Stride™ Series
Integrated Radiation Detectors

Flexible and Scalable Radiation Monitoring

STRIDE DETECTION UNIT

STANCHION WITH
STRIDE DETECTION UNIT

RUGGEDIZED
STRIDE DETECTION UNIT

Entry Control Checkpoints
Vehicle Screening Checkpoints
Package/Baggage Inspection
Mailroom Safeguards
Critical Infrastructure Security
VIP Protection
Event Monitoring

The World's Sixth Sense™

FLIR®

Continuous, rapid, and accurate classification and identification of radioactive material

Separates benign sources of radiation from true threats

Flexible and scalable system meets broad range of applications

Autonomous operation with automated calibration and stabilization

Uniform responses with accruate summation of data

Simple alarm screens and data presentation

Localizes position of radiation source or tracks its progression

Interchangeable detection units minimize downtime

Industry standard protocols expedite integration into existing security architecture

No user maintenance

Simplying the Task of Radiation Security

FLIR Systems, Inc. prides itself for innovation and achievement of many "firsts" in the field of gamma spectroscopy. Along with being the first to design and utilize digital signal processing and LED stabilization techniques, FLIR released its first handheld gamma isotope identification systems in 1998 when it launched the widely deployed identiFINDER® series of products. Now with over 15,000 identiFINDERs deployed, FLIR is the leader in handheld radiation detection and identification products.

Continuous Radiation Monitoring for Fixed and Mobile Applications

Through years of customer interaction and technology research, FLIR has learned that the identification capabilities available in its handheld product line are well-suited for a wide variety of other applications. The same advanced technology offered in the identiFINDER R-series, including template matching algorithms and digital signal processing, is now offered in Stride™ radiation systems. Stride systems are used to detect the presence or movement of nuclear material and identify the specific threat, with little to no interference to on-going operations. Stride systems can be openly or covertly installed 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.

Stride systems are ideal for checkpoint screening, critical infrastructure security, event screening, parcel inspection and area monitoring. The Stride system is scalable and flexible making it capable of meeting the diverse set of challenges each unique application presents. All detection units automatically stabilize and calibrate. With minimal operator interaction and no user maintenance required, the deployment of Stride does not interfere with day to day operations. Stride offers the best continuous protection against radioactive threats.

Detection Unit Hardware Options

The Stride system comes with detection unit hardware and a software package that includes both server and client software. Detection units are offered in an assortment of housings and detector sizes that can be tailored to application-specific environments and sensitivities. The detection unit hardware transmits acquired data to the server software every second for analysis. The server software runs in the background of any PC and can compile data from multiple detectors.

Central data processing allows the system to sum data for greater sensitivity and accuracy. It can also track the movement of radioactive material through an array of detectors. The Stride server provides dose rate measurements, alarm conditions, and, when alarm levels are exceeded, it identifies and classifies the specific isotope(s). All variations of Stride detection units communicate and function in the same manner, allowing the deployment of different configurations to fit each monitoring scenario.

200 Series

The Stride 200 Series detection unit is ideal for area monitoring, package inspection, or people screening. The unit utilizes a 2" x 3" NaI detector and can be mounted on walls or doorways, behind reception desks or entry control counters, above parcel conveyer belts, and other similar applications. Housed in an aluminum tube, this unit is designed primarily for indoor use or installation into other enclosures for custom applications.

300 Series

The Stride 300 Series detection unit is housed within a stanchion. The unit utilizes a 2" x 3" NaI detector and can be deployed in place of existing crowd control stanchions to covertly monitor people passing by. It appears and functions exactly the same as a standard crowd control stanchion with the ability to rapidly identify a radioactive source. This unit has been utilized in critical infrastructure and events drawing large crowds to deter and mitigate the threats of radioactive material.

400 Series

The Stride 400 series detection unit is made up of weatherproof enclosures utilizing either 2"x4"x16" or 2"x3" detectors. While monitoring local areas, people, or packages the smaller 2"x3" detector provides enough sensitivity to rapidly identify radiological threats. The 2"x4"x16" detection unit offers higher sensitivity and is better suited for monitoring large areas or vehicles. Either way, this unit is capable of continuous monitoring for radiation in harsh outdoor environments.

