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Imaging Enhances Justice Data Management

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In the previous issue of the *Technical Bulletin*, imaging technology was introduced and its application in justice agencies was explored. This issue of the *Bulletin* will focus on the operational experiences of justice practitioners who are users of optical imaging, and will briefly discuss the legality of optical records and their admissibility in court.

Operational experiences

For paper-intensive businesses and government agencies, the eventual ability to "go paperless" via imaging technology may be one of the most important technological developments in the last decade. "Imaging" involves storing documents and photographs as images on small optical disks that can hold up to 40,000 documents each, thus dramatically reducing the demand for bulky filing cabinets and thousands of square feet of storage space. In recent years, however, imaging technology has grown from merely a means of storing reams of paper to a powerful tool for information management. The benefits of imaging technology include: quick and efficient document processing;

Bureau of Justice Assistance, SEARCH Explore New Technologies

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The *Bulletins* identify, describe and assess new and emerging technologies that have existing or potential application in criminal justice information management. They alert practitioners to the existence of technologies which can benefit their management of information.

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easy access to documents;
simultaneous, multi-user
access to the same document;
and the virtual elimination of
misplaced files or lost docu-
ments.

Imaging has many applica-
tions in the criminal justice
field. Police departments and
sheriffs offices are using
imaging to quickly automate
reports, improve investigation
techniques, decentralize
offices and reduce storage
needs. Courts, too, are using
imaging to manage case files

and to allow multi-user access
to the same files.

Although imaging technol-
ogy is still relatively new to
the justice field, many justice
officials currently using
imaging systems believe that
the technology can improve
the accuracy, availability and
management of information.

Accuracy and efficiency

Criminal justice officials
have cited the ease, accuracy
and expedience of processing
and accessing documents as



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the primary benefits realized through the use of imaging technology. Generally, it takes most law enforcement agencies and courts a week to process and file a report, primarily because it must first be keyed into the system by an employee, then verified for accuracy and finally processed by several other employees. Thus, as the file passes from desk to desk, it may be unavailable for several days, often delaying an investigation. Imaged documents, however, can be immediately scanned or faxed directly into the system (nearly eliminating data entry errors), verified and made available within 24 hours. This efficiency is the result of workflow software that accommodates "parallel processing," whereby several employees can work on the same document at the same

time. The availability of records in such a short period of time is vital as the demand for most reports and case files is the greatest during the first week that they are filed, when investigations begin.

In Contra Costa County (California), the Sheriff's Office, Community Development Building Inspection Division and the County Animal Control Division converted from manual records to an automated imaging system in April 1990. Prior to that, the County offices, particularly the Sheriff's Office, encountered difficulties in filing and accessing records due to the decentralized nature of the field offices.

"Before we began imaging records, once and sometimes twice a day sergeants from each of the field offices had to transport their office reports to the central records building in Martinez for processing, copying and filing," explained Mr. Jim Cowger, Records Bureau Manager for Contra Costa County. In addition, Mr. Cowger said officers went to a great deal of trouble simply getting a copy of a report to begin a criminal investigation. When officers needed reports that were stored at the records bureau, they had to telephone their request to the bureau, wait for the reports to be located and photocopied, wait for notification from the bureau that the reports were ready for pick-up, and then drive over and get them. This process often took two or three days. With imaging, newly-filed County reports are generally available on the system within 24 hours, and

an operator at the records bureau can call up the report on the computer and fax it directly from the computer to the field office.

In the Syracuse (New York) Police Department, Officer Michael Pedrotti, System Administrator, said the Department decided to implement imaging in 1990 to provide police officers improved access to reports. With 18 imaging workstations (and the capability for 18 more), officers can "help themselves" by quickly accessing reports without having to request the documents from the Department's Records Division.

