

## Position Paper IDENT Implementation for U.S. VISIT

### Why Use IDENT Versus Developing A New Solution?

#### IDENT Proven Value

- ❑ Currently supporting 14,000+ trained active users and over 2,200 workstations (including international locations)
- ❑ Currently approximately 12M+ individuals (16M+ encounters) in IDENT
- ❑ "Lookout" database contains the FBI's IAFIS active "Wants and Warrants" and are updated bi-weekly from the FBI to maintain currency of the data. Since August 2001, IDENT users have identified 6,547 confirmed hits against the wants and warrants. "Lookout" database also contains the known terrorist prints from the FBI and deported aggravated felons.
- ❑ "Recidivist" database contains alerts for previous enforcement actions (including photographs) not available in other Federal databases, FBI Criminal Master File records (e.g. NSEERS special interest countries), and agent safety concerns.

#### IDENT Proven Maturity and Scalability

- ❑ The successful implementation of the NSEERS functionality in IDENT in less than 90 days proves the ability to modify and deploy the system in a short amount of time. This included the deployment of approximately 900 terminals and associated training to the majority of the POEs and all District Offices.
- ❑ The hardware is proven, stable, easy to acquire, and simple to install using a standard PC workstation, camera and a fingerprint scanner
- ❑ The current contractors have been on this task for several years and provide a wealth of lessons learned and excellent past performance
- ❑ The data communications infrastructure already supports a large number of transactions with minimal performance issues
- ❑ The technical field support and existing help desk support personnel are very familiar with the technology
- ❑ The system meets computer security requirements (Certification and Accreditation) including redundancy and continuity of operations

#### IDENT Proven Performance

- ❑ Processed approximately 3M transactions in last twelve months including all Border Patrol apprehensions and NSEERS registrations resulting in 26,238 confirmed Lookout hits and 463,247 confirmed Recidivist hits.
- ❑ [REDACTED]
- ❑ The system is currently used by the vast majority of the Inspections community requiring less training for modifications

### Is IDENT Feasible And Scalable For U.S. VISIT Implementation?

#### Assumptions for Implementation

- ❑ Fingerprints and photographs will be captured at Primary on individuals entering the U.S. from Visa countries.
- ❑ Potential population is estimated at 25 million encounters during the first year of U.S. VISIT.
- ❑ Perform a real-time one-to-one match on individuals previously enrolled or perform a search against a "Lookout" database during the current Primary inspection without substantially increasing the Inspection time.
- ❑ Enrollment into the U.S. VISIT biometric database will be performed during off-peak hours within 24 hours after entry to the U.S.
- ❑ Approximately 50% of the individuals from Visa countries are estimated to be repeat travelers.
- ❑ [REDACTED]
- ❑ Fingerprint examiner resources will be augmented to enhance data integrity.
- ❑ As new lookout fingerprints are added they are associated to all previous encounters and available for future one-to-one matches.

Redacted information withheld under FOIA exemption high (b)(2)

### **Feasibility and Scalability of Two-Prints**

- ❑ IDENT has proven the feasibility and scalability of capturing two-prints and successfully identifying individuals with greater than 99% accuracy against a current population of 12M.
- ❑ The size of the database poses no problems with identification for one-to-one verification or search against the "Lookout" database.
- ❑ [REDACTED]
- ❑ A two-print solution provides for the biometric identification of travelers to the U.S. earlier than any other available solution.
- ❑ Given the number of travelers in the first year and the number of repeat travelers, two-prints will be sufficient to maintain the current data integrity for the first nine to twelve months of U.S. VISIT.

### **Migration Plan to Additional Prints**

- ❑ The U.S. VISIT program office will develop a migration plan to transition to a multi-print capability within the first year.
- ❑ Development of the multi-print capability will be built upon the two-print platform incorporating lessons learned and technological advances.
- ❑ The current "Lookout" database contains multi-prints, minimizing the difficulty of the transition to multi-print capability.

### **What Are The Sunk Costs For Migration To The Multi-Print From The Two-Print Capability?**

- ❑ The proposed implementation for U.S. VISIT is not a proprietary solution or architecture limiting future acquisition of other vendor solutions. Although a major investment of the current vendor's hardware will be incurred for the initial implementation, this will not preclude U.S. VISIT from augmenting the environment with other vendor's solutions and not impacting the technical capability.
- ❑ The infrastructure upgrades to support a two-print or multi-print capability require the same initial investment.
- ❑ Development of the multi-print capability will be built upon the two-print platform incorporating lessons learned and technological advances.
- ❑ Fingerprint scanners at \$425 each would require replacement with a multi-print scanner resulting in a initial investment of \$750,000 that will not be recoverable.

