

# *International Association for Identification*



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## **IAI POSITIONS AND RECOMMENDATIONS TO THE NATIONAL ACADEMIES OF SCIENCES COMMITTEE TO REVIEW THE FORENSIC SCIENCES** *September 19, 2007*

### **Introduction**

The International Association for Identification (IAI) offers the following positions and recommendations to the National Academy's of Sciences *Committee on Identifying the Needs of the Forensic Science Community*. The IAI, with a membership of approximately 6,800 individuals, is a professional association of mostly forensic practitioners covering fifteen forensic disciplines.

The IAI has studied the seven topical areas that the NAS Committee is to review. While there are some topics that the IAI has extensive interest and others less, there is at least some interest to the IAI in each topic before the Committee.

The IAI has two prevailing positions as the basis for its recommendations.

**IAI Position #1:** The IAI believes that the forensic science disciplines represented by this Association are capable of performing forensic examinations which provide reliable conclusions when conducted by individuals, trained to competency, using scientific and professionally accepted practices and procedures.

**IAI Position #2:** The IAI believes that each of the forensic disciplines represented by this Association would benefit from an improved national infrastructure which provides 1) a standardized education and training program, 2) a short and long term research agenda and strategic plan, 3) standardized operating procedures, 4) enforcement mechanisms to comply with one through three, and 5) adequate funding necessary to achieve one through four and to maintain the infrastructure.

Discussion to IAI Positions #1 and #2:

The IAI strives for excellence by its members in performing forensic science examinations regardless by whom they are employed. The IAI tries to foster this goal by its educational conferences, standing committees, and certification boards. Further, the IAI believes these forensic disciplines can be effectively and reliably performed in support of criminal and civil investigations. To this extent, the IAI through its respective members for each forensic science discipline has established recognized and respected certification programs as follows:

Bloodstain Pattern Analysis Certification  
Crime Scene Certification  
Footwear Certification  
Forensic Art Certification  
Latent Print Certification  
Forensic Photography/Imaging Certification  
Tenprint Fingerprint Certification.

If, for any reason, the IAI became aware of any of the forensic science disciplines represented within this Association as being unreliable or lacking sufficient basis for conducting forensic examinations or reaching stated conclusions, the IAI would take immediate action. Either, the discipline would be removed from recognition by the IAI or a new or revised position regarding the reliability of that discipline would be established.

The IAI maintains the position that reliable conclusions are capable of being made. While the IAI has the subject matter experts (SME), one should not construe that they have the financial and/or administrative means, or the authority to review actual investigative case work conducted on a daily basis, by a member, a law enforcement agency, or a private laboratory to assess accuracy. Rather, it is through a consensus of IAI member practitioners and the certification programs that when accepted procedures and practices are stringently followed during the forensic science examination, the examiner is provided the basis to reach reliable conclusions.

The IAI recognizes the Scientific Working Groups (SWG's), sponsored by the FBI, as an integral part of maintaining many of the forensic science disciplines. Many IAI members are also members of their respective SWG. For example, the Scientific Working Group on Friction Ridge Analysis, Study and Technology (SWGFAST) currently has 39 members, of which 37 are IAI members. SWGFAST primarily addresses forensic latent print examinations but has recently added tenprint examinations based on a request from the IAI. Several years ago, the IAI endorsed and recognized the SWGFAST Guidelines and Standards and has not altered that position to date.

Similarly, this scenario of close association through shared membership with the SWG's is repeated for several other forensic science disciplines within the IAI as well, such as SWGTREAD, SWGIT, and SWGSTAIN. We would be remiss if we did not share with the NAS Committee that for several reasons not all law enforcement agencies, some of which employ IAI members, do not endorse or adhere to SWG Guidelines and Standards, nor to IAI guidelines. Neither the IAI nor the SWG's (with the exception of SWGDAM - for forensic DNA) has any enforcement authority. Regardless, the IAI utilizes the SWG Guidelines and Standards in furthering our desire for standards and to provide generally accepted practices into the IAI certification programs. With these as the only guidelines and standards in existence and a lack by some agencies to follow them, there needs to be a more formalized standard setting body similar to the DAB (DNA Advisory Board) and with similar standard setting authority.

