

I nternational Association for I dentification



Peter T. Higgins
Co-Chair AFIS Committee
3116 Woodley Road NW
Washington, DC 20008-3448
USA
Telephone (1-202)-625-7780
Fax (1-202)-625-7781

INTERNATIONAL ASSOCIATION FOR IDENTIFICATION (IAI) AFIS COMMITTEE MEETING

**JANUARY 13, 2000
SAN FRANCISCO, CA**

The meeting was called to order at 8:30 A.M. The co-chairs requested that those present introduce themselves and sign in. The attendee list is attached.

WELCOME

Co-chairs, Peter Higgins and Ken Moses, welcomed the attendees and noted that this has been an exciting year for biometrics, in particular for the fingerprint community. IAFIS, NCIC 2000's AFIS, and NAFIS have gone on-line and, with the exception of start up issues, all three systems are working as expected. Higgins noted that at the ceremony marking the opening of the FBI's IAFIS, Senator Robert Byrd (Dem.WV) stated that he is going to make West Virginia the "Biometric State" and to that end he has earmarked \$10 million for implementation of biometrics in the Department of Defense. It is expected that initially the DOD biometric projects will be housed in the FBI's Clarksburg, WV facility.

Moses reported that the AFIS Committee program at the July IAI Training Session in Milwaukee, WI, had more attendees than ever before and that there is increasing interest by IAI members in the work of the Committee.

Higgins noted that an e-Groups account has been set up for the IAI AFIS Committee. It is a list serve that can be used for Committee e-mail communications. The web site is AFIS-Committee@e-Groups.com. Anyone who is interested in signing up for the list serve can register on-line. Once your registration is processed by e-Groups, you will receive a verification number from e-Groups via e-mail. Log back on and enter the verification number into the web page, enter your personally selected password as prompted and bookmark the site. Minutes from the Committee meetings as well as other documents of interest will be posted to this e-groups account.

The meeting Agenda was reviewed:

- Review of fingerprint and standards activities by the following groups
 - AAMVA
 - The RAND Corporation/US Department of Defense
- IAFIS – latent and tenprint submissions
- ANSI/NIST Standards – Version 3
- On-going work on minutiae based interoperability
- Real-time (lights out) operations
- Analysis of hit rates for live scan vs. card scan
- Trends in International AFIS development
- Submission of topics and speakers for the July 2000 IAI Training Session is due by January 21 Bill Whyte Memorial Fund
- New business

AGENDA DISCUSSIONS

State of Ohio

Michael Powers (State of Ohio) indicated that the Ohio Attorney General's office is evaluating the use of fingerprints for applicants by running remote civilian fingerprint searches. In the initial tests fingerprint searches are limited to those applying for state hunting licenses. The individual's driver's license card is swiped and the applicant submits his/her fingerprints electronically. The applicant's name is submitted to a database for a name search and if there is a hit, the fingerprints are submitted to the state AFIS.

AAMVA (The American Association of Motor Vehicle Administrators, Arlington, VA)

Higgins reported that AAMVA is looking at a wide variety of issues surrounding the development of nationwide standards for driver's licenses, from the medium used (plastic cards with mag stripes, etc.) to their content (name, dob, address, biometric, etc.). The issue of standardized, cross-jurisdictional, driver's licenses arose from a Department of Transportation (DOT) project whose purpose was to develop standardized driver's licenses for commercial, inter-state, drivers. Based on interest from its members, AAMVA has expanded this mandate to include development of standards for all drivers. AAMVA's B10.8 committee is looking at these issues from a broad perspective and a subgroup, headed by Geoff Slagle, is looking at developing standards for biometrics that may be contained on a driver's license.

This subgroup is looking at biometric transmission standards developed by various groups including the BioAPI, AAMVA, HAAPI, IBM, ANSI/NIST and CBFF. They have pulled together a list of requirements specified by each of these groups and have generated a list of those items that they feel are needed for the driver's license standard. Higgins noted that AAMVA, with significant input from Jim Wayman (Biometric Test Center, San Jose, CA), has selected fingerprints as the biometric of choice for driver's licenses.

At this point, AAMVA has not focused on the ways in which states can, or will, exchange biometric information contained on driver's licenses. However, they have narrowed their focus to minutiae based rather than image based fingerprint capture. The issue of minutiae templates has been discussed at length and at this point all AAMVA committee members appear to agree that standardized templates are a requirement. Steve Meagher (FBI) stressed the point that a

minutiae record alone can not be used to establish a positive identification. The original fingerprint image must be available in order to withstand any challenge that a person may have, especially if adverse action is being taken against that person. The IAI, in general, and specifically this committee, should take a strong position that any use of fingerprints, such as proposed by the AAMVA or others, should be implemented in a way that will insure that the integrity of the discipline is maintained and, further, that the general public's perception of fingerprints as being sufficient to individualize is not jeopardized.

