



POLICE DEPARTMENT

1460 Humboldt Road
Chico, CA 95928
<http://www.ci.chico.ca.us>



October 22, 2012

Anna Salem
American Civil Liberties Union of Northern California
39 Drumm Street
San Francisco, CA 94111

Re: Public Records Act Request regarding Automatic License Plate Readers

Dear Ms. Salem:

Enclosed please find documents collected by the Chico Police Department that pertains to item 2.h. of the Public Records request dated July 31, 2012. Item 2.h. requests interactions with vendors, suppliers and potential suppliers of ALPR technology, including material and fact sheets supplied by vendors describing their products. These are the only documents obtained by the Chico Police department regarding Automatic License Plate Readers. Also enclosed is a receipt for copying fees of \$14.90.

Please contact my office if you have any questions.

Sincerely,

Kirk Trostle
Chief of Police

Records
(530) 897-4910
Fax (530) 895-4994

Administration
(530) 897-4950
Fax (530) 895-4929

Detective Bureau
(530) 897-5820
Fax (530) 895-4295

Special Operations
(530) 897-4940
Fax (530) 895-4929

Traffic
(530) 897-4970
Fax (530) 895-4994

Animal Control
(530) 897-4960
Fax (530) 895-4994



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Date	Invoice Number	Comment	Amount	Discount Amount	Net Amount
8/24/2012	PRA082012		14.90	0.00	14.90

Check: 032814	8/24/2012	City of Chico	Check Total:	14.90
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001-000-42604	ACLU PUBLIC REC REQ	CK 32814 CMD	
	GENERAL-ADMN	Sale of Docs/Publi	14.90

Total Receipt Amount: 14.90

Prepared By: PR/F Batch Id: CRPD022A

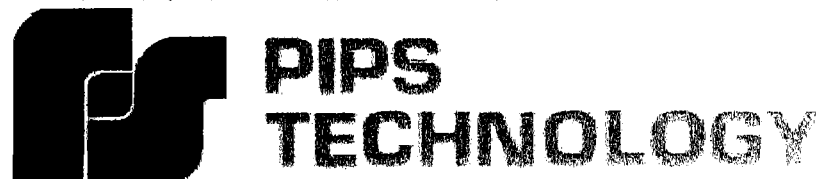
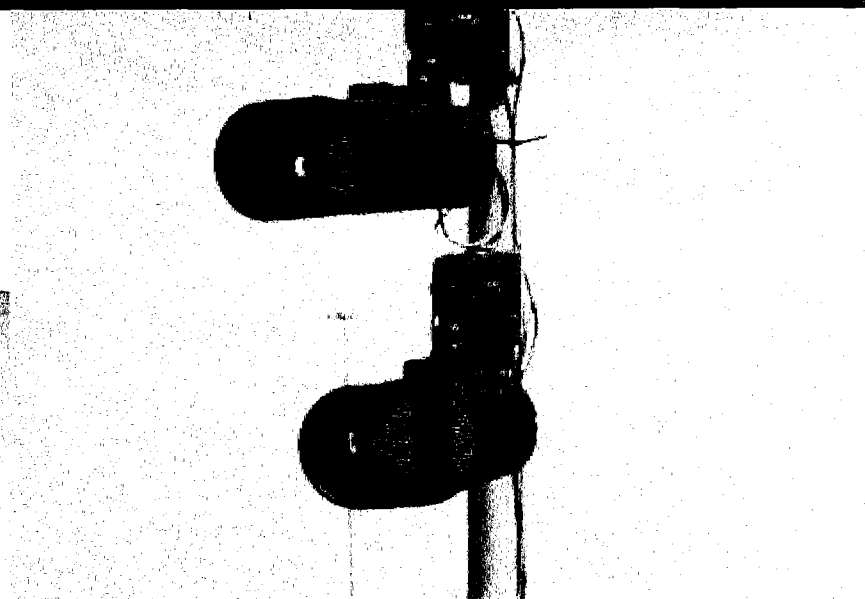
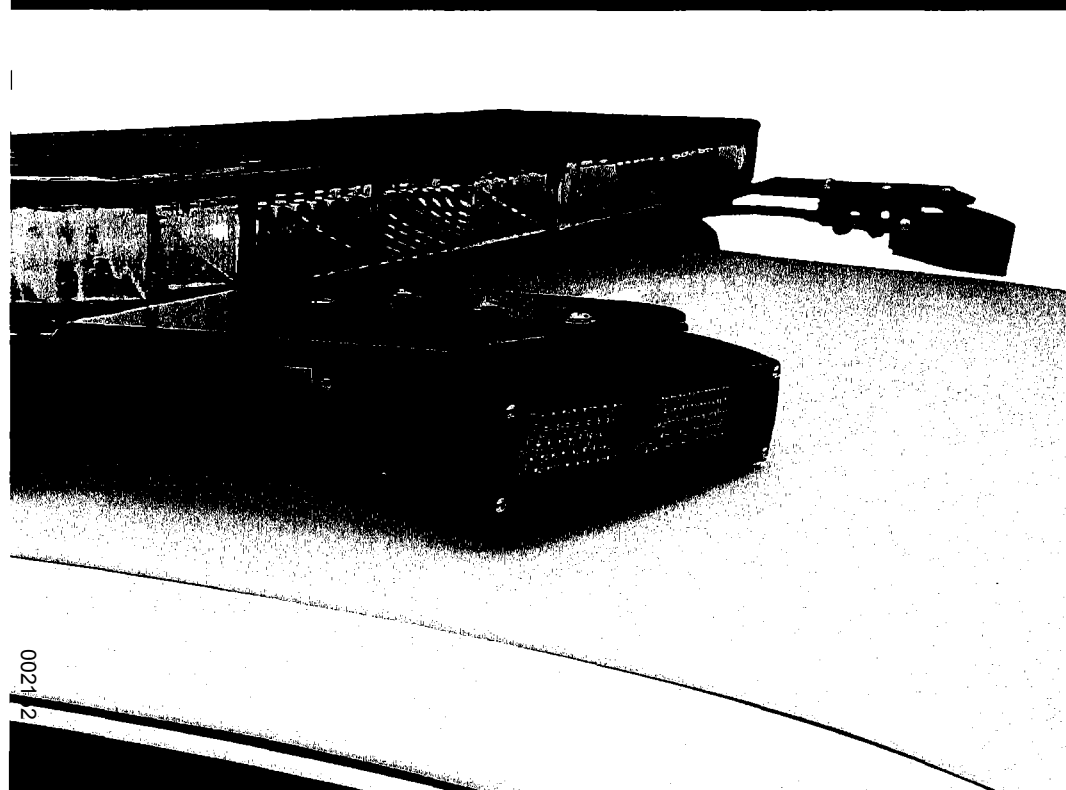
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ALPR Technology

For

D. Scott Dye
NW Regional Sales Manager
503-339-5379
sdye@Fedoralsignal.com



23503

PIPS Technology – Worldwide Leader

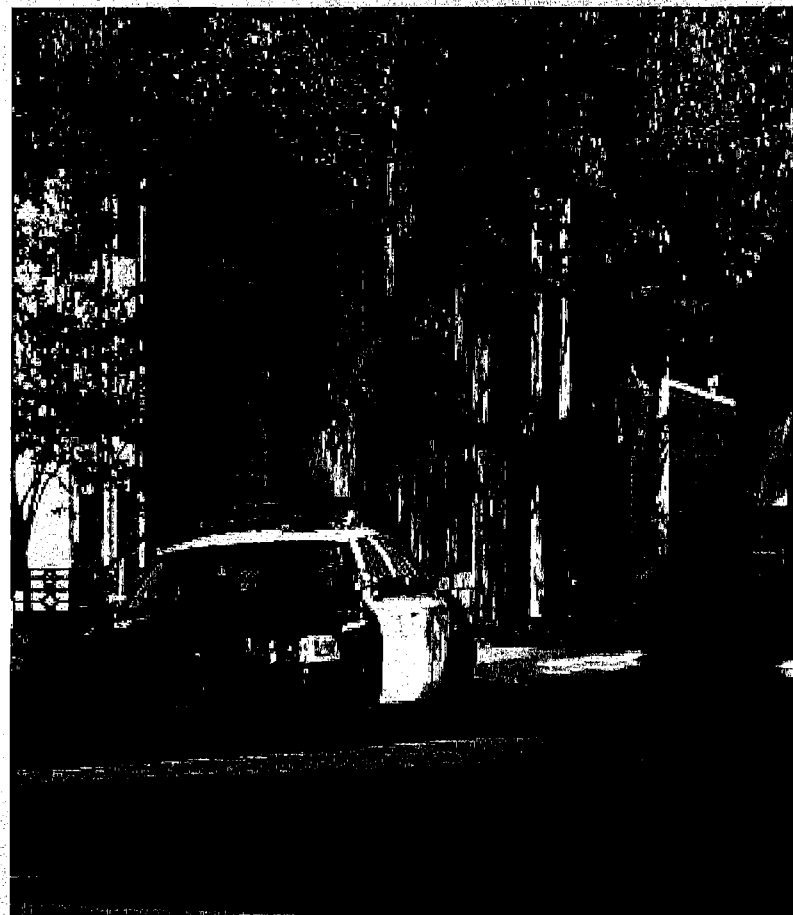
- ❑ Dedication – PIPS is the ONLY ALPR Provider in North or South America Offering Design, Manufacturing, and Support of Complete ALPR Systems
 - ❑ OCR, Cameras, Processors, Software...its all PIPS
 - ❑ No outsourced components
 - ❑ Not a joint venture; ALPR is our business
 - ❑ A Federal Signal Company
- ❑ World Headquarters in Knoxville, TN
 - ❑ Local hardware, software manufacture, development and support
- ❑ Experience
 - ❑ Over 18,000 installations worldwide
 - ❑ ALPR for 18 years
- ❑ Rated Most Accurate
 - ❑ Several independent customer led field evaluations
 - ❑ OCR Expertise and various patents
- ❑ Back Office System Software
 - ❑ Intelligence, Data Mining, Interoperability

What is Automatic License Plate Recognition (ALPR)

- **To automatically review license plates via fixed or mobile cameras with an Optical Character Recognition engine, at very high speeds. The plates are then run against multiple databases for Stolen, WANTS, Warrants, BOLO, Amber, Terrorist Watch List, etc and “ALARMS” (Audible and Visual) are given to the user to identify a “HIT”**

Applications of ALPR

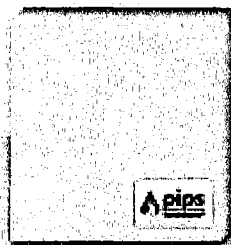
- Amber Alerts
- Wants, Warrants & BOLO
- Sexual Predator Monitoring
- Schofflaw Enforcement
- General Surveillance
- Monitoring of Commercial Locations
- Stolen Vehicle Detection
- Speed Enforcement Systems
- Crime Investigation / Analysis
- Open Road Tolling
- All Electronic Vehicle Registration





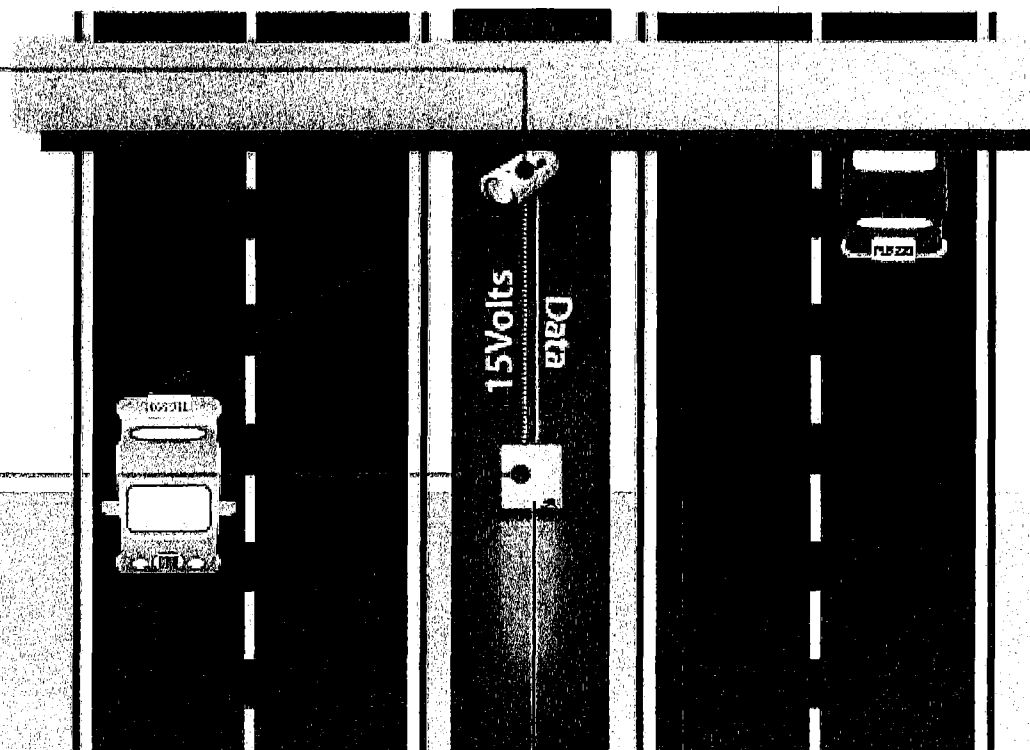
Spike + P372 Camera/Processor

- Dual Lens infrared/color ALPR camera
- Integrated ALPR processor with patented technologies
- Weatherproof to IP67 Standards
- Software or hardware trigger capability
- IP Addressable
- Easy to deploy
- Cost effective



