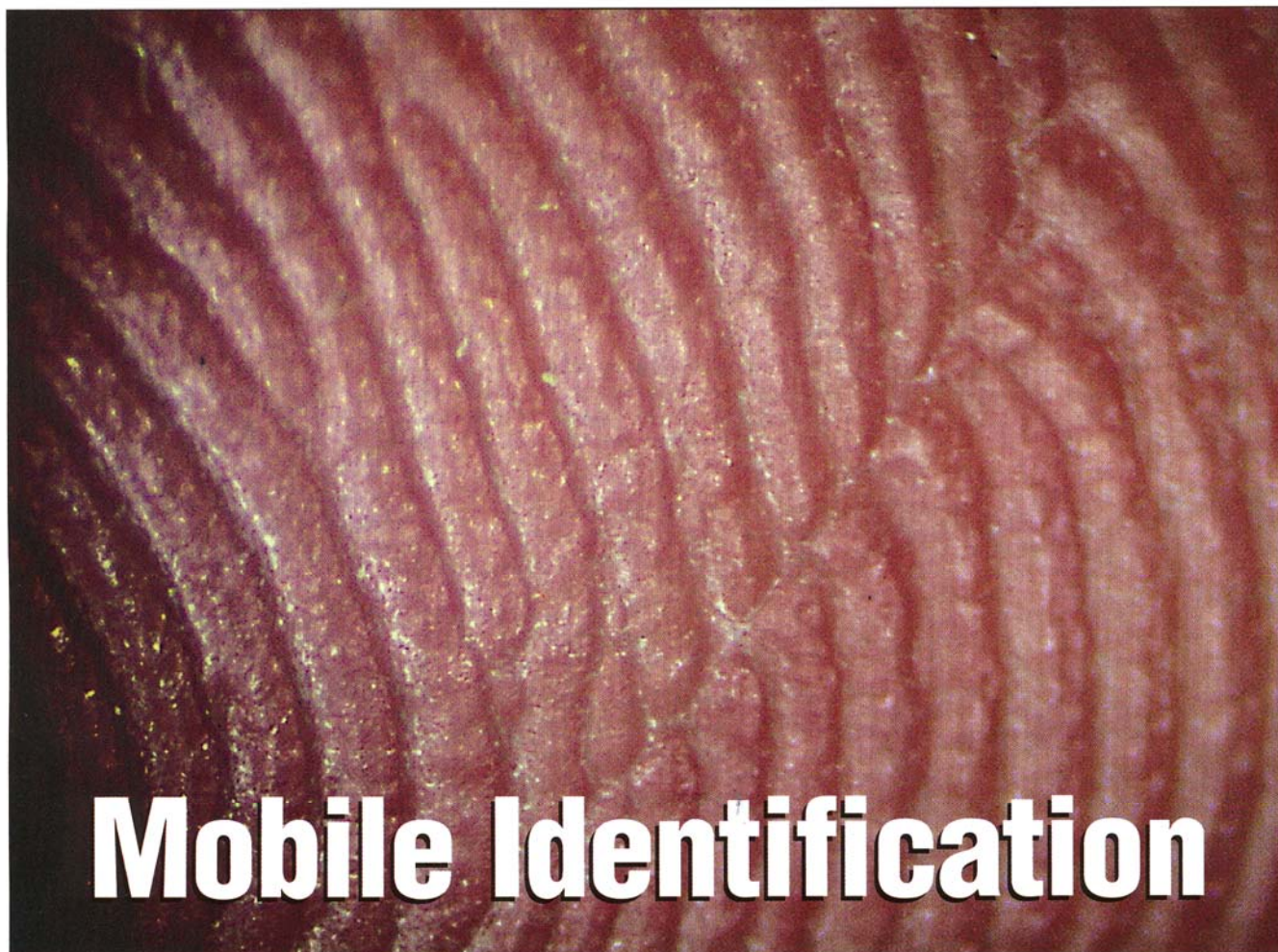


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Mobile Identification

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TOPICS IN THIS ISSUE

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- N-DEx: national information sharing
 - Crime-scene teleforensics
- What's new in CSI photography?



MOBILE FINGERPRINT IDENTIFICATION

Written by Gary Gulick



There is a variety of mobile fingerprint-ID systems...



Cogent Fusion—This product was designed for special applications. It can capture and store 10,000 or more records of fingerprints, iris images, photos, and text. It can conduct matches against stored records by way of wireless connectivity. The Fusion also does GPS tagging of all records collected. And it is very lightweight: only a little over one pound.



