System Architecture

Office of Security Capabilities

Transportation Security Administration

OSC Requires a Forward-Looking Architecture

To further advance RBS, OSC requires a screening system architecture to outline their current and future business and equipment needs to minimize acquisition risk when developing new capabilities.

Why architecture?

Architecture provides a conceptual model of the current and future system structure, its components, and the relationships between them. Specifically, TSE System Architecture will outline the future security screening system.

A Screening System Architecture will help OSC achieve:

Standardization

- Enable interoperability and modularity of transportation security equipment (TSE)
- Reduce the cognitive burden on TSOs, increasing their effectiveness
- Facilitate the acquisition of components instead of system suite, allowing for modular repairs and upgrades

Acquisition Planning

- Assist programs in developing integrated technology roadmaps for future acquisitions
- Provide analysis to define technological requirements for future screening system
- Enable a platform shift in screening capabilities; specify needs to vendors

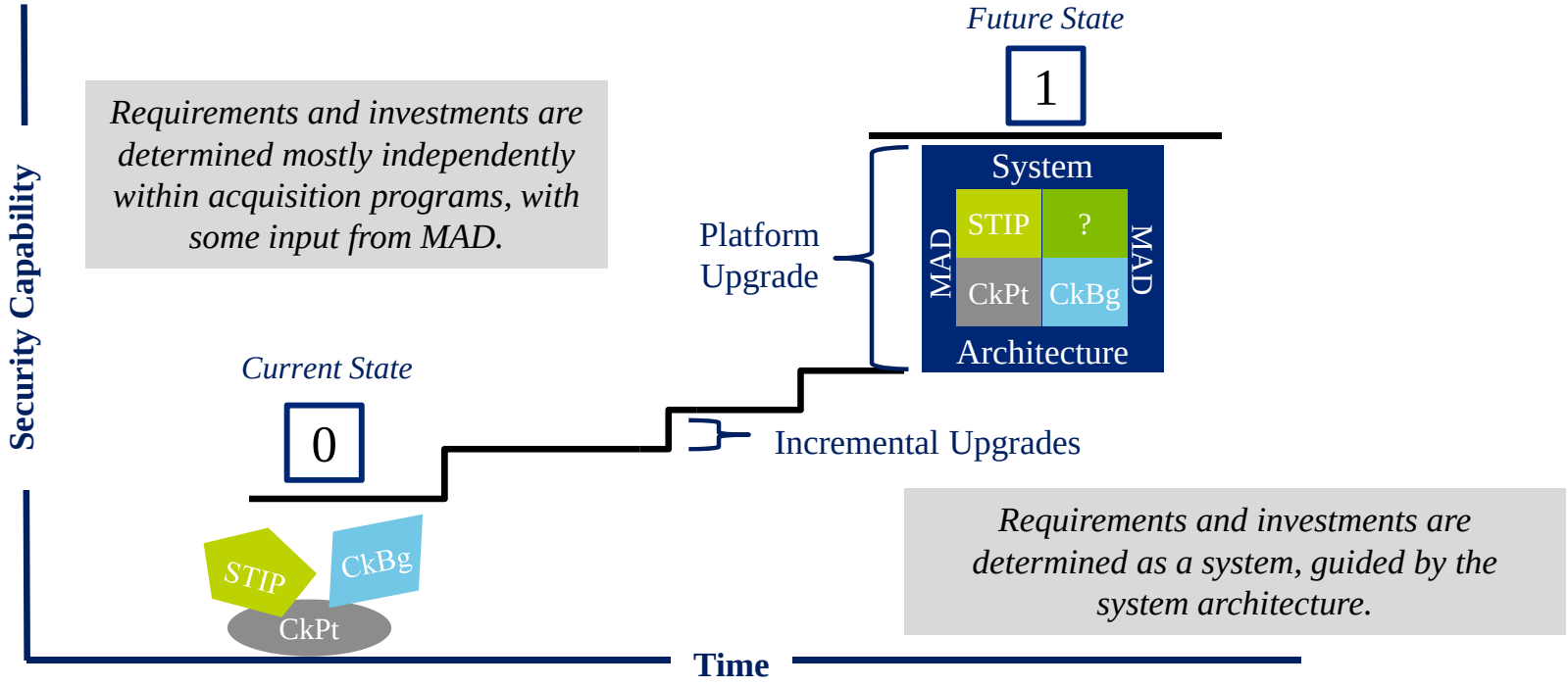
RBS Implementation

- Identify technological standards and equipment necessary to further define and implement RBS
- Develop and define risk-based functionality and automation in the screening system
- Provide common system understanding of how TSE will perform during screening and what data will be employed to make RBS decisions

