Bandweaver

CASE STUDY

PERIMETER INTRUSION DETECTION SYSTEM (PIDS) FOR HIGH-TECH DATA CENTRE USING FENCESENTRY

The Scenario

The customer is an international telecom operator with a high-tech data centre based in Singapore. Information security is a critical concern for this organisation and so they implemented a robust strategy for assuring the integrity and functionality of its hosted computer environment. In order to guarantee business continuity, this strategy incorporates multiple aspects including redundancy of operations, specialised power supply equipment, environmental controls, fire detection/suppression and site security.

Regarding the security strategy, one of the key elements and the first line of defence is the perimeter security management. The operator in this scenario employed a number of technologies including CCTV cameras, beam detectors and a fiber optic perimeter intrusion detection system.

Client Requirements

The client required an integrated strategy, which incorporated beam detectors (at the gates), close circuit television cameras (24 cameras) together with the fiber optic PIDS system based on Bandweaver's FenceSentry technology for the detection system. Bandweaver's MaxView integration platform was used for integrating and visualising the data (see figure 1 for system architecture).

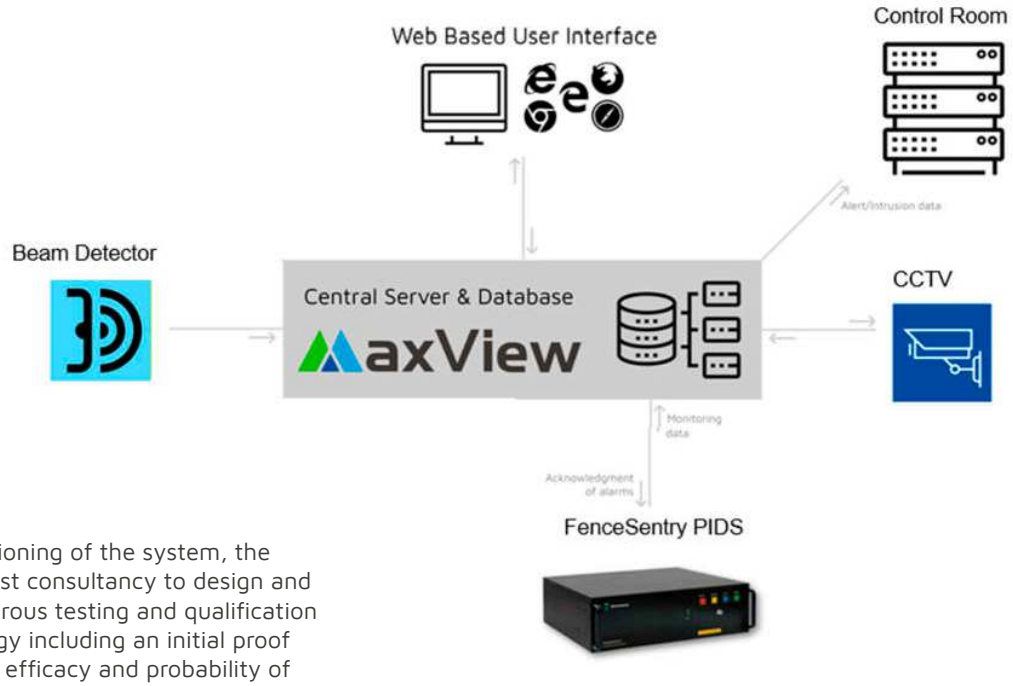

Figure 1 - System Architecture Overview

For installation and commissioning of the system, the operator employed a specialist consultancy to design and implement an extremely rigorous testing and qualification programme for the technology including an initial proof of concept trial to prove the efficacy and probability of detection.

This was a very challenging environment for a number of reasons including incorporating four different fence configurations and a sliding gate.

Figure 2 - Sample Fence Types

What Did We Do?

Bandweaver together with Innovative Energy designed and installed the fiber optic PIDS system based on an architecture of 24 zones. The zones needed to take into account both integration with each of the 24 cameras and also different fence types, each of which had different physical characteristics (stability, height, etc.) and different cable configuration and positioning. These differences meant that each of the specific zones needed to be calibrated accordingly.

