



Science and Technology



TRANSPORTATION SECURITY & EXPLOSIVES CHARACTERIZATION

BIOMETRIC DATA COLLECTION AND VERIFICATION SYSTEM

THIS TECHNOLOGY INCLUDES A SYSTEM AND METHOD TO QUICKLY AND ACCURATELY VALIDATE BIOMETRIC INFORMATION.

Biometric technologies have several shortfalls, including slow data acquisition and retrieval speeds, failures in biometric data extraction, and inaccuracies in biometric matching. These limitations decrease identification screening throughput as well as user satisfaction and trust.

Researchers from the Biometric and Identity Technology Center, Science and Technology Directorate, of the Department of Homeland Security have introduced an efficient biometric data validation system and method to address these issues. The Biometric Data Collection and Verification System (BDCVS) receives and measures data from a biometric collection station and quantifies the overall performance in terms of effectiveness, efficiency, user satisfaction, and equitability. The system characterization ensures the system is performing as required and identifies deficiencies that may require remediation. This method allows the system to compare the characterization number with the system performance criteria ensuring the performance is within the required criteria.

KEY BENEFITS

- + Eliminates acquisition errors by measuring multiple biometric features
- + Provides standard measures for biometric data collection
- + Incorporates user satisfaction into technical measures of system performance for future improvements
- + Improves trust through objective performance assessments

STAGE OF DEVELOPMENT

Proven System

PARTNERSHIP SOUGHT

License

INVENTORS

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DHS COMPONENT

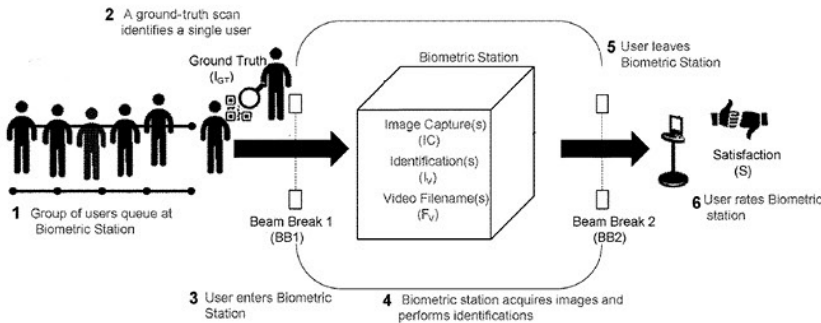
Science and Technology Directorate

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THE TECHNOLOGY

The BDCVS system quantifies acquired and stored biometric data to confirm the identification of individuals. Before entering a biometric station, a user queues for a “ground truth” scan that collects identification information, for example, scanning a passport barcode. The user then enters the biometric station, triggering a first beam break that creates a time stamp. Once inside, the biometric station acquires biometric information from the user and performs identification matching. When identification is complete, the user leaves the station, triggering a second beam break, and the user completes a satisfaction survey. The total transaction time for each user is the time between the two beam break time stamps. The biometric station collects, processes, and submits biometric information within a user’s transaction time.

Multiple image types may be collected, such as fingerprint, body, iris, and facial scans, and combined with other types of imagery for screening or vetting purposes. The biometric station calculates an identity for each user through matching algorithms that utilize a gallery of biometric images and biometric samples. The system determines whether the biometric characterization and overall system performance meets the performance thresholds required of the system.



The diagram above shows the subject system in place at a biometric station, in which users enter to have their biometric data collected and identity verified. Figure 1 from US Patent 10,817,738.

APPLICATIONS

The technology has several potential end users:

- + Transportation security and passenger screening
- + Event security screening
- + Secure facility access screening

PATENT INFORMATION

US Patent numbers 10,817,738; 10,885,364; and 11,144,773



CONTACT INFORMATION

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TECHNOLOGY SOLUTIONS

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