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Industry Perspective

Electronic Fingerprint Archives for Local & Regional Law Enforcement

A perspective on electronic fingerprints, their permanent storage, and their continuing value to the local criminal justice community.

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Introduction

Over the past ten years, the total number of electronic fingerprints have increased dramatically, because livescan fingerprints are rapidly replacing manually rolled prints. These fingerprints are submitted to the State AFIS for background checks and positive identification for criminal arrests.

Most all of the livescan fingerprints which are submitted to a state AFIS are then deleted from the local livescan system. The theory has always been that the local agency does not need to use the electronic fingerprints for anything, since the local agency can always make requests to the state.

The reality is that all fingerprints captured locally are not necessarily submitted to the state AFIS. Therefore, if these prints need future reference, they can only be retrieved manually from local files. Also, unless the crime being investigated is a high-profile crime type, online or immediate access to fingerprints in the state AFIS is restricted. Since most of the daily investigative activities at the local level focus on lower profile activities, fingerprint viewing and identification remains a manual filing process. Also, in many cases, agency-to-agency investigative sharing is required but may not be possible with some AFIS systems.

"With today's technology, a local archive of fingerprints just makes a lot of sense", says Ken Sieg, Jail Administrator and criminal justice professional. "Why not put them to local use, rather than simply delete them from the livescan?" ID Networks has heard that same comment for years and because of our extensive knowledge and development of livescan activities, we have responded with a robust fingerprint archive product. Therefore, we submit this document for your review and discussion.

Electronic Livescan Fingerprinting

Livescan vendors continue to enjoy the popularity of "automating the fingerprint process". Considering that an automated livescan system is highly efficient for a local agency, one would think that cost justification for the livescan would typically come from local officials. However, the primary funding for these systems is usually provided by Federal and State grants. Local officials are typically not convinced of any significant livescan benefit to a point where local funding is approved.

The public has demanded to background check people sooner, identify arrestees immediately, and provide accurate criminal histories. As a result, state and federal funding has escalated over the past 5-8 years. In fact, most states have aggressive livescan implementation schedules in motion throughout the U.S.

The tragedies of September 11th, 2001 further promoted federal funding for swift civilian background checks for nuclear plants, transportation systems, secured areas, and public areas

where mass attacks may occur. Hence, the rate at which livescans are being deployed is at an all time high.

Turning our attention back to the everyday law enforcement activities, ID Networks advocates that local agencies can cost justify their own livescan system. But, most livescans today provide little added value to local agencies, beyond the efficiency of electronic capture. Therefore, local cost justification does not happen and will not happen until features, functions, and real-world benefits are achieved for investigators, administrators, and others who need to share information in the criminal justice data flow.

How has Identification Technology Changed?

Let's look back 15-20 years in the criminal justice market to how the identification process has changed. Most of the high-tech identification technology has surfaced in a usable and affordable form in the last 3-5 years. But for years, even with the PC revolution and changing platforms, application software in law enforcement was a text based solution which had the goal of loading criminal history documents into a data base, index that information for quick retrieval, and display the results in a meaningful fashion.

Text based systems were keyed by a person's name and personal data such as physical characteristics, home address, employment information, and other demographic data. History searches were deployed to aid with identification, providing enough information to make an identification of the individual in question.

Today, text based searches enabled by Master Indexes still satisfy most needs for individuals. Most applications provide search capability and are very useful in a public safety system such as Calls for Service, Incident Crime Reports, Citations, Accidents, Arrest Records, Jail Records, and court systems.

Looking back into the early 1990's, digital mug shot imaging systems became popular and since then, have become very affordable. They serve as a direct replacement to costly film and provide electronic access to the arrestee's photo. Considering that the photos are usually linked to an arrest record and a name file, these systems provided significant value for everyday use, where verification, identification and tracking of an individual are critical.

Imaging system capabilities have dramatically improved in the last five years and now provide instant photo lineups for investigators, a mug book list of potential suspects, and high-quality printouts for prosecutors and judges.

Text searches and photo verification works everyday for local law enforcement and other members of the criminal justice community. Text based searches and image based systems have revolutionized law enforcement records, whereby even the internet provides access to mass repositories of criminal records and criminal photo images.

When is comes to fingerprints, the electronic revolution has not yet matured, whereby everyday use and affordable prices are common place. The AFIS market is a highly complex and scientific market to date, with prices dropping significantly, but not to point of affordability for the average agency. Most AFIS users are state agencies, federal agencies, and large metropolitan cities.

The AFIS market is controlled by a limited number of companies and driven by FBI federal standards for the quality of fingerprints stored, matching algorithms, and vendor interoperability. Because of the limited competition, prices remain high, even though prices have dropped 10-fold in the last 7-10 years.

There is no doubt that AFIS technology, in all of its forms, is an ideal tool for local law enforcement. And all of us desire rapid identification, accessibility to large data bases, and a collection of all known history for an individual. But the harsh reality is that most AFIS systems are a subset of state AFIS repositories. Therefore, they are not very accessible by local agencies for everyday use.

