Videonetics

Smart City Authority optimises public safety, asset security, and traffic management with Videonetics solution

Project Location : A town in the state of Arunachal Pradesh (INDIA)

Industry Segment : Safe & Smart City

Solution: • Videonetics VMS
• AI powered Video Analytics
• Automatic License Plate
  Recognition (ALPR)
• Face Recognition System

The Customer

One of the prominent towns in Arunachal Pradesh, India, made it into the Government of India's Smart Cities Mission development scheme with a vision of building a well-managed clean, green, and environment-friendly city. This city is envisioned to possess a character of its own, defined by scenic beauty, intellectual capital, and eco-friendly tourism through sustained economic growth for all its citizens. The target is to create a replicable role model that can act like a lighthouse to other aspiring towns of Arunachal Pradesh.

Challenges

The town is fast becoming a bustling tourist attraction in Arunachal Pradesh. Before this the town had a limited deployment of CCTV cameras, and the system was not well suited to even conduct any investigations if an unwanted incident were to happen. Over the past few years, the town has witnessed a high influx of students, visitors, and tourists. Understandably, infrastructure has also shown rapid growth, and hence local authorities understood the need to address concerns of vigilance, traffic, municipal, assets protection, and safety of the citizens.

Solution

The official body formed to execute the vision of a safe city wanted to implement a comprehensive surveillance solution to monitor law and order situations, road safety, identify miscreants, protect public and private properties, and improve urban amenities. A project team comprising officials of the governing body, Videonetics, and system integration partners, carried out extensive research to identify important spots around the town and prepared a comprehensive surveillance strategy.

Videonetics designed a versatile & unified solution that includes Video Management System, AI-powered Video Analytics, Automatic License Plate Recognition (ALPR) System, & Face Recognition System (FRS).

1

24x7 Geo-Situational Awareness & Accelerating Response time: Operators in the command & control centre monitor over 180+ locations across the town with Videonetics VMS using multi-layer GIS maps for a clear view of cameras spread across the geography.This covers areas like government establishments, public areas, airport, railway stations, schools, parks, markets, and roads.

2

Suspect Tracking and Face Recognition: The city deployed network cameras to process video streams with the Face Recognition System application at city entry-exit points and other public areas. The forensic investigation features of the application also help in a quick search for evidence and identifying suspects during investigations.

3

AI-Powered Video Analytics for Safety & Security of People and Assets: Artificial Intelligence powered Video Analytics has been deployed strategically across various facilities throughout the city while keeping in mind the requirements specific to each site. Here is a snapshot of the use cases that have been deployed meticulously.

a) Line crossing detection is deployed along perimeters of correctional facilities to detect intrusion. Face Recognition System application is also used at entry-exit gates to recognize faces in live video streams. 'Unattended object detection' use case has also been applied to identify objects that can pose a security threat.

b) Fire & smoke detection has been deployed at the Airport and road intersections across the city to detect fire and smoke caused by accidents.

c) Parks and gardens are being monitored to detect person collapsing. Face Recognition System is also being used to identify people.

d) Crowd formation & estimation has been put to use in public areas like hospitals and VIP hotspots to manage crowds efficiently.

e) To keep the city clean, the municipality body is using AI-powered analytics to detect the overflow of garbage bins installed at all garbage collection centres. Also, to keep a constant track of the timely collection of garbage and identify people violating guidelines and penalise them, the face recognition system has been deployed as well.

f) To protect various government buildings & schools, Vandalism and Graffiti Detection use cases have been deployed, along with the Face Recognition System to identify frequent perpetrators and alert the authority for timely action.

g) In the quest for maintaining the environment and air quality, authorities are using AI-powered Video Analytics to 'Detect Polluting Vehicles' in real-time.

4

Accessing vehicles details with ease: Videonetics' Vehicle License Plate Recognition (ANPR or ALPR) application is deployed across 34 locations such as Inter-city roads, intersections, entry-exit points of the city, and intersections and highways.This is done to capture and record the licence plate of any vehicle class and store them in the database for any future investigations. ANPR also supports city officials in identifying suspicious or wanted vehicles or non-standardized number plates in real-time and alert police officials in time. It has been quite helpful in solving cases of 'stolen' vehicles in the city.

Impact

The town today has become a shining beacon emblematic of the concept of a truly Safe & Smart city, as the Unified Video Management Platform of Videonetics has successfully provided tools to multiple agencies to solve real challenges beyond the basic need of monitoring for security purposes.

Here is a quick summary of the derived benefits of the end-to-end solution:

a)   Active monitoring round-the-clock, in-built Video Analytics, ANPR, and Face Recognition System has helped law enforcement authorities to manage traffic efficiently, enhance safety for citizens, and protect local businesses and city infrastructure.

b)   Working with city administration, control room operators can switch between video feeds using dynamic maps that empower them to obtain critical event information and manage emergencies by alerting stakeholders for quick action. And when necessary, the Videonetics solution makes it possible to share forensic videos across departments, facilitating more collaborative and successful response efforts.

c)   On the traffic front, operators gain vital statistical insights into traffic flow across the city that helps in pre-emptive planning to reduce congestion. The authorities also get alerts when there is a hot listed vehicle spotted.

d)   Face Recognition System has proven to be a watchful eye in identifying people of interest, suspects, criminals & trespassers, and alert teams for faster response and intervention to curtail threats.

The open and modular architecture of the solution not only allows the city to continue adding more applications to make its traffic management more robust but also integrates with the city surveillance system in a single unified interface to address overall security concerns with a holistic approach.