Improving Warfighter Support by Creating Capability Innovation/Prototyping through Science & Technology

OPR: Mr Lou Bernstein
Overview

- Command Overview
- Summarize USTRANSCOM’s RDT&E Program
- Review Capability Gaps/Operational & Technical Challenges
- Sample of Warfighter Benefits/Savings
- Overview of Ongoing Projects
- Outline FY11 RDT&E Call for Proposals
The USTRANSCOM Team

24 / 7 / 365

Single Manager for Common-User Transportation

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(A/O 6 Feb 09)
Projecting National Military Power

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(A/O 6 Feb 09)
Research, Development, Test & Evaluation (RDT&E)

- DoD RDT&E funding source dedicated to improving logistical / supply chain performance

<table>
<thead>
<tr>
<th>PE 0603713S</th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
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<td>$29.3M</td>
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- USTRANSCOM leverages technology to gain efficiencies and reduce the costs
  - Develop joint technologies to improve warfighter support
  - Improve precision/reliability/visibility/efficiency of the DOD supply chain
  - Assure superior strategic/operational/tactical mobility support for the warfighter

Identified by OSD(AT&L) as “model program” and #1 in DoD for transitioning new capabilities to the warfighter

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Program Pays for Itself
## Deployment and Distribution Enterprise Technology Program Element: PE0603713S Overview

<table>
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<th>Cost ($ in millions)</th>
<th>FY 2009</th>
<th>FY2010</th>
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<tr>
<td>Project 1: Capabilities Based Logistics</td>
<td>6.074</td>
<td>1.540</td>
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<td>Project 2: Deployment and Distribution Velocity Mgmt</td>
<td>6.591</td>
<td>7.635</td>
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<td>Project 3: Cross Domain Intuitive Planning</td>
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<td>2.430</td>
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<td>Project 4: End-to-End Visibility</td>
<td>2.779</td>
<td>4.916</td>
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<td>Project 5: Distribution Planning and Forecasting</td>
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<td>2.870</td>
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<tr>
<td>Project 6: Joint Transportation Interface</td>
<td>7.174</td>
<td>8.831</td>
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<tr>
<td>Project 7: Distribution Protection/Safety/Security</td>
<td>1.925</td>
<td>1.125</td>
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<tr>
<td><strong>Total PE Cost</strong></td>
<td><strong>29.108</strong>*</td>
<td><strong>29.337</strong></td>
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* $733K reprogrammed to BA7/$159K in taxes

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• Program Element Projects

1. **Capability Based Logistics** - Improve performance of DOD supply chain

2. **Deployment and Distribution Velocity Management** - Optimize throughput

3. **Supply Chain Planning and Execution** - Improve decision-making and collaboration

4. **End-to-End Visibility** - Provide end-to-end visibility of the projection and sustainment of forces and equipment

5. **Distribution Planning and Forecasting** – Customer focused planning to optimize distribution process

6. **Joint Transportation Interface** - Synchronizing strategic/theater delivery capabilities

7. **Distribution Protection/Safety/Security** – Providing appropriate security during operations
Top Operational/Technical Challenges

- **Command, Control, Computers, and Communications Info Ops**
  - En route comms
  - Facilitate requirements capture/assessment/planning
  - Total Asset Visibility/In-transit Visibility

- **Mobility Air Forces All Weather Capability**
  - Improve precision airdrop accuracy
  - Autonomous landing and refueling

- **Defensive Systems for Mobility Lift Assets** (e.g., Counter MANPAD)

- **Transportation and Connector Systems**
  - Synchronize strategic/theater delivery capabilities
  - Protect physical/C2 supply chain continuity
  - Optimize flow
  - Synchronize data/lift with Commercial Providers

- **Reduce Fossil Fuel Dependency**
  - Explore alternative fuels/fuel blends
  - Reduce aircraft weight
  - Improve planning/execution tools

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Selected Warfighter Benefits/Costs Savings

- **Joint Precision Air Drop System – Mission Planner (JPADS-MP)**
  - Dramatically increased precision/non-precision airdrop accuracy
  - Allows friendly forces to take the fight to the enemy in austere locations
  - Millions in costs avoidance savings by protecting ground and aviation assets & troops

- **Wireless Gate Release System (WGRS) for JPADS**
  - Automatic aircraft release gate for airdrop missions
  - Doubles C-130 JPADS/non-precision cargo carrying capacity
  - Eliminates cargo damage due to cargo mid-air collisions

- **En Route Trauma Patient Care Module**
  - Provide continuous care/monitoring of the wounded from battlefield to definitive care
  - More efficient use of liquid oxygen supply will save DOD millions of dollars
  - Technology to be used on future NASA space missions

- **Joint Modular Intermodal Container (JMIC) JCTD**
  - Standardized container for efficient use/transfer between conveyances
  - 23% reduction in 20FT container requirement and 32% reduction in air pallets required
  - $16M annual savings in cardboard uni-pack use
Selected Warfighter Benefits/Costs Savings

