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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Office of the Secretary Of Defense **Date:** February 2016

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603727D8Z I <i>Joint Warfighting Program</i>
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COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	20.936	10.108	4.982	7.848	-	7.848	8.357	9.035	9.159	9.337	Continuing	Continuing
<i>P727: Joint Warfighting</i>	20.936	10.108	4.982	7.848	-	7.848	8.357	9.035	9.159	9.337	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Joint Warfighting Program (JWP) is a pivotal resource that synchronizes two Department-wide domains, military requirements and acquisition, with shared analyses and actionable assessments. JWP supports partnership for customers including joint command staffs, the Joint Staff, and OSD elements responsible for oversight of Components equipping forces for joint missions. The account underwrites limited-scope analyses, experiments, and partnerships that define joint capability gaps and develop actionable requirements for follow-on acquisition efforts. This program element plays a major role in portfolio assessments aiming to identify critical gaps between Service-generated capabilities and suggest affordable solutions. JWP funds venues for demonstration of emergent technology-based prototypes that enable joint customers to draft requirements based on realistic understanding of feasible solutions. JWP specifically aims to assist joint-end-users by analyses that identify essential capability improvements as actionable joint military needs expressed as specific Key Performance Parameters (KKPs) and Key System Attributes (KSAs). These analyses and assessments deliver independent perspectives on ways to align Service and Agency investments and potential solutions for capability gaps created by evolving threats not aligned to single Component missions. Though a relatively modest program, JWP is consistently cited by joint combatant commanders' staffs as the seminal infusion of funding that spawned insightful demonstrations, theater centers of excellence, mission essential capability modifications and strategic concepts. JWP also underwrites staff analyses in the Acquisition, Technology & Logistics staff of the Office of the Secretary of Defense (OSD). Working with Service, OSD and joint command counterparts, the AT&L staff performs portfolio assessments focusing on warfighting environments ten to twenty years ahead.

Typical projects funded with JWP include translation of capability gap assessments into actionable military needs statements, identification of candidate solutions via experimentation, translation of solution concepts into field demonstrations, and remedy of joint capability gaps in partnership with Defense agents for doctrine changes and technology development. JWP resources dedicated to direct support joint commands provides analytic expertise not normally allocated via formal staffing billets. In this activity, JWP underwrites small grants to invigorate employment of experimentation and analysis, to formulate strategies to resolve joint capability gaps, and to stimulate participation in the Department enterprises for joint experimentation and joint capability development. JWP resources also support Mission Area Portfolio Assessments (MAPA), and the development of tools supporting joint analytic efforts.

The balance of JWP funds contributes resources to examination of potential remedies for joint mission capability gaps. In many cases, JWP funds initiatives for process improvements serving all Components, but aligned with no single Service or Agency. These early assessments of potential capability gap solutions can accelerate engineering development, subsequent field experiments, and capability demonstrations in field conditions. This segment of JWP often represents the first effort to define integrated and innovative solutions across the range of Doctrine, Organization, Training, Material, Leadership and Personnel-Facilities. The resources sustain a small segment of civilian operation research analysis (currently hosted by the Institute for Defense Analysis – IDA and the Naval Postgraduate School - NPS). Administered by the Joint Operations Support (JOS) division within OSD's AT&L organization, JOS works closely and continuously with joint customers around the world. Analytic project selection is undertaken in consultation with the OSD staffs serving AT&L and Policy and with elements of the Joint Staff. On a modest funding base, JWP forges collaborative efforts across joint staffs to cement alliances attacking tough DoD-wide issues like ISR, cyber and UAS.

