

Mobile Law Enforcement Automated License Plate Recognition (ALPR) System Specifications

Hardware Specifications

- The System must be comprised of self-illuminating Infrared (IR) cameras for effective license plate image capture in a variety of weather and lighting conditions.
- The Infrared (IR) Light Emitting Diodes (LEDs) must be "pulsed" to enhance license plate capture.
- All cameras must have a dual lens configuration in a single camera housing featuring both an Infrared (IR) lens for license plate capture and a color overview image of the vehicle.
- The integrated color and infrared LPR cameras must not emit any visible light from infrared illuminators.
- The System must have a "self trigger mode" to detect the presence of lawfully mounted vehicle license plates in the camera's Field of View (FOV)
- The cameras must be capable of producing multiple license plate images with varying Shutter and Gain Settings to ensure a high quality image regardless of weather or lighting conditions.
- The cameras must meet PAL Standards for video. NTSC Standards are not acceptable.
- The cameras must be capable of being permanently attached to the vehicle's emergency lightbar in a low profile manner to minimize impact on the lightbar system without drilling multiple holes or violating the integrity of the roof structure.
- These cameras should be attached to the light bar without interfering with visibility of the complete light bar.
- These cameras should be no larger in size than 1.65" height, 7.16" width and 3.54" depth.
- There must be no moving parts in any of the cameras.
- The cameras must have a fixed focal point or target distance from the camera to the vehicle license plates from a minimum of 8 feet to a maximum of 34 feet under a standard camera configuration.
- The ALPR Processor must be designed to be trunk mounted or similarly mounted and must incorporate an intelligent Power Supply Unit (PSU) that provides for a safe start and shut - down each time the vehicle's ignition is turned on and turned off.
- The ALPR Processor must control the electrical power source supplied to each of the cameras and provide video connection points for simplified System wiring.

- The ALPR Processor must have an operating input range of 10.5-16.5V DC at 90W.
- The ALPR Processor must be designed to meet the environmental conditions associated with a trunk-mounted unit under various temperature conditions.
- The System must provide for the simultaneous display of any two (2) cameras as selected by the User and configured by the System Administrator.
- The System must be capable of capturing license plates in any of the following modes: (a) an adjacent lane on either side of the police vehicle while driving through traffic and/or parking lots; (b) traffic in an adjacent lane while parked on the side or shoulder of a roadway; (c) any parking application from parallel to perpendicular parked car orientation with respect to the movement of the police vehicle and (d) an adjacent lane to capture the rear license plate of the vehicle as it passes the police unit or vice versa
- The camera configuration must be capable of switching from one monitoring mode to another via the software application by merely "pressing" the corresponding On-Screen Function Button.
- The System must provide effective license plate capture at night and in reduced light situations and total darkness with no external lighting required.
- The System must have the capability to capture a still image of importance at the officer's discretion using the color overview portion of the Camera.
- The System must have the capability to capture vehicle license plates at speeds up to 130 mph with license plate capture and read accuracy rates (referred to as "System Efficiency") in excess of 90%. **Bidder to provide independent test results from at least two North American law enforcement agencies verifying your accuracy claim.**
- When the System is configured to utilize an independent ALPR processor, the ALPR Processor and the cameras must be developed, manufactured and supported by the same vendor.
- All camera cabling and camera connectors must be manufactured or assembled by the vendor that provides the ALPR System and all of the required components.
- All camera mounting bracket systems must be fabricated specifically for the vendor's cameras and must be furnished by the vendor
- In addition to the camera mounting bracket systems that attach to the vehicle's emergency lightbar, the vendor must also provide camera-mounting bracket systems that can be installed on those police vehicles commonly referred to as "unmarked units" or those with no roof-mounted lightbar.
- In addition to camera mounting bracket systems for marked and unmarked police units, the vendor must also provide a magnetic mount that is made specifically for the cameras. The Magnetic Mount is designed to be used for temporary deployment of the System.

Software Specifications

- 3 • The application software must be capable of supporting multiple "hot list" databases.
- 3 • The System Administrator must have the capability to define the police department's database/s and assign a color code and priority level to each database to be used when a 'match' or a 'hit' occurs, i.e., stolen vehicles, stolen license plates, sexual predators, armed felon suspects, registered parolees, etc.
- 2 • The data file transfer must be accomplished by either of the following methods: Ethernet, USB or Wireless
- 2 • The application software (GUI application) that resides in the police unit must have the capability to provide for a User Name and Password as assigned by the System Administrator.
- 3 • The application software must be responsive in comparing a captured license plate against multiple and voluminous databases with less than a 1.5 second response to a query of a database/s containing up to 10,000,000 records.
- 2 • The System must have the feature that allows "hot list" databases to be created in the field by authorized users and the authorized users must have the capability to add license plate data to the system's database/s while in the field. All license plate data added by the authorized user will remain a part of the selected database until the database is 'overwritten' by the System Administrator or by a new or updated database/s.
- 2 • The System must provide a "Rules" Feature whereby the System Administrator can define license plate numbers and/or characters that can be interpreted in different variations or "rules."
- 2 • The vendor must provide variants of the Optical Character Recognition (OCR) Engine that are tailored/designed for a specific State or regional license plate population.
- 2 • As part of the vendor's system maintenance agreement with the customer, Optical Character Recognition (OCR) updates and/or revisions must be provided as determined by the vendor to address changes in the State's license plate population during the term of the maintenance agreement.
- 3 • The system must provide all of the following live, simultaneous video display of data for the two (2) cameras as selected by the User:
 - The IR License Plate Image
 - The license plate interpretation or system read
 - A corresponding color overview image of the vehicle displaying the captured IR license plate
 - The date and time the data was captured by the System
 - Identification of the Camera capturing the image
 - The GPS Coordinates for every license plate captured by the System