The IAI believes that historically the forensic sciences have addressed the needs of the public and judicial communities, performed well and, as any good science, continuously seek to improve. This has been a constant struggle due to the lack of a well-defined and funded forensic science infrastructure. The forensic sciences strive to do the best they can given the environment. The recent (past 10 years) emphasis on forensic DNA has brought forward a business model that has proven effective in getting the DNA discipline to a well respected and scientifically sound forensic science. It is the business model, not the science based model, which needs to be fostered for the remaining forensic sciences. This distinction is the basis for the IAI's Position Statement #2. The DNA business model brought congressional legislation, enforcement authority, training requirements, mandated standard operating procedures, accreditation and certification programs, and the funding to ensure its success. Over the years, the congressional funding (Federal and State) for DNA has exceeded all other forensic sciences combined, as reported by the news and communication media.

The IAI recognizes that the forensic sciences should not be stagnant nor rest on past laurels, and that the key to moving forward and improvement is through education and research. The IAI believes that research is best performed as a cooperative initiative with universities, private and public research laboratories, product manufacturers, and forensic science practitioners. Unfortunately, there are numerous research initiatives being funded and pursued with no over-arching strategic plan. At best, the current approach provides little benefit at great cost in comparison to a well thought-out and managed program on a national/international basis. There is a need for the development of a national/international forensic science research strategic plan which coordinates key entities, priorities, sequence of research, data collection and availability, and provides mechanisms for continuous funding. Specific research

projects, which are discipline specific, while desirable by the IAI, are not the primary focus. Rather, the IAI desires that the business infrastructure to achieve these objectives be created and funded. The actual research to be performed would be determined by those serving on a forensic science discipline specific strategic planning board.

The IAI believes the forensic science disciplines are currently questioned and challenged as to the scientific basis from two categories of individuals. The first category includes competent individuals who are well informed, trained and have practical experience, whereas, the second category of individuals lack some or all of these qualities and generally have a self-serving agenda. Legitimate challenges to the scientific validity of the forensic sciences are encouraged and welcomed and are welcomed and should be addressed in a scientific or educational setting rather than debated in the courtroom. Therefore, the IAI supports the creation of a business infrastructure which encourages a greater involvement of those outside the forensic science community thereby providing the mechanism for bringing their concerns forward and thwarting the perceived need by these individuals to bring their concerns and criticisms into the courtroom, as their only course of recognition. The creation of the proposed infrastructure would provide means to identify and address legitimate concerns while discrediting those criticisms that are not valid. This approach would address valid concerns prior to the judicial process and give the court information for its gatekeeper role and rulings, as well as result in timesavings to the court.

The IAI holds an annual educational conference and many of the local Divisions of the IAI also conduct educational conferences throughout the year, as well as list training opportunities given by recognized providers. The goal is to provide training and to share information relative to the member's needs and the forensic science disciplines within the association. For many years it has been noted by the IAI that forensic science lacks training standards. The IAI has developed training guidelines for several of the forensic science disciplines and, as time requires, has updated them as well. IAI recognizes that the SWG's have also developed training guidelines. Regardless, some agencies perceive these guidelines as non-mandatory and as a result many practitioners do not receive the full extent of training recommended. The obstacle to be overcome is that of an enforceable national standard for education and training specific to each forensic science discipline. This is further justification for the need of a forensic science infrastructure that supports standard forensic science training.

The exact same scenario plays out when discussing the need for standard operating procedures. While guidelines exist, the ability to enforce them is lacking as well as the infrastructure to create and maintain guidelines and standards.

A limited exception to the inability to enforce education, training and adherence to standard operating procedures is through an accepted, recognized and independent accreditation process. While going through the process of becoming accredited an agency must meet certain requirements associated with education, training and standard operating procedures. But striving for accreditation is a voluntary action, and not a mandatory requirement for providing forensic examination or services.

**IAI Recommendation #1:** That the NAS recommend to Congress that a national forensic science program be established that would create the business infrastructure to achieve 1) standard education and training programs for each forensic science discipline, 2) a short and long term research plan for each forensic science discipline, 3) standard operating procedures for each forensic science discipline, 4) enforcement mechanisms to comply with one through three, and 5) adequate funding necessary to achieve one through four and to maintain that infrastructure. Further, that the business infrastructure initiative would provide the means where a joint effort between the general scientific community and the specific forensic science community can develop the details of one through three above.

