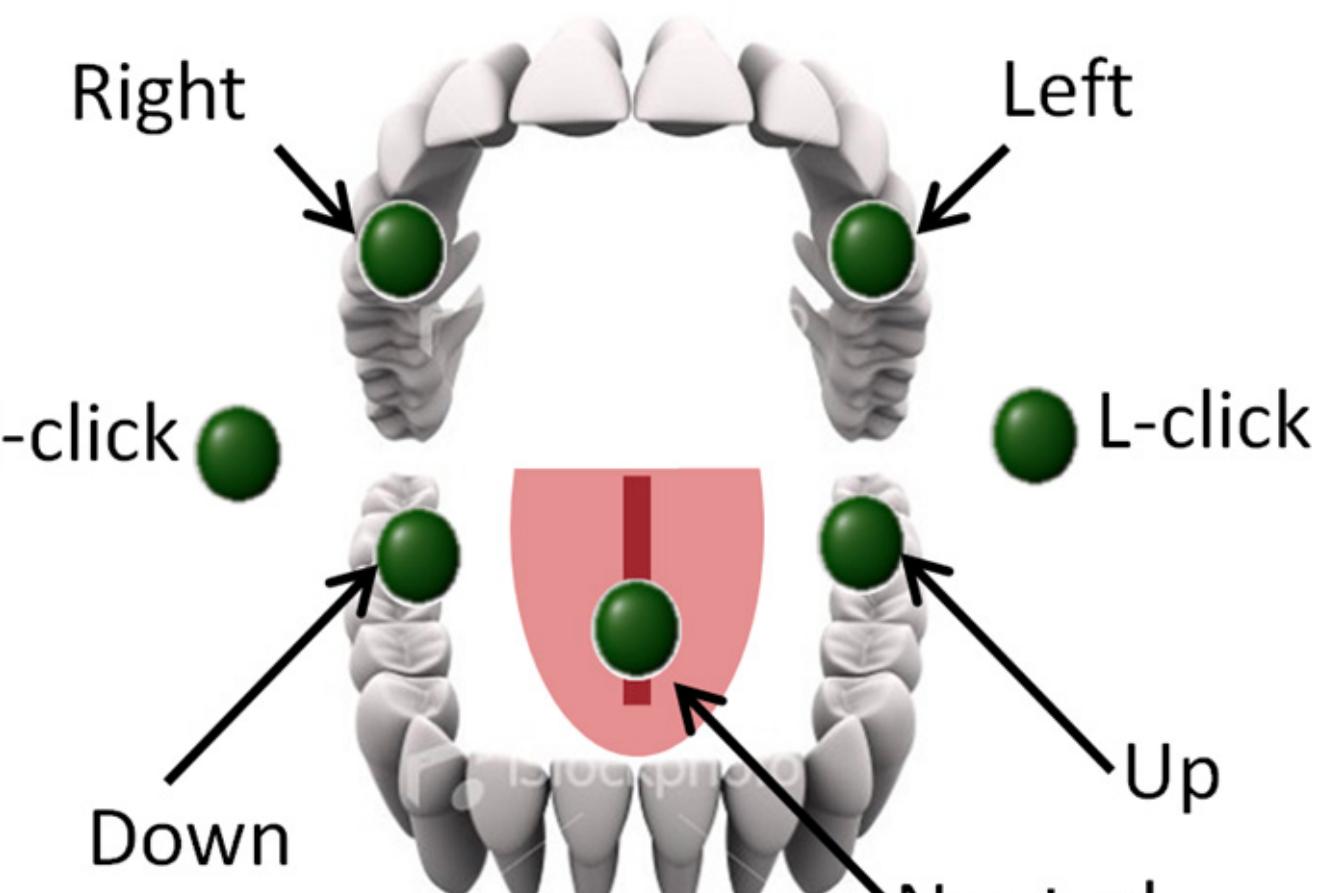
Select/drag



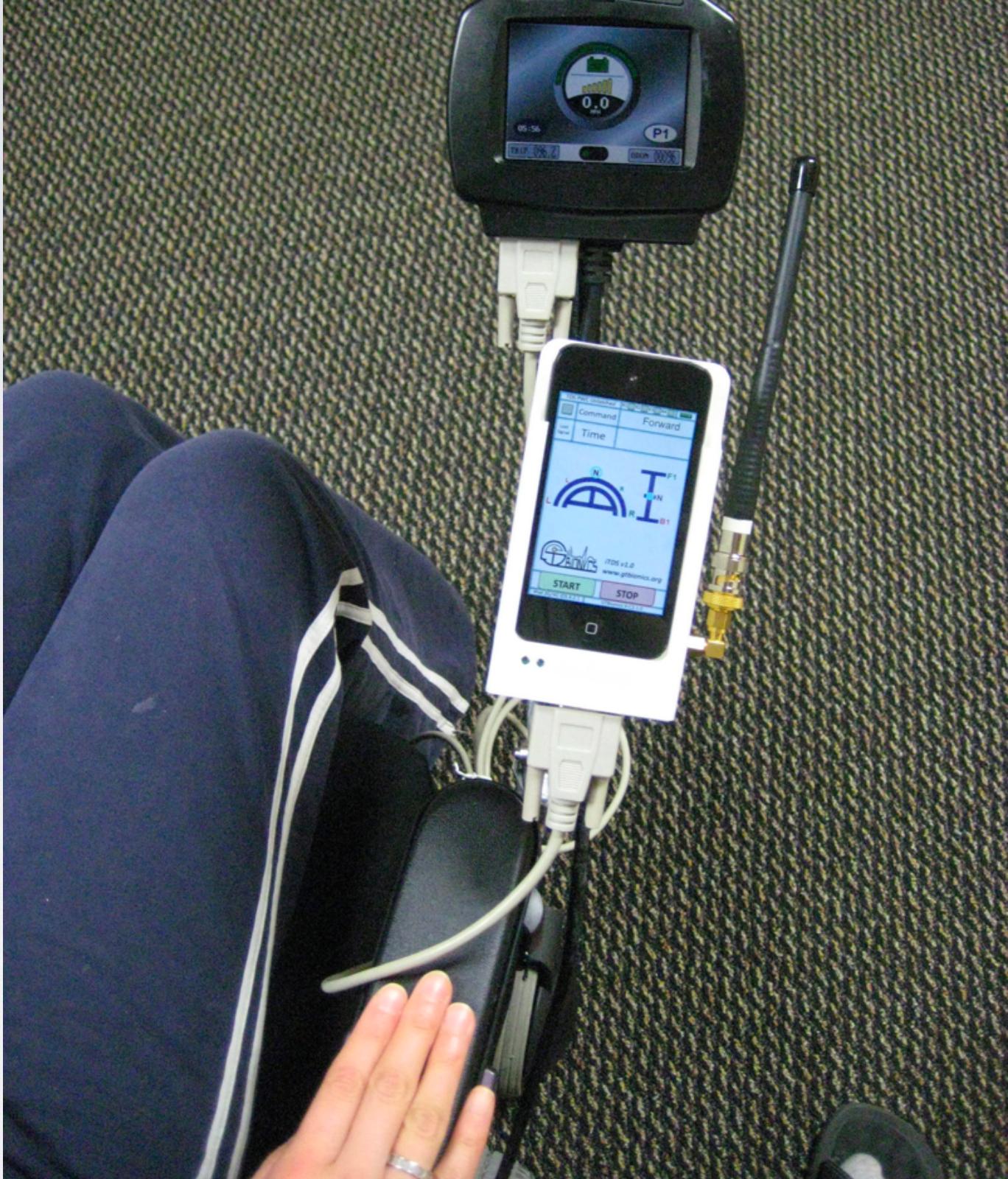
Pinch & Zoom

OTHERS

- Tongue Drive System
(Georgia Tech)



- Tongue Drive System
(Georgia Tech)



