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

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604425F / <i>Space Situation Awareness Systems</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	-	0.000	0.000	9.901	0.000	9.901	34.664	39.618	0.000	0.000	Continuing	Continuing
640290: <i>Deep Space Advanced Radar Concept</i>	-	0.000	0.000	9.901	0.000	9.901	34.664	39.618	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This program, BA 04 PE 0604425F, project 640290, DARC Technology maturation and prototype development, is a new start.

A. Mission Description and Budget Item Justification

Deep Space Advanced Radar Concept (DARC) will leverage ongoing defense science and technology efforts to mature radar concepts and technologies to develop and evaluate prototypes that demonstrate increased sensitivity, capacity, search rates, and scalability to detect, track and maintain custody of objects in deep space orbit. This effort will analyze and select the most promising technologies to move forward into system development and/or operations. The Deep Space Advanced Radar Concept will augment the Space Surveillance Network (SSN) as an additional sensor with increased capacity and capability for deep space object custody at GEO. The Deep Space Advanced Radar Concept effort will coordinate with the JSpOC Mission System (JMS) program to ensure integration with enterprise data fusion and dissemination to support space battle management and command, control and communications (BMC3).

Deep Space Advanced Radar Concept (DARC) 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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	9.901	0.000	9.901
Total Adjustments	0.000	0.000	9.901	0.000	9.901
• 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	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	9.901	0.000	9.901

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
Title: DARC Technology maturation and prototype development	-	-	9.901
Description: Leverage ongoing defense science and technology efforts to mature radar concepts and technologies to develop and evaluate prototypes that demonstrate increased sensitivity, capacity, search rates, and scalability to detect, track and maintain custody of objects in deep space orbit.			
FY 2017 Plans: Identify and evaluate potential candidate radar concepts and technologies. Develop relevant technologies and conduct initial proof of concept demonstrations to inform future radar prototyping efforts.			
Accomplishments/Planned Programs Subtotals	-	-	9.901

D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	-

Remarks

E. Acquisition Strategy

Project utilizes existing DoD engineering and study contracts and activities to conduct science and technology development and data analysis activities.

F. Performance Metrics

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

Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604425F / <i>Space Situation Awareness Systems</i>	Project (Number/Name) 640290 / <i>Deep Space Advanced Radar Concept</i>
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Product Development (\$ in Millions)				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			
Concept Definition, Prototype Development and Analysis	Various	Various : Various	-	0.000		0.000		7.913	Oct 2016	0.000		7.913	Continuing	Continuing	-
Subtotal			-	0.000		0.000		7.913		0.000		7.913	-	-	-

Support (\$ in Millions)				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			
Prototype System and Sustainment Analyses	MIPR	AFRL : Albuquerque, NM	-	0.000		0.000		1.150	Oct 2016	0.000		1.150	Continuing	Continuing	-
Subtotal			-	0.000		0.000		1.150		0.000		1.150	-	-	-

Test and Evaluation (\$ in Millions)				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			
Subtotal			-	-		-		-		-		-	-	-	-

Management Services (\$ in Millions)				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			
A&AS	Various	Various : Various	-	0.000		0.000		0.484	Oct 2016	0.000		0.484	Continuing	Continuing	-
FFRDC	SS/FP	MITRE Corp : Colorado Springs, CO	-	0.000		0.000		0.329	Oct 2016	0.000		0.329	Continuing	Continuing	-
Other Support	Various	SMC/SYG : Colorado Springs, CO	-	0.000		0.000		0.025	Oct 2016	0.000		0.025	Continuing	Continuing	-
Subtotal			-	0.000		0.000		0.838		0.000		0.838	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force								Date: February 2016			
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	Prior Years	FY 2015	FY 2016		FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	-	0.000	0.000		9.901	0.000	9.901	-	-	-	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604425F / <i>Space Situation Awareness Systems</i>	Project (Number/Name) 640290 / <i>Deep Space Advanced Radar Concept</i>

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	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
Concept Validation																												
Prototype Development																												
Operational Demonstrations																												
Final Report																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604425F / <i>Space Situation Awareness Systems</i>	Project (Number/Name) 640290 / <i>Deep Space Advanced Radar Concept</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Concept Validation	1	2017	4	2017
Prototype Development	1	2017	2	2018
Operational Demonstrations	2	2018	2	2020
Final Report	3	2020	3	2020