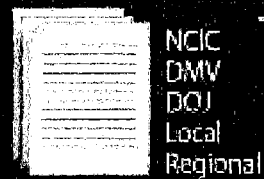
P372 NEMA Interface Box

- Provides easy access to all hardware interfaces of Spike+
- NEMA 4 rated weatherproof enclosure
- Provides for simple and rapid deployment of Spike+



Back Office

Databases of Interest



Web, FTP Network

Server/BOSS



Communications

{Wireless, Ethernet, LAN}

Fixed System Overview

Field Application of the Mobile ALPR System

SupeRex™ III Processor

- Ruggedized, trunk mounted ALPR processor
- Receives images from Cameras
- Store databases of interest from BOSS™
- Performs OCR Read and Database Matching
- Sends alerts to MDC/laptop
- Stores collected data and sends back to BOSS

Slate™ Mobile ALPR Cameras

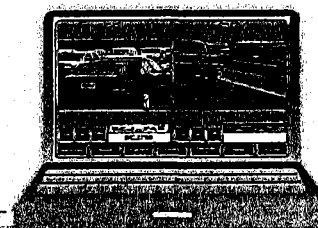
- Dual lens (Infrared and Color) ALPR Camera
- Weatherproof to IP67 Standards
- Patented Platefinder technology
- Tested at speeds up to 160 mph



IR Plate Patch
Color Image

PAGIS™ Software on Existing MDC or Laptop

- Notifies officer of "hits" with audible and visual alerts
- Easy to use touchscreen GUI
- Runs in background with intervention needed only in the event of a hit or manual data entry by the officer
- Search and mapping capability



In-Car Laptop
Running PAGIS
Software

Officer Receives Alerts

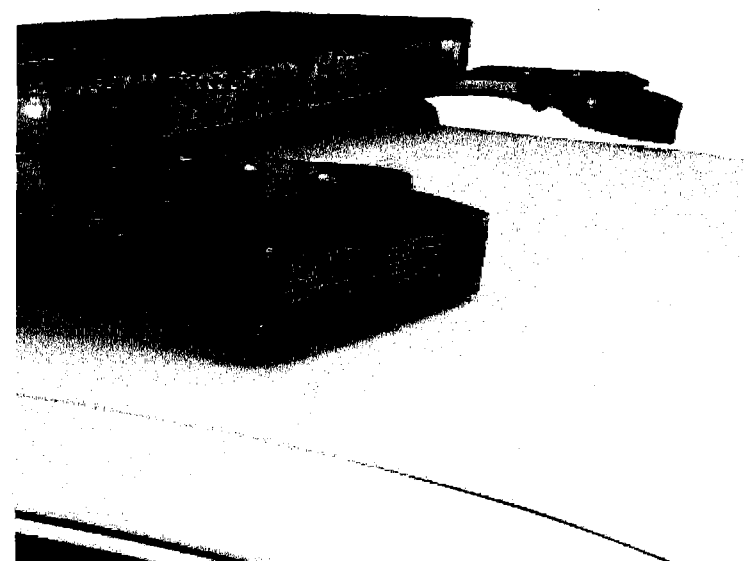


System Overview

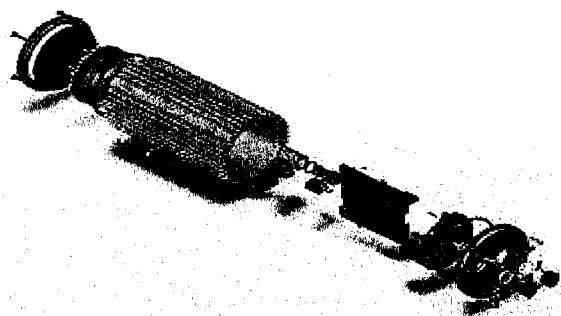


Mobile Camera Systems

- Small and Compact Design for mobile applications
- Certified Eye Safe
- Dual Sensor Color overview, Infrared plate capture, and Illumination in same IP67 certified housing
- Meets Numerous 3rd Party Certifications for Extreme Weather and Operating Environments
- PIPS Patented Technologies
- No Moving Parts – 5 year MTBF



How ALPR Works



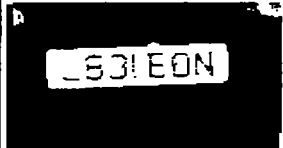
Advanced Camera Design



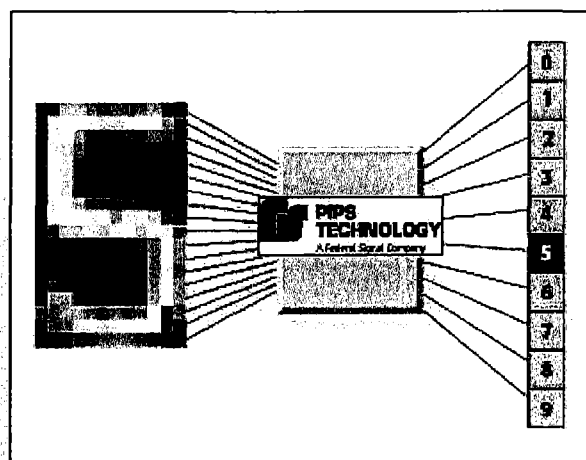
Infrared Illumination



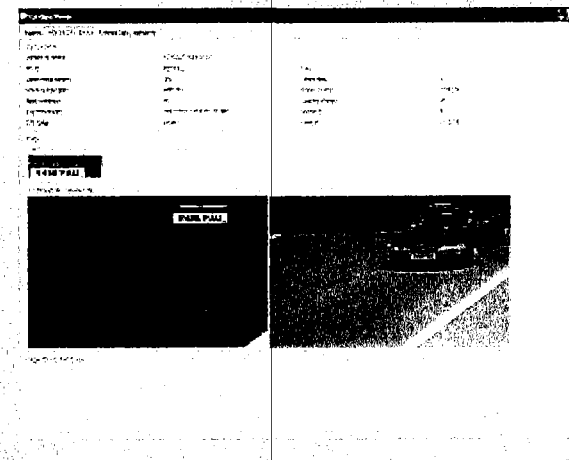
Plate Detection

Flash Duration	=	130 μ s	
Shutter Duration:	=	200 μ s	
Gain	=	2	
Flash Duration	=	390 μ s	
Shutter Duration:	=	500 μ s	
Gain	=	2	
Flash Duration	=	780 μ s	
Shutter Duration:	=	1000 μ s	
Gain	=	2	

TripleFlash Image Capture



Optical Character Recognition



Package Data for Software Use

PIPS Law Enforcement Software

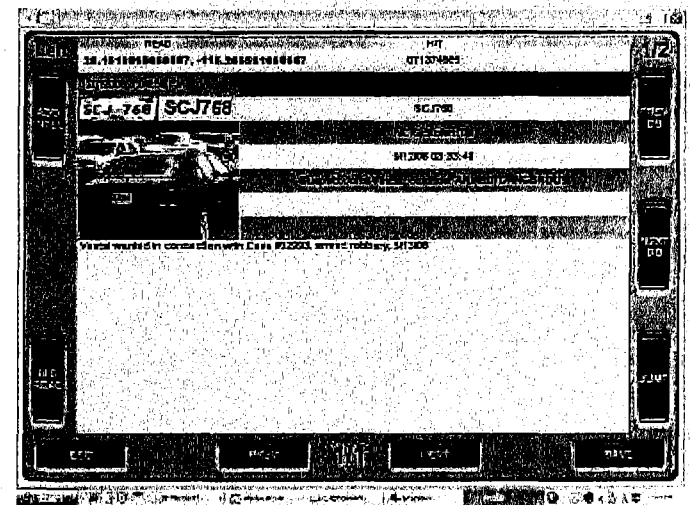


❖ PAGIS

- Mobile application for patrol vehicle
- Allows visibility to officer of captured vehicle data
- Compares captured data to hotlists as defined within BOSS
- Alerts officer in real time to vehicles of interest

❖ BOSS

- Data administration of users and hotlists
- Automatic update of hotlists from diverse sources
- Reporting on system performance and usage
- Data warehouse for all data collected by PIPS systems
- Data mining / intelligence analysis
- Data sharing with other agencies' BOSS servers



Immediate & Impressive Results

- California Highway Patrol
 - ~26 Mobile Units and 5 Fixed Sites
 - Over 1,500 seized or recovered vehicles worth over \$11M
 - Over 650 arrests
- LA County Sheriff's Department
 - 15 million plates read
 - 18,000 vehicles of interest
 - Numerous homicides, robberies, narcotics, serial rapist, and gang cases solved using data from ALPR

Immediate & Impressive Results

Long Beach (CA) Police Department

Two (2) ALPR, two (2) camera, systems searching the following data bases: NCIC stolen vehicles, local warrants and parking scofflaws

Investment: \$40K

Results for calendar years 2007, 2008 and 2009:

4,200 vehicles towed

\$2MM in anticipated parking citation revenue

\$1MM in tow and storage fees to the city (city tows/stores all vehicles)

\$3.4MM in revenue on \$40K investment

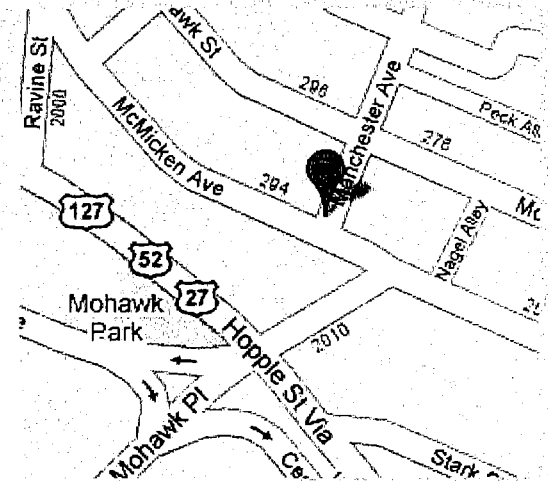


Case Study – Cincinnati Homicide



Vehicle was read at
6:23 PM

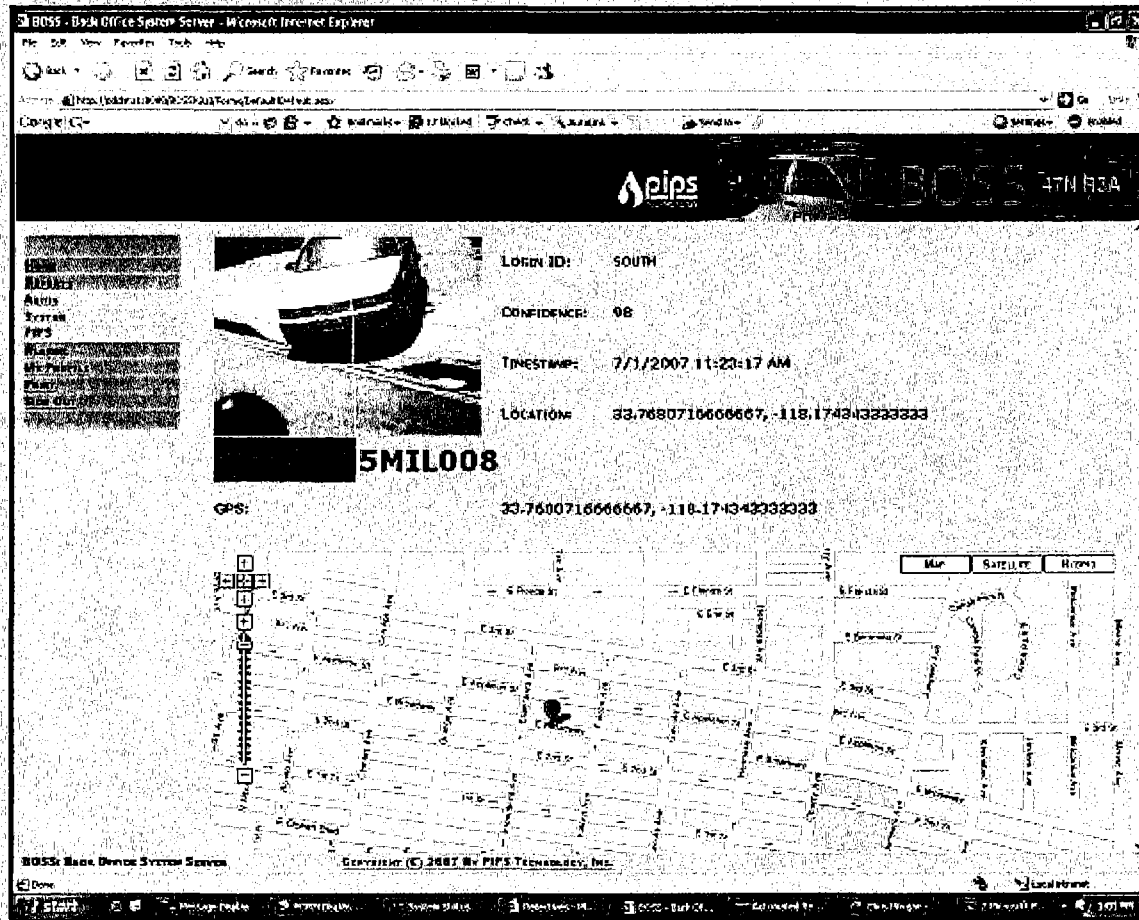
Vehicle belonged to a
homicide victim who was
discovered murdered in his
apartment at
5:00 p.m.



“A copy of the readout was printed. I distributed copies to Late Power and Third Relief officers. At 0034 hours, Officer Roberta Hais spotted the vehicle on McMicken Street at Ravine Street. District One and Vortex officers responded, two suspects were taken into custody and the vehicle was towed to the impound lot.”



