



CARGO SCANNING

HOW TO...

...rapidly screen cargo for illicit materials, automatically detecting nuclear-based WMDs and dirty bombs, even when they're covertly shielded

Cargo containers and truck trailers often are heavily loaded with dense objects that can disguise contraband materials easily. This defeats gamma ray, backscatter and other technologies because their penetrating power is simply too low to punch through these items.

Effective cargo inspection requires an imaging chain that matches high-power X-ray outputs with state-of-the-art detector arrays. Today's Linatron-based X-ray technology answers this challenge with its ability to resolve objects as small as four millimeters contained within 17 inches of steel. Screening is enhanced by the latest detectors and computer software, which allow entire containers to be scanned in high resolution, at rates approaching 15 seconds/container.

These high resolution digital images allow operators to zoom in immediately on suspicious objects, identify the exact locations of concern and save or transmit the images for future use.

Since contraband nuclear materials are a critical, but infrequently found, material in cargo containers, it is important to detect these materials automatically, with a high degree of confidence and with a very low false alarm rate.

Dual energy scanning technology makes this possible. By alternating X-ray energy from pulse-to-pulse at a high repetition rate, nuclear materials can automatically be detected and differentiated from steel and other routine materials. Operators can carry out routine inspections for more frequent contraband, while having confidence that their dual-energy system will clearly identify any significant quantity of nuclear material.

Overall, dual-energy scanning represents a breakthrough technology that, for the first time, allows the potential for automatic detection of nuclear materials while simultaneously providing exceptionally high resolution images at unmatched speeds.