

# WHITE PAPER

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## OutPost: Integrated Security & Media

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This white paper presents the concept, operational possibilities, and security performance advantages of transportation security equipment (TSE) deployment strategy based on the physical and functional integration of security technology and electronic sign media.

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## **1 INTRODUCTION**

Continued terrorist threat to mass transportation and the TSA's responding development, deployment and buildup of security countermeasures could eventually lead to a shortage of optimal installation sites for surveillance, detection and screening technologies. This proposal offers an alternate strategy for the deployment of Transportation Security Equipment (TSE) that is non-intrusive, multi-mission and supports TSA's imperative for near-term improvement and optimization of transportation security capability, performance and effectiveness.

## **2 TECHNICAL CONCEPT**

### **2.1 OUTPOST: Integrated Security & Media**

OUTPOST is a TSE deployment solution that provides TSA with the capability to efficiently consolidate security technology, and advertising and message media into a single host platform with the form and function of a commercial sign. Designed for this purpose, OUTPOST provides additional installation opportunity and capacity for cameras, sensors, processors and infrastructure that support a wide range of security technology and services. As the most visual component, the sign, is a common and accepted fixture in mass transit, and the feature that affords the platform greater placement opportunity in areas of passenger activity and traffic.

With the ability to improve sensor-to-passenger proximity and blend hardware installation into facility aesthetics, OUTPOST expands options for deployment groups and security designers to position, distribute and layer technology throughout a transit facility.

### **2.2 Basic Design Configuration**

OUTPOST can support a wide variety of technology solutions and operational situations. Design profile, dimensions and footprint are scalable, providing options to deliver the close-in technology support needed at passenger screening checkpoints. OUTPOST can also take the

shape of billboard size structures for deployment of systems providing wide area screening, detection and interdiction zones for large crowds and open air events. Exterior design and appearance can be a standardized agency theme, as in the stainless steel and acrylic prototype shown in **Figure-1**, or customized to coordinate aesthetic demands of historic facilities and sites. Interior component and sensor placement is determined by technology and operational requirement. OUTPOST also offers installation elevation variety, providing floor, eye-level and overhead view angles for position critical cameras, sensors and detectors. **Figure-2** illustrates general hardware layout and sensor elevation options.

[1] Upper Camera/Sensor Bay: provides overhead position and view. Enclosure cover options for visually open, discreet (shown) or concealed installation.

[2] Liquid Crystal Display (LCD) Panel: multi-purpose graphics for advertising or information, with integration capability to provide visual stimuli for video image and biometric data capture and real time, multi-lingual, emergency evacuation instruction.

[3] Lower Camera/Sensor Bay: eye-level, offers concealed installation option for biometric technologies: iris scan, facial recognition, voice analytics, etc.

[4] Auxiliary Equipment: multi-purpose space for supplies or handheld equipment storage. Space can also be configured with onboard computer to provide network edge processing and connectivity for integrated solutions or configured with standalone COTS solutions such as Chemical, Biological, Radiation, Nuclear and Explosives Detection (CBRNE). Air sample induction (**Figure-2** 4a,4b) can be ported from any elevation on the frame. Filter and intake tubing to the detector(s) is replaceable in the event of contamination.

[5] Platform Services: Contains power, cooling, data, communications and service entrance for platform and onboard technology. Wiring and ventilation is routed through the frame (Figure-2 5a).



