Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force											Date: February 2019	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 3: *Advanced Technology Development (ATD)*					R-1 Program Element (Number/Name) PE 0603203F / *Advanced Aerospace Sensors*							
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	-	46.784	44.968	38.292	0.000	38.292	38.538	40.980	41.079	41.400	Continuing	Continuing
63665A: *Advanced Aerospace Sensors Technology*	-	28.634	24.992	21.277	0.000	21.277	21.324	21.750	21.970	22.409	Continuing	Continuing
6369DF: *Target Attack and Recognition Technology*	-	18.150	19.976	17.015	0.000	17.015	17.214	19.230	19.109	18.991	Continuing	Continuing

A. Mission Description and Budget Item Justification

The program develops and demonstrates advanced technologies for electro-optical sensors, radar sensors and electronic counter-countermeasures, and components and algorithms. It also develops and demonstrates radio frequency (RF) and electro-optical (EO) sensors for detecting, locating, and targeting airborne, fixed, and time-critical mobile ground targets obscured by natural or man-made means. This program develops the means to find, fix, target, track, and engage air and ground targets anytime, anywhere, and in any weather. This program has been coordinated through the Department of Defense Science and Technology 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 such program funds 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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603203F / *Advanced Aerospace Sensors*	

B. Program Change Summary ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	40.978	39.968	41.662	0.000	41.662
Current President's Budget	46.784	44.968	38.292	0.000	38.292
Total Adjustments	5.806	5.000	-3.370	0.000	-3.370
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	7.000	5.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-1.194	0.000			
• Other Adjustments	0.000	0.000	-3.370	0.000	-3.370

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2018	FY 2019
Project: 63665A: *Advanced Aerospace Sensors Technology*		
Congressional Add: *Program Increase*	6.826	0.000
Congressional Add: *Program increase - sensor integration*	0.000	5.000
Congressional Add Subtotals for Project: 63665A	6.826	5.000
Congressional Add Totals for all Projects	6.826	5.000

Change Summary Explanation

Decrease in FY 2020 due to realignment of electronic warfare science and technology funding from PE 0603203F, Advanced Aerospace Sensors to PE 0602204F, Aerospace Sensors.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force			Date: February 2019
Appropriation/Budget Activity 3600 / 3	R-1 Program Element (Number/Name) PE 0603203F / *Advanced Aerospace Sensors*	Project (Number/Name) 63665A / *Advanced Aerospace Sensors Technology*	

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
63665A: *Advanced Aerospace Sensors Technology*	-	28.634	24.992	21.277	0.000	21.277	21.324	21.750	21.970	22.409	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project area develops and demonstrates aerospace sensor and processing technologies for intelligence, surveillance, reconnaissance, target, and attack radar applications in both manned and unmanned platforms, including electro-optical sensors and electronic counter-countermeasures for radars. It provides aerospace platforms with the capability to precisely detect, track, and target both airborne (conventional and low radar cross-section) and ground-based, high-value, time-critical targets in adverse clutter and jamming environments. Project activities include developing multi-function radio-frequency systems including radar and electronic warfare technology and the position and timing information to enable distributed sensing. Desired warfighting capabilities include the ability to detect concealed targets in difficult background conditions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Persistent Sensing in Contested Environment Technologies	2.761	2.412	2.987	0.000	2.987
Description: Develop active radio frequency sensor solutions to use against difficult-to-detect targets in challenging environments, and advanced radio frequency architectures for open and reconfigurable systems. Enable persistent intelligence, surveillance and reconnaissance over wide areas, and detect advanced air and ground targets. ***FY 2019 Plans:*** Conduct controlled environment ground-based data collections to validate distributed coherent radar proof-of-concept at X and S-bands for synthetic aperture radar. ***FY 2020 Base Plans:*** Analyze results of ground-based data collections extending models to include more complex platform motion and timing synchronization as a foundation for FY 2022 airborne distributed coherent radar proof-of-concept. ***FY 2020 OCO Plans:*** Not applicable ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2020 increased compared to FY 2019 by $0.575 million. Justification for this increase is described in plans above.					
Title: Passive Radio Frequency Sensing Technologies	4.844	4.523	5.500	0.000	5.500

