Worth watching
>By Jonathan Loades-Carter
>Published: October 17 2005 15:56 | Last updated: October 17 2005 15:56

>>

Walk this way.... not that way

In the increasingly security-conscious world, the proliferation of passwords and pin numbers can sometimes seem more of a hindrance than a help.

But VTT, a Finnish research centre, has developed a technology that could take the pain out of keeping mobile accessories - such as phones and laptops - secure if they end up in the wrong hands.

In fact mobility is key to the system, as it identifies the user based on his or her physical movements such as walking style.

A device is equipped with sensors that measure certain characteristics of the owner's gait. When it is used for the first time, these measurements are saved in its memory.

In normal use, the device continues to makes similar measurements and compares them to those initially stored. If they are sufficiently close, use of the item is approved. If the values differ, then the device will shut down or move on to a password/pin identification stage.

The identification process is based on advanced computation of the measurements which are used to form a "gaitcode" identifier. In early tests, the identification rate proved to be over 90 per cent - enough to encourage VTT to proceed to the next stage of development.

However, currently the system has its limitations. It worked best when the phone was attached to a user's belt and proved much less reliable when carried in a bag or purse. Also wearing high heels, suffering a foot injury and, especially having a few drinks, are activities likely to set the device off by accident, according to the inventors.

VTT:http://www.vtt.fi/indexe.htm

Tadar!

Airport security may be pretty tight these days but current screening systems are not foolproof as the example of would-be shoebomber Richard Reid clearly demonstrated.

While conventional metal detectors can only detect metal objects, the X-ray imaging used to screen luggage is unsuitable for checking people because of their use of ionising radiation.

As a result Reid, wearing shoes packed with home-made explosives, managed to slip through the security net and his detection was left to chance.

But Farran Technology, an Irish company that specialises in developing advanced microwave technology for spacecraft, claim their new screening system can detect all objects using a safe and natural technology inspired by bats.

Tadar, named after the Brazilian Tadarida bat, uses millimetre waves - the 30-300 GHz range of the frequency spectrum used for a broad range of applications astronomy to broadband radio - to detect and identify suspicious objects hidden under clothing in the same way that a bat uses high-frequency signals to navigate and locate its prey in the dark.

The high frequency energy pulses emitted by the bat bounce off objects in its path and the reflected signals are interpreted by different types of sensory cell in the bat's brain to determine both the location and the physical properties of these objects.

Tadar's sensors detect energy naturally emitted or reflected from objects by using approximately 3mm wavelengths that are

completely harmless to people.

At this wavelength clothes become transparent but dense objects such as explosives and weapons block the body's natural radiation and reflect a clear profile of the blocked energy field. The system can even "see" non-metallic objects and liquid substances. Each type of material has its own frequency response, producing its own representative colour image almost like a fingerprint.

Tadar works at a distance of up to 50m and whether the individual being screened is stationary or moving. Initially the system was developed to help pilots see through cloud and fog, but now Farran are pushing its application in airport security.

*Farran Technology:*http://www.farran.com/

Interactive ads

Moving print adverts could be appearing on concert tickets and cereal packets by 2007, according to Siemens who have developed a printable interactive display close to the thickness of paper.

At a recent trade exhibition, the German electronics group revealed a prototype monochrome screen that can switch between two colours in less than half a second. The screen is also interactive - allowing users to scroll through content.

According to a report on *NewScientist.com*, the screen works faster and has a better resolution than current "electronic paper" products, and unlike these it runs on battery power independently of a computer.

Siemens is hoping to build a multicoloured display although currently several different monochrome patches can be printed on to the same display to create a more vivid moving picture.

The display is made up of a layer of material sandwiched between two electrode layers. The material - which Siemens did not specify - is electrochromic, changing colour when an electric current is applied.

The electrode layers are made up of conductive lines that intersect at 90 degrees to each other. A pixel on the display is switched on by activating two lines that intersect at the right point.

Controlling the display is a printed circuit which can be powered by a thin printable battery.

By 2007, Siemens is hoping to develop a process to create display and its power source using the same printing method to keep the costs of production down.

*Siemens:*http://www.siemens.com/index.jsp
>
>
>