OSD RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

APPROPRIATION/ BUDGET ACTIVITY	PE NUMBER AND TITLE
RDTE, Defense Wide BA# 4	**0604016D8Z - Corrosion Prevention and Control (CPC)**

COST ($ in Millions)		FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate					
P015	Corrosion Prevention and Mitigation R&D Technologies and Projects	18.253	22.279	4.887					

A. Mission Description and Budget Item Justification:

(U) The purpose of this program is to develop a comprehensive capability to prevent and mitigate corrosion and its effects on Department of Defense (DoD) weapon systems and infrastructure. Corrosion severely impacts system and facility reliability, readiness and safety, and consumes a disproportionate amount of material and labor hours for repair and treatment of corrosion damaged systems and facilities. The cost of corrosion across the DoD has been estimated at between $10 billion and $20 billion each year. The impact and cost of corrosion are so pervasive that Congress enacted Public Law 107-314 Sec: 1067 [portions codified in 10 U.S.C. 2228]: Prevention and mitigation of corrosion of military infrastructure and equipment. This legislation requires that DoD develop a long-term corrosion strategy to include establishment of a coordinated R&D program with transition plans. The legislation also requires that DoD designate a responsible official or organization to oversee a corrosion prevention and mitigation program.

(U) The Deputy Secretary of Defense designated the Principal Deputy Under Secretary of Defense (Acquisition, Technology, and Logistics) (PDUSD(AT&L)) as the DoD Corrosion Executive in May 2003. The DoD Corrosion Executive subsequently established a Corrosion Control and Oversight office to implement the program. Subsequently, in accordance with Section 371 of the 2008 National Defense Authorization Act, the Under Secretary of Defense (USD(AT&L)) designated a Director, Corrosion Policy and Oversight to perform the duties of the DoD Corrosion Executive with responsibilities as described in the 2008 NDAA legislation. A major responsibility of the Director, Corrosion Policy and Oversight is to select high payoff research and development projects that promise to prevent or mitigate corrosion and significantly reduce the total cost of corrosion along with the adverse impact of corrosion effects on weapon system and infrastructure operational capability. This office chartered a Corrosion Prevention and Control Integrated Product Team (CPCIPT) that has selected and funded Operation and Maintenance projects for each Fiscal Year (FY) commencing in FY 2005. However, the DoD CPCIPT has determined that the biggest payoff in corrosion prevention and mitigation will come from investing in up-front prevention technologies, materials, and processes to leverage downstream cost avoidances in corrosion maintenance and repair. Likewise, development of improved predictive and prognostic techniques can eliminate unseen failure and reduce unnecessary maintenance and repair costs. Thus, R&D projects have been selected and funded since FY 2006.

(U) The Corrosion Prevention Control Integrated Product Team membership consists of both the equipment and infrastructure corrosion control experts from the Services, the Joint Staff, the Coast Guard, and the National Aeronautics and Space Administration. The Services are given project guidelines and selection criteria. The CPC project selection board, chaired by the Director, Corrosion Policy and Oversight, reviews the projects and makes recommendations to the USD(AT&L) for final approval.

(U) The former Corrosion Executive issued a policy letter that states: "Basic systems design, materials and processes selection, and intrinsic corrosion-prevention strategies establish the corrosion susceptibility of Defense material. The early stages of acquisition provide our best opportunity to make effective trade-offs among the many competing design criteria. . ." The Congress and former DoD Corrosion Executive made it clear that research and development into materials and methods to prevent or mitigate corrosion should receive high priority. Since Congress has clearly established this program as one of its highest priorities, and has reiterated its expectations regarding funding levels and methods, our budget request is designed to reflect both fiscal realities of one or more on many proposed projects over the next five to ten years.

These projects address critical corrosion issues in both Department of Defense infrastructure as well as warfighting systems. A number of low-risk, high-payoff technologies promise to vastly improve the service life and significantly reduce the maintenance costs of storage tanks and other mission support facilities essential to maintain support for the warfighter. Each of the services has identified important projects that vastly increase operational readiness and reduce operations and maintenance costs. All services are studying corrosion inhibitors that improve reliability and life of electrical and avionics equipment. Likewise, an array of highly effective, rapid cure coatings that are easy to apply and can forestall corrosion for many years on aircraft and ships are being developed. Other vital projects being considered include sealants, wash down systems, sensors and prognostic technologies that have joint service applications and potential to prevent and mitigate corrosion and its effects over a wide range of systems. The FY 2009 budget request will provide a critically needed resource to trigger even larger investment and cost avoidance.