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603203F / *Advanced Aerospace Sensors*	**Project (Number/Name)** 63665A / *Advanced Aerospace Sensors Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Description: Develop advanced techniques and prototype passive radio frequency sensors to intercept, collect, locate and track enemy radio frequency sensor systems for intelligence, surveillance and reconnaissance of air and ground targets. ***FY 2019 Plans:*** Integrate millimeter-wave hardware and software radio frequency sensor suite for proof-of-concept to intercept, collect, locate and track evolving adversary air and ground sensor systems with evolving agile radio frequency signals of interest. ***FY 2020 Base Plans:*** Conduct outdoor range testing of integrated millimeter-wave hardware and software radio frequency sensor suite against calibrated radio frequency signals to validate operating conditions. ***FY 2020 OCO Plans:*** Not applicable ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2020 increased compared to FY 2019 by $0.977 million. Justification for this increase is described in plans above.					
Title: Long Range Sensing Technologies ***Description:*** Develop radio frequency sensor technology to detect, locate, and identify air and ground targets at long ranges, including those that are low-observable, or use deception or camouflage. ***FY 2019 Plans:*** Integrate Passive Radar Illumination Selection Manager hardware and software and conduct data collection on a finite number of radio frequency emitters (cooperative/non-cooperative) and assess the utility of correlated multi-mode operation. Evaluate data collected from experiments that coordinate air and space radio frequency sensors for detection and location of air and ground radio frequency emitters. ***FY 2020 Base Plans:*** Conduct additional Passive Radar Illumination Selection Manager data collection by increasing the number of emitters and raise the complexity of the radio frequency waveforms used in order to further test the automated operation of the illumination selection manager hardware/software suite. Conduct additional air and space radio	2.613	2.262	2.903	0.000	2.903

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603203F / *Advanced Aerospace Sensors*	**Project (Number/Name)** 63665A / *Advanced Aerospace Sensors Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
frequency sensor detection and location of air/ground radio frequency emitters to improve fidelity of multi-mode radar signal processing tools. ***FY 2020 OCO Plans:*** Not applicable ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2020 increased compared to FY 2019 by $0.641 million. Justification for this increase is described in plans above.					
Title: Passive Electro-Optical Sensing for Surveillance and Reconnaissance Technologies	7.397	6.933	5.998	0.000	5.998
Description: Advance, demonstrate, and transition innovative imaging and non-imaging optical sensing technologies for surveillance and reconnaissance of airborne and ground-based objects of interest in an anti-access/area denial environment. This effort includes the development of systems, subsystems, and components necessary to yield new capabilities. ***FY 2019 Plans:*** Complete focal plane and other component technologies to enhance performance of a staring infrared search and track architecture. Prepare for a flight test of a staring infrared search and track architecture. Continue examination of approaches and technologies to reduce size, weight and power of an infrared search and track system while maintaining operationally relevant performance. Continue improvements in algorithms and software required for target detection and tracking and clutter suppression. Test candidate systems and subsystems in a laboratory environment. Advance and refine engineering trades and system optimization for this novel approach, through modeling and simulation. Continue refinement and prototyping of novel software/ hardware combined sensing strategy for turbulence mitigation in passive electro-optical/infrared reconnaissance systems to improve the useful range beyond the current state of the art. ***FY 2020 Base Plans:*** Complete fabrication of read-out integrated circuit, focal plane and prototype integrated dewar assembly for the flight infrared search and track system. Conduct flight testing and report performance of both the hardware and detection and tracking algorithms. Procure and integrate dual-band test components for tower collection. Complete dual-band infrared tower collection to analyze imaging improvements with new focal plane array technologies. ***FY 2020 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603203F / *Advanced Aerospace Sensors*	**Project (Number/Name)** 63665A / *Advanced Aerospace Sensors Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Not applicable ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2020 decreased compared to FY 2019 by $0.935 million. Justification for this decrease is described in plans above.					
Title: Laser Radar for Non-Cooperative Identification ***Description:*** Advance, demonstrate, and transition innovative laser radar sensing technologies for non-cooperative identification of airborne and ground objects of interest in an anti-access/area denial environment. This effort includes the development of systems, subsystems and components necessary to yield new capabilities. ***FY 2019 Plans:*** Establish predictive synthetic aperture laser radar performance model based on measured data and theoretical modeling. Continue development and integration of enhanced components and subsystems. Demonstrate the associated improvement in performance in a laboratory environment. Refine and test holographic aperture laser radar technology under development based on modeling and simulation to enhance spatial resolution beyond the diffraction limit of individual optical apertures. Fabricate, modify, and test critical components and subsystems for a holographic aperture laser radar demonstration in a laboratory environment. Continue sensor automatic target recognition software by applying previous phenomenology research and advanced mathematical concepts. Continue emphasizing long range air-to-air laser radar concepts through modeling and simulation to support system design and analysis of alternatives. Prepare for future technology demonstrations to advance system, subsystem, and component technology readiness levels. ***FY 2020 Base Plans:*** Conduct flight test of pathfinder laser for novel 3 dimension shape sensing waveform. Continue development of agile waveform, high power laser. Continue flight testing of synthetic aperture lidar capability with an emphasis on collecting data for processing improvements, for automatic target recognition, and for anchoring modeling and simulation for future performance predictions. Continue flight testing of a vibration sensing system to collect data for an aided target recognition study. ***FY 2020 OCO Plans:*** Not applicable ***FY 2019 to FY 2020 Increase/Decrease Statement:***	4.193	3.862	3.889	0.000	3.889

