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United States Transportation Command (USTRANSCOM)



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





Overview

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- **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**

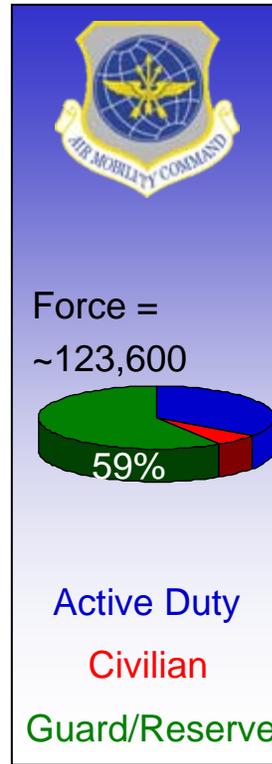
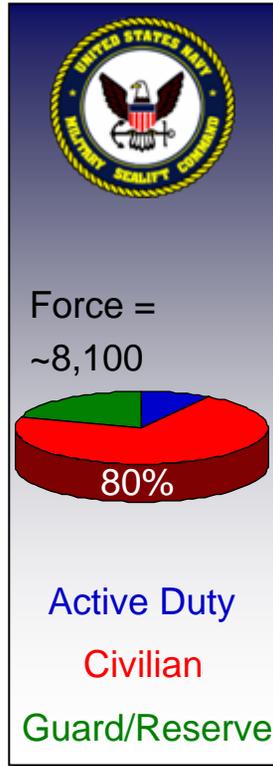
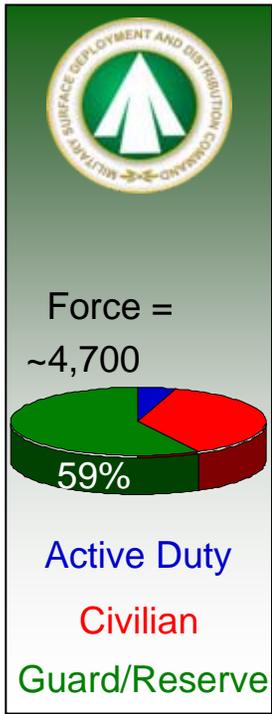




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The USTRANSCOM Team

24 / 7 / 365



Commercial Industry Contribution

1,231 Aircraft
312 Vessels



Single Manager for Common-User Transportation



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Projecting National Military Power





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Research, Development, Test & Evaluation (RDT&E)



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

PE 0603713S	FY09	FY10	FY11	FY12	FY13	FY14	FY15
DOD/PB	\$30M	\$29.3M	\$29.2M	\$29.2M	\$29.1M	\$29.2M	\$30.2M
Authorized	\$30M						
Appropriated	\$30M						

- 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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Deployment and Distribution Enterprise Technology Program Element: PE0603713S Overview

Cost (\$ in millions)	FY 2009	FY2010
Project 1: Capabilities Based Logistics	6.074	1.540
Project 2: Deployment and Distribution Velocity Mgmt	6.591	7.635
Project 3: Cross Domain Intuitive Planning	1.815	2.430
Project 4: End-to-End Visibility	2.779	4.916
Project 5: Distribution Planning and Forecasting	2.750	2.870
Project 6: Joint Transportation Interface	7.174	8.831
Project 7: Distribution Protection/Safety/Security	1.925	1.125
Total PE Cost	29.108*	29.337

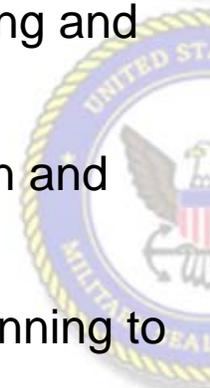
* \$733K reprogrammed to BA7/\$159K in taxes



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USTRANSCOM Deployment and Distribution Enterprise Technology

- 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





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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





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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

