



2011 ITS Project of the Year Award

Project Finalist

PRISM-Based Automated Ramp Screening System

Kentucky has deployed a PRISM-Based Automated Ramp Screening System (PARSS) at its Boone County commercial vehicle enforcement facility on southbound I-71. This system automatically identifies commercial vehicles as they enter the weigh station utilizing a 915 MHz dedicated short range communication (DSRC) reader, an automated license plate reader (LPR), and an automated USDOT reader (USDOTR). This system has been identified as a "best practice" for commercial vehicle enforcement by the Federal Highway Administration and is one of very few systems in the United States that is able to automatically identify and screen commercial vehicles at the vehicle level. This system allows Kentucky State Police - Commercial Vehicle Enforcement (KSP-CVE) officers to be more efficient with their time and make more effective decisions on which vehicles to stop for inspection.

The system was primarily designed to identify commercial vehicles that have been targeted by the Performance and Registration Information Systems Management (PRISM) Program. PRISM identifies carriers that have a Federal Out-of-Service placed against them. These carriers have serious federal issues and once identified and stopped are taken out-of-service until their problems are corrected. Kentucky also screens these vehicles for other potential violations using their Commercial Vehicle Information Exchange Window (CVIEW) and the ramp weigh-in-motion data. Kentucky's CVIEW has information regarding the safety status of the vehicle along with information on whether the company has paid the appropriate taxes and fees.

As the vehicle enters on the weigh station ramp, the system collects information from the truck and communicates it to the screening computer in the weigh station. The system collects a transponder ID (if available), an overhead image of the truck, a front image of vehicle, a plate-only image, a side image of the truck, an OCR result (for the license plate and USDOT number), and a confidence level (for the LPR and USDOTR). The truck is then weighed by a ramp weigh-in-motion scale. The screening computer correlates the data into a single transaction record and screens the vehicle against a local database to determine if the vehicle should be parked for inspection. If the vehicle is identified as having an issue, it is automatically parked using the weigh station signage and the enforcement

personnel are notified by the screening computer. They have the ability to shut the system down or screen only on specific problems if they do not have the resources in the weigh station to handle all the problems identified by the system.

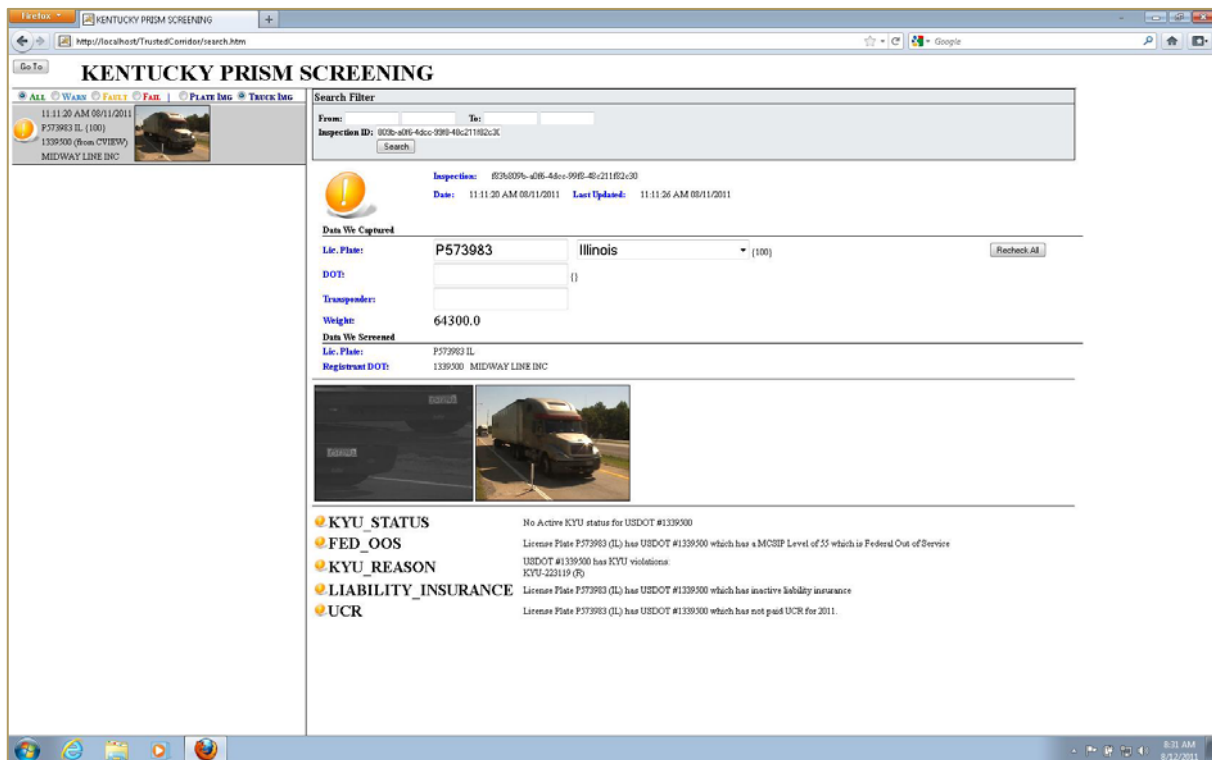


1 View Coming Up the Weigh Station Ramp

A recent daily report from the system showed that 2117 vehicles were screened using the system and 231 potential problems were identified. KSP-CVE are utilizing the system and recently provided the following results which are attributed to one officer over a two day period:

- 23 vehicles stopped and inspected (a level three inspection – driver only)
- 10 cancelled KYU Numbers
- 8 no KYU number
- 3 expired IFTA licenses
- 4 vehicles not listed on the KYU inventory
- 1 invalid registration
- 1 unpaid UCR
- 1 invalid registration
- 1 driver placed out-of-service
- 32 citations

This system is effective because it allows enforcement officers to stop vehicles based on good screening data. Kentucky's weigh stations, like most of the country's facilities, see thousands of vehicles each day. Enforcement personnel cannot possibly stop all these vehicles for inspection; therefore they need assistance in choosing the best vehicles for inspection. This system does that by utilizing ITS to automatically identify a vehicle and run checks on it before it ever reaches the facility. It is an extremely valuable resource for enforcement personnel that will likely be rolled out to most if not all Kentucky weigh stations once funding is available. Future enhancements to the system include modifications to the USDOT reader to improve the read rate and additional signage at the end of the ramp for notification to drivers.



2 Screen Shot Example

Project Lead: Kentucky Transportation Cabinet

Project Lead Web Site: <http://transportation.ky.gov>

POC: Brian Beaven | Email: brian.beaven@ky.gov | Phone: 502-564-4540