Case Study – Long Beach Armed Robbery

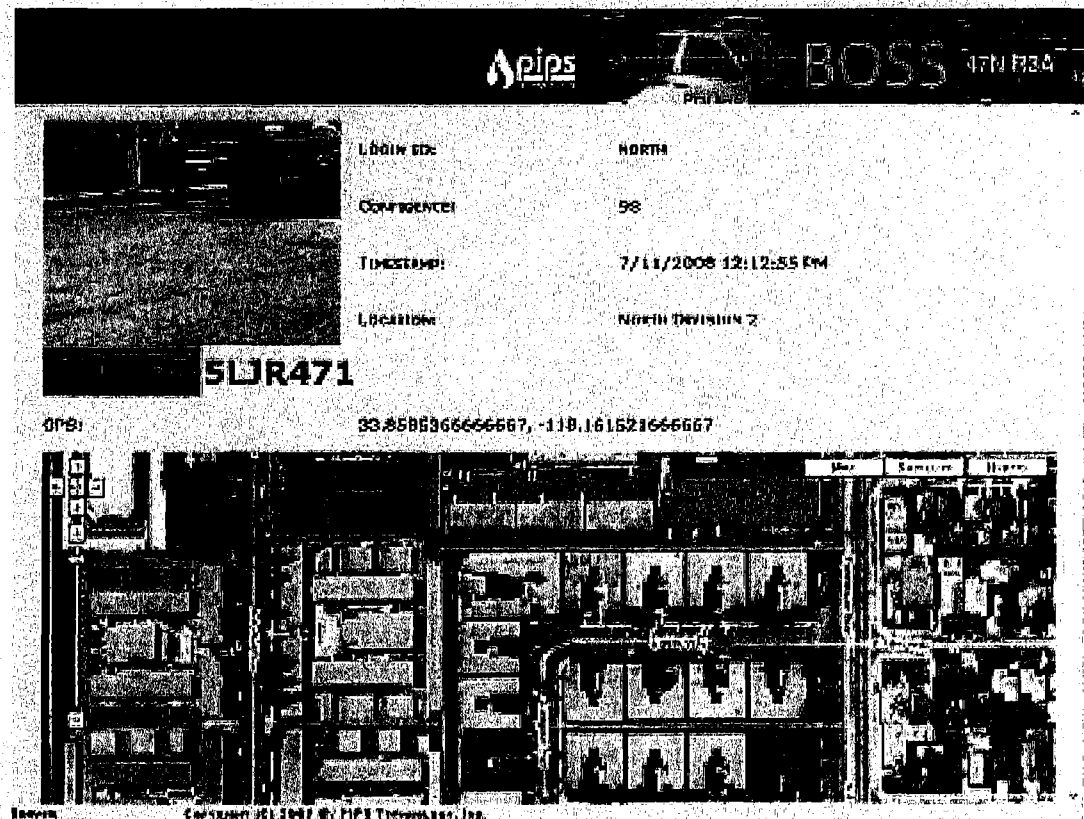


- Robbery takes place at a Shell gas station
- Possible suspect vehicle seen in alley
 - Gold Buick
 - Partial plate ***L008
- Data mining confirms vehicle description matching partial plate
- Full license plate number reveals prior locations
- Surveillance established and suspect arrested
 - Weapon and loss recovered

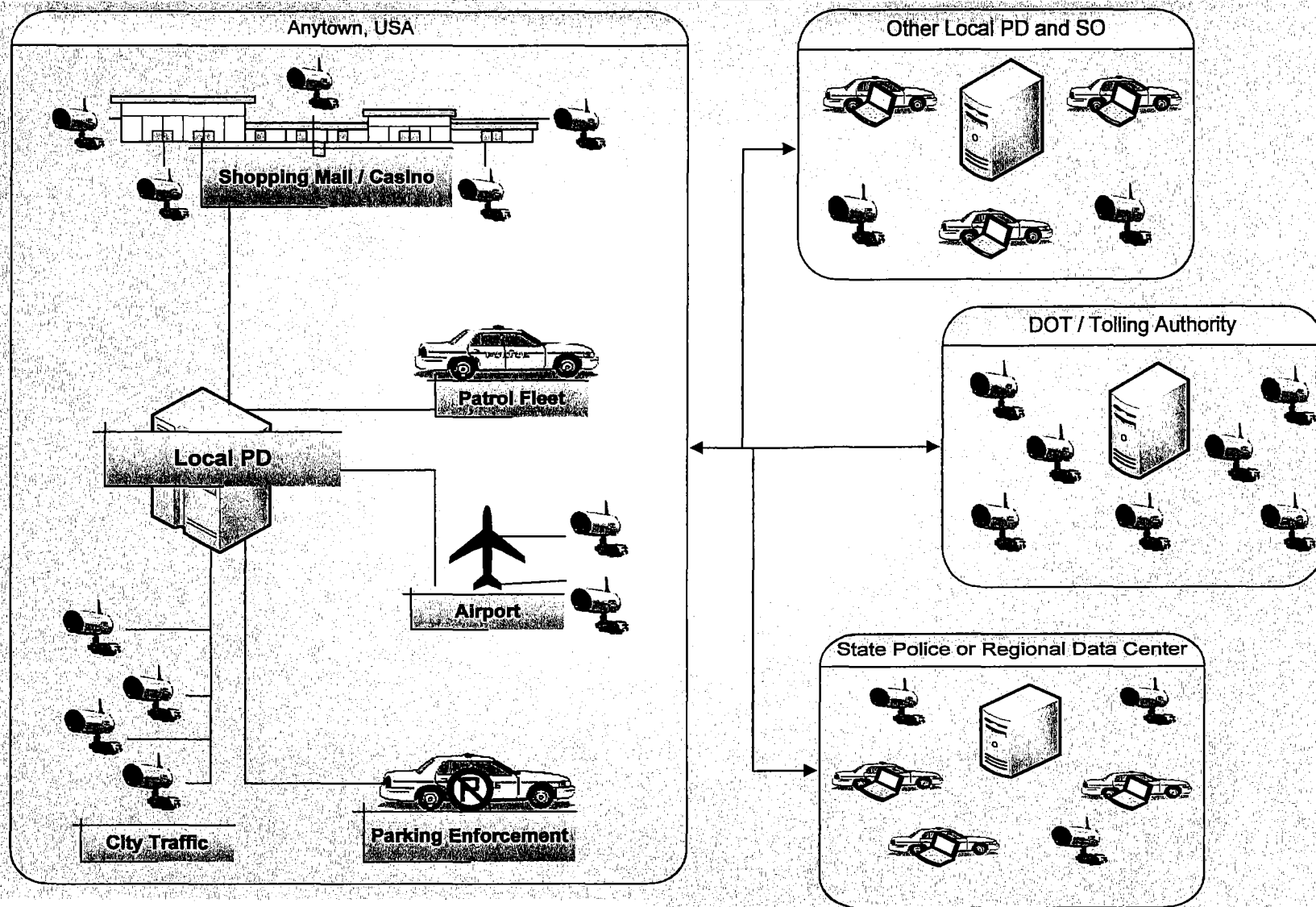


Case Study – L.A. Area Homicide

- Body of UC Professor discovered in his residence
 - 2002 Lexus missing from garage
- Patrol officer runs victim's license plate through BOSS
- Vehicle was seen by ALPR repeatedly in the area of South Paramount
 - After estimated time of death
- Surveillance established and suspect arrested



Sharing Data & Interoperability



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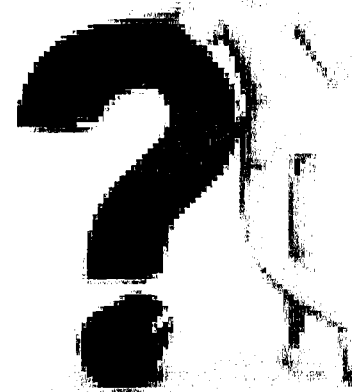
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Benefits of ALPR for Law Enforcement

- Force multiplier
- Officer safety
- Superior enforcement
- Enables stolen vehicle recovery
- Revenue recovery (expired registrations, parking violations, etc)
- Elimination of profiling claims
- Passive data collection for intelligence



Thank you / Questions?



Back up Slides

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Mobile Deployments



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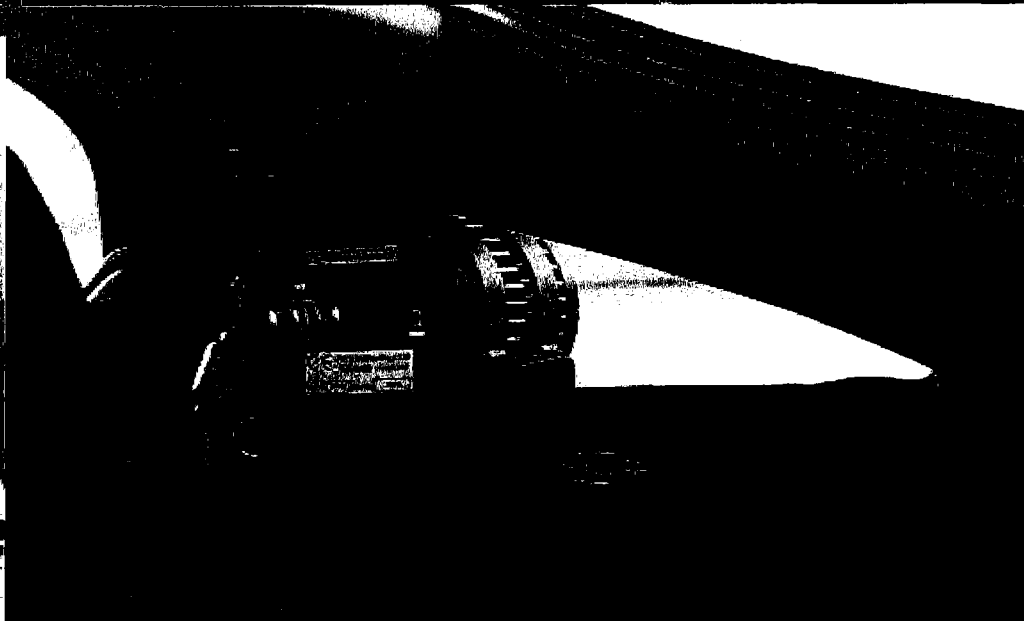