- 2. Even though the System must provide for the simultaneous display of two (2) Cameras as selected by the User, the System must also have the capability to be configured whereby up to all 4 Cameras are operating simultaneously and matching license plate data against the databases.
- 3. When the system identifies a "match" or a "hit" of the license plate, the following additional data must be displayed in a timely manner on the system's Hit Screen:
 - o The color coded database indicating the name or title of the database as assigned by the System Administrator where the "match" occurred
 - o All narrative text, if any, from the database where the "match" occurred
- 3. The Hit Screen must remain displayed until acknowledged by the officer, *and* while displayed, the system must continue to process license plate data in the background and all captured data must be stored in the System during this interval without any User intervention.
- 3. In the event that a subsequent "match or hit" should occur while the original Hit Screen is displayed to the officer, the System must alert the User that a second or subsequent "hit" occurred and the System is waiting for the (User's) officer's intervention.
- 2. The System must provide a touch screen feature to enlarge the vehicle's color overview image so that the User can examine it in order to gain additional information about the overview image or the verification of information.
- 2. The System must provide touch screen navigation capability for the police application GUI.
- 2. The System must provide the customer with the ability to integrate the GUI application to their existing Laptop Computer, MDT or MDC using Client – Server technology in order to minimize processor usage on their existing MDT or MDC so long as the MDT or MDC will support the Client-Server architecture.
- 3. The System must provide the System Administrator with the ability to customize audible alerts to differentiate between unique events within the software application.
- 2. The System must provide a visual alert for each defined event that displays in the foreground regardless of other applications in use at that time if the System's Client-Server Architecture is utilized.
- 3. The System must provide the officer with the capability to mark a license plate read as a "misread."
- 3. The System must provide the officer with the capability to manually enter a license plate for the purpose of searching that license plate against the System's database/s.
- 3. The System must provide the officer with the capability to review all of the following:
 - o "hits"
 - o license plate images and associated data
 - o license plate searches performed by the officer indicating the date and time the search was conducted
 - o pictures

- 3 • The System must provide the officer with the ability to query the GUI application in the police vehicle to determine if a particular license plate is currently stored in the System. If the license plate data is in the System, the officer must have the ability to review each license plate capture and the associated System data displayed on the GUI application Review Screen to include:
- The IR License Plate Image
 - The corresponding color overview image of the vehicle
 - The date and time the image was captured and
 - The GPS coordinates or the captured data

Administration and Data Mining/Management Specifications

- As part of the overall System and functionality, a customized back – office software application must be provided by the vendor so the customer can manage all the data collected by each individual police unit, manage the database functions, provide reporting data and manage the user administration functions.
- **The back office software must be based on Microsoft's Sequel Server database software.**
- The System must provide the ability to assign priorities to the various databases utilized by each police agency.
- The System must provide the System Administrator with the ability to import national and local databases.
- The System must provide application security via a User Name and Password for each User as determined by the System Administrator.
- The System must provide the System Administrator with the ability to determine System user access levels based upon user responsibilities.
- The System must provide remote web access to stored data for analysis and reporting.
- The System must provide the ability to perform a full or partial license plate query against the databases.
- The System must provide the ability to query for license plate data based upon time, date, location and the user.
- The System must provide the ability to utilize a mapping function to plot or identify the locations of a particular license plate or identify all plates captured in a particular area during a particular time.
- The System must provide the ability to utilize a mapping function to plot or identify the location of all "hits."
- The System must provide multiple methods for downloading and uploading information between the vehicle and the back – office application including USB, Wireless and Ethernet.

- The System must provide a server network environment to facilitate the sharing of data between other police agencies as defined by the System Administrator.

General Specifications

- All hardware and software provided by the vendor must be covered under a one-year parts and labor warranty at no additional cost to the customer during the first year of service.
- If the customer so requires, the vendor must furnish extended warranty/maintenance costs for both hardware and software for up to three (3) years from the date of System installation.
- After issuance of the Purchase Order, all hardware and software must be delivered to the customer site within five (5) weeks.
- The successful vendor must provide on-site System training for the System Users and the System Administrator/s as required by the customer.
- The successful vendor must provide System installation and/or System installation oversight based upon the customer's requirements.
- All System documentation must be furnished in electronic format.
- As part of their standard product line, the vendor must also provide ALPR cameras and required components for fixed/stationary sites, as well as installation services and training for these types of systems.

Standards and Testing Requirements

- The System must successfully operate in a temperature range of 20° C to +60° C.
- The IR cameras must meet "eye safe" certification standards, as established by an international testing agency.
- The IR cameras must be sealed to IP67 Standards.