Identity on the move

David Gerulski, EVP of Integrated Biometrics (IB) talks about the latest technological developments in fingerprint biometrics and how it can be utilised effectively in the future

The importance of mobility in fingerprint biometrics cannot be overstated.

By bringing identification, verification and enrollment capabilities to the field, mobile fingerprint biometrics have transformed the way we approach identity management. From enhancing public safety and national security to streamlining financial transactions and healthcare processes, this technology has proven its value across a wide range of industries and applications.

As we move forward, the integration of mobile fingerprint biometrics will continue to shape the way we interact with our devices

and access sensitive information, striking a balance between convenience and security.

By embracing this innovative technology, organisations can enhance not only their operational efficiencies but also foster a more secure and trusted environment for customers, employees and stakeholders.

From single-finger to palm scanning, powerful algorithms, advanced capture technology and miniaturization have enabled scanners to reach once-isolated persons or groups, those who often lack the legal identity needed to participate in many aspects of daily life.

Integration

Traditionally, fingerprint identification had been confined to controlled environments, such as police stations or government facilities, where specialised equipment and trained personnel are available.

However, with the integration of fingerprint scanners into mobile devices and phones, identification can now be carried out in the field, streamlining operations and enhancing efficiency.

Law enforcement officers can rapidly identify individuals during routine traffic stops or at crime scenes, accessing criminal databases and cross-referencing fingerprints in real-time. This capability not only ensures public safety but also aids in the swift administration of justice.

Mitigating fraud

Financial services organisations use multifactor biometric authentication for new accounts, including credit cards, checking, savings, payroll and loans.

These additional measures will increase the security of all transactions, whether in-person, at ATMs, or via mobile devices.

Government agencies, banks and other financial institutions are using fingerprint biometrics to facilitate the proper identification of individuals for electronic payments to mitigate fraud by those trying to scam the system.

In one such instance, a pension system employed fingerprint biometrics as part of a door-to-door effort to enroll and confirm the identities of large numbers of retirees living in rural areas.

After confirming the retirees' identities and enrolling them into the pension system, funds are now safely and efficiently delivered electronically. This saves institutions potentially millions of dollars on phony payouts and prosecutions of scammers and identity thieves.

Efficiency in healthcare

The process of enrolling individuals into biometric systems had once been a time-consuming and often cumbersome endeavor, requiring dedicated facilities and specialised equipment.

> **"THIS GROUNDBREAKING APPROACH TURNS ALMOST ANY SMARTPHONE INTO A BIOMETRIC CAPTURE DEVICE WITH MINIMAL INTEGRATION."**

However, the advent of mobile fingerprint enrollment has revolutionised this process, making it more accessible and efficient.

In the healthcare industry, mobile fingerprint enrollment has facilitated the seamless registration of patients, reducing wait times and improving overall patient experience.

A simple fingerprint scan is all that is needed to pull up patient names, identification numbers and data. By capturing fingerprints on-site, healthcare providers can streamline the enrollment process and ensure accurate patient identification throughout the continuum of care.

Forensics: identifying the deceased

Mobile fingerprint identification has also made great advances in the world of forensics.

When examiners need to identify the deceased, they often use fingerprints to identify victims. Fingerprints are unique to each individual and do not change after death as do faces and irises.

Mobility has also allowed greater flexibility in accessing biometric data on-site allowing faster identification and quicker notification to loved ones. Fingerprint biometrics provide an important investigative tool when other identifying evidence is limited. ▸


David Gerulski

Leveraging smartphones

Far different from touch ID and fingerprint recognition for phone access, touchless scanning capabilities on mobile phones are evolving identification methods globally.

Fingerprints can now be captured by advanced software that enables the camera in existing smartphones to generate images with a quality capable of precise identification.

This groundbreaking approach turns almost any smartphone into a biometric capture device with minimal integration.

Today, law enforcement organisations can leverage their existing smartphones to capture fingerprints for identification and verification and receive matching results in seconds.

Facial recognition and metadata supplement the identification process for any potential suspect or person of interest.

Technological advancements and future outlook

Mobile fingerprint biometrics has been made possible by significant advancements in sensor technology and miniaturisation.

Modern fingerprint sensors are not only compact and highly accurate but also capable of capturing high-quality fingerprint images, even in challenging environmental conditions like extreme heat, cold and dust.

> **“THE WIDESPREAD ADOPTION OF MOBILE FINGERPRINT BIOMETRICS REPRESENTS A SIGNIFICANT STEP FORWARD IN ENSURING PUBLIC SAFETY.”**

Low power consumption and the ability to operate in bright light also distinguish high-quality devices from traditional ones.

As technology continues to evolve, the future of mobile fingerprint biometrics holds even greater promise. The integration of artificial intelligence and machine-learning techniques will further enhance the accuracy and reliability of liveness detection and spoof prevention, which are used to counter spoofing attempts that include counterfeit fingerprints and fingers, or the presentation of severed digits.

Moreover, the advent of multi-modal biometrics, which combines fingerprint recognition with other biometric modalities like facial recognition or iris scanning, will provide an additional layer of security and authentication for sensitive applications.

These mobile systems, using advances such as light-emitting sensor (LES) technology, advanced fingerprint “selfie” applications and the ability to leverage existing cell phone networks for connectivity, all powered by a mobile phone are taking verifiable identification and enrollments into the field.

Growing importance

Security and convenience have become paramount concerns across various industries and sectors. From banking and finance to healthcare and law enforcement, the need to accurately identify and verify individuals has never been more crucial.

Fingerprint biometrics has revolutionised the way we approach identity management. With the advent of mobile devices and the increasing demand for on-the-go solutions, the importance of mobility in fingerprint biometrics has taken center stage.

By embracing this innovative technology, organisations can enhance not only their operational efficiencies but also foster a more secure and trusted environment for their customers, employees and stakeholders.

As technology continues to advance, the capabilities and applications of mobile fingerprint biometrics are expected to expand and further solidify their importance in these critical sectors.

Ultimately, the widespread adoption of mobile fingerprint biometrics represents a significant step forward in ensuring public safety, national security and operational readiness, while fostering a more secure and efficient environment for all. ▪

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