

Jacobs test drives Bosch camera with Intelligent Video Analytics (IVA) Pro Traffic



Jacobs provides a spectrum of professional services, including consulting, technical, scientific, and project delivery for the government and private sector. Jacobs was selected to operate and maintain Intelligent Transportation Systems (ITS) and manage traffic operations for Florida's Turnpike Enterprise, a division of the Florida Department of Transportation, for the last 30 years. As part of this responsibility, Jacobs operates, manages, and maintains more than 500 miles of ITS-connected roadway infrastructure across the state.

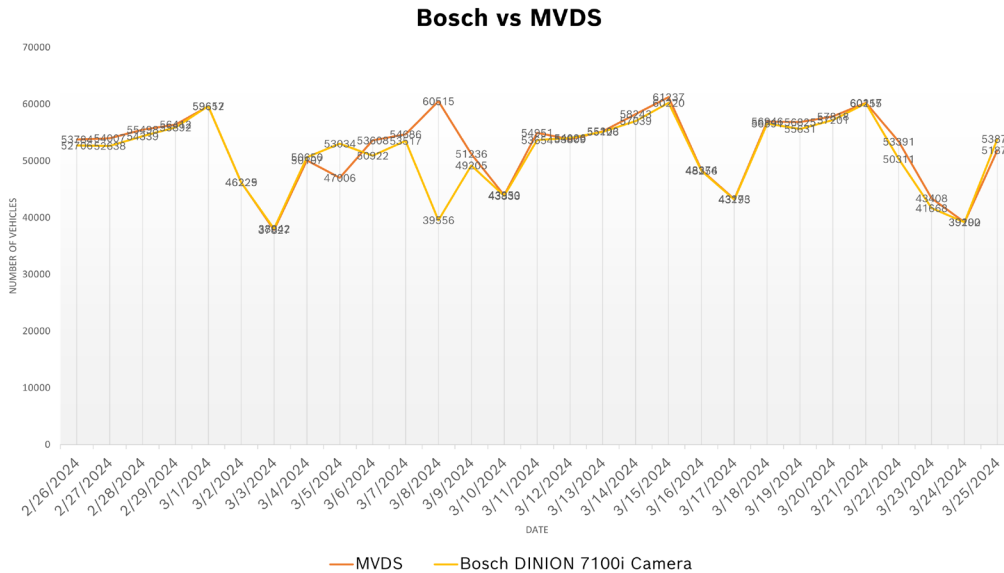
Testing IVA Pro Traffic for accuracy

Near Florida's Turnpike Operations at Milepost 65 Pompano Beach Service Plaza, Jacobs is testing the accuracy of a DINION 7100i camera with IVA Pro Traffic in counting vehicles traveling that stretch of highway. Based on deep neural networks, edge-based IVA Pro Traffic supports strategies that enhance mobility, safety, and the efficient use of roadways. In addition to providing accurate counts, it offers reliable detection and subclassification of vehicles, such as cars, bicycles, buses, motorcycles, and trucks.



Benchmarking against a Microwave Vehicle Detection System

Currently, Florida's Turnpike is using a microwave vehicle detection system (MVDS) to capture vehicle counts for determining the volume of traffic traveling its toll roads. Benchmarking the DINION 7100i camera with IVA Pro Traffic against MVDS, Jacobs has found the two technologies deliver an average accuracy of roughly 99 percent. Even in inclement weather, the camera continues to deliver a high-level of accuracy.



Comparison of the vehicle counts from the DINION 7100i camera with IVA Pro Traffic and the Microwave Vehicle Detection System installed on the same pole along Florida's Turnpike.

"I earned my PhD in computer science, so I knew the technology was capable of 99 percent accuracy," said Debojit Biswas, ITS Project Planner, Jacobs. Serving as an analyst of technology for Florida's Turnpike, Biswas is testing camera-based AI as a next-generation alternative for existing devices as they require replacement. Along with the MVDS for counting, the turnpike also uses separate video cameras for visual monitoring.

DINION 7100i camera with IVA Pro Traffic

The DINION 7100i camera is installed on the same pole as the existing MVDS and is counting vehicles in three defined areas within its field of view, including an on-ramp, service station off-ramp, and a section of highway that covers three lanes. It provides the added benefit of combining traffic data with video monitoring in a single device and can also go beyond basic counts to deliver data based on subclassifications of vehicles.

"It was easy to implement, and we are satisfied with the outcome. Using a single device instead of multiple devices can also help to lower maintenance requirements," continued Biswas.



Moving forward, Jacobs will continue testing and analyzing the technology to fully understand the potential benefits for Florida's Turnpike.