

Biometrics – common sense technology



Biometrics is a term that still has the sounds of the future about it. The reality though is that biometrics are now a common form of identification and security for everything from car ignitions to passport control. Within the emergency services sector the use of biometrics has been moving forward for sometime. However, while the take up has been understandably slower than in commercial industries, there are still areas of biometrics that remain misunderstood and the benefits of this technology are still ignored.

Motorola's technology was used by the Swiss Authorities for UEFA 2008. Below: Motorola's finger print scanners can be put onto PDAs – important with regards to the security for the 2012 Olympics Games.



Border control is a pertinent topic these days, especially concerning immigration. For Britain the management of border access points, namely airports and ferry ports, is made easier by the natural barrier of the sea. However, there is still a vital need to ensure that people entering the country are who they claim to be. Motorola has been provided the Swiss authorities with a highly developed form of handheld biometrics, which proved valuable during the recent UEFA European Championships. Gillian Ormiston, Senior Solutions Consultant, Biometric Identity Management and Security Solutions for Motorola explains that with so many people coming into their country by rail, the Swiss authorities wanted to be able to use a quick stop-and-search biometric device that would flag up any potential troublemakers. "Our solution allows officers to do just this. The information they take can also be sent to EU databases. It takes just a few minutes and if there is no match then the person can go on their way."

The speed of such processes means the officers can easily stop a large number of people without causing them too

much inconvenience. A cross border system that now contains over one million fingerprints has been in place since 2003, when it became one of the first cross EU managed systems and Gillian says that because countries are still joining the EU databases, details are being linked up, thus giving officers across Europe more chances to catch criminals.

"The use of fingerprints for identification is not a new technology by any means – the first documented use dates to over 100 years ago from Scotland Yard, but the rise of biometrics has meant the areas within which it is used has increased. The benefits of fingerprint technology extend beyond criminal identifications. In police stations or fire stations for example you can use fingerprints to check who is using what equipment and when. It's a far more efficient and secure system than paper and pen and means you have a good audit trail to see who took what from where. This can be vital in the evaluation of an incident."

The rise of this technology, especially finger print scanners that can be put onto PDAs, is important with regards to the security for the 2012 Olympics Games. As Gillian notes,

"With millions of visitors entering the capital the ability to stop and quickly identify them will be vital to ensure people don't sneak in under the radar". Furthermore, she adds that in the future critical infrastructure workers for airports and power stations may well need to use their biometric information on a day to day basis to gain access to work. "Biometrics are certainly going to become a more commonplace and mainstream way of carrying out day to day policing as well as a part of everyday life."

Perhaps then the question to ask is why aren't biometrics more popular? Richard Farnworth of NEC believes that the uptake of biometrics has taken longer than anticipated because of the public's reluctance to give over personal details, and in the aftermath of recent data loss incidents, this is possibly understandable. "If the general public come to see and understand the benefit of biometrics and accept them, then it will be much easier to implement in everyday life. At Heathrow, for example, there are special security channels for regular fliers that have biometric controls and these people can see the benefit of this technology. We need to take this to a wider audience." NEC won the contract to supply methadone dispensers within prisons through biometric controls. This system is much more secure than others, as it means only the person who is who they say they are, can have access to his allowed dosage and it can be easily tracked. "The system in prisons takes about 12 minutes to register someone's ID on the database, and from then on it takes just a matter of seconds to

identify them thereafter. This is a far more efficient and secure process than was previously in operation."

A similar system could be used by social services, for example, to keep a better track of those claiming benefits: "If you used biometrics to cut benefit fraud you could reduce the amount of money lost and so lower taxes for the majority of law abiding citizens who use benefits legitimately," explains Richard. In fact, the public at large actually give out their details far more than they realise in such things as loyalty cards: "Supermarkets show their customers the benefits of allowing them to track what they buy by giving them vouchers as a reward. This is a good example of the two-way benefits of biometrics that needs to be taken into the public sector, as the benefits of this technology could make a real difference to the police and other organisations."

Mike Nelson, General Manager Sales Operations EMEA with Fujitsu, agrees that by understanding the benefits of biometric technology and how it can be appropriated for use by the emergency services, the speed of implementation will improve. "The thing about biometric technology is that it has to be secure and acceptable to the public. In Japan our Palm Scanner technology is used for cash withdrawals like we use pin numbers. It's actually far more secure than a pin number but banks in Europe have been slow to adopt this system as they have already invested heavily in chip and pin."

