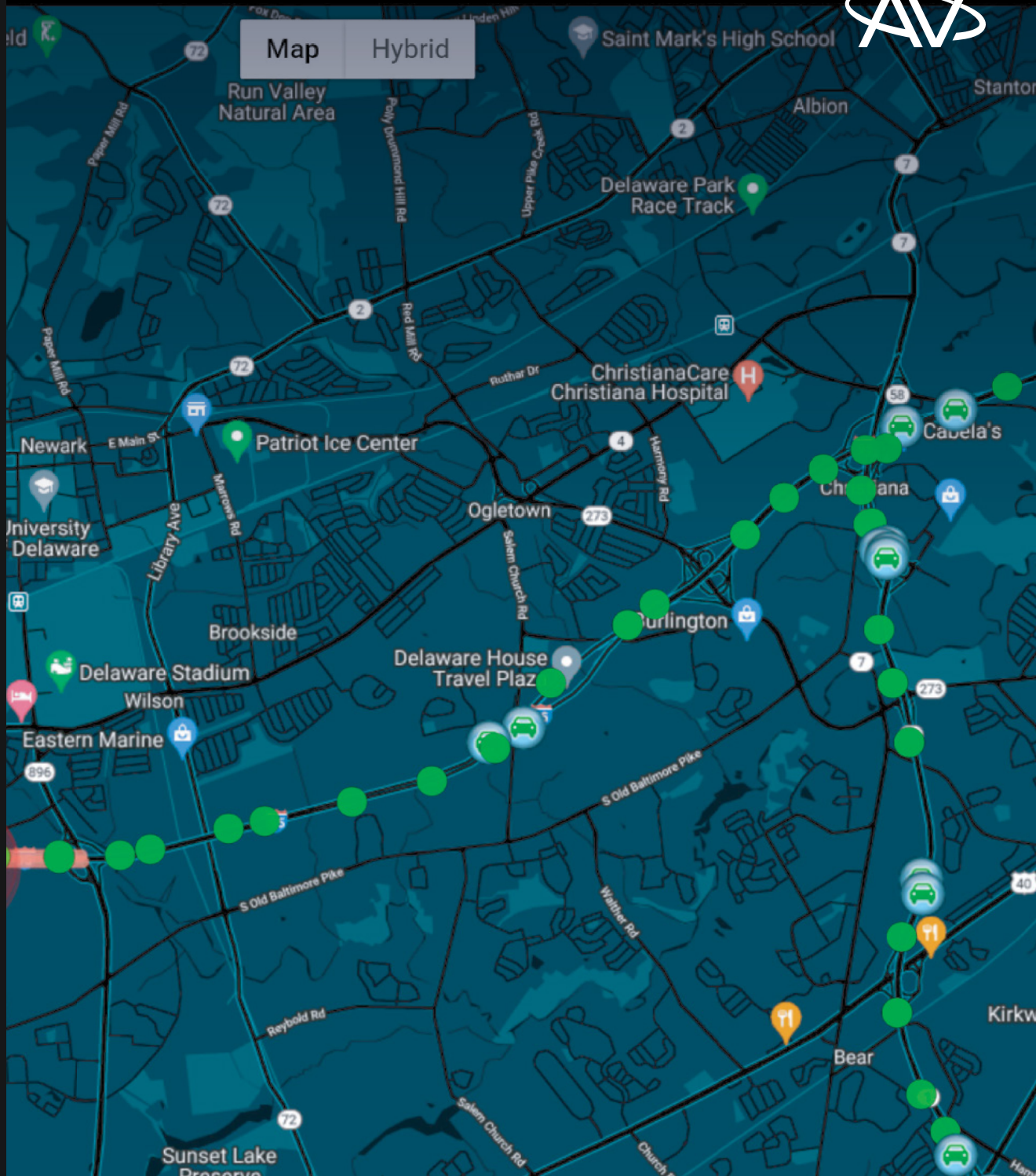


AI-TOMS

AI TRANSPORTATION
OPERATIONS MANAGEMENT SYSTEM



The Artificial Intelligence Transportation Operations Management System (AI-TOMS) enhances Traffic Management Center (TMC) data ingestion and analysis processes by providing AI tools for short-term traffic flow prediction, incident impact assessment and mitigation recommendations, and system performance evaluation. AI-TOMS easily integrates with existing TMC system and sensors to enable ingestion, analysis, and usage of automated incident detection, incident impact assessment and mitigation recommendations data.

