

98012

Western Identification Network, Inc.
Telecommunications and Information Infrastructure Assistance Program
Community Networking and Public Safety Project Grant Application
March 1998

1 Project Purpose

• **Problem definition**

The Western Identification Network, Inc. (WIN) nine western states and six federal law enforcement entities are currently unable to expeditiously share the photos of suspects identified by WIN fingerprint technology, causing consequential delays in the apprehensions of multi-state transient criminals. Furthermore, the inability to rapidly disseminate photos using national standards decreases the likelihood of identification and speedy recovery of missing persons.

~~The WIN agencies criminals are transient in nature and consistently cross state borders. These multi-state perpetrators continue to operate incognito and unidentified since the agencies are unable to take advantage of existing technology to electronically query the neighboring states imaging systems. The inability to perform content based searches or enable eminent facial recognition technology severely inhibits timely interstate criminal apprehension.~~

The single most important investigative tool is the ability to rapidly identify and circulate photos of perpetrators of crime and disseminate missing person's photos. Manual exchange of the photos is detrimentally slow and often a labor-prohibitive process. This problem continues to exist due to depressed rural agencies lack of funding for manpower and is exacerbated by the inability of existing vendor specific photo systems to interface due to disparate system architectures and operating systems. These systems are geographically spread over 1,278,723 square miles and not necessarily staffed 24 hours/7 days a week, which severely curtails a punctual delivery of quality photos.

• **Proposed solution**

The projects primary objective is to provided a cost and time effective photo exchange network and search capability infrastructure for WIN's rural law enforcement entities, combining resources to serve its economically depressed ten million residents. WIN will pool multiple state resources to minimize redundant hardware expenses. A secured private intranet application utilizing WEB crawler technology will be used to construct a NIST compliant electronic medium providing for the retrieval and expedient dissemination of images to support the needs of the criminal justice and public communities. A content based retrieval search engine, drawing from the multi-state distributed photo databases, will be utilized to rapidly obtain photos for expedient dissemination.

The project will also provide the ability to implement automated facial recognition/composite technology. This Technology will greatly enhance the law enforcement officers ability to identify suspects, deceased or missing children/persons, provide photo line-ups, facilitate public

¹WIN Member Chart

circulation, apprehend criminals and solve crimes in a timely manner. This system will be cost effective, ANSI/NIST standards based, secure, scaleable and easily integratable.

- **Realistic/Measurable Outcomes**

The seven states directly supported by WIN have experienced an average reported crime rate of 5,202 incidents per 100,000 population. Due in part, to unsolved criminal activity, WIN's average incarceration & parole rate of 41% per 10,000 persons is significantly below the nation's average of 638 per 10,000. The anticipated success of this interstate photo infrastructure should further demonstrate the investigative value of "combined" multi state regional databases by reducing the numbers of unsolved crime and increasing the average incarceration & parole rates. It is also anticipated that the average crime rate should decline once the perpetrators are apprehended and prosecuted and the recovery rate of missing persons will be significantly increased due to the timely circulation of photos. (4)

People and public property will be further protected by additional criminal identifications, reducing the release of unidentified wanted persons at the point of booking and assisting judges to determine appropriate bail and sentencing for multiple offenders. This technology will provide crime victims and witnesses the ability to review multiple agencies photo files, helping to "keep the trail warm". Embracing the adage, "a picture is worth a thousand words," technology demonstrated here will save thousands of dollars of investigative resources by affording rapid photographic identifications.

WIN staff and agencies will monitor results to law enforcement and missing person's agencies for 18 months and provide comparative historical data on criminal activity and missing persons. The methods for identifying and documenting these outcomes throughout the project are further described in Section 6, Evaluation, Documentation, and Dissemination.

2 Significance

- **Innovation/Exemplary Project**

This project will be the first large scale interstate photo network to interface multiple state agencies utilizing the ANSI/NIST standards. The ability to perform content based searches from multi-state, multi-vendor databases, will greatly assist law enforcement agencies to quickly solve crimes and locate missing persons. WIN envisions another "Central" and "Eastern" photo network easily linked using the WINPHO technology. This project is easily adaptable to other multi-state agencies and local networks and should demonstrably demonstrate the crime fighting value of this networked technology across the nation.

This project utilizes existing non-proprietary technology and can be easily replicated by other consortiums. This project will solve a problem that faces the criminal justice community throughout the United States, demonstrating that photo images can easily be exchanged and distributed using national standards on a large-scale basis, without the necessity of immense centralized photo databases and using vendor specific protocols. The infrastructure is designed to be expandable and transportable to other agencies and applications.