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B. Program Change Summary (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	5.396	9.626	7.936	-	7.936
Current President's Budget	10.108	4.982	7.848	-	7.848
Total Adjustments	4.712	-4.644	-0.088	-	-0.088
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-4.626			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	4.828	-			
• SBIR/STTR Transfer	-0.116	-			
• Economic Assumptions	-	-	-0.061	-	-0.061
• FY16 FFRDC	-	-0.018	-	-	-
• Fiscal Guidance Adjustment	-	-	-0.027	-	-0.027

Change Summary Explanation

Significant changes in FY15 funds for the JWP account resulted from a one-time commitment of funding to support "Information Technology (IT) enhancements for a dynamic targeting cell". This initiative aimed to update capabilities for the Pacific Command Area of Responsibilities (PACOM AoR). Also, FY16 is reflective of a congressional reduction for prior year carryover.

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Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603727D8Z / Joint Warfighting Program				Project (Number/Name) P727 / Joint Warfighting			
COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016		FY 2017
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Title: Support for Joint Capability Analysis	3.763	2.989		4.709
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Description: JWP resources are dedicated to analytic support for joint capability analysis and joint customers. JWP supports joint capabilities by promoting analyses and assessments to address challenges specific to their theater or functional missions. It aims to reinvigorate joint military staff capabilities to employ rigorous analysis and experimentation methodologies in support of specific mission assignments. It supports joint commander identification of capability gaps and selectively funds limited objective experiments experiment to understand a concept or technology that addresses a specific joint mission challenge. JWP also resources Mission Area Portfolio Assessments (MAPA) serving the need of joint capability clients.

FY 2015 Accomplishments:
JWP funding stimulated additional government investors in Air Force technical investigation of options for advanced jet engine design. Continuing a multi-year engagement, JWP funded a Joint Capability Engineering Architecture study delivering a detailed mapping of “Joint Suppression of Enemy Air Defenses (JSEAD) Electronic Attack and Conventional Attack within Complex Anti-Access/Area Denial (A2/AD) Environments”. This analysis focused on warfighting technologies (US and potential adversary systems) found in the Pacific Area of Operations. This architecture serves as the framework for comparative analyses, modeling & simulation, and assessment of potential solutions for capability gaps. The Joint Personnel Recovery Agency (JPRA) benefitted from JWP-funded analysis of innovative acquisition solutions to phased replacement of radios used for escape and evasion missions. Acquisition, Technology & Logistics (AT&L) pursued Mission Area Portfolio Assessments with JWP funding to generate cross-cutting assessments of Service capabilities that will inform next generation acquisition investments. AT&L also applied JWP funding to initiate “Big Data” tools aimed at reducing recurrent acquisition program reporting while providing near real time program status information across the Acquisition Enterprise. JWP funding also united AT&L with the Joint Staff to examine a “Capability Mix Dynamics” study producing insights into capabilities and gaps associated with space-based intelligence sensors.

FY 2016 Plans:
Two major efforts will receive JWP funding in FY 2016. Cross-service efforts by the Navy and the Air Force will receive participatory funding to develop technical specifications for the next generation of a Combat Search and Evasion Location communications. More than an effort to create multi-Service technical solutions, this investment underwrites an innovative acquisition approach aiming to incentivize industry participation in a rapid, lower cost alternative to traditional acquisition programs of record. JWP funding will also support AT&L initiatives to partner with US Central Command and US Special Operations Command to develop technical options tailored to evolving military demands from our operations to counter ISIL.

FY 2017 Plans:
Continue emphasis on Mission Area Portfolio Assessment (MAPA) to provide insights for acquisition decisions focused on capability development serving the needs of joint commanders and joint clients. Provide direct analytical support responding to emergent joint military staffs to identify capability gaps and military needs for material solutions. Continue to support Joint

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
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Interagency Field Experimentation (JIFX) effort hosted by Naval Postgraduate School. Support joint commanders to develop and refine capability requirements. Continue to partner with joint military staffs, encouraging experimentation cells to address mission capability gaps, explore potential solutions, and improve understanding of new technologies and concepts in response to evolving missions and military threats. Empower the joint military staffs to employ rigorous analysis and experimentation methodologies.