ARMY



Next Generation Wireless Communications



En Route Trauma Patient Monitoring Module

USAF



Joint Precision Air Drop Guidance, Navigation, Control

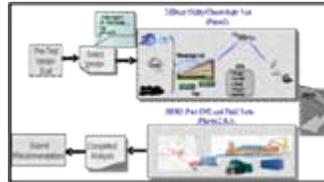


Fusion Center Operational Effectiveness

\$30M/Year Line Providing Cross-Service/JDDE Distribution Capabilities



Single Load Planning



Controlled Testing of Premium AIT Devices

JDDE



Expeditionary Theater Distribution

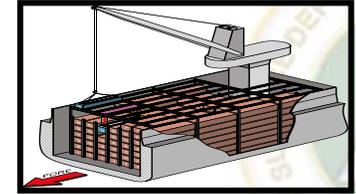


Common Operating Picture Deployment & Distribution (COP D2)

Only DOD RDT&E Funding Solely Dedicated to Transportation/Distribution Technologies

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NAVY



At Sea Selective Discharge



Large Vessel Interface - Lift On/Lift Off

USMC



Shipboard Selective Access and Retrieval System

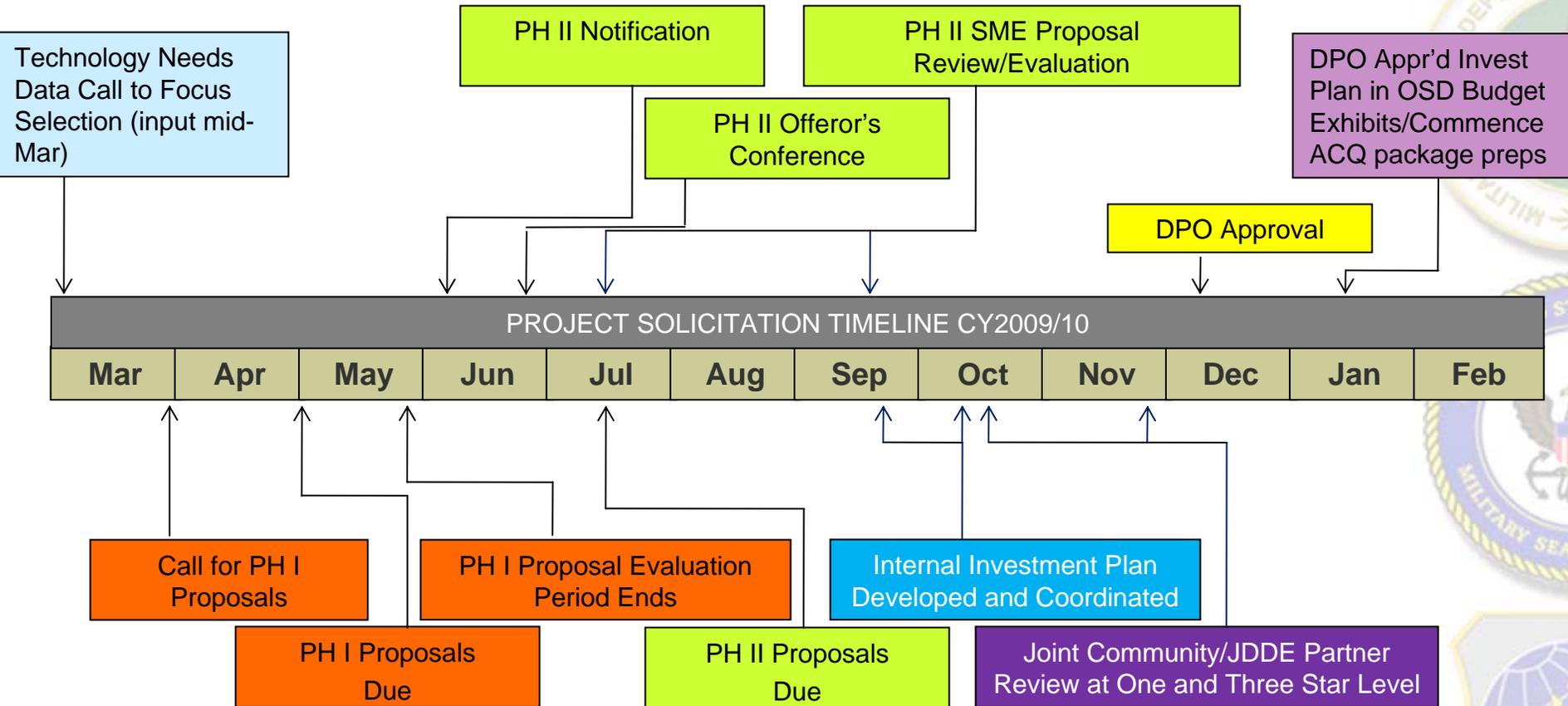


Next Generation Autonomic Logistics



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FY11 RDT&E Program Project Solicitation Timeline





