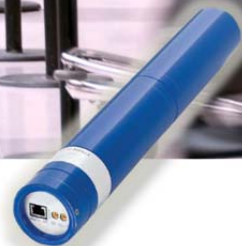
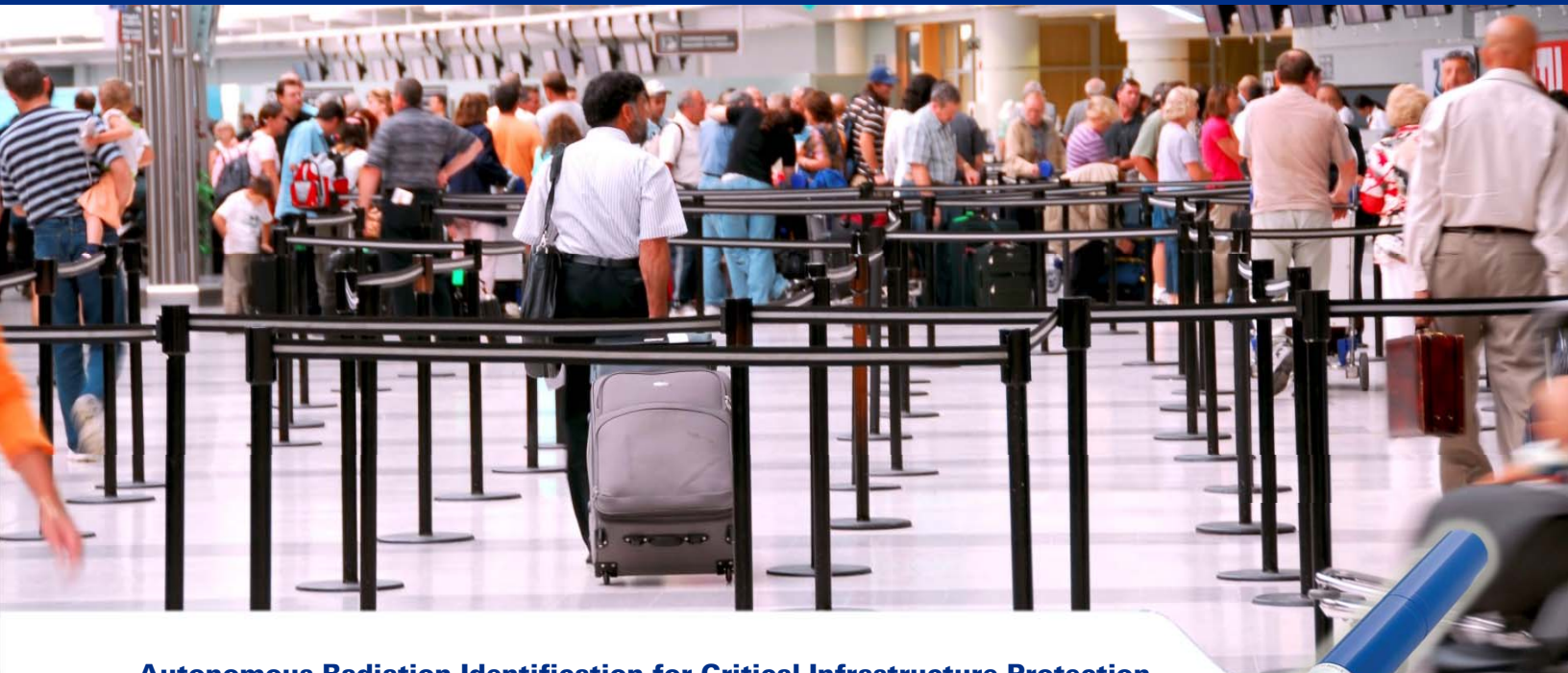


APPLICATION NOTE



Autonomous Radiation Identification for Critical Infrastructure Protection *FLIR Stride™ systems provide autonomous real time detection of radiation threats.*

OVERVIEW

The White House issued a press release in February 2013 stressing the importance of securing the nation's critical infrastructure, from government and private facilities to transportation systems and critical manufacturing sites¹. Maintaining the security of a nation, preserving the stability of the global economy and ensuring the health and safety of its citizens is vital. While attacks utilizing radiation dispersal devices (aka "dirty bombs") or other nuclear threats seem unlikely, their effects would be devastating. With looming threats of terrorism, FLIR has developed autonomous sensors to help protect against and deter radiation threats in real-time.

