Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Office of the Secretary Of Defense	Date: February 2018
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604016D8Z / *Department of Defense Corrosion Program*

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	104.097	14.394	3.837	3.477	-	3.477	3.514	3.582	3.639	3.705	Continuing	Continuing
015: *Corrosion Protection Projects*	104.097	14.394	3.837	3.477	0.000	3.477	3.514	3.582	3.639	3.705	Continuing	Continuing

A. Mission Description and Budget Item Justification

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 is currently estimated at approximately $19 billion per year (down from approximately $22 billion in Fiscal Year 2007). 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. The responsibilities of the Director, Corrosion Policy and Oversight and the Military Department Corrosion Prevention and Control Executives were further delineated in DODI 5000.67 "Prevention and Mitigation of Corrosion on Military Equipment and Infrastructure" of 01 February 2010.

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 avoidance 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, technology development, demonstration, and transition projects have been selected and funded since FY 2006. In addition, the University Corrosion Collaboration (now the Technical Corrosion Collaboration (TCC)) was formed as collaboration between universities, Armed Forces Academies and DoD laboratories focused on corrosion technology research and development and producing individuals with corrosion expertise for the DoD corrosion control community of the future. Research areas include performance prediction, assessment of finish, surface engineering, and product support. This advanced corrosion research has been ongoing since FY 2008 and performed by teams from TCC participating organizations.

In FY 2009, the Military Departments assigned corrosion executives and began submitting reports to Congress on inserting corrosion planning into the acquisition process. The FY 2011 NDAA added a requirement for the DoD to report the amount of funds requested in the preceding year budget for each planned project or activity,

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Office of the Secretary Of Defense	Date: February 2018
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604016D8Z / *Department of Defense Corrosion Program*

as compared to the funding required for each project or activity. These funds provide a portion of the funds used to implement associated corrosion control projects and activities.

These projects address critical corrosion issues in both Department of Defense systems and infrastructure. A number of low-risk, high-payoff technologies promise to vastly improve the service life and significantly reduce the maintenance costs and improve the availability and safety of weapon systems and facilities essential to maintain support for the warfighter. A total of 151 projects have been completed to date and 111 have resulted in new technology implementation. The overall return on investment as estimated by the Military Departments is 16:1.

B. Program Change Summary ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	3.893	3.837	3.505	-	3.505
Current President's Budget	14.394	3.837	3.477	-	3.477
Total Adjustments	10.501	0.000	-0.028	-	-0.028
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	10.000	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Program Adjustments	0.501	-	-0.028	-	-0.028

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2017	FY 2018
Project: 015: *Corrosion Protection Projects*		
Congressional Add: *Corrosion Control, Prevention and Prediction through Coatings, Materials and Maintenance R&D*	10.000	-
Congressional Add Subtotals for Project: 015	10.000	-
Congressional Add Totals for all Projects	10.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Office of the Secretary Of Defense											Date: February 2018	
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604016D8Z / *Department of Defense Corrosion Program*				Project (Number/Name) 015 / *Corrosion Protection Projects*			
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
015: *Corrosion Protection Projects*	104.097	14.394	3.837	3.477	0.000	3.477	3.514	3.582	3.639	3.705	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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 is currently estimated at approximately $19 billion per year (down from approximately $22 billion in Fiscal Year 2007). 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. The responsibilities of the Director, Corrosion Policy and Oversight and the Military Department Corrosion Prevention and Control Executives were further delineated in DODI 5000.67 "Prevention and Mitigation of Corrosion on Military Equipment and Infrastructure" of 01 February 2010.

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Office of the Secretary Of Defense		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604016D8Z / *Department of Defense Corrosion Program*	**Project (Number/Name)** 015 / *Corrosion Protection Projects*

as compared to the funding required for each project or activity. These funds provide a portion of the funds used to implement associated corrosion control projects and activities.

These projects address critical corrosion issues in both Department of Defense systems and infrastructure. A number of low-risk, high-payoff technologies promise to vastly improve the service life and significantly reduce the maintenance costs and improve the availability and safety of weapon systems and facilities essential to maintain support for the warfighter. A total of 151 projects have been completed to date and 111 have resulted in new technology implementation. The overall return on investment as estimated by the Military Departments is 16:1.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Title: Corrosion Prevention and Control Projects and Activities	4.394	3.837	3.477
FY 2018 Plans: • Work with the Services to develop and transition mature technologies. • Refine and improve acquisition policies related to corrosion control. • Provide oversight of corrosion planning for ACAT I systems. • Complete impact of corrosion studies on additional defense segments; perform pilot evaluation of selected ACAT I program using predictive capabilities. • Partner with the Services to provide corrosion training to military and DoD civilians.			
FY 2019 Plans: Continue to: • Work with the Services to develop and transition mature technologies; • Refine and improve acquisition policies related to corrosion control; • Perform independent risk assessments relative to corrosion for ACAT I systems; • Complete impact of corrosion studies on all defense segments; • Integrate corrosion control into critical specifications and standards; • Partner with the Services to provide corrosion training to military and DoD civilians; • Engage in communication and outreach activities to create awareness of the impact of corrosion.			
FY 2018 to FY 2019 Increase/Decrease Statement: Level of effort is consistent between FY 2018 and FY 2019. Small changes reflect minor budget fluctuations.			
Accomplishments/Planned Programs Subtotals	4.394	3.837	3.477

