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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 6: RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0605864F / <i>Space Test Program (STP)</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	-	20.552	28.143	27.070	0.000	27.070	25.325	25.802	26.281	26.748	Continuing	Continuing
662617: <i>Free-Flyer Spacecraft Missions</i>	-	20.552	28.143	27.070	0.000	27.070	25.325	25.802	26.281	26.748	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Space Test Program (STP) conducts space test missions for the purpose of accelerating DoD space technology transformation while lowering developmental risk. The program flies an optimally selected number of DoD-sponsored experiments consistent with Space Experiments Review Board (SERB) priority, opportunity, and funding. STP missions provide a cost-effective way to flight test new militarily relevant space system technologies, concepts, and designs, providing a way to:

- Support the acquisition block development approach
- Demonstrate and develop responsive research and development (R&D) space capabilities
- Provide early operational capabilities to quickly react to new developments
- Perform operational risk reduction through direct flight test of prototype components
- Improve operational design by characterizing the space environment, event, or sensor physics proposed for an operational system/system upgrade
- Develop, integrate, test, and acquire advanced payload support hardware for launch vehicles (LV) and human-rated spaceflight vehicles

The Deputy Secretary of Defense Space Test Program Management & Funding Policy, issued in July 2002, reaffirmed STP as the primary provider of spaceflight for the DoD space research community. The July 2002 policy statement also reaffirmed STP's role as the single manager for all DoD payloads on the International Space Station (ISS).

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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	21.161	28.228	27.339	0.000	27.339
Current President's Budget	20.552	28.143	27.070	0.000	27.070
Total Adjustments	-0.609	-0.085	-0.269	0.000	-0.269
• Congressional General Reductions	0.000	-0.085			
• 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	-0.609	0.000			
• Other Adjustments	0.000	0.000	-0.269	0.000	-0.269
 Change Summary Explanation					
FY15 -\$.609M SBIR					
FY16 -\$.085M FFRDC FY16 Mark					
FY17 -\$.269M Inflation Rates For Non-Pay/Non-Fuel					

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
Title: Payload Integration	9.277	18.485	15.965
Description: Integrate payloads onto spaceflight missions, including free-flyer payloads, hosted payloads, sounding rockets, experiments on the International Space Station, and commercial missions. Includes acquisition of associated spacecraft and integration hardware. Provide the unique program costs required for the operation of the Space Test Program in its management and oversight role including program management, administrative, information technology, travel and supply support. This effort includes program support.			
FY 2015 Accomplishments:			
Continued support to the STP-2 launch mission carrying ~16 Space Experiment Review Board (SERB) experiments (see remarks). Continued the integration of the Eagle Spacecraft Platform to host five SERB experiments from the Air Force Research Laboratory (AFRL) including Hyper Temporal-Spectrometer Imager (HTI) missile detection (2013 #1), MYCROFT (2013 #5), Compact Environmental Anomaly Sensor III Risk Reduction Payload (CEASE III RR) (2014 #9), Inverse Synthetic Aperture Ladar (ISAL)(2014 #14), and AFRL - 1201 Resilient Spacecraft Bus Development Experiment (ARMOR) (2012 #32) requiring flight to geo-synchronous orbit (GEO). Continuing development of STP Satellite #4 (STPSat-4) to host three SERB payloads for launch and deployment from the ISS in 2016 and STP Satellite #5 (STPSat-5) to host four SERB payloads for a polar orbit launch in 2017. Continue to integrate the STP H-5 experiment payload pallet for flight on the ISS; STP H-5 will carry the Rad-Hardened			

