CASE STUDY

Videonetics elevated traffic surveillance at the toll gates of the most populous city of UAE

Project Location : A city in UAE

Industry Segment : Traffic & Transportation

Technology and Project Execution Partner :
Vantage Integrated Security Solutions

Solution : Videonetics AI-powered Intelligent VMS
Vantage Ultra HD Network Cameras

Overview

The largest city in the United Arab Emirates, is the epitome of a city where progress meets tradition. Since the inauguration of the 21st century, the city has rapidly grown, with iconic landmarks and business centres populating it. Known befittingly as the Global City, today it is the most populous Emirate, and is home to 35,32,000 people as of 2022.

As a part of the city's metamorphosis into one of the prime international destinations, the visionary leaders of the city have developed a progressive transit system with a well-maintained roadway framework, ensuring seamless connectivity within the city's perimeters.

A significant part of ensuring a hassle-free commute in the city is the installation of an RFID-based electronic toll road system, enabling a continuous flow of traffic through toll gates.

The Challenge

While the city has a top-notch public transit system, whose efficiency has been magnified with the automated toll system installed at the gantries, the government body of the city is cognizant of the fact that the security of the citizens is paramount. To complement its modern toll system, the city needed a surveillance system to ensure safety. Considering this, almost a decade earlier, the government body had equipped the gantries with a network of cameras with the vision to surveil the traffic conditions and vehicle movement in the area.

However, the existing surveillance solution, with its limited surveillance and low-resolution video feeds, fell short of the city's requirements. The inadequate data storage capacity further augmented the issue, often causing slow investigations of critical scenarios. As a result, the city decided to undertake a major security upgrade by demanding a video surveillance solution that is resilient, scalable, and has proven expertise in monitoring the traffic of urban landscapes. Further, with the rapid increase in traffic density, it became pertinent for the city to deploy a surveillance solution that empowers operators located across the city to be able to not only access surveillance data round the clock but also provide them a framework to communicate and collaborate interdepartmentally, adding another layer of security to the schema.
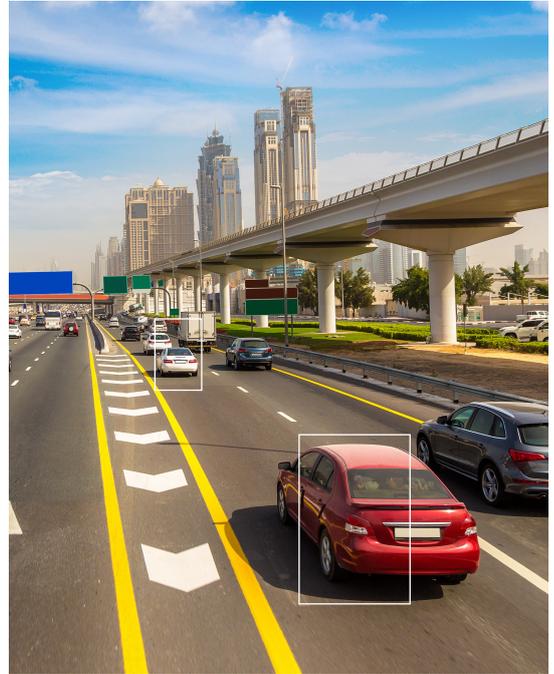
The Solution

In an effort to enhance security measures at toll gantries, decision-makers recognised the opportunity to upgrade the surveillance solution. They sought a system that would not only enable effective communication but also proactively monitor traffic across toll gantries.

Industry's leading brands, Videonetics and Vantage Security collaborated to design an intelligent and scalable surveillance solution to keep watchful eyes at toll gantries. The technology partnership between these companies resulted in a bespoke and modular AI-powered unified solution that encompassed an intelligent VMS (Video Management System) and ultra high-definition network cameras.


Key Highlights

1

Advanced Surveillance Solution for Toll Gantries: The city's government transport officials required an intelligent surveillance solution that could adapt to future needs and accommodate the city's growing number of vehicles. They prioritised an open platform that could support additional capabilities and applications over time. After a rigorous evaluation process, Videonetics and Vantage Security were chosen for the project. Today, 16 toll gantries in the city are equipped with Vantage Ultra high-definition cameras, managed by Videonetics IVMS 3.0. This integrated solution provides 24/7 monitoring through a user-friendly interface and ensures easy accessibility to video data for operators and senior authorities.

