LiDAR-based Perimeter Intrusion Detection (PID) System

Overview

A large pharmaceutical company was looking for a new Perimeter Intrusion Detection (PID) system at one of their new flagship storage facilities. The selected system would need to be a reliable, cost-effective intrusion detection solution which could address complex site-specific challenges. Those challenges include: high winds, high levels of human activity, metal fencing and lack of power and network infrastructure at the edge. Key customer requirements include minimal ducting and civils on the perimeter, 100% site coverage and a low false alarm rate.

The customer was familiar with a variety of other perimeter security technologies from previous deployments at other warehouses such as radar, and 'on fence' systems. Radar was a poor fit due to the high level of activity between the building and the perimeter, as well as interference caused by the presence of metal fencing and large metal objects. A point to point detection system was eliminated due to the lack of power and network infrastructure. 'On fence' solutions were impossible to implement due to the unacceptably high false alarm rate caused by high winds in the area. The integrator approached Oprema to seek alternative technology to overcome the issues identified previously.

After an onsite consultation and survey, the customer determined that Quanergy's AI-powered LiDAR-based QORTEX DTC™ perimeter solution was the best technology fit for their site due to Quanergy's centimeter-level accuracy and resilience to the operating environment.

Solution Details

Quanergy's M8™ LiDAR and QORTEX DTC™ AI-powered perception software was deployed to protect the customer's 400m perimeter fence line. The overall solution detects people (i.e. intruders),

LiDAR-based Visualization of the Protected Perimeter

pinpoints their exact location and tracks their movement. Security automation was achieved using the Dahua SD6AL series cameras that can be automatically and accurately controlled based on QORTEX's real-time intruder information without any human intervention. In addition, the QORTEX system was fully integrated with the Dahual NVR system to enable a mapping function for visualization purposes which helped security personnel, both on-site and off premise, to quickly identify the intruder's real-time location within the facility. For this installation, the site was monitored remotely and alarm information with the intruder coordinates from QORTEX DTC was integrated into Sure View System's Immix Monitoring Platform through the onsite Dahua NVR systems.
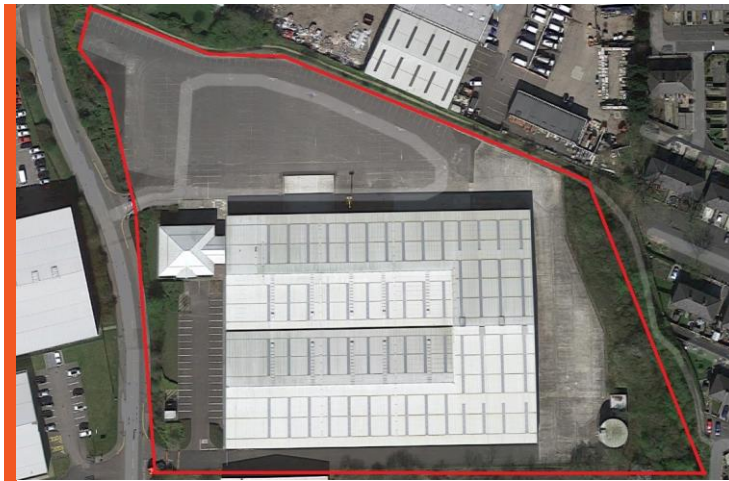
Satellite View of Protected Perimeter

Conclusion

In conclusion, the Quanergy's 3D LiDAR sensors and QORTEX, AI-powered perception software solution delivered exact performance parameters and demonstrated several additional competitive advantages. The system was able to track intruders in the entire coverage area between the fence-

M8 sensor with adjustable mount and weather shield (optional accessory).

line and the building. While being unaffected by lighting conditions (day/night) and independent of environmental conditions. Security monitoring was fully automated by controlling PTZ cameras, tracking objects, and enabling map visualization. Furthermore, operations and maintenance were improved due to alarm zone customization and a low false alarm rate.

Sunnyvale Headquarters

433 Lakeside Drive
Sunnyvale, California 94085
+1 (408) 245-9500
+1 (408) 245-9503 Fax
sales@quanergy.com

QPN 96-00075