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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force										Date: February 2015		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 Program Element (Number/Name) PE 0105921F I Service Support to STRATCOM - Space Activities							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	2.685	-	-	-	-	-	-	-	-	-	2.685
643833: Joint NavWar Center	-	2.685	-	-	-	-	-	-	-	-	-	2.685
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Program MDAP/MAIS Code: 447												
Note In 2015, Projet 643833 Joint NavWar Center (JNWC) Space Activities, efforts were transferred to PE 0105921F Service Support to STRATCOM - Space Activities, Project 672486 Joint NAVWAR Center in order to align efforts with Budget Activity 7, Operational System Development.												
A. Mission Description and Budget Item Justification Navigation Warfare (NAVWAR) is deliberate defensive and offensive action to assure and prevent positioning, navigation, and timing (PNT) information through coordinated employment of space, cyberspace, and electronic warfare (EW) operations. The term NAVWAR is sometimes equated with "PNT Superiority". The Joint Navigation Warfare Center (JNWC) was established by DEPSECDEF Memo, 17 November 2004, as the DoD Center of Excellence, tasked to integrate and coordinate NAVWAR PNT capabilities across electronic spectrum, cyberspace, and space operations. NAVWAR leverages various techniques and technologies from these mission areas to negate or prevent hostile use of PNT information and protect unimpeded use of PNT information by U.S., Allied, and Coalition Forces while not unduly disrupting peaceful use outside an area of operation. The JNWC develops and maintains the Department's premier collection of NAVWAR knowledge, and provides subject matter expertise support to warfighters, Department decision makers, the Federal Interagency (the Department of Homeland Security and other civil agencies concerned with the Critical National Infrastructure), and the Coalition. NAVWAR expertise is developed in part by execution of PNT Operational Field Assessments (POFAs), modeling and simulation, analysis, and exercise and training support. In recent years, the Global Positioning System (GPS) has become one of the most critical enablers of modern advanced technology warfare. In an era where everything from advanced weapons systems and networks to basic goods and services are tracked, guided or disciplined by PNT systems such as GPS, NAVWAR is an ever increasing capability of interest and concern, especially if PNT systems are interrupted or lost. Likewise, as Global Navigation Satellite Systems (GNSS) proliferate, it becomes necessary to consider not only denying adversary use of GPS but also negating adversary use of alternate GNSS systems for PNT. Recent revisions to National Defense Strategy and Defense Planning Guidance require Combatant Commands to account for denied / degraded PNT environments in deliberate planning. Projecting force in the Asia-Pacific Region and other theaters of operation requires an understanding of how evolving global asymmetric anti-access / area denial (A2/AD) threats may affect joint warfighting functions. JNWC-conducted POFAs are a key element in evaluating Coalition NAVWAR capabilities and vulnerabilities and adversary capabilities and vulnerabilities, both crucial to executing PNT superiority mission sets in potentially denied / degraded PNT environments. JNWC helps develop defensive and offensive PNT capabilities by focusing on four Joint Mission Essential Tasks (JMETS): 1. Enable Defensive PNT Operations: enable operations that will protect blue force PNT capabilities. 2. Enable Offensive PNT Operations: enable PNT superiority capabilities that can take advantage of GNSS vulnerabilities. 3. Establish and Maintain PNT Situational Awareness (SA): assess current and projected blue force and red force PNT related capabilities.												

