1.7   <u>PRODUCT SUMMARY</u>

The Hold Baggage Screening (HBS) System delivers multi-level, automated, multi-view explosives detection technology to airport security operations involved in screening airline hold baggage, as illustrated in Figure 1 and defined below.

<u>Level 1 Screening</u>: Automated Explosives Detection

Level 1 is defined as <u>automated</u> detection of threat items by X-Ray scanners.

Images of bags classified at Level 1 as potentially containing explosive threats are flagged as "not cleared" and sent to **Level 2** for human operator screening.

Non-threat bags are automatically "cleared" and allowed to pass through the airport's Baggage Handling System (BHS) to their destination.

<u>Level 2 Screening</u>: Human Operator Analysis of Alarmed Baggage

Level 2 is defined as a human operator at a computer workstation screening <u>images</u> of a bag flagged at Level 1 as containing a potential explosive threat.

All bags that are either not cleared by Level 2 screeners, or are subject to errors in the tracking system (or label reading system), are diverted to **Level 3**.

<u>Level 3 Screening</u>: Alarm Resolution of Rejected bags from Level 2

At Level 3, one or more of the following inspections methods may be employed:

- hand search by a human screener,
- explosive trace detection by an electronic sniffer,
- full computer tomography (CT) based X-ray scan, and/or
- using trace detection equipment and other advanced screening technology.
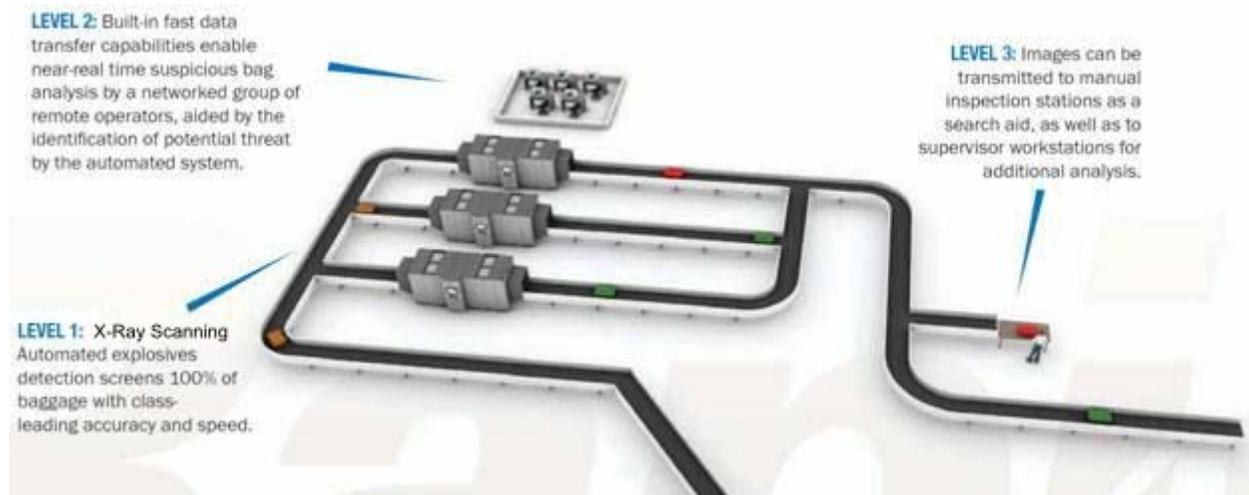

Figure 1: Hold Baggage Explosives Detection Screening "Levels"

The core of the overall HBS System is the X-Ray Scanner (Figure 2) which provides **Level 1** **screening** capability.

Figure 2: Multi-View X-Ray Scanner

The X-Ray Scanner uses high-resolution, dual-energy X-ray images in multiple (5) views to detect the full range of explosive threats. Fast reconstruction algorithms are used to determine the presence and position of threats based upon context, material density, size, and effective atomic number.

The 5 angular views plus a generated 3-D Rendering view allow better performance for the detection of materials in configurations typically difficult to resolve on high-speed X-ray systems.

Level 2 and Level 3 screeners on Workstations employing Screening Software may view bag scan images in each of these views via the Screening User Interface.

Figure 3: Bag Scan Screening Software