Citilog
A TAGMASTER COMPANY

CASE STUDY

“Smart traffic cop” solution for adaptive traffic light control optimization

City of Saint Petersburg, Russian Federation.

Mission

Saint Petersburg is the fourth largest city in Europe in terms of population (5,4 million people) and the third in terms of area (1,5 thousand square kilometers). In addition, Saint Petersburg is the most popular national and international tourism destination in Russia, with over 15 million tourists visiting the city in 2018. The city has a very old cultural, architectural and urban design heritage which also impacts the way the traffic of local citizens as well as tourists move around the City.

Applying modern technologies and an Automated Traffic Management System to ease the impact of the traffic onto everyday life of the citizens, has been on the agenda of the local authorities for a very long time, making Saint Petersburg a model of implementation of ITS (Intelligent Traffic Systems) solutions in the region.

Solution

Starting in 2012, the traffic management directorate of Saint Petersburg had the vision to implement adaptive traffic management solutions to reduce the average waiting time of the motorist at the intersections. From the beginning, a key element of the strategy was innovation and use of modern technology, leading to the choice of video analytics for vehicle detection.

As of today, about 100 intersections are fitted with Citilog’s traffic detectors which provide data such as vehicle presence and vehicle counting to both the local controllers and the Road Traffic Control Center of Saint Petersburg.

These data are then used by the controller locally for real time traffic light cycles optimization and by the Road Traffic Control Center to derive adaptive traffic plans in accordance with the actual traffic partner and traffic demand at any given time.

“The traffic flow in St. Petersburg is fairly intensive and diverse. The congestion of the roads and intersections varies depending on the time of day, accidents and other factors. Therefore, we carefully follow the development of the smart traffic systems and are willing to introduce the best international practices.
The Citilog solution for traffic assessment at intersections takes into account the constant changes in the traffic patterns and even unexpected events.“

Sergey Zaichenkov, First Deputy Director of state public institution, traffic management directorate of St. Petersburg.

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One of the challenges of such implementation is that several brands and models of controllers have historically been installed in the city. Therefore, the solution needed to be agnostic to the traffic controller, which is achieved through the implementation of a standard and universal interface card collecting the data from the cameras (sensors) and inputing it to the traffic controller through a number of possible interfaces and associated protocols (from dry contacts to Ethernet protocols).

Results

Over the years the number of intersections using this technology has grown and keeps growing today.

The key factors, reported by the customers, for this success is first the reliability of the solution to accurately provide the required data of vehicle presence and vehicle counting. But other factors such as the high availability and low rate of defaults were also very critical for the daily operation and maintenance of the solution over the years.

As summarized by Mr. Sergey Zaychenkov, First Deputy Director of state public institution, traffic management directorate of St. Petersburg: «The traffic flow in St. Petersburg is fairly intensive and diverse. The congestion of the roads and intersections varies depending on the time of day, accidents and other factors. Therefore, we carefully follow the development of the smart traffic systems and are willing to introduce the best international practices. The Citilog solution for traffic assessment at intersections takes into account the constant changes in the traffic patterns and even unexpected events.»

Another major advantage of this technology is the ability to access the sensor remotely from the Road Traffic Control center. This is becoming even more important as the new generation of sensors, based on Axis Communications cameras with Citilog’s analytics embedded, will offer additional value through high resolution and high-quality videos available for the operators or any city management stakeholders.

The combination of useful and reliable analytics with the Axis Communications cameras makes the new device the perfect fit for any city’s strategy to enter the age of true SmartCity.