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I. Executive Summary

This is a Demonstration project intended for the Community-wide Networking primary application area and for the Public Safety secondary application area. The purpose of the Cal-Photo pilot project is to provide law enforcement agencies located in different parts of the state with a mechanism to share their digitized photo images (mugshots) and associated data with one another.

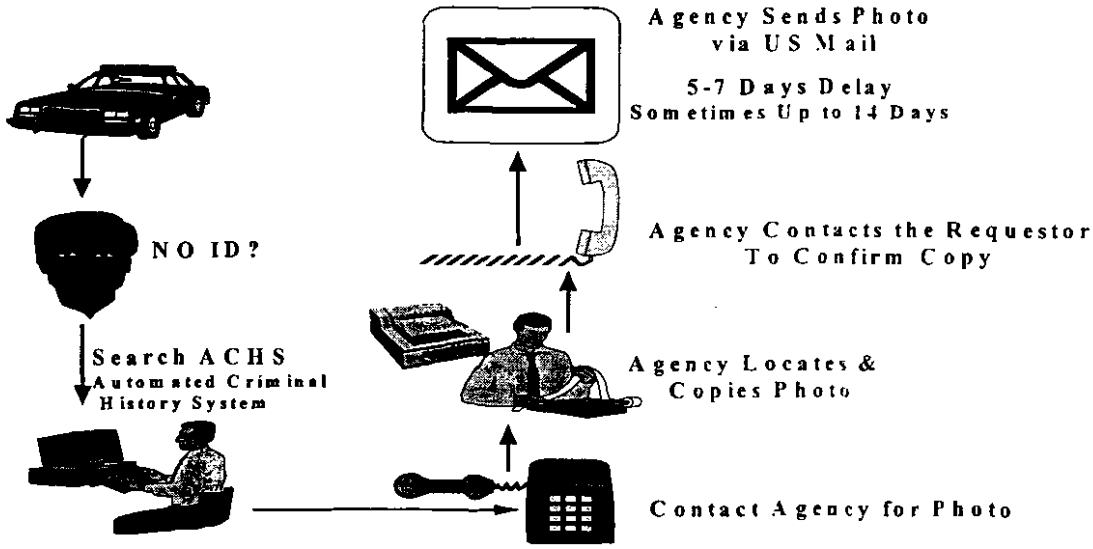
Four pilot sites have been selected to participate in the Cal-Photo pilot project: San Diego Police Department; Orange County Sheriffs Office; Santa Clara Sheriffs Office, and the State Department of Motor Vehicles (DMV). These sites were selected because they currently have an existing data base; they use distinct imaging systems; they are separated by large distances; and they want to be able to access databases located in each of the different areas.

Several mechanisms for statewide transmission of law enforcement related photographs were explored. The preferred alternative uses the technology and equipment commonly with the public Internet and is termed an *intranet.* The Cal-Photo intranet system will be a private wide area network maintained by the Department Of Justice. It offers several layers of security and the ability to transport images and data over existing secure telecommunication lines.

A. Problem Definition

State and local law enforcement agencies are unable to transmit and/or receive photo images between disparate system architectures and operating systems which are separated by geographical distances.

State and local law enforcement agencies are unable to perform content-based searches and inquiries on image databases currently maintained by state and local agencies.



ONE OF THE MAJOR PROBLEM CONFRONTED BY LAW ENFORCEMENT AGENCIES IS THE LABOR INTENSIVE PROCESS TO OBTAIN A DESIRED PHOTO OR IMAGE.

Obtaining photographs of suspects is a labor intensive process which can in some instances, take up to fourteen days. Content-based searches and inquiries are impossible because there is no mechanism in place to allow images and databases on geographically displaced systems to share files. Figure 1 illustrates the steps required by local law enforcement personnel in order to secure a copy of a photo or image. This process is virtually unchanged despite the use of automated imaging systems. Agencies using an automated mugshot imaging system can locate a desired image with ease, if the photo is located within their own system. If, however, the desired image is located in another local law enforcement agency, the request must be handled manually. (As illustrated above.)