Cross Match Verifier Mw—This is a mobile wireless fingerprint scanner that is only two inches longer than a dollar bill, making it very comfortable for single-handed operation. Wireless connectivity options include WiFi. The captured images are transmitted to AFIS in NIST-compliant format. Image resolution is 500 pixels per inch.



L-1 Identity Solutions' IBIS—The Integrated Biometric Identification System (IBIS) weighs less than one pound, can fit on a belt, and is operable with one hand. It has an advanced optical sensor and a card reader to scan documents such as a driver's license. The IBIS can be used in different configurations, including interfacing with a smart-phone or PDA.

MOBILE IDENTIFICATION

THINGS TEND TO CHANGE as our creativity and innovation respond to the needs of the world around us. For example: Traditional methods of capturing fingerprints for record-keeping purposes involves ink pads and ten-print forms. Apply ink to finger, roll finger on form, and proceed to next finger. And when you are finished, you have to scan the prints digitally in order to enter them into a local Automated Fingerprint Identification System (AFIS) database or the national Integrated Automated Fingerprint Identification System (IAFIS) database. It is a very time-consuming procedure.

But then someone came up with the idea of using modern optics and digital technology—and suddenly we had the *livescan* method of capturing fingerprints. You just roll each of the subject's fingers over a livescan device and the prints are captured as high-resolution digital images. Those images can then be enrolled into an AFIS database.

For some, however—especially the officers working at borders or in the

field—this method is not fast enough. Currently, the faster alternative is plain-impression flat capture, or *slap capture*. The drawback is the omission of potentially useful detail on the sides of the fingers.

To meet both needs, some of the product developers are in search of a technology called *fast capture*. The July-August 2006 issue of *Evidence Technology Magazine* focused on the Fast Capture Initiative* that was coordinated by the National Institute of Justice (NIJ). Because of that initiative, there are a number of vendors that are in the process of developing products with similar technologies, but with somewhat different applications.

For years, there has been a need on the part of patrol officers for a livescan or rapid-identification device that they could use to get the bad guys off the streets. If you are a patrol officer, you might stop someone for a traffic violation and suspect that he is wanted for something more serious. But how do you know for certain who that person is? And how do you determine if there

are outstanding warrants without leaving your beat, taking him back to the station, getting his fingerprints, and spending the time to search the system and get a positive identification?

The solution to this aggravating problem was tackled by vendors in the law-enforcement community. To reach their objectives, they utilized a variety of technologies: digital imaging, computerization, wireless communication, database-management systems, and available resources like AFIS.

The result is a range of products that permit an effective procedure most people refer to as *mobile fingerprint identification*. It is something that has been evolving over the last 15 years. The following pages describe some of the available products.

Cross Match Technologies

“Our company has several mobile identification devices available for law enforcement,” said Mike Oehler, vice president of product management at Cross Match Technologies, Inc. “If you just want a fingerprint capture, you can

*For information about Fast Capture Initiative: <http://www.ojp.usdoj.gov/nij/topics/technology/biometrics/fast-cap-fingerprint.htm>

...that represent a broad span of advanced technology



Sagem Morpho Rapid MR 1100—This unit has a forensic-quality scanner to capture the fingerprints, along with a digital camera to support facial recognition. These functions are built on a rugged, handheld PDA that is resistant to dust and rain. Wireless communications options include WiFi, cellular, and Bluetooth with GPS localization.



TBS BioGuard Surround—The BioGuard line of products has several models, including Touch and Surround. The BioGuard Surround has touchless 3D sensor technology for multi-view images. The system features network integration via LAN or WLAN. The technology can output 3D fingerprint and other finger-surface data (see photo on Page 26).



Cogent BlueCheck—Using Bluetooth communication, BlueCheck can remotely transfer the fingerprint data to any Bluetooth-enabled PDA, laptop, or cell phone in a secure manner. The unit receives search results and displays the results on its LCD display, providing timely and accurate information for law-enforcement personnel.

MOBILE IDENTIFICATION.

opt for our Verifier Mw unit. It has a single fingerprint optical sensor and a wireless connection to a laptop in the patrol car or to a remote server. But if you want to be able to capture prints and get a direct response that you can read on the display, then you might want the Be.U Mobile unit.”

This company’s Verifier Mw was introduced in October of 2008 and is reportedly very easy to carry and very easy to use. Even that product is undergoing upgrades, according to Oehler. “We are currently in the process of modifying the Verifier Mw to offer a version that will be tailored to the FALCON Rapid ID program that is now underway in Florida.”

TBS, Inc.

