

HID GLOBAL RECEIVES THE 2023 PRODUCT LEADERSHIP AWARD

*Identified as best in class in the global biometric
authentication solutions industry*

Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. HID excels in many of the criteria in the biometric authentication solution space.

AWARD CRITERIA	
<i>Product Portfolio Attributes</i>	<i>Business Impact</i>
Match to Needs	Financial Performance
Reliability and Quality	Customer Acquisition
Product/Service Value	Operational Efficiency
Positioning	Growth Potential
Design	Human Capital

A Market Snapshot: Global Biometric Solutions

Biometric solutions continue to gain traction as strong alternatives to traditional identity verification, enhancing the user experience (UX) through multiple modality options (e.g., face, fingerprint, iris, and more) and frictionless authentication and onboarding. Many solution vendors are focusing on balancing UX convenience with secure transactions. Moreover, ongoing customer demands for self-sovereign identity (i.e., sole ownership and control over personal data) continues to drive biometric authentication's evolution. Finally, the post-COVID-19 world requires remote, contactless tools, driving the need for accurate and efficient identity authentication procedures and quicker verification. However, as new solutions enter the market, organizations must balance data privacy requirements with a positive UX functionality. Complicated onboarding processes for end-users can impact a client's receptiveness to new biometric capabilities. Moreover, misinformation regarding biometrics solution, data privacy, and the new capabilities continue to impact public perception. Frost & Sullivan estimates the global biometrics solutions market will reach \$41.27 billion in 2030, with a compound annual growth rate of 14.9%.¹

Best Practices Excellence: HID

Founded in 1991 and headquartered in Austin, Texas, HID is a leader in digital identity systems, utilizing biometric hardware and software. Since its founding, the company has grown into a trusted vendor in various markets, including physical and logical access control, which includes authentication and

¹ *Growth Opportunities in the Global Biometric Solutions Industry* (Frost & Sullivan November 2022)

credential management, visitor management systems, and highly secure government and citizen identification (ID). More importantly, HID focuses on creating customer value via robust quality, innovative technology, and knowledge leadership.

Setting New Standards

HID has spent the past 30 years evolving and growing into a leader and preferred identity vendor, which includes building and refining its product portfolio to enable use cases in all facets of the biometrics ecosystem (e.g., facial and fingerprint recognition, palm print, iris, and multi-modal biometric systems). Thus, the company's solutions are applicable in various industries, including banking and financial services, retail, healthcare, enterprise, travel and transportation, and the government sector. Moreover, HID's solutions empower multiple stakeholders throughout the value chain, from front-line workers to executive leaders. As a result, various sectors continue to invest in secure and robust authentication solutions, including facial recognition and fingerprint biometrics, enabling them to prevent fraud, protect client data, and deliver superior user experiences.

Facial Recognition

To deliver its robust and best-in-class facial recognition solutions, HID integrated Paravision's reliable and flexible matching algorithm into its identity solutions, facilitating ethical and unbiased face matching via gender and age distinctions across multiple racial characteristics. Leveraging artificial intelligence (AI) and machine learning combined with multi-spectral imaging, advanced presentation attack detection (PAD), and on-board facial recognition enables HID to provide accurate identification in challenging lighting conditions such as darkness, direct sunlight, backlight, and gradient conditions, which many of its competition cannot achieve.

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**- Samantha Fisher,
Best Practices Research Analyst**

The company differentiates through its modular solution approach to facial recognition, which provide substantiated value throughout the entire product lifecycle.

- **U.ARE.U® Camera Identification System** leverages passive liveness security to facilitate reliable and accurate facial recognition, identification, and verification. The solution also combines HID's patented multispectral imaging (MSI) technology with artificial intelligence (AI) and machine learning, enabling it to function in any lighting condition.
- **U.ARE.U Face Software Development Kits** enable clients to add facial recognition easily and quickly to existing applications in Windows, Linux, Android, and iOS, with 1:1/1:N matching, liveness detection, image quality analysis, and template extraction.
- **ArcID™ ID Proofing Server** enables HID customers to add electronic Know Your Customer (eKYC) features (e.g., workflows, rules, and identity document verification) to their mobile enrollment processes for identity verification, which includes government-issued ID authentication and matching, bolstering accuracy and eKYC compliance.

