

SPOTLIGHT ON TRANSPORTATION SECURITY

INTELLIGENT FENCE DETECTION TECHNOLOGY ADDRESSES AIRPORT VULNERABILITY



A terrorist will attempt to access the air transportation system at its weakest point, and at many of the world's airports, this point is the perimeter, which is often extensive and underprotected. As security concerns continue to escalate on all continents, airports are looking to a unique perimeter fence detection system - Southwest Microwave's INTRERPID™ MicroPoint™ Cable - to secure their sites against unauthorized entry.

According to Martin Lomberg, Southwest Microwave's General Manager for Europe, there has been a shift in airport security emphasis to the external perimeter from a previous investment focus on passenger entry systems.

"Larger airports risk losing carriers if they cannot secure the entire operating area, which includes the fence line," he noted, adding that the company has just completed a trial at Domodedovo Airport in Moscow, which could see customers curtailing flights for this reason. Vilnius Airport in Lithuania has already adopted MicroPoint™ Cable for perimeter protection, as have other high profile airfields including Bahrain International Airport, Glasgow Airport in Scotland and Australia's Sydney International Airport.

UNIQUE CALIBRATION CAPABILITIES

Lomberg pointed out that securing an airport's perimeter is not an easy task. Overall fence quality can degrade. Also, as an airport increases in size, the protected area may be expanded - often with different fence types - resulting in an awkward assortment of fencing making up the site's outer framework.

"With traditional fence sensors, achieving uniform detection sensitivity on fencing of varying conditions or dissimilar fabric

is nearly impossible," he said. "The result is a high rate of nuisance alarms and unreliable detection of cut or climb attacks."

MicroPoint™ Cable, Lomberg explains, has a built-in failsafe against these challenges. The system is calibrated in 1.1 metre increments - called subcells - upon installation, to compensate for variations in fence quality or material. The alarm threshold is set to correlate with measured detection sensitivity at each subcell, guaranteeing consistent sensor performance.

"At Glasgow Airport, we encountered a scenario that for any other perimeter intrusion sensor would have required extensive fence upgrades prior to installation," Lomberg explained. "There were inconsistencies in fence composition, but calibration allowed the system to perform effectively."

ACCURATE DISTURBANCE IDENTIFICATION

Because airports are often situated in expansive open areas, they are particularly affected by adverse environmental conditions. To traditional fence sensors, wind and rain are a recipe for constant nuisance alarms. For the Glasgow site, facing harsh climatic extremes on a regular basis, minimising weather-generated alarms was important.

"Simply put, MicroPoint™ is an intelligent sensor," said Lomberg. "Other systems call for the lowering of detection sensitivity to avoid environmental disturbances, which can similarly mask the detection of fence attacks. Conversely, our system relies on patented technology that discerns between legitimate fence attacks and distributed disturbances, such as high wind, pelting rain or aircraft vibration. At Glasgow, the British

Airport Authority was able to avoid nuisance alarms that ambient conditions would have triggered in other sensors.”

Lomberg explained that MicroPoint™ is a proprietary vibration sensor cable that is tie-wrapped to a perimeter fence. Typically attached at the midpoint, one run of cable is sufficient for the protection of enclosures up to 4.3 metres tall. Higher fences require a dual run.

Each 400-metre section of cable is associated with a processor module (PM). Power, communications and alarm data are transmitted from the first PM to up to 8 subsequent modules within the system, protecting 3.2 km of fence. In an airport configuration, there are typically several such systems networked and integrated into the facility’s existing security management system, or one supplied by Southwest Microwave.

PRECISE INTRUSION ASSESSMENT

With MicroPoint™, incursions can effectively be identified to within 3 metres, assuring pinpoint location of intrusion attempts. Lomberg explained that an airport user might reasonably specify detection zones of 20 metres to ensure high-resolution CCTV assessment - an important component of the overall perimeter protection plan and particularly critical at night when visibility is reduced.

With MicroPoint™, an alarm is triggered when an intrusion attempt occurs, prompting the security management system to direct an integrated camera preset to the precise point of intrusion. Authorities may then immediately assess disturbances from the control center versus allocating costly resources for remote patrols that could delay incident evaluation.

“Our system is extremely cost-effective over distance,” Lomberg stressed. “Furthermore, it is not affected by airport or aircraft radar systems, whereas other technologies can be.”

FLEXIBLE, RELIABLE SOLUTIONS

Being modular, airports can easily introduce MicroPoint™ to cover critical sections of perimeter fence and cost-effectively expand usage over time. Alternatively, the system can be employed to protect particularly vulnerable areas, such as fuel storage depots or hangars.



Global perimeter security protocol often includes Southwest Microwave’s K-Band microwave detection sensors for gates, rooftops or aircraft stop bar control applications.

While maintenance activities for the MicroPoint™ system are minimal, customers do have access to industry-leading three-year warranty coverage, which Lomberg correlates to Southwest Microwave’s confidence in the system’s long-term performance.

He reinforced that global airport perimeter security protocol often also includes Southwest Microwave’s INTREPID™ Micro-Track™ buried RF sensor for early-warning detection, or its K-Band microwave sensors for gates, rooftops or aircraft stop bar control applications.

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Martin Lomberg
General Manager, Europe
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FOR MORE INFORMATION

Southwest Microwave has been a trusted global supplier of perimeter detection technologies since 1971. For further information about the INTREPID™ MicroPoint™ Cable fence detection system and other PIDS solutions for airport applications, visit www.southwestmicrowave.com.

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