



Atlanta's Smart Corridor uses smart cameras to move traffic

City of Atlanta - North Avenue Smart Corridor, Unites States of America.

Mission

On September 14, 2017 the City of Atlanta, Georgia launched the 2.3 mile North Avenue Smart Corridor – a \$3 million project leveraging multiple "smart" technologies in order to transform traffic operations on this important mid-city corridor that carries nearly 29,000 vehicles a day.

North Avenue was chosen for the Smart Corridor Project because of its prominence as a major east-west artery in the City of Atlanta serving prominent institutions (Georgia Institute of Technology, The Coca-Cola Company and Georgia Department of Transportation, among others).

The corridor is also served by numerous routes, key bicycle routes, and includes 18 signalized intersections between Northside Drive and Freedom Parkway.

One goal of the overall project is to better understand and optimize the traffic on the Smart Corridor. Ultimately, the direct impact of the project is going to be on quality of life: reducing emissions and pollution in the city".

Solution

The city of Atlanta had installed in 2015 a number of video surveillance cameras to monitor parts of the current Smart Corridor site. The city wished to be able to use those cameras

as traffic sensors: provide traffic statistics and provide traffic data to operate and optimize intersections in real time.

In April 2017, the city of Atlanta selected 360ns a Georgia company with a strong experience in providing Intelligent Transportation and Mobility Solutions.

360ns selected Citilog's SmartTraffic-td image processing application to provide real time traffic data and statistics. The application could be installed directly on the 84 existing Axis M1125 cameras previously installed by the city of Atlanta and could communicate with the existing traffic controllers

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as well as the new traffic management system, SURTRAC, deployed within the scope of the Smart Corridor Project.

Citilog's SmartTraffic-td application computes real time traffic data onboard the Axis cameras installed on 26 intersections along the Smart Corridor. The traffic data (vehicle counts, speed, occupancy) is sent to and hosted in Citilog's CTCloud, a cloud platform enabling to host, visualize but also easily share data within the city organization.

The data processed by the SmartTraffic-td application is also shared with SURTRAC, an adaptive traffic signal control technology developed at the Robotics Institute at Carnegie Mellon University that optimizes the performance of traffic signals. SURTRAC uses volumes, vehicle types, speed, and queues provided by the application.

Last but not least the SmartTraffic-td application provides vehicle presence information to the traffic controller on the 26 intersections of the corridor, by means of a communication interface board. Using this interface, the application is able to connect to any traffic controller on the market without

the need of altering or altering or reprogramming the controller.

Results

By enabling real-time adjustments to traffic light timing the combination of Axis cameras, Citilog's SmartTraffic-td application, SURTRAC and traffic controllers improves travel times and reduces waiting time at intersections.

The CTCloud platform is used in real time for traffic operations but also offline for analysis and study; the platform allows keeping several months of data. The cloud platform is also used to checking that the system works well.

Having the intelligence inside the cameras was a great help for the project implementation as there was very little room available in existing traffic controller cabinets for additional equipment.

One of the advantages of the SmartTraffic application was its flexibility that allowed accommodating all different needs and scenarios that evolved with the project; particularly interfacing with 3 different platforms at the same time.

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cameras to implement traffic data collection, the project truly embodies the Smart City spirit that is working across silos and mutualizing resources within the city for the greater good.

At the 2018 ACEC Georgia Engineering Excellence Awards, the North Avenue Smart Corridor project was awarded the Engineering Excellence Awards as well as the people's choice Award in the “Building/Technology Systems” category.