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LASD Covert Nissan 300Z

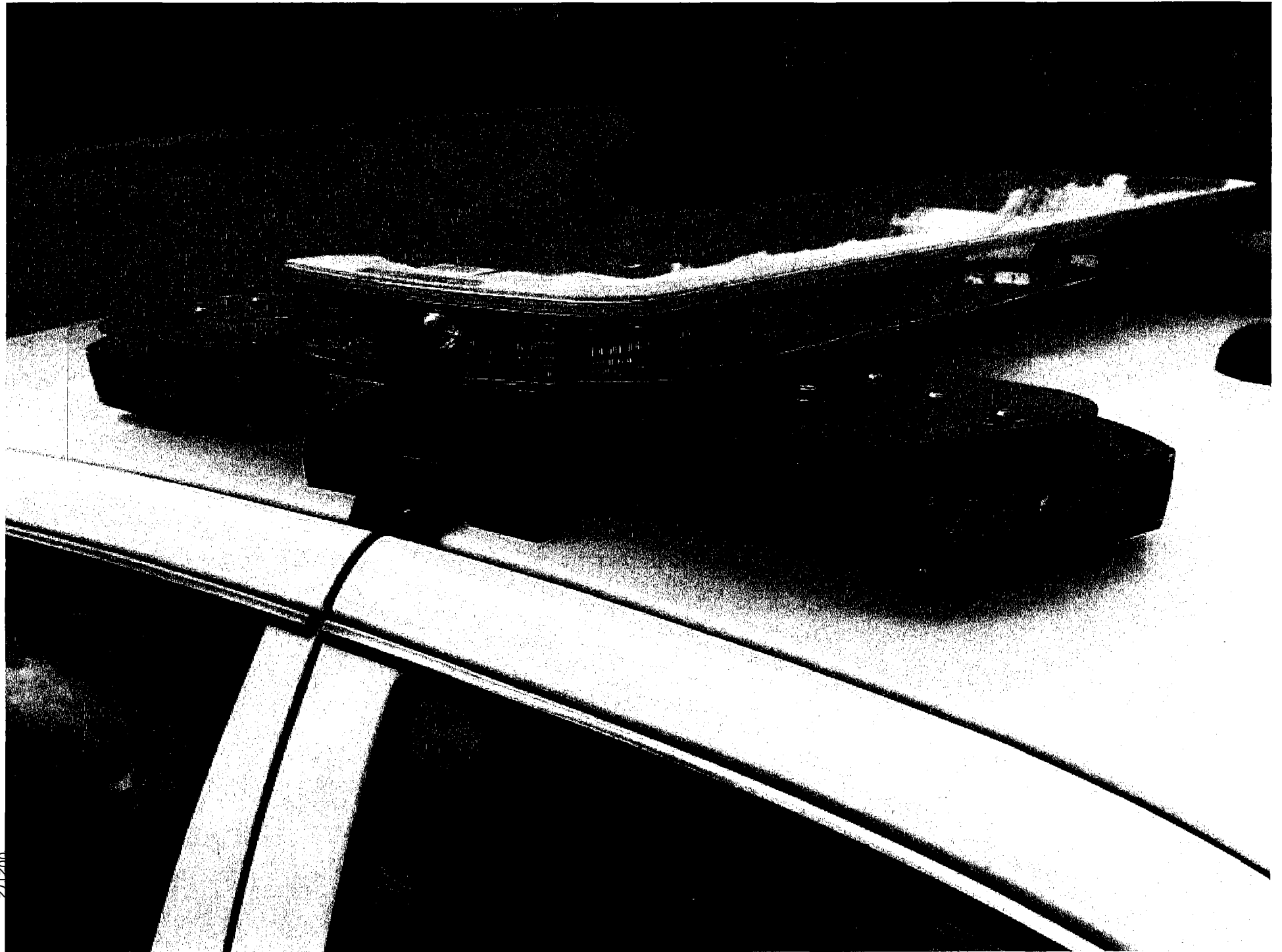


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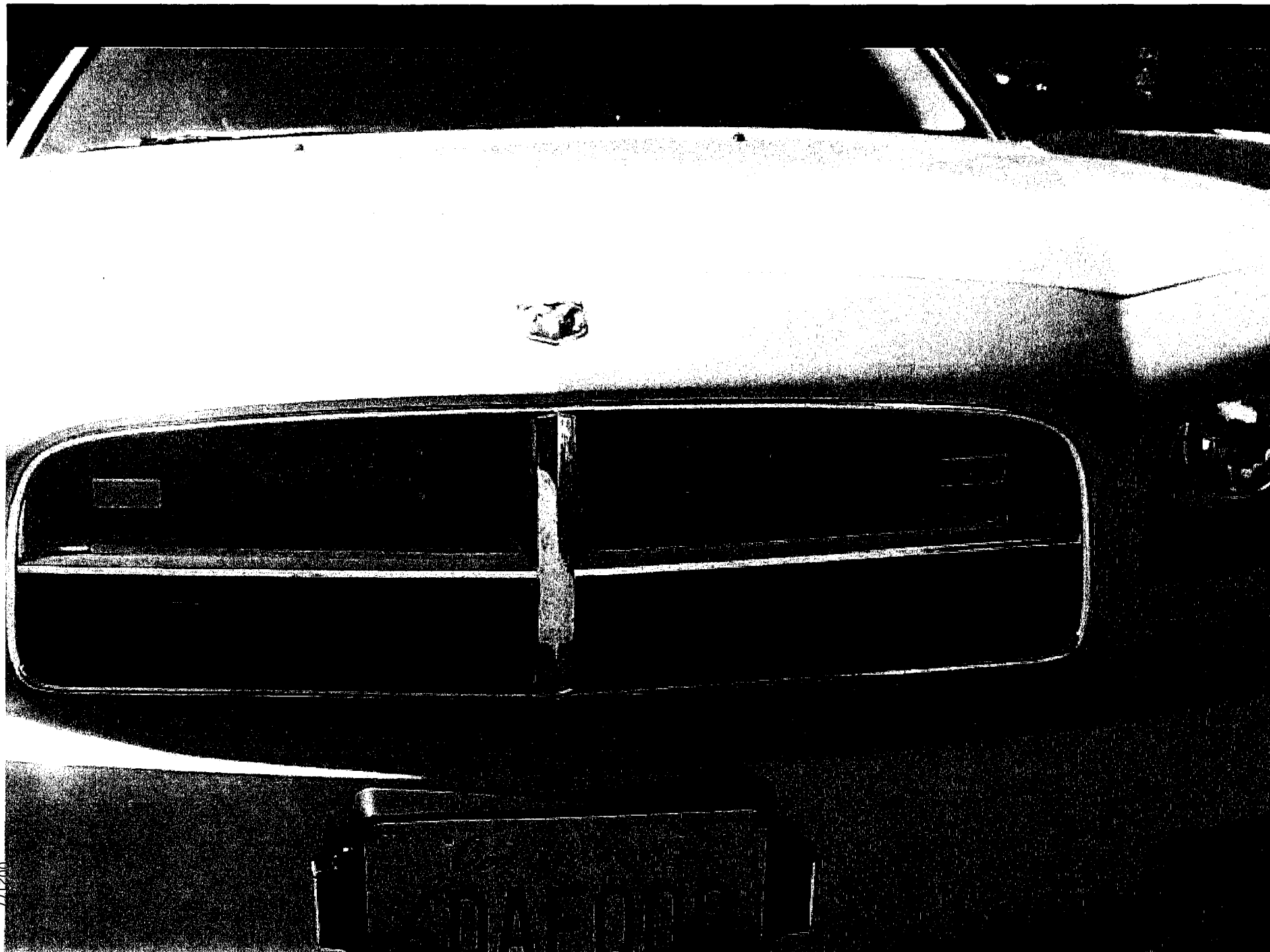
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A Federal Signal Company

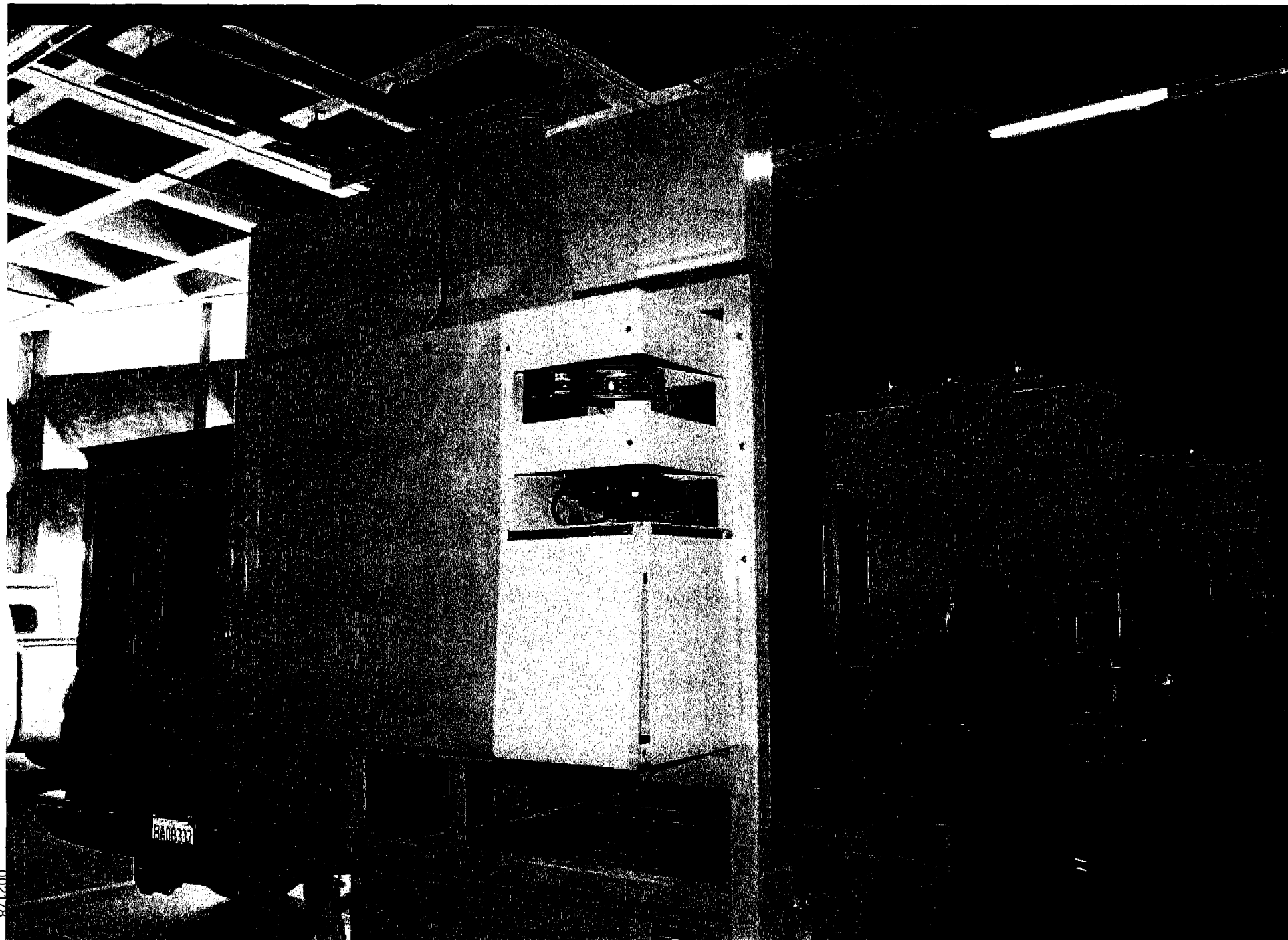
*the most advanced license plate
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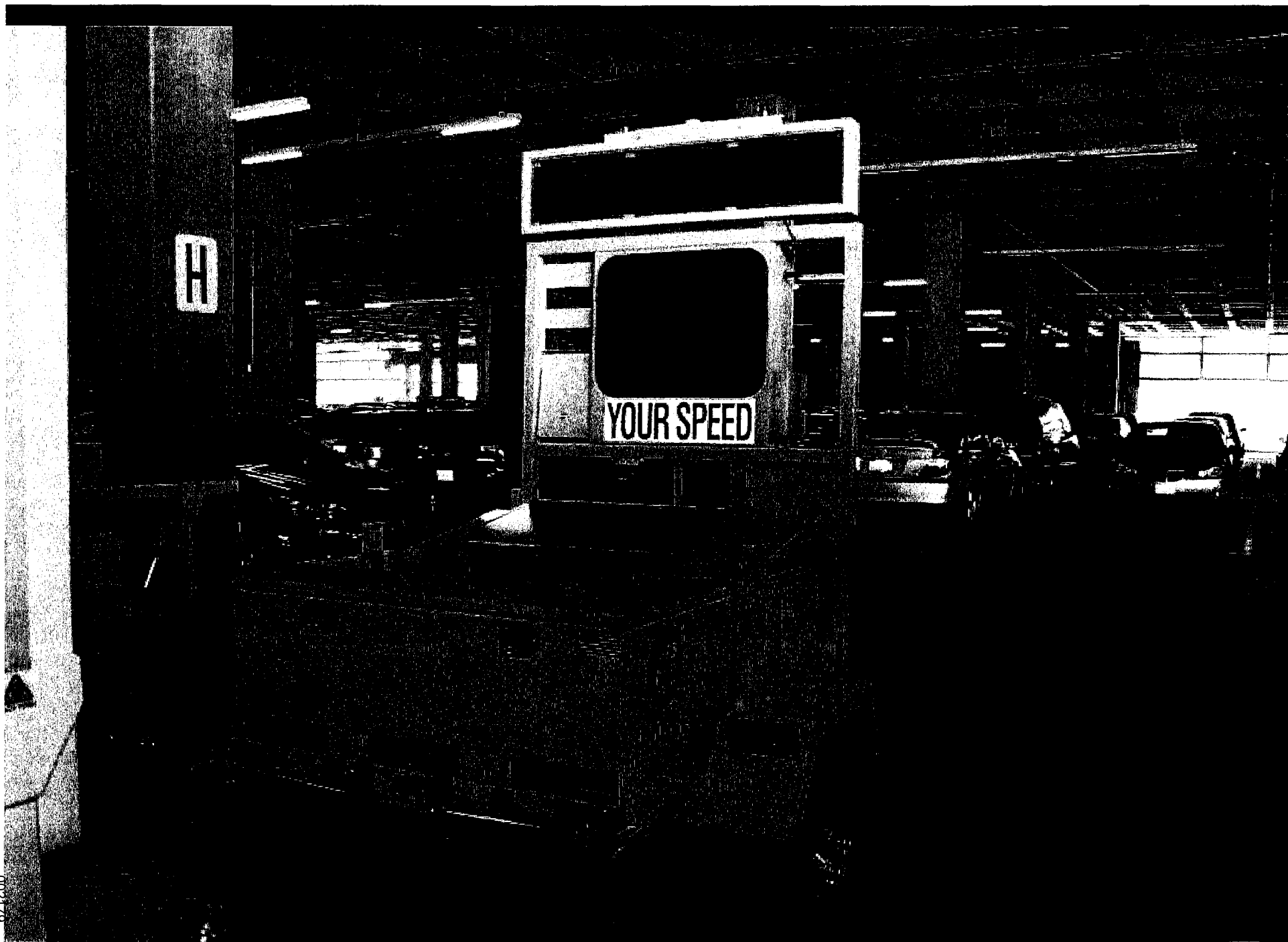


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Recognition Systems in the World

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Recognition Systems in the World