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Two-Print Searches in ENFORCE/IDENT and US-VISIT IDENT

The ENFORCE/IDENT and US-VISIT two-print searches do not search all of the same data sources. The ENFORCE/IDENT two-print search does not query US-VISIT enrollments and the US-VISIT two-print search does not query enforcement apprehensions (ENFORCE):

<b>ENFORCE Two-Print Search</b> <i>IDENT Lookout and Apprehension (Recidivist) databases</i>	<b>US-VISIT Two-Print Search</b> <i>IDENT US-VISIT Watchlist and Enrollment databases</i>	<b>IDENT Databases not Searched by ENFORCE or US-VISIT</b>
Known or Suspected Terrorists	Known or Suspected Terrorists	
Wanted Persons	Wanted Persons	
Deported Felons	Deported Felons	
Sexual Registrants	Sexual Registrants	
IDENT Lookout Enrollments	IDENT Lookout Enrollments	
IDENT Alerts	IDENT Alerts	
Previous Criminal Histories	Previous Criminal Histories	
Latent Prints (off-line search)	Latent Prints (off-line search)	
		Asylum Database
		Border Crossing Card Database

IDENT Apprehensions

US-VISIT Enrollments

NSEERS Registrants

"Call out" boxes indicate what is contained in shadowed boxes that may not be clearly visible to reader.

## US-VISIT - 2 print vs. 10 print Issue paper

**Background:** The four goals of the US-VISIT program are:

- Enhance National Security;
- Improve the integrity of the immigration process;
- Facilitate legitimate trade and travel; and
- Adhere to all relevant privacy regulations and policies.

To support these goals a biometric system must be able to do two things: first, verify the identity of an individual (is he who he says he is) and second check current databases to see if this person has been seen before (has he been previously enrolled or is he on a lookout list). To facilitate trade and travel the capture of the biometric must be quick, unobtrusive, and must use a device that can fit into the current operational environment (i.e. small desks at the consular post, or primary inspection lane). The results must be returned with a high degree of confidence in a time frame that is operationally feasible (i.e. within seconds at the primary lane – as even a few more seconds could increase wait times and back up port traffic to unacceptable levels). The decision on which biometric to use should be based on the requirement.

**2 prints vs. 10 prints:** The following table summarizes some of the differences and similarities between 2 prints and 10 prints.

<b>Fingerprint Biometric</b>	<b>Speed of capture</b>	<b>Accuracy (TAR)</b>	<b>Footprint Size (HxLxW)</b>	<b>Human Contact</b>	<b>Traveler Impression</b>
<b>2 flat</b>	15 sec <sup>1</sup>	96% <sup>2</sup>	2.45" x 6.38" x 3.25" <sup>3</sup>	None	Non-intrusive
<b>10 rolled</b>	5-6 min <sup>4</sup>	97.5% <sup>5</sup>	6.7" x 15.9" x 10.3" <sup>6</sup>	Full	Criminal process
<b>10 flat</b>	45 sec <sup>7</sup>	96.65% <sup>8</sup>	6.7" x 15.9" x 10.3" <sup>9</sup>	Limited	Cumbersome

<sup>1</sup> Average times as they have been captured in US-VISIT since January 5, 2004

<sup>2</sup> Matching performance for the US-VISIT IDENT system using flat fingerprints taken from a NIST report titled "Matching performance of the US-VISIT IDENT system using flat fingerprints" NISTIR 7110

<sup>3</sup> Crossmatch verifier 300 LC model used for US-VISIT

<sup>4</sup> Taken from experience of the application support centers that take 2 million rolled prints a year

<sup>5</sup> NIST Studies of plain to rolled fingerprint matching using NIST Algorithmic Test Bed (ATB) Page 18 table 9

<sup>6</sup> Crossmatch ID 500 scanner specs

<sup>7</sup> Estimated time frames as there is currently no one performing this in a live environment similar to US-VISIT (language barriers)

<sup>8</sup> NIST Studies of plain to rolled fingerprint matching using NIST Algorithmic Test Bed (ATB) Page 18 table 9