Less storage space

Another advantage to imaging is the reduction in storage space. One 5.25-inch optical disk can store nearly 20,000 pages, and one 12-inch optical disk can store up to 200,000 pages. A 16 square-foot optical jukebox that can hold 80 to 100 disks can replace up to 2,600 square-feet of floor space — the equivalent of 350 four-drawer file cabinets.

Mr. Cowger says he can store 19,000 records on a 5.25-inch disk, compared to 6,000 records on one roll of microfilm — and the disk is considerably smaller than the three rolls of microfilm it replaces. When comparing the storage capabilities of an optical disk versus paper filing, Mr. Cowger says 50 disks (or five years of reports for Contra Costa County, consisting of half a million pages) can be stored in a jukebox the size of a two-drawer file cabinet. The same number of records

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stored in paper format would occupy 45 full-size filing cabinets.

The 18th Judicial Circuit Court in Dupage County, Illinois, obtained an imaging system in 1991 to help manage the Court's yearly burden of 295,000 cases (which, in turn, generated some 4.5 million pages of documents). The storage capabilities of imaging mean that in the near future, Mr. Joel Kagan, Clerk of the Circuit Court, will be able to convert 34,000 square feet of space that he currently uses to store those paper documents into usable workspace.

Multi-user access

Public service is also enhanced by imaging since documents stored as images are never "out-of-file." Unlike a paper file, an image is never physically removed from storage. With the multiple-user access function of imaging, a file is always available to the requester, and, depending on the number of workstations, hundreds of people can access the same file at once. The Illinois Court, for example, has 135 imaging workstations, and, if need be, all 135 users can access the same file at the same time. The fact that the document never physically leaves the file also accounts for the virtual elimination of lost or missing files.

Other benefits

Other benefits noted by criminal justice officials include:

- a reduction in data processing needs due to the system's document scanning capabilities (Los

Angeles Municipal Court estimates a potential savings of several thousand workhours per year preparing court case files);

- the ability to decentralize workers (employees no longer have to be located within walking distance of the filing cabinet); and
- the high quality of imaged documents generated by the computer.

System maintenance

Much like personal computers when they first came out on the market, imaging is still considered "first-generation technology," meaning that it could potentially encounter serious problems because it has not been found "tried and true." Many critics argue that the technology still needs to "prove itself." Criminal justice users who were interviewed, however, stated that they had little or no problems with their systems so far.

Mr. Cowger admits that at first he was apprehensive about installing imaging because there was little "real world" experience with the systems, but he feels comfortable now that there are more jukeboxes in use, and he says it is easier to get support and maintenance from a variety of companies. An extensive back-up system also assures that should the main system go down, the County will still be able to access records. Mr. Cowger says that Contra Costa County's jukebox system has been in operation for two years without a problem, and likewise, none of the other imaging users interviewed reported major

problems with the systems. In addition, all of the agencies commented on the exceptional support and maintenance services they have received from the various manufacturers of their imaging systems.

Overall, current users of imaging systems interviewed for this bulletin said they would recommend the system to any paper-intensive business or agency — particularly to justice agencies. Officer Pedrotti offered this advice to law enforcement officials considering investing in imaging: "If you can buy it, get it!"

Mr. Cowger also enthusiastically encourages imaging. He does suggest, however, that an agency storing records for archival reasons only — not retrieving and using the records on a regular basis — consider keeping its micro-filing system, rather than investing in imaging.

Mr. Kagan says there is no better time than the present to implement imaging. "Imaging has become a feasible alternative for the storage of records," he said. "It is no longer an item on the wish-list; it is now a reality."

Admissibility of optical disk records in court

There are currently two uniform laws in the United States on which the admission of optical disk records may rely. The first is the Uniform Photographic Copies of Business and Public Records as Evidence Act (UPA).¹ It codifies the prevailing viewpoint of microfilm and duplicate copies. This law has been adopted by the federal government, 31 states and one

...information management

territory. The language of the law encompasses "any other process which accurately reproduces ... the original." (Emphasis added.) The reproduction of the original source document in the case of electronic imaging is the optical disk, and, therefore, it falls within the scope of the UPA.

