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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 6: RDT&E Management Support					R-1 Program Element (Number/Name) PE 1206116F I Space Test and Training Range 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	-	17.912	25.773	23.254	0.000	23.254	19.942	20.288	20.709	21.086	Continuing	Continuing
666156: Space Test and Training Range Development	-	17.912	25.773	23.254	0.000	23.254	19.942	20.288	20.709	21.086	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Supports the development of Space Test and Training Range (STTR) capabilities critical for developmental and operational test, training, exercises and tactics development for Space Control systems and Joint National Space Architecture. Includes development, demonstration and delivery of test assets, special test equipment, capabilities and systems required to test, validate, and verify performance of integrated space control systems. Provides a safe, secure, controllable and repeatable environment for the testing and training of Space Control mission systems and operators that is both realistic and relevant. Additionally, this program develops test range assets for both the fixed node Space Range Operation Center (SROC) at Schriever AFB and a deployable capability to support complex Joint and AF exercises. The virtual range as part of the Family of Systems (FoS), called Big Top, is being developed to accomplish the STTR mission. Big Top integrates to a Distributed Mission Architecture, tying into both the Information Operations (IO) and Air ranges for increased realism and complexity required to prepare space operators for real-world threats. This technology will allow for the first-ever use of a realistic signal environment to increase the realism and efficiency of space control squadron training.

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 element may include necessary civilian pay expenses required to manage, execute, and deliver STTR weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 1206392F and 1206398F.

This program is in Budget Activity 6, RDT&E Management Support because this budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation.

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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	18.528	25.773	23.429	0.000	23.429	
Current President's Budget	17.912	25.773	23.254	0.000	23.254	
Total Adjustments	-0.616	0.000	-0.175	0.000	-0.175	
• 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	-0.616	0.000	-0.175	0.000	-0.175	
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2017	FY 2018	FY 2019
Title: Range Control				17.912	25.554	23.031
Description: Development and acquisition of mobile, transportable, virtual, and fixed range monitoring, emulation, and communications capabilities for the space range.						
FY 2018 Plans: Continue development and acquisition of mobile, transportable, and fixed range monitoring and communications capabilities for the space range. Integrate STTR into other Air Force Range capabilities. Address Risk Management Framework (RMF) compliance, general obsolescence, outdated servers, database overhaul, Windows 10 migration, further hardening of hard drives, upgraded encryption, and software upgrades. Continue program office and other related support activities that may include, but are not limited to studies, technical analysis, etc.						
FY 2019 Plans: Continue development and acquisition of mobile, transportable, virtual, and fixed range monitoring, emulation, and communications capabilities for the space range. Integrate STTR into the Air Force Range capabilities. Address Risk Management Framework (RMF) compliance, general obsolescence, outdated servers, database overhaul, Windows 10 migration, further hardening of hard drives, upgrade encryption, and software upgrades. 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.						
FY 2018 to FY 2019 Increase/Decrease Statement: FY 2019 decreased compared to FY 2018 by \$2.523M. Justification for this decrease is described in plans above.						
Title: Bandwidth Support				0.000	0.219	0.223

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019
Description: Provides for leased Satellite Communication (SATCOM) bandwidth for STTR operations. FY 2018 Plans: Provide required space range satellite communications bandwidth for exercises, tests, and training of both offensive and defensive space control systems of the space range. Continue program office support and other related support activities that may include, but are not limited to studies, technical analysis, etc. FY 2019 Plans: Provide required space range satellite communications bandwidth for exercises, tests, and training of both offensive and defensive space control systems of the space range. FY 2018 to FY 2019 Increase/Decrease Statement: FY 2019 increased compared to FY 2018 by \$0.004M. Justification for this increase is described in plans above.				
Accomplishments/Planned Programs Subtotals		17.912	25.773	23.254
D. Other Program Funding Summary (\$ in Millions) N/A Remarks E. Acquisition Strategy All contracts funded in this program element 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.				