Below is an illustration of the survey results when agencies were asked about the waiting time involved in attempting to obtain a desired photo. Many law enforcement agencies were required to wait over seven working

days; others had to wait two weeks or more for a desired photo. This is due primarily to the incompatibility of the various automated mugshot imaging systems, and the lack of a transmission infrastructure which will facilitate transmission of the desired image and associated data to and from law enforcement agencies, on a statewide basis.

HOW LONG DOES IT TAKE TO OBTAIN A PHOTO?	
1 Day or Less	22%
2-3 Days	18%
3-5 Days	20%
7-10 Days	23%
Over 14 Days	17%

ATTACHMENT A *provides further details regarding a recent survey by the Department.*

The primary objective of Cal-Photo then, will be to provide law enforcement entities located throughout the state with a mechanism to share their photo images with one another. It will also allow content-based searches and inquiries to be performed on image databases currently maintained by state and local agencies.

The ability to easily share information by searching other databases would be of tremendous benefit to local agencies. While they are able to obtain information from the State (via Automated Criminal History System), and from the federal agencies (FBI), no system exists which allows law enforcement to exchange images and data. Law enforcement agencies rely on accurate information that is provided in timely manner. An intranet solution provides fast, (60 seconds or less) secure information at a reasonable cost.

This system allows content-based searches on data such as scars, marks, tattoos, known accomplices, addresses, vehicles, and any other data items which local law enforcement agencies currently capture. Local law enforcement agencies would not be limited to searching their own data base. They would be able to search all databases (of participating agencies) for information. Thus, local law enforcement personnel would be able to search for, locate, and obtain photo images and other data *in minutes*, not days or weeks.

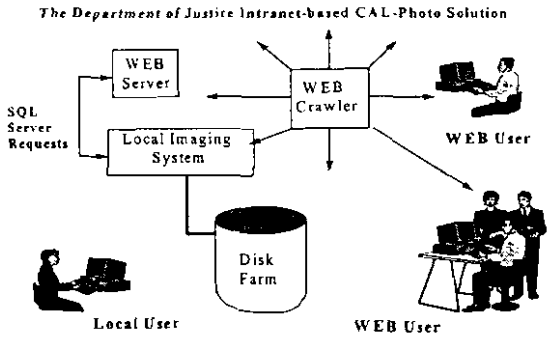
B. *Technical Approach*

Several systems were reviewed; the preferred alternative meets the objective of the Cal-Photo pilot project and solves the problems defined above. In other words, the preferred alternative provides state and local law enforcement agencies with a means to share images and to perform content-based searches and inquiries on image data bases maintained by each participating agency.

The Department of Justice, Cal-Photo ***Intranet-based*** solution will be comprised of many small to medium sized internet servers (from this point forward referred to as WEB servers) connected to an internal, isolated/secure State network. The servers will be initially located at the pilot sites and eventually will be located throughout where the information exists or is needed. These locations may be counties, cities, or individual law enforcement agencies. At each location, the WEB Servers will automatically create homepages for each criminal record. The homepage will contain the name, State Identification number (SID), height, weight, etc., plus pointers to the associated criminal record photographs, *regardless of whose system the photograph(s) reside on.*

The WEB Crawler is a content-based retrieval engine that will reside on the private network.. It will automatically "crawl" the network, indexing the content of the WEB pages. A user of this system must be connected to the internal state network. From the users personal computer or workstation they use a WEB browser application like Netscape to connect to the system. When they first log in, they are presented with a query screen, to which they provide an initial search clue (much like the search engines of the public Internet). Supplying a clue or series of clues will result in a list of WEB pages that meet those criteria.

From the search results, the user simply double clicks on the description returned, and they will then be connected to the WEB server within the DOJ network that contains the suspects homepage. The user is then presented with the associated textual information on the criminal plus any photographs and related data.



As illustrated, the WEB users locate information through the WEB Crawler. Local users of installed imaging systems have access to their existing system while at the same time a Web user can access the same data.

