



## Video Intelligence Takes the Wheel

*Written by ISS Team*

### How Automated Incident Detection by Intellisession® is changing the ITS landscape

As populations in cities around the world continue to grow, urban streets face mounting challenges in the form of perpetual traffic congestion and safety concerns. According to [data from the Federal Highway Administration](#), there were more than 275 million registered vehicles in the U.S. in 2020, up from 250 million in 2010. Additionally, a [recent study by the Texas A&M Transportation Institute](#) found that American commuters wasted average of 54 hours stuck in traffic in 2022.

Aside from reducing gridlock, many cities are also looking to emerging ITS technologies to reduce accidents and fatalities on roadways, which only continue to climb. [According to the National Highway Traffic Safety Administration \(NHTSA\)](#), nearly 43,000 people died in motor vehicle traffic crashes in the U.S. in 2021, a more than 10% increase from 2020 and the highest number of fatalities recorded since 2005.

The question looms large for city and highway planners alike: how should modern traffic management infrastructures be designed to accommodate an ever-increasing number of people on the roadways without straining existing resources? The answer lies in leveraging powerful video technologies that optimize traffic flow and enhance public safety.

### Tackling Traffic Challenges with Video Intelligence

The stakes for traffic management have never been higher. Consider the impact of traffic congestion — it's more than just an inconvenience for drivers. Congestion disrupts the economy, increases fuel consumption, and escalates harmful emissions. Meanwhile, safety risks from accidents, stalled vehicles, and other incidents strain public resources like emergency services. Against this backdrop, the need for intelligent, proactive systems is clear.

That's where Automated Incident Detection by Intellisession® steps in. This AI-driven system redefines traffic management with real-time detection, in-depth analytics, and predictive insights. By leveraging advanced neural network technology, it enables traffic operators to

address issues like accidents, wrong-way driving, stopped vehicles, and more — all before these incidents spiral into broader disruptions.

The advanced capabilities provided by the solution were developed using ISS' advanced artificial neural network technology in conjunction with the OpenVINO™ toolkit, which is designed to help Intel partners accelerate the development of various AI tools. The OpenVINO toolkit makes the most of Intel AI hardware, the latest neural network accelerator chips, and embedded computers and edge devices to maximize AI analytics performance.

## Enhancing Traffic Management with Real-Time Detection

Traffic congestion often feels inevitable, but newer AI-powered solutions are rewriting this narrative. Upon deployment, Automated Incident Detection becomes an always-on digital guardian, monitoring multiple traffic channels and alerting stakeholders to potential incidents in real time. Key features of the software include:

- **Accident Detection:** Immediate alerts about vehicle collisions help responders arrive on the scene faster, mitigating the potential for secondary accidents.
- **Wrong-Way Driving Identification:** Early detection reduces the hazards posed by disoriented drivers.
- **Pedestrian Monitoring:** The system identifies people and even animals in the roadway — both major risk factors for accidents.
- **Vehicle Classification:** Advanced analytics can count and categorize vehicles while measuring speed and occupancy data to optimize traffic flow.

These capabilities allow city authorities better control over their roads. By addressing problems as they occur — or even predicting them before they arise — forces such as traffic gridlock are proactively diminished.

## Insights for Safer Cities

Beyond real-time functionality, Automated Incident Detection is designed to continuously improve over time. The integration of machine learning enables its neural network to adapt to shifting conditions, such as new traffic patterns, seasonal changes, or weather impacts. This feature not only optimizes traffic management strategies but also substantially improves road safety.

For example, the platform's predictive analytics help traffic planners anticipate areas of high congestion before they materialize, allowing for preemptive routing adjustments or signal timing changes. This foresight means avoiding a significant portion of delays, creating smoother commutes.

Furthermore, the solution's floating license model offers unparalleled scalability. Municipalities can adjust their monitoring efforts by activating or deactivating cameras as needs evolve, ensuring cost efficiency while maintaining robust coverage.

## The Broader Impact on Sustainability and Cities of the Future

Considering the environmental impacts, systems like Automated Incident Detection play a significant role in reducing vehicle idle time, contributing to fewer carbon emissions. Coupled with smoother traffic flow and reduced congestion, this encourages a shift toward greener, more sustainable urban environments.

For city officials, traffic planners, and engineers, the implications are profound. By investing in ITS solutions that learn, adapt, and scale, cities can prioritize safer highways, minimize resource waste, and even foster economic growth by improving the reliability of transportation networks.

### Building the Future of Mobility — Today

The road ahead for traffic management is undoubtedly complex, but innovations like Automated Incident Detection by Intellisession® are simplifying the challenge. With its data-driven approach to solving urban mobility issues, this powerful new ITS platform represents a shift toward smarter infrastructure solutions. Its interoperability with other systems, scalability, and emphasis on predictive safety analytics ensure it's not just a temporary fix but a long-term solution built for the evolving demands of the future.

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