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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 1203174F I Space Innovation, Integration and Rapid Technology Development							
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	-	6.233	11.390	21.019	0.000	21.019	24.220	24.401	24.643	24.859	Continuing	Continuing
67A011: Space Analysis and Application Development	-	6.233	11.390	21.019	0.000	21.019	24.220	24.401	24.643	24.859	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Located at Peterson AFB, Colorado, the Space Innovation, Integration and Rapid Technology Development program develops and modifies modeling and simulation tools that Air Force Space Command's Space Analysis Center uses for operations research, military utility analyses, tradeoff studies, and other evaluations of space mission areas to guide planning, programming, requirements generation, analyses of alternatives, and other activities. Development activities incorporate changes in fielded and projected space operational capabilities, as well as technical improvements, into the group's software tools to ensure their data and technology remain current. Space Training Simulators develop and upgrades space training emulators using Standard Space Trainer (SST) to meet Space Mission Force (SMF) threat-based, advanced training requirements as well as funds connection to Distributed Mission Operations (DMO) training networks. Finally, its innovation, education, and training activities foster solutions to operational deficiencies and enhance the integration of space systems into Air Force operations, thereby enabling service and joint warfighters to realize the full potential of existing and planned space capabilities.

The current and future space domain demands that space systems be responsive to new and changing threats, and can rapidly integrate new capabilities to make our warfighting force more resilient in a contested battlespace. This agility, survivability, and rapid reconstitution must extend through the entire space warfighting enterprise, to include how we learn about the threat; develop solutions; acquire, test, deploy, train, operate and integrate new systems into the greater system of systems; and ensure our space mission force is ready to defeat a thinking adversary in a complex, multi-domain battlespace. The enterprise will use all of its elements to accelerate decision-making, prototype potential solutions, rapidly integrate decision-making tools and sustain a war-winning capability by delivering multi-domain effects in, from, and through space and cyberspace enabling battle management and resilience options to "fight through."

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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B. Program Change Summary (\$ in Millions)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget		3.070	11.390	11.178	0.000	11.178
Current President's Budget		6.233	11.390	21.019	0.000	21.019
Total Adjustments		3.163	0.000	9.841	0.000	9.841
• Congressional General Reductions		0.000	0.000			
• Congressional Directed Reductions		-1.500	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		-0.052	0.000			
• Other Adjustments		4.715	0.000	9.841	0.000	9.841
Change Summary Explanation						
FY2017: -\$1.500M Congressional reduction for unjustified request; \$4.715 FY2017 OCO						
FY2018: +\$8.3M increase from FY2017 for modeling and simulation development support to USSTRATCOM/DEPSECDEF Joint Warfighting Forum						
FY2019: +\$10.000M increase for Space Training Simulators						
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2017	FY 2018	FY 2019
Title: Model/Tool Development and Capability Upgrades				5.444	5.467	5.206
Description: Develops, verifies, and validates models for space and cyber mission areas and modifies existing models to portray new capabilities. Advancing modeling and simulation (M and S) tools to incorporate space effects at the campaign, mission and engagement levels with the goal of enhancing decision support, visualization, exercise and wargaming. Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to program office support, studies, technical analysis, prototyping, etc. The space and cyber M and S Models are used for military utility analyses, trade studies, and other evaluations of space/cyber programs supporting program offices at the Space and Missile Center, HQ AFSPC and other activities with a space/cyber focus.						
FY 2018 Plans:						
Develop and modify several models and tools in support of space and cyber analysis. Continue building on FY 2017 activities.						
SSNAM - Continue support to JMS and analysis and studies of the Space Surveillance Network						
SEAS/STORM - Continue to produce technically sound and responsive space/cyberspace analyses analyzing warfighter ops in a highly-contested environment in support of national and military needs (SEV and JSOTF)						

