Overview

• Mission

• Technology Development Objectives

• Technology Thrusts

• Sample Capabilities Delivered

• Leveraging USTRANSCOM RDT&E Funds

• Take Aways

OSD Acquisition, Technology, and Logistics (AT&L) identified as “model program” and #1 in DOD for transitioning new capabilities to the Warfighter

Together, we deliver.
USTRANSCOM’s End-to-End Mission

The optimized schedule is ready for execution.

Will my force in the AOR be ready for the fight on D-Day?

Where is my equipment now & when will it get here?

Forces (Services/JFCOM)

Bases

Sustainment

Industry

DLA

GSA

SPOE

APOD

COCOM

SPOD

APOD

Sea Basing

DLA TDC

Fwd Stocks

User

Svc Component Handoff Points

Theater APOD (JTF-PO)

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Leveraging S&T to Transform Logistics Support to the Warfighter and Ensure the Development of Affordable Solutions
Technology Development 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
- Hybrid Lift

Mid-Term (3-5 yrs)
- Deployment & Distribution COP/Networked JDDE
- Common Computing Environment
- Integrated Distribution to Point of Consumption
- Adaptive Planning
- Joint Sea Base Enablers
- Living Plan
- Energy Conservation

Far-Term (5+ yrs)
- Sense & Respond Logistics
- Humanitarian Airdrop
- Integrated Egress/Port Efficiencies
- Cargo Threat Detection/Protection
- Virtual Intermediate Staging Base
- Rapid/Automated Landing Sites
- Fuel/Water Alternatives

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Technology Thrusts

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

RDT&E Project Areas
- Command and Control, Optimization, Modeling & Simulation
- End to End Visibility
- Cyber
- Global Access
RDT&E Roadmap

**Command & Control/AT21**

- Analytical Architecture
- ODCO Outcomes
- USTC Strategic Plan
- USTC Fusion Center
- COCOM DDCCs
- Service Components
- Commercial Partners

**End-to-End Visibility**

- Leverage existing MS&O Tools
- NKD mods to existing tools
- Build out tools and integrate within BPFMS
- Achieve E2E systems integration

**Global Optimization & “Living Plan”**

- Dynamic Planning/Replanning
- Deployment & Distribution Optimization
- Data, MS&O tools, BPMs, services, legacy systems fully integrated

**Cyber**

- Standardized View (Distribute mil)
- Standardized Processes (BPM)
- Standardized Services (SOA)
- Standardized Information Exchanges (DDCOI)
- Standardized Delivery (KML/EIL/Production)

**Global Access**

Together, we deliver.
### MOTIVATION

- GAO designated DOD supply chain mgmt as a high-risk area w/3 areas for improvement
  - Requirements Forecasting
  - Asset Visibility
  - Materiel Distribution
- **Need to reduce fuel consumption**
- **Address these deficiencies**
  - Per USTCH 60-2, Integrated Priority List, S&T IPL, AT21 ICD, and JDDE gaps

### PICTURE

![Diagram showing various elements related to supply chain and operations management.](image)

### TECHNICAL IDEAS

- **Key Technical Ideas**
  - Through predictive analysis, provide enterprise insight regarding customer logistics needs
  - Permit collaborative, integrated load planning
  - Support mode optimization and determination
  - Optimized/networked enterprise
  - Reduce fuel consumption via improved planning
- **Program leveraging Service/Agency efforts and invests in proven technologies**

### PAYOFF

- **Provide objective/repeatable method to assess airport capacity and flow requirements** (cost avoidance $0.9M/yr)
- **Field airlift mission scheduling tool** (cost avoidance $6.38M/yr)
- **Common operational situational awareness/enterprise networked collaborative capabilities** (better support via improved unity of effort)
- **Transform surface transportation enterprise into SOA environment** (reduce development/integration/fielding time by ~50%/consolidate application functionality & data silos by ~30%)
- **Optimize air refueling execution** (cost avoidance <$125M/yr)
- **Standardized/secure computing and production environment** (20% reduction in System Admin/80% reduction in hardware refresh costs)
- **Optimize theater distribution** (cost avoidance $16.7M/yr)

