

Innovative Uses of Automated License Plate Readers to Enhance Criminal Investigations

Assistant Police Chief Travis Martinez | Redlands Police Department | June 2019

Introduction

With the vast majority of crimes involving the use of motor vehicles, law enforcement agencies nationwide use Automated License Plate Readers (ALPRs) as critical crime-fighting tools for tracking, identifying, and investigating criminal suspects. In the Inland Empire region, which is located approximately 60 miles east of Los Angeles, the technology has proven to be instrumental in helping to develop leads and solve a wide variety of crimes. Several police agencies in the area have found the analysis of ALPR data to be an essential investigative tool. Investigators can maximize their use of ALPR data by having a firm understanding of the technology's capabilities.

Understanding ALPRs

ALPR systems use cameras, either in fixed locations or mounted on vehicles such as police units or mobile trailers, to capture license plate numbers and store them in databases which investigators can access to: analyze the data during their investigations, generate leads, determine the truthfulness of suspects, and provide crucial evidence to the prosecution. ALPR cameras are deployed by law enforcement agencies at strategic locations and commercially by way of tollbooths, tow truck drivers for asset recovery, and other businesses that have a need to capture license plate information. However, only authorized law enforcement agencies can access the data for criminal investigations.

Each license plate scan from an ALPR camera captures an infrared image of the license plate number, a color-image of the vehicle, and its GPS coordinates. The ALPR camera then places a date and time stamp on the image (Hosseini). To maximize their potential to capture data, some cities have strategically placed ALPR cameras to cover the primary ingress and egress points of the city. Often, witnesses to a crime obtain only a partial license plate number. Investigators can search the ALPR database using the partial license plate number and obtain any hits of that plate entering or leaving the city during specific time frames. Since all ALPR cameras capture a photograph of the corresponding vehicle, investigators can

immediately determine the full license plate number of the suspect's vehicle and show the witness or victim an image of the exact vehicle to determine if they have the correct vehicle. For example, investigators investigating a residential burglary located a witness who obtained a partial license plate number and described the vehicle as an older, dark-colored Honda. After plugging the partial license plate number into the ALPR database, investigators quickly learned the full plate and were able to show the witness multiple images of the vehicle. The witness was able to positively identify the vehicle, which allowed investigators to focus on who was driving the vehicle.

Previously, at the scene of a violent crime, investigators often wrote down the license plate numbers of all vehicles in the area. Now, investigators can use a police vehicle with a mounted ALPR to capture license plate number information. Investigators can then analyze all of the data when conducting post-investigative work on the crime.

In some instances, witnesses have supplied investigators with what they believe was the exact license plate number of the suspect's vehicle, along with the make and model of the vehicle. But when first responders queried the license plate number in the law enforcement vehicle registration database, they immediately determined that the supplied license plate number was for a vehicle with a different make and model than the one the witness provided. In situations like this, the officer can search the ALPR database and if a match is made, the officer can compare the color of the vehicle to the color the witness provided. If the colors do not match, the officer can reasonably suspect that the plate provided by the witness may be off by a few digits. The officer can then search the ALPR database in an effort to discover near misses to the originally supplied license plate number. If a match is made to a near miss, the officer can corroborate the color with the victim to see if the lead is valid.

Producing Leads

ALPRs also have the capability to instantaneously cross reference data captured by an ALPR to license plate numbers that have been entered into state law enforcement databases as stolen, related to a missing person, or as part of a felony crime investigation. Many law enforcement agencies have made arrests of people driving stolen vehicles immediately after receiving an alert supplied by an ALPR camera capturing the license plate number of the stolen vehicle. Often, the arresting investigators have located other stolen property in the car taken from a separate burglary. On some occasions, first responders have even located burglary tools in the vehicle, indicating that the occupants may have been on their way to commit a burglary. In these cases, ALPRs have connected law enforcement to individuals with the intent of committing a crime. This often leads to investigators clearing cases and solving crimes.

On December 2, 2015, for example, the day two terrorists killed 14 people at an office Christmas party in San Bernardino, Redlands Police Department dispatchers were notified of an ALPR alert of a stolen vehicle that was traveling southbound on a roadway into the city. They received the alert only minutes before investigators in Redlands intercepted the terrorists as they traveled in their black SUV. Coincidentally, Redlands units spotted the stolen vehicle, and a high-speed car chase ensued, leading investigators to the same area where the terrorists also had travelled and ultimately engaged in an exchange of gunfire with law enforcement. Thus, investigators who came to the area initially in pursuit of a stolen car were fortuitously on hand to assist the investigators who were engaging the terrorists.

Facilitating Crime Scene Analysis

The ALPR system gives investigators the capability of being alerted when a license plate number is captured by an ALPR using the National Vehicle Locator System (NVLS). The NVLS is managed by a private company that stores all ALPR data captured by both government and commercial cameras.

The data stored in the NVLS is routinely used by law enforcement across the nation to develop investigative leads and locate suspects.

For example, when witnesses obtained a license plate number of a vehicle driven by several residential robbery suspects, investigators quickly placed the license plate number into the NVLS, and within a few hours investigators received an alert that the vehicle was parked at a mall in Ontario, California. A tow truck equipped with an ALPR had captured the license plate number.

Authorities responded to the mall's location, set up surveillance on the car, and detained four suspects as they entered the vehicle. Investigators were able to recover several pieces of stolen property and clear multiple residential burglaries.

In another case, this one involving a shooting, gang investigators placed the suspect's vehicle license plate number into the NVLS. The next day, they received an alert that the license plate number had been captured by a fixed ALPR. Investigators saturated the neighborhood and within minutes located the vehicle as it was traveling through the area. They were able to stop the vehicle, collect crucial evidence, and make an arrest. Before the advent of ALPRs, investigators had to wait for a fellow law enforcement officer to spot the vehicle, which often took days if not months. Now, ALPRs put hundreds of digital eyes virtually scanning thousands of license plate numbers on the lookout for vehicles that have been identified as being involved in crime.

