

Smarter and safer roads with Axis video surveillance.

The Commune of Prato uses Axis network cameras for traffic planning and optimization.



Organization:
Prato Municipality

Location:
Toscana, Italy

Industry segment:
City surveillance

Application:
Traffic planning, vehicle counting

Axis partner:
Magenta Lab srl

Mission

As in other cities, traffic monitoring is a very important issue for Prato Municipality, since providing statistics on the number, type and speed of vehicles in transit enables planners to adequately size the roads that can have the most effect on improving traffic flow. To get this data, the Municipality needed an innovative and easy-to-implement vehicle counting system.

Solution

The design and implementation of the system was entrusted to Magenta Lab, an Axis partner, who installed six AXIS P3364 Network Cameras at strategic entry and exit points of the city. Thanks to Vehicle Counter, a Magenta Lab application for monitoring traffic flow developed for the AXIS Camera Application Platform (ACAP), it was possible to create an effective monitoring system already integrated on board the individual cameras.

Result

The installed system helps the Municipality monitor traffic and collect a large amount of real-time data and statistics, which are used by traffic managers and potentially even by motorists via user information systems. The scalable and flexible network video solution, capable of providing a cutting-edge vehicle counting system, has many advantages for municipal authorities. In addition to data access, the solution can provide high-quality live footage captured on expressways, intersections, tunnels, bridges and main highways.

“We are fully satisfied with the installed system from all viewpoints. The quality of the Axis cameras combined with the Intelligent Video function for counting vehicles has proven perfect for achieving the objectives of our municipal administration.”

Mr. Bardazzi, Commune of Prato.

Intelligent traffic flow scaling and traffic optimization

Prato, the second largest city in Tuscany, needed an intelligent solution for traffic monitoring, which is an important issue for municipal authorities.

“Our commune needed to collect data and statistics on traffic circulation, and the number of vehicles entering and leaving the city, in order to identify and correctly scale new infrastructure projects that will be incorporated in the local authorities' long-term plan,” said Mr. Bardazzi from Prato Municipality.

The AXIS P3364 Network Cameras and the software developed by Magenta Lab were used to create the Vehicle Counter function, an innovative traffic monitoring system incorporated on board the camera. The camera is the only piece of hardware necessary for implementing the solution. With this Intelligent Video feature, developed on the ACAP platform, and the quality of the Axis cameras, it is extremely easy to share live HD footage taken on expressways, intersections, tunnels, bridges and main highways, providing numerous advantages for all users.

Reduce congestion

The advantages include: traffic control centers can quickly reroute vehicles and reduce congestion; emergency services can rapidly identify the best and fastest route to their destination; radio stations can provide detailed traffic information to listeners; and users can access live footage on the internet and make itinerary decisions based on the real-time situation.

“This application developed for ACAP can be installed on board many Axis camera models and provides meaningful statistics regarding the number, type and estimated speed of vehicles transiting over the framed

lanes,” said Walter Nunziati, the owner of Magenta Lab. The application also allows positioning a number of virtual sensors and deciding how to aggregate the statistics. The sensor configuration can be set up through the specially provided web application installed on board the camera and served by the integrated web server. The statistics are stored and made available for download and analysis on a daily basis, enabling users to track down the details of all transits recorded at any time of the day.

“The vehicle counting software is based on the ‘virtual coil’ concept, image zones that are positioned horizontally with respect to the vehicles’ direction of travel, which are analyzed by the software to detect the passage of vehicles,” added Nunziati.

Real-time transit detection

The innovative traffic monitoring system enables real-time transit detection of every vehicle, with estimates of its speed and size, which can be configured in classes. The system is also capable of providing aggregate data for each lane of the road, indicating the number of vehicles in transit with a 91 percent accuracy rate estimated on real datasets.

Thanks to the quality of the Axis cameras, the system is capable of operating under all conditions: day and night, in different weather and lighting conditions, with heavy or slow traffic or backups. The optional storing of traffic data, or video and images at configurable intervals, takes place directly on the SD card installed on board the camera. The system is integrated with data acquisition systems via the REST web service and has trigger activation configurable according to transits.



“Axis cameras are the perfect hardware for our Vehicle Counter application. We have been an Axis partner for quite some time, and we think their products are particularly suitable for any type of requirement and request expressed by our clients,” said Walter Nunziati, owner of Magenta Lab.