Custom Configurations

Stride detection units can be utilized in an array of environments and addresses a wide variety of applications. Please contact your FLIR representative for the most up to date information on all the hardware options available or to discuss customer applications.

Stride 200 Series

Stride 300 Series

Stride 400 Series

FLIR®

The World's Sixth Sense™

Scalable System to Meet Any Monitoring Need

ENTRY CONTROL SCREENING
People and packages remain relatively stationary for a moment during entry control screening. This offers an opportunity for a 'confirming' measurement to be made. Passenger lines, ticket counters, immigration desks, transit platforms and other entry control checkpoints can be equipped with a Stride radiation monitoring system. Public buildings such as courthouses, banks, hotels, theaters and office buildings are places where radiation monitoring can protect people and assets against an attack. A standalone system can be integrated into existing security screening operations. Stride systems offer a covert autonomous means of monitoring for radioactive material with minimal disruption to existing operations.

Screening large crowds of people can present many challenges due to the close proximity between each person. Using Stride detection units spaced throughout a queue can provide an approximate location and advanced warning prior to the material passing through a key location. Detection units in close proximity at key checkpoints provide the ability to track the position of a radiation source throughout traffic flow. Event entrances require rapid screening to maintain high throughput. The Stride system offers covert radiation monitoring without throughput interference - an ideal solution for security infrastructure.

VEHICLE CHECKPOINTS
A vehicle chokepoint is common in military bases, government buildings, parking garages, shipping docks and other critical infrastructure entrances. Vehicles are passively screened by a mounted Stride detection unit above each vehicle lane or loading bay. This allows the Stride system to not only detect and identify the radioactive material, but also indicate which lane the source is located in. Because the vehicles remain stationary, a greater amount of data can be collected for high confidence results.

WIDE AREA MONITORING
The ability to have continuous monitoring with 'on-the-fly' identification makes the Stride detection unit ideal for area monitoring applications where nuclide identification is critical to decision making. Isotopic information is critical for emergency response and management around cities or regions. Preventing contaminated material from exiting or entering key facilities can protect workers and the environment, while also preventing costly cleanup efforts.

System Benefits

AUTONOMOUS MONITORING
The Stride system automatically begins analyzing collected data against its extensive library when a change in background radiation is detected. By utilizing a large detector in the Stride system, the radiation source is identified within seconds. Identification of the source and classification of the threat material allows for rapid decision making and response measures. Because no user interaction is required, minimal impact is made on daily operations and the burden of manual radiation screening is removed from security and emergency personnel.

FAST, RELIABLE IDENTIFICATION
Constant sampling allows for on the fly identification. Depending on the amount of radioactive material present, the speed of the source in transit, and the detection unit chosen, radionuclides can be detected and properly identified in a few seconds. The type of material is classified as medical, industrial, naturally occurring (NORM) or special nuclear material (SNM), as well as whether it is innocent, suspicious or threatening. In addition, the specific isotope is identified and security personnel are alerted via audible or visible annunciators.

SCALABLE AND EXPANDABLE ARCHITECTURE
Stride detection units are available in a wide variety of sizes and housing. Customers can begin with a standalone system and scale to meet changing needs at a later time. Each Stride detection unit offers a consistent response, allowing the data to be processed centrally by a server. The server software handles communications, alarm processing, and analysis of the data. It can transmit analysis results over the network for a number of client programs. Simple client programs provided by FLIR range from basic alarm and isotope screens to complex "expert" modes used by highly trained personnel. It also allows for easy expansion or re-configuration of the deployment via a simple "drag and drop" set up interface.