This solution is architected to be modular in nature and for the most part, these components can be added or removed independently. A minimum system, however, consists of a TCP IP network, a Web Crawler, a Web server, and a Web Browser.

After reviewing the proposed Cal-Photo system with the pilot sites, there were several concerns that needed to be addressed technically. First, that local agencies remain "in control" of their data, allowing them to update, delete, modify information at their convenience. Second, that agencies not be required to purchase a whole new system as a result of implementing Cal-Photo. In fact, agencies expressed the desire to use their existing equipment (PCs and hardware). The system must be easy to use, and the complex tasks of searching, retrieving, and converting must be transparent to the user. Finally, the system must be scaleable, allowing users of any size (large or small) to access the system.

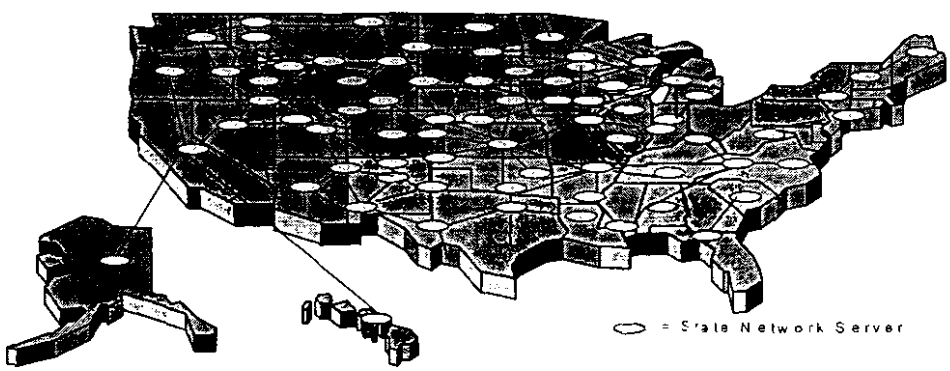
One of the most attractive features of this type of system is the ease of upward and downward scalability which it offers. No matter what type of data base is currently used, or will be used in the future (voice clips, video clips, newspaper clips), the Cal-Photo solution can transmit information quickly, efficiently, and securely. The suggested configuration is modular and allows new sites to be added in phases. Using Mobil Data Terminals (MDT) in a squad car, the patrol officer can search this same network for on-the-spot cross-match and identify suspects in the field at crime scenes. At the other end of the spectrum, international law enforcement agencies (e.g., INTERPOL and Scotland Yard), could be allowed to search our databases or respond to searches made by state local law enforcement agencies.

SEE ATTACHMENT B for detailed specifications of the proposed system.

C. ABILITY TO SERVE AS A MODEL

As our survey indicates, there is a definite increase in the number of automated imaging systems being used by law enforcement agencies. While these systems allow access to central data bases, unless the agency uses a specific vendor's software, access to the data base is unavailable. As a result, there is an emergence of isolated islands of information, unable to electronically share data with one another. Cal-Photo can demonstrate that all agencies can in fact be linked, at a reasonable cost, without replacing individual systems.

This system can serve as a model for different states, as well as a model for the nation. Imagine a Web server tied in to each of the fifty states that are in turn tied into their own county and/or city Web servers. The most remote part of any given state can be linked to this type of system. Although smaller agencies may not use an automated imaging system, the use of an intranet configuration can be designed to allow dial-up modem access to the system. This allows smaller agencies to access the same data that larger agencies can access.



Several other systems of a similar nature have been successfully implemented. The San Diego Network (SANNET) is one such system. Owned and operated by the San Diego Data Processing Center, SANNET allows officers within the county of San Diego to access mugshots, crime scene photos, and new clippings. The officers have access to an on-line booking process which makes the data immediately available (real time) to anyone on the network. There are also links to legal resources such as penal code information, statutes, regulations, etc..