Further, with respect to the fingerprint discipline that a body such as a Fingerprint Advisory Board (FAB) be created, perhaps by the International Association for Identification (IAI), to oversee the standards process, how the standards are derived, communicated to the forensic community, and enforced. Similar boards could be created, if needed, for other pattern evidence disciplines.

## **ACCREDITATION:**

**IAI Position #3:** The IAI endorses the accreditation of forensic science operations.

Accreditation by the American Society of Crime Laboratory Directors, Laboratory Accreditation Board (ASCLD-LAB), Forensic Quality Services (FQS) and others is widely accepted by many crime laboratories, but much less so by other forensic service providers such as identification units, often found in law enforcement agencies. In order to meet the ongoing movement toward accreditation, those forensic service providers must be made aware of the benefits of accreditation and quality systems in general. Quality managers must be identified and appropriate reporting, documentation and other aspects of accreditation be implemented. Accreditation does not come without a cost. Agency administrators must be convinced that accreditation is important and worthy of funding with scarce dollars.

Some would say these types of forensic service providers should be completely eliminated and all forensic analyses be conducted in crime laboratories. While perhaps a noble goal, given the large amount of forensic work done in identification units, this is not feasible. For example, approximately 66% of fingerprint analyses are not conducted in crime laboratories but rather in identification units.

West Virginia University (WVU) is currently conducting a census of non-crime laboratory forensic service providers to get a better idea of how many non-crime laboratory entities are doing forensic work, what kind of analyses are conducted, staffing, budgets, etc. The study will mirror the BJA document, Census of Public Crime Laboratories of which you have a copy. That census will provide a much better idea of this oft overlooked segment of the forensic science system.

The IAI believes that any entity, public or private, performing forensic science examinations, whether for criminal or civil purposes, should be accredited by an independent, professionally recognized and authorized accrediting body. While this will not eradicate errors or preclude unethical behavior of practitioners, it will insure that acceptable quality assurance mechanisms are in place to reduce the risk of error and to more easily detect and correct unacceptable practices, as well as unethical behavior. Forensic science laboratory accreditation is a desired objective by the IAI.

**IAI Recommendation #2:** That the NAS recommend to Congress the establishment of a mandate, with funding, for forensic science laboratory accreditation that must be obtained within a three year period after passing legislation. (While not a prerequisite, this recommendation is most likely to be achieved if IAI Recommendation #1 is in place.)

That an effort be made to further publicize the importance of accreditation to forensic service providers to raise their level of understanding of the importance of these quality systems.

## **CERTIFICATION**

**IAI Position #4:** The IAI endorses certification of forensic science practitioners.

A natural progression from the quality systems of the organization (accreditation) is the competency of the individual, or certification. Certification in forensic disciplines is widely available from the International Association for Identification (IAI), the American Board of Criminalistics (ABC), the American Board of Forensic Toxicologists (ABFT), the American Board of Forensic Document Examiners (ABFDE) to name but a few. All crime laboratories and other forensic service providers should move toward certification of their analysts. While no program of certification or accreditation can guarantee quality, certification, at a minimum, attests that the individual performing the analysis has met a certain standard of competence as evidenced by the certification program. Continuing proficiency testing is also desirable to assure that competency is maintained over time.

As stated previously, the IAI has several certification programs for forensic practitioners. The IAI believes certification is a demonstration of a practitioner's ability to perform a forensic examination

reliably, providing the public and judicial communities with a measure of competency and credibility. As previously mentioned, practitioner certification is a continuum of the quality program, which includes periodic proficiency testing to ensure that competency is being maintained. The IAI endorses both practitioner certification and annual proficiency testing.

**IAI Recommendation #3:** That the NAS recommend to Congress the establishment of a requirement for forensic science practitioners to obtain certification from an independent, recognized certification body for each forensic science discipline being performed by the practitioner. Further, that successful completion of an annual proficiency test be mandatory, as well as certification.