POSITIONING AND TRACKING
FLIR is the only company to provide the ability to track or pinpoint a source's location without shielding. The Stride system locates a radiation source by analyzing the count rate of the detection unit and then quickly and accurately identifies the radioactive material. The system is capable of determining that a source is located adjacent to a specific detector, has moved across the midpoint between the two closest detectors or can provide a general location within a large area. When used in conjunction with the physical constraints of the environment such as walls, rail lines, lane barriers, or other objects restricting the traffic flow, this capability allows security personnel to interdict the threat without alerting the individual it has been detected.

COVERT AND OVERT MONITORING
The covert movement of special nuclear material or weapons into populated areas represents a great security threat. The Stride system can detect and deter this threat by recognizing the presence or movement of radioactive material across borders, into government buildings, at large public gatherings or events and much more. It can be openly or covertly installed 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.

EASE OF INSTALLATION AND INTEGRATION
High stress situations require simple installation and operation for maximum efficiency. Stride produces simple alerts that do not require data interpretation. Some installations opt for the data to be integrated into existing control systems. The Stride data stream was designed with this in mind allowing for radiation detectors to fold into security systems as easily as a smoke detector. The system uses industry standard protocols for communication and utilizes standard Ethernet components for integration and power. The data server is analyzed by Stride software to minimize the burden on the integrator. With flexible deployment options, seamless installation and integration, the Stride system is easy to use for integrators and their customers.

$\diamondsuit$ **FLIR**®

The World's **Sixth Sense**™
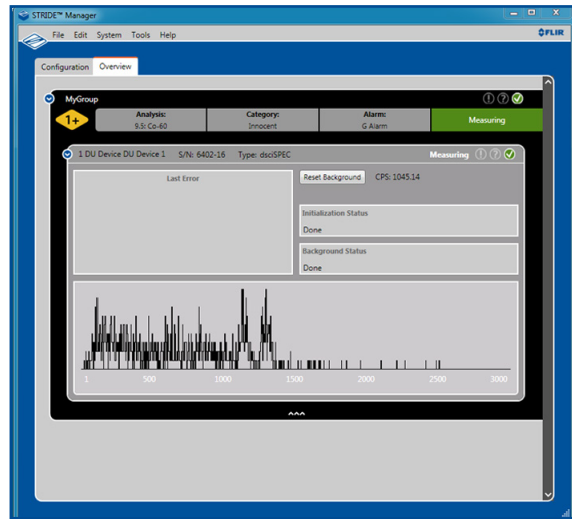
STRIDE SOFTWARE

The Stride system was designed with flexibility and ease of use in mind. The system uses server-client software architecture to allow for simple deployment and an intuitive interface. Each system comprises of a detection unit, or combination of detection units, a server software application, and a client software application.

STRIDE SERVER SOFTWARE

The server software handles communication, alarm processing, and analysis of the data. The server analyzes information sent from the detection units every second. The system will take an initial background measurement and set alarm levels based on a deviation above the acquired background. If the alarm level is exceeded, the system will immediately begin summing the data to provide fast, accurate identification. If multiple detection units are deployed in an area and configured as a group, it will compare count rate data from the individual sensors to determine a location and track a source.

The server software can be run on any PC. The system is configured through an easy to use drag and drop interface for a simple set up right out of the box. After initially configuring and starting the program, the service will run entirely in the background requiring no user interaction.The server will process and transmit all the analysis results over the network for any number of client programs.

STRIDE CLIENT SOFTWARE

FLIR offers a client software package that addresses most users' needs. It provides various user selectable alarm screens. These range from basic views only containing the alarm condition and identification, to advanced screens with dose rate and spectroscopic data. The software can be minimized to the taskbar and pop up during alarm conditions or actively monitored if desired. Multiple instances of the view software can interface to the same data stream coming from the server. This allows users on the front lines to have a local display with only the information related to their individual task while a central command can view detailed information for a multi-level approach.

Alternatively, Stride data can be easily integrated into existing security software. The Stride data streams over the network in an easy to integrate XML format that FLIR provides in the standard software manual. Many companies have already integrated to this data stream.

