From: Ken Mackenzie [kmackenzie@Platescan.com]
Sent: Tuesday, July 21, 2009 12:35 PM
To: 'Kelley Stone'; bwillis@friscotexas.gov; scott.stowers@wylietexas.gov; lsmart@collincountytx.gov; nbroughton@friscotexas.gov; knevil@collincountytx.gov; rredden@mckinneytexas.org; rjones@mckinneytexas.org; DStevens@ci.frisco.tx.us; brushing@cityofallen.org; gfowler@cityofallen.org; rflores@cityofallen.org; 'Carol Strickland'; 'Caren Skipworth'; 'Casey Stone'; Ed Drain; Glenn Cavin; 'Chuck Ruckel'; 'Gina McFarlin'; 'Johnny Thomason'
Cc: egray@co.collin.tx.us
Subject: URGENT-PLATESCAN INSTALLATION SET FOR WEEK OF AUGUST 17th

Attachments: Toronto Side.jpg; Toronto Front.jpg; Toronto rear closeup.JPG; Toronto rear.jpg; Toronto right side closeup.JPG

Good Morning Everyone,

I am pleased to announce that we are ready to begin the PlateScan installation process for the ALPR vehicles. Collin County won't have the regional back-office server delivered until September, however Kelley and I decided that we didn't want to wait on the server, before we got the vehicles operational. The vehicles can hold their data for 30 days, so we shouldn't lose any data and it can be transferred to the server once it is installed.

The installation process will begin at the Collin County Shop, 700A Wilmeth Road on Monday, August 17th. They will be doing the installation on all six agencies vehicles that week. The Collin County Shop has given PlateScan after-hours access, so that they can get all six vehicles done that week. Knowing the average install time, they will probably work over the weekend and hopefully have the vehicles completed the following Monday.

To complete this task on time, we need for each agency to deliver their designated ALPR vehicle to the Collin County Shop no later than Friday, August 14th by 4:30pm. Please make sure that it is the same vehicle that you spec'd in the pre-planner. Any surprises will only slow down the install process. The actual shop is closed on Fridays, but the ladies in the front shop office will be there and will take your keys from you until 4:30pm on that Friday.. Liz Gray at the Shop is coordinating this for us, so if you have a question about delivering you vehicle, she should be able to help you. Her number is 972-548-3734.

Please take a look at the attached photos of the new cameras installed. I think you will all be pleased at the new low profile of the cameras and see that it was worth the wait, rather than getting the previous model cameras.

Start thinking about training. I have blocked off most of the week of August 24th to train all the Collin County Agencies. For the vehicle training, I will need a classroom with a projector for my laptop. Each class will take 1.5 to 2 hours and you can send as many officers as the room will hold. I can do a couple of classes for each agency to meet their shift requirements. For the back-office training for dispatchers, investigators, crime analysts and anyone else that you want to have access, those classes only take about 30 minutes per class. The more classes I can do at one agency on one day, the more time it give me for the other five agencies. Don't worry though, we can do additional classes, as my schedule allows.

Please double-check this email to insure that I sent it to everyone at your agency that needs it.

As always, if you have any questions, feel free to call me at any time.

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Automated License Plate Reading Briefing

March 31st 2010

Introduction

- The following outlines the results of a two year study of automated license plate reading (ALPR) technology and resulting solutions. **This document is not an endorsement of any particular firms goods and services.**

Presented By

John Dalinsky

Technical expertise includes: tactical and commercial RF communications (terrestrial and satellite), remote surveillance, sensors, biometric, video surveillance, ground surveillance radar, automated license plate capture, automated traffic enforcement and command & control solutions.