Fujitsu's Palm Scanner technology works by scanning the



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Fujitsu's palm scanner works by scanning the unique vein pattern beneath the skin and matching this data to that on a database.



"We now have fingerprint scanners integrated in our solutions which recognise that a finger is 'alive'. This means there is no way to bypass the system. It's not a nice thing to think about but it's something that has to be considered and overcome."

➤ Gillian Ormiston, Motorola.

unique vein pattern beneath the skin and matching this data to that on a database. The system has been in use for around three years and has found many uses. "One of the interesting applications of this technology has been in a school in Glasgow. Rather than having children take in money for lunch they use the scanner to register their lunch. This involved a detailed consultation process with the parents and once they understood that no personal details would be stored and that it was hygienically safe they were happy for the school to set up the system."

The hygienic side of this system is another benefit that could find uses within the hospital sector, according to Mike. "Fingerprint technology is not the most hygienic system and in hospitals this is an important consideration. But with a scanner you can avoid this and use the system for giving the relevant people access to the medical records, medicines, and certain rooms."

The other benefit of palm scanner technology is that it is a cradle-to-grave system, where the user's unique data never changes, and as it works by reading of veins and blood flow there is no way the data can be tricked by, as Mike puts it, "grizzly means". This is a genuine concern with biometrics and there have been cases in the Middle East where high-end sports cars that are protected with fingerprint technology have been stolen when the owner's finger has been chopped off.

However, as Gillian from Motorola explains, "We now have fingerprint scanners integrated in our solutions which recognise that a finger is 'alive'. This means there is no way

to bypass the system. It's not a nice thing to think about but it's something that has to be considered and overcome."

Biometric information such as height and facial features can also be used to prove the identity of someone from CCTV footage where the accused may dispute the evidence, claiming it's not them on the tape. The Facial Verification Bureau (FVB) is a company that specialises in analysing forensic imagery and confirming or disproving the various hypotheses proposed by the police.

Orly Golding, Forensic Analyst for the FVB, says, "CCTV is so ubiquitous these days but its use as a deterrent is often questioned. It has greater potential for use in gathering information post incident. We come in at this stage to ascertain data such as the height of the crime perpetrator, match facial features to imagery of the suspect and compare clothing." By analysing this data FVB can provide the police, or the defence in some cases, with opinion evidence regarding the identity of the person in the footage. This may strengthen a case or allow innocent persons to be eliminated. This technology can also be used to identify a vehicle caught on camera, even from a small body part caught on CCTV, so that the police can eliminate the vast majority of cars they could be looking for, helping save time during investigations.

However, while this service is of undoubted benefit to the police, and often more reliable than eyewitness information, there is a lack of awareness of the FVB's services that means they often have to explain their work and its benefits. Senior Forensic Analyst Elaine Woods says that some police forces and their personnel are very aware of the work FVB does, but most are not. "Particularly in Scotland, prosecutors are becoming aware, when we are in court for the defence. They see the work we do and how we can interpret data and realise they could use our material in future trials."

The FVB are not the only company providing this sort of biometric data evaluation but there are only a limited number of companies that do. This is a good thing says Elaine, "Because there are only a small number of companies carrying out this sort of work, it means we critique each other's work and follow similar practices. If we disagreed with each other all the time it would suggest there was something inherently wrong in the analysis, but as we don't it shows that it is good practice. Also, that this technology and data interpretation are accurate and legitimate ways of proving or disproving evidence, suitable even for highly demanding courtroom trials."

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NEC has just announced the establishment of a new Identifications Solutions Division in Düsseldorf.

The formation of the new division has been driven by the need to satisfy the growing demand for biometric solutions from European public authorities and it will focus on providing biometrics across Europe as well as being deployed by public authorities, transport sector law enforcement agencies and for

border controls.

Kei Nakata, manager of the new NEC Identification Solution Division, explained, "NEC has already successfully implemented countless biometry-based projects in Europe, and I see the formation of a dedicated pan-European business division for biometry as the next logical step in further developing our competence in covering EU member states' very specific personal identification needs."