3 Project Feasibility

- **Technical approach**

WIN's proposed project is a dedicated, secure intranet application utilizing WEB Crawler technology which will manage a content based retrieval search engine drawing from DMV photos and existing distributed photo databases. The photo databases will continue to be locally maintained at each of the local agencies. The interface software will utilize the ANSI/NIST standards. The infrastructure will be comprised of small to medium sized internet servers connected through an internal, isolated/secure National Law Enforcement Telecommunications System (NLETS) network. The information will be secured using firewall technology and encryption technology, and will adhere to each participating states stringent criminal record dissemination laws. This Intranet solution provides fast secure information at a reasonable cost.

National Institute of Standards and Technology (NIST) has established standards for the interchange of identification data and has appended Photo, Scar, Mark and Tattoo records to the existing transmissions standards ANSI/NIST-CSL-1-1993. This allows up to 99 photos of a subject to be transmitted³ and up to 1,000 subjects to be retrieved per request. WIN has been an active participant in the development of these ANSI/NIST Photo standards⁴. Exchange of NIST compliant records will require larger communication lines and message switchers as compared to today's standards.

By utilizing the ANSI/NIST-CSL-1-1993 transmission standards combined with a secured frame relay FDDI network backbone, agencies will be able to interoperate with all networked identification systems utilizing these standards, providing public policy permits. All transmissions and inquiries will be journaled. The nations Public Safety agencies are rapidly moving in this direction.

- The servers will initially be located at the pilot sites and eventually will be located throughout the western states where the photo information exists. At each agency, the WEB server will automatically create a WEB profile for each criminal. The profile will contain the name, DOB, height, weight, etc. plus pointer(s) to the criminal record photograph pointing to the system(s) it resides on. The infrastructure will also be designed to allow the photo systems to be enhanced, soliciting up to 1,000 potential candidates from other systems allowing the facial recognition software to be used independently. This warrants significant communications enhancements.

All procurements will be accomplished using a competitive bid process to insure a cost effective solution. WIN's technical approach is to enhance a frame relay network properly sized to employ the interchange of significant NIST images between the Western States and Federal agencies⁵. NIST compliant technology will also be installed to support the indexing and distribution of the photo images initially from two Oregon sites, one Nevada site, one Idaho site and one Utah site. Please refer to the attached conceptual technical diagram of the WINPHO

²NLETS WIN Network Configuration

³ANSI/NIST Jan, 1997 Mugshot Record Structure

⁴ANSI/NIST April, 1996 Letter

⁵WINPHO Conceptual Diagram

photo imaging pilot project⁶.

This project is *scaleable* by networking additional web servers to photo systems as the agencies obtain funding for photo systems and additional workstations. The Web Crawler technology is very expandable. The proposed RFI technical specifications can support several million subjects. WIN currently has networked access to over 12,000,000 subjects⁷ fingerprints. The proposed hardware is part of an expandable series of components, which has successfully digested the entire contents of the INTERNET and continues to expand daily.

WINs *technical alternatives* were reached after reviewing the San Diego Network (SANNET), Western Digital Identification Network (WDIN) and Eastern Digital Identification Network (EDIN) projects. The major drawback with all of these systems is they are all closed-door vendor specific applications which agencies must subscribe to access the network. These systems are unable to interface with neighboring photo systems due to disparate system architectures, transmissions and operating systems. WINs goal is to make the exchange of photos between multiple vendors transparent.

There were numerous other photo systems, which would have been excluded from this project had WIN selected that technical approach. ~~WIN is not allowing the vendors to continue to manipulate the law enforcement community by acquiring a vendor specific solution creating more isolated islands of data. By requiring ANSI/NIST interfaces, all systems should be readily able to exchange data from any interfaced system.~~ It is anticipated systems utilizing ANSI/NIST interfaces will readily proliferate, similar to the success of fax machines.

The *maintenance/upgrading* of the system will be supported by the estimated vendor warranties of the equipment and software. WIN member agencies will provide funding through legislative means to provide ongoing maintenance, support, and growth. The infrastructure can easily be expanded by adding WEB servers, additional photo systems, memory and hard drives.

- *Applicant Qualifications*

WIN is a ten year old non-profit corporation that provides Automated Fingerprint Identification Services directly to State, local and Federal government criminal justice agencies. WIN is controlled by a board of directors made up of high ranking administrators from their member states, federal and local government entities. WIN is a proven Public Safety partnership of seven rural western states (Alaska, Idaho, Montana, Nevada, Oregon, Utah, Wyoming), two interface western states (California and Washington), and six federal members (United States Postal Inspections, the Immigration and Naturalization Services, the US Secret Service, the Internal Revenue Service, the Drug Enforcement Administration, and the Federal Bureau of Investigation). WIN is a fiscally sound corporation audited yearly by a licensed CPA firm.

