A major utility chooses CIAS Microray to prevent tailgating

Tailgating application with Micro-Ray | Use case

Overview

Judge Electrical was asked by PECO Security to come up with a solution to deter/prevent tailgating (anti-tailgating) as it's a large problem that they face. The following summarizes the anti-tailgating system which was installed at a PECO sub-station to address the issue by showing how the system works for a "Badge in, no exit" scenario.

The Challenge

The customer needed a system that would detect unauthorized entry coming in behind the vehicles/ pedestrians that were approved to enter.
Timing was such that it allowed people to get in before the sliding gate closed.
The customer did not have the ability to read license plates, but had 24/7 camera monitoring. The camera system was recording after the fact. A more proactive approach to alert staff was required.

Requirement

Preventing tailgating was the key requirement, with large vehicles entering (and exiting) by swiping their card and unwanted people/vehicles accessing the site behind the authorized vehicle prior to the sliding gate closing.

Solution

The CIAS MICRORAY system is a microwave-based linear barrier that creates a narrow (line-of-site) zone of detection for would-be adversaries. Unlike infrared beams, the microwave-based MICRORAY is not impacted by fog, heavy rain or severe climatic conditions, does not require heaters to deal with cold temperatures but rather has the advantages of microwave – operational in -40F to +158F, high winds, snow, fog, hail, etc.
One (1) set of MICRORAY Towers (6 feet (2m) tall with 3 beams each) was installed at each gate entrance to cover the inside perimeter of the sliding gate.

How it works

In an inactive position, the gate is closed and the red light is on. While in the inactive (closed) position, the CIAS "Micro-Ray" microwave will NOT detect any approaches; that is, triggers are ignored. The anti-tailgate system is ONLY activated by a count of "2" passes through the beams (vs (1)) so keeping the microwaves shunted until the gate is opened is crucial. The gate can be opened by one of the following means:

- Valid badge read at the card reader pedestal (most frequently used)
- NEDAP wireless card reader
- Intercom (remote open)

Regardless of which method is used to open the gate, the same output on the card access system always triggers the sequence.

Once the gate opens, an input is sent to a PLC (Programmable Logic Controller) to trigger the green light to turn on, signaling the (authorized) driver/pedestrian that entry is allowed. The same gate contact is also monitored by the card access system for forced/held open alarms. The CIAS Micro-Ray towers are mounted just inside the secure side of the gate, approximately 20 feet apart.

Once the authorized driver/pedestrian passes through the microwave detection area, an output from the Micro-Ray sends an input to the PLC which will trigger the light go back to a red status. This signals the next user to present their badge before entering to not set off the anti-tailgate system. The next user can scan their badge without needing the gate to close.

If access is granted, the light will go to a green status to again signal authorized entry. This continues as long as valid badge reads are presented. If a valid badge is presented and nobody passes through the gate, the gate will close and return to the inactive state. The Micro-Ray is always active while the gate is open which can also detect entry, even if the gate motor is turned off, disengaged and left open.

Tailgate Attempts:

If a pedestrian/driver attempts to tailgate behind a verified user, a **red light** flashes for 10 seconds and a siren goes off for 5 seconds. These alerts are triggered by outputs on the PLC. This sequence will repeat for every tailgate violation until the gate is closed and reset. Whenever a tailgate violation occurs, there are dedicated camera call up events to view the event. Events are also stored in journal history on the card access system.

The Micro-Ray anti-tailgate system is 100% customizable, depending on customer needs. This is done through the programmable signal light/siren, and PLC. The programmable signal light allows for an array of colors to choose from: light patterns/strobe effects, and siren tones/volumes. Settings on the signal light can be saved into a configuration file to be used on another install, if desired. The config file also allows for easier replacement.

The PLC can control timing/counts to fine tune the system, add auxiliary equipment, and can be coupled with any **card access system**. A configuration file can also be saved for other installations or for PLC replacement.

