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Automated Fingerprint Identification System Market Assessment, By Component [Software, Hardware], By Application [Image Acquisition, Image Enhancement, Indexing & Retrieval, Fraud Detection, Others], By End-user [BFSI, Transport & Logistics, Defense & Security, Consumer Electronics, Healthcare, Residential, Others], By Region, Opportunities and Forecast, 2016-2030F

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Abstracts

Global automated fingerprint identification system market size was valued at USD 7.9 billion in 2022, expected to reach USD 26.5 billion in 2030, with a CAGR of 16.3% for the forecasted period between 2023 and 2030.

Automated Fingerprint Identification Systems (AFIS) offer numerous advantages, including enhanced security through accurate identification, faster criminal investigations, fraud reduction, and streamlined authentication processes. Factors driving the AFIS growth include rising security concerns, increased adoption in law enforcement and border control, advancements in biometric technology, and the expanding use of fingerprint recognition in various industries. Additionally, the government mandates biometric identification in passports and IDs and the need for efficient data management, contributing to the growing demand for AFS solutions.

The AFIS's accuracy relies heavily on the quality of the fingerprints received. Nonetheless, it is generally very precise, with fewer errors than the other identification systems. Moreover, the accuracy of the fingerprints exclusively depends on the number of fingerprint sets submitted. As per Thales Group , there are almost 16 million sets of

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fingerprints of military personnel and more than 173 million sets from individuals worldwide as of April 2023 in the NGI database.

Utilization of AFIS For Fraud Reduction is Driving Market Growth

The application of automated fingerprint identification systems plays a pivotal role in reducing fraud thereby propelling the market growth. AFIS enhances security by verifying individual identities through their unique fingerprints, making it difficult for impostors to gain unauthorized access or engage in fraudulent activities. This technology is extensively used in financial institutions, border control, and government agencies to authenticate individuals, preventing identity theft and fraudulent transactions.

For example, FIFRAUD , a fingerprint-based fraud detection engine strengthens ID verification systems by using biometric data to verify identities. It compares the scanned fingerprint with stored records to ensure a person’s identification. If an unauthorized attempt is detected, it triggers alerts of identity theft and fraudulent access. This robust verification method enhances security in various sectors like banking, border control, and healthcare, thereby enhancing fraud prevention efforts.

Digital Imaging Technology is Significantly Enhancing the Market Growth

Digital imaging technology is regarded as one of the most crucial drivers of the market. It allows high-resolution fingerprint scans, and efficient data storage and retrieval. AFIS strongly relies on this technology to accurately match fingerprints and enhance identification. With advancements in digital imaging, AFIS systems are becoming more reliable and accessible, fueling their adoption in law enforcement, border security, etc., thus propelling the overall market growth.

For example, capacitive fingerprint scanners and sensor devices create a digital image of the fingerprint ridges and valleys by capturing the electrical differences between these features on the skin's surface, which makes them an ideal choice for many businesses and industries. Moreover, their remarkable accuracy, speed, and secure authentication process are some of their benefits.

Image Acquisition for Biometric is Catering to Extensive Opportunities

Image acquisition for biometric applications fosters market opportunities by enabling more accurate and versatile identification methods. Advancements in image capture

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technology, including higher resolution sensors and multi-modal biometric systems, enhance the reliability and scope of biometric recognition. It has led to increased adoption in various sectors like finance, healthcare, and security, creating opportunities for market expansion. Additionally, the growing demand for contactless authentication further accelerates developing and deploying biometric image acquisition solutions.

For example, signal processing is the key to any biometric system, assessing image quality, conducting feature extraction, and performing pattern matching. Pattern matching assumes a vital role, involving the comparison of stored data templates with provided input samples. The pattern matcher evaluates these matches and forwards the results to the decision module for the final call.

North America Dominate the Automated Fingerprint Identification System Market

North America dominates the automated fingerprint identification system market due to advanced technological infrastructure, substantial government investments in law enforcement and security, and a robust demand for biometric solutions. The presence of major AFIS providers and research institutions, coupled with high awareness and adoption, contributes to North America's market leadership. Additionally, stringent border control measures and an emphasis on public safety have driven the integration of AFIS in various sectors, consolidating its regional dominance.

For example, in May 2022, Apple Inc . revealed in-display fingerprint sensors in iPhones, as the US Patent and Trademark Office has officially awarded the Cupertino company a patent related to utilizing optical fibers behind the screen. The innovation aimed to enhance biometric data capture faster and more efficiently.

Government Initiatives Accelerate the Market

Government initiatives are substantially influencing the automated fingerprint identification system market. Many governments worldwide mandate biometric identification for passports, national IDs, and immigration control. These initiatives drive the adoption of AFIS in public sector applications. Law enforcement agencies increasingly use AFIS to solve crimes and enhance security. Overall, government support and regulatory requirements propel the expansion of the AFIS market in various sectors.

For example, The Union Anti-Fraud Programme (UAFP) is committed to preventing and countering fraud, corruption, and illegal activities that harm the European Union's

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financial interests. It can be achieved through three distinct components, each aligned with specific objectives. These elements provide Member States and beneficiaries financial aid, facilitate mutual administrative support, and promote collaboration in customs and agricultural affairs.

Impact of COVID-19

The global automated fingerprint identification system market experienced distinct phases due to the advent of COVID-19 pandemic. Pre-COVID, the market was steadily growing, driven by increasing security needs, governmental mandates for biometric identification, and expanding applications in various sectors. However, the onset of the pandemic disrupted supply chains, delayed project implementations, and led to budget constraints, causing a temporary slowdown in AFIS adoption. Post-COVID, there has been a notable resurgence of interest in AFIS technology. The pandemic accelerated the demand for contactless and secure authentication methods, with biometrics gaining prominence as a hygienic alternative to traditional touch-based systems. The renewed focus on safety and security has revitalized the AFIS market, leading to its expanded adoption in healthcare, finance, travel, and other industries, shaping a dynamic present landscape for technology.

Key Players Landscape and Outlook

The automated fingerprint identification system market is witnessing notable progress, with major firms dedicated to developing fresh AFIS solutions to boost their market value and revenue. Substantial investments have been channeled into creating advanced wearable devices, while prominent collaborations, acquisitions, and partnerships are reshaping the industry as these companies pursue their objectives.

In November 2022, NEC Corporation announced an extensive campaign to promote its innovative multimodal biometric authentication solution, a flagship product within its 'Bio-IDiom' brand. The innovative offering marks the world's first integration of NEC's top-ranked face recognition and iris recognition technologies, both acknowledged as No. 1 by the US National Institute of Standards and Technology (NIST). The solution is available for purchase in Japan, with a global market release in 2023.

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