John has a 30+ years of experience as a successful sale and marketing Executive in the Business Development arena serving the Federal (Defense & LEA), State and Local Government markets

Presentation Goals

- The goals of this presentation is to familiarize you with:
  - Basic ALPR Technology
    - Components
      - Software
      - Hardware
  - Quality
  - ALPR Applications

What is ALPR

- Automatic License Plate Reading (ALPR) is an established and proven technology that allows vehicles observed by video cameras to have their vehicle license plates “read” using optical recognition software. ALPR cameras can check up to 3,600 license plates an hour on cars traveling in excess of 100 mph. When combined with other resources and data, ALPR becomes an extremely powerful tool for real time response, crime deterrence, and the prevention and mitigation of vehicular based threats

Automated License (Number) Plate Reading

- Definition
  - A PC based solution that interprets number characters from images and digitizes the information for transmission and application
- Primary functionality
  - Event recording (passive application)
  - Database matching (pro-active application)

ALPR History

- Developed by Cambridge University in the United Kingdom 1992 in response to IRA terrorism
  - Primary component of the “Ring of Steel” surrounding the City of London
    - Theory if you cannot neutralize the weapon system neutralize the delivery system through vehicle interdiction prior to entry into the target area

The Goals of an ALPR Solution

- To increase the productivity of police patrol efforts
- Provide early warning to the police department of vehicles of interest
- To provide a pro-active intelligence based policing tool increasing the efficiency of criminal investigations
- To provide a deterrent to crime by deploying a technological enhancement to the existing efforts of the police department which produces a reputation within the local criminal element that an equipped municipality is a “hard target”

Benefits of ALPR Technology

- What does ALPR Buy?
  - Enhanced Patrol operations
    - 37,500 plate look ups / day versus 270 based on 3 patrol cars over 3 duty shifts
  - Enhanced investigative operations
    - Ability to place a vehicle at multiple crime scenes
    - Pattern Analyses
  - Early warning
    - Facilitates proactive police intervention
  - Revenue Enhancement
    - More effective counter narcotics interdiction
    - More effective citing offenses
      - Uninsured or Untitled citations / stolen vehicle recovery

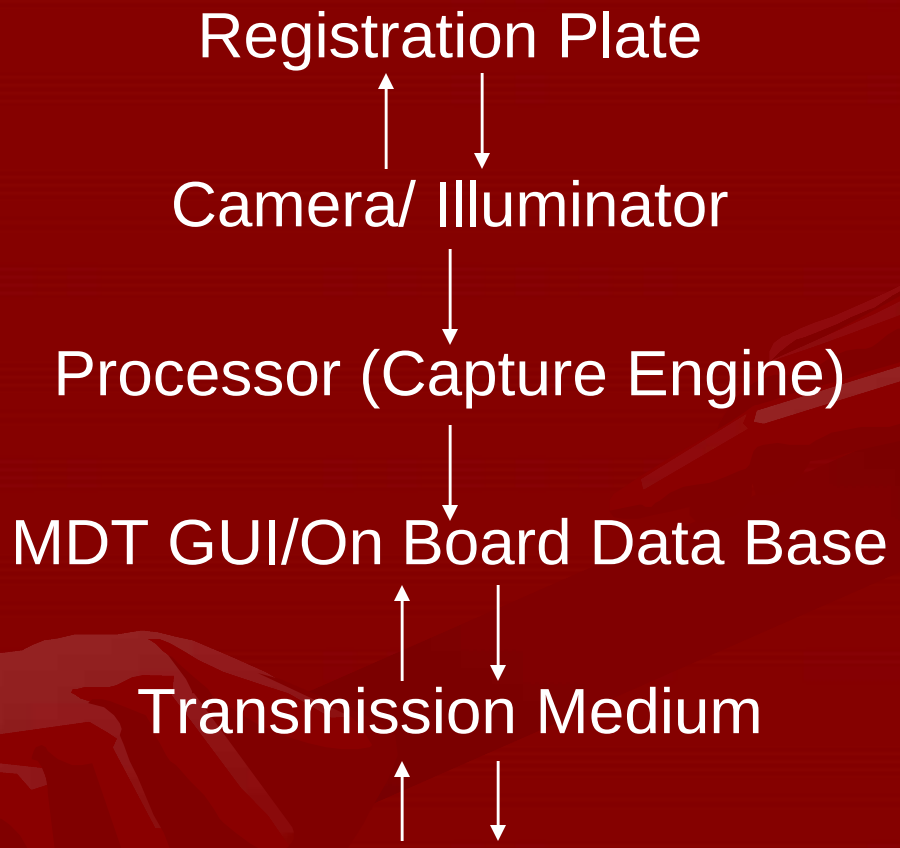
Why Gadsden Should Consider ALPR Technology

