

Conduent proposes utilizing our POLISCAN Speed scanning LiDAR system in portable camera unit enclosures (“PCUs”) in both work zone and residential enforcement locations for the State and resulting municipalities.

Scanning LIDAR Based System

Our proposed solution, the VITRONIC POLISCAN Speed system, is a non-invasive and highly accurate automated speed enforcement system (Figure C.1-1) that will be deployed by Conduent Field Service Technicians (“FSTs”) in portable camera units (“PCUs”) violation capture arrangements. The POLISCAN Speed system harnesses the latest in scanning LiDAR detection technology to provide precise position and speed data for each vehicle on the roadway. The scanning LiDAR detection, in conjunction with twin digital cameras, allows for the documentation of all speeding offenses, including fast moving vehicles traveling side-by-side in high volume traffic. The system can enforce traffic offences for up to six lanes of same direction travel simultaneously, attributing specific vehicle and lane identification to the offender in the recorded images.



Figure C.1-1. POLISCAN Speed System
POLISCAN SPEED PCU system with flash.

Images are captured with high resolution/definition photographs to be used in an evidentiary capacity. The POLISCAN Speed system not only records a higher volume of traffic offenses than competing technologies can, but it also stands up to the rigorous challenges that are brought on by the courts with the lowest adjudication rate in the industry.

VITRONIC POLISCAN Speed Equipment Specifications

The proposed system is versatile enough that it is the only unattended automated enforcement system to effectively enforce roadways with hills and curves. Its automatic internal calibration checks provide confidence in the correct operation of the system while disabling operation in case of a failure. The twin digital cameras and their separate lenses increase the depth of field, enhancing the sharpness and clarity of the image, without the need for image enhancement. Unlike competing single camera solutions, when multiple, simultaneous, and concurrent violations occur, the system spreads the workload between the high-resolution twin-cameras to eliminate the possibility of a “busy” camera not recording an image and missing a potential violation like all other competing technologies have. The POLISCAN Speed is a LiDAR based digital speed enforcement solution offering superior day and nighttime images capable of reading characters from reflective and non-reflective license plates in all lighting scenarios.

The POLISCAN Speed system is capable of recording violations in varying weather conditions in all seasons. The system is currently used throughout the world in locations where environmental conditions range from the extreme heat of Saudi Arabia to the cold winters of Saskatchewan, Canada. For optimal operation across varying temperatures the system automatically monitors the internal temperature of the system and stops operation if the permissible range, between -

40°F to +131°F, is exceeded. To prevent operational interruptions during cold weather, the system uses an internal heater that is automatically engaged as necessary. The system is unaffected by hot weather because the components are contained within the portable camera unit (PCU) and are not subjected to the exterior temperatures.

PCUs are rotated by FSTs at your direction and ready for enforcement promptly upon request from you. To summarize, this system offers several distinct advantages over other equipment:

- The POLISCAN Speed system records both more violations as well as higher quality images than competitive systems with effective coverage of up to 6 lanes
- The highly advanced hardware and software automates nearly all facets of the operator setup and improves violation detection capabilities
- Form factor drastically reduces the size and weight of the system so that overall setup time is minimized

Violation Capture. The vehicle detection sensor in the POLISCAN system is an eye-safe scanning LiDAR. Within the measuring area, the system analyzes the reflected laser light from the scanning LiDAR at a rapid rate, filtering out vehicles from non-vehicles. Upon detection of the presence of vehicles in the measuring area, it tracks each vehicle's precise position independently. The system computes and records the average speed of each vehicle as it travels through the measuring area, autonomously analyzing the quality and confidence levels of the measurements and eliminating those outside of its tolerances. Figure C.1-2 depicts approaching enforcement however in Delaware and most programs in the US, this includes rear enforcement operating as the same with the system directed to only capture the rear of the vehicle once the vehicle passes the system.