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019
Other model modifications as needed based on leadership questions and future AoAs				
FY 2019 Plans: Continue to develop and modify several models and tools in support of space and cyber analysis. Continue building on FY 2018 activities.				
SSNAM - Continue support to JMS and analysis and studies of the Space Surveillance Network				
SEAS/STORM - Continue to produce technically sound and responsive space/cyberspace analyses analyzing warfighter ops in a highly-contested environment in support of national and military needs (SEV and JSOTF)				
Other model modifications as needed based on leadership questions and future AoAs				
FY 2018 to FY 2019 Increase/Decrease Statement: FY2019 decreased compared to FY2018 by \$0.261M. Justification for this increase is described in plans above.				
Title: Model Verification		0.319	2.392	2.347
Description: Verification of changes made to models.				
FY 2018 Plans: Verification of model changes resulting from Model Development and Modification efforts.				
FY 2019 Plans: Continue verification of model changes resulting from Model Development and Modification efforts.				
FY 2018 to FY 2019 Increase/Decrease Statement: FY2019 decreased compared to FY2018 by \$0.045M. Justification for this increase is described in plans above.				
Title: Model Validation		0.470	3.531	3.466
Description: Validated model change results.				
FY 2018 Plans: Validation of model changes resulting from Model Development and Modification efforts.				
FY 2019 Plans: Continue validation of model changes resulting from Model Development and Modification efforts.				
FY 2018 to FY 2019 Increase/Decrease Statement:				

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019							
FY2019 decreased compared to FY2018 by \$0.065M. Justification for this increase is described in plans above.											
Title: Space Training Simulators Description: Develop/upgrade Standard Space Trainer (SST) simulators to meet Space Mission Force (SMF) threat-based, advanced training requirements as well as builds connectivity to Distributed Mission Operations (DMO) training networks. FY 2019 Plans: Distributed Mission Operations - Space (DMO-S) modeling and simulation development and develop the Geostationary Space Situational Awareness (GSAAP) Standard Space Trainer (SST). GSSAP SST will include DMO connectivity, Enterprise Ground Service (EGS) compatibility, and Blue/White/Red operator-in-the-loop modeling and simulation consoles (i.e., GSSAP space operator consoles, instructor/evaluator consoles, and opposing force consoles). FY 2018 to FY 2019 Increase/Decrease Statement: N/A		-	-	10.000							
Accomplishments/Planned Programs Subtotals		6.233	11.390	21.019							
D. Other Program Funding Summary (\$ in Millions)											
Line Item	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
• SPAF 01 GNRLT: <i>General IT</i>	1.481	1.661	1.577	-	1.577	1.592	1.620	1.649	1.679	Continuing	Continuing
Remarks Funding and content procures equipment for the SIIRTD AFSPC Virtual Analysis Capability (AVAC) system. Supports space and cyber modeling and analysis using a variety of Linux and Windows based hardware and software suites. Also procures Information Technology (IT) hardware & software infrastructure for the Distributed Communications Architecture.											
E. Acquisition Strategy Any new projects funded in this program will be awarded using competitive procedures to the maximum extent possible.											
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 2019 Air Force												Date: February 2018					
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 1203174F / Space Innovation, Integration and Rapid Technology Development						Project (Number/Name) 67A011 / Space Analysis and Application Development					
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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		
Develop/modify software tools/models - OCO	C/Various	Various : Various	-	4.715	Aug 2017	0.000		0.000		0.000		0.000	Continuing	Continuing	-		
Develop/modify software tools/models	C/CPFF	SimaTek : Denver, CO	-	0.633	Mar 2017	1.183	Mar 2018	1.049	Mar 2019	0.000		1.049	Continuing	Continuing	-		
Develop/modify software tools and models	C/CPFF	Segue Corp : Lake Forest, CA	-	0.885	Jan 2017	1.774	Jan 2018	1.574	Jan 2019	0.000		1.574	Continuing	Continuing	-		
Develop and modify software tools/models	C/CPFF	Segue Corp : Lake Forest, CA	-	0.000		8.433	Jun 2018	8.396	Jun 2019	0.000		8.396	Continuing	Continuing	-		
Space Training Simulator Development	C/CPFF	Sonalysts Inc : San Diego, CA	-	-		-		10.000	Dec 2018	0.000		10.000	Continuing	Continuing	-		
Subtotal			-	6.233		11.390		21.019		0.000		21.019	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			-	6.233		11.390		21.019		0.000		21.019	Continuing	Continuing	N/A		
Remarks																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force			Date: February 2018		
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	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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
SIIRTD																												
Model development/modification, verification, and validation																												
Space Training Simulators																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 1203174F / <i>Space Innovation, Integration and Rapid Technology Development</i>	Project (Number/Name) 67A011 / <i>Space Analysis and Application Development</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
SIIRTD				
Model development/modification, verification, and validation	1	2017	4	2023
Space Training Simulators	1	2019	4	2023