<sup>9</sup> Crossmatch ID 500 scanner specs

**Speed:** The US-VISIT system in place at all air and sea ports collects 2 prints for the purposes of enrollment and returns a lookout hit/no hit in seconds (15 seconds for the process of capturing the prints and 10 seconds to return the result to the inspector). The time required to collect 10 prints is substantially longer. In addition the time required to perform a 10 print match is substantial. As part of the IDENT/IAFIS integration program, the FBI's IAFIS system returns 10 print-based queries to DHS within 2 to 10 minutes. However, even a one-minute delay would be devastating to wait times.

**System Availability:** The IDENT system is available on a 24 X 7 basis. In the last two years there has not been a single unscheduled outage for any of the IDENT databases or systems.

**Accuracy:** Both 2 prints and 10 prints have a very high degree of accuracy. Both have a True Acceptance Rate (TAR) of over 95% (a measure of false negative). The US-VISIT IDENT system has TAR of 96%. What this means in practical terms is if an individual wishes to enter the country under a new name using a fraudulent document, they would have to pass the pre-inspections intelligence checks including name/Date of Birth checks, the normal inspections process, and then they would only have a 3.5% chance of avoiding identification through biometric means. A very unlikely scenario.

Although there was some early concern about false positives, a recent NIST study of the US-VISIT IDENT system showed that the False Acceptance Rate (FAR) appears to rise in a consistent manner with the rise in the size of the fingerprint database. This has been born out empirically. The FAR has proved to be measurable and consistent. To deal with this the US-VISIT has developed processes to efficiently manage the false positives as they occur. For example, of the roughly 35,000 travelers which are processed through the US-VISIT IDENT system every day, about 30 of these are false positives against the lookout list and are sent to secondary. The average time for a fingerprint examiner to clear a lookout false positive is only 3 minutes and 40 seconds.

The performance of the US-VISIT IDENT system is monitored very closely. As the FAR rises with the size of the database, the US-VISIT program office will make the necessary adjustments in the numbers of fingerprint examiners and in the technology to manage this.

Note: Shortly after September 11, NIST performed what has become known as the 303 study. Since that time NIST has had the opportunity to do additional studies of biometric systems and scenarios. In a recent NIST study of the US-VISIT IDENT system - where it is suggested that 2 prints may be adequate for identification - NIST discussed the findings of the 303 report "The conclusions of that report should be updated in light of NIST's recent findings that the VTB fingerprint matcher is substantially less accurate than commercial systems"<sup>10</sup> NIST's original conclusions were based on the performance of the IAFIS VTB system,

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<sup>10</sup> Extract taken from a NIST report titled "Matching performance of the US-VISIT IDENT system using flat fingerprints" NISTIR 7110 page 4 footnote 3

and not on some of the more advanced, commercially available, fingerprint matching systems.

**Foot print Size:** Height x Length x Width of the device. The size of the primary booths at an air or seaport is limited in size. The time and effort required for the facilities build out required to accommodate a multi-print scanner would be substantial.

**Human contact and Traveler Impression:** The 2 print devices do not require operator assistance to obtain the prints. The devices used to take 10 prints often require the operator to come in physical contact with the subject.

According to the Department of State, taking 10 prints is perceived by many cultures as intrusive and is done only for criminal processing. This was confirmed in our own conversations with representatives from the Canadian and Mexican governments and with various privacy advocacy groups.

**Latent processing:** Latent processing is an investigative tool, not a real-time identification tool. In order to initiate a latent search, the owner/originator of the print must first go through a lengthy and manually intensive process to map the fingerprint minutiae into a form that can be matched against a database. When the latent print is searched against the database a candidate list is generated and the images (and associated biographic data) are returned to the originator of the print. Using a combination of the images, the biographic data, and investigative techniques, the originator of the prints will make a determination whether or not the individual can be placed at the crime scene. This is a lengthy labor-intensive process and is prone to error. It is used solely for investigative purposes and not for real time identification.

[REDACTED]

**Future Biometrics:** Future increments of US-VISIT will incorporate not just fingerprints but also facial recognition. In the future it is very possible that other biometrics such as voice recognition or iris scanning will be employed. A combination of biometrics will be fused into a multimodal approach with the particular biometric used, dependent upon the particular operational requirement.