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Multi-View CT Capable System (MVCTC)

Explosives Detection in Air Cargo ADSA10

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About Astrophysics



- **Founded in 2002**
- **Headquarters and Production in City of Industry, California**
- **Present in over 100 countries with over 100 agents**
 - Offices in Washington DC, UK, India, Lebanon, Mexico, Philippines
- **Over 1,200 customers and 10,000 units installed**
 - United Nations, US Air Force, US Navy, Federal Bureau of Prisons, CA Court Houses...
- **13 different tunnel sizes / 34 different models**
 - Energy Levels / Beam Orientations / Single View / Dual View / Mobility
 - Checkpoint (TSA Capacity A)
 - Hold Baggage (TSA Capacity B)
 - Cargo (TSA Capacity C)
 - Mobile Systems, High Energy Container Scanners
- **TSA Air Cargo Screening Technology List (ACSTL)**
 - 19 qualified systems, most recent a 1.8m x 1.8m Dual View 320kV pallet scanner





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Acknowledgments

- **Funding & Support from DHS, S&T Directorate**
 - **Screening of Palletized Air Cargo Program**
 - Stephen Surko, Explosives Division
 - Curtis Bell, Transportation Security Laboratory



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What benefit would TSA obtain from our technology?

- **Multi-view X-ray transmission imaging of pallets**
 - Through up to 360 degrees
- **Volumetric (“3D” / CT) X-ray imaging when needed**
 - Automated detection
- **Screening operations similar to current pallet X-ray systems**
 - 20cm/s conveyor speed in multi-view mode
 - Expect operational throughput > TSA’s requirement of 20 pallets/hour
- **Operating costs similar to current pallet X-ray systems**
- **Moderate system cost**
- **Significant upgrade to detection**



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MVCTC Pallet Scanner

- **Dual function Multi-View & CT system**

- Adapted Astro's multi-view technology to pallet scale
 - High-resolution detector arrays
 - Operates as a "1st level" transmission screening system with high throughput
- Computer tomography (CT)
 - Enhanced screening tool when multi-view cannot clear (use OCAST?)
 - Improved & automated threat detection
 - Reduced rejects / false alarms

MVCTC Air Cargo
Pallet Screening System





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Summary

- **Astrophysics roadmap:**

- Continuing to develop and evaluate the technology
- Trials planned with DHS S&T under the Screening of Palletized Air Cargo Program

- **Major benefits:**

- Transmission & CT screening tools
- Automated CT detection
- Good operational throughput (comparable to existing 320kV systems)
- Good penetration (source may be a monoblock, tube, betatron or linac)
- Moderate cost
- Minimal disruption to current screening CONOPS
- Significant upgrade from technology currently available