Airport Security Massive Multiplexing Imaging System

Enhance the Security and Efficiency of the
Airport Checkpoint and Baggage Screening Process

Addressing the Need

Each day, aviation security systems are put to the test as travelers with their carry-ons and hold-baggage pass through checkpoints and hold-baggage screening at airports around the world. As global airport staffing shortages persist and the potential for treats remains ever-present, there is a constant, vital need to improve both security efficiency and effectiveness.

To meet this need, security experts at Integrated Defense and Security Solutions (IDSS) and The Chertoff Group have developed a massive multiplexing system that enables checkpoint and checked baggage images generated onsite at any airport to be screened remotely at redundant centralized locations. (*See Figure 1*.) Our team has independently validated that our solution allows remote image review at the same speed as the local airport checkpoint with typical airport bandwidth requirements.

This system uses patented covert node technology, developed by The Chertoff Group, to insert real threat objects into the baggage stream, producing system-wide performance data for threats.

Advantages of Massive Multiplexing

The primary advantages of this networked approach are the ability to remotely evaluate the performance of the aviation security system, individual officers, and the overall efficiency of screening operations. Its benefits extend to stakeholders across the aviation environment – including the traveling public, airport management, technology providers, and federal officials.

Figure 1. Airline Security Massive Multiplexing Imaging System Workflow
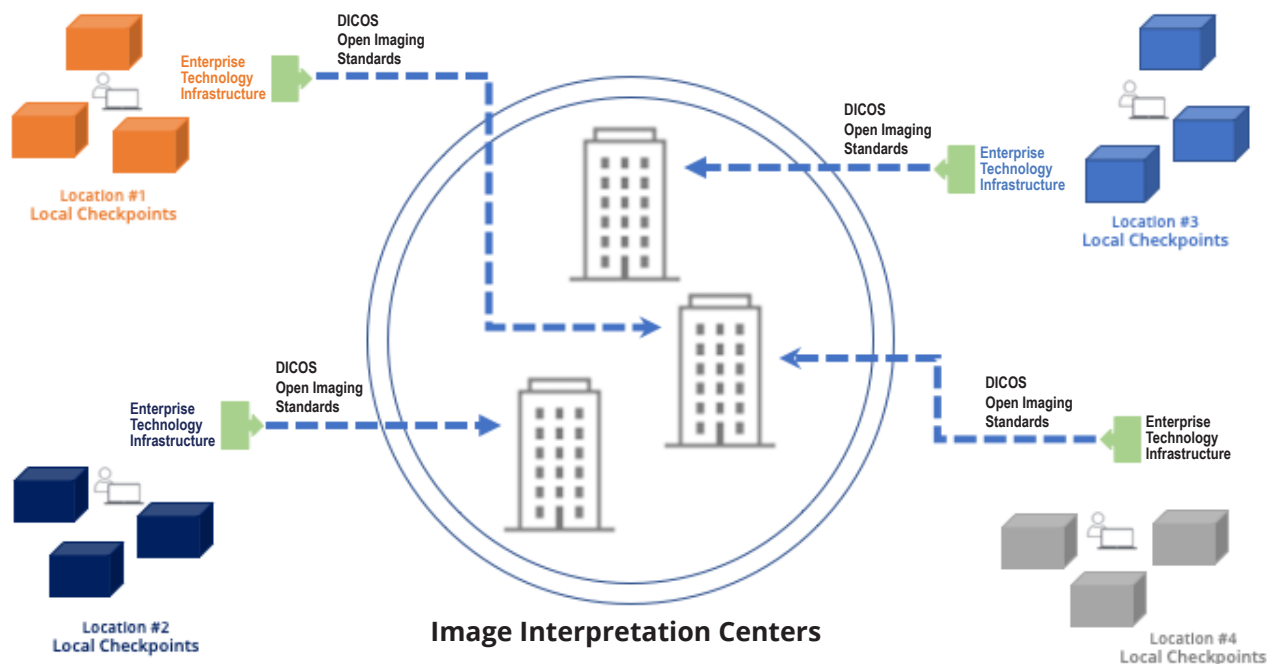
Incremental Advantages and Capabilities

Interoperability
The system uses open imaging standards (DICOS), which enables existing technology infrastructure to plug into the massive multiplexing network, regardless of the manufacturer. This fosters greater competition and innovation.

Expertise
Remote screening promotes officer specialization, which increases staff efficiency and effectiveness.

Peak Shaving
Remote networking improves screening capacity and checkpoint throughput by shaving peaks. Imaging centers can support rolling peaks worldwide and across multiple time zones.

Rich Data
The system facilitates an expansive database that will be used to continually train artificial intelligence-based threat detection algorithms and reduce reliance on human image interpretation.

Flexibility
Remote screening makes it easier to adapt and respond to emerging threats and new technology.

Covert Node
Bomb technicians at a secure, non-airport location can insert bags with actual threat items for real-time detection performance testing, subsequent training, and operating procedures. This capability spurs the development of a global Key Performance Indicator (KPI) database with system-wide reporting on security and operational performance.

Cybersecurity
The system meets Zero Trust Architecture design principles.

How It Works

There is no limit on the number of airports with standard IT infrastructure connections that can connect to the massive multiplexing network, which is entirely decentralized and redundant. Through the use of this innovative technology, it is as fast to display an image for review at a remote facility hundreds or thousands of miles away as it is to display it for review locally.

The system is based on an open architecture, allowing any manufacturer operating with the open DICOS standard and who meets high cybersecurity requirements can operate in the massive multiplexing environment (Open Architecture for Airport Security Systems v1).

Contact us to learn more.

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