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4. Develop and Execute NAVWAR Operational Assessments and Analysis for Future NAVWAR Operations and conduct field assessments to evaluate blue force and red force capabilities and vulnerabilities.						
The JNWC executes its assigned mission responsibilities through three lines of operation (LOO):						
1. Create Knowledge for PNT Superiority: PNT operational field assessments, studies and analysis, assessment and dissemination of PNT related intelligence, and managing the PNT Superiority data repository						
2. Operationalize PNT Superiority: Joint Force and Contingency Operations support to Combatant Commands, Services, and other customers through outreach; creating and demonstrating operational capability for PNT Superiority in the near term						
3. Institutionalize PNT Superiority: Acquisition, policy, doctrine, and coalition support; creating the environment for robust PNT Superiority capability in the future						
This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.						
B. Program Change Summary (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget		2.779	-	-	-	-
Current President's Budget		2.685	-	-	-	-
Total Adjustments		-0.094	-	-	-	-
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-0.094	-			
• Other Adjustments		-	-	-	-	-
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2014	FY 2015	FY 2016
Title: PNT Operational Field Assessments (GYPSY)				2.386	-	-
Description: The JNWC will investigate, operationally assess, and simulate potential threats and mitigation strategies for potential denial of blue force PNT capabilities as well as preventing the hostile use of Positioning, Navigation and Timing (PNT) information. This will be accomplished primarily through the use of operational field assessments, laboratories, employment of competitively selected contractors, universities, other government agencies, and Federally Funded Research and Development Centers (FFRDCs).						

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
<i>FY 2014 Accomplishments:</i> GYPSY Juliet POFA will assess operational effects and effectiveness of red and blue force NAVWAR equipment in a live, joint environment; develop, assess and revise Joint NAVWAR Techniques, Tactics, and Procedures; upgrade NAVWAR Modeling and Simulation tools; provide Combatant Command staffs the expertise to inform planning and operations in a PNT denied area. <i>FY 2015 Plans:</i> N/A <i>FY 2016 Plans:</i> N/A				
<i>Title:</i> PNT Operational Field Assessments (FORTUNE) <i>Description:</i> The JNWC will investigate, operationally assess, and simulate potential threats and mitigation strategies for potential denial of blue force PNT capabilities as well as preventing the hostile use of Positioning, Navigation and Timing (PNT) information. This will be accomplished primarily through the use of operational field assessments, laboratories, employment of competitively selected contractors, universities, other government agencies, and Federally Funded Research and Development Centers (FFRDCs). <i>FY 2014 Accomplishments:</i> The FORTUNE Operational Field Assessments serve as a series of risk mitigation events as a lead up to the FY14 GYPSY Juliet POFA. FORTUNE POFAs are planned and executed to demonstrate various PNT system capabilities and platform vulnerabilities to increase the Joint Navigation Center's understanding of test objectives to be undertaken during a GYPSY event. <i>FY 2015 Plans:</i> N/A <i>FY 2016 Plans:</i> N/A		0.299	-	-
Accomplishments/Planned Programs Subtotals		2.685	-	-
D. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				

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<u>E. Acquisition Strategy</u> Studies and assessments will be accomplished using a combination of competitively selected contractors, universities, other government agencies, and Federally Funded Research and Development Centers.		
<u>F. Performance Metrics</u> Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015			
Appropriation/Budget Activity 3600 / 4						R-1 Program Element (Number/Name) PE 0105921F / Service Support to STRATCOM - Space Activities				Project (Number/Name) 643833 / Joint NavWar Center					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Assessment Event Planning	MIPR	Joint Navigation Warfare Center: Kirtland AFB, NM : Albuquerque, NM	-	0.650	Oct 2013	-		-		-		-	-	0.650	-
Subtotal			-	0.650		-		-		-		-	-	0.650	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Assessment Range Support	MIPR	Joint Navigation Warfare Center: Kirtland AFB, NM : Albuquerque, NM	-	0.906	Oct 2013	-		-		-		-	-	0.906	-
Additional Operational Assessment Support	MIPR	Joint Navigation Warfare Center: Kirtland AFB, NM : Albuquerque, NM	-	0.299	Oct 2013	-		-		-		-	-	0.299	-
Subtotal			-	1.205		-		-		-		-	-	1.205	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Assessment Execution	MIPR	Joint Navigation Warfare Center: Kirtland AFB, NM : Albuquerque, NM	-	0.830	Oct 2013	-		-		-		-	-	0.830	-
Subtotal			-	0.830		-		-		-		-	-	0.830	-

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Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-		-	-	-	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	2.685	-	-	-	-	-	2.685	-

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force																Date: February 2015																									
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										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Gypsy Juliet																																									

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0105921F / Service Support to STRATCOM - Space Activities	Project (Number/Name) 643833 / Joint NavWar Center

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Gypsy Juliet	3	2014	4	2014