- US highways have become the major arteries the transmission of major and minor criminal behavior
  - Narcotics / Firearms
  - Wanted and Warranted Individuals
  - Burglary / Home Invasion
  - Stolen Vehicles
  - Unregistered Vehicles / Uninsured Motorist
  - Amber Alerts / Grey Alerts
- Every day at every hour suspect vehicles pass through a police jurisdiction unchecked and unnoticed
- ALPR automates the fundamental core law enforcement process that being police officers checking license plates for wants and warrants

ALPR Solution Components

- Hardware
  - Camera (s)
  - Processor (Capture Engine)
  - MDT (GUI)
- Software
  - Capture Engine
  - GUI
  - Back Office
  - Data Base
- Transmission Medium

ALPR Process



Platforms

- ALPR solutions are available in three platforms. These platforms include:
  - Mobile Platforms
    - Patrol Vehicle
  - Fixed Platforms
    - Pole Mounted
  - Deployable Platforms
    - Mobile Automated Speed Enforcement Vehicle
    - Existing Video Surveillance Trailer

Mobile Component Roles

- Patrol Vehicle Solutions
  - Mobile Sensor Platform
    - Quick Reaction
    - Roaming Intelligence Based Policing Data Collection
- Deployable Solutions
  - Mobile Sensor Platform
    - Fixed Point Protection (hot spots)
    - Intelligence Based Policing data collection

ALPR GEN II Cameras Mounted on Ford Crown Vic Interceptors

Typical Ford Police Interceptor Deployment

- Three Cameras
  - One External IR/Color
    - Night Operation
  - One In Car Forward
  - One In Car Side
    - 90 Degree Parking
- Utilizes Existing MDT

The system is designed to “read” the number plates captured from the connected ANPR cameras and store the details of this event to the hard drive of the PC with associated overview images. Associated software will allow easy searching of all the recorded information by Plate- Full/Partial/Fuzzy Matching, Date, Time, Lane, Category and even database fields on-board.

Fixed/Deployable Components Roles

- Create a “geo fence” around zones of community interest
  - Alert police dispatch of vehicles of interest entering or leaving the zone
- Function as a sensor platform for Intelligence Based Policing data collection
- Provide a visible deterrent to the criminal element
- Fixed Deployments are much more Accurate than Mobile Deployments
  - 65 % overall performance for Mobile Deployment*
  - 87 % overall performance for Fixed or Deployable*

*** Based on the United Kingdom National APCO ANPR Standard (NAAS)**

Deployable Configurations

Fixed Configurations

Quality ALPR

ALPR Camera Technology

Infra Red Frequency – Dependant on Plates and Conditions.

Focus and Depth of Field

Variable Shutter Speeds

Blacking level adjustments

Video Manipulation Problems – Camera Functions that need to be turned off

Light Filters

All Weather Capabilities

“Intelligent” Cameras (on board ALPR chip)

