

Commanding voice

New technology enables using your voice as your password

BY ALLISON PERKINS

As a road warrior logging thousands of miles each month and making many calls on the run, Jack Healy likes the new feature on his smart card. When making a phone call, technology on the card can authenticate his voice pattern and authorize the card's usage.

Since the events of Sept. 11, many companies and consumers such as Healy are concerned about security issues. As a result, biometric authentication devices, which validate users'

from \$523.9 million in 2001 to \$1.9 billion in 2005.

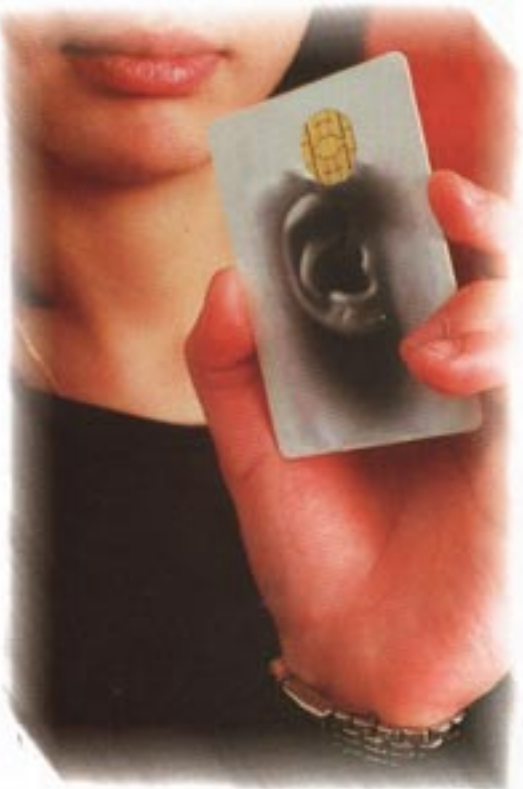
One U.K.-based company, Domain Dynamics Ltd., which specializes in signal processing and speech recognition, is raising the level of biometrics and smart cards by adding voice authenticators that prevent card usage by anyone except the approved cardholder.

Developing the technology

In January 2001, Domain partnered with Consult Hyperion, an IT management consultancy specializing in smart card and

cards. "Every voice is unique. TESPAP measures the signal waveform of a person's voice, encoding the shapes of the waveforms," George says. "Every person has a voice fingerprint or a 'voiceprint.' The technology can manipulate the voiceprint in different ways."

George explains that the technology stores three samples of the user's voice on a template within the Java-based smart card. TESPAP can even disregard background noise and can cope with day-to-day variations in an individual's voice. The only sensor needed is a microphone, which comes standard



identities based on unique biological characteristics such as voice or fingerprint, are beginning to surface. And the prospects for growth are compelling.

A new analysis by Frost & Sullivan indicates the total biometric market generated \$66 million in 2000 and is expected to reach \$900 million by 2006. Meanwhile, the International Biometric Group (IGB), a New York-based integration and consulting firm, pegs biometric revenues to grow

e-commerce security systems, to develop a prototype demonstrating how the technology can be used with internet PC and pocket PC devices and multi-application smart cards.

Using its TESPAP (Time Encoded Signal Processing and Recognition) voice authentication technology, Domain has developed a range of solutions that can run verification codes and store a user's voice template on smart cards. Consult Hyperion has expertise in the areas of cryptography, Public Key Infrastructure (PKI) and digital certificate processes to complement the speech biometric implementation of the TESPAP technology.

Martin George, sales manager at Domain Dynamics Ltd, is currently responsible for the promotion of the TESPAP Voice Authentication technology on Java and standard smart

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— *Martin George*

with many desktop PCs, notebook computers and mobile phones.

Addressing various needs

Essentially, the technology uniquely secures personal information, replacing PINs for secured transactions and providing security clearance for access to property. "Cash will become a less important part of our culture, and most transactions will be via some kind of card," George says. "And mobile phones will become like a credit card, which will be an effective smart card inside the phone. Your mobile phone will become a gateway to all financial services."

Suddenly, the smart card applications that are rapidly gaining worldwide popularity can have guaranteed security for access control, banking, share trading, online shopping, telephony services, storing personal and confidential data – even loyalty cards. So the big question is: How much will this technology cost?

George believes TESPAP technology addresses this. "Voice biometrics centers on its extremely low cost and low memory requirements, processing

recorded samples, a process that takes a fraction of a second. "TESPAR can be placed onto an existing chip card. A person can then use the

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and power resources. In practice, a template created from enrollment samples of the smart card holder's voice is stored on a standard 8-bit Java smart card. This technology can be accommodated on each product for no more than 50 cents per unit," George says.

How the technology works

The transactions involving this technology will require the cardholder to insert his card into a terminal and give a speech sample. The card then matches the spoken voice to the

smart card with a mobile phone and plug the smart card directly into the phone, where it acts as a payment terminal for banking transactions," says George.

Reaching U.S. consumers

Aware that smart cards still are emerging in the U.S., how does George envision this product catching on here? "Storing medical patient records is an example of how the technology could be used in the U.S. Some doctors are considering placing patients' medical information on a smart card, which

would allow only particular doctors to have access to an individual's information," George says. Security levels can be easily adjusted to suit specific requirements through alteration of the classification strategies deployed by TESPAP's verification algorithms.

Recently, Domain Dynamics received a \$4.3 million investment to accelerate the rapid global commercialization of compact voice authentication and word recognition solutions for handheld devices and smart cards. The investment will be used to develop both business-to-business and consumer-oriented applications with third party solutions providers to supply voice biometric and recognition solutions.

While IGB analysts believe the biometric industry will expand steadily, it will face increased merger and acquisition pressures as well as competition from much larger technology firms entering the biometric market. **ICN**

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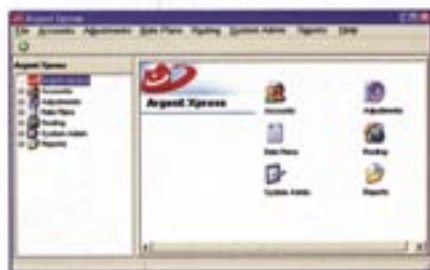
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