Another similar application is the Western Digital Identification Network (WDIN). Like SANNET, WDIN is a privately owned and operated law enforcement network which allows subscribers to share mugshots and photographs of identifying scars, marks, and tattoos. This network services law enforcement agencies located throughout the west coast. The east coast counter part to WDIN is EDIN (Eastern Digital Identification Network), and services several east coast states.

The major drawback to SANNET, WDIN, and EDIN is that one must subscribe to their network. In the case of WDIN and EDIN, subscribers must also purchase vendor specific proprietary software, and depend on the vendors for maintenance, modifications, and upgrades. While there are few agencies that are linked via modem, they are also linked to a specific vendor and use proprietary software.

Cal-Photo, is not interested in implementing a proprietary system; we are, interested in linking the fastest, most efficient system available today. Cal-Photo proposes using an open systems approach using TCP/IP network protocols and industry standard client/server software configured as Web servers and browsers. Given the wide availability of both hardware and software, this system can easily serve as a model for any size community: city, county, region, nation.

D. *Applicant Qualifications*

As Chief Law Enforcement Officer in the State of California, the Attorney General is responsible for ensuring that state laws are uniformly enforced. The Attorney General carries out this constitutional responsibility through the programs managed by the Department of Justice.

The Attorney General represents the people of California before trial, appellate, and supreme courts of California and the United States in criminal and civil matters, serves as legal counsel to state officers, boards, commissions and departments, and assists districts attorneys in the administration of justice. To support California's local law enforcement community, the Attorney General coordinates statewide narcotics enforcement efforts, participates in criminal investigations, and provides identification and information services and telecommunication support. The California State Department of Justice supports the Attorney General's mission in these areas.

1. The California Department of Justice, Division of Criminal Justice Information Services

The California Department of Justice, Division of Criminal Justice Information Services oversees several Bureaus, including:

- Western States Information Network
- Bureau of Criminal Information and Analysis
- Bureau of Criminal Identification and Information
- Hawkins Data Center

2. Bureau of Criminal Identification and Information

The Bureau of Criminal Identification and Information (BCII) provides a wide range of support to local law enforcement agencies. BCII maintains the central repository for criminal history information generated by the California criminal justice community. The overall objective of BCII is to provide complete, accurate, and timely information to criminal justice organizations and regulatory agencies.

BCII also oversees and processes fingerprint cards for purposes of compiling a state summary criminal history record, establishing a fingerprint file for subject identification, and performing background checks for employment, licensing, or applicant certification.

3. Hawkins Data Center

The Hawkins Data Center (HDC) provides all automated data processing and telecommunications support activities, including the California Law Enforcement Telecommunications Systems (CLETS), the California Justice Information System (CJIS), and the California Identification System (Cal-ID).

E. Partnerships and Community Support

Each pilot site was contacted and presented with a plan to use their site as a Cal-Photo pilot site. Both the local law enforcement and the vendors with whom they contract were enthusiastic about the project. Due to the mobility of criminals and suspects, law enforcement agencies require a system that can easily access several data bases to obtain the information they need. Cal-Photo is strongly supported by local law enforcement agencies throughout the state due to the benefits that can be realized from such a project.

Participating Law Enforcement Agency	Imaging System Vendor	Data Base Size
Department of Justice (Sacramento)	WEB Crawler Work Station Only	0
San Diego Police Department	Epic Solutions	35,000
Santa Clara Sheriffs Office	TFP (WDIN & EDIN)	300,000
Orange County	CDI (Systems Integrator)	38,000
Department of Motor Vehicles	NBS (Systems Integrator)	32,000,000

Each agency will be expected to provide the systems integrators information that will assist them during the installation phase. DOJ will facilitate the logistics information and act as the primary contact for all parties involved. Digital consultants are expected to complete the systems integration and provide trouble shooting, if needed to the local agencies and DOJ. Once "connected" to a Web Server as a front-end system, the user will be able to search the system for a desired suspect. Although DOJ does not have a data base, DOJ will be expected to access and search the system as would those with a data base.
ATTACHMENT C provides letter of support for the Cal-Photo pilot project.