Meagher noted that there is always going to be a need to capture images not just minutiae points. Both Meager and Tom Hopper (FBI) recommended that AAMVA should use the FBI's Appendix G and F as guidelines for image quality. They also stressed the need for repeatability and the need for a set of images that can be used for testing and comparisons. Higgins noted that AAMVA has not yet dealt with the issue of encryption and that he had suggested that AAMVA generate a "best practices" or "concept of operations" document that can be used to guide future activities.

The AFIS Committee discussed ways in which other groups, notably social service agencies who are looking at using biometrics for such tasks as welfare distribution and verification, could use the AAMVA standards. Higgins noted that Larry O'Gorman (Veridicom, Inc.) is looking at pushing the issue of interoperability between the states. O'Gorman believes that standards for driver's licenses will help to focus industry developments.

Representatives from the US Secret Service indicated that a standardized driver's license, with biometric identifiers, would be useful in their efforts to track stolen or falsified driver's licenses, although it would not necessarily stop the production and use of false breeder documents. Glen McNeil (Sagem-Morpho) noted that the AAMVA standards do not mean that every state must follow the recommendations of the AAMVA B10.8 committee and that individual states may want to incorporate a second biometric, such as iris scans, as additional protection.

Geoff Slagle at AAMVA can be contacted at 703-522-5843. His e-mail address is gslagle@aamva.org. He can provide information on how interested IAI members can be added to the B10.8 list serve.

RAND

Higgins presented a brief description of the RAND Corporation's (RAND) role in assisting the Department of Defense (DOD) evaluate the benefits of using biometrics for Department-wide civilian and non-civilian employee tracking, security and access control.

As mentioned earlier, approximately \$10 million (over the next five years) has been earmarked for evaluation, selection and implementation of a biometric solution to tracking employees and authorizing use of DOD equipment. RAND has been hired by the DOD to investigate the sociologic, ethical, legal and technical issues surrounding the use of biometrics on a wide-scale basis. RAND has held a number of seminars and discussion groups on the use of biometrics and is expected to present their findings to the DOD within the next couple of months. Initial reports indicate that RAND will suggest that fingerprint biometrics are the most logical and technically feasible route for DOD to take.

Higgins indicated that he would circulate the results of the RAND study to AFIS Committee members as soon as the report is available.

FBI IAFIS & Related Issues

Steve Meagher reported that the FBI's IAFIS is up and running with relatively few initial system glitches. IAFIS is currently processing 40,000-60,000 10-print records per day. Only small percentages are submitted electronically, but this number is expected to grow as states become electronically connected. The 10-print operation is also working to downsize the backlog of 10-print cards and the FBI expects that the backlog will be cleared within the next 6-9 months.

Latent operations see the 10-print operations as one of many tools needed by latent examiners. Latent examiners will always need the 10-print cards and consider the absence of cards and the current level of image quality as real concerns. One of the major concerns in transitioning to a paperless environment is changing the way that latent examiners approach their tasks.

IAFIS has been very successful for the latent examiners. Since the system went operational in mid-1999, they have made 265 identifications in approximately 170 cases, which represents more hits than they have gotten since 1989 on the much smaller old system. The FBI's latent division had specified a 65% hit rate in the top 10 positions for IAFIS and although they have not yet achieved that goal, they feel that the current success rate is encouraging. The penetration rate requirements are for 30% although latent examiners have only experienced an average of 12-15% to date. Meagher is reluctant to report an average number of latent searches submitted to IAFIS on a daily basis because initial system start up problems and down time affect the average. However, he estimated that the Latent Section is submitting approximately 50-80 prints per day to IAFIS. The unsolved latent and full cognizant latent file capability won't be available until mid-2000.

The latent fingerprint workstation has far more features than the 10-print workstations. The workstation includes a complete package that allows the latent examiner to move virtually all of his/her work to a paperless environment. Meagher suggested that state and local latent print groups take this into consideration when ordering equipment in the future. The IAFIS latent workstation and accompanying software, is not a perfect solution but the Latent Print Units will continue to grow its capabilities in the future.

A related capability, RFES software developed by Lockheed Martin, can be made available to state law enforcement agencies for no charge. Although there are no plans for the FBI to update this hardware/software, they expect that industry will pick up on the features and requirements of RFES and incorporate these into existing and new products.

