

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force										Date: May 2017		
Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
3600: Research, Development, Test & Evaluation, Air Force I BA 3: Advanced Technology Development (ATD)					PE 0603444F I Maui Space Surveillance System (MSSS)							
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	-	12.303	11.681	10.433	0.000	10.433	11.912	12.147	12.390	12.638	Continuing	Continuing
634868: Maui Space Surveillance System	-	12.303	11.681	10.433	0.000	10.433	11.912	12.147	12.390	12.638	Continuing	Continuing
A. Mission Description and Budget Item Justification												
This program funds ground-based optical space situational awareness (SSA) technology development and demonstration at the Maui Space Surveillance System (MSSS) in Hawaii, as well as the operation and upgrade of the facility. Efforts in this program have been coordinated through the Department of Defense (DoD) Science and Technology (S&T) Executive Committee process to harmonize efforts and eliminate duplication.												
This program is in Budget Activity 3, Advanced Technology Development because this budget activity includes development of subsystems and components and efforts to integrate subsystems and components into system prototypes for field experiments and/or tests in a simulated environment.												
B. Program Change Summary (\$ in Millions)				FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total				
Previous President's Budget				12.853	11.681	11.681	0.000	11.681				
Current President's Budget				12.303	11.681	10.433	0.000	10.433				
Total Adjustments				-0.550	0.000	-1.248	0.000	-1.248				
• 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				-0.347	0.000							
• SBIR/STTR Transfer				-0.203	0.000							
• Other Adjustments				0.000	0.000	-1.248	0.000	-1.248				
Change Summary Explanation												
FY 2018 reduction is due to higher DoD priorities.												
C. Accomplishments/Planned Programs (\$ in Millions)										FY 2016	FY 2017	FY 2018
Title: Operate and Upgrade Maui Space Surveillance System (MSSS)										10.316	9.271	9.454
Description: Operate and upgrade the MSSS to support development, demonstration, and integration of ground-based optical SSA technologies.												

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force		Date: May 2017		
Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 3: Advanced Technology Development (ATD)</i>		R-1 Program Element (Number/Name) PE 0603444F / <i>Maui Space Surveillance System (MSSS)</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2016	FY 2017	FY 2018
<p>FY 2016 Accomplishments: Maintained MSSS facility and experimental equipment in a mission-ready state. Performed needed upgrades and modernization to keep facilities and equipment in good working order and allow MSSS to perform efficiently and reliably. Operated MSSS facility for development and demonstration of ground based optical SSA capabilities in conjunction with customer programs and an operational SSA mission. Installed Laser Guidestar system for atmospheric compensation at MSSS and initiated on-sky testing demonstration.</p> <p>FY 2017 Plans: Maintain MSSS facility and experimental equipment in a mission-ready state. Perform needed upgrades and modernization to keep facilities and equipment in good working order and allow MSSS to perform efficiently and reliably. Operate MSSS facility for development and demonstration of ground based optical SSA capabilities in conjunction with customer programs and an operational SSA mission. Apply Laser Guidestar system at MSSS to geosynchronous satellite imaging demonstration and detection of closely-spaced orbital objects.</p> <p>FY 2018 Plans: Maintain MSSS facility and experimental equipment in a mission-ready state. Perform needed upgrades and modernization to keep facilities and equipment in good working order and allow MSSS to perform efficiently and reliably. Operate MSSS facility for development and demonstration of ground based optical SSA capabilities in conjunction with customer programs and an operational SSA mission. Apply Laser Guidestar system at MSSS to geosynchronous satellite imaging demonstration.</p>				
<p>Title: Geosynchronous Object Sensor</p> <p>Description: Develop and demonstrate dual-use integrated sensor technology for imaging of geosynchronous objects as well as other long-range applications.</p> <p>FY 2016 Accomplishments: Initiated low power demonstration of augmented objects for refinement of full-power system. Completed build-out of low-power transceiver hardware and initiated telescope modifications for future demonstration of laser imaging of objects in geosynchronous orbit.</p> <p>FY 2017 Plans: Complete low power demonstration of augmented objects for refinement of full-power system. Begin build-out of full-power transceiver hardware and initiate telescope modifications for future demonstration of laser imaging of objects in geosynchronous orbit. Begin full-power demonstration of laser imaging of objects in geosynchronous orbit.</p> <p>FY 2018 Plans:</p>		1.987	2.410	0.979

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force		Date: May 2017		
Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 3: Advanced Technology Development (ATD)</i>		R-1 Program Element (Number/Name) PE 0603444F <i>I Maui Space Surveillance System (MSSS)</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2016	FY 2017	FY 2018
Complete full-power demonstration of laser imaging of objects in geosynchronous orbit. Investigate options to scale technology to smaller apertures and enable range profiling of geosynchronous satellites for rapid orbit determination.				
Accomplishments/Planned Programs Subtotals		12.303	11.681	10.433
D. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
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.				