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603203F / *Advanced Aerospace Sensors*	**Project (Number/Name)** 63665A / *Advanced Aerospace Sensors Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
FY 2020 increased compared to FY 2019 by $0.027 million. Justification for this increase is described in plans above.					
Accomplishments/Planned Programs Subtotals	21.808	19.992	21.277	0.000	21.277

	FY 2018	FY 2019
Congressional Add: Program Increase ***FY 2018 Accomplishments:*** Conducted congressionally directed effort. ***FY 2019 Plans:*** Not Applicable	6.826	0.000
Congressional Add: Program increase - sensor integration ***FY 2018 Accomplishments:*** Not Applicable ***FY 2019 Plans:*** Conduct Congressionally directed efforts	0.000	5.000
Congressional Adds Subtotals	6.826	5.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. 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.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force			Date: February 2019
Appropriation/Budget Activity 3600 / 3	R-1 Program Element (Number/Name) PE 0603203F / *Advanced Aerospace Sensors*	Project (Number/Name) 6369DF / *Target Attack and Recognition Technology*	

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
6369DF: *Target Attack and Recognition Technology*	-	18.150	19.976	17.015	0.000	17.015	17.214	19.230	19.109	18.991	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project area develops and demonstrates advanced technologies for closed-loop, multi-domain, multi-intelligence sources, multi-platform, multi-sensor automation and autonomy, providing capabilities in battle management, fire control, battlespace awareness and visualization, predictive analytics, target recognition, sensor and information fusion, and sensor / platform asset tasking. This project also conducts advanced investigations to determine solution credibility, in terms of underlying technology and in terms of consistency with future Air Force missions within highly contested environments. This project includes robust techniques to support intelligence, surveillance, and reconnaissance and targeting missions within adverse weather conditions and against adversaries employing deceptive techniques. This project includes development of software-intensive solutions suitable for cloud-based integration and for development/operations-like operational environments. This project develops technology for effective management of online and offline information sources incorporating both constrained and cooperative sensing. In FY 2020, this project was realigned to better reflect technical areas being emphasized such as autonomy, multi-domain and multi-sensor information processing, leverage of machine learning developments and enterprise-level modeling, simulation and analysis.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Integrated Sensor Targeting Technologies	3.359	3.697	0.000	0.000	0.000
Description: Develop an advanced suite of sensors with automatic target recognition, fusion, and target tracking, all working in concert to provide a high-confidence identification capability. ***FY 2019 Plans:*** Extend development of multi-intelligence detection for multiple named areas of interest in multiple areas of regard. Conduct laboratory test of task flexibility with payload management and knowledge reasoning with electronic support measure and intelligence, surveillance and reconnaissance. Initiate development of multi-platform resource management aggregate planning capability. ***FY 2020 Base Plans:*** Starting in FY 2020, this work will be performed under the Advanced Multisource Exploitation effort within Project 6369DF, Target Attack and Recognition Technology. ***FY 2020 OCO Plans:*** Not applicable ***FY 2019 to FY 2020 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603203F / *Advanced Aerospace Sensors*	**Project (Number/Name)** 6369DF / *Target Attack and Recognition Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
FY 2020 decreased compared to FY 2019 by $3.697 million. Funding decreased due to realignment to Advanced Multisource Exploitation effort within Project 6369DF, Target Attack and Recognition Technology.					
