Mobile License Plate Recognition: Technology Serving Police Forces Worldwide

Every 26 seconds a motorized vehicle is stolen in the United States. In France, car theft accounts for two thirds of all criminal offences. Worldwide, vehicle theft has become a crime pandemic leading to ever-increasing insurance fees for owners and placing a heavy burden on law enforcement agencies. Unfortunately, only one in three vehicles is returned to its rightful owner in France, and only 13% of car thefts lead to arrests in the US. These statistics indicate that police forces are simply not equipped with the necessary tools to deal with this quagmire. Fortunately, new technologies such as the automatic recognition of license plates empower police officers to effectively combat car theft. AutoVu Mobile, Genetec’s in-vehicle license plate recognition solution, has revolutionized the search for stolen cars by accurately recognizing license plates of parked and in-motion vehicles as police officers patrol streets and highways in their cruisers.

Most police agencies today maintain accurate lists of stolen vehicles, yet lack the necessary time or resources to pace up and down roads, parking lots and highways in search of stolen cars. In addition, the high numbers of vehicles registered in these databases makes the task of finding stolen cars extremely arduous, if not impossible. With mobile license plate recognition technology, stolen vehicles can be identified automatically while officers conduct their routine patrols. The solution, comprising of two cameras mounted on a police cruiser’s roof and a sophisticated software that detects license plates of vehicles surrounding the police cruiser. These plate reads are then compared with a hotlist of stolen vehicles, which can be updated to the vehicle before every shift or in real-time using wireless networks. When a plate belonging to a stolen car is recognized an alarm is triggered, alerting the officer, who then proceeds to confirm that the identified plate does indeed correspond to the automobile registered in the stolen vehicle database.
The capability of accurately identifying license plates of both parked and moving cars is made possible by the use of high-resolution infrared cameras as well as refined character recognition algorithms. Genetec’s AutoVu Mobile solution identifies moving vehicles at differential speeds of up to 225 km/h (140 mp/h). These powerful LPR capabilities allow police officers to detect cars on a highway driving in the opposite direction of the cruiser (given plates are located on both the front and rear of passing vehicles). Furthermore, at top speed, Genetec’s AutoVu Mobile solution can recognize simultaneously and with great accuracy license plates of vehicles located on 4 separate lanes (two lanes on each side of the cruiser), thus allowing for the detection of stolen vehicles on most highways. AutoVu Mobile can even capture plates of vehicles parallel parked at between 45 and 90 degree angles, enabling the identification of stolen cars in parking lots, including those at airports, a favorite cool-down location for car thieves.

With the aid of real-time global positioning technologies (GPS), license plate recognition solutions can indicate exact vehicle locations. This GPS data can be used to facilitate the towing of recovered vehicles once an arrest is made. This data can also allow investigators to track a stolen vehicle throughout a city, providing insight into thieves behavioral patterns. Mining GPS data over time can also aid investigators in determining theft patterns, such as cars stolen in region X are predominately found later in region Y. With these powerful capabilities, finding stolen cars becomes little more than child’s play.

As police vehicles are a demanding environment, Genetec’s AutoVu Mobile solutions are designed and built to withstand any condition, yet be easy to operate by the police officer. For example, the hardware comprising the solution is industrial grade, capable of withstanding extreme vibration and heat. To reduce the system’s in-vehicle physical footprint, the interface software can operate on a standard police Mobile Data Computer (MDC). For ease of use by the officer, the system is equipped with a touch screen and user friendly software interface.

Results from Genetec’s AutoVu Mobile license plate recognition technology speak to the technology’s impressive effectiveness. In Toronto, AutoVu Mobile was installed aboard 4 police cruisers leading to the recovery of 1730 stolen cars in 2005, an average of 430 vehicles per cruiser equipped with the system. If all police vehicles were equipped with this technology the recovery rate of stolen automobiles would undoubtedly reach near 100% levels.
APPLICATION FOCUS

Mobile license plate recognition technologies such as AutoVu Mobile serve as an effective and accurate tool for police forces worldwide to retrieve stolen vehicles practically effortlessly. Although these systems do not directly prevent theft, they are a powerful weapon in the fight against crime. As such, AutoVu Mobile is a part of making all roadways and parking facilities more secure.