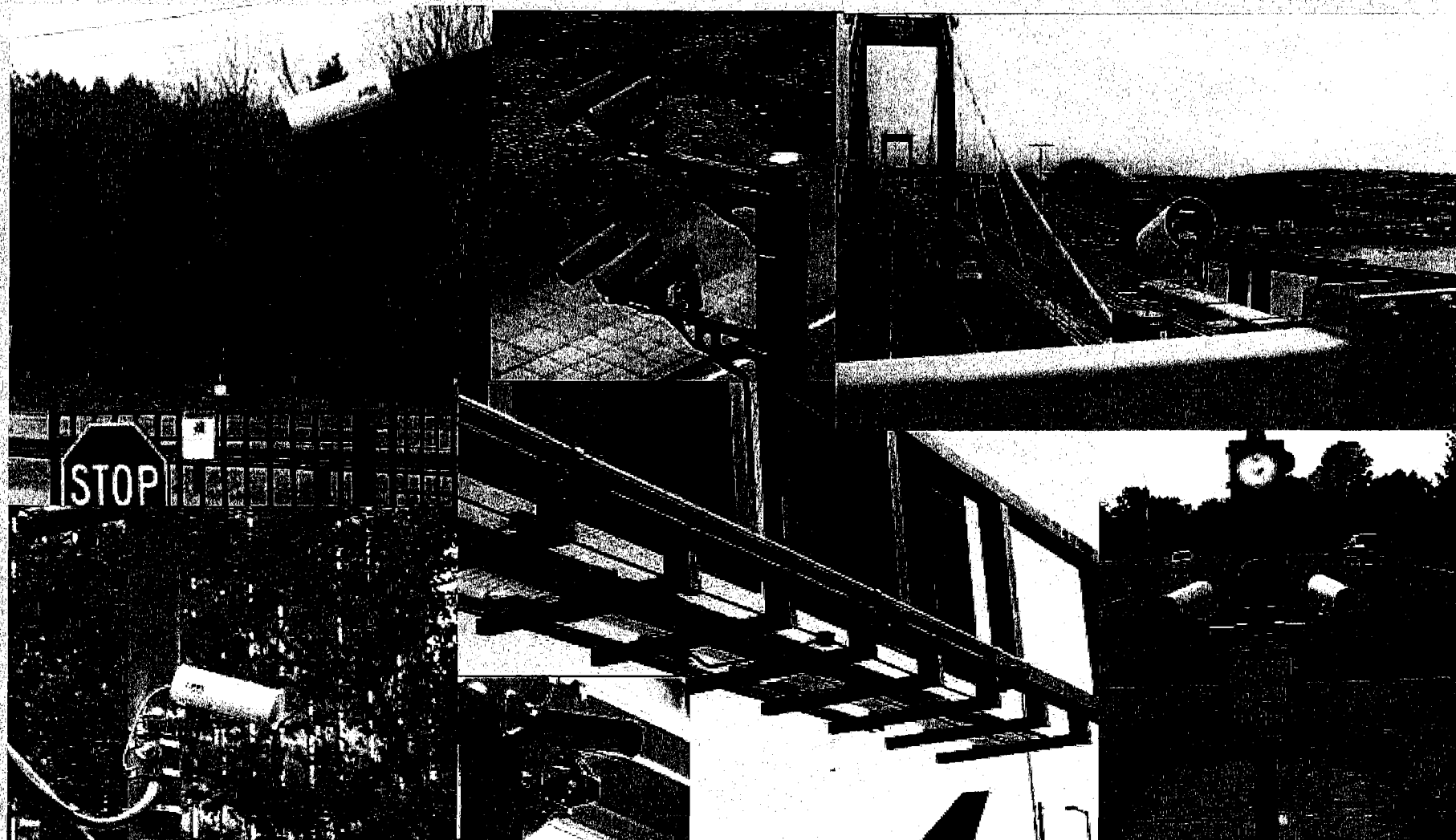
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Spike+ Fixed ALPR System

- Same as Mobile Camera, but with integrated ALPR Processor
- Provide high volume traffic data directly into BOSS for real time hotlist check
- Strategic surveillance of choke points and entry points into a geographic area
- Most widely used camera of its type in the world



Fixed Site Installations



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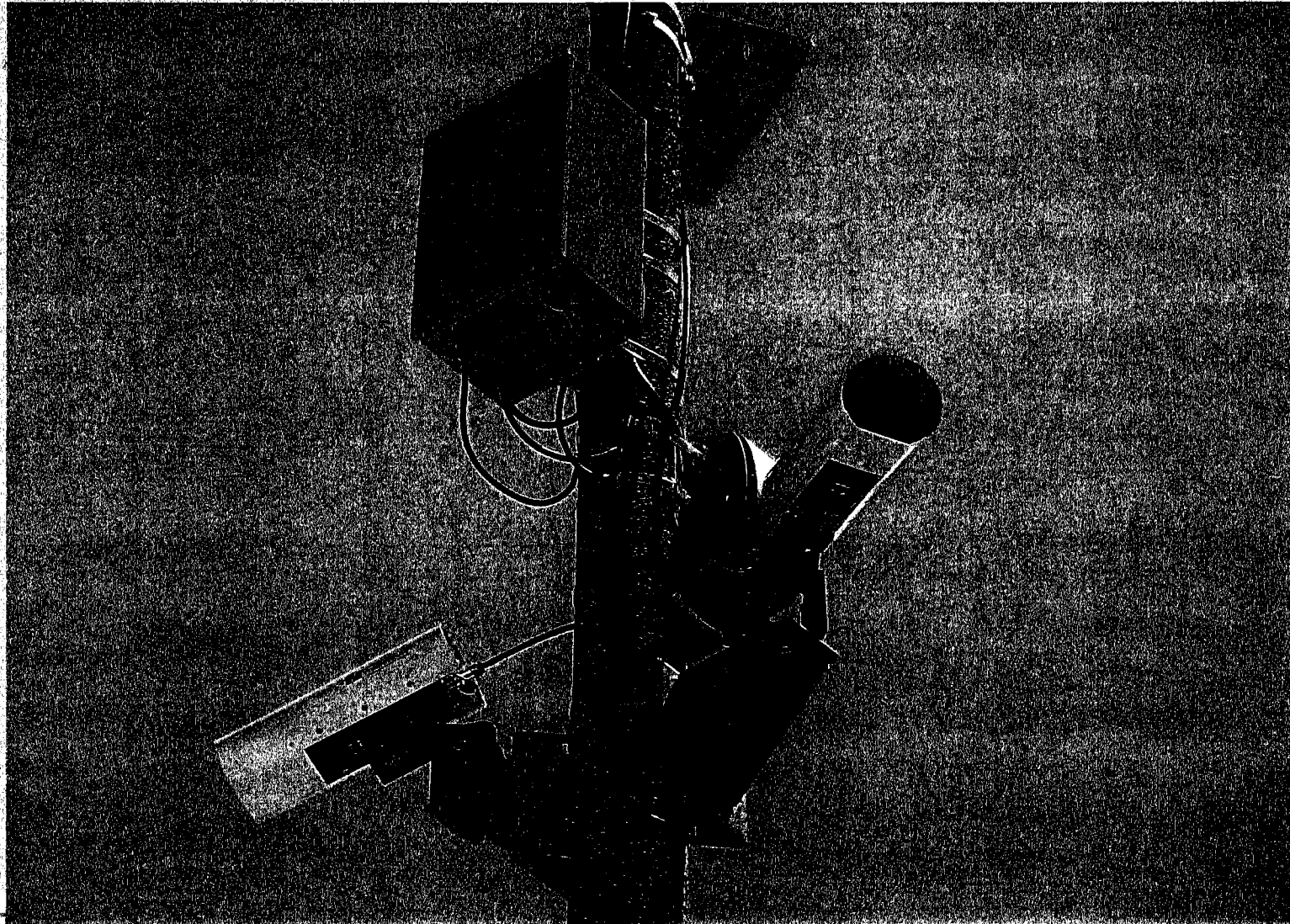


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Fixed Deployment North and South



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Fixed Deployment



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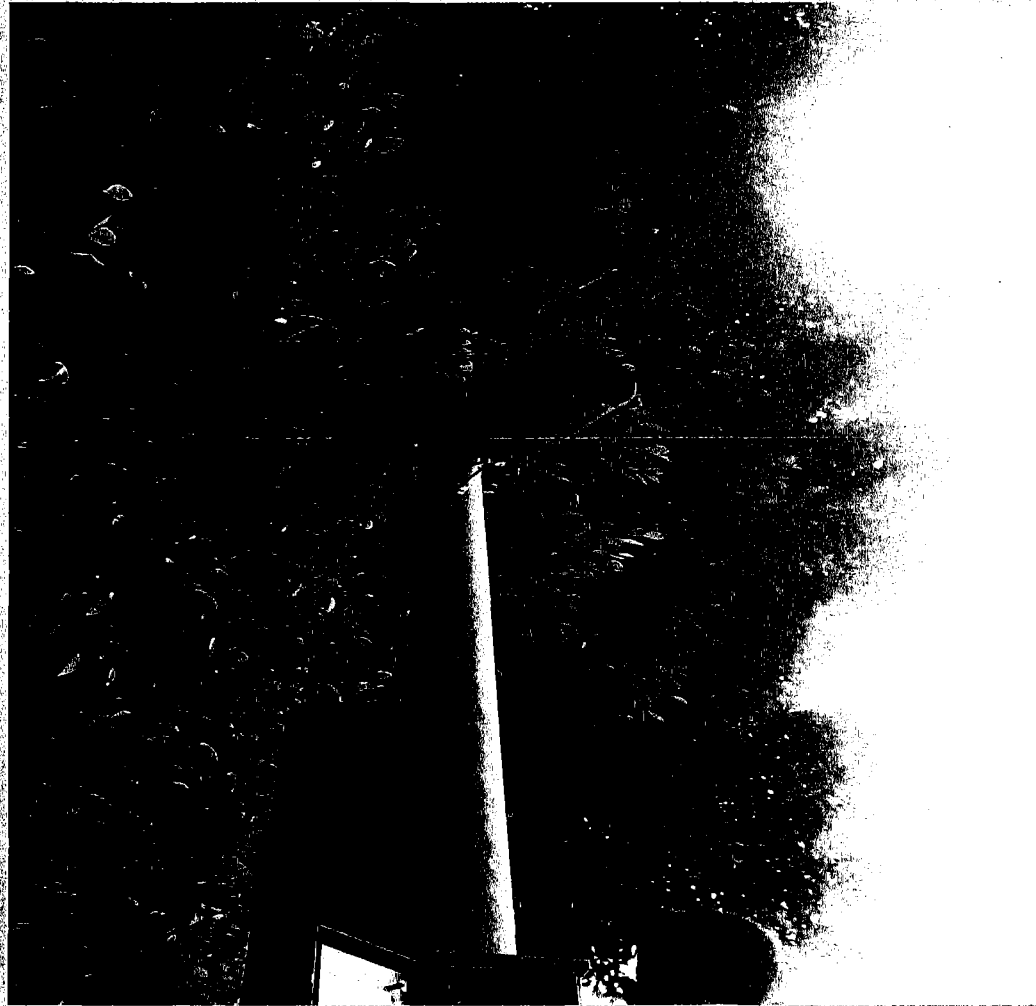


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Fixed Deployment



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**PIPS
TECHNOLOGY**

A Federal Signal Company

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804 Innovation Drive, Knoxville, TN 37932

FEDERAL SIGNAL

for Law Enforcement

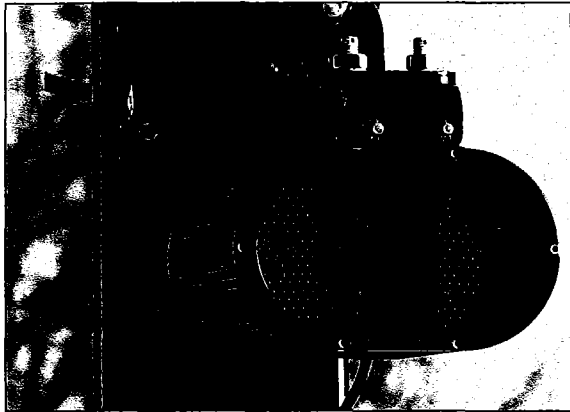
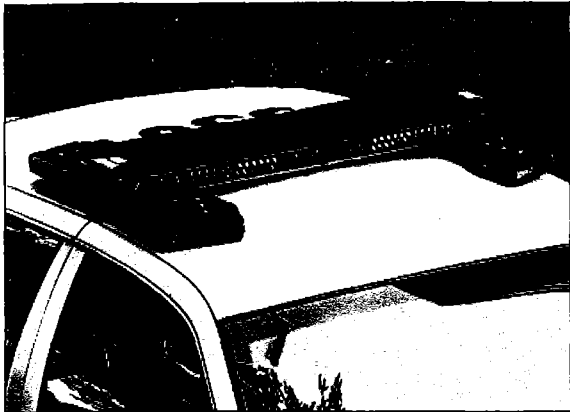


PIPS Technology – the leader

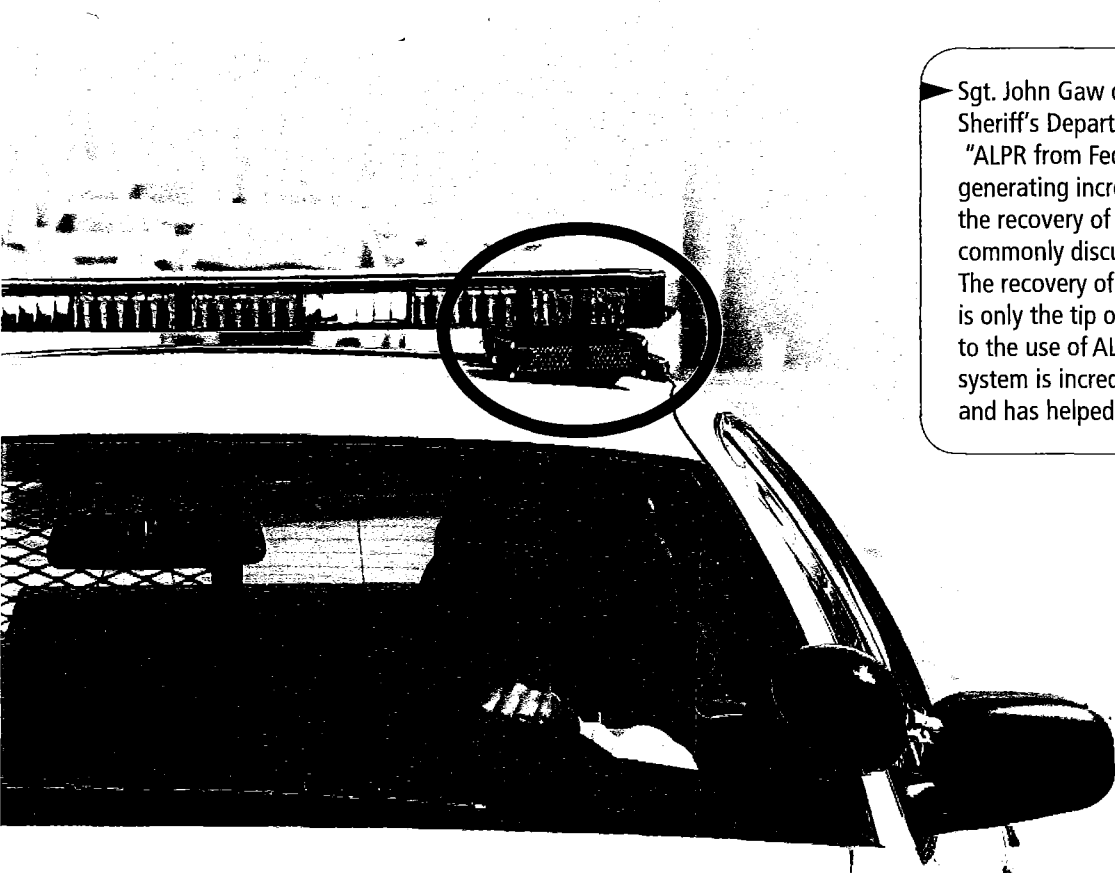
Automatic License Plate Recognition is widely recognized as an effective tool to combat criminal activity, enhance productivity and improve officer safety.