- **Deployable Cargo Screener (DCS) ACTD**
  - Screen cargo pallets for explosives
  - Army incorporated technology into robotics for IED detection

- **Joint Air Lift Information System-Next Generation (JALIS-NG)**
  - Web-based tool to enhance Operational Support Airlift (OSA) global C2
  - 20% increase in OSA asset use efficiency will save millions

- **Coalition Mobility System JCTD**
  - Gain visibility/improve scheduling of coalition transportation assets
  - 100% return on investment within 2 years and $2.3M estimated annual ROI there after

- **Node Management and Deployable Depot (NoMaDD) ACTD**
  - Deployable depot to manage in-theater logistics
  - Processed 4000 truck loads of meals and ice in support of Hurricane Ike
  - During user evaluation achieved 53% reduction in airlift for DLA managed items and reduced customer wait time from 19.8 days to 10.8 days

- **Joint Enabled Theater Access-Seaport of Debarkation (JETA-SPOD) JCTD**
  - Planning/decision support tool for analysis of austere ports locations for anti-access areas
  - Lightweight modular causeway supporting seabasing to shore movement of forces

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Overview of FY09 RDT&E Projects

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**ARMY**
- Next Generation Wireless Communications

**USAF**
- Joint Precision Air Drop Guidance, Navigation, Control
- En Route Trauma Patient Monitoring Module

**USMC**
- Shipboard Selective Access and Retrieval System

**NAVY**
- At Sea Selective Discharge
- Large Vessel Interface – Lift On/Lift Off

**JDDE**
- Controlled Testing of Premium AIT Devices
- Expeditionary Theater Distribution
- Common Operating Picture Deployment & Distribution (COP D2)

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**Only DOD RDT&E Funding Solely Dedicated to Transportation/Distribution Technologies**
FY11 RDT&E Program Project Solicitation Timeline

PROJECT SOLICITATION TIMELINE CY2009/10

- Technology Needs Data Call to Focus Selection (input mid-Mar)
- Call for PH I Proposals
- PH I Proposal Evaluation Period Ends
- PH I Proposals Due
- PH II Notification
- PH II Proposal Evaluation Period Ends
- PH II Proposals Due
- PH II SME Proposal Review/Evaluation
- DPO Offeror’s Conference
- PH II Notification
- PH II SME Proposal Review/Evaluation
- DPO Offeror’s Conference
- DPO Approval
- DPO Appr’d Invest Plan in OSD Budget Exhibits/Commence ACQ package preps
- Joint Community/JDDE Partner Review at One and Three Star Level

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QUESTIONS

Transforming Defense Distribution

The USTRANSCOM Research Development Test & Evaluation program explores innovative joint technologies that address Distribution Process Owner (DPO) and Defense Transportation System (DTS) capability gaps.

Ongoing Projects

References

Transitioned/Completed Projects/Capabilities

FY11 Project Solicitation (government only)

Related Links

Program Training
Back up

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Large Vessel Interface-Lift-on/Lift-off:

- Inter-ship transfer of fully loaded 20ft containers at sea in up to sea state 4
- Collaborative partnership with Navy to demonstrate capability to transfer ½ loaded container Fall 09
- Field initial capability as part of Maritime Positioning Force-Future (MPF-F) in FY15
Project 2: Deployment and Distribution Velocity Management

Description: Increase force projection and sustainment velocity

Applies to JCA Tier 1/2 activities: Logistics/Deployment & Distribution and Supply

• Transportation Tracking Number:
  – Create a FedEx like commodity tracking number to increase end-to-end visibility of transportation requirements
  – Significantly reduce re-ordering errors, reduce costs and enhance warfighter confidence
  – Complete development/transition FY10

• Shipboard Selective Access and Retrieval System:
  – Adapt commercial air skid type technology to move cargo and vehicles in a Large, Medium-Speed Roll-on/Roll-Off (LMSR) cargo hold in conditions up to sea state 5
  – Enhanced ability to conduct at sea/seabase operations
  – Complete development/transition FY11

• Joint Recovery and Distribution System (JRaDS) JCTD:
  – Common Joint Cargo Handling System that meets – or exceeds – the requirements for multiple Joint Operational Concepts for MCO, GWOT & Stability Operations
  – Enable more efficient, seamless multi-mode transport of cargo between Ships, Aircraft and Tactical Wheeled Vehicles, from Port of Debarkation to dispersed forces - transition FY12
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Project 3: Supply Chain Planning and Execution

Description: Improve supply chain decision-making/collaboration

Applies to JCA Tier 1/2 activities: Logistics/Deployment & Distribution and Command & Control/Planning and Decide

• **Next Generation Autonomic Logistics:**
  – Monitor/report maintenance status of combat assets in tactical operations; distribution demand forecasting/execution monitoring tools
  – Timely tactical logistics demand data “injected” into operational and strategic level distribution systems
  – Complete development/transition FY12

