ENHANCE OFFICER SAFETY. IMPROVE INTELLIGENCE CAPABILITIES.

AUTOMATIC LICENSE PLATE RECOGNITION

A police cruiser rolls down the road, the officers inside heading back to headquarters at the end of their shift. It's nearly 3 AM, traffic is light, and what few cars they pass are traveling at the speed limit: 65 mph. A blue car zips by them in the opposite direction, no faster than the others — yet a few minutes later, the officers pull the car over. The driver owes thousands of dollars for parking violations. How was he caught by tired officers, on a dark road, the cars passing each other at 130 mph? He wasn't.

Protecting the public is a challenge in the best of times. These days, with limited budgets and ever-present security concerns, the task grows more difficult every day. What if there was a way to increase patrol effectiveness and boost intelligence gathering capabilities, without increasing headcount? What if you could find more stolen vehicles, track felons and drug dealers, and recover revenue from deadbeat violators, all while freeing

personnel from a time-consuming, tedious task? That's the promise — and reality — of Automatic License Plate Recognition (ALPR) from Motorola and PIPS Technology.

AN ALPR SYSTEM FROM MOTOROLA AND PIPS TECHNOLOGY DELIVERS KEY CAPABILITES

- In moving traffic, it can automatically photograph a vehicle and zero in on its license plate. The photographed license plate can then be read in real time. This process is silent and fully automatic, requiring no interaction from the officer in the car.

- In response to a match, the system can raise an alert, showing a photo of the vehicle and license plate, and displaying why it's of interest. If Motorola PremierOne™ Mobile software is installed, the system will automatically perform a detailed records search. Or, it can silently record the time and location of the match, for later review.

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- At the command center, plate identification data can be mined and analyzed for patterns, giving investigators a powerful intelligence-gathering and crime-fighting tool.

ALPR ON THE STREET

In a single shift, an officer can manually check 50 to 100 license plates. During the same shift, an ALPR system can check 8,000 plates or more. Not surprisingly, police are the most enthusiastic adopters of ALPR technology, and the technology has been put to many uses by law enforcement:

Combating auto theft. When police in Long Beach, California, installed four ALPR systems, in six months they identified 929 lost or stolen license plates, recovered 275 stolen vehicles and made 50 arrests. Without ALPR, a stolen vehicle has to be found by chance, or the thief has to do something that arouses an officer's suspicion. With ALPR, the stolen vehicle only has to pass a police cruiser; if the plate number is in the database, the system will let the officer know. The system will also inform the officer if the driver is known to be armed and dangerous, so the officer can choose to pursue discreetly rather than pull the suspect over immediately. Considering how often stolen cars are involved in other serious crimes, ALPR can be an invaluable tool.

Collecting revenue from ticket scofflaws. Long Beach police used two ALPR-equipped vehicles to search for parking scofflaws. In 30 days, they located and impounded more than 300 vehicles — collecting over $200,000 in delinquent fines and impound fees[1].

A study done for the City of Seattle showed that parking ticket collection rates across municipalities vary from 71% to 87%, with 80% being the median[2] — that's a million dollars or more of uncollected revenue in each city. Searching for parking ticket violators isn't the most productive use of an

officer's time so locating serial violators has been left to chance: the officer would have to find the car as part of a routine plate check or another traffic stop.

With an ALPR system, the police vehicle only has to pass the violator — whether parked or in traffic — and ALPR will alert the officer. A quick drive through a large parking lot will often locate several serial violators whose cars can be towed or clamped until the fines are paid. The end result is fewer scofflaws getting away with nonpayment of fines.

Monitoring known felons and other persons of interest. Besides alerting the officer when he passes a vehicle of interest, an ALPR system equipped with GPS can quietly note the time and location the vehicle was passed. This data is loaded into Back Office System Software (BOSS®) and mined and cross referenced to keep tabs on known drug dealers, terrorist suspects, organized crime figures or crime patterns.

Reducing claims of profiling. The ALPR system reads and checks all license plates, regardless of the car or driver. By eliminating the officer from the process of checking license plates, the system reduces the risk of profiling claims.

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[1] Beery, Craig. "Busted... At the Speed of Light." **Law Officer**, Vol. 4, Issue 1. January 1, 2008.

[2] Howe, Robin and Susan Cohen, **Parking Fine Collection Internal Controls Review (Job Design Conclusions),** City of Seattle, September 21, 2005. Appendix 3, p. 11.

A LEADING-EDGE ALPR SOLUTION

An ALPR system must be able to locate license plates in a variety of environments, photograph the plates at highway speeds and despite weather conditions, convert the photo into a license number, and make a decision as to whether to alert the officer, record the encounter, or disregard the information – in seconds. This requires top-grade photographic and processing hardware.