Title: Multi-Sensor Target Recognition ***Description:*** Develop and assess multi-sensor automatic target recognition for intelligence, surveillance, reconnaissance, strike, and weapon systems. ***FY 2019 Plans:*** Demonstrate flyable, real-time deep learning-based synthetic aperture radar target identification. Conduct large electro-optical data collection/characterization and assessment in conjunction with the National Geospatial-Intelligence Agency. Develop performance model for deep learning synthetic aperture radar target recognition. ***FY 2020 Base Plans:*** Starting in FY 2020, this work will be performed under the Advanced Modeling Simulation and Analysis for Multi-Intelligence/Domain Fusion and the Sensing Assignments and Multisource Analytics efforts within Project 6369DF, Target Attack and Recognition Technology. ***FY 2020 OCO Plans:*** Not applicable ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2020 decreased compared to FY 2019 by $8.216 million. Funding decreased due to realignment to Advanced Modeling Simulation and Analysis for Multi-Intelligence/Domain Fusion and Sensing Assignments and Multisource Analytics efforts within Project 6369DF, Target Attack and Recognition Technology.	7.465	8.216	0.000	0.000	0.000
Title: Wide-Angle Continuously-Staring Technologies ***Description:*** Develop wide angle, continuous staring, multi-sensor/wavelength sensing and automated exploitation technology to detect, track, and identify targets over large areas at high sensor update rates. ***FY 2019 Plans:*** Continue development of stand-off (air and space) and episodic stand-in sensing capabilities for contested and denied environments. Continue to demonstrate tracking, change detection, and image processing capabilities for data representative of contested and denied environments. Collect, process, and catalogue data from advanced wide-angle sensor. Develop feature aided tracking methods for wide angle radio frequency sensors.	7.326	8.063	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603203F / *Advanced Aerospace Sensors*	**Project (Number/Name)** 6369DF / *Target Attack and Recognition Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Initiate multi-target tracking, improvement to three-dimensional radar products, and surrogate radar sensing capability. ***FY 2020 Base Plans:*** Starting in FY 2020, this work will be performed under the Advanced Modeling, Simulation and Analysis for Multi-Intelligence/Domain Fusion and the Sensing Assignments and Multisource Analytics efforts within Project 6369DF, Target Attack and Recognition Technology. ***FY 2020 OCO Plans:*** Not applicable ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2020 decreased compared to FY 2019 by $8.063 million. Funding decreased due to realignment to Advanced Modeling, Simulation and Analysis for Multi-Intelligence/Domain Fusion and Sensing Assignments and Multisource Analytics efforts within Project 6369DF, Target Attack and Recognition Technology.					
Title: Advanced Multi-Source Exploitation ***Description:*** Demonstrate multi-source behavioral and physical knowledge generation algorithms on operational data sets for specific customers and evaluate the performance of the algorithms with respect to contested environment scenarios. Investigate methods for reducing the size, weight and power footprint of information fusion techniques to enable technology transition. Automate algorithm components to increase warfighter efficiency by reducing human-in-the-loop timeframes. Develop intelligent reasoning capabilities that inform operators with respect to information requirements to improve/enable mission success, for example, autonomously recommend additional data collection geometries/scenarios to enhance fusion for synthesis performance. ***FY 2019 Plans:*** For FY 2019 and prior, this work is performed under the Integrated Sensor Targeting Technologies effort within Project 6369DF, Target Attack and Recognition Technology. ***FY 2020 Base Plans:*** Mature and transition technology to three customers: Air Combat Command Combat Identification, Air Force Distributed Common Ground System, and Space. Candidate technologies include decision/feature-level	0.000	0.000	3.655	0.000	3.655

