



Modernizing Yas Tunnel: Advanced Incident Detection for Road Safety

Description

The Yas Tunnel is a 1.1 km, six-lane road tunnel located on Yas Island, Abu Dhabi. It serves as a critical link between major attractions, including Yas Marina Circuit, Ferrari World, and Yas Waterworld and residential areas such as Al Raha Beach and Al Bandar. With high traffic volumes, especially during international events like the Formula 1 Abu Dhabi Grand Prix, ensuring the safety of road users in this enclosed environment is paramount. Citilog was selected to deploy its Automatic Incident Detection solution as part of a tunnel refurbishment. The project utilizes 22 AID cameras from AXIS running Citilog's latest deep learning technology on edge, providing not only real-time detection of stopped vehicles, wrong-way drivers, pedestrians, and smoke but also traffic statistics.

Results and benefits

Citilog's deep learning-based AID provides the Yas Tunnel operations team with comprehensive, 24/7 automatic monitoring across the two tubes, each with 3 lanes. The system delivers extremely low false alarm rates, allowing operators to focus on genuine incidents and respond faster. Key detections include stopped vehicles, wrong-way drivers, pedestrians or debris on the roadway, and early-stage smoke detection — all critical in a tunnel environment where incidents can escalate rapidly. Real-time incident data is fed directly into the tunnel's SCADA system, enabling automated responses such as lane closures and driver alerts. The Citilog management server is fully redundant and complies with the latest cybersecurity standards.

Conclusion / What's next

The Yas Tunnel project reinforces Citilog's growing presence in the Middle East and demonstrates the adaptability to high-traffic urban tunnels in extreme climate conditions. The successful deployment positions Citilog for further opportunities in the UAE and the wider Gulf region, where major tunnel and highway infrastructure