Solution Brief

Edge AI
Intel® SceneScape™, Intel® Core™ processors, Intel® Arc™ GPUs, Intel® vPro®, Metro AI Suite

Edge AI Solutions Power the Future of Intelligent Transportation

OnLogic ruggedized computers built with Intel® architecture bring scalable, reliable edge intelligence to fleet management and roadside infrastructure.

ONLOGIC

Introduction

Transportation is becoming the nervous system of cognitive cities, powered by edge AI that drives safety, sustainability and smarter mobility. Rugged, energy-efficient computers from OnLogic, built on Intel® architecture, deliver the performance and reliability needed to make this vision real. By processing video, sensor and vehicle data where it's generated, they enable real-time decisions that reduce congestion, improve passenger safety and optimize operations across connected fleets and roadside infrastructure.

This solution represents the building block of the intelligent city, where transportation infrastructure becomes aware, connected and responsive to its environment. For commuters, this means safer intersections, fewer delays and faster emergency response.

The Challenge

As cities evolve into cognitive systems powered by data-driven decisions, the challenge of deploying and managing real-time intelligence grows, especially across mixed roadside, fleet and control-center environments where reliability, latency and connectivity all intersect.

- **Harsh edge environments:** Temperature extremes, vibration and exposure to dust or humidity limit the use of conventional computing infrastructure. Modern cities need edge systems that deliver industrial reliability without compromising AI performance.
- **Latency and cost constraints:** Cloud dependency can slow decision making and increase bandwidth costs, making it unsuitable for real-time responses to traffic or safety events.
- **Regulatory compliance pressures:** The Build America, Buy America Act (BABA) requires U.S.-assembled systems for federally funded projects, creating added sourcing and documentation challenges.
- **Integration across systems:** Realizing the vision of cognitive cities requires platforms that combine video, sensors and connected-vehicle data into actionable intelligence and adapt in real time.

The Solution: OnLogic Edge Systems Powered by Intel

OnLogic's rugged edge computers with Intel technologies deliver industrial reliability and advanced AI performance. The solution operates at both roadside and in-vehicle edge layers, bridging sensors with centralized traffic management systems.

Key capabilities include:

- Real-time object, incident and intersection analytics using Intel® SceneScape™ for continuous scene understanding and context-aware decision making.
- Dynamic, multimodal traffic routing that uses multi-agent decision making to integrate map data, live intersection feeds, weather conditions and VMS inputs for real-time route optimization and traffic flow adjustments.
- 3D object detection from standard cameras, without cloud dependency, enabling responsive analysis in variable lighting conditions and weather.
- Edge-optimized inferencing powered by Intel® Core™ processors with Intel® Arc™ graphics, balancing CPU and GPU performance for visual analytics.
- Local edge AI processing that converts visual and sensor data into actionable insights, enhancing operational efficiency and safety.
- U.S. assembly and BABA-compliant manufacturing, ensuring alignment with federal procurement standards.

Intel Technology Advantage

- **Intel® Core™ processors:** Delivers scalable, high-performance compute for AI and vision workloads at the edge.
- **Intel® Arc™ GPUs:** Provides parallel processing power for demanding visual analytics and inferencing.
- **Intel® vPro® technology:** Enables secure, scalable remote management and long lifecycle support for field deployments.
- **Intel® SceneScape:** Uses vision-based AI and sensor data to deliver real-time scene understanding, object detection and event analytics for smart intersections and connected fleets.
- **Metro AI Suite:** Accelerates edge AI deployment with optimized SDKs, sample applications and reference pipelines that simplify deployment on Intel® hardware.

Use Cases

Roadside infrastructure:

Real-time edge AI video analytics and scene understanding powered by Intel SceneScape to detect congestion, incidents and ensure pedestrian safety.

Impact:

Significantly reduces traffic incidents, accelerates emergency response times and enhances pedestrian safety compliance through proactive monitoring and alerts.

Connected fleets:

Edge AI for in-vehicle diagnostics, predictive maintenance and driver monitoring with low-latency data processing.

Impact:

Minimizes vehicle downtime, reduces maintenance costs and improves driver safety through real-time behavioral analytics and predictive insights.

Intelligent traffic management:

Deploy scalable AI systems at intersections for adaptive traffic control, supporting vehicle-to-everything (V2X) and edge-to-cloud integration.

Impact:

Optimizes traffic flow to reduce congestion, decreases fuel consumption and enables seamless V2X communication for enhanced autonomous vehicle readiness.

Partner Ecosystem

Exemplifies how Intel's ecosystem partnerships accelerate deployment of intelligent transportation:

- **OnLogic:** U.S.-assembled, rugged edge systems purpose-built for industrial and transportation environments with flexible I/O, long-term availability and support for key industry standards including NTCIP, ONVIF and MQTT, ensuring seamless integration across roadside, fleet and control-center networks.
- **Intel:** Provides the compute, graphics and AI software stack that powers scalable, intelligent edge deployments.

This solution gives integrators access to a validated foundation for building adaptive, data-driven systems that can scale with evolving smart and cognitive city needs.

Key Benefits

Rugged, scalable AI performance built for real-world transportation.

- **Edge-optimized performance**: Run real-time AI workloads at the point of data generation for immediate decision making.
- **Regulatory readiness:** U.S. assembly and BABA-compliant manufacturing simplify procurement and align with federal infrastructure priorities.
- **Reduced latency:** Local inferencing at the edge minimizes cloud dependency for faster, real-time responsiveness.
- **Flexibility and scalability:** Configurable OnLogic computers with a range of available Intel® platforms, coupled with open software frameworks, support customization across diverse transportation and urban applications.
- **Long lifecycle support:** Intel® embedded processors and diligent component management by OnLogic ensure dependable operation and availability for multi-year projects.
- **Cost optimization:** Intel® Edge platforms lower total cost of ownership through reduced cloud usage, efficient performance, and long lifecycle reliability.

Proof Point

At ITS World Congress 2025, the Intel and OnLogic solution demonstration showed how edge AI enables the foundation for cognitive cities. Running live traffic feeds in real time, the solution identified incidents, analyzed intersections and optimized routes, all powered by Intel Core processors, Intel Arc graphics and SceneScape software running on OnLogic ruggedized edge systems.

The result: A real glimpse into how intelligent edge computing is shaping adaptive, self-learning cities of tomorrow.

Next Steps

Learn more about how OnLogic and Intel are enabling smarter, safer and more connected transportation:

Video & AI Cities Community

Edge AI Suites for Industry Specific AI Solutions

Email: transportation.us@intel.com

Solution provided by:

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