- **ArcID™ Biometric Server** is designed to support full facial recognition functions, including 1:1 verification and 1:N matching, biometric records management, and import/export records to and from secure endpoints. The highly scalable solution is available as an on-premise or cloud architecture.
- **ArcID™ Device Manager** enables clients to manage their biometric hardware devices, including remote monitoring, provisioning, software updates, and security, all via a user-friendly interface.

Superior Technology and Customer-focused Growth Strategy

Fingerprinting technology has grown into the industry standard for identification due to the unique nature of human fingerprints, even as facial recognition has quickly achieved similar levels of acceptance and usage. While many biometric vendors offer this modality, HID stands apart as the market leader due to its portfolio breadth and customer-focused strategy, which enables it to consistently bring best-in-class fingerprint readers to market.

Fingerprinting

HID leverages its commitment to innovation to deliver highly accurate, efficient, and secure fingerprint readers. At the same time, the company incorporates client and market feedback into its product roadmap to maximize short-term growth opportunities while providing a path to future revenues. Thus, HID offers a wide range of fingerprint technologies featuring different image capture methods, security features, form factors and industry certifications designed to deliver best-in-class performance, which includes DigitalPersona®, EikonTouch®, Lumidigm®, and NOMAD™ single fingerprint product lines.

- **DigitalPersona® 4500/5300:** The optical reader portfolio offers vital benefits to the government, banking and finance, healthcare, pharmacy, and retail and hospitality industries due to their design. The USB peripheral, silicon-coated 4500's compact form factor offers a small footprint, making it ideal for point-of-sale (POS) environments. Meanwhile, the compact 5300 is purpose-designed for large-scale identification and authentication for civil organizations and commercial enrollment applications. Moreover, the 5300's durable form factor, which includes an Ingress Protection 64-rated glass platen, makes it ideal for harsh environments.
- **EikonTouch® TC510/TC710:** The compact, silicon fingerprint reader offers enhanced usability and durability suited for high-traffic environments (e.g., POS and multi-user applications). HID equipped the TC510 with patented technology to capture high-quality fingerprint images for liveness detection and biometric authentication. The identity verification solution enables enterprise customers and system integrators with a natural extension to security infrastructure for desktop personal computer (PC) and mobile PC security, access control, and other custom applications.
- **Lumidigm® M- and V-Series:** Built on HID's patented multispectral imaging (MSI) technology, the spoof-resistant fingerprint sensor technology accurately assesses whether a finger is real or fake, boosting authentication security. The high-performance Lumidigm scanners use different light colors from different angles to read a finger's surface and sub-surface data. This unique feature enables the Lumidigm readers to capture the most difficult finger types (wet, dry, aged, damaged, dirty, oily), which provides a highly accurate result and identifies spoofed fingerprints. Moreover,

the Lumidigm sensors incorporate sophisticated endpoint security technology using FBI-certified encryption algorithms to prevent bad actors from accessing your networks. If a hacker attempts to gain access to the reader, the MSI device provides active tamper protection and detection features that will erase the encryption keys, preventing the hacker from accessing your keys.

- **NOMAD™ 30 Pocket Reader:** This single fingerprint scanner leverages HID's thin-film transistor technology for accurate and efficient image capture in the mobile environment. . More importantly, the technology captures images that meet the FBI standards, regardless of environment (e.g., direct or indirect sunlight conditions). This same technology facilitates image capture from fingers under various conditions, including dry or dirty fingers and stained or inked skin (e.g., tattoos).

In addition to the single-finger sensors, HID also offers livescan products, providing high quality capture of tenprint and palm prints for the public sector. For years, HID Guardian™, Patrol™ and L Scan™ scanners have led the industry for high-quality palm and fingerprint image acquisition. All scanners could be integrated into a livescan cabinet, kiosk or Jumpkit.

- **Guardian™ 200 Tenprint Scanner:** Known as the industry leader in tenprint livescan capture quality, the Guardian 200 delivers performance, reliability and flexibility for high-volume applications. Whether wet or dry fingers, users can easily learn to use and quickly capture high quality images for a positive user experience.
- **Patrol Tenprint Scanner:** This scanner offers users an economical approach for tenprint capture without sacrificing image quality. Its practical, intuitive design provides an efficient user experience for tenprint flats and rolled fingerprints.
- **L Scan™ Tenprint and Palm Scanner:** The L Scan family addresses the need for high resolution fingerprint and palm images for enrolling or booking suspects quickly and accurately. L Scan scanners deliver an image quality either in 500 ppi, as the internationally recognized FBI standard, or 1000 ppi for superior image quality — capturing level 3 details, such as a person's sweat pores. This enables the best possible match rates when checking against a database.