That an effort be made to further publicize the importance of certification to forensic service providers to raise their level of understanding of the importance of these quality systems.

### **Training and Education; Increasing the Number of Qualified Forensic Scientists:**

**IAI Position #5:** The IAI encourages universities to incorporate performance related courses for applying forensic science examinations.

The IAI has noted a significant increase in the number of individuals interested in pursuing the forensic sciences. The IAI suspects this is primarily due to the current popularity of crime related television programs exploiting the use of forensic science to solve crime. Our experience in working with these highly motivated students is that most of the forensic science programs offered in universities today teach general crime scene investigation with little detail into the actual technical aspects of forensic science examinations. Most courses only provide theory and procedures but lack actual performance based instruction. What results from this limited formal education is that a law enforcement agency hiring one of these graduates must still provide a complete forensic science training program. Many agencies' training programs range from six months to 24 months.

For example, in the latent print discipline (as well as other comparative analysis disciplines) many individuals are hired having a university degree, to include scientific graduate and doctoral degrees, that have never conducted an impression comparison, or have conducted a miniscule number of impression comparisons that are not representative of those encountered in actual case work, giving them an unrealistic expectation of the comparison process. Whereas, comprehensive comparison training exercises designed to address all levels of difficulty and unusual circumstances would provide a measurement of the student's ability. Accomplishing this goal would provide the student with tens of thousands of comparisons and result in a better prepared individual with a performance record for potential employers to assess. A new hire having these demonstrated and proven skills would significantly reduce the training time needed to be provided by the law enforcement agency or laboratory, as well show aptitude for conducting impression comparisons.

**IAI Recommendation #4:** That the NAS recommend to Congress the establishment of a Forensic Science business infrastructure include direction for modifying current university forensic science programs to provide more performance related courses in applying the respective forensic science discipline, e.g., structured exercises involving large volumes of comparisons for forensic impression evidence.

### **AFIS; Examine the interoperability of Automated Fingerprint Identification Systems, as well as other automated databases used by the forensic community for impression evidence**

The IAI positions on these matters are as follows:

**IAI Position #6:** Friction ridge skin identifications are a reliable means to individualize.

**IAI Position #7:** AFIS technology is an excellent tool that provides a candidate list from extremely large populated databases of fingerprints and palm prints from which to match latent and

recorded prints.

**IAI Position #8:** AFIS latent print search results do not provide sufficiently reliable results for making the final identification decision, therefore, the process still requires a competent examiner to perform the final print comparison with a candidate's fingerprint or palm print.

**IAI Position #9:** Latent and recorded print services, as well as other impression evidence, should be exploited by improving and increasing the utilization of automated technology (i.e. AFIS and IBIS) via properly secured electronic connectivity/networking.

**IAI Position #10:** National legislation is needed to advance the use of print/impression services via improved and increased automation interoperability and broader connectivity, with standard security measures.

**IAI Position #11:** The national legislation must be adequately funded.

Under the NAS task #7, it is the intent of the IAI to improve and increase latent print services via the use of Automated Fingerprint Identification Systems (AFIS). Latent print identifications are not only reliable as a means to individualize but offer powerful probative forensic evidence. As such, latent print examinations should be afforded the broadest possible opportunities to positively identify perpetrators of crime and those responsible for terrorist acts. Given that the standards to be interoperable and the technology to be widely connected have existed for at least a decade, coupled with the fact that fingerprints and palm prints have been utilized successfully for over 100 years, one would expect that searching a latent print against every conceivable fingerprint and palm print repository is something that not only currently exists but has existed for quite some time. To the contrary, the capability to search latent fingerprints in an automated, widely networked manner is quite limited and does not provide all of the potential that should be exploited for such a powerful tool in our arsenal to fight crime, identify terrorists and even potentially prevent acts of terrorism. The IAI supports the need to pursue the opportunities to improve and increase impression evidence services via the use of automation technology and electronic networking.

Improving and increasing latent and recorded print services encompasses more than just having connectivity between AFIS systems or being interoperable from a technical standpoint. By more, it is meant to be far more reaching than just the capability to search another agency's fingerprint repository. Such things as better utilization of unidentified latent print repositories being accessed and shared, access and sharing 10-print fingerprint records and images, increase in qualified latent print experts, and appropriate funding for handling such an increase in personnel and AFIS computer and connectivity related resources. There are underlying and periphery matters as well, such as improved fingerprint image quality, advanced training of experts, research into next generation fingerprint matcher technology, and many others.