AFIS technology has not changed dramatically in the past several years, because fingerprints have not changed dramatically in the past 20-30 years. Electronic standards for the capture and resolution of the fingerprint have been increased in order to promote more accurate checks against a large data base. Matching algorithms have improved in speed and accuracy. But the architecture and useful value of AFIS systems only remains effective for those organizations fortunate enough to have access to an AFIS system.

Livescans are the Official Conduit between Local & State Systems

Livescan technology has come of age and is playing a significant role in the everyday world of local, state, and federal systems. The fingerprints captured on the livescan, the photos taken on the livescan, and the corresponding arrest and biographical data linked to the fingerprints have a significant impact on the accuracy and usefulness of records systems, imaging systems, and AFIS systems.

State criminal history systems and state mug shot repositories are being re-programmed nationwide to accommodate the arrestee's associated data and photos, provided by the livescan 10-print submissions.

Livescans have become the official conduit between local & state systems. That is why they have become the local point of presence for the state networks. That is why they have assumed responsibility for interactive queuing and messaging with the state network. It is the electronic 10-print card and its contents which represent the Official Criminal Record accepted by the state.

It is the livescan that now provides instant E-mail notification to the prosecutor, once the 10-prints are completed and forwarded to the state AFIS. It is the livescan which interacts with final dispositions from the prosecutor or clerk of courts. It is the livescan which can collect supplemental transactions and re-distribute messages to original arresting agencies when there is no state terminal in place. It is the livescan which can re-print a 10-print card for local use when an official copy is requested from another agency.

It is the livescan which is the conduit for local criminal justice agencies to centralize the criminal arrests and final dispositions being filed. It is the livescan which submits official arrest records from arresting agencies to the state repository.

Needless to say, we believe that the livescan technology of today has matured rapidly over the past several years. Needless to say, we believe the rate of livescan influence over local criminal records systems, along with the need for enhanced livescan functionality is a priority for every vendor in the criminal justice market.

Livescans Should have a Useful Life of 5-7 years

Over the past ten years of livescan offerings in the market, livescans have gone through three generations of technological change. One of the reasons has been new and improved FBI standards and specifications required for the fingerprint capture process. Another reason has been new camera and optics technology to improve the process and quality of fingerprints. Also, smaller livescans has become more of an issue in order to provide mobile and desktop operation.

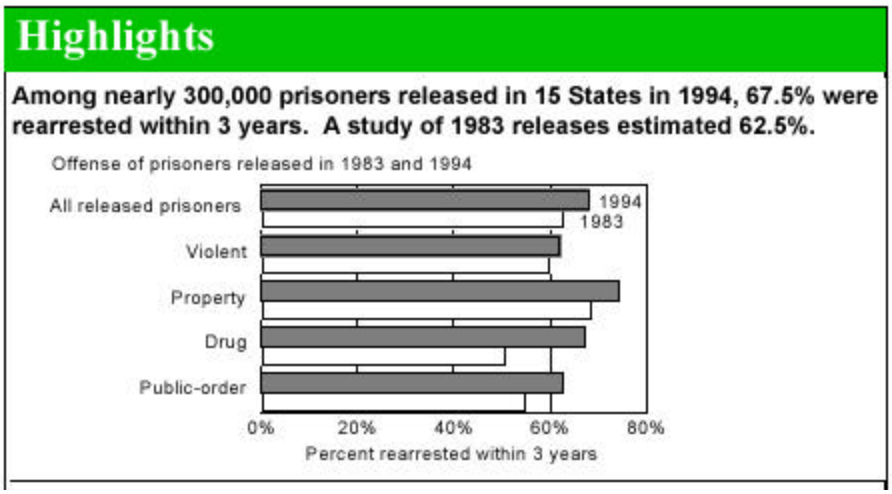
The heart of the livescan system is still the application software, computer, operating system, security, and networking. We all know that these technologies are subject to continuing change. Add-on products, such as photo imaging, biometric authentication, biometric tracking, the automated swipe of drivers license data, and 1:1 verification of identity for final release all create a more robust livescan system also.

Assuming the prior two paragraphs to be true, it is inevitable that your present livescan technology will become obsolete and will either need upgrading or replacement. Therefore, if a local agency is going to preserve the arrest records, photos, and fingerprints from their livescan, the data base archiving system should certainly accept data from the livescan, but not become dependent on any particular vendor's hardware technology. This will protect you from a potential loss of history or a conversion hassle, should you decide to change livescan technologies.

Recidivism Builds a Case for Archiving

The U.S. Department of Justice, Bureau of Justice Statistics, recently released a report entitled "Recidivism of Prisoners Released". Based on 1994 data, it was found that nationally, within 3

years of release, 67.5% of prisoners were rearrested for a new felony offense or serious misdemeanor. 46.9% were convicted of a new crime.



With the recidivism rates increasing, local law enforcement continues to be faced with an uphill battle in the fight against crime. Accurate and complete local records are an important resource to local officials and investigators. Considering that not all fingerprint records taken by the local agency are submitted to state AFIS systems, and considering the need for online instant access to criminal data and fingerprints, local agencies should be adopting local initiatives to properly retain all fingerprints captured and match them to existing records systems.