Meagher described the FBI's new training program for latent examiners. They have 9 new trainees enrolled in a 2 year program. None of the trainees had previous fingerprint experience but all have BA or MA degrees. Initial results have shown that automated comparisons have been somewhat slower than in a manual environment. Although Meagher cannot definitely account for the difference, he thought that the availability of image enhancement tools might result in examiners spending too much time trying to enhance images that do not need to be enhanced.

Several committee members noted that they had different experiences with their automated latent processes. Lloyd Bunbury (RCMP) indicated that their experience has been that automated comparison systems work best if the examiners use the automated equipment for not more than 4 hours per day with the remainder of the day in a manual environment. Mike Lesko (Texas

DPS) stated that they found that automated comparisons were much quicker than manual comparisons.

Lesko also explained that the Identification Services Subcommittee (ISS) of the APB is working closely with the FBI on electronic submittal of 10-print images to IAFIS and although they are getting fairly good results from their searches, they are concerned with the rejection rate. There is apparently some confusion over the quality standards that the FBI is using for rejection as well as some other issues that have cropped up due to different processes used by the 50 states. Lesko agreed to give a presentation at the July Training Session on the ISS's current agenda.

Hopper discussed the FBI's Latent Search Interoperability Project. Its goal is to establish procedures and standards for sharing identification services within the criminal justice community. To date, the infrastructure development has defined the Open Latent Search Interoperability Standard, procedures for Security/Authentication of transactions, and cross jurisdictional and IAFIS latent search connectivity.

The ULW has been designed to change expectations, explore, define, and validate interoperability, improve the identification rate, and provide a platform for collaboration among vendors. Approximately 200 of these workstations have been distributed although not all of them are hooked up. The biggest problems appear to be related to issues surrounding connectivity.

Lessons learned from this effort include:

- Each AFIS vendor has strong views on what the coding environment needs to be.
- AFIS vendors are evolving and expanding their feature sets to improve accuracy.
- Agencies and vendors do not want substandard search records.
- Mark Rushing (Lockheed Martin) indicated that the goal for IAFIS was 100% accuracy for 10 print searches. However, in order to meet this goal, cross-jurisdictional searches will have to follow strict standards to ensure that high quality levels can be met regardless of AFIS vendor.
- Congress and DOJ are expecting that law enforcement officials at all levels and the vendors will accept the need for interoperability and that vendors will successfully address this need in their emerging technologies.

Long range plans for the FBI's Interoperability Project include:

- Smaller, simpler, extensible,
- Component architecture to facilitate vendor involvement,
- Strong CJIS commitment,
- Large client base where the most valuable asset, fingerprint data, is leveraged with a good AFIS and the AFIS has the largest possible client base.

Discussions continued on the involvement of local level law enforcement agencies in submitting latents and 10 prints to the FBI. Meagher stated that the FBI Laboratory's case acceptance policy does not include property crimes from outside agencies (with a few exceptions. However, the FBI encourages IAFIS connectivity so that each state and local agency can initiate its own latent fingerprint searches.

Ken Moses voiced the opinion that since the local law enforcement agencies generate the data that is eventually submitted to the FBI, their interests and needs should be taken into consideration. He indicated that many local law enforcement agencies suspect that state and Federal agencies don't have their best interests in mind when they design large systems and procedures. Moses described the local B & E as the "salary level" crime for child molesters, conspirators, etc., and stated that local law enforcement would be best served if latents from property crimes could be submitted to IAFIS. Bunbury and Burzinski agreed with Moses' position regarding the need for more local access to central fingerprint repositories. Moses suggested that the FBI make access to IAFIS for all crimes for a period of perhaps one month to see how much traffic is created and to record the number of hits generated.

Meagher reiterated that the FBI's system was not designed to accept all latents for all classes of crimes. He also reiterated the original IAFIS concept of operations for latent prints that was developed through the workshops attended by state and local users and that software was developed to meet those concepts. The FBI is not adequately staffed to accept and handle remote submissions and encourages state and local agencies to become connected as soon as possible to initiate their own remote searches. Hopper added that the IAFIS latent search services are not running at capacity because the infrastructure is not yet in place to reach all the local, state and Federal agencies.

Lunch Break – 12:30 – 1:30

Miscellaneous Connectivity/Development Issues

Committee members discussed the need for a common architectural path. As of now the AFIS vendors have not selected a common technical approach that will permit one vendor's encoding algorithm module to run in another vendor's workstation. Possible solutions to this problem include agreement on using Java applets, plug-ins, etc.