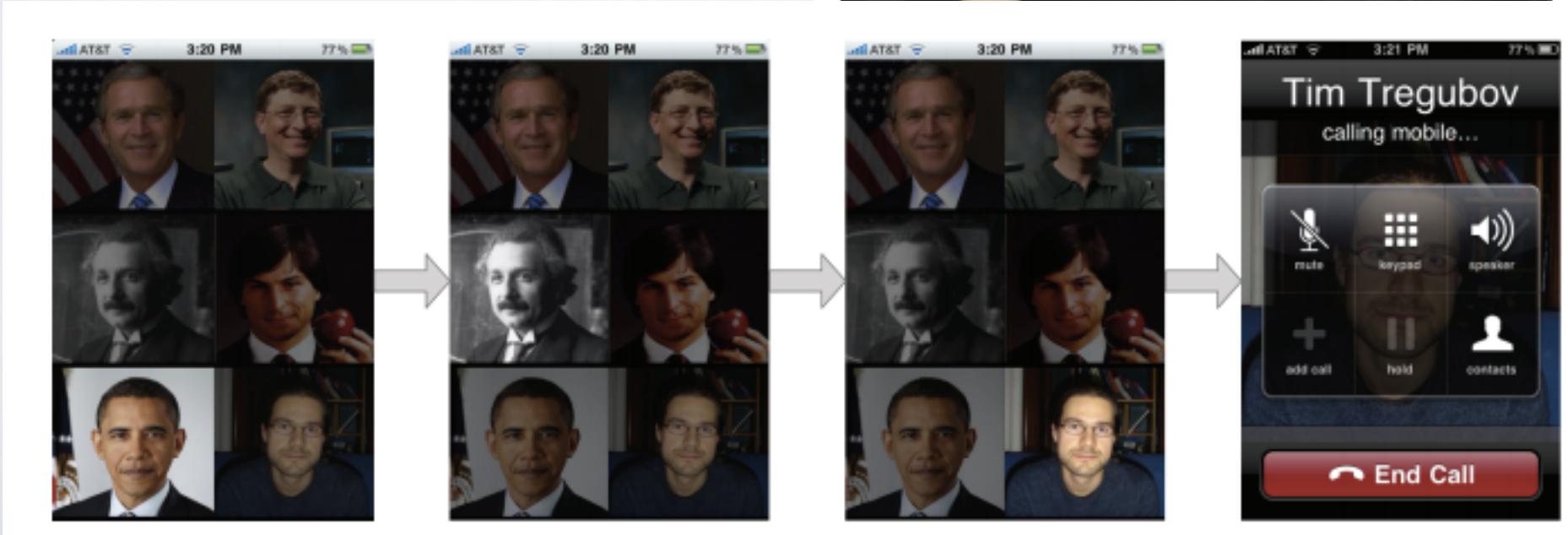
OTHERS

- EEG. Xwave (NeuroSky/PLX). Entertainment only



OTHERS

- Neurophone
(Dartmouth College).
Research using Emotiv
EPOC





SWITCH INPUT

INGREDIENTS

- Switch Box

RJ Cooper Super Switch



(Has switch port for second switch to be used in two switch scanning)

? ~ + |/3

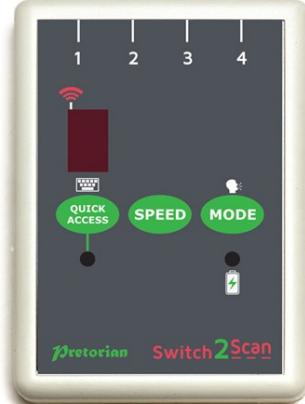
Blue2 Switch / PageFlip



(Can use inbuilt switches, or has two switch jacks for external switches)

L/R, Up/Down, PageU/PageD,
Space/Enter, MouseR/MouseL

Switch2Scan



? VO Compatible ?

INGREDIENTS

- Switch Box

Airturn/TBox Switch Box



(Has two switch ports for external switches)

~ + | / 3

APPLICATOR / Switch4Apps



(Has four ports for external switches. Can be used to control music as well as Apps.)

Space/Enter / ~ + | / 3

Hook



Just for Music

INGREDIENTS

- Alternative Switch Box (with CCK)

Hitch (Ablenet)



Switch Interface Pro



NB: Highly reliant
on the apps
supporting the
right commands!