System Architecture Objectives

"Over the next few years, TSA will focus on developing a comprehensive system architecture that will allow TSA to proactively identify gaps and define capabilities at a system level. TSA will collaborate with industry to develop this shared vision for the future state of aviation security where business, data, and next-generation platforms combine to enable near real-time decision-making and response capabilities to combat emerging and evolving threats."

- TSA's *Strategic Five-Year Technology Investment Plan for Aviation Security*



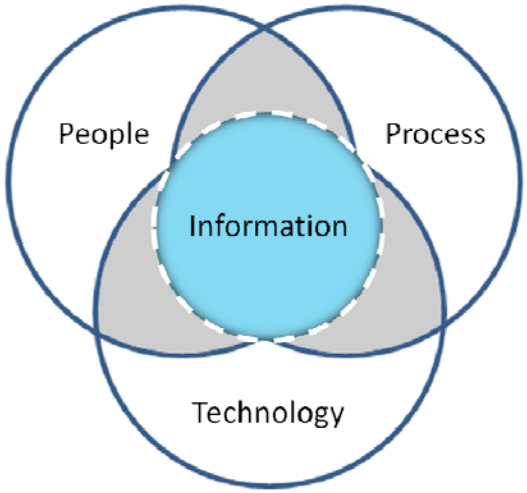
A comprehensive system architecture program will allow OSC and TSA to proactively identify capability gaps and define targeted screening capabilities to address those gaps by enabling an integrated and modularized security screening system.

Enterprise Architecture Approach

TSA utilizes an Enterprise Architecture (EA) approach to align *people*, *processes*, *information and technology* and become a high performing organization.

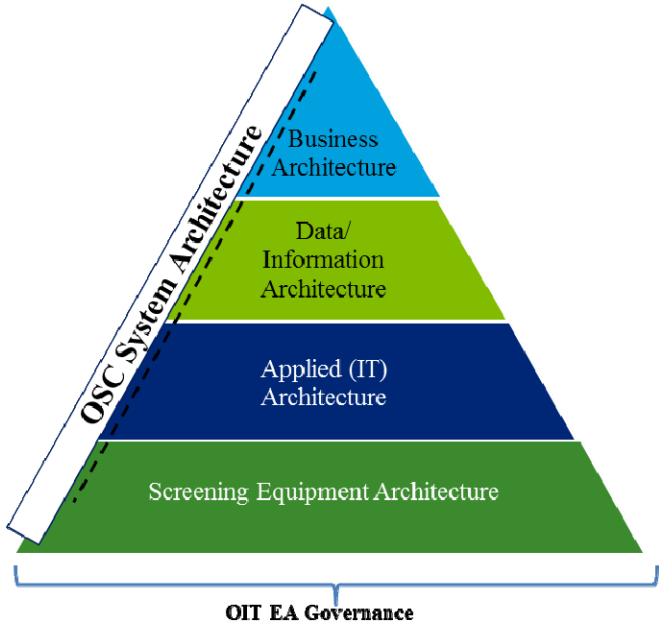
Enterprise Architecture Benefits:

- Increasing effectiveness and efficiency of business through use of information and technology.
- Developing a flexible and scalable business model and secure architecture that allows for easy integration of new mission requirements and technology.
- Maximizing use of technology and resources to minimize redundant and/or manual business processes.



