



Homeland  
Security

# An Operator's Perspective

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**Office of Biometric Identity Management (OBIM)**

# What We Do

**MISSION:** OBIM provides the Department of Homeland Security and its mission partners with biometric identity services that enable national security and public safety decision making.

**VISION:** OBIM leads the use of biometric identity for a safer world, enhanced individual privacy, and improved quality of life.

## SWIFT

The fastest response times for a unique set of services and customers



## SURE

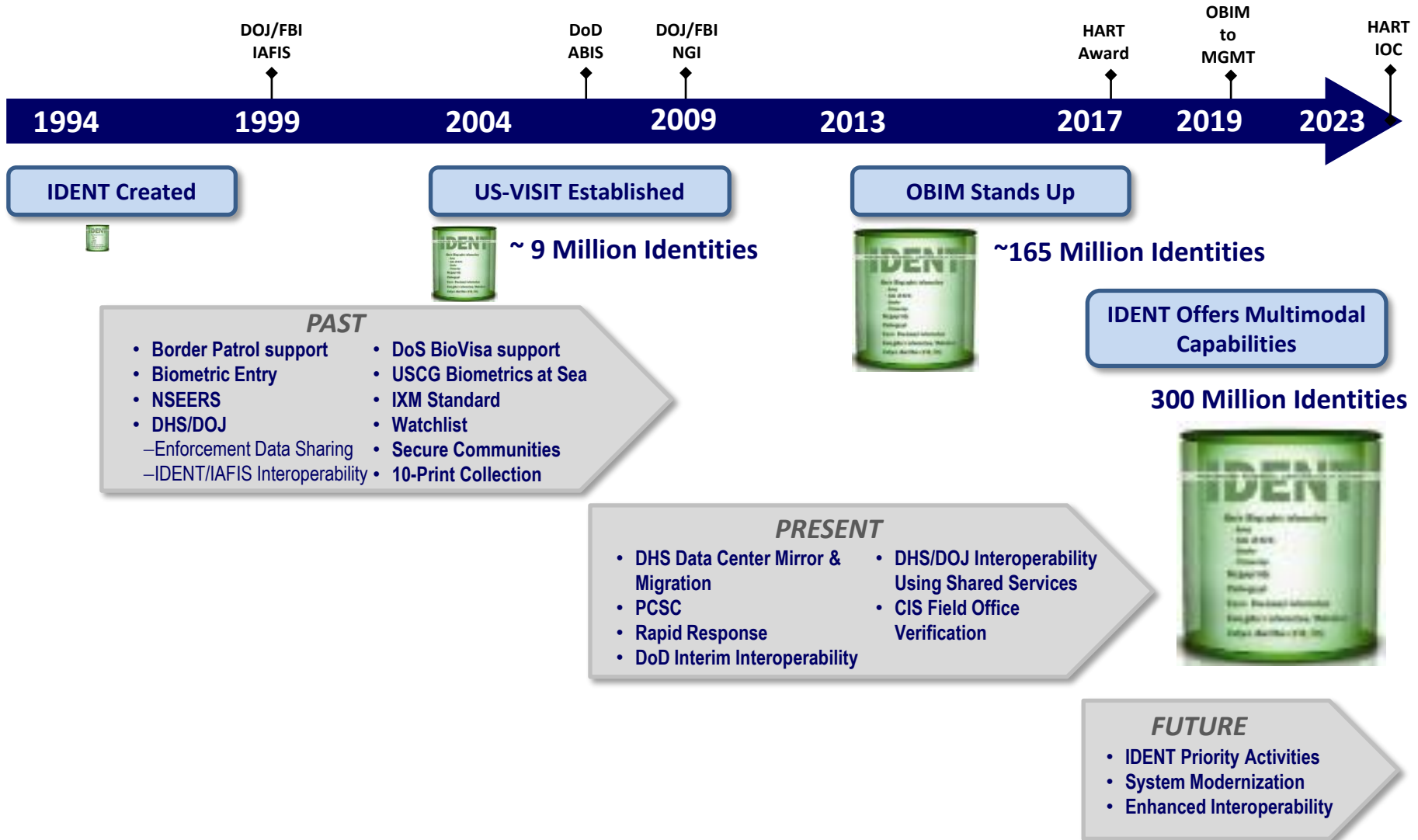
The largest biometric capability in the U.S. Government with more than 300 million biometric identities

