



# United States Transportation Command Operational and Technology Challenges Brief

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# USTRANSCOM Technology Thrusts



## RDT&E Project Areas

- Command and Control, Optimization, Modeling & Simulation
- End to End Visibility
- Cyber
- Global Access



## Future Joint Force Missions

- Counter Terrorism
- Deter and Defeat Aggression
- Project Power Despite Anti-Access/Area Denial Challenges
- Counter Weapons of Mass Destruction
- Operate Effectively in Cyberspace and Space
- Maintain a Safe, Secure, and Effective Nuclear Deterrent
- Defend the Homeland and Provide Support to Civil Authorities
- Provide a Stabilizing Presence
- Conduct Stability and Counterinsurgency Operations
- Conduct Humanitarian, Disaster Relief, and Other Operations



# Development Vision/Objectives



## USTRANSCOM RDT&E Vision

## Operational Experience

### Near-Term (0-3 yrs)

- Improved Aerial Delivery
- Integrated Computing Environment
- Cargo Unmanned Air System
- AT21 Optimization/Mode Determination
- Situational Awareness & Collaboration
- Meshed Networks/Enhanced Visibility
- End-to-End Modeling

### Mid-Term (3-5 yrs)

- Hybrid Lift
- Deployment & Distribution Networked Enterprise
- Integrated Distribution to Point of Consumption
- Humanitarian Airdrop
- Sense & Respond Logistics
- Adaptive Planning
- Joint Sea Base Enablers
- Living Plan
- Energy Conservation

### Far-Term (5+ yrs)

- Integrated Egress/Port Efficiencies
- Cargo Threat Detection/Protection
- Virtual Intermediate Staging Base
- Rapid/Automated Landing Sites



# FY15 Solicitation Technology Focus Areas



- **Command and Control/Optimization/Modeling and Simulation** - Emerging technologies that support the sharing of information and services across security boundaries that maintains information assurance and system integrity; technologies that ease the development cycle on source systems for web services and make best use of geographically distributed server environments. Integration of these complex technologies and methodologies requires improved processes for managing virtualized environments and service based architectures. These technologies include but are not limited to the following areas of interest; cross domain communications, web services provisioning, and portfolio management capabilities and transfer of data from a government web site in the public domain to a sensitive/unclassified government data system for transportation planning/shipping of vendor shipments.
- **Cyber Security** - Proposals which involve maturing technologies that allow for assured, secure and trusted communications across DOD networks and shared with commercial partners. These technologies will support the warfighter in the detection, analysis, assimilation, and deterrence of cyber threats.
- **Information Technology Enterprise Standardization** - Multiple IT architectural efforts result in lack of standardization and require significant resources to maintain. Standardized architecture efforts will simplify maintenance requirements and standardize services/systems used to enhance the Defense Transportation System. Transitioning USTRANSCOM to a Common Computing Environment should be expedited. This fosters significant time savings on future projects and facilitates interoperability.
- **Global Access Technologies** - Seeking Air/Land/Sea technologies that provide timely capability to deliver cargo to dangerous (i.e. anti-access/austere) locations across a complex, distributed battlefield without jeopardizing warfighter safety.
- **Expeditionary capability to offload military equip** – Seeking technologies that support a heavy duty, deployable system that would be suitable for the Civil Reserve Air Fleet. Capabilities include portable vehicle loading ramps for rapid offload of vehicles and portable highline docks to support offload of palletized pallet trains.
- **Rapid Distribution Technologies** - Technologies that improve the end-to-end flow of military unit equipment and cargo through ocean ports, aerial ports and intermodal interchanges. Concepts that improve deployment speed and throughput are critical to providing required customer support.
- **Determine and Coordinate Convoy Security** - The theater commander has not always been able to provide the appropriate security in a timely manner during movement from the Theater Distribution Center to/from final destination. Movement requirements are competing for the same limited resources. Modeling, simulation, and decision support tools that assist convoy planning/routing would enable security providers to optimize resources.



# FY15 Solicitation Technology Focus Areas (con't)



- **Cargo Screening** – Seek solutions to screen cargo for Chemical, Biological, & Explosive threats without negatively degrading throughput operations. Interests include systems with stand-off detection, hand-held detection, vehicle inspection detection, robotic inspection detection, unmanned vehicles detection-both on land and in the water, and fixed detectors which allow for detection before endangering personnel and/or resources.
- **Force Protection** - Terrorism and asymmetric warfare pose an ever-present threat to our nation's strategic mobility assets (personnel, equipment, and mobility assets) and their embarked cargo, equipment, and personnel. We seek advanced and affordable technologies for on and off board aircraft systems to enhance aircrew situational awareness and to defeat guided missiles and emerging directed energy threats. Interests include the application of technology to create virtual borders at the point of loading and early detection of container breach or tampering.
- **Distribution Systems Interoperability**– Transportation/distribution information exchange across the DOD is inhibited by the disparity of systems, differing data standards and insufficient interfaces. Queries and retrieval of movement status and shipment information cannot be executed due to lack of connectivity between the various components of the supply chain. DOD cannot optimize customer requirements as it does not provide inventory interoperability across all Services, theaters, and locations. There is little connectivity among the various components in the supply chain. Source systems use different data standards making in-transit visibility aggregation difficult and often inaccurate.
- **Distribution Planning and Forecasting** - There is a lack of collaborative distribution planning, based on an understanding of aggregate customer requirements, for optimizing the JDDE. Require synchronized planning, forecasting and collaboration capabilities to ensure people, processes and assets are in place to execute the plan.
- **Supply Chain Simulation Tools** - Joint simulation tools are poorly equipped to integrate sustainment flow modeling at the strategic and operational levels (wholesale and Service-level retail). Little capability exists to do unconstrained "what-if" supply scenarios without manual effort.

USTRANSCOM to release its annual call gov't proposals ~ 1 May – best way for industry/academia to leverage is via a government sponsorship/partnership

Additional Info at <http://www.transcom.mil/RDTE> or via e-mail at [USTC-TCJ5J4-RDTE-Lst@ustranscom.mil](mailto:USTC-TCJ5J4-RDTE-Lst@ustranscom.mil)