Intersections are the most complex and dangerous traffic situation of any road infrastructure. Cars, heavy goods vehicles and motorcycles cross each other’s paths and often intermingle with vulnerable road users such as cyclists and pedestrians. These crossing and turning maneuvers result in many vehicle-to-vehicle, vehicle-to-pedestrian, and vehicle-to-bicycle accidents that can lead to serious injuries or fatalities.

PROTECTING INTERSECTIONS AND CROSSINGS
The complexity of intersections and crossings demands enforcement solutions that can detect a multitude of violations. POLISCAN REDLIGHT uses LIDAR vehicle detection and tracking to deliver exactly that. Vastly superior to other non-invasive technologies in terms of resolution, the POLISCAN systems detect virtually all vehicles simultaneously, locating their exact position and movements. This allows authorities to monitor driving behavior such as red light running, over-speeding or entering lanes and zones reserved for vulnerable road users. This can all be achieved using one device across large intersections and several lanes.
DETECTING MULTIPLE VIOLATIONS

POLISCAN REDLIGHT creates a real-time spatial representation of the intersection including individual lanes. Within this representation virtual zones can be defined that represent the key risk areas of the intersection. Accordingly, POLISCAN REDLIGHT can detect and document the most common and dangerous violations.

Crossing the Stop Line
At the intersection, the stop line marks the latest point a vehicle has to stop at when approaching in order to avoid potential collisions with crossing traffic or pedestrians. POLISCAN REDLIGHT systems precisely detect any violation of this stopping boundary mandate. Trigger thresholds can be freely configured to correspond with the traffic light signals.

Entering Pedestrian Crossings
As the primary point of conflict between vulnerable road users and motorized vehicles, pedestrian crossings are one of the most sensitive areas in intersection topology. POLISCAN REDLIGHT can virtually mark out this area and create separate case documentation for this kind of traffic violation. With this technology, authorities can create safer zones for the protection of pedestrians and bicycle riders.
Driving into the Intersection Center
Crossing an intersection while ignoring a traffic light can cause high-velocity side-impact (T-bone) collisions often resulting in serious injuries for the passengers. When a vehicle approaches or enters this zone during a red-light phase, POLISCAN REDLIGHT reliably documents the violation including information on the red violation time, that is, the time span that passed since the traffic light turned red.

Speeding
Speeding is the largest threat to road safety due to the increased impact potential, especially at intersections when vehicles are accelerating to pass through a yellow light phase. For vulnerable road users, lower vehicle speeds drastically reduce the consequences of a collision. POLISCAN REDLIGHT monitors vehicle speeds during all traffic light phases and creates additional cases in the event of speed violations.
ADDITIONAL FEATURES

POLISCAN REDLIGHT is customized to fit local regulatory requirements.

Photo and Video Documentation
POLISCAN REDLIGHT supports photographic and video documentation. Depending on the requirements of the local jurisdiction, documentation can be made from either the rear of an offending vehicle including an image of the traffic light phase, or from the front with an optional image taken of the driver. Combinations of photo and video, front and rear documentation is also possible. All visual case documentation is included in a single file for each violation.

Optical Traffic Light Detection
Optical traffic light detection eliminates the need to physically connect the enforcement system to the traffic lights. The traffic light status is automatically detected using machine vision technology and is documented for case generation. This gives authorities maximum freedom in choosing enforcement sites; given there is electrical power available at each site, the system can be effectively installed.

Right-Hand Turns on Red Phase
Every so often intersections allow right turns to be performed even when the traffic light is in the red phase. For such cases, POLISCAN REDLIGHT can be configured to detect right-hand turns on certain lanes. In case of permitted right turns on red phases, the system is able to recognize this as a non-violation. Any other red light violations are still documented.

Rear Detection
POLISCAN REDLIGHT can detect red light violations of receding traffic facing the traffic light. This allows installation of all measuring and documentation equipment at a single site when visual documentation of the traffic light phase is required.
VITRONIC WORLDWIDE

VITRONIC is a global leader in the field of industrial machine vision headquartered in Wiesbaden, Germany. Since its foundation in 1984, the privately owned company has been offering highly innovative solutions in industrial automation, logistics automation and traffic technology. Today, VITRONIC supports customers in over 60 countries via a global network of subsidiaries, service centers and partner companies.

All of the companies’ products are developed, designed and manufactured by VITRONIC in Germany. They range from standardized to fully customized solutions.

Feel free to contact us – we look forward to hearing about your projects.

Full contact details and further information are available at www.vitronic.com