

**OSD RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)**

Date: February 2007

APPROPRIATION/ BUDGET ACTIVITY RDT&E/ Defense Wide BA# 6		PE NUMBER AND TITLE <b>0604875D8Z - Joint Systems Architecture Development</b>						
Cost (\$ in Millions)	FY 2006 Actual	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total Program Element (PE) Cost	10.473	9.337	14.437	14.336	14.822	14.745	14.732	14.764
P875 Joint Systems Architecture Development (JSAD)	10.473	9.337	9.705	9.479	9.448	9.450	9.450	9.450
P876 Portfolio Systems Acquisition (PSA)	0.000	0.000	4.732	4.857	5.374	5.295	5.282	5.314

**A. Mission Description and Budget Item Justification:** The Quadrennial Defense Review (QDR) and acquisition reform initiatives call for top down, national security strategy-driven capabilities-based planning. Department of Defense (DoD) Instruction 5000.2 and Chairman of the Joint Chiefs of Staff Instruction 3170.01D promulgate capabilities-based requirements and acquisition processes. The JSAD program enables collaborative efforts to achieve these goals. These efforts include providing support to conduct warfighting capability-based analyses; performing assessments of joint capability areas and joint integrating concepts; developing and supporting needed sets of system and system-related data; developing and applying systems engineering methodologies and tools; creating integrated roadmaps to support acquisition investment decisions; and performing assessments of major defense acquisition programs and major automated information systems in a capability area context. Activities in the JSAD project are divided into three areas: capability based analyses, roadmaps, and support tools and guidance. Capability-based analyses provide analysis of the different technology, functionality, and integration impacts of systems on warfighting capability, which forms the basis for initial systems engineering. Acquisition roadmaps guide systems development and associated investment plans. JSAD support tools and guidance initiatives develop systems engineering methods, systems data, and tools, exploit modeling and simulation and architecture efforts to improve DoD's overall assessment capability. These efforts guide the development and improve the testing and fielding of integrated systems of systems in order to achieve Joint mission capabilities.

The QDR also lays out the need for an institutional reorientation or shift in emphasis from organization-specific to enterprise-wide approaches. This means: 1) horizontal integration within the Department and unity of effort through greater interagency collaboration, 2) engaging in a coordinated and portfolio-based approach to planning, programming, budgeting and execution, and 3) significant reforms at the governance, management and execution levels. To accomplish this direction, there needs to be a focused goal and concerted emphasis on shifting from systems acquisition to capabilities-based portfolio management (or portfolio systems acquisition). Starting in FY 2008, this program enables collaborative efforts to implement the QDR direction outlined above in order to achieve portfolio systems acquisition goals. The program is broken up into two focus areas (Portfolio Management and Reform Initiatives) and consolidates work previously performed under various other Program Elements.

<b>B. Program Change Summary</b>	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2007)	10.780	9.390	9.705	9.479
Current BES/President's Budget (FY 2008/2009)	10.473	9.337	14.437	14.336
Total Adjustments	-0.307	-0.053	4.732	4.857
Congressional Program Reductions		-0.058		

**OSD RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)**

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Congressional Rescissions				
Congressional Increases				
Reprogrammings				
SBIR/STTR Transfer	-0.307			
Other		0.005	4.732	4.857

**C. Other Program Funding Summary:** Not Applicable.

**D. Acquisition Strategy:** Not Applicable.

**E. Performance Metrics:**

FY	Strategic Goals Supported	Existing Baseline	Planned Performance Improvement / Requirement Goal	Actual Performance Improvement	Planned Performance Metric / Methods of Measurement	Actual Performance Metric / Methods of Measurement
07	See below					
08	See below					
09	See below					

Comment: FY 2007:

- Complete the Concept Decision/Time Defined Acquisition Pilots (4 planned).
- Complete all FY 2007 Evaluation of Alternatives activities in section 2.2.1 of FY 2007 Acquisition, Technology & Logistics (AT&L) Strategic Goals Implementation Plan (3 planned).
- Complete two Investment Balance reviews (2 planned).
- Complete Integrated Air Missile Defense version 2 Roadmap and Conventional Engagement Capability (CEC) Roadmap (2 planned).

FY 2008:

- Complete all FY 2008 Concept Decision/Time Defined Acquisition activities under section 2.1.1 of FY 2007 AT&L Strategic Goals Implementation Plan (3 planned).
- Complete all FY 2008 Evaluation of Alternatives activities in section 2.2.1 of FY 2008 AT&L Strategic Goals Implementation Plan (3 planned).
- Complete three Investment Balance reviews (3 planned).

