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Case Study:
Dharamshala Smart City: AI-Powered Traffic Management & Video Intelligence

Introduction

Dharamshala, nestled in the hills of Himachal Pradesh, is a prominent tourist destination known for its scenic landscapes, winding mountain roads and vibrant tourist activity. The city's unique hilly terrain, coupled with increasing movement of private vehicles, public transport and tourists, presents distinct challenges for managing traffic and ensuring public safety.

To address these evolving requirements, Vehant Technologies deployed its OKEAN® AI platform, bringing together intelligent traffic monitoring, automated traffic enforcement and advanced video analytics. The solution enables authorities to gain real-time visibility across critical locations and use AI-driven insights to support safer and more efficient city operations.

The Problem Statement

As a popular tourist destination, Dharamshala experiences varying traffic and pedestrian movement throughout the year, with significant increases during peak tourism periods. The combination of hilly terrain, diverse road conditions, increasing private vehicle movement and public transport makes effective traffic management and continuous surveillance particularly challenging.

Conventional surveillance relies heavily on operators monitoring multiple camera feeds, making it difficult to detect traffic violations, congestion and public-safety incidents in real time. Dharamshala needed an intelligent system to strengthen traffic management, improve public safety and enable smoother, better-managed roads for residents and visitors.

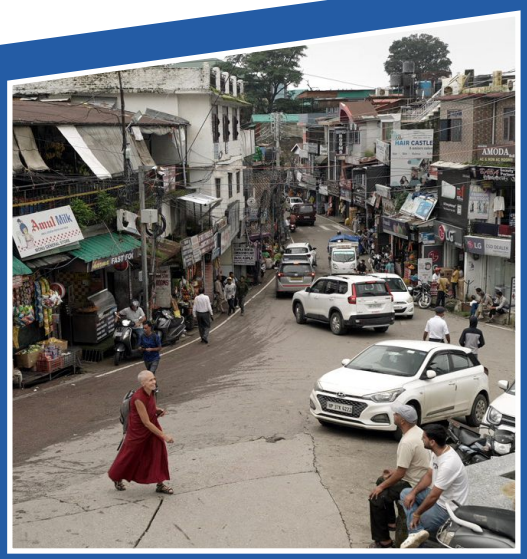

Fig.1 Dharamshala Smart City



Fig.2 Dharamshala Smart City - Control Room

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OKEAN® DeepVue™ – Video Analytics & Business Intelligence

- Abandoned Object
- Fight Detection
- Face Recognition System (FRS)
- Garbage Overflow
- Graffiti
- Loitering
- Object Classifiation
- Park Violation
- Person Collapse
- Standard Crowd
- Tourist Harassment
- Fight Detection
- Traffic Congestion

OKEAN® TrafficMon® – Traffic Monitoring & Enforcement

- ANPR
- Parking Violation Detection
- No Helmet Detection
- No Seat Belt Detection
- Triple Riding Detection
- Wrong Way Detection
- Central Monitoring Dashboard
- Mobile Phone While Driving Detection

Solution: Impact & Outcome

Vehant's OKEAN® AI platform combines OKEAN® TrafficMon for traffic monitoring and enforcement with OKEAN® DeepVue for intelligent video analytics, addressing Dharamshala's unique challenges of hilly terrain, limited road widths, high pedestrian movement and fluctuating tourist traffic.

- Strengthen traffic monitoring & enforcement through automated violation detection.
- Improve real-time visibility across traffic corridors and public spaces.
- Enable quicker identification of critical incidents for timely intervention.
- Monitor traffic congestion, particularly during peak tourist movement.
- Enhance public safety through AI-based incident detection.
- Reduce dependence on continuous manual monitoring through automated alerts.
- Support smoother mobility for locals and tourists through better-managed roads and public spaces.

For local residents, better visibility of traffic conditions and incidents can help authorities respond more effectively to disruptions, supporting smoother daily movement on Dharamshala's constrained road network. This becomes particularly valuable when congestion builds up and there are limited alternative routes.

For tourists, who often have limited time to explore the city, improved traffic management and public-safety monitoring can help reduce avoidable delays and create a safer, more comfortable experience. The initiative ultimately supports safer roads, smoother mobility and better-managed public spaces for both the local community and visitors to Dharamshala.

By combining traffic intelligence with AI-powered video analytics, Dharamshala is moving towards a more proactive, responsive and data-driven approach to traffic management and public safety helping create a safer and smoother experience for residents, businesses and visitors alike.

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