



Biometrics Research and Engineering Laboratory

As the Department of Defense (DoD) moves forward with the employment of biometric technologies, ARDEC is well positioned to assist, having identified biometrics as a critical tool for perimeter defense and weapon systems employed in the Global War on Terrorism (GWOT). A critical preliminary step in the application of biometric systems to controlled access points, communications, computer systems, and countermeasure platforms is the establishment of the **Biometrics Research and Engineering Laboratory (BREL)**. The purpose of the BREL research and engineering efforts is to generate application specific systems that meet both system accuracy and product reliability that are representative of real world target scenarios and user groups. The information gathered from evaluation efforts is used to support external customers as well as research and development initiatives based at ARDEC, Picatinny. The goal of the BREL is to become the **Center of Excellence for Biometrics Research, Test and Engineering** by providing industry, academe, DOD, Department of Homeland Security (DHS) and other federal agencies with research, consulting and informational, and integration services.

Consulting and Informational Services

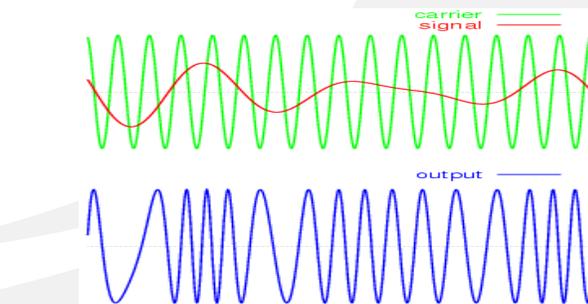
- Feasibility studies for biometric authentication systems
- Integration into Facility/Security/Construction Integrated Product Teams (IPTs)
- Expertise in software programming, software and hardware engineering, web enabled and acquisition support environments
- Institutional Review Board (IRB) oversight for testing involving human subjects
- Capability Maturity Model Integration (CMMI) Level 5 process expertise in support of a full range of Department of Defense (DOD) Research & Engineering/Science & Technology (R&E/S&T) activities

Research and Integration Services

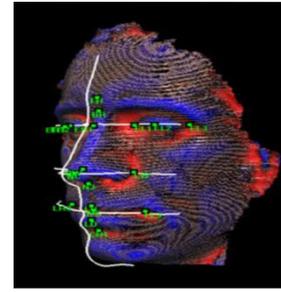
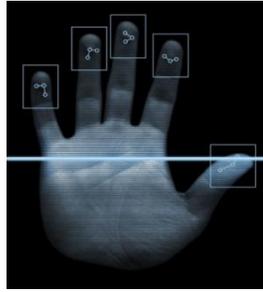
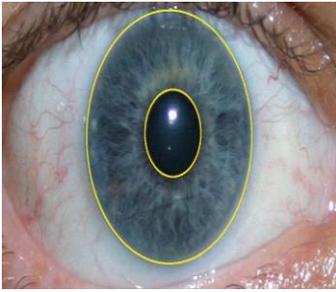
- Novel Biometric Technology Evaluation Laboratory
- Rapid Prototyping
- Software Development Biometric Testing and Evaluation
- Development – Multi-modal biometric authentication systems
- Hardware Development - Integration of biometric authentication systems to existing security systems and weapons/communication systems
- Environmental Standards Assessment Development – Authentication of biometric equipment and measurement in austere and extreme military environments



Facial Biometric Matching



AND Radio Frequency Identification (RFID)



Recent Accomplishments

The BREL recently performed a biometric software and hardware feasibility study for the **Biometric Concept Initiative (BCI) project**. In addition the BREL has developed the **Biometric Access Control System (BACS)**, **Iris Recognition at a Distance (IRD) system**, **Biometric Facility Inventory Control System (BFICS)**, and **Biometric Lock-Out of Critical Systems (BLoCS)**.

BCI is a program undergone in conjunction Department of Defense (DoD) Biometric Identity Management Agency, in which ARDEC performed an analysis of prototype biometric programs developed through DoD BIMA Biometric Agency Announcements and Biometric Technology Demonstrations.

BACS is a multi-technology access control system implemented to control access to laboratories within ARDEC at Picatinny. BACS allows for access control via, iris recognition or contactless Common Access Card (CAC) reader.

IRD is a multi-technology proof of concept demonstrating the recent advances in iris recognition technology that mitigate distance problems normally associated with iris recognition. IRD offers secure access control to low and medium traffic area volumes.

BFICS is a multi-technology proof of concept effort to demonstrate integration of Biometrics and RFID technology for controlling access to a facility and managing the inventory of its high value contents. BFICS provides a means of controlled access to an area for pre-authorized individuals based on biometric identification and inventory management functions for controlled inventory items using RFID tags.

BLoCS is a multi-technology proof of concept that uses logical biometric and proximity-controlled access. BLoCS offers effective access control to secure Windows-Based or Mission Critical Platforms such as the Mortar Fire Control System – Heavy (MFCS – H) or the Stryker Fire Control System.

To accomplish future objectives, we have formed partnerships with various experienced public and private organizations. These partnerships allow us to gain experience in different areas we have not explored yet while lending knowledge of our activities in the field to other sources.

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