

Safety and Security Screening Grant

Scope of Services

The funds from this grant will assist the New York State Department of Transportation in researching future CVIEW electronic screening system enhancements and functionality, and performing integration, testing and field demonstration activities of the prototype electronic screening system incorporating a license plate reader/video recognition subsystem.

Under this grant NYSDOT will research the feasibility, cost, benefits and impacts of improving the existing CVIEW e-screening system's design concept, architecture and roadside operating software (Model MACS) from a stand alone, non-interopertive system into a communications based virtual network system. Additionally, steps will be taken to research and assess the required modifications to the roadside software (Model MACS) to accommodate the integration of the license plate reader/video recognition sub-system. Lastly, under this grant NYSDOT will perform a four week in-field demonstration of, and appropriate staff training for, the complete CVIEW e-screening system integrating a license plate reader/video recognition and weigh-in-motion sub-systems.

This effort will include the following scope items:

- 1) Research and assess options to upgrade or replace the roadside operating software (Model MACS) based on research and field demonstrations performed to date to meet the present and future electronic screening business needs of the NYSDOT. Research shall include assessing and documenting the required modifications to the roadside software (Model MACS) to allow integration of license plate reader/video recognition technology. Research, assessment and documentation shall include but not necessarily limited to the following:
 - Assessment and documentation of all existing software deficiencies and/or limitations including the relative importance of each and the proposed corrective actions needed to address the problem
 - Modifications required to integrate the license plate reader/video recognition sub-system with the existing prototype e-screening system
 - Degree of difficulty to accomplish the change
 - Timeframe for modification or replacement
 - Benefits and impacts of modification or replacement options
 - Cost of improvements including any hardware, software or consultant support
- 2) Research and document available options to modify and convert the existing prototype stand alone electronic screening system to a network based communications platform including any required modifications to the system's existing hardware and software including:
 - Assessment and documentation of the existing prototype system's deficiencies and/or limitations and activities required to convert the existing prototype system's communication platform and system architecture to a network based communication system capable of virtual operation including the relative

importance of each and the proposed corrective actions needed to address the problem

- Degree of difficulty to accomplish the change
 - Timeframe for modification or replacement
 - Benefits and impacts of modification options
 - Cost of improvements including any hardware, software or consultant support
 - Assessment of the potential of the system to provide the communications and roadside interface for other similar commercial vehicle applications including freight tracking.
- 3) Develop recommendations and plan of action for implementing the most attractive option for converting the existing stand alone system to a network based communications system that best meets the present and future needs of the NYSDOT commercial vehicle inspection and safety program

Deliverable: One hard copy and one electronic copy of the Research Report for modifying the roadside operating software to meet current business needs including integration of the license plate reader/video recognition sub-system, and for converting the existing roadside e-screening system and roadside operating software to a network based integrated communications system.

- 4) Using the results of the research effort, incorporate the previously procured license plate reader/video recognition (LPR/VRS) sub-system into the existing prototype mobile e-screening system via wireless communication. Responsibilities include but are not necessarily limited to:
- Delivering the LPR/VRS hardware to the site and preparing the site for installation
 - Installing the hardware and any related software at the field site as required
 - Integrating and testing all sub-system components
 - Testing the sub-system as part of a comprehensive e-screening system

Deliverable: Installation and integration of the License Plate Reader/Video Recognition sub-system at the site and appropriate testing. This task shall include a thorough testing of the complete LPR and/or VRS, including the subsystem's integration with, and output for, the mobile electronic screening roadside system. The operational test shall be considered complete when the LPR and/or VRS installation integrated with the roadside electronic screening system, including all subsystems and components, has performed reliably and consistently and provides real time information.

- 5) Perform a four week in-field demonstration of the complete electronic screening system incorporating the integrated weigh-in-motion and license plate reader/video recognition sub-systems at the testing site. This task shall include collecting all pertinent data, metrics and other relevant information from the system needed to evaluate the system as a whole and the sub-systems individually.
- 6) Perform at a minimum a four hour training session of the mobile CVIEW e-screening system and provide system and sub-system user documentation. The training shall

consist of as a minimum of a two hour classroom session and a two hour hands on field training session.

- 7) Summary and report on the four week in-field demonstration of the complete CVIEW e-screening system with integrated WIM and LPR/VRS sub-systems including appropriate data and analysis, evaluation assessment, system risk analysis including operating weaknesses or problems and documentation of any issues that would prevent or reduce the effectiveness of future permanent deployment of the completed prototype system.

Deliverable: A four week in field demonstration of the complete mobile CVIEW electronic screening system with integrated weigh-in-motion and license plate reader/video recognition sub-systems. This deliverable will include all appropriate documentation based on the four week field operational test including a system's operations assessment report which will outline costs, benefits, potential weaknesses of the system and its ability to meet the existing and future business requirements of the NYSDOT/NYSP roadside commercial vehicle safety inspection program.