Motorola and PIPS Technology have worked together to create a leading-edge ALPR solution with unparalleled power, intelligence, and flexibility.

Slate™ Cameras. It is a mistake to think that cameras suited for video surveillance can also be used for ALPR. An ALPR camera needs to have the shutter speed and sensitivity to permit use in low light and poor visibility, while at the same time be able to react to ever-changing light conditions as the police vehicle is moving. The camera needs to capture video in full color as well as infrared, virtually simultaneously. Because it rides on the outside of a police vehicle, the camera needs to be protected from the elements, vehicle vibration and shock. Slate cameras will not only handle the optics and capture, but also provide some data processing, ensuring a higher-quality capture and lessening the load on the workstation in the vehicle. Their low profile also allows Slate cameras to blend in discreetly and not interfere with the light bar.

PAGIS® In-Vehicle Software. The best cameras in the world will be of no use if the information they capture is not properly recorded, analyzed and able to be acted on. ALPR software needs to convert license plate photographs into alphanumeric license plate numbers, accurately and instantaneously. Accuracy is key: missed hits – or worse yet, false positives – will cause officers to ignore alarms. Finally, a system's user interface should be designed with a busy officer in mind; PAGIS software is unobtrusive during routine patrol, only sounding an alarm when action is needed. Customizable color codes reinforce alarm descriptions: a different color can be used for a parking scofflaw vs. a stolen vehicle or carjacker, making it easy to make the correct decision in seconds.

Back Office System Server (BOSS®) Software. ALPR systems can generate vast amounts of data: database hits GPS coordinates, time of day, photographs, plate numbers, and more. Back at headquarters, BOSS turns this data into useful intelligence. BOSS is designed to enable law enforcement agencies to organize and archive data collected from multiple mobile and fixed site ALPR deployments. Users can query the data using multiple search parameters including time, date, full or partial plate, location and user. BOSS can also map all locations related to a single plate to track vehicle movements. The BOSS Web interface allows data to be easily shared across multiple locations and agencies.
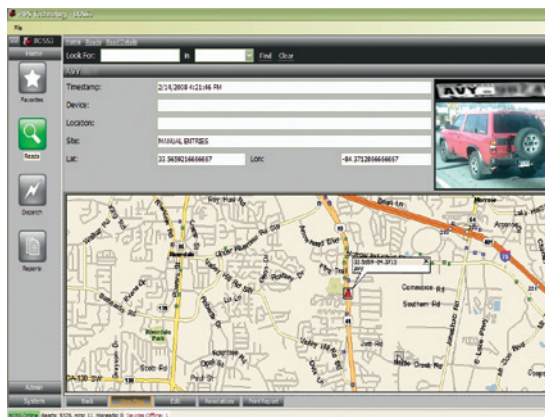
MW810 Mobile Workstation R2.0. A powerful, flexible mobile workstation is one of the distinguishing characteristics of Motorola's ALPR solution. The Motorola MW810 Mobile Workstation is designed for mission-critical vehicles and optimized for ALPR. The MW810 natively supports* up to four digital Slate cameras, eliminating the need for a dedicated ALPR processor — which saves on trunk space, hardware, wiring, and labor cost. The MW810 Mobile Workstation is fully ruggedized against heat, cold, water, dust, shock and vibration — hazards encountered every day by computers on the road — so it will keep working in the harshest of conditions. The standard touch screen makes it easy to interact with PAGIS software without using the mouse pad.

The MW810 is a complete mobile workstation, combining outstanding ALPR support with best-of-breed MDT attributes. By installing it in your vehicle, you do more than provide the best possible in-vehicle support for your ALPR system: you also invest in a powerful, flexible, scalable, and expandable computing platform that can be customized to fit all of your mobile computing needs.

Built without the space and battery-life compromises inherent in laptop design, the MW810 not only has a powerful processor and plenty of RAM — it also supports

MW810 AND ALPR

- Lower hardware, wiring, labor costs
- Top-quality integrated MDT+ALPR solution
- Dedicated preprocessor for optimal MDT performance
- Smaller footprint

a wide variety of configurations, including the addition of a second monitor, mounting the CPU in the trunk to save space, GPS and Dead-Reckoning GPS, Smart Card support, and displays that remain clear and bright even under intense sunlight.

The MW810 also offers many communications options — including Public Safety LTE, broadband cellular, Wi-Fi™, and Bluetooth® — with optional software that makes transitions between networks smooth and transparent. This not only allows more frequent ALPR database updates, but turns your MW810 Mobile Workstation into a mobile data communications center, able to transmit and receive anything from a text bulletin to streaming video. After all, when it comes to wireless connectivity, you expect nothing less from Motorola.

*Optional configuration

For more information, contact your Motorola representative
or visit **motorola.com/ALPR**.

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