Omnisight Improves accuracy of traffic study for the 3rd largest airport in the world.

CASE STUDY

Omnisight uses AI Fusion Sensor with HD3D radar and HD video to provide 98% accuracy rates on traffic data to improve mobility along main entry road into the 3rd largest International Airport.

SUMMARY:

Accurate traffic data is key to understanding how current and future events impact entry road into the airport. This 11.1-mile-long roadway provides the only roadway access to the 3rd largest International Airport.

This Boulevard offers connectivity to numerous off-airport developments and communities. The Gateway area contains some of the only undeveloped land near the airport's far northeast region and is anticipated to experience a significant increase in development in the years ahead.

The airport authority is building a Boulevard Master plan. Part of this plan involves conducting a Transportation Study and a Mobility Study while the (DOT) conducts a Travel Study for the Gateway area. These studies will allow the airport authority to develop a multi-modal solution to improve mobility along the main entry Boulevard.

The Need for Improvements

- Real-time reporting of existing traffic demand
- Enhance Safety
- Reduce Crashes
- Improve travel time reliability
- Gather data to prepare Travel Demand Management strategies

Previous Situation

- Prior radar-based system had been installed and was over-counting traffic and less than 60% accurate
- Data integration did not provide desired data formats
- Traffic reports required hours to generate
- Congestion rendered prior system unable to accurately measure throughput

Project at a Glance

Entry Boulevard

The boulevard is approximately 11.1 miles long and includes 8 interchanges with 21 structures to improve traffic operations.

- Average daily traffic flow of 138,000
- 22 Solar powered traffic study stations
- Count & classification
- Major & minor intersections

SOLUTION

Replace existing radar equipment with the Fusion Sensor to monitor traffic via count, classification, and accident detection.

TOP BENEFITS / RESULTS

- ✓ **Increased Accuracy**: Accuracy of data count and classification shifted from <60% to over 98%
- ✓ **Real-time Monitoring:** Live traffic data provides the ability for faster response to traffic issues
- ✓ **Operational Efficiency:** Data reports are now available 24x7 and can be generated in seconds instead of hours
- ✓ **Cost**: The ability to retrofit existing poles and cabinets without sensor controller hardware significantly reduced project cost

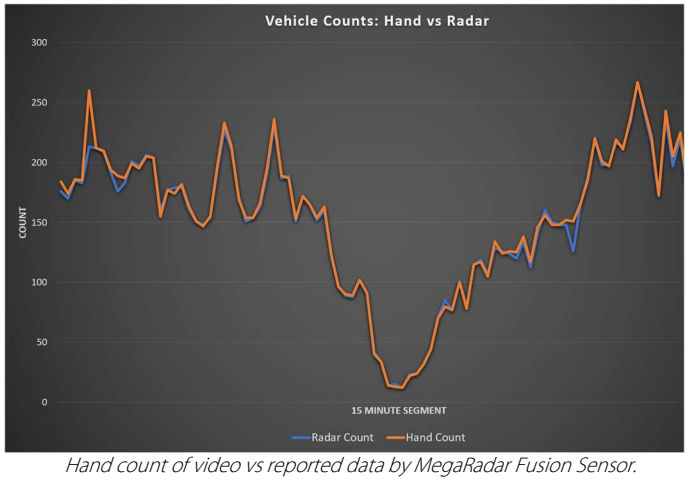
CASE STUDY

THE SOLUTION:

Retrofit existing solar powered infrastructure with the Omnisight Fusion Sensor

The Fusion Sensor was selected because it requires no cabinet space, can be installed quickly, can adapt to existing pole locations, and uses sensor fusion to provide accurate results in any weather condition regardless of congestion or vehicle speeds. To evaluate the effectiveness of the new proposed solution, All Traffic Data (ATD) performed installation at one of the twenty proposed existing data collection locations to monitor a 4-lane portion of the main boulevard leading into the airport. Data and video were collected for 24 hours, then the video was hand counted at 15-minute intervals, and the collected data was found to be over 98% accurate.

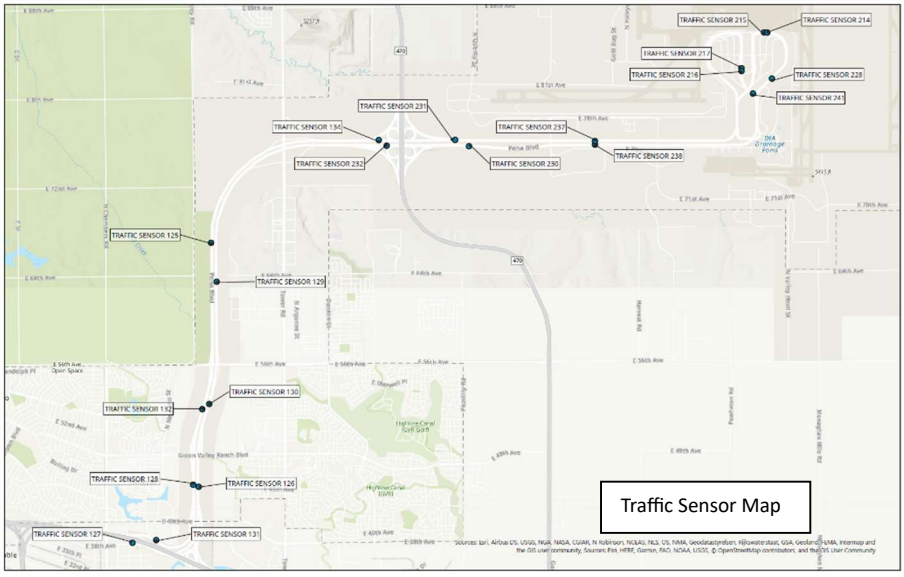
Pilot installation of MegaRadar Fusion Sensor next to existing radar. Existing Side-Fire Radar (left), MegaRadar Fusion Sensor (right)



Hand count of video vs reported data by MegaRadar Fusion Sensor. X-Axis: 15-Minute Segment, Y-Axis: Vehicle Count

RESULTS:

The International Airport retained All Traffic Data (ATD) to replace existing solar-powered radar hardware on the Blvd with the Fusion Sensor. In total, 22 Fusion Sensors were deployed and integrated with the airport's traffic management system. By using a sensor which fuses both video and radar in a single edge-detection device, this solution utilizes the benefits of radar and video without the typical drawbacks such as weather, lighting, congestion, or vehicle speed issues. In addition, the real-time data and report generation allows the airport transportation authority to more efficiently gather actionable data on the entry Blvd. The event-based system will also allow for future notifications of accidents, congestion, queue, wrong-way, or near miss scenarios. This cost-effective approach to updating existing hardware required no sensor controllers, pole relocations, or cabinet adjustments and retrofit installation was performed in a matter of days.



Traffic Sensor Map