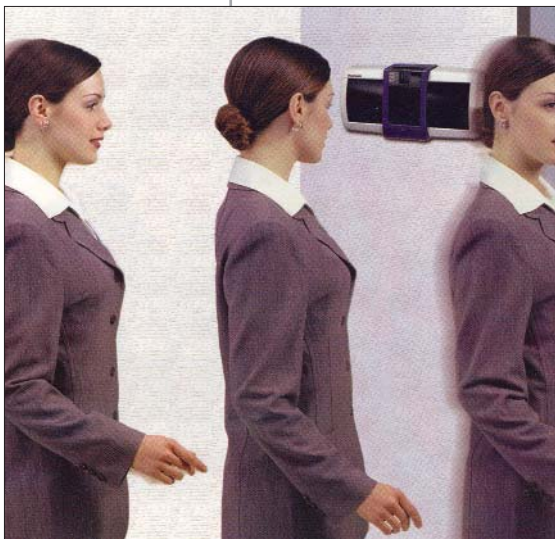


OPPORTUNITY IS IN THE EYE OF THE BEHOLDER

Biometric security technologies such as iris scanners may provide opportunities for AV integrators with the right skills.



With iris recognition technology, the chances of two iris patterns matching is less than one in 1.2 million, which is 1,000 times better than its next closest competitor: fingerprint scanners

by Don Kreski

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Iris recognition technology and related biometric systems make up the fastest-growing segment of today's security market. According to a recent West Virginia University study, worldwide biometrics revenues grew by a factor of four from 1999 to 2003. Security industry website biometricsinfo.org reports that the worldwide biometrics market reached \$324 million in 2002, with iris recognition products accounting for about five percent, or \$16.2 million. By 2007, this same study expects sales from iris products alone to grow almost 13 times that figure to \$210 million.

"There's a significant wow factor associated with this type of technology," says Tim Meyerhoff, market development manager for Panasonic Iris Recognition Systems.

Panasonic currently offers two iris recognition systems through the pro AV channel. Its BM-ET300 and BM-ET500 wall-mounted cameras are designed for entry-door access control. Both products can take a high-resolution digital image of a person's iris (the colored portion of the eye) and compare its pattern to a database of iris scans from people authorized for entry. The process is extremely accurate, with odds of about 1.2 million to one against a mistaken ID, according to data collected by AIM Japan, the Japanese affiliate of the

Association for Automatic Identification and Data Capture Technologies.

The Panasonic iris recognition system and competing systems can be sold profitably in various environments where positive identification is a major concern. A small system deployment typically covers two to eight doors, while a larger one can include 16 or more. "By the time [the system] gets installed, you're looking at roughly \$4,000 per door," Meyerhoff says. "But of course, we see that our dealers make a larger part of their profit based on the integration and support services that they provide."

One dealer that has capitalized on its installation skills is Swiderski Electronics of Itasca, IL, which moved into the security business about 25 years ago. The company's president, Joseph Swiderski, says the firm has worked primarily in CCTV monitoring and entry access control, which he says go hand-in-hand. "About three to four years ago, the sophistication of what we were being asked to get involved in increased significantly," he says. "That was good for us, because we're most competitive in the kind of work that requires a higher level of expertise. We were able to expand in certain product lines, with Panasonic and Infographics card access control being the key ones."

Last summer, Panasonic chose Swiderski Electronics among its initial set of iris-recognition dealers. So far, Swiderski says his company has had the most success in the hospital and banking markets. "Iris recognition isn't a large market now, but it's only months old," he says. "When customers want a very high level of security, for example, in airports where employees need access into controlled areas, this is the best way to go."

Swiderski says the increased accuracy of iris recognition systems is one of the technology's main advantages. "The problem with standard card access is that if you borrow or steal an ID card and know the pin number, you can get through," he says. "But it's a little harder to change somebody's eyeballs."

Meyerhoff says that in addition to Panasonic, two other major iris recognition product manufacturers - Oki Electric and LG Electronics - currently produce systems and serve as an OEM to other manufacturers and dealers. Gaining access to products shouldn't be a problem for interested AV dealers. Meyerhoff says that dealers willing to take on an annual volume commitment and a couple of training days per product can establish direct relationships with companies like Panasonic.

However, Swiderski says a few requirements could help those considering entering the high-end security market. "For this type of installation, you need to be a union contractor, at least in this part of the country [the Midwest]," he says. "You also have to be a licensed electrical contractor or have the ability to pull down

permits for projects."

Swiderski says knowledge of IP-based equipment is also important. "You have to be able to integrate [these products] into clients' networks and use them as a passageway and a gateway," he says. "You also need the ability to integrate different systems from different manufacturers - systems that allow us to split images on large display walls and AMX-type remote control equipment - and the ability to create custom software."

Given these specific areas of expertise, Swiderski says this market would be difficult to break into for a dealer without security experience. "You'd probably have to acquire somebody in the security end of the business who has the customer contacts, the access to the product lines, and the staff to be able to execute it," he says. "You also need a certain financial backing, plus the ability to post performance bonds. It's not for amateurs."

Nevertheless, Swiderski says there are opportunities for pro AV professionals. "The security dealers don't necessarily understand the visual side or IP side of it," he explains.

For AV contractors currently working in the security market, as well as experienced integrators willing to make the investments to move into a new area, the rewards can be great.



HOW IRIS-BASED ACCESS CONTROL TECHNOLOGY WORKS

Iris recognition technology is based on three facts:

- 1) The patterns in the iris (colored section) of a human eye are extremely complex.
- 2) Each person's iris patterns are different (even for identical twins).
- 3) Iris patterns stabilize by about two years of age and remain unchanged throughout a person's life.

John Daugman, a researcher at Cambridge University, recognized these facts and designed a computer algorithm that searches for certain distinctive features in a monochrome image of an iris, and tracks them in a database. To compare iris signatures, it's only necessary to work with relatively small files of 256K- which makes it a fast and simple operation. Even with this limited data set, the chances of two iris patterns matching is less than one in 1.2 million, which is 1,000 times better than the next closest competitor - fingerprint scanners.

The scanner itself is also relatively simple. "It's basically a high-performance camera that's strictly focused on iris imaging capture," says Tim Meyerhoff, market development manager for Panasonic Iris Recognition Systems.

Users walk up to the camera, stand about a foot away, and look into the camera until they can see their eyes reflected in a small mirror inside. Removing eyeglasses or contact lenses isn't necessary.

"There are visual indicators on where to look, but the camera has voice guidance and will tell you to move forward, back, or left to right," Meyerhoff says. "Once you're lined up properly and the camera has detected an iris that's in focus, it snaps an image."

The various cameras on the market are sensitive to infrared light, and systems include an IR source in the near-visible range, which eliminates the flashbulb effect of traditional cameras, Meyerhoff says. If the iris data set matches an appropriate file in a facility's database, the system produces a voice prompt and indicator light, and then sends a signal to an access control unit to unlock the door.

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TECHNOLOGY COMPARISON

Method	Coded Pattern	Misidentification Rate	Security	Application
Iris recognition	Iris pattern	1/1,200,000	High	High-security facilities
Fingerprinting	Fingerprints	1/1,000	Medium	Universal
Hand shape	Size, length, and thickness of hand	1/700	Low	Low-security facilities
Facial recognition	Outline, shape, and distribution of eyes and nose	1/100	Low	Low-security facilities
Signature	Shape of letters, writing order, and pen pressure	1/100	Low	Low-security facilities
Voiceprinting	Voice characteristics	1/30	Low	Telephone services

Source: AIM Japan