2 **Enhanced Traffic Monitoring and Incident Recording:** The implemented solution empowers control centre operators to monitor traffic activity, maintain traffic flow, and capture any adverse events occurring at toll gantries. The adaptive interface allows dynamic monitoring with swift navigation through the system using a map-based interface. Operators can simultaneously view live and recorded videos on a single display panel, ensuring no critical event is missed and investigations are expedited. The platform's data recovery framework with failover and redundancy features ensures uninterrupted access to critical information, even during unforeseen calamities.
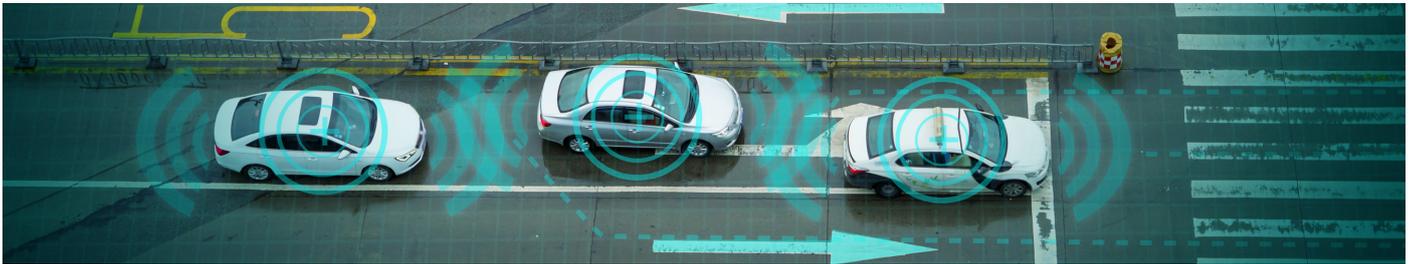
3 **Streamlined Collaboration and Rapid Investigations:** The unified surveillance solution offers significant advantages in investigations, streamlining the process and accelerating outcomes. Previously, investigators had to sift through extensive video data in separate systems to identify relevant information and suspects. With the platform's unified view, investigators can expedite their work by easily accessing all required data in one place. Additionally, the built-in chat engine facilitates seamless communication among active operators, allowing them to share camera views, events, and screen layouts. This feature enables effective collaboration and enhances the speed and efficiency of investigations.

By implementing this advanced surveillance solution, city's toll gantries have significantly improved security measures while ensuring scalability and adaptability for future needs. The collaborative efforts of Videonetics and Vantage Security have resulted in an integrated system that enhances traffic monitoring, incident recording, and investigative capabilities, setting a new standard for toll gantry surveillance.

The Impact

The implementation of Videonetics and Vantage Security's unified solution has had a transformative impact on traffic monitoring at toll gantries. This case study features the remarkable outcomes achieved through this technology, including real-time information for authorities, enhanced security levels, expedited investigations, improved response efficiency, and a more secure and efficient driving experience for residents and commuters.

"Partnering with Videonetics to develop a unified solution for the city has been an enlightening and rich experience. With their dedication to continuous innovation and improvement, they have curated an Intelligent Video Management Solution, that, in combination with our powerful cameras, is primed to transform traffic management and surveillance in one of the wealthiest cities of UAE." – **Prateek Verma, Sales Director - MEA Region, Vantage Integrated Security Solutions.**

Key Points

a) **Real-Time Traffic Monitoring and Enhanced Security:** The unified solution provides authorities with real-time information on the traffic situation near toll gantries, enabling easy monitoring and management. By leveraging ultra-HD cameras with wider coverage and sharp details, the overall security level of toll gantries has significantly improved. Round-the-clock monitoring ensures prompt detection and response to potential security threats or incidents. The solution empowers authorities to take proactive measures and ensures a safer environment for all road users.

b) **Expedited Investigations and Improved Response Efficiency:** The implementation of the unified solution has expedited investigations into incidents, leading to heightened situational awareness and improved response efficiency. Investigators can now access a unified view of all video data, eliminating the need to retrieve information from separate systems. This streamlined process enables quicker analysis of incidents, allowing authorities to take necessary actions promptly. The solution enhances the accuracy and efficiency of investigations, resulting in improved safety and security outcomes.

c) **Secure and Efficient Driving Experience:** With live visualisation capabilities, operators can identify potential threats or emergencies and respond promptly. The advanced surveillance technology provides a more secure and efficient driving experience for residents and commuters. The presence of the unified solution reassures road users that their safety is prioritised, instilling confidence in the overall transportation infrastructure. The solution's capabilities contribute to smoother traffic flow, reducing congestion, and enhancing the overall driving experience.

d) **Future-Proof Investment through Flexibility and Scalability:** With live visualisation capabilities, operators can identify potential threats or emergencies and respond promptly. The advanced surveillance technology provides a more secure and efficient driving experience for residents and commuters. The presence of the unified solution reassures road users that their safety is prioritised, instilling confidence in the overall transportation infrastructure. The solution's capabilities contribute to smoother traffic flow, reducing congestion, and enhancing the overall driving experience.

The implementation of the unified surveillance solution has revolutionised traffic monitoring at toll gantries of the city. The outcomes include real-time information for authorities, enhanced security levels, expedited investigations, improved response efficiency, and an overall secure and efficient driving experience. With its future-proof design, the solution ensures that city's toll gantries are equipped with advanced technology to meet evolving needs and ensure the safety of road users.