**OSD RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)**

Date: February 2007

APPROPRIATION/ BUDGET ACTIVITY  
RDT&E/ Defense Wide BA# 6

PE NUMBER AND TITLE  
**0604875D8Z - Joint Systems Architecture Development**

- Demonstrate open and transparent data/information management exchanges between OSD, Joint Staff, and Components.

<b>OSD RDT&amp;E PROJECT JUSTIFICATION (R2a Exhibit)</b>	Date: February 2007
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APPROPRIATION/ BUDGET ACTIVITY RDT&E/ Defense Wide BA# 6	PE NUMBER AND TITLE <b>0604875D8Z - Joint Systems Architecture Development</b>						PROJECT <b>P875</b>	
Cost (\$ in Millions)	FY 2006 Actual	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
P875 Joint Systems Architecture Development (JSAD)	10.473	9.337	9.705	9.479	9.448	9.450	9.450	9.450

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**B. Accomplishments/Planned Program:**

<b>Accomplishment/Planned Program Title</b>	FY 2006	FY 2007	FY 2008	FY 2009
JSAD:	10.473	0.000	0.000	0.000

(U) FY 2006 Accomplishments

Capability Based Analyses (CBAs) - Performed CBAs to support Joint Functional Capability Boards and front-end systems engineering planning, specifically:

- Performed Electronic Warfare (EW) Functional Area Analysis in support of an EW Capabilities Based Assessment (CBA) to support the identification of EW capability gaps.
- Conducted analysis of force mobility concepts and capabilities across the Department, including the Seabasing CBA.
- Completed the Integrated Fire Control (IFC) military utility assessment, resulting in issue paper to fund implementation of IFC kill chain.
- Special Access studies and analyses supported multiple Department-level decisions.
- Initiated Next Generation Long Range Strike study.
- Completed study of Joint Unmanned Combat Air System (JUCAS) to understand the implications of JUCAS program restructure.
- Performed Joint Battle Management Command and Control (JBMC2) legacy assessment of the Army Battle Command System (ABCS) to determine whether to phase-out ABCS, make it interoperable, or maintain the system as is.

Roadmaps - Developed roadmaps to support warfighting capability-based analyses conducted by the Joint Staff and Combatant Commanders, specifically:

**OSD RDT&E PROJECT JUSTIFICATION (R2a Exhibit)**

Date: February 2007

APPROPRIATION/ BUDGET ACTIVITY RDT&E/ Defense Wide BA# 6	PE NUMBER AND TITLE <b>0604875D8Z - Joint Systems Architecture Development</b>	PROJECT <b>P875</b>
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- Updated the EW Roadmap to articulate the Department's plans and investment strategy to fill EW capability gaps; performed first order analysis to identify electronic attack capabilities required to dominate the electromagnetic spectrum in future warfare.
- Completed version two of the Integrated Air and Missile Defense (IAMD) Roadmap.
- Developed Conventional Engagement Capability Roadmap and companion Joint Conventional Munitions Database (JCMD). Used by Services and Joint Staff for capability area and weapons inventory analysis.
- Updated Joint Battle Management Command and Control (JBMC2) Roadmap.
- Updated Joint Network Fires Roadmap to ensure that Defense Science Board recommendations are fully implemented.

Support Tools and Guidance - Developed the systems engineering methods, systems data, and tools to improve DoD's overall system of systems assessment capability, specifically:

- Led development of Evaluation of Alternatives (EoA) pilots to determine best means to enhance requirements, programming and acquisition decision making process.
- Updated Matrix Mapping Tool and expanded user base to support capability-based planning and system of system modeling analysis.
- Provide program support reviews, system engineering support to Acquisition Category (ACAT) ID/IAM programs.
- Developed computer models to demonstrate the integration of Single Integrated Air Picture data with ground information to provide a fused view of the battlespace.

Objectives: Capabilities documented, gaps and needs identified, guidance developed for investment decisions, acquisition support tools and processes developed, new acquisition processes identified

Artifacts: Capability Based Analyses, Roadmaps, Tools, Reviews

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Plans for FY 07/08/09	0.000	9.337	9.705	9.479

- (U) Capability Based Analyses - Continue to perform Capability Based Assessments (CBA) to support Joint Functional Capability Boards and front-end systems engineering planning, specifically:
- Perform selected Functional Needs Assessments (FNA) for in-depth analysis of Electronic Warfare (EW) capability gaps. Perform and update Functional Solutions Analysis (FSA) to identify material and non-material solutions for capability gaps identified during FNA.
  - Continue analysis of EW capability cost and performance trades, EW platform sufficiency to meet current and future missions, and EW operational effects.
  - Continue force mobility analysis and update Department plans and investment strategy to address intra-theater mobility programs.
  - Analyze new and emerging electronic attack missions and targets and provide options for optimum platform delivery of various operational effects.
  - Complete Next Generation Long Range Strike study to inform Service and DoD budget decisions.
  - Conduct follow-on Joint Unmanned Combat Air System study to inform Department on desired capabilities and implementation options.
  - Perform additional Joint Battle Management Command and Control (JBMC2) legacy assessments.