Identifying Suspects

In some instances, investigators and crime analysts have been able to use ALPR-collected data to identify the driving patterns of a suspect vehicle. For example, when investigators obtained the license plate number of a vehicle that had been associated with a number of armed robberies, they then determined that the vehicle was registered to an adult female, though the robberies were being committed by three males. After conducting a comprehensive analysis of the ALPR database, investigators clearly saw a pattern that indicated the vehicle drove a specific route at a specific time of day. Investigators then contacted the corresponding law enforcement agency to coordinate saturation of the area so that an officer could develop probable cause to stop. Ultimately, the intelligence obtained from the traffic stop led to identification of the three robbery suspects.

Investigators can utilize the ALPR system to generate leads in a series of crimes by analyzing the data to determine if there is a common license plate number being captured in the area at the time the crimes are committed. This investigative technique is similar to that of a cell phone tower dump. For example, during the summer of 2017, multiple fires broke out over the course of several weeks in the foothills of the San Bernardino Mountains. The fires all appeared to have been started in the same manner by an arsonist. Authorities deployed a mobile trailer equipped with ALPRs at strategic points in the foothills. As the fires continued, arson investigators combed the ALPR database and determined that a white Ford Ranger truck had been in the area of each fire. As investigators were obtaining an arrest warrant for the suspect, another fire broke out. Law enforcement investigators in the area were alerted to the white truck, and as investigators converged on the area, they located the truck fleeing the scene. Upon conducting a traffic

stop of the vehicle, investigators were able to collect evidence linking the driver to all eight fires.

Facilitating Interrogation

A key component in conducting an effective interrogation is the ability to determine the truthfulness of a suspect — a process greatly enhanced if the detective can conduct research prior to the start of the interview. For example, if a detective can access data from the ALPR system prior to interviewing the suspect, the investigator can use his knowledge of where a vehicle was located to build his or her questioning and determine the suspect's honesty by comparing the suspect's responses to the ALPR data. The ALPR-collected data arms the detective with information and evidence that can be used to confront the suspect, and when the suspect learns that he/she has been caught in a lie and that the detective can show evidence, the suspect is more likely to begin telling the truth. As law enforcement agencies nationwide seek to become more effective in investigating crime, new strategies and innovative technologies such as ALPRs will be identified as a force multiplier when it comes to generating leads, determining the truthfulness of suspects, and providing crucial evidence to the prosecution. ALPR-collected data is proving its value daily both as a complement to existing investigative tools and techniques and as a crime-solving tool in its own right. International Association of Chiefs of Police,

About the Author

Travis Martinez is currently an Assistant Chief of Police with the Redlands Police Department (RPD). Assistant Chief Martinez oversaw the daily operations of the Investigations Bureau for several years where he gained extensive experience using ALPRs to help solve crime and assist in investigations. A true innovator in the field of policing, he also developed a creative and affordable strategy using GPS technology to address crime trends occurring in the community. RPD experienced immediate results with arrests for crimes such as vehicle burglary, armed robbery, and commercial burglary using this strategy.

Assistant Chief Martinez holds a Master's Degree in Public Administration and has presented at several international, national, and state conferences on how to address crime trends utilizing GPS tracking devices. He has also taught POST-approved classes on the topic in several states.

Assistant Chief Martinez created the While You're Away program, which was highlighted in the February 2014 COPS Community Policing E-Newsletter and is now being replicated by other police departments throughout the United States. Throughout his career he has received numerous awards including being named the 2012 City of Redlands Safety Manager of the Year. For its efforts in helping the community address crime trends, the Redlands Police Department received the RISE Award as the 2015 Law Enforcement Agency of the Year at the International Association of Chiefs of Police Conference.

References

1. International Association of Chiefs of Police, <https://www.theiacp.org/beyond-the-license-plate-award>.
2. Hosseini, Raheem, Cops' License Plate Readers Keep Their Eye on You, Sacramento, <https://www.newsreview.com/sacramento/cops-license-plate-readers-keeptheir/content?oid=20556765>; April 7, 2016.

Funded by BJA, the National Resource and Technical Assistance Center for Improving Law Enforcement Investigations (NRTAC) provides training and technical assistance (TTA) and resources related to conducting high-quality investigations, as well as developing Crime Gun Intelligence Centers. TTA can include homicide unit assessments, trainings on topics such as case management and evidence recovery, webinars, as well as the facilitation of peer to peer learning opportunities across departments. Subject matter experts (SMEs) deliver TTA to meet the investigative needs of local law enforcement, prosecutors, and public safety agencies.

To request TTA or other resources, agency POCs should fill out an online request form on either project website, or contact the Police Foundation at TTA@policefoundation.org or by phone at 202-833-1460.

Project Websites
centerforimprovinginvestigations.org
crimegunintelcenters.org



NATIONAL RESOURCE & TECHNICAL ASSISTANCE CENTER
FOR IMPROVING LAW ENFORCEMENT INVESTIGATIONS



BJA
Bureau of Justice Assistance
U.S. Department of Justice

P
NATIONAL
POLICE
FOUNDATION

This publication is funded through a grant from the Bureau of Justice Assistance, Office of Justice Programs, U.S. Department of Justice. Neither the U.S. Department of Justice nor any of its components operate, control, are responsible for, or necessarily endorse, this publication (including, without limitation, its content, and policies, and any services or tools provided). This project was supported by Grant No. 2016-MU-BX-K005 awarded by the Bureau of Justice Assistance.