B. Program Change Summary	FY 2008	FY 2009	FY 2010	
Previous President's Budget (FY 2008/2009)	18.917	5.102	5.050	
Current BES/President's Budget (FY 2010)	18.253	22.279	4.887	
Total Adjustments	-0.664	17.177	-0.163	
Congressional Program Reductions				
Congressional Rescissions		-0.123		
Congressional Increases		17.300		
Reprogrammings	-0.108			
SBIR/STTR Transfer	-0.519			
Other	-0.037		-0.163	

C. Other Program Funding Summary: Not applicable for this item.

D. Acquisition Strategy:

There is an annual Corrosion Prevention and Control Integrated Project Team (CPCIPT) call for proposed project plans in April. Projects are submitted by the Services annually in June. The project plan format is contained in the DoD Corrosion Prevention and Mitigation Strategic Plan. Each project plan contains:

1. Problem statement: Description of the problem or situation, including background, history, issues, operational problems and support costs.

2. Impact statement: Details regarding why project is important including description of the operational and/or logistic impact if no action is taken.

3. Technical description: Definition of the corrosion prevention and control objective and description of the system affected by this project; applicable technologies and associated development; expected operations and logistics performance improvement characteristics; brief description of the user community and how it will apply to their mission; and current acquisition status.

4. Risk analysis: Description of the risk in managing/developing/prototyping/ testing/qualifying/manufacturing/completing the technical effort including assumptions that could affect project development or implementation.

5. Proposed phases: If project is complex and will be performed in phases, description of each phase objective.

6. Expected deliverables and results or outcomes: Description of products to be delivered such as type/number of hardware, technical orders/drawings, installation, training, etc.; and description of expected operations and/or logistics performance improvements.

7. Program management: Description of the overall approach and tasks to be taken to accomplish the project, including organization, coordination and acquisition approach.

8. Cost/benefit analysis: Definition of all resources necessary to accomplish project, description of resulting benefits, computation of Return-On-Investment (ROI), and documentation of mission criticality.

9. Schedule: Milestone chart showing all significant events through project completion.

10. Implementation plan: Explanation of how the project will be implemented when completed including a description of the transition approach.

The Corrosion Prevention and Control Integrated Project Team (CPCIPT) receives project plans and engages an evaluation panel to review proposed projects and make recommendations regarding project selection. Projects are also evaluated using Data Envelopment Analysis (DEA) to rank projects by relative efficiency. DEA factors include project performance period, ratio of OSD funding to Service funding, return-on-investment (ROI), project acceptability, potential benefits and joint service applicability. DEA efficiency scores are provided to the evaluation team to assist in their prioritization of projects for funding. In addition, evaluators consider the following in recommending final priorities:

1. Return on investment credibility: Degree to which there is evidence that the project will achieve an acceptable return on investment
2. Technology maturity: Degree to which proposed technology has been developed or demonstrated and will satisfy project objectives
3. Schedule confidence: Degree to which the project is likely to be completed on time
4. Budget confidence: Degree to which the project is likely to be completed within the proposed budget
5. Management support: Degree to which management actively supports this project and has committed program resources to both manage and support this project

The project priority ranking is finalized and sent to the CPCIPT lead for a final decision.. Upon acceptance and approval of the projects by the CPCIPT, the projects are briefed to the Corrosion Forum. Funding is distributed between the Services based on priority and the evaluation process results.

Upon selection by CPCIPT of the highest priority projects and final funding approval, Office of the Secretary of Defense (OSD) transfers individual project funding to the appropriate funding sites that are provided by the Services. After receiving the project funding, the Services are responsible for the funding and management of the projects. OSD retains oversight and direction of the Corrosion Prevention and Control initiative through the CPCIPT. Project oversight includes the review of bi-monthly status reports which address progress summary, performance goals and metrics and upcoming key events, as well as reports to periodic Corrosion Forums.