Together, we deliver.
End-to-End Visibility

**MOTIVATION**
- GAO designated DOD supply chain mgmt as a high-risk area w/3 areas for improvement
  - Requirements Forecasting
  - Asset Visibility
  - Materiel Distribution
- Efficient humanitarian relief operations
- Address following deficiencies

**PICTURE**

**TECHNICAL IDEAS**
- Key Technical Ideas
  - Enable cost effective global end-to-end visibility
  - Information-sharing system of non-standard relief supplies
  - Leverage sense & respond logistics to facilitate best cost transportation solutions/warfighter support
- Program leveraging Service/Agency efforts and invests in proven technologies

**PAYOFF**
- Determine parts failure/usage patterns and use data to initiate sustainment support actions (fulfill demand using best cost transportation solution)
- More accurate read at a greater distance of passive RFID tags (lower infrastructure costs/reduced system maintenance)
- Mature wireless networking protocols/distribution enterprise-wide asset visibility ($23.6M/13 yr; sensor ROI TBD)
- Flexible, dynamic, web-based, simple-to-use humanitarian aid/disaster relief asset visibility system

Together, we deliver.
Cyber

**MOTIVATION**

- Secure cyber operations
  - Very capable/persistent threat actors daily compromise DOD information
  - Require assured capability to operate in cyber space
  - Detection intrusion analysis & response
- USTRANSCOM’s R&D investments explore technologies to address these deficiencies
  - USTCH 60-2, IPL, STIPL, and JDDE gaps

**TECHNICAL IDEAS**

- **Key Technical Ideas**
  - Differentiate between valid & unauthorized users
  - Determine hardware/software trustworthiness
  - Protect info/detect anomalies
  - Ability to operate despite cyber attack
  - Rapidly analyze networks/ID & react to attacks
  - Ability to rapidly restore operations

**PAYOFF**

- Employ reusable web services utilizing ontology-based intelligent collaborative agent technology for data validation/correction = time/cost savings via improved operational effectiveness across the JDDE
- Reduction of man-hours to manually review log data and identify unauthorized user access
- Ability to continue critical network operations in a contested unclassified/classified network environments via secure enclaves

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Global Access

MOTIVATION

• Investment to provide integrated global access and point of need delivery capabilities
  - Limited ability to deliver/support the warfighter at the point of effect in austere/anti-access/urban environments
• Enhance joint sea based sustainment operations and integrated ingress/egress
  - Current projection/sustainment capabilities rely almost exclusively on fixed infrastructure & host nation support assets
• USTRANSCOM IPL/STIPL, Service S&T Master Vision/Strategy, Sea Basing Cost Benefit Analysis, Joint Urgent Operational Need Statement (JUONS)

TECHNICAL IDEAS

• Key Technical Ideas
  - Enhance inter-modal transfer
  - Transfer fully loaded containers at sea
  - Enhanced sea base connectors/interfaces
  - Improved accuracy/lower costs of air drop operations
  - High speed, low level, robust, precision resupply
  - Alternative air delivery (unmanned systems/hybrid)
  - Ability to continue mobility operations in an asymmetric (chemical/biological) environment
• Program invests in proven technologies and leverages Service efforts to address JDDE validated gaps/need

PICTURE

PAYOFF

• Safely move/recover aircraft, vehicles & containers
• Transfer 20ft containers in Sea State 4 (key sea base enabler)
• Optimize causeway systems (cost avoidance $246M to procure replacement capability)
• Offload com’l cargo vessels at sea (reduced sealift recap bill)
• Enhanced airdrop accuracy (reduction in ground recovery ops; minimizes troop exposure)
• Hybrid airlift - risk reduction efforts to support future demonstration
• High speed container aerial delivery (70% reduction in exposure to ground threat due fast ingress/egress)
• Helo delivery of airdrop bundles (increased agility/enhanced aircrew/helo safety and reduction in ground convoys)
• Unmanned aerial cargo delivery (enhanced support at point of need)

Together, we deliver.
Agile Transportation for 21st Century Theater (PE0603264S)