## SECURE

Strong adherence to privacy principles that protect our citizens and visitors



# History





## Automated Biometric Identification System

- DHS biometric matching system for rapid identification and verification
- Contains searchable fingerprint records for more than 300 million identities
  - Approximately 400,000 searches per day
  - Both non-U.S. citizens and U.S. citizens
  - Criminal and non-criminal
- Provides biometric services to more than 45 U.S. and international organizations
- Multimodal capabilities include
  - Iris (1:1, 1:N)
  - Face (1:1, 1:N candidate list, and 2-photo submission)
  - These capabilities are provided in addition to fingerprint matching (1:1, 1:N, latent-to-known, and known-to-latent)
- Currently offers the ability to store fingerprint, face, iris, scars/marks/tattoos, and palm prints



## Current capabilities

- **1:1 (Verification)**
- **1:N (Candidate List)**
- **Face Comparison (2-photo submission)**

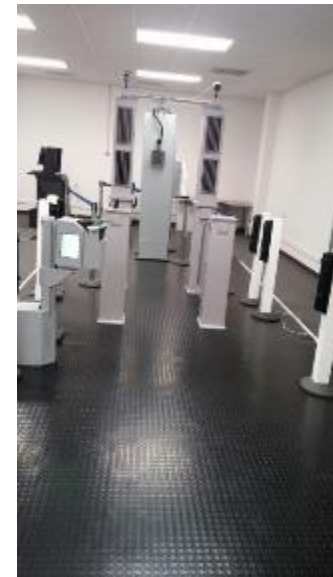
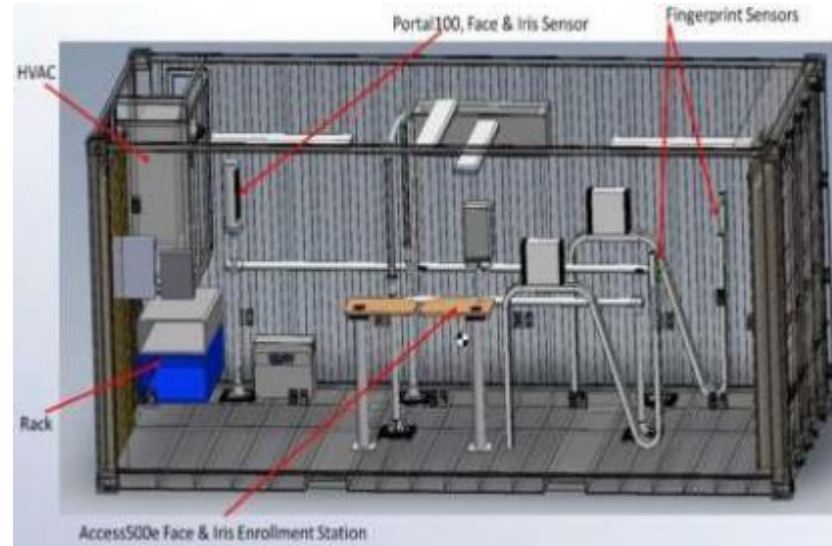


- OBIM resourced the investment for a DHS enterprise-wide license for face recognition matching software.
- OBIM is partnering with the National Institute of Standards and Technology (NIST) to develop a face image quality standard; OBIM provided NIST with approximately 150M images.
- OBIM is supporting U.S. Immigration and Customs Enforcement (ICE), Human Rights Violators & War Crimes Unit (HRVWCU) with face recognition services, via OBIM's Biometric Support Center, for a small volume ICE HRVWCU pilot effort.
- OBIM provides face images to U.S. Customs and Border Protection (CBP) Office of Field Operations to support CBP's Biometric Entry/Exit.

# Contactless Physical Access

Physical Access Control Systems with contactless biometrics (face, fingers and iris) for rapid and non-stop identification and matching of personnel.

Current speed is 24 persons a minute



# Face Recognition Binocular System

Tethered Face Recognition Binocular system that provides a capability to conduct long range (70-200m) collection.

Fielded 10 systems to the U.S. Central Command in July 2018 that operated from 70-140m.

System integrator developed a hardware and software solution increasing the range to 200m; conducted an acceptance test on in September 2018.