FLIR Stride™ systems are used to detect the presence or movement of nuclear material and identify the specific threat, without interfering in daily operations. Stride systems can be openly installed or concealed from view in building entrances, at airports, bus or train stations, above or beside luggage or freight conveyer belts, by stadium entrances, ship ports and many more similar locations of potential risk for attack. The use of a Stride system prevents the unwanted entrance or exit of radioactive material from critical sites. Many facilities share similar characteristics and key points of entry that can be monitored in common ways. Critical infrastructure owners and operators can manage risks to their individual operations and assets by exploiting the full capability of Stride localization features.

FEATURES & BENEFITS

- Continuous, rapid ID of radioactive material
- Separates benign sources from true threats
- Simple alarm screens and data presentation
- Localizes position of source or tracks progression
- Flexible, scalable system addresses specific needs
- Easily integrates into existing security architecture
- Small form factor allows it to be concealed
- Interchangeable hardware minimizes downtime
- Automatic calibration and stabilization
- No user maintenance



Figure 1. Outdoor Stride Installation

APPLICATION NOTE

APPROACH TO RADIATION MONITORING

Stride offers identification using proven template matching algorithms and localization by comparing count rates between detectors. This approach provides benefits that ultimately increase throughput over existing portals:

- **Locate and Stop the Threat Faster:** By utilizing the comparison of the count rates and eliminating the need for shielding to localize sources, the system can measure and identify the source prior to it entering the area of concern.
- **Identify Innocent vs. True Threat:** Individuals who have received radiation treatments or imaging represent innocent radiation sources and can be separated from true threats without intrusive screening methods.

Stride systems monitor for the transportation of radioactive material either on a person or in a vehicle. Although these are not the only deployment options, two common installation points for Stride include reception desks and vehicle checkpoints. They represent natural chokepoints that minimize proximity to the sensors and maximize the duration of the measurement time. Elevator entrances and parking garages offer similar advantages.

RECEPTION DESK INTEGRATION

Employees, visitors and other persons entering a secure facility are screened for identification at a reception desk (Figure 2). This check-in area offers a location where the Stride system can be openly installed or concealed from view to monitor for radioactive sources. By locating two Stride 203 Series detection units under or within the desk, the system will alarm and identify while the source approaches or waits in queue. As it proceeds to the counter, the source location is pinpointed by comparing the count rates of the two detectors.



Figure 2. Representative Reception Check-in

VEHICLE CONTROL CHECKPOINT

Multi-lane vehicle control checkpoints may require drivers to slow down to present personal identification. The Stride detection unit can be mounted under the awning where vehicles pass under to minimize the potential distance to the source (Figure 3). Due to the greater distance and the potential for shielding, larger Stride 416 Series detection units are an ideal solution. Utilization of the Stride identification and localization features allows an operator to reduce disruption to throughput by avoiding unnecessary inspection of a vehicle.



Figure 3. Representative Vehicle Checkpoint

SUMMARY

The FLIR Stride system requires minimal operator interaction and is an effective solution to protecting critical assets. With no user maintenance, the system can run in the background providing autonomous protection against radioactive threats. Although FLIR provides all the software required to perform more advanced analysis or view alarm details, the system can integrate the data to existing site security software. In either case, the system provides critical information in an easy to understand way with minimal disruption to daily operations.

¹Source: <http://www.whitehouse.gov/the-press-office/2013/02/12/presidential-policy-directive-critical-infrastructure-security-and-resil>