MOTIVATION

• Provide the JDDE the capability to
  - Optimize end-to-end delivery of forces/other discrete movement requirements to ensure on-time delivery at lowest transportation cost
  - Optimize end-to-end delivery of sustainment/other capacity-based movement demands maximizing time-definite delivery at lowest overall supply chain cost

• Address following deficiencies
  - USTCH 60-2, IPL, STIPL, Joint Logistics Distribution Joint Integrating Concept, Theater Enterprise Deployment & Distribution (TED2), and JDDE gaps

TECHNICAL IDEAS

• Key Technical Ideas
  - Leverage commercial off-the-shelf optimization and rules software to provide the Geographic Combatant Commander (GCC) a single theater movement system
  - Provide a highly-configurable, agile capability to model, simulate, analyze, and report metrics for the complex and detailed business processes within a distribution center
  - Adapt current Airport Simulation Tool to support detailed airport ops modeling to optimize daily as well as future ops

PICTURE

PAYOFF

• Provide configuration/implementation of commercial business process management system and Optimization tools in targeted GCCs (FY12/13)
• Expand capability implementation across all GCCs (FY14/15)
• Improved decision making for resource acquisition and allocation, stock placement, nodal infrastructure requirements, and sustainment policies
• >$16.7M annual cost avoidance from improved use of joint theater common user conveyances
• Provide objective/repeatable method to assess airport capacity and flow requirements (cost avoidance $0.9M/yr)

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Sample Capabilities Delivered

- **Joint Modular Intermodal Container:** $16M/yr cost avoidance in cardboard uni-pack
- **Defense Distribution Expeditionary Depot**
  - Significant reduction in military inter-theater airlift for Defense Logistics Agency managed items
  - Customer Wait Time reduced from 19.8 days to 10.8 days
- **Coalition Mobility System:** 100% return on investment within 2 years; $2.3M/yr thereafter
- **Common Operating Picture (Deployment and Distribution)**
  - Identified top 100 heaviest airlifted items saving $54M annually in transportation costs
  - Delivered initial Distribute.mil capabilities (i.e., workspace mgmt, collaboration, etc.)
- **Joint Precision Air Drop System**
  - Mission Planner: Dramatically improved accuracy/operationalized capability (>200Mlbs delivered since Aug 06)
  - 80% reduction in recovery operations
  - Reduce improvised explosive device exposed convoys, safer recovery ops, increased personnel survivability
- **Low Cost Low Altitude:** Reduce airdrop asset recovery/improve safety (fewer grnd convoys)
- **Joint Recovery and Distribution System:** Dozens of missions completed in Afghanistan
- **Enterprise Integration Lab:** Mitigating technical risk/accelerating capability fielding via comprehensive functional and certification & accreditation testing
- **Wireless Gate Release System**
  - Doubles C-130 delivery capacity (cost avoidance in lower fuel and aircraft wear/tear associated costs)
  - Eliminates bundle damage due leap-frogging (effects 20% of airdropped bundles)

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RDT&E Solicitation Process

Jan - Feb
- COCOMs
- Industry
- USTC/Components
- Service Labs
- USTCH60-2 Gaps
- DPO Partners
- Joint Staff J3 & J4

Mar
- On-Going Projects
- JCTDs
- ERRC Validation/Announcement
- Receive Proposals/Construct Plan

Apr - Aug
- RDT&E Plan Build
- Corporate Governance
- Distribution Process Owner Governance

Sep - Nov
- New Projects & Plan
- TCCC Approval
- Vet/Approve Plan

Dec*
- *OSD budget exhibit submissions drives timeline

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Take Aways

• Collaborative joint efforts – transitioning militarily relevant capabilities

• Commercial entities seeking USTRANSCOM dollars should have a government sponsor

• Aggressively leverage Small Business

• Identification of transition path/strategy is critical

• Funds 100% obligated & expensed in two years

2009 House Armed Services Committee: “extremely impressed for finding efficiencies ... allowing for cost savings that can be passed back to the DOD...should be commended for functioning in a manner consistent with the best interests of the DOD and the nation.”

Together, we deliver.
Together, we deliver.

We Measure Success Through the Eyes of the Warfighter & the Taxpayer!