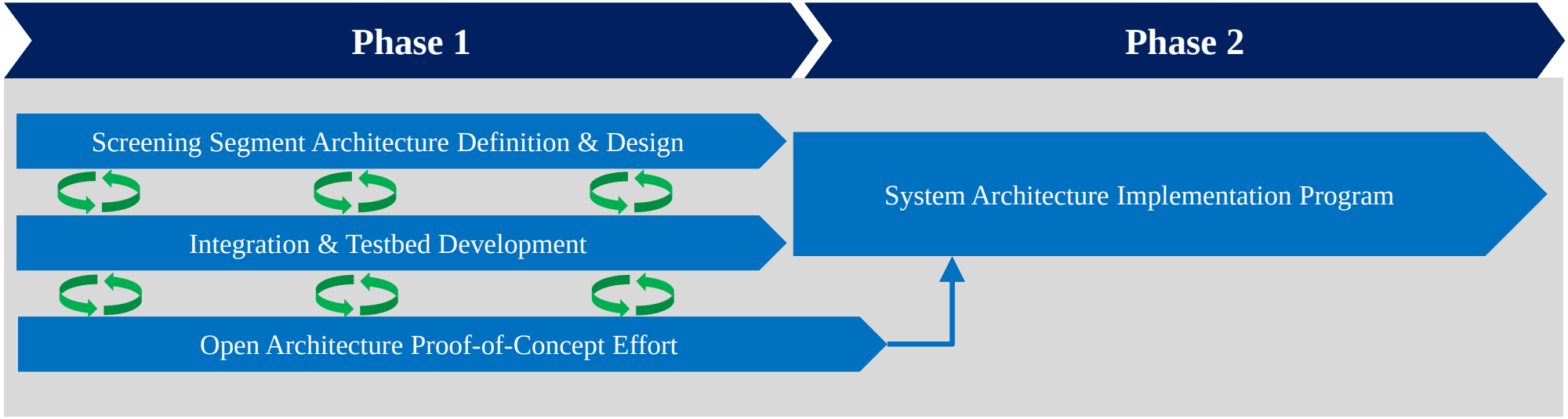
OSC System Architecture Approach:

- OSC's System Architecture will be comprised of multiple architecture levels and will define current and future screening capabilities needs while pulling on relevant EA domains to apply them to the screening system.



System Architecture Program Components

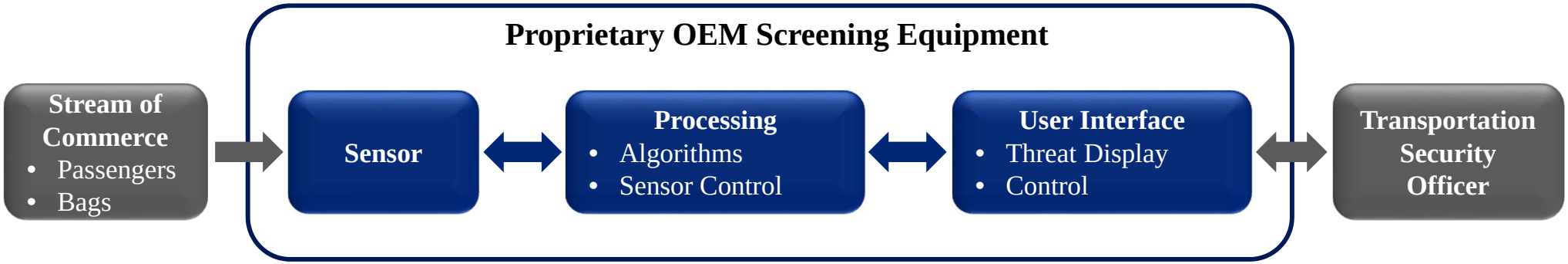
The system architecture program is comprised of specific efforts in the following phases:



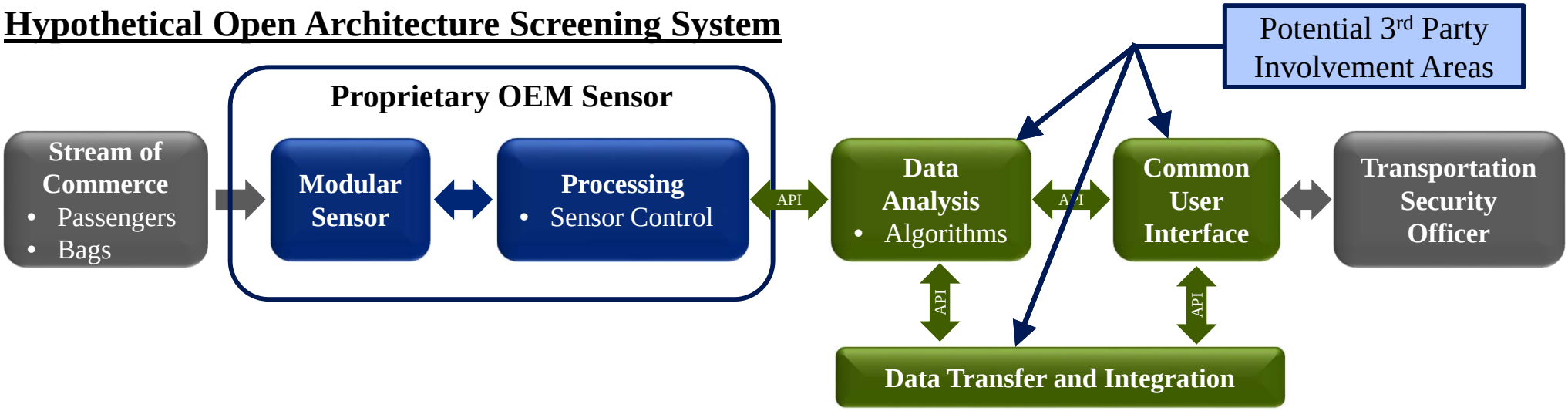
Screening Segment Architecture Definition & Design *(MITRE)*	The segment architecture definition effort will create conceptual models that describe the existing and future structures of a particular system, as well as their components and the relationships between each component.
Integration & Testbed Development *(GD)*	A System Architecture Testbed will be used to incrementally explore, validate, and demonstrate alternative screening solution concepts that advance TSA's RBS vision. The architecture testbed will serve as a development and demonstration platform of an integrated screening concept.
Open Architecture Proof-of-Concept *(Sandia National Lab)*	Sandia National Labs is developing the Open Threat Assessment Platform (OTAP), a limited-scope prototype X-ray detection platform that utilizes an open Application Programming Interface, standard data formats, and human-annotated images.

Standards-Based, Open Architecture Strategy

Current Proprietary Transportation Security Equipment System



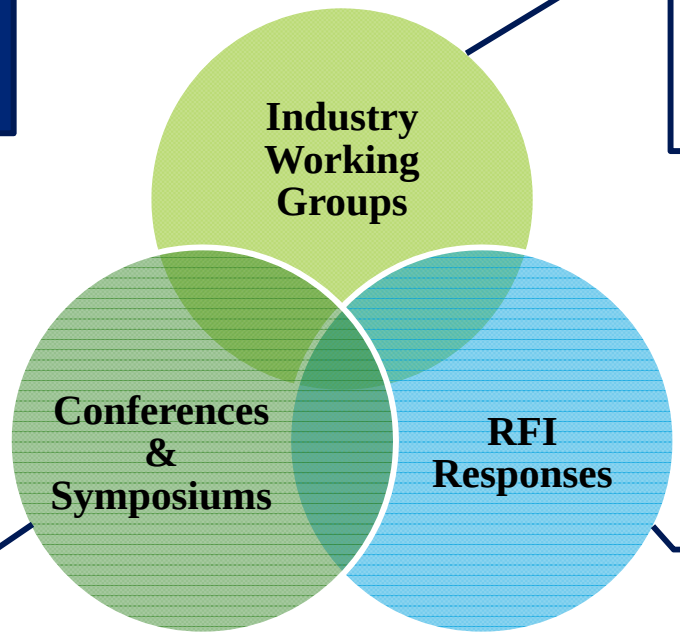
Hypothetical Open Architecture Screening System



TSA Partnership with Industry

TSA needs strong Industry involvement to develop a mutually beneficial future-state systems architecture.

Avenues for TSA Engagement with Industry



TSA intends to stand-up specific Industry working groups to jointly develop their future state system architecture with Industry

TSA regularly attends and participates in Industry Conferences and Symposiums to collaborate with vendors.

TSA plans to release multiple RFIs to better understand Industry's solution offerings and to better define procurement requirements

TSA is creating a sustainable industry engagement model to collaborate with Industry throughout the development of a mutually beneficial future-state systems architecture.