Figure 1- Prototype

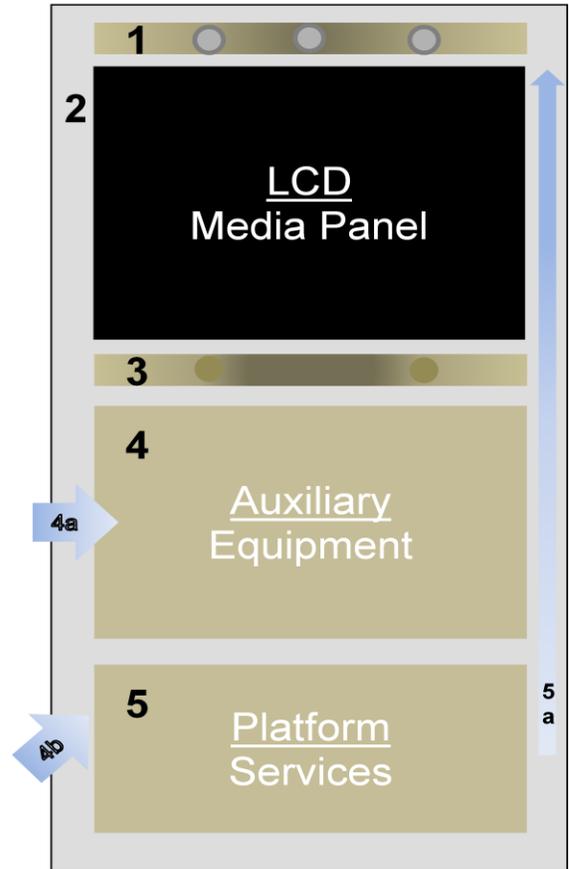


Figure 2 – Equipment Layout

### 2.3 Capability Demonstration: Travel Document Checker (TDC)

Deployed technology varies with security strategy, but it is anticipated that most OUTPOST platforms will be configured with a minimum of fixed and Pan Tilt Zoom (PTZ) cameras providing a variety of close-up views for video surveillance. Upgrading the platform with a computer provides edge processing and connectivity to support integrated on-board analytics, alarm processing and data storage as well as support for standalone Biometric solutions and

CBRNE countermeasures. OUTPOST design flexibility and ability to bring expanded security products and technology options to a specific task is demonstrated in the following scenario.

Passenger Screening Checkpoint, Travel Document Checker (TDC). **Figure-3a** illustrates a

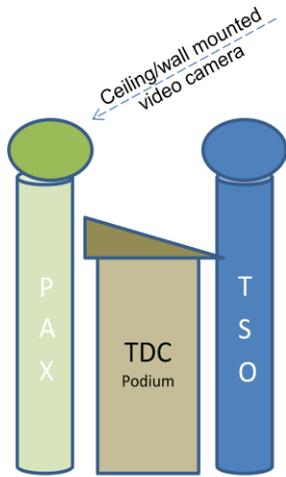


Figure-3a

typical TDC station; passengers (PAX) present identification (ID) and boarding pass (BP) to the Transportation Security Officer (TSO) operating the TDC Podium. Most TDC screening is manual, with occasional assistance from standalone Credential Authentication/Boarding Pass Screening Systems (CAT/BPSS) mounted on a nearby stanchion. Video surveillance of the transaction is usually provided by a camera mounted on a distant wall or ceiling. **Figure-3b**, illustrates TDC security enhancements possible with OUTPOST implementation.

The free standing unit is positioned behind the TDC operator.

Discreet or concealed over-head and eye-level video cameras provide close-up imaging for surveillance and biometric data capture. The multi-purpose LCD display provides TDC station and Checkpoint identification and status, and can also be integrated with security and emergency response messaging systems. Design flexibility supports standalone products and integrated technologies that can be operated autonomously, remotely, or with local TSO operator interface. This TDC task specific adaptation can enhance Credentialing, Identification Verification and Behavior Detection capability. With the

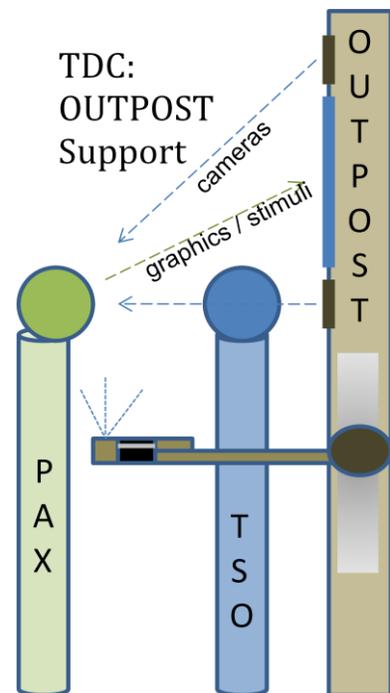


Figure-3b

addition of a swing-out desktop that provides ideal position for integrated fingerprint/ palm

scanner, smart card/ barcode reader, and embedded microphone for voice analytics, recording, and communications, all without the need of a standalone podium. OUTPOST offers the ability to place security technology where you need it. Additional task specific design options and styles incorporating a variety of technology and products can be implemented to provide expanded capability for:

- Queuing and Checkpoint perimeter signage
- Passenger Screening Area technology enhancement, i.e. Behavior Detection
- Exit Lane Breach Control, identification and tracking
- Boarding Gate, secondary screening and identity verification
- Checked Baggage Screening, Check-in and Screening drop-off, identity capture
- Baggage Claim, access control, identity verification
- CBRNE and Stand Off Detection (SOD)

#### **2.4 Advantages, Capabilities & Features**

- Improved distribution, layering, and positioning of security technology
- Reusable, installation ready, accelerates future deployments
- Minimized footprint, combining security with multi-purpose media
- Non-intrusive, low impact blending of security technology with site aesthetics
- Improved passenger screening and travel experience
- Facilitates stakeholder installation design approval
- Free standing, eliminates dependency on walls and ceilings
- Open, Discreet, Concealed and Deterrent options
- Improve CBRNE positioning, detection, and plume tracking accuracy

- Enhance security network efficiency, connectivity and capability
- Multi-purpose signage offers advertising revenue, security and public safety messaging

## **2.5 Disadvantages, Constraints & Risk**

- Shifting policy regarding discreet and concealed security devices
- Airport/Rail/Port Authority design requirements
- Possible impact to OEM/product warranty or operational test and evaluation (OT&E)

## **3 RELEVANCE**

The primary purpose of OUTPOST is to optimize performance and effectiveness of security equipment and services by providing better installation positioning, infrastructure support and capability for rapid deployment. Design adaptability provides TSA with a non-intrusive, reusable, multi-mission deployment platform with the ability to place security technology where it's needed. OUTPOST should have wide appeal and utility for TSA deployment groups and mass transit stakeholders, and play a key role in the future of security technology deployment and countermeasure architecture.

### **3.1 Passenger Screening Program (PSP)**

OUTPOST implementation optimizes the security hardware footprint in space constrained checkpoint screening and queuing areas. Floor space occupied by signs, benches and boundary partitions can be leveraged to provide additional capability for security technology, products and processes that support PSP's mission needs.

- Improved technology and sensor proximity, positioning and performance
- Create additional space for supplies, handheld TSE storage, or IT installation

- Expand security and media options at screening and control stations: TDC, Exit Lane, Boarding Gate, Baggage screening drop-off and Baggage Claim area access control
- Improve security network efficiency and connectivity

### **3.2 Advanced Surveillance Program (ASP)**

OUTPOST can provide ASP with expanded installation opportunities to distribute video surveillance and biometric technologies throughout transportation facilities without dependency on ceilings or walls. Design versatility offers open, discreet, concealed and deterrent options. Multipurpose LCD sign media integrated with video and biometric systems, provides visual stimuli and lighting that improve image capture and systems performance.

- Improved sensor-to-passenger proximity
- Low impact to facility aesthetics
- Simplified standalone or integrated deployment
- Network edge processing for analytics, alarms and data storage
- LCD integrated with video surveillance, providing subject attention, focus and spot lighting

### **3.3 Operational Test & Evaluation (OT&E)**

One of OUTPOSTs primary features is to provide a reusable, installation ready platform with the footprint of a typical commercial sign or directory. This feature gives OT&E capability to rapidly install, update or replace pilot technologies while offering each system under test a variety of sensor and detector placement elevations that support simultaneous installation and test configurations that reduce the number of test cycles.

- Built-in signage provides public notification of “technology in use”
- Secure, reusable enclosure simplifies installation, test and monitoring equipment storage

- Improved aesthetics - minimize stakeholder concerns

#### **4 OPERATIONAL UTILITY ASSESSMENT PLAN**

Ultimately the success of OUTPOST will be measured by how much it improves the performance and effectiveness of TSA's security technology in an operational transportation environment. Since OUTPOST is only in the concept phase, an Operational Utility Assessment Plan has not been developed.