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603203F / *Advanced Aerospace Sensors*	**Project (Number/Name)** 6369DF / *Target Attack and Recognition Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
fusion for stationary target classification given multi-sensor imagery, and deep/machine learning detect/track/ identification techniques. ***FY 2020 OCO Plans:*** Not applicable ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2020 increased compared to FY 2019 by $3.655 million. Funding increased due to realignment from Integrated Sensor Targeting Technologies effort within Project 6369DF, Target Attack and Recognition Technology to better reflect technical areas being emphasized such as autonomy, multi-domain and multi-sensor information processing, leverage of machine learning developments and enterprise-level modeling, simulation and analysis.					
Title: Advanced Modeling, Simulation and Analysis for Multi-Intelligence/Domain Fusion ***Description:*** This advanced research will concentrate on leveraging existing modeling, simulation and analysis tactics, techniques and procedures as well as advancing the multi int/domain fusion of information to understand with greater fidelity how current and future generations of intelligence, surveillance and reconnaissance air, space and cyber sensing can be most effectively applied to the battlespace. ***FY 2019 Plans:*** For FY 2019 and prior, this work is performed under the Multi-Sensor Target Recognition and the Wide-Angle Continuously-Staring Technologies efforts within Project 6369DF, Target Attack and Recognition Technology. ***FY 2020 Base Plans:*** Advanced research investments will be made in the following: 1) increased fidelity and integration of air, space, cyber, and fusion performance models into modeling and simulation capabilities for phase 0 and phase 1/2 analysis, 2) specific analysis support to the Air Force Research Laboratory Enterprise modeling, simulation and analysis 3) Integration of distributed small satellites, cyber physical sensing, electronic warfare, and passive and multi-static radio frequency capabilities into the modeling, simulation and analysis baseline, and 4) increase focus on synthetic data generation as an alternative test method to measured data. ***FY 2020 OCO Plans:*** Not applicable ***FY 2019 to FY 2020 Increase/Decrease Statement:***	0.000	0.000	4.815	0.000	4.815

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603203F / *Advanced Aerospace Sensors*	**Project (Number/Name)** 6369DF / *Target Attack and Recognition Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
FY 2020 increased compared to FY 2019 by $4.815 million. Funding increased due to realignment from Multi-Sensor Target Recognition and Wide-Angle Continuously-Staring Technologies efforts within Project 6369DF, Target Attack and Recognition Technology to better reflect technical areas being emphasized such as autonomy, multi-domain and multi-sensor information processing, leverage of machine learning developments and enterprise-level modeling, simulation and analysis.					
Title: Sensing Assignments and Multisource Analytics ***Description:*** Develop advanced techniques for multi-domain closed-loop sensing that apply predictive analytics to available information, inferring candidate course-of-action hypotheses and recommending confirmatory / refutative sensing tasks. ***FY 2019 Plans:*** For FY 2019 and prior, this work is performed under the Multi-Sensor Target Recognition and the Wide-Angle Continuously-Staring Technologies efforts within Project 6369DF, Target Attack and Recognition Technology. ***FY 2020 Base Plans:*** Develop algorithms to generate and modify rule-based representations of adversary courses of action, and conduct laboratory tests to assess utility and streamline performance. Develop advanced representations of available sensing and platform assets, and develop techniques to correctly and automatically convert high-level sensing requests into detailed asset plans. ***FY 2020 OCO Plans:*** Not applicable ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2020 increased compared to FY 2019 by $8.545 million. Funding increased due to realignment from Multi-Sensor Target Recognition and Wide-Angle Continuously-Staring Technologies efforts within Project 6369DF, Target Attack and Recognition Technology to better reflect technical areas being emphasized such as autonomy, multi-domain and multi-sensor information processing, leverage of machine learning developments and enterprise-level modeling, simulation and analysis.	0.000	0.000	8.545	0.000	8.545
Accomplishments/Planned Programs Subtotals	18.150	19.976	17.015	0.000	17.015

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603203F / *Advanced Aerospace Sensors*	**Project (Number/Name)** 6369DF / *Target Attack and Recognition Technology*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

E. 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.