WIN successfully supports inquiries against 2,000,000 subjects fingerprints and provides networking access to over 10,000,000 additional subjects fingerprints from its interfaced law

⁶ WINPHO Technical Diagram

⁷ WIN Networked Agencies Total Records

enforcement entities. WIN states represent 26% of the US land space and 18% of the U.S population⁸. WINs law enforcement agencies continue to experience a successful 38%⁹ incidence of multi-state active criminal identifications through fingerprint searches of multiple western states migratory criminals.

WIN's technical and managerial staff and the supporting agencies staff hold extensive experience in developing and maintaining large criminal justice networks. The existing WIN AFIS system is one of the numerous successful networked applications supported by these individuals. WIN has received the following awards for innovation and exemplary Government and Non-Profit Organization Service since being incorporated in 1988.

1991, June	ComputerWorld Smithsonian Award of Achievement
1992	National Center for Public Productivity; Exemplary Award
1992, March	Council of State Governments; Innovation Award

● **Budget, Implementation Schedule and Timeline**

The following is the consolidated budget, implementation schedule and timeline, please see Detailed WINPHO Timeline¹⁰ for further details:

Jan/99 WIN will contract with NLETS to upgrade its Frame Relay Network, conduct a competitive bid process for the WEB Crawler Search Engine hardware/software and negotiate and contract interface software development with photo vendors supporting selected initial sites. Budget will expend funds for staff time and travel.

Jun/99 WIN will upgrade network devices. Budget will expend funds for communication hardware, communication services and staff time.

July/99 WIN will install WINPHO Technical Solution¹¹ comprised of WEB Crawler Search Engine hardware, WEB Server technology and vendor NIST interface software at five initial sites and central site, firewall technology, remaining network and workstation sites to protect the integrity of the files and accessibility. WIN will test the integrity of the files and secured accessibility, and firewall technology and monitor and report on criminal identifications realized by using this technology. WIN will perform acceptance test of hardware and software. Budget will expend funds for communication services, hardware, software and staff time.

Jan/00 WIN will establish an Intranet Web site with the firewall, install PCs into selected rural public safety agencies, provide training and continue to monitor activity/identifications. Perform acceptance test of hardware and software. Budget will expend funds for hardware, software communications services and staff time.

● **Sustainability**

WIN has proven its ability to sustain a multi million dollar contract supporting the fingerprint identification needs of the WIN agencies since 1988. In October 1997, WIN signed a contract

⁸Altas@ Compilation

⁹WIN Tenprint Hit Chart

¹⁰ WINPHO Detailed Timeline

¹¹ WINPHO Technical Solution

that quadrupled fingerprint workload and sustains members through July 2005. WIN members have fiscally committed to support the ongoing costs and will continue to expand the network by interfacing additional photo systems and expanding the number of workstations after successful completion of the WINPHO pilot project.

4 Community Involvement

- ***Partnerships***

WIN has a proven success of long term interstate public safety partnerships by providing cost effective electronic interchange of criminal justice fingerprint information to it's nine state agencies, and six federal agencies for the last ten years. WIN's 14 member Board of Directors has strongly directed the WIN staff to secure the WINPHO project.

WIN will be providing funding for WIN staff, travel, communications and hardware/software procurement. Four of the states, (Idaho, Nevada, Oregon and Utah) are providing a portion of their technical and managerial staff time to facilitate the implementation of the WINPHO project. Please review letters of support from the following member states; Alaska DPS, Idaho DLE, Montana DOJ, Nevada HP, Oregon SP, Utah DPS and Wyoming DCI.¹² The agencies solicited to participate as the pilot sites are Multnomah County Sheriffs, Oregon, Washington County Sheriffs, Oregon, Ada County Sheriffs, Idaho, State of Utah Division of Criminal Identification and Washoe County Sheriffs, Nevada.

- ***Involvement of the Community***

In carrying out the WINPHO project WIN intends to utilize its existing governance structure. There are 15 member agencies¹³ in WIN and approximately 300 public safety agencies that utilize WIN's services. This represents an existing partnership that encompasses Federal, state, and local criminal justice agencies, a ready made steering committee that actively guides the planning and implementation of the project.

- ***Support for End Users***

End users will be approximately 17,000 law enforcement officers which provide public safety services to over 10 million residents spread over 1,278,723 square miles. Law Enforcement agencies require photographs to timely identify suspects in criminal cases. This capability will provide a new dimension in identification and investigative capability on a multi-jurisdictional basis that crosses political and geographical boundaries and assist communities in identifying missing children/adults.

For example: A latent examiner finds a latent fingerprint at a child abduction scene with no known suspects or witnesses. The agency runs a fingerprint search, which identifies two potential hits of out of state subjects. Using WINPHO to fetch the photos of the SID's identified by the fingerprint system, the suspects photos are quickly obtained from the originating agencies' photo files without manual processing, affording officers a timely photo of the missing child and a potential perpetrator. The officers investigating the crime scene could have an almost

¹²Letters of Support

¹³ Board of Directors Members

instantaneous photo to issue an all points bulletin with assisting in the apprehension of the suspect in a timely manner and hopefully a timely recovery of the missing child.