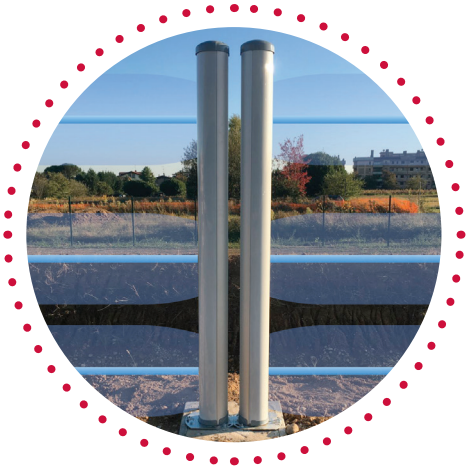
Hardware & Software Used

HARDWARE

- **CIAS** Pair Micro-Ray Transmitter/Receiver Microwave Barriers (1 set per gate)
- **Software House** Card Access
- **WERMA** eSIGN Signaling Light
- Programmable Logic Controller

SOFTWARE

- C-cure Card Access Platform (Johnson Controls)
- **Exacqvision** Video Management System (VMS)

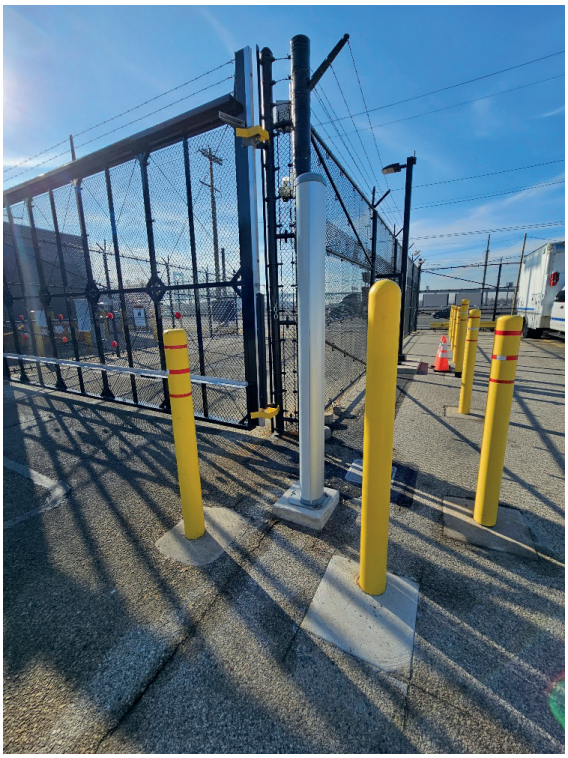


MICRO-RAY linear mW barrier
For long narrow corridors that are very sensitive to weather conditions. The IR alternative

RESULTS - A word from the customer

> *Once we worked through this new application of the CIAS technology, the system has been working very well*
>
> said Pat Judge, Owner, Judge Electrical
>
> *The Microray system can alert the utility's control room of a potential breach so monitoring personnel can respond accordingly. They are now looking to deploy it at several substations.*
>
> He added that the CIAS system is very reliable, easy to install and requires minimal support once up and running.

The final (utility) customer is pleased with the system as it has identified breaches already. They are not considering installing more towers at gates at additional locations.



About CIAS

CIAS Security has been protecting critical sites at risk with its intrusion detection security systems since 1974.

The company specializes in the manufacture of outdoor intrusion sensors (microwave volumetric and linear barriers, fence detection and short-range radar systems) which are installed in airports, transportation, corrections, energy/utilities/oil & gas, nuclear power plants, data centers, military/government, industrial sites and other critical sites at risk for potential threats.

With headquarters in Milan, Italy, the company has offices in Miami and Montreal to serve the North American market. The Microray barrier technology used in this application is the only product of its kind on the market today.

www.cias-security.com

About Aella

Aella Group provides expert guidance and services to individuals, businesses, organizations, and governments to help them mitigate risks and enhance their security posture. The firm employs a team of security experts who have extensive experience in various domains of security, such as physical security, cybersecurity, risk management, and emergency response planning.

About Judge Electrical

Judge Electrical, Inc. is a full-service electrical contractor, specializing in security systems, utility grounding and foundation installation. The company, founded by Frances Mary Judge in 1997, is licensed and insured to serve the greater Philadelphia area. The company prides itself in pairing the quality of their work with a family-friendly business approach.

About Peco

PECO, formerly the Philadelphia Electric Company, is Pennsylvania's largest electric and natural gas utility, serving over 1.6 million electric and 550,000+ natural gas customers in Philadelphia and surrounding counties. A subsidiary of Exelon, PECO provides regulated energy delivery to residential, commercial, and industrial customers.

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