

Procurement of Cargo Vehicle Scanner at JIAP Karachi (Tender No. HQPAA/1992/372/XXLN)

Considering the security requirements of airport and aviation air cargo screening, we recommend a Dual-Mode / Dual-Energy scanner such as Passthrough and Mobile Mode. Instead of only passthrough (Fixed) mode. Compared with conventional systems, Dual-Energy technology provides superior material discrimination, enhanced threat detection, and improved image analysis, which are critical for screening dense and consolidated cargo.

Furthermore, a 4/6 MeV interlaced system is preferred because systems operating below 4 MeV provide lower penetration capability, which can reduce the detection of threats and other contraband concealed within dense cargo. The proposed energy level offers greater steel penetration and enhanced inspection performance for dense cargo containing significant metallic content. Moreover, this energy range is within the permissible limits of both international standards and the local regulations imposed by PNRA. In addition, the required safety zone for this type of scanner is smaller compared to that of pass-through scanners, making it a more practical solution for operational deployment.

Based on current industry practices and the operational requirements of air cargo screening, we believe that a **Dual-Mode scanner incorporating both Pass-Through and Mobile operating modes** would be a more suitable solution than a **Fixed Pass-Through Installation**, particularly where enhanced security detection capabilities, higher penetration performance, operational flexibility, and rapid deployment are required.

In addition, a Dual-Mode Mobile system requires significantly less civil work and supporting infrastructure compared to a Fixed Pass-Through installation. Fixed installations typically require extensive civil works, site preparation, and construction activities prior to commissioning.

The system shall incorporate advanced capabilities to provide depth or spatial localization of objects within the container. The system shall provide an indication of the relative position of an object in the vehicle. This capability shall assist the operator in locating concealed objects and interpreting overlapping cargo.

Moreover, as the delivery timeline is a critical requirement under the tender, a Fixed Pass-Through installation may have a longer project execution schedule due to civil works and site readiness requirements. The installation period can extend up to approximately 60 days, subject to site availability and construction progress. In comparison, Dual-Mode Mobile systems generally offer shorter delivery and deployment timelines, resulting in faster operational readiness.

Advantages of a Dual-Mode (Passthrough & Mobile Operational Mode) Scanner

- Can operate in both **Drive-Through/Pass-Through** and **Stationary Scanning** modes.
- Can be relocated to different airport locations if operational requirements change.
- Requires less civil works and supporting infrastructure.
- Can support multiple security checkpoints with a single asset.
- Suitable for screening trucks, containers, vehicles, and cargo at various locations within the airport environment.
- Provides greater operational flexibility and scalability for future security requirements.
- Enables rapid deployment and commissioning compared to fixed installations