• **Cross Domain Collaborative Info Exchange (CDCIE) JCTD:**
  – Deliver a suite of tools for the Joint Warfighter with Text chat language translation, whiteboard, audio and XML Guard functionality
  – Enable cost-effective coalition and interagency information sharing for effective Command and Control
  – Complete development/transition FY13

• **Future Center Organizational Effectiveness (FCOE):**
  – Organizational simulation that can manipulate key parameters (e.g., manpower, task complexity, etc.) to optimize Fusion Center performance
  – Allows weighing of alternatives before engaging in risky activities… saves time, money, and manpower

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Project 4: End-to-End Visibility

Description: Provide end-to-end visibility of all aspects of the projection and sustainment of forces and equipment

Applies to JCA Tier 1/2 activities: Logistics/Supply and Command & Control/Planning

• Next Generation Wireless Communications (NGWC):
  – Provide a mobile, adhoc wireless mesh network linking various existing communication technologies to improve theater-wide asset visibility
  – Provides immediate, reliable, and accurate shipment status through system access or event management
  – Complete development/transition FY11

• Expeditionary Theater Distribution (ETD):
  – Provide next-generation Portable Deployment Kit (PDK) capability with improved security, communications, and miniaturization
  – Quick deployment of RFID technology in austere/mobile environments extending asset visibility to the last tactical mile
  – Complete development/transition FY11

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**Project 5: Distribution Planning & Forecasting**

**Description:** Planning, based on an understanding of customer requirements, for optimizing distribution process

Applies to JCA Tier 1/2 activities: Logistics/Deployment & Distribution and Command & Control/Planning

- **Single Load Planning Capability:**
  - Integrate cross-JDDE load planning capability applicable to air, sea, rail, and road movement
  - Provide a collaborative info workspace where incoming cargo can be dragged and dropped into load plans for follow-on conveyance
  - Complete development/transition FY11

- **Distribution Performance Nodal Model:**
  - Develop a highly configurable model to express and analyze complex/detailed business processes within distribution nodes
  - Enhance DOD’s ability to conduct programmatic distribution analysis
  - Complete development/transition FY11

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(A/O 16 Mar 09)
Project 6: Joint Transportation Interface

Description: Synchronizing, through information exchange, strategic/theater delivery capabilities to meet customer needs

Applies to JCA Tier 1/2 activities: Logistics/Deployment & Distribution, Command & Control, Understand and Net-Centric/Enterprise Services

• Multi-Modal Optimization/Booking:
  – Enhance war fighter support through the optimization of transportation lift assets
  – Perform automated/integrated (air/land/sea) booking functions (saving both manpower and reducing costs through improved system performance)
  – Capability to see and understand problems impacting execution movement prior to and during execution

• Collaborative Operational Picture-Deployment & Distribution (COP D2):
  – COP D2: Link disparate distribution systems across the JDDE for a common logistics picture and actionable C2 information
  – Data Quality Improvement for COP D2: Accurate and standardized distribution data to enable performance of COP D2
  – Spirally transition capabilities across FYDP

• Coalition Mobility System (CMS) JCTD:
  – Ability to collect and query operationally relevant information pertaining to force movement and sustainment supporting coalition operations
  – Allows for visualization of coalition movements and improved lift efficiency
  – Complete development/transition FY10

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Project 7: Distribution Protection/Safety/Security

Description: Providing the appropriate security in a timely manner during deployment and distribution operations

Applies to JCA Tier 1/2 activities: Logistics/Deployment & Distribution, Command & Control/Decide, and Force Support/Health Readiness

• Next Generation Guidance, Navigation & Control:
  – Effort across FYDP to increase the delivery accuracy of Joint Precision Air Drop System (JPADS) cargo in support of the warfighter
  – Collaborative Army/Air Force/USTRANSCOM initiative
  – Required capability is 50 meters (previous efforts decreased landing zone from 260 to 5 acres (98% improvement))

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## RDT&E Program Metrics

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<tr>
<th>Performance Metric</th>
<th>Measure</th>
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<tr>
<td>Project Selection Focus</td>
<td>At least 50% are collaborative efforts with other gov’t organizations</td>
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<tr>
<td>Enduring Capabilities</td>
<td>At least 75% transition to Program of Record, Service, NSN, or GSA</td>
</tr>
<tr>
<td>Delivering Timely Militarily-relevant Capabilities</td>
<td>25% of projects provide an operationally relevant product within 2 years after start and 75% complete final demo within 3 years</td>
</tr>
<tr>
<td>Reduced Costs</td>
<td>At least 25% of transitioned technologies producing positive ROI</td>
</tr>
<tr>
<td>Technically relevant</td>
<td>At least 80% achieve appropriate TRL and 90% validated by independent MUA/LOE</td>
</tr>
<tr>
<td>Program Execution</td>
<td>FMR-mandated obligation/expense goals are exceeded on annual basis (1(^{st}) yr 89% O/60%E; 2(^{nd}) yr 100%O/90%E; 5(^{th}) yr 100%E)</td>
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