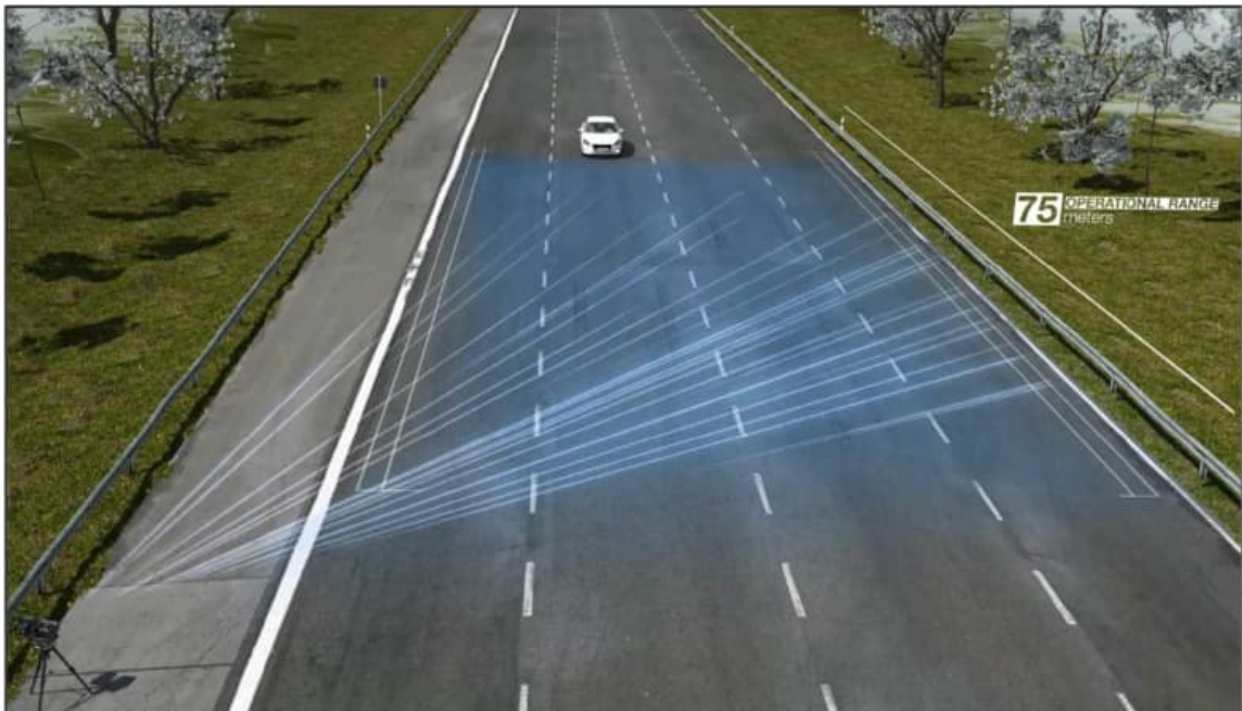


Figure C.1-2. POLISCAN Speed Scanning LiDAR Detection Measurement Area
Depicted in the images is a car within the system's measurement area.

If the measured speed of a vehicle exceeds the user-adjustable speed limit threshold, the system triggers one of the twin-cameras to record two consecutive images. The interval time between the two images is approximately 0.2 seconds, unless changed by the user. The software automatically chooses the appropriate camera to record the images, based on the focal length of the camera lens. An evaluation template on each of the recorded images correctly assigns the measured speed to the offending vehicle. Visible on the violation image, the evaluation template consists of a frame around the detected vehicle that is automatically generated by the software at the time of the violation (Figure C.1-3).

The camera trigger point is limited to a specific area to prevent incorrect measured speed assignments (see shaded area in Figure C.1-3). The recorded images and violation data are encrypted and stored on the system's internal storage device and may be transferred to an external storage device at a later point in time. Additionally, the system records and stores information such as the number of vehicles passes and violations. Proprietary extraction and conversion software is used to decrypt and view the recorded images and data before it is sent via our virtual private network (VPN) to the back-end data center.

