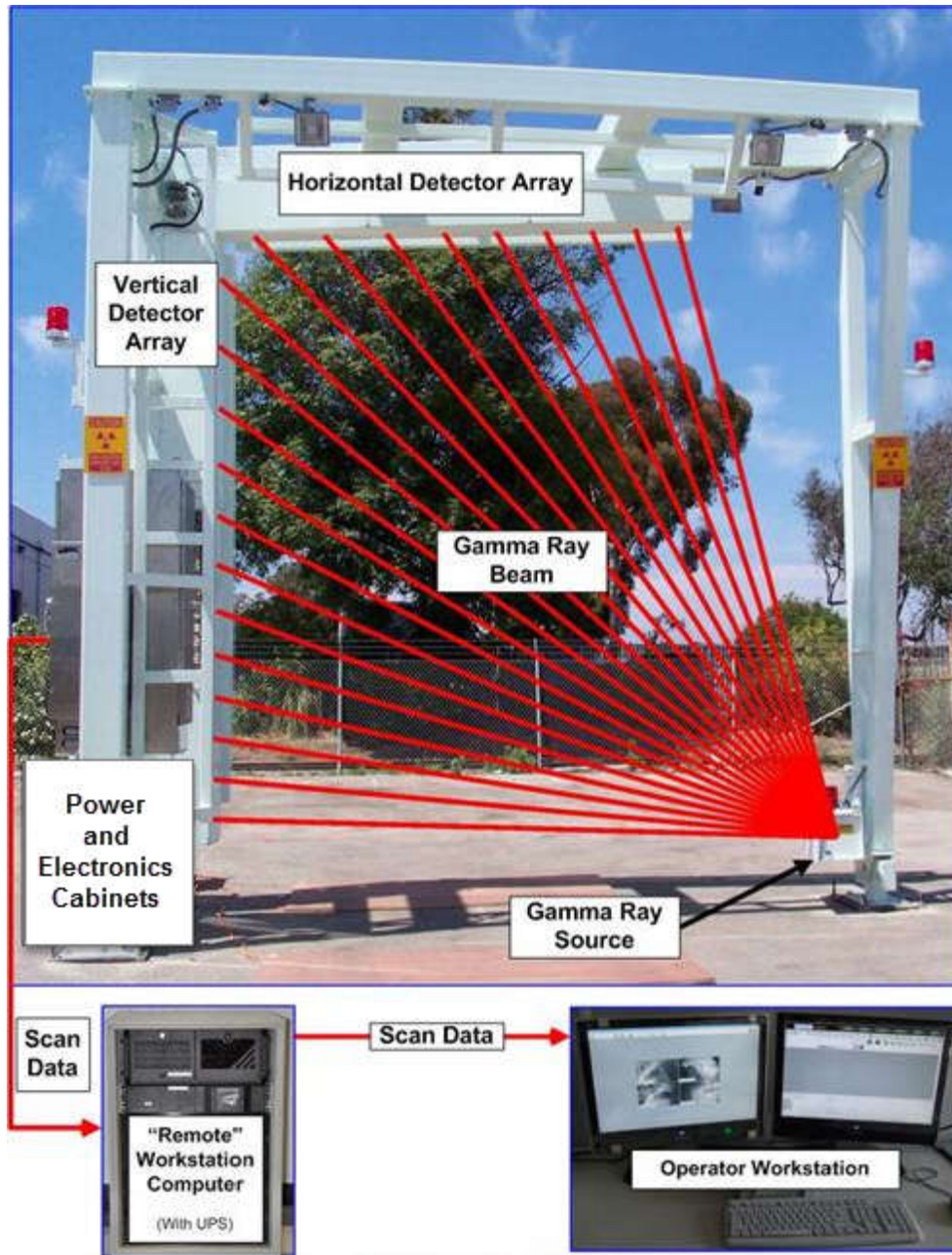


### 1.4 **PRODUCT SUMMARY**

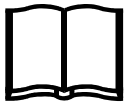
The Vehicle Scanning System (**Figure 1**) is a Non-Intrusive Inspection (**NI**) system that supports Border Surveillance and Cargo Inspection.

The system is designed to accommodate a high-throughput, typically scanning twenty 40-foot cargo vehicles per hour automatically.



**Figure 1: Vehicle Scanning System**

As illustrated in **Figure 1**, gamma radiation from an electrically controlled gamma ray source is collimated to project a fan-shaped beam, which is able to penetrate the contents of a truck, container, or other type of vehicle as it is driven through the portal structure. (See Chapter 5 on Radiation Safety for further information.)

**DEFINITION: gamma rays**

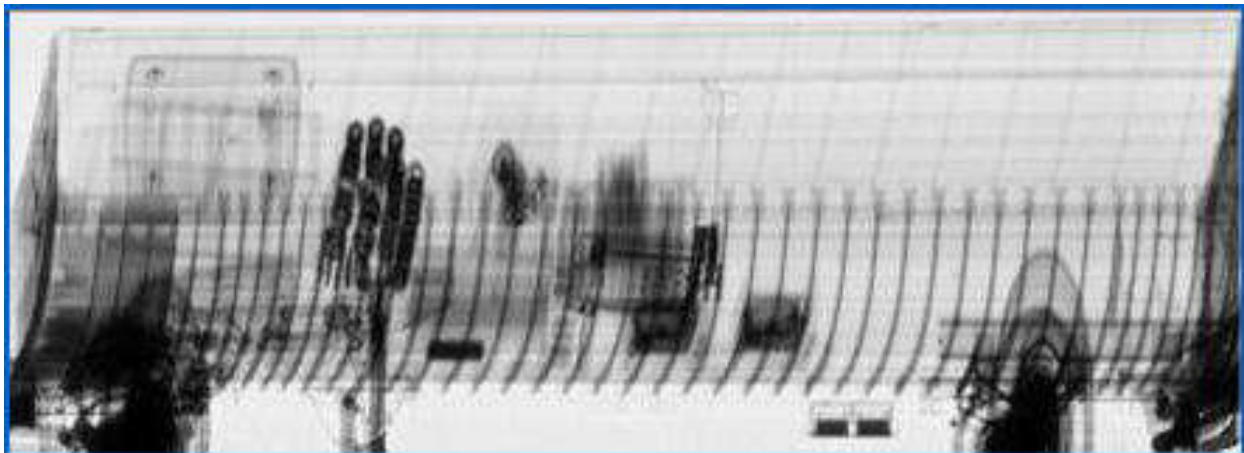
Very high energy electromagnetic radiation (interacting electric and magnetic field waves traveling at the speed of light or less if passing through matter).

Radiation penetration is continuously measured by an “L” shaped, folded array of photo multiplier tube (PMT) detectors on the portal structure. As the vehicle under inspection progresses through the fan-shaped beam, detection data is instantly transmitted to an on-site computer system for image processing.

At an **Operator Workstation**, a real-time, digital image (**Figure 2**) is simultaneously displayed on a high-resolution monitor. An Operator then employs Scan Image Viewer software to perform a threat analysis and general manifest verification of the vehicle under inspection. If anomalies are found in any target vehicle, the operator can annotate the image for archiving in support of secondary search protocols.

These real-time images can be easily enhanced to identify any specific details of the cargo, while the closed circuit television (CCTV) cameras capture and display video images of the vehicle under inspection for license plate and trailer identification.

The Vehicle Scanning System has the ability to perform in harsh environments, such as seaports and desert areas, and to tolerate a wide range of temperatures. While it possesses all the features of a fixed system, it may be relocated to other sites as necessary.



**Figure 2: Sample of a Digital Image Display from the Vehicle Scanning System**