The current AFIS latent print concept of operations for exchanging latent print services is, at best, to utilize the FBI's Integrated AFIS (IAFIS) coupled with the FBI Criminal Justice Information Systems (CJIS) Wide Area Network (WAN), or CJIS-WAN. This concept limits latent print searching via electronic means to a sequential process that starts at the local agency level, and migrating through the state agency to the FBI. The concept supports the philosophy that local crime will most likely be solved at the local level, then the state, and, if all else fails, try the national level. While at first blush this seems reasonable, it is quite limited. The fact is there are many advantages that are excluded from this concept. To further complicate this matter, given today's highly mobile society, jurisdictional boundaries are meaningless to criminals or terrorists.

The aforementioned concept should not be rejected as flawed or replaced as it has proven to be quite effective and has resulted in positive identifications of many individuals and solving many crimes; and is expected to continue to be effective. But rather, this concept needs to be expanded to better exploit more opportunities to identify more individuals and aid in solving even more crimes. The successes to date only exemplify the tip of the iceberg if latent services were to be expanded.

What specifically needs improved and what increases are needed?

The major stumbling blocks to such improvements and increases are many and each has several underlying issues. This does not mean that the improvements and increases cannot be accomplished but rather that a thorough investigation and sound advice is crucial to making good recommendations.

The first and most significant hurdle is the political will to proceed towards these objectives. The underlying issues, to no surprise, are the unknown cost/benefits, increased personnel resources, and unknown impact on current AFIS systems. Law enforcement managers seem to be reluctant to permit the open connectivity without understanding the consequences, and rightfully so. Regardless, it is widely acknowledged that success would result from such improvements and increases; it is just very difficult to accurately predict cost/benefits and their impact from such an endeavor.

A second hurdle that needs to be overcome is the connectivity/networking requirements. While the FBI's CJIS WAN is currently in place it is only currently being utilized as a one-way street to the FBI. It is not currently utilized for state X to search a latent print against state Y's fingerprint or palm print repository. Further, it does not permit a Federal law enforcement agency to search latent prints directly against state X's fingerprint repository. The FBI has clearly stated that they would support such procedures via the CJIS WAN provided all the participating parties have the appropriate Memorandums of Agreement (MOA) in place. Here lies the hurdle. Obtaining MOA's from all parties is not a simple undertaking and generally requires legal considerations. The expectation of these MOA's being achieved from all parties or in any reasonable timeframe (probably years) is very low. A different approach needs to be considered. National legislation with funding is an alternative.

A third hurdle is that all fingerprint records are not centrally located. Given the 50 states and the Federal regulations there are as many reasons why all fingerprint records are not centrally located. If this hurdle cannot be overcome then it bolsters the need for an electronic network in which all are connected.

A fourth hurdle is to address the need to maintain accuracy. It serves no purpose, or at best, a limited purpose, to be connected but not be able to achieve accurate search results. The interoperability of different AFIS technologies can be addressed either from latent print images or latent print minutiae templates. By going the image route generally requires human input on the receiver's end and would require additional personnel resources depending on the workload increase. By going the minutiae template route there remains accuracy issues. Both can be supported and are supported by the IAI.

A fifth hurdle is workload management. Issues arise about how one manages their own agency's needs with that of high priority requests from outside requests is just one of numerous others.

A sixth hurdle is the need to provide up-to-date information for what each agency can support. Does the agency have a palm print repository, is there an unsolved latent print repository, what is the current AFIS technology, are just a few of the many types of functions that would need to be managed.

As previously stated, all of these hurdles can be easily overcome if the will is to achieve this objective.

**IAI Recommendation #5:** That the NAS recommend to Congress the need for national legislation to advance the use of latent and recorded print services, as well as other forms of impression evidence, via improved and increased automation interoperability and broader connectivity.

The IAI is grateful for the opportunity to provide our positions and recommendations on key issues affecting various disciplines within forensic science community.