Title: Analytic Development of Joint Military Requirements Addressing Evolving Threats / Missions 6.345 1.993 3.139

Description: This segment underwrites innovative, responsive and timely analytic support on joint capability development serving the needs of joint warfighters in partnership with senior acquisition staffs. It provides an independent source to examine potential remedies for mission capability gaps and can establish a framework for subsequent field experiments, capability demonstrations or accelerated acquisition. Joint warfare independent analysis often represents the first effort to define alternative solutions across the range of Doctrine, Organization, Training, Material, Leadership and Personnel-Facilities. Administered by the Joint Operations Support cell within OSD/AT&L, this fund capability gap definition and technology based initiatives. Project selection is undertaken in consultation with the OSD staffs serving Acquisition, Technology, and Logistics (AT&L) and Policy and with elements of the Joint Staff.

FY 2015 Accomplishments:

Investments in joint capability analysis aimed to stimulate partnerships on a wide variety of topics. Principle sponsorship of the Joint Interagency Field Experiment (JIFX) series conducted by the Naval Postgraduate School provides unique opportunities for Services and joint commands to examine developmental technical advances offering potential solutions to specific capability gaps. The Deputy Secretary of Defense praised JIFX as a venue attuned to the Department's outreach for innovation from corporate partners, universities, and non-traditional technologists. JWP of analysis investment focused on countermeasures for emergent ballistic missile threats in the Pacific Command (USPACOM) Area of Responsibility. A Department-wide initiative led by Under Secretary of Defense (Acquisition, Technology & Logistics) is assessing evolving threats and generating innovative approaches to countering potential adversaries. Funding also underwrote pathfinding efforts by USPACOM to integrate cyber warfare techniques and tactics into operational and tactical military efforts. This investment partially offset technical staff costs for a theater center that serves the dual purpose of training and innovative experimentation in combined cyber/conventional operations. A small incremental investment from this fund supported an effort with the Joint Staff to explore alternative architectures for distribution of data from Airborne Intelligence, Surveillance and Reconnaissance (AISR) sensors. Steeply increasing demand for information from AISR sensors places a strain on existing data exchange networks serving Combatant Commands. This study examined potential infrastructure investments to increase network capacity apace with demand for connectivity. Joint Warfighting Program funds also supported efforts by Transportation Command to improve protection of their critical networks and data from cyber intrusion.

FY 2016 Plans:

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
<p>JWP will continue to support analytic development of countermeasures for emergent ballistic missile threats as a prime priority in FY 2016. AT&L will employ JWP funds to partner with the Joint Staff on a series of air warfare scenarios employing engineering-level detail to accurately depict performance of US systems versus potential adversary in the most stressing of operational environments. Continued support of JIFX, now spotlighted as a prime DoD incubator for innovation, will continue to provide joint customers with insights supporting ambitious but realistic definition of requirements for new warfighting capabilities. Funding will be dedicated to renewing US European Commands to assess capability gaps resulting from a resurgent Russian military posture. Support for the TIDES projects conducted by the National War College will provides US Pacific Command with a planning framework for humanitarian/civil assistance supporting new international partnerships on the Pacific Rim. Funding support for Joint Staff capability examinations and for the analytic efforts of an "Acquisition-Intelligence-Requirements Task Force" synchronizing efforts on Intelligence Mission Data production will round out the major investments for the Joint Warfighting Program. As in FY 2015, this is an ambitious plan to leverage a relatively modest resource.</p> <p>FY 2017 Plans: This segment will provide independent analysis of joint issues and capability gaps. It will provide responsive and timely capability development pathways and recommendations for rapid acquisition, field experiments conducted by joint military staffs and units. It will provide an independent source for enabling capability development suitable for joint experimentation undertaken by joint authorities.</p>			
Accomplishments/Planned Programs Subtotals	10.108	4.982	7.848

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Performance is measured through metrics including (1) objective validation of enhanced CCMD capabilities to perform joint missions in their assigned theaters and areas of responsibility, (2) documented delivery effective joint operational concepts, (3) confirmed production of refined and validated capability descriptions.