With Federal Signal's PIPS Technology you can:

- Capture up to thousands of license plate reads per minute
- Capture plates at up to 160 mph differential speed
- Alert officers immediately when a license plate is a match or "hit" in any of the databases used by the agency
- Identify suspended and revoked drivers
- Capture data that aids in witness identification, watch list development, placing suspects at a scene, terrorist interdiction, pattern recognition
- Assist in stolen vehicle recovery
- Identify felons or wanted individuals
- Monitor school and playground perimeters for sexual predators
- Assist in amber alerts
- Identify delinquent citations for revenue enforcement
- BOLO suspects
- Crime scene intelligence and surveillance
- Monitor gang activity and location
- Assist in drug enforcement



Federal Signal designs, manufactures and supports a complete line of ALPR equipment – from fixed systems to processors, mobile systems to software, installation services to customer support.



► Sgt. John Gaw of the Los Angeles County Sheriff's Department ASAP Unit notes, "ALPR from Federal Signal PIPS Technology is generating incredible results that go far beyond the recovery of stolen vehicles, which is the most commonly discussed benefit of the technology. The recovery of stolen vehicles, while important, is only the tip of the iceberg when it comes to the use of ALPR. The data collected by the system is incredibly valuable for investigations and has helped us in many cases."

er in Automatic License Plate Recognition (ALPR)

► Partner with the leader in ALPR Technology

With over 18,000 cameras deployed throughout 33 countries and a wide range of patents covering our technology and its application, Federal Signal is easily recognized as a leading provider of traffic related video imaging and license plate capture technology.

Increase productivity

The robust Federal Signal ALPR system provides for both improved field enforcement of wanted vehicles, and enhanced proactive, preventive enforcement by enabling more intelligent investigations and data sharing across jurisdictions.

It can also act as a force multiplier. While an officer could manually enter a few hundred license plate queries a shift, Federal Signal's PIPS Technology is capable of capturing and querying thousands of plates a shift.



Improve officer safety and effectiveness

PAGIS® software provides significant improvements to officer's productivity and safety as compared to traditional manual license plate searches. While officers are patrolling, PAGIS instantly checks captured plates against one or more databases of interest and immediately alerts of a 'hit'.

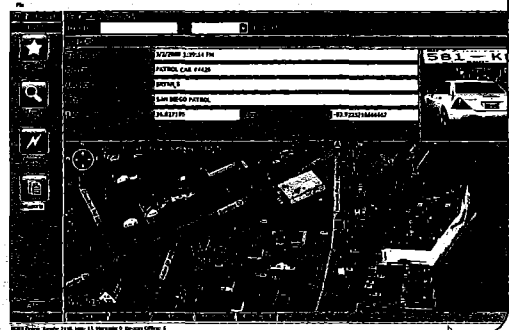
PAGIS software also offers a user-friendly and intuitive interface, to query data against multiple search parameters, such as time, date, full or partial plate, location, and user.



Access and organize data

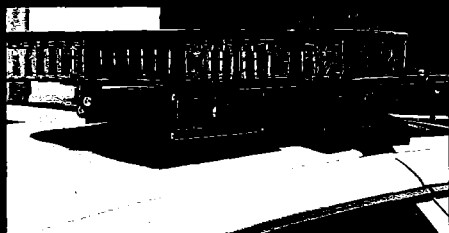
BOSS® (Back Office System Software) enables users to organize and archive the vast amount of data generated by both mobile and fixed units. BOSS stores all captured license plate data in a central location to support data analysis, data queries and reporting to assist law enforcement investigations.

BOSS is capable of mapping all locations associated to a particular plate in order to track vehicle movement.



► Police Chief James O'Connor of the Lyndhurst Police Department noted, "I've worked with Federal Signal throughout my law enforcement career, and its a name that I know and trust. Having a name like Federal Signal as my ALPR solution gives me peace of mind that I've made a sound investment – one that I can rely on for many years to come."

Federal Signal's ALPR solution fits a variety of demanding applications



Mobile ALPR System

Federal Signal's mobile ALPR system analyzes each plate read against known databases checking for criminal activity and maintains the data for future reference.



Portable ALPR System

Taking advantage of the already compact and high-performance camera system, Federal Signal has packaged its proven SuperEx[™] processor into an ultra compact package for easy deployment and portability. SuperEx system has the ability to run up to four cameras simultaneously.



Fixed ALPR System

Federal Signal's fixed ALPR system can provide continuous monitoring of high traffic areas and communicate to local agencies all database hits, allowing for rapid, efficient and appropriate deployment of resources. It also integrates with our mobile and portable system using the BOSS software allowing for a complete solution.

For more

Please call us or visit us online for details on the Federal Signal PPS Technology ALPR solutions for law enforcement and our complete line of automatic license plate recognition technologies.

www.fedsig.com

FEDERAL SIGNAL

Worldwide/USA Headquarters

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Automated License Plate Recognition Investment Justification and Purchasing Guide

Federal Signal Corporation

Published: August 2008

Abstract

Automated License Plate Recognition (ALPR) is likely the most talked about technology today in law enforcement, public safety, and the transportation sectors. Endorsed by the IACP as an **"effective tool for law enforcement"** in a resolution at the 2007 IACP Annual Conference, the technology has proven itself time and again as a force multiplier that can bring about incredible results for agencies at every level. ALPR is being called the biggest single advancement for law enforcement since the radio was introduced in the 1950's, and it is expected that ALPR will become standard issue for all new patrol vehicles within the next 5-7 years.

As with all new technology, there is an element of cost justification that must be considered. This document is intended to give some guidance for those considering the purchase of ALPR and should provide some valuable information for use in building an investment justification.

PIPS Technology, a Federal Signal Company, is an industry leader in the development and manufacture of ALPR systems. Providing a broad range of ALPR products that enable the next generation of information technology for Travel Time Measurement, Law Enforcement, Tolling, Congestion Charging, Access Control, Traffic Monitoring and Automated Site Security Solutions. PIPS products are manufactured to ISO 9001:2000 standards.

This Investment Justification and Purchasing Guide White Paper is for informational purposes only. Federal Signal PIPS makes no warranties express, implied or statutory, as to the information presented in this white paper document.

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Introduction

Automated License Plate Recognition (ALPR) is growing in acceptance around the world, due to improved performance characteristics and recognition of the benefits provided.

In the simplest of terms, ALPR involves the use of specialized cameras and software that recognize a license plate, capture an image of the license plate, and interpret the characters of the license plate into data that may then be used for one or more purposes.

While the technology was developed by PIPS Technology almost 20 years ago with funding provided by the British government, and while ALPR is widely accepted throughout Europe, it has only been within the last 5 years that the technology has seen broader deployment elsewhere in the world.

ALPR is now offered by a number of companies in the marketplace, with very few companies offering a comprehensive engineered solution. Many companies, taking advantage of the newfound commercial interest, are constructing solutions from "off-the-shelf" components. These companies come and go, with the few providers of engineered solutions standing the test of time with products that actually perform.

How it works

The technology can be deployed in either a fixed or mobile environment. A fixed camera may be mounted on a roadside pole, overhead gantry, bridge overpass or building structure. A mobile system may reside on a patrol vehicle, school bus, or a public works vehicle such as a street sweeper or sanitation truck.

Whether mobile or fixed, the cameras are basically the same, consisting of infrared (IR) light emitting diode (LED) illumination, an infrared camera, and a color camera. Infrared illumination is used as almost all license plates are highly reflective to infrared which provides effective license plate image capture during day or night, and also eliminates the variability of plate backgrounds and colors by providing a clear monochrome image of the license plate. The lenses of these cameras are fixed focal length to produce a properly sized image that will optimize the overall performance of the optical character recognition (OCR). The color and infrared lenses are synchronized, and while OCR is typically performed from the IR side of the camera (as explained in following paragraphs), the color side may also be used for OCR in certain applications and/or environments.

The infrared illumination, invisible (but safe) to the human eye, illuminates the camera's field of view (FOV). Depending on the location of the deployment and the manufacture of the license plates, different wavelengths of IR may be employed to provide the best quality image for OCR interpretation. A software algorithm searches the FOV and determines the presence of a license plate based on size, dimensions, and reflective properties. This software algorithm identifies individual video frames containing a license plate image. The system will capture multiple images (one every 10-20 ms) of the plate as it passes through the FOV, with varying image capture settings with each picture to



compensate for changing ambient conditions, plate-to-plate variability, and other variables. The cameras are very high speed, allowing for this process and effective image capture to take place at differential speeds of up to 160 mph. Another software algorithm then reviews each of the images to



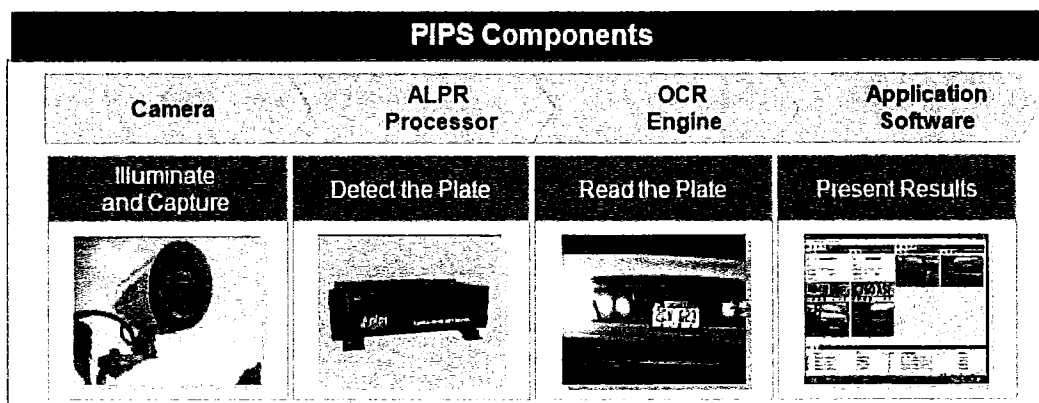
determine which image is the best image for OCR. These software algorithms, as well as the OCR engine, reside on a processor (integrated onboard the camera, roadside, vehicle mounted, or remote).

OCR is a critical element of a successful ALPR system, and is the downfall of many potential ALPR providers. Due to the complexity of license plate formats, syntax rules, font types and sizes, and special characters, a focus on OCR is essential. In the ALPR business, it is not a "one size fits all"

approach regarding OCR. The North American market is particularly complex as it is not uncommon for an individual state to have 150-200 individual plate types. Dedicated OCR resources and expertise are needed to keep the technology at its optimum performance. Many of the (few) true technology providers will maintain a library of 20, 30, 40, or more engines optimized for the different market regions. The OCR engine effectively "reads" the plate and generates a text string that is then packaged with other data and used for one of the many applications.

Key to your ease of use is the robustness of our solution and the fact that PIPS Technology designs and manufactures all components of its solution including cameras, processors, optical character recognition engines, and software applications.

This approach insures that you have the most integrated, reliable, and scalable solution with the industry leading accuracy that customers have known and expect from PIPS all available to enable your automatic license plate recognition application needs.



The application of ALPR technologies are primarily categorized into mobile and fixed solutions for Intelligent Transportation, Public Safety and Access Control / Parking. In the next section we drill into those categories in detail and share some practical implementation examples.

Applications of ALPR

Public Safety

The public safety market is the market that receives the most attention in the media, as ALPR is revolutionizing law enforcement and improving public safety and security. Over 50% of all crime is related to a vehicle, and the ability to automate the process of identifying vehicles of interest has immense inherent value. In recent interviews with larger metropolitan agencies, ALPR is being compared to the two-way radio relative how it has revolutionized law enforcement upon being brought to market.

In the public safety market, ALPR is currently used to identify stolen vehicle, vehicles associated with wanted individuals, vehicles with outstanding violations or taxes, and many more important applications. One of the major benefits of ALPR is the collection of data that allows for investigative purposes; this benefit is being seen with equal or even greater interest than the identification of known vehicles of interest.

Under traditional methods, in a mobile setting, an officer would typically check no more than 20 to 50 license plates in a standard 8-hour shift. Using ALPR frees the officer to focus on his driving and look at other things outside the vehicle, while automatically checking every vehicle he or she encounters; the system is limited only by the number of plates that are able to pass in front of the camera. Many agencies are seeing mobile systems capture between 5-10,000 plates in a shift.

Fixed location cameras operate continually, and are being deployed in known high-crime areas, or in areas with high traffic throughput such as interstate overpasses. More progressive cities such as Los Angeles, Chicago, and Cincinnati believe that an integrated mobile and fixed solution provides the greatest benefit.



A back office system software (BOSS) resides on a server in the agency, and is linked to any number of databases, or vehicle hotlists. These hotlists may reside on a network location, at an ftp location, or on a website. These hotlists may present differing data schemas and file formats, and the BOSS brings all of these hotlists together for use by the system. The BOSS also monitors these hotlists for updates, pulling them in as changes are made and making them available to the ALPR systems, fixed and mobile.

