ART OF LOGIC

City+ Smart City Security Solution

The Product

→ With a population of over 170,000 people and about 5km of coastline, Bayside Council in southern Sydney is a highly popular tourist destination. For many years, Bayside Council was suffering from illegal parking and dangerous driving along its waterfront. Recently the Council and community hired Art of Logic (AoL), a leading provider of computer vision solutions, to provide an end-to-end solution to reduce anti-social incidents in its premises.

→ AoL installed 10 IP cameras on the beach, monitoring 65 parking spots along a 250 meter stretch of shoreline. The cameras are connected to a single, low-cost and low-power server, empowered by a single Hailo-8 AI accelerator, which was designed by AoL and manufactured by Maris Technology.

→ Video streams are managed centrally by the Network Optix Nx Witness VMS platform, providing dashboards, reports, alerts, forecasts and additional insights.

Why AI?

In peak hours, the system is monitoring and analyzing large volumes of data and multiple events simultaneously:

→ The system is monitoring thousands of cars per week, tracking entry and exit times for each vehicles, to ensure parking compliance.

→ In addition, the system can monitor pedestrians to identify distress signals, anti-social or law-violating behavior, to guarantee maximum security of beach visitors

→ Based on weather forecast and historic statistical data the system provides forecast for the traffic in the area, to make sure there are enough council personnel to support the number of visitors.

Industries & Applications

→ Security & public safety
→ Smart city
→ Parking compliance

Tasks

→ Parking infringement detection
→ License Plate Recognition (LPR)
→ Object detection
→ Pose estimation

HAILO

www.hailo.ai

Why Hailo?

High Performance

To address the complex processing of multiple tasks and multiple events in real-time, high AI compute is needed. With the high AI capacity of Hailo, multiple tasks can be performed in parallel, providing high resolution data and insights in real time. Several advanced AI models are being used concurrently to track both license plate numbers and pedestrian behavior patterns.

Low Power Consumption

All cameras and the server are powered by both wind turbines and solar panels, ensuring they are future proof and minimizing the environmental impact of the project, while reducing its operation and maintenance costs. The only way to handle such complex AI analytics powered by renewable energies, is with a low-consumption AI processor such as the Hailo-8.

Data Safety

By using edge AI technology, no personal information of visitors or vehicles is collected. The system collects metadata, which enables capturing only meaningful events and search historic data for specific events.
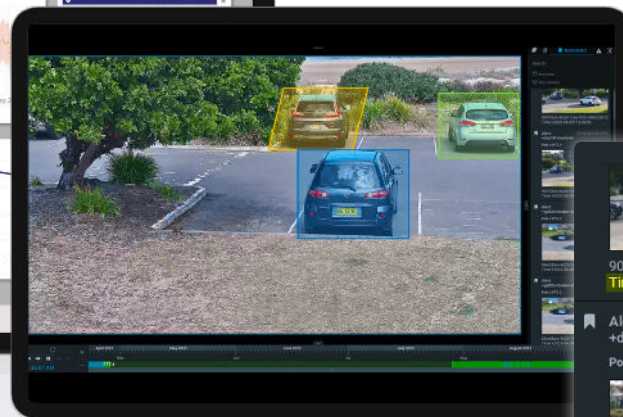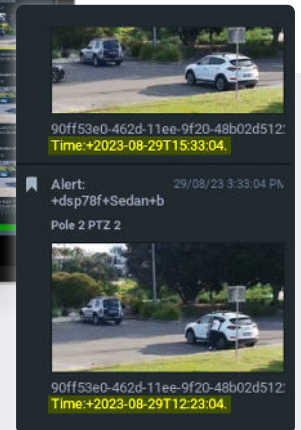
Durability

As systems are installed next to the ocean, in harsh environment of humidity and corrosion, low power consumption also means a more durable, fanless design.
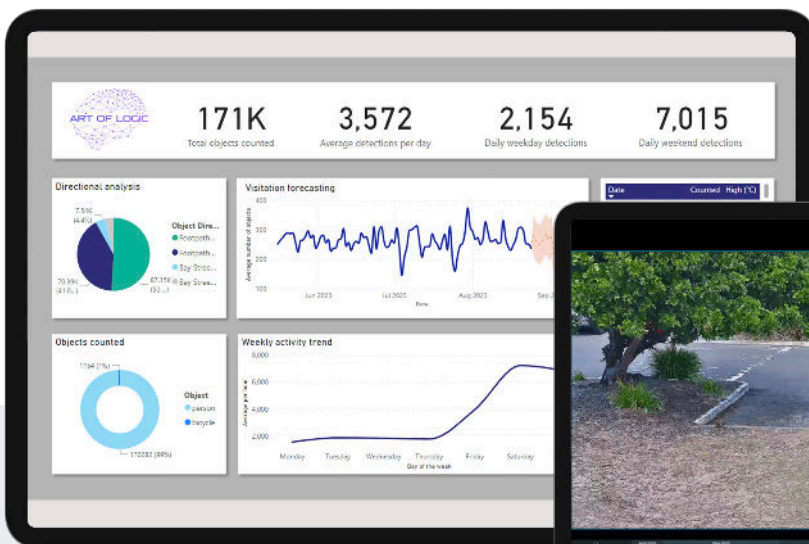
Screenshots from the Network Optix Nx Witness VMS platform

Vehicle, pedestrian, and bicycle traffic on a daily, weekly and monthly resolution, including a weather-based forecast

Alerts on vehicles exceeding the 3h free parking limit

> *Hailo has opened up the world of Computer Vision and AI to the world, particularly on the edge where every Watt of consumption counts. We are building edge devices using renewables as the power source with more Machine Learning capability than we used to have inside of our hardwired Labs"*

Darren Ruger, Founder & CTO, Art of Logic

> *Without access to the Hailo AI accelerator module, the project would have been much more difficult to deploy"*

James Gulloni,
Manager – Customer Strategy
& Innovation, Art of Logic

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