Upgrades currently being fielded followed by additional operator training; three-year authority to operate awarded.

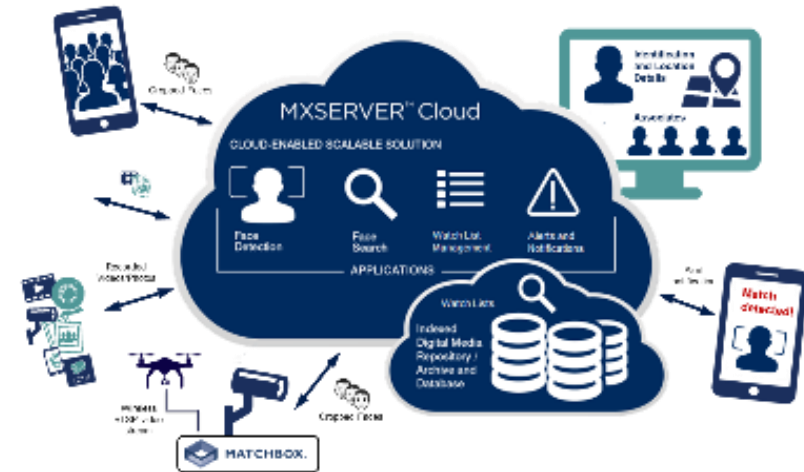


# Video Identity Collection & Exploitation (VICE)

Provide face matching capability to support the identification of individuals using face recognition from against known photos and video.

Fielded to CENTCOM AOR 8 SEP 18 with 120 days of FSR support to conduct operator training. EUCOM and PACOM expressed interest in capability.

Assisting with Biometric Enabled Watch List dissemination effort



Livescans



Web Postings



CCTV



Media exploitation



WL Suggestions and Confirmation

Collection

Watch List Activities

Exploitation

Tips & Queues



WL Status View



VICE Consolidated Response

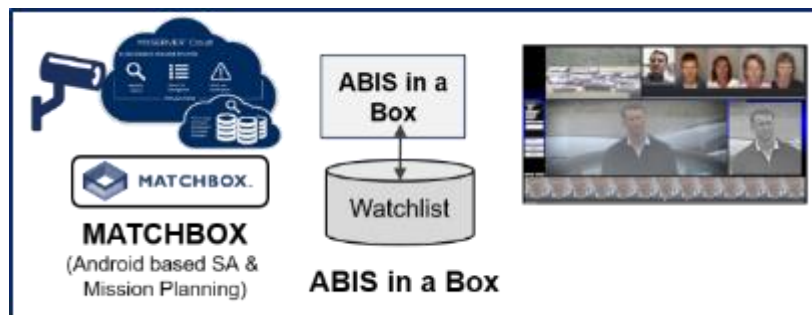




# Matchbox

Matchbox is a small network appliance which connects to a live video stream and automatically detects, tracks, extracts, and submits face images for biometric matching against watch lists.

The app runs on Android and enables an organization to create a large sensor array of biometric capture devices (mobile phones, tablets and video surveillance cameras) that can continuously and autonomously capture biometric samples (faces) to detect and alert when persons-of-interest are present.



# Long Range Thermal Face Recognition

Mature, human-portable long-standoff range (10 to 500m) biometric identification broadband camera/processor prototype for final development, testing, evaluation.



~>300 meters

Real time multi-person detection,  
tracking and identification



Image enhancement and  
turbulence mitigation



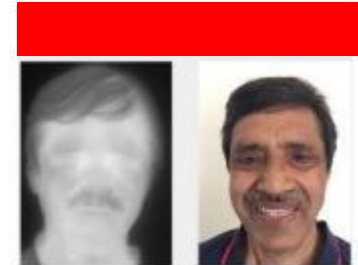
Thermal image probe  
matched against  
traditional enrollments



