

Airport Perimeter Detection with RaySense Fiber

How a Latin American international airport protected more than 20 km of perimeter fence with a single fence-mounted RaySense fiber optic sensor: events located to within approximately 3 m, cameras cued through Genetec Security Center, installed in a few weeks without disrupting operations.



AERIAL VIEW OF AN INTERNATIONAL AIRPORT AND ITS PERIMETER. ILLUSTRATIVE IMAGERY; CUSTOMER IDENTITY WITHHELD.

20+ km PERIMETER COVERED	1 RAYSENSE UNIT	~3 m LOCATION CLASS	Genetec CAMERA CALL-UP	0 ELECTRONICS ON THE FENCE
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The Challenge

A 20 km fence cannot be watched by people, and much of it is out of sight of everything.

The customer is a major international airport hub handling high-volume passenger traffic and time-sensitive air cargo, with an ICAO-driven security program audited against its perimeter control. The fence runs more than 20 km (12.4 miles) around runways, aprons, fuel storage and cargo terminals.

Remote fence sections are the natural entry point for cargo theft crews and worse, and regulators expect airports to detect intrusions rather than discover them afterwards.

THREE PROBLEMS AT THIS SCALE

- **Distance:** patrols pass a point a few times a day, and fixed cameras cover buildings and gates, not the long empty stretches.
- **Noise:** jet blast, ground equipment and wind keep an airport fence in constant vibration.
- **Infrastructure:** point sensors would mean dozens of powered enclosures strung along remote fence line.

The Solution, RaySense AI DAS Fiber

A standard optical fiber cable mounted on the fence fabric becomes the sensor along its entire length: the RaySense unit reads backscatter from laser pulses and turns the whole cable into a continuous line of listening points. The full perimeter runs on a single unit, rated for up to 50 km in one direction and 100 km in total.

- **Located alarms:** a disturbance is classified and placed on the fence to within approximately 3 m.
- **Passive glass in the field:** no power, electronics or communications anywhere along the fence line.
- **Genetec Security Center:** the alarm location cues the nearest cameras, so the operator sees the stretch of fence while the event is in progress.
- **Tuned on site:** the classifier is commissioned against the airport's own noise floor, section by section.

The Results

The fiber says where, the video says what.

The design intent is that a cut or climb attempt anywhere on the perimeter, including stretches no camera or patrol was covering, raises a located alarm in the security operations center while it is happening.

- The response team is dispatched to a point on the fence, not to a section of airfield.
- Local crews installed the fiber in a few weeks under RBtec supervision, with flight and cargo operations normal throughout.
- RBtec has not published measured before and after alarm or incident counts for this airport.
- Continuous, documented and testable coverage across the full perimeter supports the airport's ICAO-driven audits.

"An airport is a location problem. On a 20 kilometer fence an alarm is only useful if it says where. The fiber gives the operator a point a few meters wide, and the VMS turns that point into the nearest camera. Alarm, location, picture: that is the whole design."

RBtec engineering team

RaySense at a Glance

System	RaySense AI DAS Fiber Optic Perimeter Detection
Perimeter	More than 20 km (12.4 miles)
Sensor	Single fiber optic cable, fence-mounted along the perimeter
Processing unit	One RaySense unit, rated up to 50 km one direction, 100 km total
Location precision	Approximately 3 m location class on chain-link fence
Integration	Genetec Security Center, camera call-up to the located point
Installation	Local crews with RBtec supervision, a few weeks, operations uninterrupted
Compliance context	ICAO-driven airport security program



RAYSENSE INSTALLATION IN PROGRESS ON THE AIRPORT PERIMETER FENCE. CUSTOMER IDENTITY WITHHELD.

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