The Federal Rules of Evidence are also applicable to the issues relating to optical disk records. The Rules of Evidence, like the UPA, admit duplicate records into evidence if they accurately reproduce the original. Inasmuch as the rules clearly provide for the admission of photocopies, microfilm and facsimile, the basis for admitting optical disk records appears equally clear. The optical disk shares the same characteristics as the other duplication methods, that is, capturing the image of the original document, formatting the document for storage and reproduction, and conversion of the formatted image into a visible form. The result for all methods is an accurate reproduction of the original — a reproduction which is admissible under the Federal Rules of Evidence.

Regardless of the language in the Federal Rules of Evidence, which have been adopted by half of the states, some states have modified their laws to provide specifically for the admission of optical disk records. Among the states that have taken such action is California.

In 1989, California amended several statutes relating to the use of optical disk records. The California

modifications included specific authority to allow state agencies to maintain public records on electronic data image systems;² to allow the California Department of Justice and criminal justice agencies to maintain records on optical disk;³ to authorize criminal justice agencies to destroy the original records maintained by the agencies;⁴ and to deem the certified reproduction of an optical disk record to be the same as a certification of the original record.⁵ Among the records required to be kept by the Attorney General (Department of Justice) may now be maintained on optical disks, pursuant to statutory provisions, include copies of fingerprints, applications to carry concealed weapons, dealers' records of sales of firearms, and reports of stolen, lost, found, pledged, or pawned property.⁶

A common element of the state statutes is the requirement that the image be on a nonerasable or durable medium. This requirement, therefore, sets a stricter standard than the Federal Rules of Evidence, where the standard is an accurate reproduction.

Other considerations

Once the decision is made to implement electronic imaging systems for the management of information, there are several additional considerations that must be addressed to ensure the success of the effort and the integrity of the record.

Written procedures. Since the integrity of the technology and the optical disk records

will be the hallmark for acceptance, thorough written procedures should be in place before beginning the use of the technology. Such procedures should include provisions for training, documenting that the procedures were followed, and for auditing. In addition to an initial benchmark auditing to ensure data quality and system acceptance, audits should be conducted periodically throughout the life of the system to safeguard ongoing performance of the system.

Auditing. Auditing is critical to the quality control of the process. A sample of the original source documents ought to be compared to the optical disk records *before* the originals are destroyed to confirm that the optical records are in fact accurate reproductions of the originals. The comparisons should be made not only to the screen versions, but also to actual printed versions.

Acceptance of the technology. Even when all of the legal hurdles are cleared and appropriate procedures are in place for carrying out the optical storage of records, there should be a recognition that a comfortable acceptance of the use of optical disk records may take time. As with all new technologies, skepticism will likely be encountered regarding the reliability and capability of the technology. The key to establishing a comfort level about the use of such records is to establish the trustworthiness of the records by following written procedures, instituting training, conducting auditing, etc.

Conclusion

This *Technical Bulletin* has provided an overview of imaging technology and the operational experiences of several justice agencies implementing the technology. The *Bulletin* also briefly addressed several legal issues that an agency needs to consider when implementing imaging. The legal topics covered, however, are not exhaustive, and any agency considering imaging technology is advised to conduct its own, in-depth research on planning and implementing an imaging system and the legal issues associated with optical storage.