Known vehicles of interest, as they are identified by the system, are brought to the attention of an officer via a software application in the vehicle, to a central dispatch location or emergency operations center (EOC) via the BOSS, or sent to one or more individuals via email or text message. This automated, near real-time notification allows for quick decisions to be made relative to interdiction.

As previously referenced, BOSS is also a central repository for all collected data, providing a massive intelligence database for crime investigations. Witness accounts of partial plates and vehicle descriptions may be used to locate potential suspects, suspects may be placed in the vicinity of crimes, and potential locations of suspects may be identified using historical data of where they have been seen in the past.

With interoperability and data sharing as two of the primary “buzzwords” in this market, it would be shortsighted to overlook how many agencies are now establishing linkage between their BOSS servers to expand law enforcement capability beyond their jurisdictions and improve their abilities to protect the communities they serve.



While ALPR has received the attention of privacy advocate groups, these concerns are typically short lived for a number of reasons. As ALPR removes the officer from the process of running plates, many privacy advocates and civil rights groups actually applaud ALPR as it removes all possibilities of profiling, essentially ignoring all vehicles and drivers and looking equally at all license plates. On a more straightforward note, the license plate is the property of the state as are the roadways

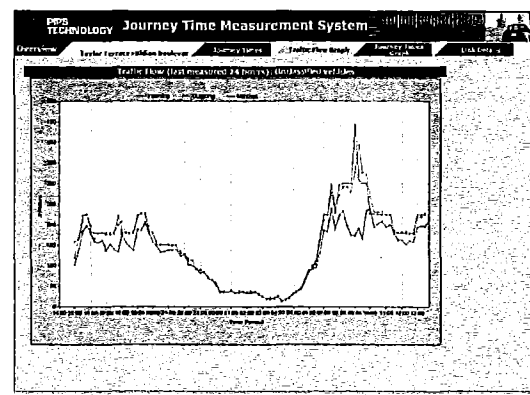
(typically), and there is no reasonable expectation of privacy on a roadway,

Longer term, as legislation allows, ALPR cameras may provide speed enforcement by determining speed using a simple time over distance calculation. This method of speed enforcement would be much more effective than other “spot-checking” methods of speed enforcement; it would modify driver behavior by enforcing speed over the larger road network, as opposed to a spot in the road.

Intelligent Transportation

Intelligent transportation systems (ITS) is a phrase that encompasses many different applications, and this market most likely represents the largest long term commercial opportunity for ALPR. Included in the ITS market space are tolling enforcement systems, congestion charging systems, origin-destination studies, travel time measurement systems, electronic vehicle registration (EVR), and other traffic studies.

Tolling and congestion charging systems, as they are revenue related, will often present redundant functionality such as RFID as the primary vehicle identification, with ALPR being the secondary violation enforcement. The benefit of ALPR over other methods of vehicle identification is that ALPR requires no additional infrastructure or equipment at the vehicle level; ALPR leverages what already resides on the vehicle. As acceptance grows, ALPR may become the preferred mechanism for primary vehicle identification in these types of systems.



As the privatization of roads continues, and as cities look for ways to encourage public transport and reduce congestion, ALPR will see increased usage in these types of systems. As an example, the United States Department of Transportation (USDOT) made available \$250 million in 2008 for five cities to fund congestion mitigation programs. ALPR is a common thread to most of these programs, and these cities are often looking at the Transport for London (TfL) program as a model, with well over 1,000 ALPR cameras monitoring the roadways and charging road users a toll based on the time of day and congestion zone.

Origin-destination and travel time measurement systems can provide otherwise unavailable or hard-to-come-by information to DOT's and other transportation planning groups. By understanding road usage, where drivers enter and exit a roadway, and accurate travel times at various times throughout the day / week, transportation planning becomes much more of an accurate science with accurate reliable data available.



EVR is a relatively new concept of integrating data from various sources to a common identifier. Much like tolling and congestion charging, today's EVR looks for system redundancy due to the associated revenue. EVR encompasses the more accurate administration (and revenue capture) associated with vehicle registration and taxation, and could even be used for insurance verification and other purposes.

ALPR may allow for the accurate allocation of expense between two agencies sharing, or it may provide a mechanism for a DOT to monitor the impact of a construction project upon travel times...the possibilities are endless.

Parking and Access Control

This market has several major application subsets including parking enforcement, parking operations, and access control / security. These applications may be seen within universities, airports, military bases, corporate campuses, embassies or government buildings, and elsewhere.

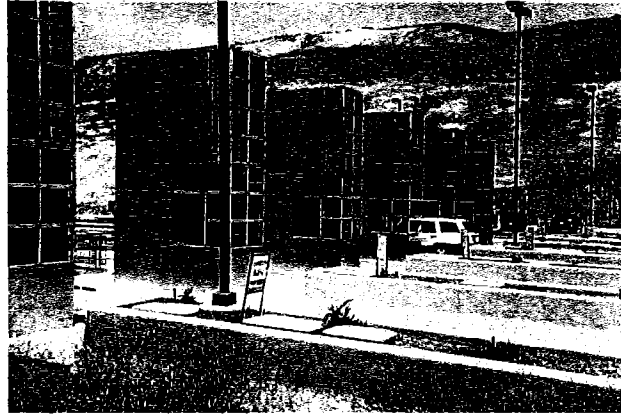
Parking enforcement is a very popular application of the technology because of the rapid return on investment typically achieved. With tens of millions of dollars owed in scofflaw violations, the ability to identify the vehicles associated with this outstanding revenue is a very attractive proposition to states and municipalities that are always looking for adequate funding for road improvements, public safety, education, and other initiatives.

In addition to this very obvious use of ALPR to identify vehicles of interest (similar to the public safety application), ALPR can also be used for permitting at permit parking facilities such as universities and residential areas...tying the permit to the license plate and potentially eliminating hang tags or other permitting methods that are costly, ineffective, and difficult to administer.

Timed parking enforcement or "chalking" is yet another parking enforcement application of ALPR. By comparing repeat instances of the same vehicle, either using GPS coordinates or a designated route,

ALPR is able to automate the chalking process making the process more effective, creating more revenue, and doing so with a fraction of the resources.

For parking operations, ALPR is often integrated into parking revenue systems as a means to reduce ticket fraud, which has been estimated at \$10 million per year in lost revenue at airports and other paid parking facilities. An ALPR system can provide data to a revenue control system whereby it is married to the ticket. As a vehicle leaves, this provides the ability to validate that the ticket being presented is in fact the same ticket obtained by the vehicle upon entering the facility. In the instance of a lost ticket, it also provides a mechanism for the driver to be fairly charged.



The collection of parking inventories also presents a challenge to parking managers – a challenge that ALPR can greatly simplify. Whether by pad and paper, or using a handheld device, a vehicle-mounted ALPR represents a much more cost effective and accurate means of collecting a vehicle inventory. One mobile ALPR system can accomplish more work than 6-10 workers could otherwise accomplish in a shift...and it can do so much more accurately. These vehicle inventories can then be used to provide length of stay and capacity analysis, tell a customer where their car is located, look for trends in usage, monitor for frequent visitors to identify frequent customers or employees, and more.



In today's post-9/11 world, the need for sophisticated and effective access control and security programs is tantamount. ALPR in this application can provide a very simple trigger to a gate based on a known list of "allowed"

plates, or it can be much more advanced to provide credentials to different locations within a military base, to set alerts for vehicles taking

too long to get from point A to point B, to

match license plates to vehicle and/or driver images for a visual inspection, or to provide an inventory of those present in the event of an evacuation.

In the next section we will discuss the cost justification and provide some thoughts around return on investment which can assist you as you are reviewing this new high powered integrated technology offering.

A Wise Investment with a Quick Return

The applications for ALPR are limited only by the imagination. While many of the stories in the media focus on stolen vehicle recovery, this is only one of the applications that should be considered when building an investment justification. Some of these applications of ALPR contribute to the effectiveness of the agency resulting in better enforcement and improved safety and security in the community, while others may actually contribute revenue to the equation. Several applications of ALPR are outlined below.

Non-Revenue Related

- **Officer Efficiency** – While an average officer may check 50-100 plates in an 8-hour shift using conventional methods, the system is capable of checking tens of thousands...it is limited only by the number of cars that the system encounters. *Example: The City of Long Beach reported over 1.4 million plates checked within the first 6 months during a limited deployment.*
- **Improved Enforcement** – More vehicles checked means that more bad guys will be located for intervention. The result is a safer community. *Example: The City of Cincinnati reported over 325 arrests attributed to ALPR in the first few months of using system. PIPS has many success stories to share with you including the recovery of drug paraphernalia, burglary tools, identify theft profiles, weapons, and much more.*
- **Stolen Vehicle Recovery** – Often the most talked about benefit of ALPR, stolen vehicle recovery can be drastically enhanced with the use of the technology. Improved recovery translates to fewer settlements paid out by the insurance industry, and ultimately lower premiums for policy holders. And with stolen vehicles often used to commit much more serious offenses, this benefit translates to improved security. *Examples: In the first seven months of deployment, a single mobile deployment in the Southeast US was responsible for 170 recoveries valued at over \$2.4 million. The California Highway Patrol saw even more remarkable results; the CHP reported 868 recoveries worth over \$7 million and 535 arrests in over a year of deployment. One officer within CHP is averaging 300 hits per month.*
- **Officer Safety** – Making an officer more aware of his surroundings produces a safer work environment. *Example: An officer on the Pennsylvania Turnpike was making a routine traffic stop, when his PIPS system notified him that the vehicle was wanted in connection with a kidnapping and murder. After calling for backup, the three armed suspects were apprehended without incident.*
- **Better Intelligence for Investigations** – The data collected by the ALPR system can be maintained in the back office system software (BOSS) and provides valuable intelligence for investigative purposes...to place a suspect near the scene of a crime, to validate or disprove alibis, to find potential suspects based on eyewitness accounts with license plate data, and more. *Example: Cincinnati PD was having difficulty locating a suspect in a string of copper burglaries. CPD used BOSS data to see all historical sightings of the vehicle, and were able to see a pattern, set up surveillance, and make an arrest.*
- **Eliminate Profiling Claims** – By eliminating the officer from the process of checking license plates, you minimize risk associated with profiling claims. The system sees and checks all license plates regardless of the car or driver.

Revenue Related

- **Parking (Scofflaw) Enforcement** – Many cities have a large amount of outstanding citations, sometimes totaling over \$1 million in larger municipalities such as Cincinnati. ALPR may be used to identify vehicles with outstanding parking citations and enforce with booting or towing to capture this revenue due to the City. *Example: An agency on the West Coast deployed two ALPR-equipped vehicles for a total of 180 hours. The result was an astounding 290 vehicles booted or towed with revenue collected in excess of \$200,000 during this short time.*
- **Enforcement of Outstanding Registrations and Vehicle Taxes** – The typical methods of enforcing vehicle registrations and taxes include mailing notices to the owners and visual checks by officers for the current license plate decal. ALPR can automate this process and be much more effective by enabling real time enforcement of these violations. *Example: In a collaborative effort between PIPS and 3M, an Electronic Vehicle Registration (EVR) project was deployed in Bermuda using PIPS fixed site cameras coupled with RFID. On the small island, it was estimated that registration non-compliance was costing taxpayers roughly \$2.5 million. In its first year of deployment, the non-compliance rate has been cut in half and continues to decline...providing over \$1.25 million that can be used for maintaining the roads and implementing other programs to improve driver safety. In a much simpler scenario, Arlington County deployed a single mobile system and recovered almost \$30,000 in the first month of operation.*
- **Tollway Enforcement** – As many tollways move to open road tolling (ORT) solutions using RFID transponders to electronically toll vehicles using the ORT lanes, ALPR is typically the preferred violation enforcement mechanism to identify vehicles passing through toll plazas without a transponder. Additionally, mobile ALPR systems can be used to patrol tollways for chronic violators to enable real-time enforcement. *Example: The State of Maryland is owed some \$3 million from drivers unlawfully using tollways without paying. There are an estimated 1300 chronic violators, and ALPR is now helping to address the problem. A single mobile system is now checking on average 8500 tags per day, and notifying the officer of toll violations. The first system has been so successful; the State is ordering 3 additional mobile systems. In March, the system identified a commercial vehicle with a whopping \$110,000 in outstanding toll violations.*
- **Congestion Charging** – In efforts to mitigate congestion and modify driver behavior to select alternate routes, use mass transit, or carpool, congestion charging schemes are becoming more attractive to many of the world's larger congested metropolitan areas. A network of ALPR cameras create zones within a city's more congested areas. Road users are charged a toll for entering the congestion zone, which may be dependent upon the time of day or day of the week. *Example: The City of London has the world's most well known congestion charging system. Deployed by Siemens using well over 1,000 cameras from PIPS, the system has been reported to generate charge and penalty revenues for the City of London in excess of \$300 million annually. Other benefits of the system include increased usage of public transport, decreased travel times, and emissions reductions.*

Purchasing Considerations

- Where is the company headquartered?
 - Federal Signal is headquartered in Chicago; PIPS Technology, a Federal Signal Company, is headquartered in Knoxville, Tennessee and in South Hampton UK.
 - PIPS is part of the Federal Signal Public Safety Systems Division which is comprised of first responders, industry architects, lead engineers, and software development expertise that is best in the industry.
- Does the company have significant experience in ALPR?
 - PIPS Technology is the world leader of ALPR (IMS Research, 2006), and has been designing and manufacturing ALPR solutions for over 15 years.
- How many cameras have been deployed by PIPS?
 - PIPS has over 13,000 fixed and mobile cameras solutions installed around the world.
 - PIPS provides not only cameras but OCR engines, mobile and fixed software, and a robust back office server platform that allows you to quickly scale to support your needs.
- How long has the company been serving the public safety market?
 - Federal Signal has been addressing the needs of the public safety market for over 100 years. PIPS is responsible for many of the world's largest deployments of ALPR.
- What is the financial viability of the company...will they be around in 10 years to provide support?
 - Federal Signal is a \$1.3 billion publicly traded company (NYSE: FSS) with over 5,000 worldwide employees.
- Does the company provide a thorough and diverse list of references that will speak to their satisfaction with the product, the service, and the results?
 - Federal Signal is widely known to be one of the most trusted names in public safety, and can provide a list of references that is unmatched by any other company.
 - Likewise, PIPS Technology is the clear leader in ALPR and maintains a very broad base of satisfied customers including such landmark law enforcement agencies as the Los Angeles County Sheriff's Department, Los Angeles Police Department, Las Vegas Police Department, Phoenix Police Department, Seattle Police Department, San Antonio Police Department, California Highway Patrol, Chicago Police Department, Cincinnati Police Department, City of London, Warsaw Police, Equita, IIS, as well as hundreds of other agencies and customers of all types and sizes. For more information please visit our public safety systems news and information site at:
<http://www.fspublicsafety.com/index.php?/news/>
- Does the company maintain design and manufacturing control for all components of the solution?

