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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2017 Air Force **Date:** February 2016

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604429F / <i>Airborne Electronic Attack</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	-	26.555	8.358	9.187	0.000	9.187	7.071	7.204	0.000	0.000	Continuing	Continuing
655192: <i>Network &amp; Sys -of-Sys Dev</i>	-	26.555	8.358	9.187	0.000	9.187	7.071	7.204	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This project concentrates on the overall systems engineering, modeling and simulation, architecture and network requirements development, effectiveness assessment and requirements allocation to component systems of the Airborne Electronic Attack (AEA) System of Systems (SoS). It also includes establishment and use of virtual test capabilities for system of systems effectiveness testing/evaluation for AEA, instantiating updated Defense Planning Guidance (DPG) scenarios into digital representations suitable for supporting modeling and simulation, conducting studies and technology risk mitigation demonstrations for potential AEA SoS components and AEA SoS battle management, development planning, and the development and maintenance of the Air Force electronic warfare capability investment strategy. These efforts are crucial in the development of critical electronic attack capabilities in support of Air Force and joint operations to include Global Strike and Persistent Global Attack Concepts of Operations (CONOPS).

As the joint AEA SoS has evolved since it's origination in 2004, it now includes the Navy EA-18G and its Next Generation Jammer (NGJ) increment 1 subsystem and the Air Force EC-130H Compass Call Baseline 3 (significant upgrades to the former Block 35) configuration as stand-off components. As stand-in components, the AEA SoS includes the Air Force Miniature Air Launched Decoy (MALD) and its jammer variant, MALD-J; Active Electronically Scanned Array (AESA) radar equipped aircraft; and potentially unmanned stand-in jamming/counter electronics platforms, as well as other stand-in and distributed components capable of suppressing or degrading enemy integrated air defense system (IADS) and non-IADS targets. Current military actions continue to drive the need for increased focus on developing advanced electronic attack capabilities for use against both IADS and non-IADS targets such as radar sensors, infrared (IR) sensors, communications networks, remote controlled improvised explosive devices, computers, command and control links, man portable air defenses, etc. in both major combat and irregular warfare scenarios.

This program is included in Budget Activity 5, System Development and Demonstration, because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
Previous President's Budget	30.687	8.358	7.779	0.000	7.779
Current President's Budget	26.555	8.358	9.187	0.000	9.187
Total Adjustments	-4.132	0.000	1.408	0.000	1.408
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-3.076	0.000			
• SBIR/STTR Transfer	-1.056	0.000			
• Other Adjustments	0.000	0.000	1.408	0.000	1.408

**Change Summary Explanation**

FY15: \$3.076 reprogrammed for higher Air Force priorities  
 FY17: \$1.5M added for increased AoA scope, -\$92K for inflation

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
<p><b>Title:</b> AEA System Engineering Studies &amp; Technology Transition</p> <p><b>Description:</b> Apply systems engineering rigor to manage Air Force Airborne Electronic Attack (AEA) System of Systems (SoS) program requirements, designs, and operational concepts. Assess operational effectiveness of multiple Electronic Warfare systems in both offensive and defensive roles.</p> <p><b>FY 2015 Accomplishments:</b>            Conducted cost and operational effectiveness assessments of AEA components such as recapitalizing the COMPASS CALL capability onto a high performance platform, examining use of non-kinetic counter electronics capabilities in both IADS and non-IADS scenarios for major and irregular warfare, and establishing the basis for conducting offensive AEA SoS alternative analyses; defined and recommended implementation strategies to mitigate AF electronic support system risks; updated AF EW Roadmap as directed by HQ AF; and updated AF EW Capability Investment Strategy with studies in support of CAF Core Function Support Plans.</p> <p><b>FY 2016 Plans:</b>            Conduct cost and operational effectiveness assessments of all components of the AEA SoS in preparation for conducting a joint Air Force/Navy offensive AEA SoS Analysis of Alternatives. Further define and recommend implementation strategies to resolve AF electronic support system risks; update AF EW Roadmap as directed by</p>	2.750	4.698	4.409	0.000	4.409