The bi-monthly project report (PR) format has been defined and requires the following input:

1. Statement of progress
2. Outstanding issues
3. Performance goals and metrics
4. Upcoming events
5. Schedule status
6. Current return on investment (ROI) status

These project reports (PRs) are submitted to the CPCIPT. The CPCIPT analyzes project status, progress and project statistics and informs the Service points of c

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
08	Life cycle cost reduction	$200M cost avoidance	$200M cost avoidance	$650M cost avoidance	ROI: 10:1	ROI: 98:1

APPROPRIATION/ BUDGET ACTIVITY	PE NUMBER AND TITLE
RDTE, Defense Wide BA# 4	**0604016D8Z - Corrosion Prevention and Control (CPC)**

09	Life cycle cost reduction	$200M cost avoidance	$200M cost avoidance		ROI: 10:1	
10	Life cycle cost reduction	$200M cost avoidance	$200M cost avoidance		ROI: 10:1	

Comment:

The objective of each of the projects is the reduction in the life cycle costs of corrosion for the affected systems. Return on Investment (ROI) is the primary performance metric for the projects and for the Corrosion Prevention and Control (CPC) initiative. The average projected ROI for these projects (based on discounted cash flow computations) exceeds 10:1 with estimated annual direct cost avoidance of over $200 million across the Future Years Defense Plan. Thus, the critical performance metric for this effort is the resulting life cycle cost reduction. Gains in reliability, maintainability, supportability, and thus readiness are the by-products of the projects with attendant additional cost reduction benefits. Cost avoidances will be measured and tracked for each project, summed to the Service level and totaled at the Office of the Secretary of Defense (OSD) level.

OSD RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

APPROPRIATION/ BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDTE, Defense Wide BA# 4	**0604016D8Z - Corrosion Prevention and Control (CPC)**	**P015**

COST ($ in Millions)		FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate					
P015	Corrosion Prevention and Mitigation R&D Technologies and Projects	18.253	22.279	4.887					

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B. Accomplishments/Planned Program:

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Corrosion Prevention and Mitigation:	1.435	1.470	1.440	

Coatings and Corrosion Prevention Compounds

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Corrosion Prevention and Mitigation:	0.665	0.680	0.620	

Diagnostics, Prognostics, Monitoring and NDI Technologies

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Corrosion Prevention and Mitigation:	0.500	0.510	0.510	

Prediction, Modeling and Supporting Technologies

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Corrosion Prevention and Mitigation:	0.550	0.562	0.510	

Maintenance and Cathodic Protection Technologies and Practices

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Corrosion Prevention and Mitigation:	0.390	0.400	0.390	

Materials Selection Processes

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Corrosion Prevention and Mitigation:	1.443	1.480	1.417	

Corrosion Control Management Activities

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Corrosion Prevention and Mitigation	13.270	17.177		

University initiatives for Corrosion Prevention and Control

C. Other Program Funding Summary: Not applicable for this item.

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These project reports (PRs) are submitted to the CPCIPT. The CPCIPT analyzes project status, progress and project statistics and informs the Service points of contacts.

E. Major Performers: Not applicable for this item.

OSD RDT&E COST ANALYSIS (R3)

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Advanced Component Development and Prototypes (ACDP)	**0604016D8Z - Corrosion Prevention and Control (CPC)**	**P015**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date					
Coatings and Corrosion Prevention Compounds			4105	1435		1470		1440						
Diagnostics, Prognostics, Monitoring and NDI Technologies			1896	665		680		620						
Modeling and Supporting Technologies			1430	500		510		510						
Maintenance and Cathodic Protection Technologies and Practices			1572	550		562		510						
Materials Selection Processes			1110	390		400		390						
Corrosion Control Management Activities			4414	1443		1480		1417						
University initiatives for Corrosion Prevention and Control				13270		17177								
Subtotal:			14527	18253		22279		4887						

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date					
Subtotal:														

Remarks:

Support provided by CPC Program

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date					
Subtotal:														

Remarks:

Test and Evaluation included in Product Development Costs

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date					

OSD RDT&E COST ANALYSIS (R3)

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Advanced Component Development and Prototypes (ACDP)	**0604016D8Z - Corrosion Prevention and Control (CPC)**	**P015**

Subtotal:												

Remarks:

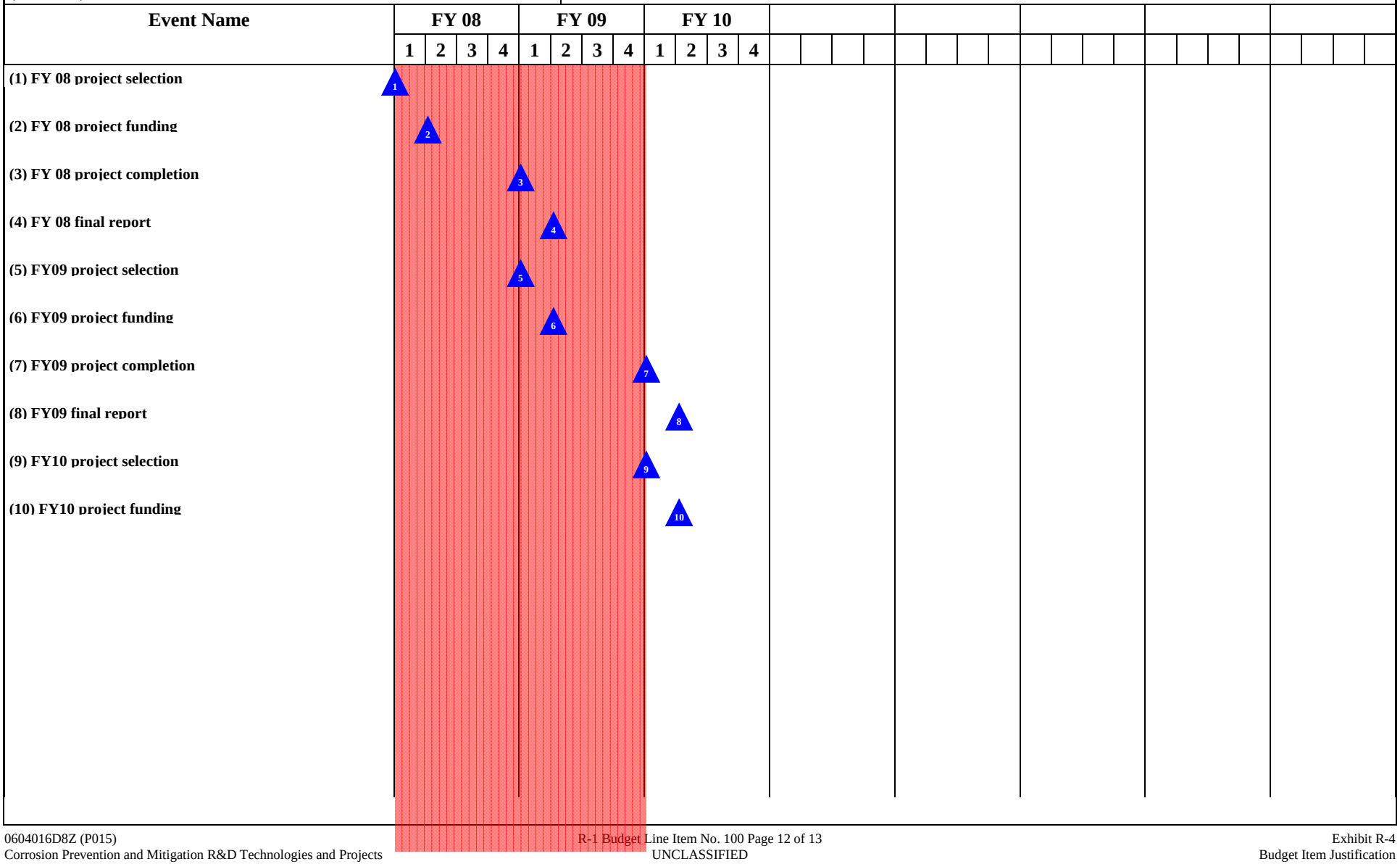
Management Services listed in Product Development as Corrosion Control Management Activities

Project Total Cost:	**14527**	**18253**		**22279**		**4887**						

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Advanced Component Development and Prototypes (ACDP)	**0604016D8Z - Corrosion Prevention and Control (CPC)**	**P015**



Schedule Profile (R4a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Advanced Component Development and Prototypes (ACDP)	**0604016D8Z - Corrosion Prevention and Control (CPC)**	**P015**

Schedule Detail	**FY 2008**	**FY 2009**	**FY 2010**					
FY 08 project selection	1Q							
FY 08 project funding	2Q							
FY 08 project completion		1Q						
FY 08 final report		2Q						
FY09 project selection		1Q						
FY09 project funding		2Q						
FY09 project completion			1Q					
FY09 final report			2Q					
FY10 project selection			1Q					
FY10 project funding			2Q					
FY10 project completion								
FY10 final report								

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