SWIR



MWIR



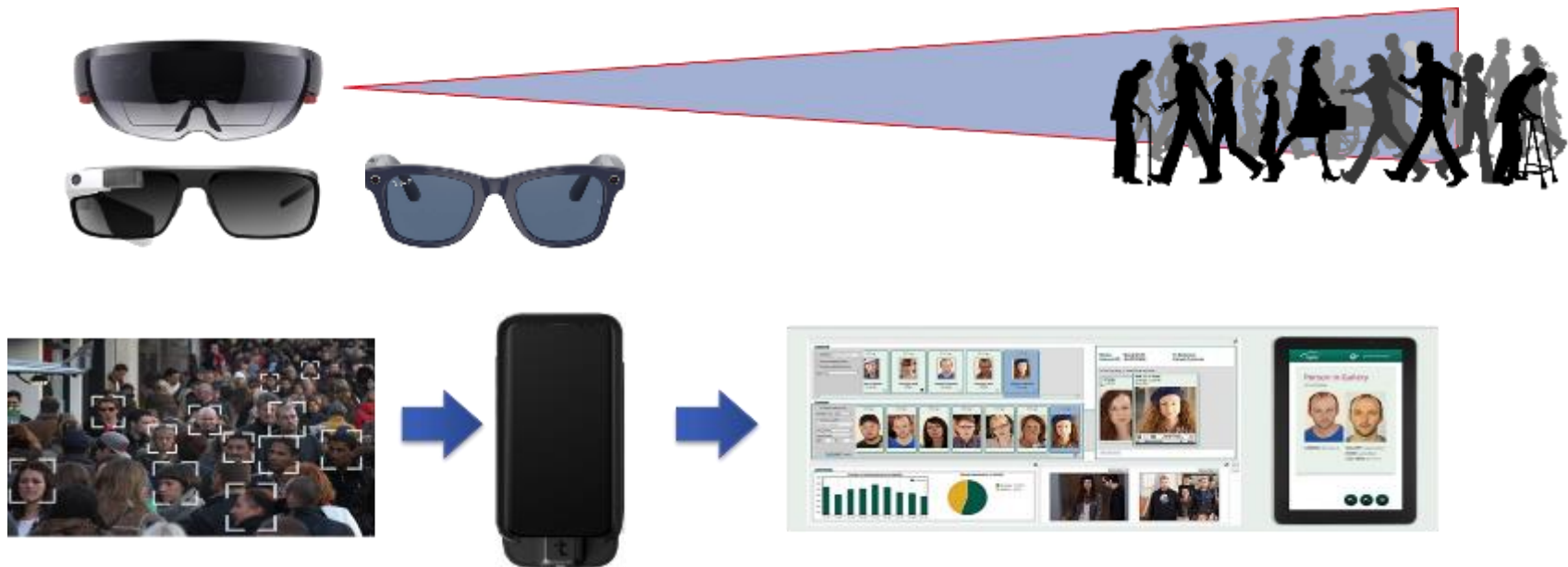
## 2D/3D LIDAR Vehicle



2D face detection identifies and targets the Laser Guided Radar Light Detection and Ranging (LIDAR) system to scan for faces in real time. The image is passed to the face matching system which produces a match result to the system and users. Direct applicability to force protection and counterintelligence requirements.

# Biometrics for Augmented Reality

Utilizing an application resident on the android device, the user ingests live video streams from the IVAS/Google glass cameras to automatically detect, extract and submit face images to matching algorithms for face recognition against watch lists and can send the captured record to an authoritative biometric database for wider search and matching.





## Key Initiatives

### Face Recognition

- Develops standards for improved image quality
- Explores improvements to recognize faces "in the wild," also called unconstrained images



### Craniofacial Structural Progression

- Explores the best modalities and periodicity of enrollment for optimum performance



### Speaker Recognition

- Leverages voice as a biometric modality
- Plans to provide verification of speaker identities to USCIS



### Contactless Fingerprints

- Enables capture and processing of fingerprints at a distance
- Works toward standards development and evaluation of current solutions



### DNA

- Leverages DNA as a biometric modality
- Emphasis is on kinship analysis to detect fraud in familial claims.





# OBIM Biometrics in the Last Hour

**14,603**

BIOMETRIC TRANSACTIONS

**69**

ENFORCEMENT  
TRANSACTIONS

**3,874**

CBP PORT  
OF ENTRY  
TRANSACTIONS

**17**

URGENT  
FINGERPRINT  
EXAMINATIONS  
COMPLETED

**2,324**

NEW IDENTITIES IN IDENT

**35,713**

BIOGRAPHIC  
TRANSACTIONS

**7** ENFORCEMENT  
WATCHLIST HITS

**5** KNOWN OR SUSPECTED  
TERRORIST RECORDS RECEIVED

**53** TSA  
Transactions