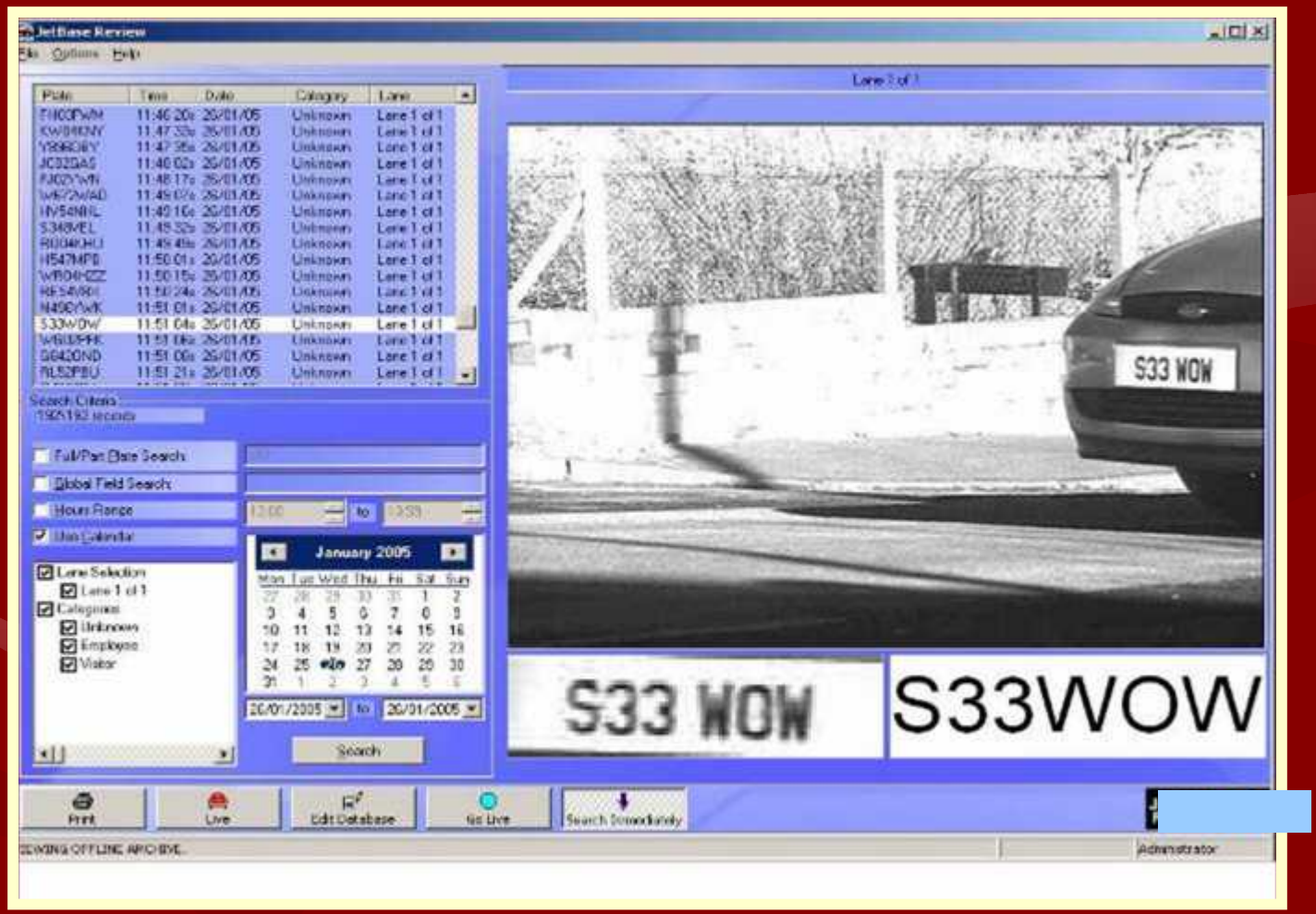
Image Illumination Considerations

Conventional

ALPR

ALPR Considerations

Angles of Skew / Tilt / Rotation?