	FY 2017	FY 2018
Congressional Add: Corrosion Control, Prevention and Prediction through Coatings, Materials and Maintenance R&D	10.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Office of the Secretary Of Defense		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604016D8Z / *Department of Defense Corrosion Program*	**Project (Number/Name)** 015 / *Corrosion Protection Projects*

	FY 2017	FY 2018
FY 2017 Accomplishments: • Conducted 2017 DoD - Allied Nations Technical Corrosion Conference – over 700 attendees and 140 technical papers presented. Participation by eight allied nations. • Continued to execute the Technical Corrosion Collaboration (TCC) • Funded corrosion control research at the University of Alabama, University of Virginia, Southern Mississippi, University of Hawaii, Ohio State University, and Pennsylvania State University. • Funded corrosion activities at each of the Armed Services Academies including research, curriculum improvements, and Cadet/Midshipmen capstone projects • Program has produced 176 articles in refereed journals, involved over 300 graduate and undergraduate students at civilian institutions, and over 120 Cadets and Midshipmen. • Undergraduate Corrosion Engineering degree at the University of Akron became fully accredited. • Developed a long distance learning course through the University of Florida • Funded the following additional Corrosion Prevention and Control Demonstration/Implementation Projects - Rustproofing for Corrosion Control in Hidden Areas - Corrosion Estimation App - Internal Curing of High Performance Pier Deck Concrete - Plastic Lumber Foundations - Zinc Rich Primer - Volumetric Superhydrophopic Coating for Corrosion Prevention of Galvanized Steel Shore Structures - Inorganic Polymer Rehab RR Ties		
Congressional Adds Subtotals	10.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Acquisitions are accomplished in three categories including projects, research opportunities, and activities as described in the DoD Corrosion Prevention and Mitigation Strategic Plan.

Projects are funded jointly by CPO and the Military Departments and are led by subject matter experts at the Military Department laboratories. CPO issues a call for proposed project plans in April and projects are submitted in June. The project plan format is contained in the DoD Corrosion Prevention and Mitigation Strategic Plan. CPO receives project plans and convenes 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

Exhibit R-2A, RDT&E Project Justification: PB 2019 Office of the Secretary Of Defense		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604016D8Z / *Department of Defense Corrosion Program*	**Project (Number/Name)** 015 / *Corrosion Protection Projects*

to Service funding, return-on-investment (ROI), degree to which the proposed technology addresses high-cost corrosion problems, potential benefits, joint service applicability, and probability of transition. Upon acceptance and approval of the projects, funding is distributed to the Military Departments by Military Interdepartmental Purchase Request (MIPR) based on funding priorities associated with the evaluation process results. Project execution is monitored through submission of quarterly quad charts and by conducting an annual review.

Research opportunities are funded through the Technical Corrosion Collaboration (TCC). A call for white paper proposals is issued by CPO through an existing U.S. Air Force Academy (USAFA) Broad Agency Announcement (BAA). Submissions are evaluated by a technical panel chaired by the Deputy Director, CPO. Evaluation factors include quality of proposed research, potential impact on DoD corrosion problems, level of student involvement, and proposed collaboration between the research institutions and DoD laboratories. Projects are ranked by the selection panel and funded based on merit and available funds. Research institutions receive funds for the TCC through the establishment of cooperative agreements with USAFA. Research execution is monitored through submission of quarterly quad charts and by conducting an annual review.

Activities are those work efforts associated with the Working Integrated Product Teams (WIPT) under the CPCIPT and include policy, training, specifications and standards, metrics, science and technology, facilities, and communication and outreach. WIPT Leads submit funding requirements associated with their annual tactical plan submission to CPO. The proposed activities are prioritized by CPO and funded based on merit and available funds. Activities are accomplished by both government and contractor personnel. Funds are transferred to government personnel through the MIPR process. Funds are transferred to contractor personnel through competitively awarded contracts including the multiple-award Blanket Purchase Agreement held by CPO. Progress on activities is reviewed tri-annually at meetings of the CPCIPT.

