



## Vehant Technologies Builds Smart Traffic Management Solution with AWS & Intel

Road safety is a key factor affecting the quality of life, especially in a developing country like India. The nation accounts for more than 11% of road traffic related deaths globally, the highest in the world. With its increasing population and rapidly soaring vehicle ownership rates among citizens, road traffic in both urban and rural regions are also on the rise. This in turn is making Indian roads more and more congested, increasing the number of accidents. Traffic violations like over-speeding, jumping red lights and not wearing seatbelts or helmets contribute significantly to accident-related deaths in the country. Road safety experts have constantly cited poor infrastructure as the biggest constraint towards improving the country's traffic standards. More importantly, the lack of an efficient, centralized traffic surveillance system has hampered the country's law enforcement bodies from penalizing the violators and persuading the motorists to obey traffic rules strictly.

### Transforming the Road Safety & Traffic Surveillance Landscape

Vehant Technologies is a pioneer in road safety enforcement and traffic management, offering a wide range of solutions for surveillance and traffic monitoring. As traffic management was a major pain-point for many of its customers, Vehant explored developing a solution that would help law enforcement authorities to augment their capabilities to not only detect violations but also enhance the overall traffic management and improve mobility nationwide. However, building such a solution with the infrastructure available in India posed its own challenges. Traffic management is still a heavily personnel-intensive task in India, especially for law enforcement. So, the solution was required to generate actionable insights in real-time and in a cost-effective manner. The challenges increase further when dealing with regions which feature non-lane-disciplined traffic stream. To sum up, Vehant needed a solution that works efficiently with less manpower even in challenging situations and environments.

### The Road to TrafficMon: Building a Violation Detection System

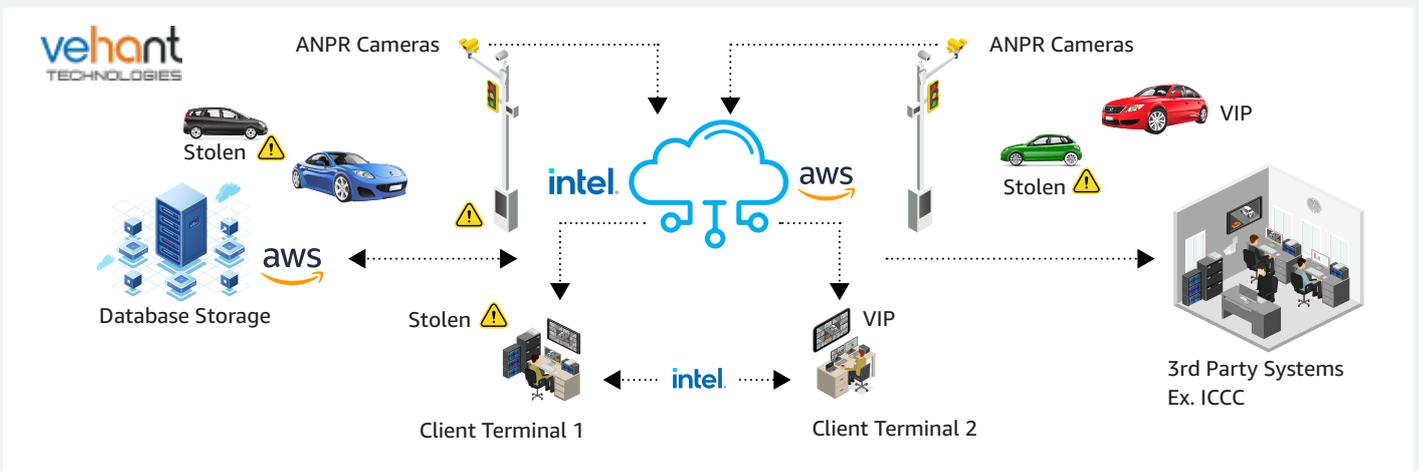
Vehant developed TrafficMon® - a suite of traffic law enforcement and monitoring solutions - powered by AI and Machine Learning. By harnessing the latest technologies from Intel and AWS, it enables data-driven decisions through actionable insights from video analytics and offers access to real-time monitoring. TrafficMon adds an intelligence layer to standard IP cameras, which allows detection of multiple types of infractions. The IP camera stream is fed into an AWS-powered cloud server system, which processes raw image frames.

TrafficMon leverages various software technologies, including advanced AI models, to process the visuals and understand what is happening. Improved performance and more cores, along with increased memory bandwidth of the 3rd Generation Intel® Xeon® Scalable processors, allow the solution to do faster object recognition analysis on multiple video streams simultaneously.