Justifying the Value of a Local Fingerprint Archive

If the livescan continues to play a significant role within local networked systems, what is the purpose of the fingerprint archive and what does it do for local agencies? The state fingerprint archive in the AFIS system is getting larger each day.

Since most fingerprint records are being forwarded to the state repository, and remain inaccessible for everyday use, attention should be given to the potential use of the local fingerprint archive. So why don't livescans care about storing local fingerprints? Better yet, what is the role of the fingerprint archive?

Traditionally, strong emphasis and federal funding has been put on state AFIS systems and their critical use to society, by enabling rapid identification and solving crimes through the use of digital latent to digital 10-print comparisons (prints from the livescan). This implementation of livescan submissions has been a slow process for a variety of reasons, but maturity in the industry, enforced specifications, and more vendor-to-vendor cooperation is improving the work flow and effectiveness significantly.

Most states are now in the final stages of 90% deployment of livescans this year and next. If that flow of information remains timely, accurate, and complete, the state systems will flourish with robust criminal history, AFIS systems with complete sets of 10-prints, and mug shots to represent secondary identifications for individuals. Fingerprint identification and forensic latent searches for crime solving will always be an AFIS responsibility, if daily access were granted.

ID Networks advocates that it is now time to promote and support local initiatives to keep that flow of livescan data timely and accurate. Too many livescans are being stranded and inoperable because of poor integration and high maintenance fees paid by the local agency. One of the ways to ensure continuous fingerprint submissions to the state, would be to promote local benefit with the very system which enables the flow of information to the state – the livescan.

So how can the livescan be enhanced to provide local benefit?

Considering that local agencies have invested heavily into criminal records systems and photo identification systems, the missing data in their permanent storage is the 10-print card which should help to purify their in house systems and aid in investigative activities. Decisions at the local level are made daily by accessing archives of local information. Fingerprints have a direct correlation to all of the arrests which are processed locally, so why shouldn't they be archived also? Of course as you archive them, searchable indexes will be created in order to cross reference the data with the fingerprints and photos.

We believe the immediate value of a local fingerprint archive can be summarized as follows:

1. Instant visual access to confirm the identification of individuals previously known to the system.
2. Permanent data base cross references to arrest records, photos, and fingerprints – which is a direct reflection of what is being sent to the state, as well as those changes being made locally which do not go to the state
3. Reproduction of an FBI/State approved 10-print card to a certified printer
4. Online investigative tools to analyze fingerprints for crime solving & elimination prints
5. Electronic sharing with other individuals or organizations with E-mail
6. Integration of the FBI & ANSI/NIST standards into local applications
7. Becomes a building block for a future local AFIS system
8. Provides 1:1 AFIS verification tool kits for local applications to utilize for positive identification and history retrieval situations

Local Agency Responsibility to Integrate the Fingerprint Archive with Other Applications

As we forecast the longevity of the livescan systems at the local level, we envision continued integration with local applications. There is already strong evidence in many states which supports the theory that the livescan has become an integral part of the criminal justice

workflow. With that in mind, local agencies need to commit to the accuracy, timeliness, and completeness of those records. They also need to realize that the livescan is no longer and island of technology which was put there for state purposes only.

The data being created by the local agency is owned by that agency and likewise is the responsibility of the owner agency. Any good record keeping principles would also demand that an archival system be put in place to insure the permanency of those records for which the agency is accountable. Fingerprint archiving from livescan EFTS packets is that solution.

It is also incumbent on the agency to provide for the continuing reliability of the livescan and archiving system, with proper maintenance agreements in place. Having said that, it is also incumbent on the vendors in the market to minimize the service fees to the users in order to support their efforts and goals.

If the goals and cooperation are in place between local agencies and the vendors involved, then proper integration can begin. Proper integration will guarantee continued efficiency and provide the potential for local benefits.

Integration with the state, the local prosecutor, the court system, the booking desk, law enforcement agencies, the ID bureau, and local investigative applications will provide the benefits and incentives necessary for the livescan to survive the myriad of controversy and hassle which now exists in the industry.

About the Author

Douglas G. Blenman, Sr. is currently the president of ID Networks. His company has been integrating livescan imaging and other biometric technologies since the early 1990's. Mr. Blenman has dedicated his last 20 years to the continuing improvement of criminal justice systems through the application of new technology. His company services clients throughout the country with fully integrated client-server systems and remote browser based applications for records systems, imaging systems, and various fingerprint technologies.

In October of 2001, the FBI certified the ID Networks FingerRoll livescan for use in criminal justice and civilian markets. FingerRoll software is fingerprint scanner independent and preserves the data, photos, and fingerprints within the system. ID Networks products are compliant with NCIC, the FBI, ANSI/NIST, and other state/federal standards.

Reference Materials

1. FBI Certified Product List for Livescans - http://www.fbi.gov/hq/cjisd/iafis/cert.htm
2. U.S. Department of Justice, Bureau of Justice Statistics, June 2002 - http://www.ojp.usdoj.gov/bjs/pub/pdf/rpr94.pdf

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