While evolving from a product standpoint, HID never loses sight of a clients' perspective. Its brand maintains its global presence while meeting customer-specific needs. Given today's landscape, Frost & Sullivan believes HID is in a prime position to increase its market share in the highly competitive biometric solutions industry.

Recipe for Success

With a deep-rooted history of purpose-fit innovation, HID shapes the industry's trends, impacting its role in the market. The company's biometric solutions leverage the Secure Software Development Lifecycle (SSDL) methodology to ensure they are securely integrated into a client's infrastructure. The SSDL process also gives developers insight and threat alerts before they occur. In addition, the company's facial recognition technology uses Privacy by Design (ethical data collection with user opt-in/opt-out functionality) and End User License Agreement guidance that fully complies with modern privacy regulations, such as the General Data Protection Regulation. Finally, HID's facial recognition portfolio is based on a Modular Solution Approach, which simplifies integration without requiring a costly rip-and-

replace or migration to a new platform. The company's approach focuses on a fast and flexible deployment, reduced cost and resources, customization to budget and business requirements, and flexibility to scale up as the client's business grows.

"Leveraging multispectral imaging technology, advanced presentation attack detection, and structured light illumination in its 2D/3D camera technology enables HID to provide accurate identification in various lighting conditions such as darkness, direct sunlight, backlight, and gradient conditions, which many of its competition cannot achieve."

**- Danielle VanZandt,
Industry Manager, Commercial & Public Security**

With its biometric solutions, HID addresses an ongoing market need not easily replicated by competitors. Personally identifiable information (PII) encompasses more than Social Security or account numbers, including physical factors (e.g., fingerprints, face images, and iris scans) and behavioral biometrics (e.g., typing cadence and swipe pattern data). Due to ongoing fraud and security issues, various

industries are working to integrate new authentication solutions to defend and secure end-user PII. HID's biometric solutions are unique due to a variety of factors, including its ethically trained AI engine, unrivaled PAD algorithm, MSI technology, and high performance in any environment. Frost & Sullivan applauds HID's ongoing innovation and superior technology, further solidifying its position as a market leader, showcased through its continued revenue growth figures throughout the pandemic years.

Conclusion

To be a product leader, a company needs to understand the market's needs and deliver a solid solution designed and embedded with high-quality and reliable performance. Frost & Sullivan finds that HID embodies this concept and exemplifies it with best practice implementations. The company draws on its commitment to innovation and identity solutions legacy to deliver groundbreaking technologies and powerful algorithms to defend against fraud, ensuring robust and secure identity authentication and verification for various industries, including the banking and financial services, government, and commercial enterprise sectors. HID's portfolio of high-end biometric solutions provides strong value to customers through multiple biometric hardware, software, and integrated identity solutions. The company outpaces its competition through its proprietary technology, such as multispectral imaging, which offers a higher level of security and anti-spoofing capability to physical biometrics. Moreover, HID ensures it remains compliant with all necessary regulatory bodies, enabling the company to address challenges across various industries.

With its strong overall performance, HID earns Frost & Sullivan's 2023 Global Product Leadership Award in the biometric authentication solutions industry.

What You Need to Know about the Product Leadership Recognition

Frost & Sullivan's Product Leadership Award recognizes the company that offers a product or solution with attributes that deliver the best quality, reliability, and performance in the industry.

Best Practices Award Analysis

For the Product Leadership Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Product Portfolio Attributes

Match to Needs: Customer needs directly influence and inspire the product portfolio's design and positioning

Reliability and Quality: Products consistently meet or exceed customer expectations for performance and length of service

Product/Service Value: Products or services offer the best value for the price compared to similar market offerings

Positioning: Products serve a unique, unmet need that competitors cannot easily replicate

Design: Products feature innovative designs, enhancing both visual appeal and ease of use

Business Impact

Financial Performance: Strong overall financial performance is achieved in terms of revenues, revenue growth, operating margin, and other key financial metrics

Customer Acquisition: Customer-facing processes support efficient and consistent new customer acquisition while enhancing customer retention

Operational Efficiency: Company staff performs assigned tasks productively, quickly, and to a high-quality standard

Growth Potential: Growth is fostered by a strong customer focus that strengthens the brand and reinforces customer loyalty

Human Capital: Commitment to quality and to customers characterize the company culture, which in turn enhances employee morale and retention