Set on AWS Cloud, TrafficMon is capable of operating 24x7. It offers several violation detection capabilities such as red-light jumps, over-speeding, not wearing helmets, triple riding, wrong lane movement, and various other traffic violations in real-time, even on non-lane-disciplined streams. Built on Intel hardware, the solution's architecture flexibility allows it to be adapted to customers' requirement quickly and seamlessly.

The solution has an overview camera to capture the image of an entire area when there has been a violation. The in-built automatic number plate recognition (ANPR) system identifies the number of the vehicle which performed the violation and stores it in the database. As the system is connected to the traffic control room and integrated with the country's VAHAN database, automated/manual challans can be sent directly to the violators. Intercepting is probably more useful for Stolen/Hotlist for some crime, etc - use case of Map visualization.

Ultimately, TrafficMon helps traffic authorities to enhance operational performance by reducing human error, centralizing traffic management, and optimizing monitoring functions. It can accelerate response time by detecting and reporting events quickly.



## Leveraging AWS & Intel to Deliver a Reliable & Secure Video Analytics Solution

Video analytics workloads demand a high level of availability and scalability across regions. As there is a growing need for customer workloads to move to cloud, it was essential for TrafficMon to be cloud-ready. Vehant leveraged Amazon EC2 instances powered by Intel for compute power and S3 for storage infrastructure. **Amazon EC2** provides a wide selection of instance types optimized to fit different use cases.

Taking advantage of an infrastructure designed on the **Intel Xeon Scalable processors**, TrafficMon delivered outstanding analytics performance for faster, more accurate insight. The Intel Xeon Scalable processors offer the performance, security, and operational controls required for video analytics, and consolidated workloads at the edge or on-prem. The solution also relied on **Intel® Distribution of OpenVINO™ toolkit** for inference acceleration, delivering faster insights without losing accuracy. OpenVINO toolkit is adopted to optimize the inference performance and deploy solutions seamlessly.

The 3rd Generation Intel Xeon Scalable processors - powering the **M6i, R6i, and C6i** instances - provide customers greater TCO than previous generation-based instances by offering higher per-core performance, built-in AI acceleration with Intel® Deep Learning Boost (Intel® DL Boost), and built-in crypto acceleration. As a result, Vehant's customers can now set up surveillance projects with much reduced IT operational costs, cut overheads, and scale to demand with less efforts.

### Key Features

<p>Video-based traffic violations detection system</p>	<p>Business intelligence dashboard for intuitive insights</p>	<p>Complete evidence capturing mechanism</p>	<p>Works with non-lane discipline traffic</p>	<p>Works seamlessly in all weather conditions</p>	<p>Data security to ensure confidentiality &amp; integrity</p>
<p>24x7 operations</p>	<p>Intuitive and user-friendly interface</p>	<p>Review violation &amp; evidence data</p>	<p>Real-time alerts for violations</p>	<p>Advanced search options</p>	<p>Customized MIS reports</p>

### Learn More

To learn more about Vehant, visit [www.vehant.com](http://www.vehant.com)

To learn more about AWS and Intel, visit [www.intel.com/content/www/us/en/partner/showcase/aws/overview.html](http://www.intel.com/content/www/us/en/partner/showcase/aws/overview.html) and <https://aws.amazon.com/intel/>

### About Vehant Technologies

Incubated in Indian Institute of Technology (IIT)-Delhi in 2005, Vehant Technologies is a pioneer in AI-based physical security, surveillance, traffic monitoring, and junction enforcement solutions.

### Benefits

- Works even with challenging scenarios like non-lane-disciplined traffic
- Unified HW and system architecture for violation detection and Traffic Management
- Also handles No-seatbelt, Mobile usage and two-wheeler infractions like No-Helmet and Triple-riding

#### Disclaimer:

No product or component can be absolutely secure.

Your costs and results may vary. For more information please refer Legal Notices and Disclaimers.

© Intel Corporation. Intel, the Intel logo, and other Intel marks are trademarks of Intel Corporation or its subsidiaries. Other names and brands may be claimed as the property of others.

Amazon Web Services, Inc. is a subsidiary of Amazon.com, Inc. Amazon.com is a registered trademark of Amazon.com. This message was produced and distributed by Amazon Web Services, Inc. or its affiliates 410 Terry Ave. North, Seattle, WA 98109. © 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved. Read our Privacy Notice.