“We were one of several organizations that were asked to participate in the NIJ Fast Capture Initiative,” said Roger van Diepen, president of TBS, Inc. “When we concluded the program, we learned we were the only participant that presented a working prototype and produced images. At the 2008 IAI conference, we showed our product: the BioGuard 10. Since then, we have added two new products, including the BioGuard Touch that has a self-contained terminal. But the BioGuard Surround would probably interest your readers even more. It is a touchless version of the system that can capture 3D images of the finger and convert

Some mobile systems are so sophisticated that they can actually image sweat in the pores:



Image captured by TBS BioGuard Surround.

them to a 500-dpi rolled equivalent.”

According to Diepen, the BioGuard Touch will be released for sale in March. The BioGuard Surround will be available in May.

Sagem Morpho Inc.

“Our company offers a product that is called RapID that has been on the market for about four years,” said Glen McNeil, senior manager of product management for Sagem Morpho Inc. “The third generation of our technology

—RapID MR 1100—was introduced at the end of 2008. This model can do both fingerprint and facial capture. It can search captured fingerprints against a remotely located central database or it can search a watch-list of up to 100,000 individuals that can be stored on the device itself. The unit is fully customizable, allowing you to capture prints from any number of fingers. The typical application, however, is to capture two index fingers.”

McNeil said the device has a built-in real-time quality check that automatically determines whether to accept or not accept the captured print. If the print is accepted, it can be searched against a Sagem Morpho AFIS by transmitting feature data only—or the full image can be transmitted to an AFIS for the search function.

Cogent Systems, Inc.

“We have three different products in the mobile identification area,” said Teresa Wu, marketing manager for Cogent Systems, Inc. “Perhaps the most popular one is the BlueCheck. It is a portable fingerprint capture unit that uses the Bluetooth technology to send the fingerprint back to the computer in the patrol car or to a cell phone on the officer’s belt. The inquiry runs through AFIS and if the person has a record, the results come back to a laptop or a cell phone. The results will include a rap sheet and a photo if they

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are available. We launched this product in August of 2006 and it has been very well received."

Wu said the BlueCheck can be used with a Blackberry or a Pocket PC. The company has two other mobile devices: the Fusion that captures fingerprints, iris, and face; and the Mobile Ident II that captures fingerprints and face.

L-1 Identity Solutions, Inc.

"Our IBIS system is certainly not a brand-new technology," said Joseph Atick, executive vice president and chief strategic officer for L-1 Identity Solutions, Inc. "But the technology is current. We have taken it through four generations of development. The name *IBIS* is an acronym for *Integrated Biometric Identification System*. It is a very robust and interoperable system. It can capture fingerprints in any environment with FBI-certified quality. That level of quality is very important because it enables you to search any vendor's AFIS program. The L-1 IBIS is a totally stand-alone unit that does not require a laptop. It can capture,

process, and transmit wirelessly over standard networks in a secure way to the IBIS server. When the search results come back, the officer can read them on the unit's PDA."

Atick went on to point out that there have been large-scale deployments with L-1 units. "To date, there have been more than 24,000 field searches in L-1 mobile devices."

Where is mobile identification going in the future?

There are a number of programs in the United States and around the world that focus on increasing the speed of the capture, search, and response times in mobile identification. For example:

❑ **RISC** is the FBI's acronym for *Repository for Individuals of Special Concern*. When the program becomes functional, an officer could take fingerprint images from an individual using a mobile device and submit them to RISC through a participating state's identification bureau. RISC will have a database made up of wanted persons, known or suspected terrorists, and

sexual offenders. The goal will be to process the inquiry in only seconds—and respond with a red, yellow, or green flag. For information, go to the FBI website: www.fbi.gov/hq/cjisd/ngi.htm

❑ **Project Midas** is a program that is underway in the United Kingdom to equip the police with mobile fingerprint scanners so they can run identity checks on people in the street. According to *The Guardian*, a leading newspaper in England, tens of thousands of scanners will be distributed. To read the article go to: www.guardian.co.uk/politics/2008/oct/27/project-midas-fingerprint-scanner-liberty

❑ **FALCON Project** is the name of Florida's new Integrated Criminal History System that cross-matches fingerprints and criminal histories; includes photos; searches criminal justice databases; and allows instantaneous updating of criminal justice information systems. To learn more, go to: www.falconichs.com

FOR MORE INFORMATION ON THESE MOBILE-IDENTIFICATION PRODUCTS:

Cross Match Technologies, Inc. — www.crossmatch.com/mobile_finger_scanners.html

TBS, Inc. — www.tbsinc.com/cms/front_content.php

Sagem Morpho Inc. — www.morpho.com/products_solutions/law_enforcement/RapID.html

Cogent Systems, Inc. — www.cogentsystems.com

L-1 Identify Solutions, Inc. — www.l1id.com/pages/73-mobile-identification



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