Endnotes

¹ The UPA, as adopted by the federal government, is as follows:
If any business, institution, member of a profession or calling, or any department or agency of government, in the regular course of business or activity has kept or recorded any memorandum, writing, entry, print, representation or combination thereof, of any act, transaction, occurrence, or event in the regular course of business has caused any or all of the same to be recorded, copied, or reproduced by any photographic, photostatic, microfilm, microcard, miniature photographic, or other process which accurately reproduces or forms a durable medium for so reproducing the original, the original may be destroyed in the regular course of business unless its preservation is required by law. Such reproduction, when satisfactorily identified, is as admissible in evidence as the original itself in any judicial or administrative proceeding whether the original is in existence or not; an enlargement or facsimile of such reproduction is likewise admissible in evidence if the original reproduction is in existence and available for inspection under direction of court. The introduction of a reproduced record, enlargement, or facsimile does not preclude admission of the original. This subsection shall not be construed to exclude from evidence

any document or copy thereof which is otherwise admissible under the rules of evidence. (Emphasis added.)

28 U.S.C. § 1732.

² CAL. GOV'T CODE § 14756.

³ Section 11106.1 of the California Penal Code provides, as follows:

Any system of microphotography, optical disk, or reproduction by other techniques which do not permit additions, deletions, or changes to the original document, may be used by the Department of Justice as a photographic reproduction process to record some or all instruments, papers, and notices that are required or permitted by law to be recorded or filed. All storage medium shall comply with minimum standards of quality approved by the National Institute of Standards and Technology.

⁴ Destruction of records is addressed by the following statute:

Notwithstanding any other provisions of law relating to retention of public records, any criminal justice agency may cause the original records filed pursuant to this chapter to be destroyed if all of the following requirements are met:

- (a) The records have been reproduced onto microfilm or optical disk, or by any other techniques which do not permit additions, deletions, or changes to the original document.
- (b) If the records have been reproduced onto optical disk, at least one year has elapsed since the date of registration of the records.
- (c) The nonremovable storage medium used meets the minimum standards recommended by the National Institute of Standards and Technology for permanent record purposes.
- (d) Adequate provisions are made to ensure that the nonerasable storage medium reflects additions or corrections to the records.
- (e) A copy of the nonerasable storage medium is maintained in a manner which permits it

to be used for all purposes served by the original record.

- (f) A copy of the nonerasable storage medium has been stored at a separate physical location in a place and manner which will reasonably assure its preservation indefinitely against loss or destruction.

CAL. PENAL CODE § 13103.

⁵ CAL. PENAL CODE § 13104.

⁶ CAL. PENAL CODE § 11106.

This report was written by Kelly J. Harris, Program Coordinator, SEARCH, and Sheila J. Barton, Director, SEARCH Law and Policy Program. Points of view or opinions are those of the authors and do not necessarily represent those of SEARCH or the SEARCH Membership Group.

Additional Information

For a more detailed look into planning for, implementing and using imaging technology, the Association for Information and Image Management (AIIM) produces a multitude of documents and reports each year. You can contact AIIM at the following address:

Association for Information and Image Management
1100 Wayne Avenue, Suite 1100
Silver Spring, MD 20910-5699
Telephone: (301) 587-8202
Fax: (301) 587-2711

The following is a limited listing of publications available from AIIM suggested for more in-depth reading regarding imaging technology:

- *Buying Electronic Image Management Systems*, by Robert Kalthoff.
- *Electronic Document Imaging Systems: Design, Evaluation and Implementation*, by William Saffady.
- *Integrating Imaging with Existing Systems*, by Stephen Elliot, Janet Matchett, and Andersen Consulting.
- *Automated WorkFlow: Developing General Designs and Support Plans*, by James J. Fruscione.
- *Legal Requirements for Business Records: Basic State Requirements, Records Retention Procedures, and Recordkeeping Requirements*, all by Donald Skupsky, JD, CRM.
- *Legality of Optical Storage*, edited by Robert Williams.
- *Performance Guidelines for the Admissibility of Records Produced by Information Technology Systems as Evidence: Part 1-3*, AIIM Technical Report 31/1-3.
- *Introduction to Electronic Imaging*, by Don M. Avedon.
- *Introduction to Electronic Document Management Systems*, by William B. Green.
- *A Manager's Guide to Electronic Imaging*, by Robert W. Starbird and Gerald C. Vilhauer.



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