Argonne NATIONAL LABORATORY

AVAILABLE FOR LICENSING

Tracking of Moving Radioactive Sources (ANL-IN-05-128, ANL-IN-09-003 and ANL-IN-09-007)

A flexible, low-profile system for detecting the source of radiation

The Invention

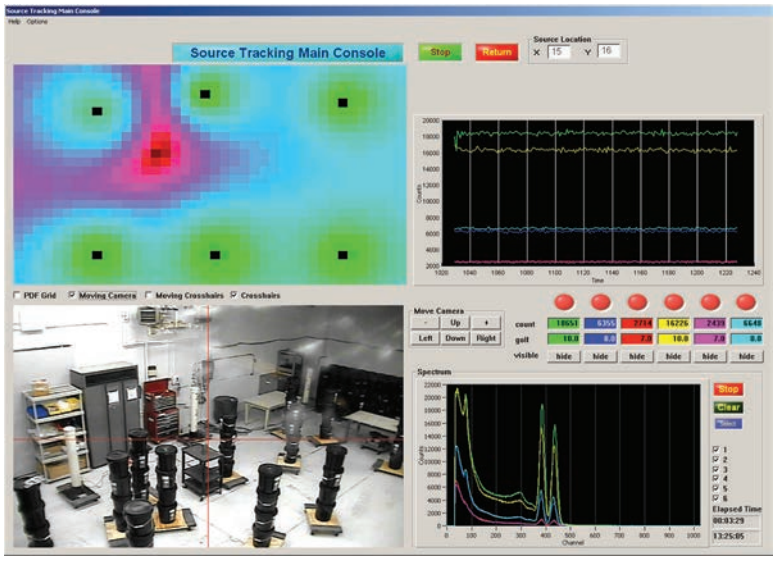
Scientists at Argonne National Laboratory have created a flexible, low-profile system for detecting the sources of radiation. This innovative system offers the unobtrusive detection and tracking of radioactive sources in a variety of traffic environments.

Devices that detect the sources of unsecured nuclear materials are currently limited in their capabilities, range and accuracy. Most systems need to be physically near the source of radioactivity to detect it. No systems currently integrate signals from multiple sensors, provide directional information or identify discrete source locations. Present-day devices generally must be deployed in a single fixed geometric arrangement of detectors and thus are limited to applications where the flow of traffic can be directed to meet the device's spatial requirements. In addition, under such systems, targets know they are being tracked.

Argonne's invention addresses many of these limitations. Radioactive source detection is performed using a sequential analysis test: a video camera for capturing radiation information and video data; a data collection and storage system linked to a network of radiation detectors; a decision-making architecture for processing the radiation information; and a graphical user interface for real-time display of the processed radiation information and the video data. The system is easily moved to new locations without sacrificing accuracy or performance quality. False positives and the probability of a missed positive are minimized, even in environments where the signal-to-noise ratio is lower than what current systems can achieve.

Benefits

- Detects, locates and tracks radioactive sources in real time
- Does not need to be physically near the source of radioactivity to detect it
- Portable
- Easy to use and deploy
- Unobtrusive



Example of video monitoring and data capture using Argonne's system.

Applications and Industries

- Passengers at subway stations, stadium events and airports
- Highway rest stops or toll collection plazas
- Truck stops
- City halls, public streets, hospitals museums
- Venue monitoring, crowd monitoring and traffic choke points
- Free-form areas

Developmental Stage

Reduced to practice

Availability

Ready for licensing and commercialization

Argonne Invention Numbers

ANL-IN-05-128, ANL-IN-09-003 and ANL-IN-09-007

Intellectual Property

US Patent 7,465,924; US Patent Applications 2012/881,943 and 2012/881,928

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