E. Performance Metrics

Not applicable.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Office of the Secretary Of Defense		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604016D8Z / *Department of Defense Corrosion Program*	**Project (Number/Name)** 015 / *Corrosion Protection Projects*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Corrosion Policy and Oversight	MIPR	Various (Army, Navy, Air Force) : Various	91.657	11.080	Jan 2017	0.408	Jan 2018	3.477	Jan 2019	-		3.477	Continuing	Continuing	Continuing
		Subtotal	91.657	11.080		0.408		3.477		-		3.477	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Corrosion Policy and Oversight	MIPR	Logistics Management Institute : McLean, VA	8.484	2.061	Oct 2016	2.148	Oct 2017	-		-		-	Continuing	Continuing	Continuing
Corrosion Policy and Oversight	MIPR	Decisive Analytics Corporation : Arlington, VA	3.956	1.253		1.281	Oct 2017	-		-		-	Continuing	Continuing	-
		Subtotal	12.440	3.314		3.429		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	104.097	14.394		3.837		3.477		-		3.477	Continuing	Continuing	N/A

Remarks

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Office of the Secretary Of Defense		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604016D8Z / *Department of Defense Corrosion Program*	**Project (Number/Name)** 015 / *Corrosion Protection Projects*

EXHIBIT R-4, SCHEDULE PROFILE	Date: 2 January 2018
Appropriation/ Budget Category: RDT&E, CORROSION PREVENTION AND CONTROL / BA 4	Program Element: 0604016D8Z

PROJECT / TASK	2014				2015				2016				2017				2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	OCT NOV DEC	JAN FEB MAR	APR MAY JUN	JUL AUG SEP	OCT NOV DEC	JAN FEB MAR	APR MAY JUN	JUL AUG SEP	OCT NOV DEC	JAN FEB MAR	APR MAY JUN	JUL AUG SEP	OCT NOV DEC	JAN FEB MAR	APR MAY JUN	JUL AUG SEP	OCT NOV DEC	JAN FEB MAR	APR MAY JUN	JUL AUG SEP
TO 0001: CORROSION POLICY AND OVERSIGHT																				
DOD 5000-Series Review	100%				100%				100%				100%				0%			
Integration of CPC and CPC-Related Policy	100%				100%				100%				100%				0%			
DAG Review	100%				100%				100%				100%				0%			
Corrosion Board of Directors	100%				100%				100%				100%				0%			
DOD Corrosion Prevention and Mitigation Strategic Plan	100%				100%				100%				100%				0%			
USC Engagement	100%				100%				100%				100%				0%			
GAO Engagement	100%				100%				100%				100%				0%			
Corrosion Technology Implementation Projects Support	100%				100%				100%				100%				0%			
Training Gap Analysis	100%				100%				100%				100%				0%			
Corrosion Website Sustainment	100%				100%				100%				100%				0%			
Product Introduction and Qualification Tool	100%				100%				100%				100%				0%			
Facilitate/Support Corrosion Events	100%				100%				100%				100%				0%			
International Corrosion Partnerships and Engagements	100%				100%				100%				100%				0%			
Programmatic Support	100%				100%				100%				100%				0%			
Technical Corrosion Collaboration	100%				100%				100%				100%				0%			
TO 0001: CORROSION TECHNOLOGY SUPPORT																				
Corrosion Prevention and Control (CPC) Review	100%				100%				100%				100%				0%			
Guidebook and Manual Support	100%				100%				100%				100%				0%			
DFARS Support	100%				100%				100%				100%				0%			
Funding Reviews	100%				100%				100%				100%				0%			
Weapon Systems and Infrastructure Oversight Support	100%				100%				100%				100%				0%			
Military Department Corrosion Program Review	100%				100%				100%				100%				0%			
Corrosion Technology Implementation Project Reviews	100%				100%				100%				100%				0%			
Corrosion Subject Matter Expertise	100%				100%				100%				100%				0%			

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Office of the Secretary Of Defense		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604016D8Z / *Department of Defense Corrosion Program*	**Project (Number/Name)** 015 / *Corrosion Protection Projects*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Corrosion Policy and Oversight				
DOD 5000 Series Review	1	2017	4	2017
Integration of CPC and CPC-Related Policy	1	2017	4	2017
DAG Review	1	2017	4	2017
Corrosion Board of Directors	1	2017	4	2017
DOD Corrosion Prevention and Mitigation Strategic Plan	1	2017	4	2017
USC Engagement	1	2017	4	2017
GAO Engagement	1	2017	4	2017
Corrosion Technology Implementation Projects Support	1	2017	4	2017
Training Gap Analysis	1	2017	4	2020
Corrosion Website Sustainment	1	2017	4	2020
Product Introduction and Qualification Tool	1	2017	4	2017
Facilitate/Support Corrosion Events	1	2017	4	2017
International Corrosion Partnerships and Engagements	1	2017	4	2017
Programmatic Support	1	2017	4	2017
Technical Corrosion Collaboration	1	2017	4	2017
Corrosion Technology Support				
Corrosion Prevention and Control (CPC) Review	1	2017	4	2017
Guidebook and Manual Support	1	2017	4	2017
DFARS Support	1	2017	4	2017
Funding Reviews	1	2017	4	2017
Weapon Systems and Infrastructure Oversight Support	1	2017	4	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Office of the Secretary Of Defense		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604016D8Z / *Department of Defense Corrosion Program*	**Project (Number/Name)** 015 / *Corrosion Protection Projects*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Military Department Corrosion Program Review	1	2017	4	2017
Corrosion Technology Implementation Project Reviews	1	2017	4	2017
Corrosion Subject Matter Expertise	1	2017	4	2017