QUESTIONS

RDT&E
Research Development Test & Evaluation

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Transforming Defense Distribution

Ongoing Projects

References

Transitioned/Completed Projects/Capabilities

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

FY11 Project Solicitation (government only)

Related Links

Program Training

OPR for this page: TCJ5 Last Modified: 03/09/2009





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Back up



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Project 1: Capability Based Logistics

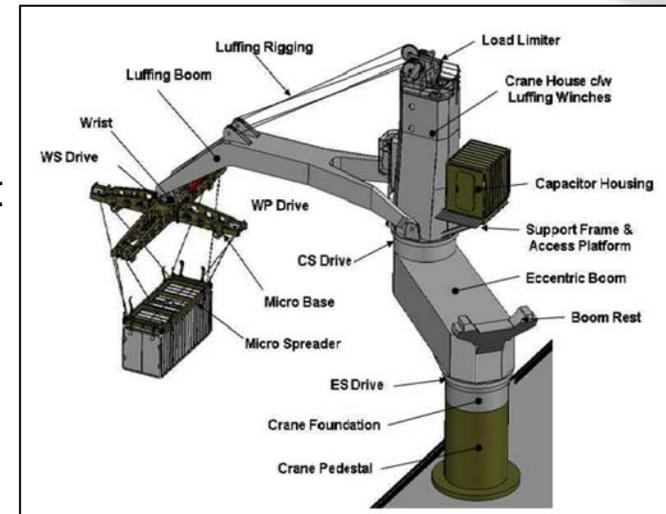
Description: Critical enterprise-level distribution system capabilities to improve DOD supply chain performance

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



- **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



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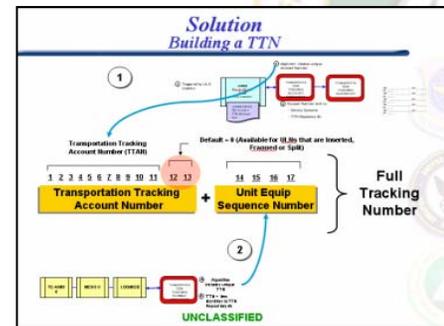
Project 2: Deployment and Distribution Velocity Management

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





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

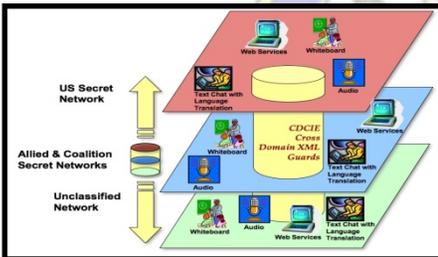
Next Generation Autonomic Logistics:

- 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

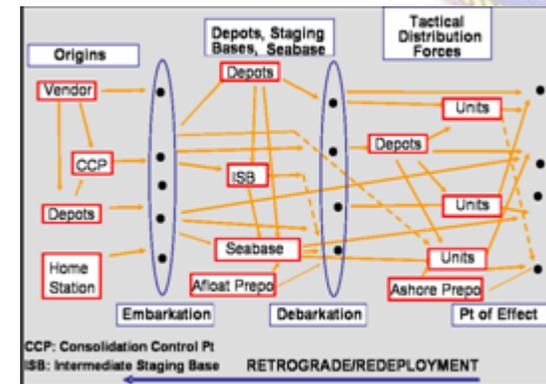
• Single Load Planning Capability:

- 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





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



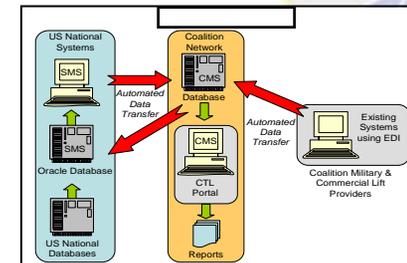
• **Collaborative Operational Picture-Deployment & Distribution (COP D2):**

- 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))





RDT&E Program Metrics

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