F. Support For End Users

End users will be primarily law enforcement personnel: officers, investigators. detectives, etc. Below is a breakdown of the number of personnel and population served for each of the agencies:

Agency	No. Sworn Personnel (FT Peace Officers)	No. Non-Sworn	Total	Population Served (1994 Population by County)
San Diego PD	1,986	602	2,588	2,705,800
Santa Clara SO	423	131	554	1,591,900
Orange SO	1,312	1,162	2,474	2,615,300

For the most part, law enforcement personnel are unaccustomed to working on computers. Their typical experience is having to learn a "whole new system" each time a computer is brought in. Cal-Photo will be easy to use, the user will be presented with a query screen. The officer simply puts in a "clue" and lets the system responds with all of the hits that match the clue. The complex tasks of searching for the matching clues is completely transparent to the user. The user does not care where the information is, they simply want to know if its available, and obtain a useable copy immediately.

Cal-Photo will have the capability to search all participating law enforcement agencies with information. This will assist law enforcement personnel in obtaining critically needed information quickly, literally within minutes. The survey requested information from law enforcement agencies regarding the benefits of transmitting photo images statewide. The reason most cited by law enforcement was the ability to quickly identify a suspect.

HOW PHOTOGRAPHS ARE USED	
Investigative Tool	41%
Photo Line-ups	35%
Verify ID	17%
Other	7%

Each pilot site using Cal-Photo will be required to use an easy to use electronic "questionnaire" which will be made available via drop down menus. The purpose of the questionnaire will be to gather more definitive information

regarding the benefits being obtained as a result of Cal-Photo. The Department will also track the number of transactions and monitor the extent to which the system is used (who is using it, what time of the day are they using it, what type of queries are they inputting). This effort will be coupled with face-to-face contact with the local law enforcement agencies to ensure that the equipment and software is usable, beneficial to the law enforcement personnel, and solicit improvements in the system.

G. Evaluation and Dissemination

It is expected that Cal-Photo will lead to an increase in the number criminals that are identified and captured; thus leading to an increase of arrests.

The Department will employ the Post Implementation and Evaluation Report (PIER) to evaluate the effectiveness of the system. This evaluation system is required by the State Department of Information and Technology. Its purpose is to measure the effectiveness of the system and the benefits derived from it. PIER identifies the specific objectives (which are included in Feasibility Study Report) and compares them to the data collected. The Bureau of Criminal Identification and Information and the Hawkins Data Center will prepare the PIER report.

ATTACHMENT D for specific information regarding the PIER system.

The information derived from the Cal-Photo project will be sent to the Journal of Forensic Identification for publication. This professional journal is published six times a year and targets law enforcement agencies that use various types of equipment which identify subjects.

Also, the Department is required to meet with larger agencies (30) twice a year. At these meetings updates and final outcomes of the Cal-Photo pilot project will be disseminated.

H. Reducing Disparities in Access to and Use of the NII

Cal-Photo will significantly reduce the time it takes to receive a photo image or mugshot. It will also eliminate the geographic distances between agencies by allowing them to share information. In fact, the pilot sites were strategically selected for the following reasons:

- Each agency uses a distinct imaging system vendor.
- The maximum distance between two agencies is 540 miles (Sacramento and San Diego). The shortest distance is 50 miles (San Diego and Orange County).
- Each agency sees the potential in obtaining information in minutes from other data bases.
- Cal-Photo will not require the participating agencies to modify their data base or purchase new hardware.

Even with an automated imaging system in place, agencies must rely on a manual method to obtain images. If the law enforcement agencies have to have to the image immediately they must either rely on over night mail or they must physically drive to the agency which has the image or photo. If the law enforcement officer drives to the owner agency, he or she is wasting valuable time. Attempting to obtain an image or photo becomes a cumbersome time consuming task, depleting law enforcement agencies of valuable and scarce resources.

The Cal-Photo pilot project is a bold and innovative project. In can literally change the face of law enforcement, providing them an edge in the fight against crime.