_Data Management

AI-TOMS analyzes live data streams and displays high-priority information at any given time (incidents, congestions, major events). It also monitors data quality in the background, reporting the type of issues and occurrence statistics for maintenance actions.

_Signal Performance Measure

AI-TOMS collects High Resolution data from controllers in five-minute intervals and provides near real-time analysis and visualization of performance measures.

_Traffic Flow Prediction

AI-TOMS tracks traffic volume, speed and occupancy over time, then uses machine learning to predict up to 60 minutes into the future. This tool enables TMC staff to operate traffic proactively.

_Automatic Incident Detection

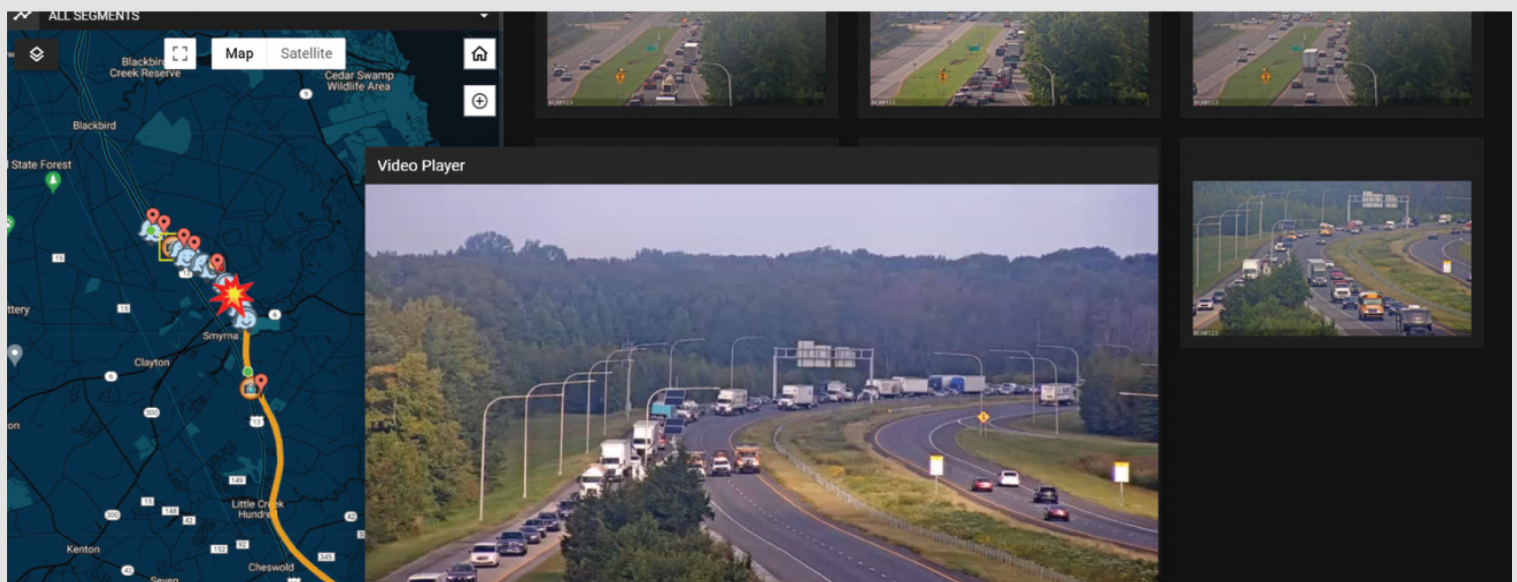
AI-TOMS detects and classifies traffic incidents based on multiple sources. The evidence for each incident is grouped and associated with the timeline for cause reasoning and impact analysis.

_Mitigation Plan Recommendations

AI-TOMS applies artificial intelligence to TMC operations by generating and evaluating response plans to on-going incidents such as traffic detours and signal timing adjustment. Recommended mitigation plans can be deployed automatically or implemented upon confirmation from TMC staff members.

_Incident Analysis and Tracking

AI-TOMS maintains the incident analysis and mitigation history with corresponding sensor data, to assist operators in long-term planning and short-term response objectives, and the software tool to improve its performance over time.



AI-TOMS USES CAMERA DATA AND LIVE DATA STREAMS