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
<p>Electronic Memory Experiment (RHEME) (2014 #4), Limb-Imaging Ionospheric and Thermospheric Extreme UV Spectrographs (LITES) (2014 #15), GPS Radio Occultation and Ultraviolet Photometry - Colocated GROUP-C) (2014 #23), Automated Plume Sentry (APS) (2013 #54), Spacecraft Structural Health Monitoring (Spacecraft SHM) (2014 #33), and for rapid Anomaly Resolution Integrated Miniaturized Electrostatic Analyzer-Reflight (iMESA-R) (2013 #57) SERB payloads.</p> <p>Completed the design of STPSat-6 to serve as the prime payload for the STP-3 medium launch mission to GEO, hosting a minimum of six SERB payloads. Provided the unique program costs required for the operation of the Space Test Program (STP) in its management and oversight role including program management, administrative, information technology, travel and supply support.</p> <p>FY 2016 Plans: Continue payload integration efforts onto spaceflight missions (STPSat-4 and STPSat-5). Begin acquisition and integration of STPSat-6, and STP-H6 for the ISS. STP will fund operations for NASA's Green Propellant Infusion Mission carrying Space Object Self-tracker(2013 #41), Small Wind And Temperature Spectrometer (SWATS) (2014 #11) and iMESA-R (2013 #57) SERB experiments. Continue to provide the unique program costs required for the operation of the STP in its management and oversight role including program management, administrative, information technology, travel and supply support.</p> <p>FY 2017 Plans: Continue payload integration on to STPSat-6, STP-H6, and other efforts onto spaceflight missions. Continue to provide the unique program costs required for the operation of the Space Test Program in its management and oversight role including program management, administrative, information technology, travel and supply support.</p>				
<p>Title: Launch Vehicle and Launch Services</p> <p>Description: Purchase launch services, launch vehicles and launch vehicle support for free-flyer payloads, hosted payloads, sounding rockets, experiments on the ISS, and commercial spaceflight missions.</p> <p>FY 2015 Accomplishments: Continued integration efforts for the Kestrel Eye II spacecraft for a commercial launch/deployment via NASA's NanoRacks contract. Finalized and launched the Charged Aerosol Release Experiment #2 (CARE-2) sounding rocket missions from Andoya Norway using NASA Wallops Flight Facility's sounding rocket capability. Coordinated support from AFSPC for the next medium launch mission, STP-3, as a direct inject to GEO launch.</p> <p>FY 2016 Plans:</p>		9.609	8.764	9.652

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
<p>Continue purchase of launch services for STPSat-5, launch vehicles, and launch vehicle support for free-flyer payloads, hosted payloads, sounding rockets, experiments on the ISS, and commercial spaceflight missions. Forecasted launch STP-2 medium launch mission and launch Kestrel Eye II.</p> <p>FY 2017 Plans: Continue purchase of launch services, launch vehicles, and launch vehicle support for free-flyer payloads, hosted payloads, sounding rockets, experiments on the ISS, and commercial spaceflight missions. Plans to launch STPSat-5, EAGLE on the AFSPC-11, and additional payloads to the ISS in FY17.</p>			
<p>Title: On Orbit Satellite Operations</p> <p>Description: Execute first-year operations and operations support for STP-sponsored missions.</p> <p>FY 2015 Accomplishments: Executed first-year operations and operations support for STP-sponsored missions, including operations for the STP Satellite #3 (STPSat-3). STPSat-3 hosted six payloads including the Air Force Research Lab (AFRL) Strip Sensor Unit (Space Experiment Review Board (SERB) #10), Naval Research Laboratory small Wind and Temperature Spectrometer (SERB #26), the US Air Force Academy's Integrated Miniaturized Electrostatic Analyzer Re-Flight (SERB #72), NASA/NOAA's Total Solar Irradiance Calibration Transfer Equipment, AFLR Joint Component Research (SERB Unranked), and the STP/AFRL De-orbit Module (Enabling Technology) and completed the first year of operations of the Automated Navigation and Guidance Experiment for Local Space (ANGELS).</p> <p>FY 2016 Plans: Complete forecasted launch and early-orbit checkout of the Demonstrations and Sciences experiment (DSX) (#1 2008) on STP-2. Execute first-year operations and/or operations support for STP-sponsored missions.</p> <p>FY 2017 Plans: Continued support of forecasted launch and early orbit checkout of the DSX mission on STP-2. Execute first-year operations and/or operations support for STP-sponsored missions, e.g. DSX, GPIM.</p>	1.666	0.894	1.453
Accomplishments/Planned Programs Subtotals	20.552	28.143	27.070

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</u> <u>Complete</u>	<u>Total Cost</u>
• RDT&E: BA03: PE0603401F: <i>Advanced Spacecraft Technology</i>	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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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</u> <u>Complete</u>	<u>Total Cost</u>
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Remarks
STP-2 is a dedicated research and development launch mission that also supports the commercial new entrant launch strategy. STP-2 will carry multiple Space Experiments Review Board approved payloads.

E. Acquisition Strategy

N/A

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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