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
HQ AF; and update AF EW Capability Investment Strategy with studies in support of CAF Core Function Support Plans.  <b>FY 2017 Base Plans:</b> Support the joint AF/Navy offensive AEA SoS Analysis of Alternatives. Conduct technology maturation demonstrations to address AF electronic support system risks; update AF EW Roadmap as directed by HQ AF; update AF EW Capability Investment Strategy with studies in support of CAF Core Function Support Plans.  <b>FY 2017 OCO Plans:</b> N/A					
<b>Title:</b> AEA Capability Planning  <b>Description:</b> Provide capability planning to the Air Force electronic warfare and Airborne Electronic Attack (AEA) System of Systems (SoS) portfolio and constructive modeling and simulation and analysis management.  <b>FY 2015 Accomplishments:</b> Began work on various analysis of alternatives related to electronic attack as well as conducted additional AEA simulations in support of a non-kinetic counter electronics analysis of alternatives and contributions of AEA components to effectiveness and survivability of 4th Generation fighters operating in both stressing IADS and Irregular Warfare/non-IADS environments. Initiated phase I of an AF offensive AEA SoS analysis of alternatives to examine and recommend a suitable high performance platform for rehosting COMPASS CALL electronic warfare capabilities.  <b>FY 2016 Plans:</b> Complete phase I of the AF offensive AEA analysis of alternatives. Initiate phase II of the offensive AEA SoS analysis of alternatives, in conjunction with the Navy, to examine and develop cost and operationally effective joint stand-off, stand-in, and distributed EW capabilities for operations in the 2030+ time frame.  <b>FY 2017 Base Plans:</b> Conduct and complete the joint offensive AEA SoS analysis of alternatives. Report out preferred concepts that provide advanced cost and operationally effective materiel solutions to joint AF/Navy combat operations in the 2030+ time frame.  <b>FY 2017 OCO Plans:</b> N/A	23.805	3.660	4.778	0.000	4.778
<b>Accomplishments/Planned Programs Subtotals</b>	26.555	8.358	9.187	0.000	9.187

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<b>D. Other Program Funding Summary (\$ in Millions)</b> N/A		
<b>Remarks</b>		
<b>E. Acquisition Strategy</b> "Network and System of Systems Development" uses existing Air Force Life Cycle Management Center, Air Force Research Lab, and other contracts and instruments to provide engineering, architecture development, and other support for the Airborne Electronic Attack (AEA) System of Systems.		
<b>F. Performance Metrics</b> 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 2017 Air Force** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604429F / Airborne Electronic Attack	<b>Project (Number/Name)</b> 655192 / Network & Sys -of-Sys Dev
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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AEA system of systems engineering	C/CPFF	Various : Various	-	2.750	Dec 2014	4.698	Dec 2015	4.409	Dec 2016	0.000		4.409	Continuing	Continuing	-
AF EW Capability/ Development Planning	MIPR	Various : Various	-	22.955	Dec 2014	3.285	Dec 2015	4.397	Dec 2016	0.000		4.397	Continuing	Continuing	-
<b>Subtotal</b>			-	25.705		7.983		8.806		0.000		8.806	-	-	-

**Remarks**  
Includes system of systems engineering; architecture development; network requirements planning; requirements refinement and development; EW assessments, including Air Force Electronic Warfare Capability Investment Strategy (AFEWCIS) roadmap development, maintenance & assessments; technology risk mitigation, DoD scenario initiation & distribution; working group support; engineering and test planning; capability planning for AF EW portfolio; conduct of constructive/virtual modeling simulation and analysis.

<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Mission Support	Various	Various : Various	-	0.850	Dec 2014	0.375	Dec 2015	0.381	Dec 2016	0.000		0.381	Continuing	Continuing	-
<b>Subtotal</b>			-	0.850		0.375		0.381		0.000		0.381	-	-	-

**Remarks**  
Element includes miscellaneous support to projects. Costs include travel and unique security expenses.





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**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Air Force **Date:** February 2016

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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
DoD Planning Scenarios Suppressor updates	1	2015	4	2020
Continuing to Support EW Assessments	1	2015	4	2020
AEA SoS Suppressor Improvements	1	2015	4	2020
AF EW Investment Strategy	1	2015	4	2020
AESA/RWR analysis/test	1	2015	4	2015
Non Kinetic Counter Electronics Analysis	1	2015	4	2016
NKCE Technology Demonstration	1	2015	2	2015