Roadmaps - Continue to develop roadmaps to support warfighting capability-based analyses conducted by the Joint Staff and Combatant Commanders, specifically:

- Update the EW Roadmap to reflect the Department's EW resource investment strategy.
- Update the Integrated Air Missile Defense Roadmap to address ballistic and cruise missile defense capabilities and identify key synchronization and interoperability issues.
- JBMC2 Roadmap - update to review blue force tracking findings, development of Joint Close Air Support mission thread.
- Rename Joint Networked Fires Roadmap to Joint Integrated Fires, develop Joint fires mission thread.

Support Tools and Guidance - Continue to develop the systems engineering methods, systems data, and tools to improve DoD's overall system of systems assessment capability, specifically:

<b>OSD RDT&amp;E PROJECT JUSTIFICATION (R2a Exhibit)</b>	Date: February 2007
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APPROPRIATION/ BUDGET ACTIVITY RDT&E/ Defense Wide BA# 6	PE NUMBER AND TITLE <b>0604875D8Z - Joint Systems Architecture Development</b>	PROJECT <b>P875</b>
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- Conduct analysis of EoA pilots to establish changes to Department's overall system acquisition process.
- Continue development of JCMD to support capability area reviews of land attack weapons.
- Update Matrix Mapping Tool to further support capability-based planning and verification of proposed joint capabilities.
- FY07 Defense Acquisition Board for Single Integrated Air Picture.
- Provide program support reviews, system engineering support to Acquisition Category (ACAT) ID/IAM programs.
- Develop strategy/architecture to integrate multi-sensor inputs from air, ground, and sea domains to provide unambiguous tracks and targets.

Objectives: Capabilities documented, gaps and needs identified, guidance developed for investment decisions, acquisition support tools and processes developed, new acquisition processes piloted and implemented.

Artifacts: Capability Based Analyses, Roadmaps, Tools, Reviews

**C. Other Program Funding Summary:** Not Applicable.

**D. Acquisition Strategy:** Not Applicable.

**E. Major Performers** Not Applicable.

<b>OSD RDT&amp;E PROJECT JUSTIFICATION (R2a Exhibit)</b>	Date: February 2007
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**A. Mission Description and Project Justification:** The Department's 2005 Quadrennial Defense Review lays out the need for an institutional reorientation or shift in emphasis from organization-specific to enterprise-wide approaches. This means: 1) horizontal integration within the Department and unity of effort through greater interagency collaboration, 2) engaging in a coordinated and portfolio-based approach to planning, programming, budgeting and execution, 3) and significant reforms at the governance, management and execution levels. To accomplish this direction, there needs to be a focused goal and concerted emphasis on shifting from acquisition of individual systems to portfolio management (or portfolio systems acquisition). This program enables collaborative efforts to implement the QDR direction outlined above and to achieve portfolio systems acquisition goals. The program is broken up into two focus areas (Portfolio Management and Reform Initiatives) and consolidates work previously performed under various other Program Elements.

**B. Accomplishments/Planned Program:**

<b>Accomplishment/Planned Program Title</b>	FY 2006	FY 2007	FY 2008	FY 2009
FY 2008/2009 Plans:	0.000	0.000	4.732	4.857

The program is broken up into two focus areas and consolidates work previously performed under various other Program Elements. The first focus area funds portfolio management efforts. The second focus area funds reform initiatives and activities associated with our program evaluation responsibilities. Portfolio management efforts will include the development and implementation of integrated roadmaps, cross-cutting portfolio reviews, development of metrics for portfolio management, implementation of governance reforms to include concept decisions, evaluation of alternatives, and capital budgeting activities. This project will fund analysis in several portfolio areas including rotary wing aviation modernization, unmanned systems, impacts of natural disasters on our critical shipbuilding infrastructure, joint conventional munitions, and support to our homeland defense mission. Program evaluation efforts will ensure that reforms and activities result in decreased program development cycle times, decreased costs, and more predictable performance in our weapons program.

**C. Other Program Funding Summary:** Not Applicable.

**D. Acquisition Strategy:** Not Applicable.

**E. Major Performers** Not Applicable.

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PROJECT  
**P876**