BlueFace Biometric Screening

Real-time video processing for verification, identification and alert person on watchlists

BlueFace supports the biometric identification, comparison, and verification of persons who are members of a large group.

BlueFace are a real-time verify, identify and alert of persons and a real-time facial screening for a variety of market applications including to:

- Border Crossing
- Transportation
- Sensitive Law Enforcement
- National Security
- Foreign Labor
- Video Surveillance
- Physical access control
- Adaptable for local requirement

BlueFace is a face recognition-based tool designed specifically for the real-time identification needs of law enforcement. BlueFace makes the identification of wanted individuals easier for security personnel as it acts as a security barrier, providing actionable intelligence based on accurate identifications. BlueFace can relay alarm information to security officers on the scene in real-time. Because of the high accuracy of the underlying BlueFace engine, the system has the ability to help identify large numbers of unfamiliar faces.

BlueFace has identifying of the objects who a wanted person as "a face in the crowd" is always a challenge for inspection officers and security personnel. BlueFace acts as a security barrier, providing actionable matching with more accurate identifications so officers can be more effective. With the high accuracy of the underlying face recognition technology, the system has the ability to help identify thousands of unfamiliar faces quickly, distinguishing between look-alikes and even twins.

BlueFace is a real-time face screening system that captures faces through a live video stream from high resolution cameras, searches them against predefined watchlists, and generates real-time alarms whenever a match is found. It enhances the efficiency of security and law enforcement personnel by providing a list of possible matches for human verification, so that the operator spends valuable time focusing on persons of interest rather than the public at large.

BlueFace Families:

BlueFace Acquisition:
Enrolling, capturing and assessing digital portraits for Photo-ID or digital cameras

BlueFace Database Scan:
Verify and identify the photograph matching in databases

BlueFace Video Alert:
Advanced Technology of computer-assisted video surveillance

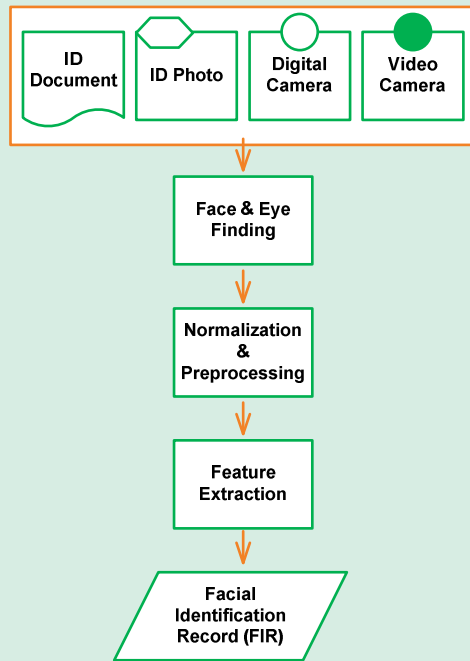### MORE EFFECTIVE USE OF RESOURCES

- System provides list of possible matches in real-time for human verification
- Operators can focus on suspicious persons versus general public
- Multiple watchlists can be monitored simultaneously
- Alarm details are customizable
- Overhauled, operator friendly graphic user interface (GUI) environment
- Alarm information to security officers on the scene in realtime

HOW IT WORKS

- Verify and identify in real-time for human to data which stored facial information record (FIR) in large databases
- System and cameras are installed where people pass through critical locations.
- Those who are not on watchlists do not trigger any alarms and are able to pass.
- Criminals on watchlists trigger alarms to alert security personnel in real-time.

Enrollment

The enrollment is the process of the generating a Facial Identification Record (FIR) from any kind of digital image source that showing a face. The face and the eyes positions are detected on the media, the facial image information has normalized and preprocessed, and the features will be extracted and transformed to a Facial Identification Record.

ID Document	ID Photo	Digital Camera	Video Camera

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Face & Eye Finding

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Normalization & Preprocessing

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Feature Extraction

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Facial Identification Record (FIR)

Alert and Watchlists mode

Video Alert is automatically scans incoming video streams, detects multiple faces and checks for possible "watchlists" matches. If a match is found, operators are notified – in real time – allowing them to focus on the identified person instead of simultaneously observing multiple video screens.

System Requirements

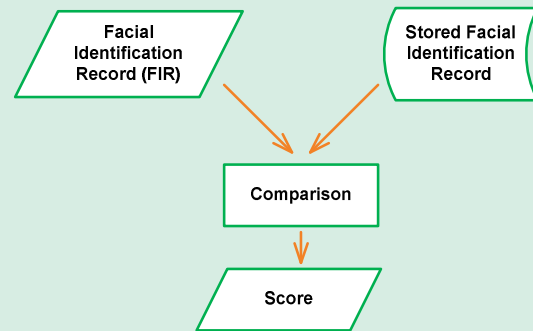|	
Work Station	Intel® Core™ i7 CPU 2.1GHz
Operating System	Windows XP Service Pack 3, Window 7 Professional/Enterprise 32Bit, .NET Framework 3.5 SP1
Memory	2GB minimum, 4GB recommended
Camera Type	HD-SDI Megapixel Camera recommended
Lenses	Motorized Zoom Lens 5-50 mm.

Face Standards Compliance

FBI Certified NIST record formats type-10

INCITS ANSI 385

ISO/IEC Biometric Data Interchange Formats: 19794-5

ISO/IEC CBEFF: 19785

IEC 15444, "JPEG 2000 Image Coding System"

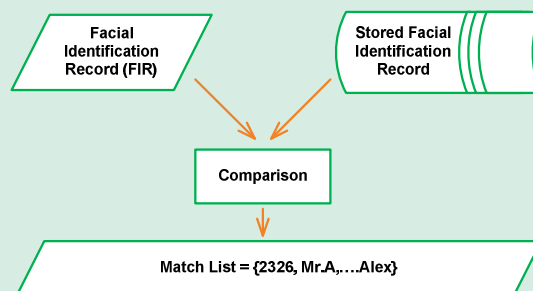## Verification mode (1 : 1)

An image is processed and compared to a stored FIR. Based on the similarity features, the identity is verified person.

Facial Identification Record (FIR) → **Comparison** ← **Stored Facial Identification Record**

Comparison → **Score**

Identification mode (1 : N)

An image is processed and compared to a database of reference records in gallery of FIRs. The most similar reference data are taken as an evidence of the person's identity.

Facial Identification Record (FIR) → **Comparison** ← **Stored Facial Identification Record**

Comparison → **Match List = {2326, Mr.A,....Alex}**