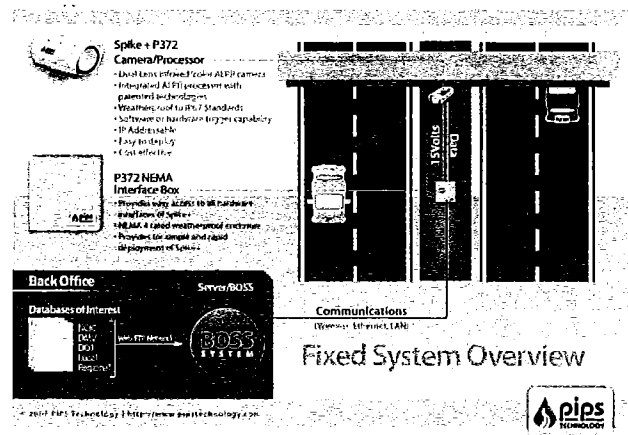
- PIPS Technology designs and manufactures all components of its solution including cameras, processors, optical character recognition engines, and software applications.
- Does the company offer various optical character recognition (OCR) engines for specific states and regions, and does it have dedicated resources to update and maintain its OCR engines for optimal performance?
 - Federal Signal PIPS maintains a staff of experienced and dedicated OCR engineers to respond to the frequent changes seen in license plates within the North American, UK, and other world-wide markets.
- What patented technologies does the company provide you with, to insure you are receiving the most technologically advanced and best performing product?
 - Federal Signal PIPS has long been a pioneer in the ALPR market, and holds numerous patents. One of the more noted patents includes Platefinder, a technology that minimizes false triggers seen by other systems by triggering the camera upon the presence of a license plate as indicated by the size, dimensions and reflective properties typical of a plate. Another powerful patented technology from PIPS is TripleFlash; TripleFlash takes multiple images of every plate varying the settings on the camera with each image capture. Using a sophisticated algorithm, the system determines the best image for OCR processing and discards the others. TripleFlash compensates for changes in ambient light, varying plate conditions, and other factors that may otherwise degrade the performance seen with other systems.

Data Considerations

While concern is taken to minimize bandwidth and storage usage, ALPR systems can produce large amounts of data very quickly...especially in a public safety setting where the data is typically retained for investigative purposes. How much and how quickly depends on several variables including the data retention policy of the agency or governing legislative body, the scope of the system, and the configuration of the cameras relative to what data is being retained (license plate text only, full data set, or something in between).

Many legislative bodies will have data retention policies regarding any information collected that may be used for photographic evidence. This will often define how long an agency retains the data, and also how that data is retained (within the server application itself or on external storage). For agencies that do not have a legislative body governing this, it is common to see the data retained for 60-90 days with hits being retained for a longer period.

A rule of thumb to estimate ALPR data storage requirements is that 100,000 vehicle records equals 1GB of data.



Summary and Next Steps

Automated License Plate Recognition (ALPR) is growing in acceptance around the world, due to improved performance characteristics and recognition of the benefits provided. The technologies help increase your collective ability to protect people, property, and the environment and at the same time can help generate revenue for your city, county, state, and local government entities.

The PIPS ALPR solutions are industry leading and are part of the overall Federal Signal public safety systems "industry platform" that integrates and works well with your existing technologies and processes. Designed for robustness, longevity, and the best accuracy rate in the industry, PIPS is here to help you today and tomorrow.

For more information please visit us at <http://www.federalsignal.com/publicsafety> or at <http://www.pipstechnology.com> You may also call us at anytime at: 1.800.548.7229





Looking ahead at grants for 2010

By Margaret Stark, Professional Grant Writer

Let's take a look ahead at the grant funding for fiscal year 2010. It is very possible that we will not see money in a recovery act program such as we did in 2009 although there have been rumors that one may pop up. On that front, we will just have to wait and see.

What can we expect to see?

These are the programs under the Department of Justice which I will attempt to explain and give you an idea of the funding level.

- Edward Byrne Memorial Justice Assistance Formula Grant (JAG)
 - Proposed funding level 510 to 529 million.
 - This is a formula grant and is divided 40% to specific cities and counties based on a formula and 60% to states for a pass through.

How does this work?

Cities and counties that will receive the 40% will be on the list when the Byrne JAG funding is announced. The 60% that will go to the state and will be administered by the SAA (State Administering Agencies). About 85% of this will be distributed to the cities and counties. Each state will have different opening dates and guidelines.

Contact your SAA for more information at <http://www.ojp.usdoj.gov/saa/index.htm>.

- Edward Byrne Memorial Discretionary Grants Program: This program is mostly earmarks.
- Edward Byrne Competitive Grant: Proposed funding level 30 to 40 million.
- Indian Country: Proposed funding level 30 to 47 million
- COPS Technology: This program is all earmarks.
- Other programs that fall under this funding can be found at:
<http://www.ojp.usdoj.gov/BJA/funding/FY09SolSum.pdf> and
http://www.ojp.usdoj.gov/BJA/programs/law_enf.html

Total funding that we can expect in the Department of Justice grants is between 896 and 966 million dollars for 2010. To see the current funding opportunities as they open in the coming year for BJA visit <http://www.ojp.usdoj.gov/BJA/funding/current-opp.html> and for OJP visit <http://www.ojp.usdoj.gov/funding/solicitations.htm> or just watch for the emails that TASER will be sending to help keep you informed.

Homeland Security is expected to be funded at 3.3 to 3.5 billion in 2010. These grants are administered by SAA as well but the Homeland Security SAA is different from the DOJ list. You can find this list at: http://www.ojp.usdoj.gov/odp/contact_state.htm.



What you need to know:

- Grants are most times political in nature.
- You will need to understand how your project fits federal, state, and regional priorities.
- You will need to know your state plans
- You should develop a relationship with your SAA both DOJ and DHS.
- Think in terms of regional projects and coordination, incorporate other agencies in your projects.
- Know your risk, needs, and identify how your project will address your agency, your community, and other first responders in your region.
- Be able to demonstrate fiscal control and accountability.

As we move forward into the new funding cycle ELSAG will make every attempt to keep you informed when these grants open and what you will need to do to apply. Remember that most funding will come through your state SAA so begin building those relationships now. You can also request to be placed on a list to be notified when grants open within your state.

This is a lot of information if you follow each link and for some may prove to be a bit confusing. ELSAG has a grant consultant available through www.PoliceGrantsHelp.com to assist you and try to make this process much easier.

NASPO Participating Addendum Information

These contracts were bid in conjunction with the National Association of State Procurement Officials (NASPO) and are open to any State, and its eligible entities, in the continental United States that wishes to participate.

States wanting to participate in these contracts should fill out and sign the attached Intent to Contract form. Copies of the completed form should be sent to NYS OGS contract officer as listed on the form.

The Participating Addendum form is to be used by the participating States and sent to those contractors under these awards with whom they wish to contract. States may add their own additional terms and conditions as an attachment or in the space provided on the form if it is required. Once completed, a copy of this form should be sent to the NYS OGS contract officer listed on the form.

The following table lists the States that have presently submitted an Intent to Participate and the State contact person for that State.

Last updated: February 25, 2009

<i>State</i>	<i>Contact Person</i>	<i>Email</i>
Alaska	Jason Soza	Jason_soza@admin.state.ak.us
Arizona	Adam Williams	Adam.williams@azdoa.gov
Arkansas	Robin Rogers	Robin.rogers@dfa.state.ar.us
California	Cynthia Okoroike	Cynthia.Okoroike@dgs.ca.gov
Florida	Smith, Donna	Donna.smith@dms.myflorida.com
Georgia	Matt Taylor	Mtaylor@doas.ga.gov
Idaho	Richard Vogel	Dick.vogel@adm.idaho.gov
Louisiana	Denise Lea	Denise.lea@la.gov
Maryland	Mike Haifley	
Massachusetts	Robert Irvine	Robert.Irvine@state.ma.us
Maine	Betty Lamoreau	Betty.m.lamoreau@maine.gov
Minnesota	Linda Parkos	Linda.parkos@state.mn.us
<i>New York State- lead state</i>	<i>Sue Wolslegel</i>	<i>Susan.wolslegel@ogs.state.ny.us</i>
Oklahoma	Lee Johnson	Lee_johnson@dcs.state.ok.us
Oregon	Tim Jenks	Tim.jenks@state.or.us
South Dakota	Steven Berg	Steven.berg@state.sd.us
Tennessee/Shelby County	Nelson Fowler	Nelson.fowler@shelbycountyttn.gov
Virginia	Frances Finch	Fran.finch@dgs.virginia.gov

National Association of State Procurement Officials/NYS Cooperative Purchase

HAZARDOUS INCIDENT RESPONSE EQUIPMENT
NYS/NASPO Cooperative contract
Group 38232, Award 19745

INTENT TO CONTRACT

I. PURPOSE:

The purpose of this Agreement is to provide the Participating States in the NASPO Procurement Cooperative with the opportunity to participate in multi-state cooperative contracts. The Intent to Contract identifies the NASPO parties who intend to order from each contract and defines the nature of the commitment from each party.

A cooperative procurement of Hazardous Incident Response Equipment (HIRE) is considered in the best interests of NASPO and the Participating States because:

1. Access to broad-based catalog contracts for Hazardous Incident Response Equipment (HIRE) is a requirement of all NASPO States to enable them to meet anticipated requirements for domestic preparedness equipment in a timely manner.
2. All States have a need for centralized reporting of ordering volume, to enable better management of these types of supplies
3. National distribution chains exist which are compatible with these objectives
4. NASPO expects that a centrally procured and administered contract will reduce pricing for domestic preparedness equipment and achieve better efficiencies in ordering.
5. The solicitation and contract is structured to accommodate any Participating States' localized requirements concerning availability of supplies in their geographical areas

II. EFFECTIVE DATES OF THIS INTENT TO CONTRACT

This agreement shall remain in effect until the term of the contract, established in Section IV of this document, has ended or has been terminated for cause.

III. SCOPE OF THE CONTRACT

Scope Description. The State of NY is authorized by agreement of the participants to act as the Lead State in developing this multi-state cooperative contract for the following commodities or items: *Hazardous Incident Response Equipment*. This contract will be permissive and provide access to the successful vendors' product lines.

Permissive or Mandatory: Permissive contracts.

Administrative Fee

An administrative fee of one-half of one percent (0.5%) will be assessed centrally for purchases under the contract. NYS will receive 0.5% of the sales to NYS. NASPO will receive 0.5% of the sales to all other participating States for administration of the procurement and resulting contracts.

IV. TERM OF THE CONTRACT

The initial contract will be established for five (5) years to May 31, 2010, with the option of two (2) and one (1) year extensions.

V. SOLICITATION AND CONTRACT DEVELOPMENT/ADDITIONAL INFORMATION

Solicitation and contract development has been accomplished in compliance with the NASPO Memorandum of Agreement, incorporated herein by reference.

Solicitation Publication Period

Bidders/offerors were given from January 16- date of bid publication- to March 29 to submit bid offering.

Solicitation Type and Evaluation Criteria

This bid is being evaluated based on:

1. Discount percentage offered
2. Reasonableness of price
3. Delivery time.
4. Existing sales to government entities of \$300,000/yr.
5. Product offered

Award(s): The solicitation permits multiple awards. Multiple awards made by Participating States for use in their regions will be administered by the Participating State

Additional Requested Information

We request each NASPO member, desiring to participate in this contract award, provide the following information along with this Intent to Contract:

1. Any known limitations on their State's ability to order commodities, such as those limitations that may arise because of the existence of mandatory price agreements.
2. The State-specific terms and conditions that will govern orders placed within the Participating State, or other significant terms and conditions that may be required on the Participating Addendum.
3. A draft participating addendum will be supplied to participating states. States requiring addition of significant terms and conditions to those already accepted by the contractors should attach them and submit to each contractor for signature. If no additional terms are needed Participating States should have the document signed by the contractors under the resulting awards. A copy of the signed agreement should be sent to the Lead State for their records

VI. PARTIES TO THIS AGREEMENT

The parties to this Agreement have affixed their signatures below in witness and in execution of this Intent to Contract, this _____ day of _____, 2005.

Printed Name and Title

Signature

State

Contact information- please list information for State contact that will interface for NYS regarding any contract issues.

State:	
Name:	
Phone number:	
Fax number:	
Email:	
Mailing address:	

For questions or comment please contact:

*Susan Wolslegel
NYS OGS Procurement Services
38th floor, Tower
Empire State Plaza
Albany, New York 12242
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Phone 518 473-9441 (voice)
E-mail susan.wolslegel@ogs.state.ny.us.*