TRACKING CONFIGURATIONS

FLIR is the only company to provide the ability to track or pinpoint a source's location without shielding. By analyzing the count rate from the detection unit(s), the Stride system can quickly determine the location of a source and accurately identify the radioactive material.

1+, 2+, 3+, ETC… - NON TRACKING CONFIGURATIONS

These configurations include single or multiple detector groups that do not provide tracking information. They provide fast, accurate identification, dose rate information, and spectral data. Due to all detection units being linearized, information from individual detectors can be summed to increased sensitivity. This effectively makes several smaller detectors act as one larger detector. They are commonly used when only the presence and the type of a source is a concern.
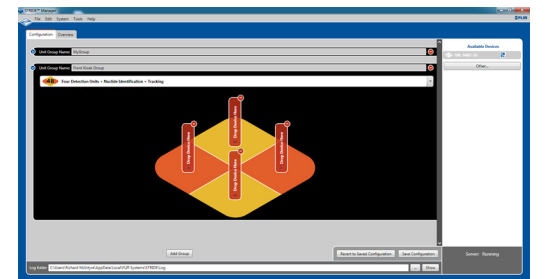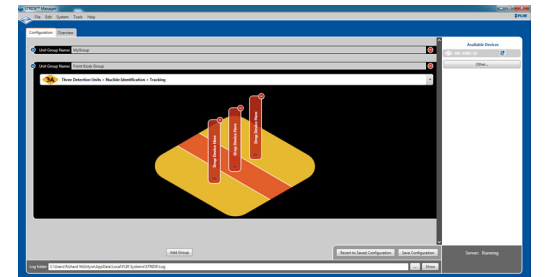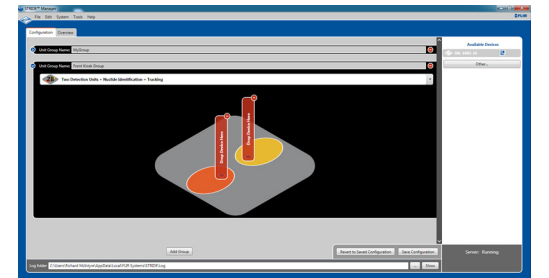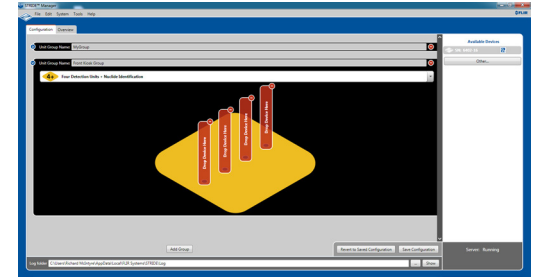

2B– CHOKEPOINT MONITORING CONFIGURATION

By using the quadratic relationship between count rate and distance to the detector, the "2B" configuration is capable of determining if the source is located adjacent to a specific detector. This allow units to be mounted under a reception desk, in stanchions placed at the front of queues, or mounted in an entranceway. Not only do these units identify the isotope present, but they also pinpoint when the sources is located next to the detector. This algorithm is ideal for pinpointing the source location when traffic is forced through a specific point.

2A, 3A, ETC… - LINEAR TRACKING CONFIGURATIONS

Laying out Stride detection units in a straight line provides the ability to track a radioactive source in a linear progression. It is ideal for tracking people who move through a specific path like security lines or corridors. The Stride system will alert that the source has moved across the midpoint between the two closest detectors. When used in conjunction with the physical constraints of the environment such as walls, rail lines, lane barriers, or other objects restricting the traffic flow, this deployment can let you follow the progression of a source and interdict without alerting the individual that has been detected.

4B - LARGE AREA LOCALIZATION CONFIGURATION

When monitoring a large area without the benefit of traffic control, the "4B" configuration can be used to divide up the area into quadrants. The lack of chokepoints or traffic control does not mean that an entire area has to be searched. The Stride system can determine the approximate location by placing four units in a square to cut the search area down. Though not as specifc as other configurations, it is essential for monitoring large areas where manpower is limited.

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