The Bandweaver FenceSentry is an extremely versatile PIDS system which can detect movements down to a precision of 1m and has the flexibility to calibrate each zone according to the specific environments.

Figure 3 - Fence Sentry equipment installed in rack

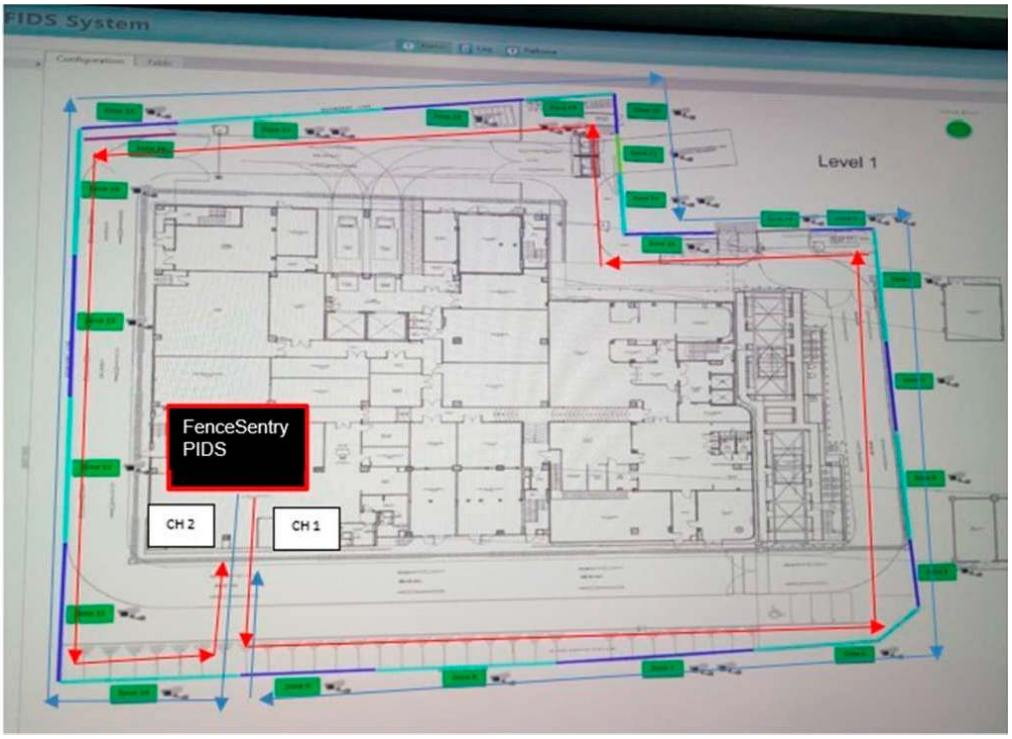

Figure 4 - MaxView Screen shot – two channel cut resistant configuration

Cut Resistant Configuration

In this scenario, the customer chose to increase the level of robustness by incorporating a 2-channel FenceSentry system with the cut resistance feature. With a 2-channel loop configuration, the system can still operate with full functionality in the event of a cut to the sensing cable. The system will alert the operator that there has been a breach in security but will continue to operate with complete functionality and continuous monitoring over the entire perimeter.

Benefits to the Client

When evaluating the system, the client used a number of factors to make the choice across the lifetime of the project. Below are the following benefits which helped persuade the client that the fiber optic PIDS systems offered a number of benefits over other technologies.

Low Cost of Ownership: Fiber optic sensors are completely passive and are immune to EMC interference, not affected by dust or other environmental factors and are completely non-corrosive. Therefore, the lifetime of a fiber optic cable can be greater than 30 years, without any maintenance required.

High Reliability: Another benefit of the passive, inert nature of fiber optics is that they are very reliable and so there is no downtime. In addition to the lower maintenance costs, they also provide a higher level of coverage, lowering the overall risk and improving protection levels.

Precision of Detection: The FenceSentry PIDS system can locate an intrusion event to within 1m so events can be located extremely accurately and action can be taken early to prevent escalation of any intrusion incidents. With the integration to the CCTV, a second form of verification can be employed in order to further clarify and improve decision making.