Vendor representatives agreed that there is no formalized path, but that one needs to be developed, to support an architectural approach for the proof of concept. There needs to be a common way that users can buy from one vendor and then add translation functions from other vendors to ensure interoperability. All agreed that the problem of defining a path for an acceptable architecture is one that needs further research.

A motion was made to approach The Search Group to see if they would be willing to fund additional research or to submit a proposal to DOJ for grant money to conduct this type of a study. Higgins and Moses will prepare a draft outline and post it to the AFIS list serve for comments before approaching the Search Group.

NIST Standard Discussion

The committee discussed the comments on the NIST standard that had been forwarded by the IAI Fingerprint Committee. McCabe (NIST) indicated that the comments posed by the Fingerprint Committee were made to an old SWGFAST document and that many changes had already been made to the draft Standard.

The SWGFAST group will be meeting again during the week of February 7 at Quantico. Comments on the documents that will be generated from that meeting will be due by March 6. Ed German is the chair of the SWGFAST Automation committee. Most SWGFAST members are also IAI members and some are IAI officers.

On a vote of 6-4, the AFIS Committee rejected the SWGFAST changes to the ANSI/NIST standard for the following reasons:

1. ANSI/NIST provides technical transmission specifications for fingerprint records. A specification should reflect prevailing practice *and allow for reasonable extensions*, not set new and higher *minimum* standards that are not currently attainable by existing users. Most users have equipment that is set for approximately 500 dpi.
2. The standards set minimum and maximum guidelines so that the images can be processed by printers and displayed on monitors. The new records appear to have no maximums on scan rate but can be down sampled for display or printing.
3. The proposed standards can, and do, allow for higher scanning resolutions provided that the recipient has the capability of receiving such an image.
4. The FBI and the APB have recommended that minimum standard for latents be 1000 ppi for IAFIS, and there is nothing in the proposed NIST standard that precludes this change in the FBI Image Quality Standards *as mandated through the EFTS*. In fact, it was the consensus that this change would be very desirable though it would not be appropriate for inclusion in the broader NIST proposal.
5. It is anticipated that the standard will become international, and therefore, the minimum requirements should not be set so high to preclude participation by other countries that currently require, *and use*, 500 ppi operationally (e.g., Canada and Great Britain.)
6. The SWGFAST request that palm print images be captured at a minimum 1000 ppi with no maximum size was also rejected for similar reasons. Instead, the proposed standard is in line with the IAI/FBI Palm Print Card and Digital Capture standards previously approved, i.e., 5.5 x 8 inches at 500 ppi. (See new Type 15 record.)

There was a minority vote that this should not be limited to 500 ppi. (Meagher agreed with the area dimensions, but he did not agree with the 500 ppi resolution.)

McCabe indicated that he will make changes to the draft standard to reflect these discussions. The draft standard will be amended to read as below.

Field 15.013: Palmprint position (PLP)

This mandatory tagged-field shall contain the palmprint position that matches the palmprint image. The decimal code number corresponding to the known or most probable palmprint position shall be taken from Table 19 and entered as a one- or two-character ASCII subfield. Table 19 also lists the ~~recommended~~ *maximum* image areas and dimensions for each of the ~~eight identified~~ *possible* palmprint positions, ~~and the maximum area and dimensions for "Unknown" and "Other" palmprint positions.~~

Trends in Real Time AFIS Applications

Committee members discussed their experiences with "lights-out" searches. Although most agreed that the technology has improved enough to allow "lights-out" searching for 10 print

searches more evaluation is needed to see if human intervention is still needed. A committee member noted that Bob Marks from the Search Group conducted a survey and found that while searches are being done, image quality checks and database updates are not being made automatically. Committee members agreed that “lights-out” operations should include some level of human intervention by examiners and verifiers. It was noted that additional tests, on each vendor’s equipment, should be done to test the scientific basis for full “lights-out” capabilities so that the results could withstand a legal challenge.

Hit Rate Analysis

Committee members discussed hit rate analysis and whether or not improved system performance, capabilities, and increases in size of repositories have increased the number of hits received per search. Komarinski will address NY’s findings in this area at the July Training Seminar. McNeil will talk with the NAFIS/PITO and present their results and Burzinski will talk with NEC clients to see if they have generated any statistics on hit rates. Members agreed that a uniform definition of terms would help to make the statistics more accurate and meaningful.

International AFIS Issues

Committee members agreed to the following commitments with respect to International AFIS use for the July IAI Training Session.