WHY USE SYNTAX

Typical Graphical User Interface Screens

Back Office Component Role

- Networking software in each platforms
  - When a platform captures and reads a vehicles plate it will then package the information and transmit it to a dedicated server. At the server all events will be collated into date / time and location order which will allow the user to search all events from one location.
- From the data stored on the server back office software provides
  - Matching against various Hotlists, Bulk Hotlists, NCIC and others in real-time.
  - Live alerts are distributed to all users and displayed as an audible/visual alert or can be transmitted as SMS, email or pager message.
  - Detailed mining of bulk ALPR data based on Partial or Full VRM, Date/Time, Hotlist, PNC marker, Camera, Location, Make, Model, Color etc.
  - GIS mapping facility overlaying alert information in real time onto detailed maps enabling the operator to clearly identify the alert location.
  - Detailed reports

Typical Data Base Components

- ALPR camera image
- Captured plate patch image
- Driver Name, ID Number, Category Photo ID
- Plate #, Lane, Time & Date, GPS
- Additional
- Images (mug shots)

Simple Concept, Complex Solutions

- Multiple Hardware Components
  - One or more ALPR Cameras
    - Color read / overview vs. IR read (best ALPR performance)
    - Different lenses / DOF for different applications
    - Light sources (IR LED (different wavelengths)
    - “Intelligent” vs. dumb cameras
  - CPUs of correct spec for plate reading, plus GUI
  - High capacity communications (multiple large jpeg files, encryption)
  - High capacity servers integration (hot list and hits databases, back offices, data importation)
- Multi level technical support

Simple Concept, Complex Solutions

- Multiple Software / Firmware Components
  - Recognition Engine (multiple algorithms)
  - One or more Frame Grabbers
  - Camera firmware (standard set ups cause problems)
  - GUI
  - Application Software Interface with Police / Other hot list databases
  - Interface / Integration with other applications (ICV, CAD, MDT)
  - Encrypted Communications (e.g. security, data integrity, avoid conflicts with other systems)

Simple Concept, Complex Solutions

Successful ALPR systems are not "plug and play"! They are ongoing, evolving solutions that constantly providing new functionality for the users. ALPR should not be viewed as a tool but as a tool box.

ALPR System Considerations

Multi - Design
Retro-Reflective
Non-Reflective
Reflective Coated
Square Plates

Operational Evaluation Program Strategic Goals

- Identify best hardware and software provider in the following areas
  - Hardware (Optics & Processors)
  - Software (OCR (Reading), GUI, Back Office)
- Identify best service provider
  - Install & Post Sale Support
- Identify potential deployment process & quantify internal segments that may require investment
  - Identify positive attributes within PSE and external partners
  - Identify negative & missing attributes within PSE and external partners

Summary Of Findings

- Hardware components are equal
  - OEP supplied with GEN I Optics and transitioned to GEN II
- Software components define solution superiority
  - OCR, GUI, BOF
    - **Engine quality = performance**
    - **GUI, BOF = productivity**
- Pre-sale/post – support essential
- Limited embedded customer expertise
- Pre-sale engineering critical
- Post-sale project management needed
- In field IT expertise required

Capture/Recognition/Performance Rates

- The capture rate is defined as being the percentage of the total number of license plates and erroneous reads (Signs, Fences, Patterns in Brickwork, Vehicle Model Names, etc) captured (Total Capture, TC) by the ALPR device when compared to the total number of legitimate license plates. I.E Total Items Read minus Erroneous Reads divided by Total Items Read, Multiplied by 100 = Capture Rate. e.g. 100 total items read, 20 Erroneous reads gives 100 -20 divided by 100, multiplied by 100 = 80% Capture Rate
- The recognition rate is defined as being the percentage of license plates correctly and accurately recognized by the ALPR device when compared to the total number of legitimate license plates captured by the device. I.E. Capture rate minus miss-read plates divided by Capture rate, multiplied by100. e.g. 80 Captured Plates - 20 Miss-reads divided by 80 Captured Plates, multiplied by 100 = 75% Recognition Rate. (RR)
- The overall performance rate is defined as being the product of the recognition rate (RR) divided by the Total Number of reads (TC) and multiplied by 100. e.g. 60 Accurate Reads divided by 100, multiplied by 100 = 60% Performance Rate (PR)

BOLO

- What most ALPR companies will concentrate on is the Recognition Rate thereby ignoring all the false and miss-reads. **The key to good ALPR is a high Capture Rate and a high Performance Rate.** Eradicating miss-reads and erroneous reads and maximizing accurate reads is the goal.

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