Another example: A reporting rape victim in Idaho states she was abducted by a man driving a vehicle with Oregon license plates, having a large tattoo of a skull and cross on his right upper arm. Idaho submits a content-based inquiry into the WINPHO photo system initially reviewing local suspects of surrounding agencies systems. When this fails to produce a suspect, a search is automatically launched for all possible WIN suspects, based on the description of the suspect by the victim. Using the Idaho WINPHO photo workstation, she reviews the photo line up in an attempt to identify her attacker. If a suspect is identified in an Oregon database, further inquiry is made to gather specific criminal activities of the suspect and last known address using the secured Interstate Identification Index (III) interface.

- *Privacy*

WINPHO will be a highly secure system utilizing a private Intranet application utilizing firewall systems and secure/encrypted tunnel technology to provide privacy and confidentiality to end-users. This technology only allows access to authorized individuals/systems. Usage guidelines will be developed and staff will be trained.

5 Reducing Disparities

- *Description and documentation of disparities*

The WINPHO project will reduce or virtually eliminate the manpower prohibitive time it takes to obtain a photo or composite of a suspected perpetrator from another state's photo file. The geographical distances will no longer be an obstacle to solving criminal activity of interstate perpetrators. The agencies will be able to expect responses to their photo requests within minutes, in lieu of the one to two weeks turnaround time now being experienced. WIN's proven ability to pool state resources to obtain the lowest cost effective solution will again be applied to the WINPHO project. The economic viability of the rural member states obtaining their own systems is relatively low when compared to the national averages.

The WINPHO/THAP project will install terminal access at strategic locations to provide expedient access to the WINPHO search engine. As the project is proven, the states will be able to procure the low cost PC based systems independently to expand the network and enhance the photo accessibility relying on the WIN network to facilitate this access.

WIN directly supports 1,278,723 square miles, and indirectly an additional 235,010 square miles, totaling 26% of the US landmass. WIN directly supports 9,277,000 residents, and indirectly an additional 36,654,000 representing 18% of the total US population. The poverty rate of WIN direct member states is an average of 12.7%, with a per capita income averaging 7% below the national average. WIN direct member population density rate averages 7.3 people per square mile. These communities are quite rural as compared to the national average of 72 people per square mile¹⁴, and manually support 24 x 7 staffed identification services.

WIN needs federal assistance in the installation and start up costs of the WINPHO infrastructure.

¹⁴ATLAS@1993 data

After this pilot program is implemented, WIN states will bare the cost of on-going operation based on the success demonstrated in the project. The WIN states are not in a fiscal position to solicit additional internal funding for the significant costs to fully implement the WINPHO project. WIN is drawing on its technical expertise and partnership of state agencies to equitably share in the costs of the WINPHO project.

- ***Strategies for overcoming barriers to access***

WIN proposes that Law Enforcement Agencies access and exchange images using the Internet Communication protocols and standards. Interface between dissimilar systems for access and retrieval of images will be configured to run TCP/IP and Web Browsers configured to meet authentication and security standards. High grade encryption algorithms will protect the integrity of the information.

6 Evaluation, Documentation, and Dissemination

- ***Evaluation Plan***

A team that consists of WIN staff and WIN members staff will evaluate the final outcomes of the WINPHO project. The project results will be measured by the amount of utilization, the number of cases solved directly due to this technology, and the number of subjects identified and recovered. Progress will be measured against the estimated timelines and project budget. Accumulation of this information will be facilitated by system logs, progress reports, financial reports, and user reports. Information will be provided to the project manager who will be responsible for project evaluation, documentation, and dissemination of information to the participating agencies.

- ***Documentation Plan***

The guidelines of the state of Oregon's Post Implementation and Evaluation Reporting procedures will be utilized to measure the effectiveness of the system and the benefits derived from it. At project implementation one of our first tasks will be to disseminate the project plan within all WIN member states and define their specific tasks. The project team on a bi-weekly basis will measure progress. The project deliverables will be reviewed by the team and monitored by the WIN CEO. The status of the project will be reported to the WIN Board of Directors and appropriate parties on a quarterly or as needed basis.

The ***Project Plan*** identifies tasks associated with defining, developing and conducting system tests, physical design tests, unit tests, and acceptance tests. WIN members will determine that project objectives and functional requirements were achieved.

- ***Information Dissemination Plan***

The results of this project will be presented to the WIN Board of Directors, Conference of Western Attorney Generals and published in the INTERNET AFIS Users newsletter , the WIN Bits & Hits newsletter and on the WIN Web Site. These meetings and publications target numerous nationwide law enforcement entities.