1. Bunbury will address the RCMP’s experiences when installing and using central AFIS databases.
2. Fred Preston will be asked to present NAFIS’s findings in the UK.
3. Burzinski will get information from the Japanese Police.
4. McNeil will get information from the German police and other international groups.
5. Higgins will contact the Swiss Immigration Service.
6. Burt will provide information on the New Zealand system.

Bill Whyte Memorial

Higgins indicated that all efforts to get the IAI to act on a memorial for Bill Whyte have, to date, failed to accomplish anything. He will contact the IAI President directly to see if they can come to some resolution on this issue by the July Training Session.

Other Topics for July IAI Meeting

Topics selected for presentation at the July Training Session are listed below. Moses reiterated that the topics and speakers must be confirmed by January 24 so that they can be included in the agenda.

1. Bob Mongovan (Aware, Inc.) – presentation on electronic signatures
2. Komarinski (NY) – presentation on hit rates
3. Higgins – presentation on civil biometric systems
4. FBI representative – presentation on “ground truth matching minutiae.” Presentation should include descriptions on how ground truth files can be used for training, testing, benchmarking, performance metrics, etc.
5. Powers (Ohio) – presentation on Web checking

6. Higgins – presentation on AAMVA status and other standards, i.e., BioAPI, HaPPI, CBFF, etc.
7. Tymeson (NY) – presentation on lights-out for 10 prints
8. McCabe – presentation on ANSI/NIST Standards
9. Hopper – presentation on Rap Sheet Standardization
10. Vendors – panel presentation on plans for palm prints
11. Higgins – will check with NOVARIS and city of Alexandria on NCIC 2000 AFIS use by local police. Check also with Roy Weise from FBI on this project
12. Lesco – presentation on current ISS activities

The next Committee meeting will be held immediately before or during the IAI annual meeting in Charleston, WV.

The meeting was adjourned at approximately 5:30 PM.

PARTICIPANT LIST

NAME	COMPANY	PHONE	E-MAIL ADDRESS	FAX
Bunbury, Lloyd	RCMP	613 998-6388	Lloyd.bunbury@rcmp-grc.gc.ca	613 993-1948
Burt, John	NZ Police	64 4 3812106	Afisbach@globe.net.nz	64 4 4963918
Burzinski, John	NEC	847-590-8494	Jburzinski@nectech.com	847-590-8596
Byers, Robert	Secret Service	202-406-5621	Rbyers@ussstreas.gov	202-406-5603
Foreman, Buck	Printrak	714-238-2040	Buck@printrak.com	714-238-2049
Higgins, Kathy	HAI	202-625-7780	KMHiggins@aol.com	202-625-7781
Higgins, Peter T.	HAI	202-625-7780	PeterHAI@aol.com	202-625-7781
Hopper, Tom	FBI	202-324-3506	Teh@cais.com	202-324-8826
Komarinski, Peter	NYS DCJS	518-485-7670	Komarins@dcjs.state.ny.us	518-485-1859
Lesko, Mike	Texas DPS	512-424-2524	Mike.lesko@txdps.state.tx.us	512-424-5911
McCabe, Michael	NIST	301-975-2932	Mccabe@nist.gov	301-975-5287
McGrath, Robert	Printrak	714-238-2036	Robertm@printrak.com	714-238-2049
McNeil, Glen	Sagem Morpho	253-591-8849	Gmcneil@morpho.com	253-591-8856
Meagher, Steve	FBI	202-324-6157	Labfsu3@fbi.gov or Sbmeagfam@msn.com	202-324-3194
Mizoguchi, Masanori	NEC	+81-3-3456-5295	Mizo@s4.gsd.mt.nec.co.jp	+81-3-3456-8335
Moore, Ben	Secret Service	202-406-5274	Bmoore@ussstreas.gov	202-406-5656
Moses, Kenny	Forensic ID Services	415-664-2600	Bearup@aol.com	415-664-2615
Mungovan, Rob	Aware	781-687-0367	Rob@aware.com	781-276-4001
Powers, Michael	State of Ohio	740-845-2204	Mpowers@ag.state.oh.us	740-845-2021
Rathwell, Mike	Cogent Systems	626-799-8090	Info@cogentsystems.com	626-799-8996
Rushing, Mark	Lockheed Martin	407-306-1388	Mark.Rushing@lmco.com	407-306-1153
Stewart, Larry	Secret Service	202-406-5333	Lfstewart@ussstreas.gov	202-406-5603
Tymeson, Mike	NYS DCJS	518-457-6174	Tymeson@dcjs.state.ny.us	518-457-6550