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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
3600: <i>Research, Development, Test & Evaluation, Air Force I BA 3: Advanced Technology Development (ATD)</i>					PE 0603444F / <i>Maui Space Surveillance System (MSSS)</i>							
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	-	9.755	10.674	11.878	0.000	11.878	12.094	12.319	11.728	11.968	Continuing	Continuing
634868: <i>Maui Space Surveillance System</i>	-	9.755	10.674	11.878	0.000	11.878	12.094	12.319	11.728	11.968	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 element may include necessary civilian pay expenses required to manage, execute, and deliver science & technology capabilities. The use of program funds in this PE would be in addition to the civilian pay expenses budgeted in program elements 0601102F, 0602102F, 0602201F, 0602202F, 0602203F, 0602204F, 0602602F, 0602605F, 0602788F, 1206601F, and 0602298F.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	10.433	10.674	11.878	0.000	11.878
Current President's Budget	9.755	10.674	11.878	0.000	11.878
Total Adjustments	-0.678	0.000	0.000	0.000	0.000
• 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	-0.115	0.000			
• Other Adjustments	-0.563	0.000	0.000	0.000	0.000

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Operate and Upgrade Maui Space Surveillance System		8.840	10.674	11.878	0.000	11.878
Description: Operate and upgrade the Maui Space Surveillance System (MSSS) to support development, demonstration, and integration of ground-based optical space situational awareness (SSA) technologies.						
FY 2019 Plans: Continue to maintain Maui Space Surveillance System 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 Maui Space Surveillance System to perform efficiently and reliably. Operate Maui Space Surveillance System facility for development and demonstration of ground based optical space situational awareness capabilities in conjunction with customer programs and an operational space situational awareness mission. Accept control of dynamic telescope system operations into Maui Space Surveillance System capability baseline as components are generated.						
FY 2020 Base Plans: Continue to maintain Maui Space Surveillance System (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 Maui Space Surveillance System to perform efficiently and reliably. Continue to operate Maui Space Surveillance System facility for development and demonstration of ground based optical space situational awareness (SSA) capabilities in conjunction with customer programs and an operational Space Situational Awareness mission. Continue to accept control of geosynchronous satellite imaging capability, collecting images as requested by mission partners. Begin transition of dynamic telescope system operations into Maui Space Surveillance System capability baseline.						
FY 2020 OCO Plans: Not Applicable						
FY 2019 to FY 2020 Increase/Decrease Statement: FY 2020 increased compared to FY 2019 by \$1.204 million. Funding increased due to additional support for facility security.						
Title: Geosynchronous Object Sensor		0.915	0.000	0.000	0.000	0.000
Description: Develop and demonstrate dual-use integrated sensor technology for imaging of geosynchronous objects as well as other long-range applications.						

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C. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020 Base
FY 2019 Plans: This work was completed in FY 2018. FY 2020 Base Plans: Not applicable FY 2020 OCO Plans: Not Applicable FY 2019 to FY 2020 Increase/Decrease Statement: Not Applicable					
Accomplishments/Planned Programs Subtotals			9.755	10.674	11.878
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.					