

REQUEST FOR INFORMATION (RFI) from the Florida Dept. of Transportation

RFI Number: DOT-RFI-26-9086-SJ

RFI Title: Camera Sensor Systems for High Speed Vehicle Data Collection

The Department of Transportation, Transportation Data & Analytics Office is requesting the following information from prospective vendors about the commodities and/or contractual services described below.

Description of commodities/contractual services:

Purpose

The Florida Department of Transportation (FDOT) Transportation Data & Analytics Office is seeking information from qualified vendors and technology providers regarding the capabilities, specifications, and deployment considerations of AI-enabled camera sensor systems designed for continuous, high-accuracy vehicle data collection on the Florida State Highway System. The primary objective is to evaluate technologies capable of operating 24/7, under high-speed traffic conditions, and across diverse environmental and climatic conditions, with a minimum vehicle detection and classification accuracy of 95%.

Background

FDOT is exploring advanced sensing technologies to enhance its Transportation Monitoring Program. Traditional inductive loops and radar-based systems have limitations in scalability, maintenance, and data richness. AI-powered camera systems offer the potential for multi-modal data capture, including Federal Highway Administration (FHWA) 13-vehicle classification, speed estimation, lane occupancy, and trajectory tracking, with the added benefit of edge processing and real-time analytics.

Specific Information Requested:

Respondents should provide detailed information on systems/technologies that meet or exceed the following technical and operational criteria:

Functional Capabilities

- **Vehicle Detection & Classification:**
 - Must support classification of at least 13 FHWA vehicle classes.
 - Detection and classification accuracy must meet or exceed 95% under all operating conditions.
- **Speed Estimation:**
 - Accuracy within $\pm 5\%$ of actual vehicle speed at highway speeds (≥ 70 mph).
- **Lane-Level Detection:**
 - Ability to distinguish vehicles by lane, including during lane changes and congestion.

- **Traffic Volume & Occupancy:**
 - Real-time reporting of vehicle counts and lane occupancy rates.

Environmental & Operational Conditions

- **24/7 Operation:**
 - Continuous operation with minimal downtime or recalibration.
- **Weather Resilience:**
 - Must function reliably in rain, fog, high humidity, salt air, and direct sunlight.
- **Temperature Range:**
 - Operational range of -10°C to 60°C (14°F to 140°F).
- **Nighttime Performance:**
 - Must include infrared or low-light imaging capabilities for nighttime detection.

Installation & Maintenance

- **Mounting Options:**
 - Pole, gantry, or roadside cabinet mounting at heights suitable for highway observation.
- **Power & Connectivity:**
 - Support for AC, solar power, battery backup, and wireless (cellular/LTE/5G) or fiber connectivity.
- **Edge Processing:**
 - On-device AI inference preferred to reduce bandwidth and latency.
- **Remote Management:**
 - Remote diagnostics, firmware updates, and system health monitoring.

Data & Integration

- **Data Outputs:**
 - Structured data formats (e.g., PRN, JSON, XML) with timestamped vehicle records.
- **Integration:**
 - Compatibility with FDOT's existing Transportation Data Management Systems (TDMS).
- **Cybersecurity:**
 - Compliance with NIST Cybersecurity Framework or equivalent cybersecurity standards for data transmission and storage.

FDOT requests detailed technical specifications, case studies, deployment examples, and performance validation data. Information should include technical feasibility and innovation, proven field performance, scalability and ease of deployment and data quality and integration capabilities.

Submission Structure

Vendors should structure their responses to include:

- Company Overview and Relevant Experience
- Technical Specifications of Proposed System/Technologies
- Environmental and Operational Performance Data
- Case Studies or Pilot Deployments
- System Architecture and Data Flow Diagrams
- Maintenance and Support Model
- Integration and Interoperability Capabilities

Contact for Questions or clarification:

Eric Griffin eric.griffin@dot.state.fl.us

The requested information must be received by 5:00 pm (EST) on Friday, June 26, 2026.

Send to: eric.griffin@dot.state.fl.us

NOTE: Responses to this Request for Information (RFI) will be reviewed by the agency for informational purposes, and will not be considered as offers to be accepted by the agency to form a binding contract. Advertisement of any subsequent competitive solicitation that may result from this RFI will be posted on the Florida Vendor Information Portal.