Truck Rollover Prevention System

TEXAS, USA

The accuracy of SmartSensor HD’s dual-beam radar is helping the Texas Department of Transportation prevent semi-truck rollovers on a freeway connector ramp near Houston.

Project Team
The Texas Department of Transportation, TransCore, and Twincrest Technologies, an authorized Wavetronix channel partner.

Project Scope
TxDOT has deployed a system to alert truck drivers when they exceed the safe, posted speed limit on freeway ramps. The goal is to reduce the number of semi-truck rollovers that occur when truck drivers attempt to negotiate the ramps at unsafe speeds.

Problems and Challenges
Magdy Kozman, transportation operations engineer at TxDOT, says there was considerable trouble on tight interchange connector ramps around Houston.

“There were high instances of trucks rolling over due to excessive speed, unknown cargo loading factors, and freeway super elevation problems,” Kozman says.

TxDOT needed a non-intrusive solution because their previous loop system required a traffic control plan to close the ramp for installation. It also needed to get creative with methods of alerting drivers.

“The flashing system was a challenge because no other similar application existed to our knowledge,” Kozman says.

Solution
The system TxDOT has implemented relies on the highly accurate per vehicle speeds provided by SmartSensor HD’s unique, dual-beam radar. HD identifies a vehicle’s speed and length and activates a flashing warning sign, as well as an LED speed sign, if the vehicle meets a predefined length and is traveling faster than a predefined speed limit.

Benefits
Travelling the posted speed limit greatly reduces the possibility of a rollover, which damages property and can endanger the driver as well as others.

SmartSensor HD was selected for this project because of the accuracy of its speed data and because it is easy to install and configure: HD can be installed without closing the ramp or individual lanes, since HD installs at roadside, workers are kept out of harm’s way, so there are additional safety benefits. And because HD requires no routine maintenance and offers long-term reliability, the cost benefit of an HD installation increases over time.