INGREDIENTS

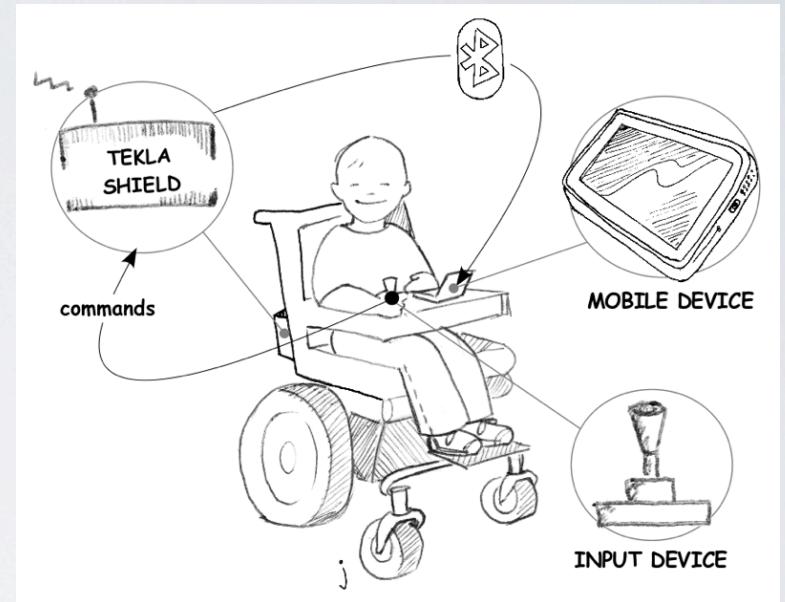
- Switch accessible App e.g.

- Inclusive Apps (1 & 2 switch scanning, Blue2 switch box) (Aunt Maggies, Five sharks,
- Catch the Cow (1 switch scanning, Tbox/Blue2)
- Rad sounds (Cause & effect, TBox)
- Scene & Heard (1 & 2 switch scanning, Screen as a switch)
- SwitchKids (1,2,3 or 4 switches. Cause & effect. Tbox/Blue2 switch interface, Screen as a switch)
- Alexicom (2 switch scanning, TBox/ Blue2)
- GoTalk Now (1 or 2 scanning. Tbox or Attainment switch app on second device)
- MyTalk Mobile (Tbox/Blue2)
- MyVoice (1 switch scanning, Screen as switch)
- PicBoard (1 & 2 switch scanning. Tbox)
- SayHi (2 switch scanning)
- Sounding Board (1 2 switch scanning. Tbox/Blue2)
- Talk Board (1 & 2 switch scan, TBox)
- TapSpeak Button/Plus/Choice/ Sequence (Tbox/Blue2/Screen)
- TapToTalk (1 switch scanning. Blue2. Screen as switch)

See Jane Farrall's [Blog](#) for a latest list

FULL-DEVICE SCANNING

- Origin I Tornado (In-Development)
- TECLA (In-development)
- Some problems though:
 - Auto-pairing is a pain (and remembering)
 - Locking of the device is a pain
 - How will this work with AsssitiveDevices is a mystery



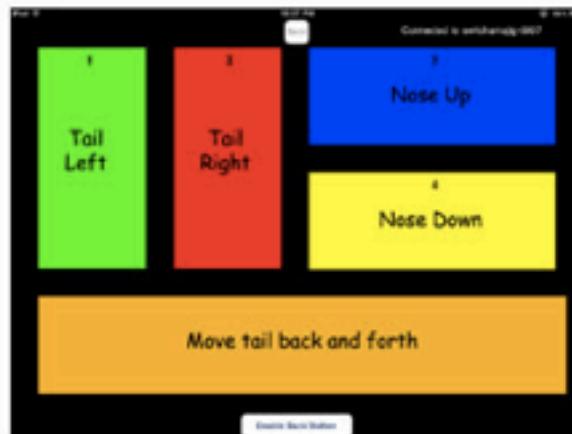
SWITCH OUTPUT!

- Switchamajig

How will YOU Switchamajig?



Connect your switch adapted toy
to the Switchamajig Controller
(shown here with an Air Swimmer
remote control)



Open the FREE Switchamajig app on your
iPad and select a screen



Have fun!

IN SUMMARY

- iDevices need to be assessed alongside a whole range of traditional and non-traditional devices for access to Communication, Control and leisure activities
- Some access issues are easier than others to overcome than others
- Thanks to the great up-take by the mainstream the AT community has a real chance to benefit quickly if standards are maintained and opportunities grasped

;

- With thanks to the Royal Hospital for Neurodisability, Kent Communication & Assistive Technology Service.
- Will Wade: will.wade@nhs.net @willwade