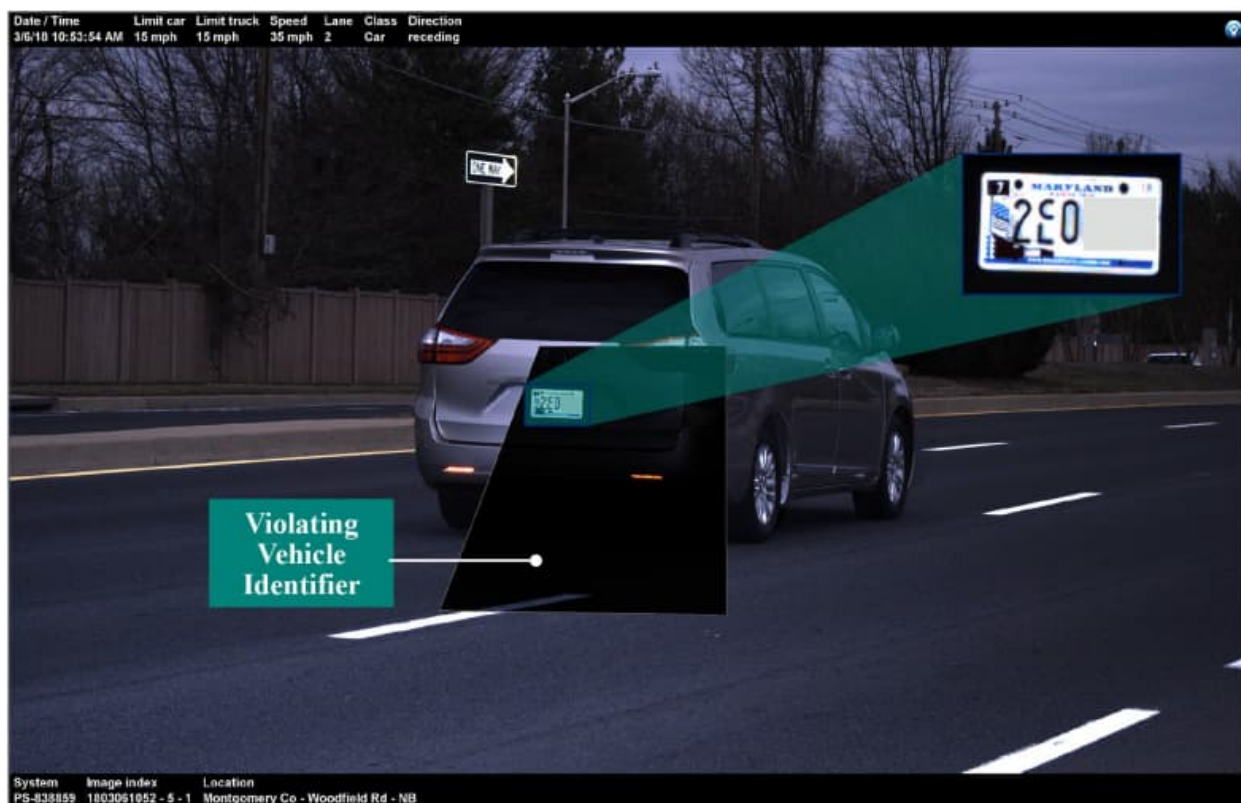


Figure C.1-3. POLISCAN SPEED Evaluation Template
Sample showing license plate close-up and evaluation template.

The POLISCAN system records up to two digital color images of each speeding offense, day or night, year-round. The images are of high enough quality that a close-up of the license plate may be extracted, providing an opportunity for a clear, legible plate image. Each image contains the relevant violation data such as: measured speed, lane number, date and time, which are embedded into the image's data bar at the time of the violation. The data-bar is positioned on the top and bottom portions of the recorded image. Each image also contains a representation of the measurement data in the form of an evaluation template explicitly identifying the violating vehicle, even when multiple vehicles are shown in the image.

The POLISCAN system, in addition to violation data, records the traffic data for passing vehicles and stores it in an XML file that is loaded to CiteWeb® for reporting purposes.

An image of our PCU is as follows:

