Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force											Date: April 2022	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 3: *Advanced Technology Development (ATD)*					R-1 Program Element (Number/Name) PE 0603216F / *Aerospace Propulsion and Power Technology*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	159.354	110.273	64.254	0.000	64.254	85.665	104.409	107.943	110.344	Continuing	Continuing
633035: *Aerospace Power Technology*	-	43.536	38.216	12.049	0.000	12.049	12.753	14.132	15.618	15.966	Continuing	Continuing
634093: *Missile Rocket Propulsion Integ & Demo*	-	0.000	22.612	3.192	0.000	3.192	8.899	9.250	9.480	9.690	Continuing	Continuing
634921: *Aircraft Propulsion Subsystems Int*	-	0.000	11.610	31.576	0.000	31.576	40.800	44.589	45.590	46.605	Continuing	Continuing
634922: *Space & Missile Rocket Propulsion*	-	75.666	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
635098: *Advanced Aerospace Propulsion*	-	0.000	17.019	17.437	0.000	17.437	23.213	36.438	37.255	38.083	Continuing	Continuing
63681B: *Advanced Turbine Engine Gas Generator*	-	40.152	20.816	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program develops and demonstrates technologies to achieve enabling and revolutionary advances in turbine, advanced-cycle, rocket, and space propulsion as well as electrical power, thermal management, and fuels. The program has five current projects, each focusing on technologies with a high potential to enhance the performance of existing and future Air Force weapon systems. The Aerospace Power Technology project develops and demonstrates adaptive power and thermal management components, controls, and systems for high-power payloads and aircraft as part of energy-optimized aircraft development. The Aircraft Propulsion Subsystems Integration project develops demonstrator engines by integrating the engine cores demonstrated in the Advanced Turbine Engine Gas Generator project with low-pressure components. The Advanced Aerospace Propulsion project develops the scramjet propulsion cycle to a technology readiness level appropriate for in-flight demonstration and for full integration with other engine cycles (including turbine and rocket based). The Advanced Turbine Engine Gas Generator project develops and demonstrates core turbine engine technologies for current and future aircraft propulsion systems. The Missile Rocket Propulsion project develops and demonstrates innovative rocket propulsion technologies, propellants, and manufacturing techniques.

All transfers detailed below are administrative realignments due to the stand up of the United States Space Force, and not new starts. This work will continue to be executed by the Air Force Research Laboratory Aerospace Systems Technology Directorate located in Wright Patterson Air Force Base, OH, Edwards Air Force Base, CA, or Arnold Air Force Base, TN.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force	Date: April 2022
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603216F / *Aerospace Propulsion and Power Technology*

In FY 2022, the work and funding associated with advanced space technology demonstrations in Program 0603216F, Aerospace Propulsion, Project 634922, Space & Missile Rocket Propulsion, are transferred to Appropriation 3620F, Research, Development, Test & Evaluation, Space Force, Program 1206616SF, Space Advanced Technology Development/Demo, Project 634922, Space & Missile Rocket Propulsion, due to the creation of a new Appropriation for Space Force.

In FY 2022, the work and funding associated with missile rocket propulsion technologies in Program 0603216F, Aerospace Propulsion, are transferred from Project 634922, Space & Missile Rocket Propulsion, to Project 634093, Missile Rocket Propulsion Integ & Demo due to the creation of a new Appropriation for Space Force.

The Department of the Air Force technologies in this program are both enabling and enduring as we invest in maturing emerging technologies that address established mission gaps, and transformational technologies that address integrated enterprise capabilities intended to reshape the future force across air, space, and cyber warfighting domains. Development of transformational operational capabilities through advanced technology solutions focuses on five strategic capabilities: Global Persistent Awareness; Resilient Information Sharing; Rapid, Effective Decision-Making; Complexity, Unpredictability, and Mass; and Speed and Reach of Disruption and Lethality.

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 program element would be in addition to the civilian pay expenses budgeted in program elements 0601102F, 0602020, 0602102F, 0602201F, 0602202F,0602203F, 0602204F, 0602602F, 0602605F, 0602788F, 0602298F, and 1206601SF.

Projects 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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	144.229	75.273	0.000	0.000	0.000
Current President's Budget	159.354	110.273	64.254	0.000	64.254
Total Adjustments	15.125	35.000	64.254	0.000	64.254
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	35.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	24.178	0.000			
• SBIR/STTR Transfer	-4.753	0.000			
• Other Adjustments	-4.300	0.000	64.254	0.000	64.254

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force	Date: April 2022
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603216F / *Aerospace Propulsion and Power Technology*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Project: 633035: *Aerospace Power Technology*		
Congressional Add: *Program increase - Silicon carbide research*	9.670	10.000
Congressional Add: *Program increase - low spool generator capabilities*	4.835	-
Congressional Add: *Program increase - advanced battery technology for directed energy*	4.851	-
Congressional Add: *Program increase - Domestic manufacturing of solid state power controllers*	0.000	10.000
Congressional Add Subtotals for Project: 633035	19.356	20.000
Project: 634093: *Missile Rocket Propulsion Integ & Demo*		
Congressional Add: *Program increase - Hypersonic liquid rocket propulsion*	0.000	10.000
Congressional Add: *Program increase - Altitude chamber infrastructure upgrades*	0.000	5.000
Congressional Add Subtotals for Project: 634093	0.000	15.000
Project: 634922: *Space & Missile Rocket Propulsion*		
Congressional Add: *Program increase - chemical apogee engines*	0.000	-
Congressional Add: *Program increase - upper stage engine maturation*	0.000	-
Congressional Add: *Program increase - space propulsion technologies*	0.000	-
Congressional Add: *Program increase - multi-mode propulsion*	4.835	-
Congressional Add: *Program increase - upper stage engine technology*	19.341	-
Congressional Add Subtotals for Project: 634922	24.176	-
Project: 63681B: *Advanced Turbine Engine Gas Generator*		
Congressional Add: *Program increase - small turbine engines for long range weapons*	16.440	-
Congressional Add Subtotals for Project: 63681B	16.440	-
Congressional Add Totals for all Projects	59.972	35.000

Change Summary Explanation

Increase in FY 2021 reflects reprogramming to support Research and Development Projects, 10 U.S.C. Section 2363, an amendment to PL 110-417, 10 U.S.C. Section 2358 and 10 U.S.C. 2805(d)(1)(B).

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force	Date: April 2022
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603216F / *Aerospace Propulsion and Power Technology*

The FY2022 President's Budget submittal did not reflect FY2023 through FY2026 funding. Therefore, an explanation of the change between the two budget positions for FY2023 cannot be made in a relevant manner.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force			Date: April 2022
Appropriation/Budget Activity 3600 / 3	R-1 Program Element (Number/Name) PE 0603216F / *Aerospace Propulsion and Power Technology*	Project (Number/Name) 633035 / *Aerospace Power Technology*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
633035: *Aerospace Power Technology*	-	43.536	38.216	12.049	0.000	12.049	12.753	14.132	15.618	15.966	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops and demonstrates system and subsystem integration to include adaptive architectures, actuation, electrical power, thermal management, and distribution for aerospace applications. This project develops and demonstrates the components, controls and systems required to satisfy the operational needs of current and future aircraft and enables the use of future high-power payloads. This technology enhances reliability and survivability, and reduces vulnerability, weight, and life cycle costs of air platforms. The electrical power system components developed are projected to provide a two-fold to five-fold improvement in aircraft reliability and maintainability, and a reduction in power system weight. This project is integrated into energy optimized aircraft efforts and power and thermal programs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: High Power Aircraft Subsystem Technologies	24.180	18.216	9.755
Description: Develop and demonstrate integrated architecture, controls and components for power generation, conditioning, and distribution; energy storage components; and thermal management and subsystem technologies for integration into high power aircraft. ***FY 2022 Plans:*** Continue development and demonstration of system and component electrical power, electro-mechanical, and thermal technologies for high-power aircraft. Continue the development of hybrid-cycle power and thermal management system. Continue development of advanced power generation and distribution system. Continue development and demonstration of integrated, adaptive megawatt- class tactical aircraft power and thermal capability. Continue development and demonstration of megawatt class architecture, controls and integration. Continue development and demonstration of robust electrical power systems for megawatt applications. Continue development and demonstration of thermal management systems for megawatt applications. ***FY 2023 Plans:*** Complete development and demonstration of system and component electrical power, electro-mechanical, and thermal technologies for high-power aircraft. Complete the development of hybrid-cycle power and thermal management system. Complete development of advanced power generation and distribution system. Continue development and demonstration of integrated, adaptive megawatt- class tactical aircraft power and thermal capability. Continue development and demonstration of megawatt class architecture, controls and integration. Complete development and demonstration of robust electrical power			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603216F / *Aerospace Propulsion and Power Technology*	**Project (Number/Name)** 633035 / *Aerospace Power Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
systems for megawatt applications. Complete development and demonstration of thermal management systems for megawatt applications. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 decreased compared to FY 2022 by $8.461 million. Due to database/systems issues, $8.507 million was erroneously moved to Program 0603211F, Aerospace Technology Dev/ Demo, Project 634927, Flight Systems Control under the Transformational Technology Development effort. The funding in this effort should have increased by $0.046 million in FY2023 compared to FY2022 due to increased emphasis on power and thermal management technologies related to autonomous systems. A technical adjustment will be submitted to correct this error.			
Title: Transformational Technology Development ***Description:*** Continually funded effort. This funding allocation will initiate new and continue existing Transformational Technology Development efforts. The Transformational Technology Development program will select new projects, in alignment with mission focused areas which include, but are not limited to: Intelligent Planning and Wargaming; Battlespace Awareness; Integrated Base Defense; and Hypersonic Multi-Mission Aircraft. Investments focus on technology development efforts including, but are not limited to technologies to enhance survivability, operability and performance of personnel, sensors, and structures in a threat environment through engine core and low spool component technologies. This investment is overseen by senior representatives from Air and Space Forces who participate in the submission, initial review, and down-selection of Transformational Technology Development proposed efforts. Final selections will be reviewed by the Air Force Deputy Assistant Secretary for Science, Technology, and Engineering before a final recommendation for Congressional approval is made. ***FY 2022 Plans:*** This effort is starting in FY2023. ***FY 2023 Plans:*** Continue to develop and demonstrate a capability for high speed delivery of area effects. Initiate projects selected from the annual WARTECH process that investigate Department of the Air Force prioritized topics. Continue to perform modeling, simulation, and analyses to establish the future force effect of candidate Transformational Component investments and continue the next cycle of WARTECH process. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 increased compared to FY 2022 by $2.294 million. Funding increased to scale investment toward the Department of the Air Force target outlined in the Air Force 2030 Science and Technology (S&T) Strategy.	0.000	0.000	2.294
Accomplishments/Planned Programs Subtotals	24.180	18.216	12.049

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603216F / *Aerospace Propulsion and Power Technology*	**Project (Number/Name)** 633035 / *Aerospace Power Technology*

	FY 2021	FY 2022
Congressional Add: Program increase - Silicon carbide research ***FY 2021 Accomplishments:*** Conduct Congressionally directed efforts. ***FY 2022 Plans:*** Conduct Congressionally directed efforts.	9.670	10.000
Congressional Add: Program increase - low spool generator capabilities ***FY 2021 Accomplishments:*** Conduct Congressionally directed efforts.	4.835	-
Congressional Add: Program increase - advanced battery technology for directed energy ***FY 2021 Accomplishments:*** Conduct Congressionally directed efforts.	4.851	-
Congressional Add: Program increase - Domestic manufacturing of solid state power controllers ***FY 2021 Accomplishments:*** Not applicable. ***FY 2022 Plans:*** Conduct Congressionally directed efforts.	0.000	10.000
Congressional Adds Subtotals	19.356	20.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force			Date: April 2022
Appropriation/Budget Activity 3600 / 3	R-1 Program Element (Number/Name) PE 0603216F / *Aerospace Propulsion and Power Technology*	Project (Number/Name) 634093 / *Missile Rocket Propulsion Integ & Demo*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
634093: *Missile Rocket Propulsion Integ & Demo*	-	0.000	22.612	3.192	0.000	3.192	8.899	9.250	9.480	9.690	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops technologies for the sustainment of strategic systems (including solid rocket motor boosters and missile propulsion, post boost control, and aging and surveillance efforts) and tactical rockets. Characteristics such as environmental acceptability, affordability, reliability, responsiveness, reduced weight, and reduced operation and launch costs are emphasized. Increased life and performance of propulsion systems are key goals. Technology areas investigated include ground demonstrations of compact, lightweight, advanced propulsion technologies and high-energy propellants. Aging and surveillance thrusts for solid rocket motors could reduce lifetime prediction uncertainties for individual motors by fifty percent, enabling motor replacement for cause. The efforts in this project contribute to the sustainment of the rocket propulsion industry, providing rocket propulsion technology for the entire Department of Defense (DoD). The efforts in this project are part of the Rocket Propulsion of the 21st Century (RP21) program. The efforts in this project are reviewed by a DoD level steering committee annually for relevance to DoD missions and achievement of technical goals defined by the RP21 program.

This project includes the initiation and development of programs addressing DAF capability gaps and provides technologies for transformational future force capabilities. Transformational efforts will be identified through a competitive process and be responsive to DAF design priorities. Selected efforts will be designated as transformational, indicating enterprise-level priority.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Ballistic Missile Technologies	0.000	7.612	2.032
Description: Develop and demonstrate missile propulsion and post-boost control systems technologies for ballistic missiles.			
FY 2022 Plans: Continue development and test of solid rocket motors relevant to defense needs such as large air-launched boosters for high speed weapon application. Continue to design and develop modeling and simulation tools that more fully describe the physical processes that occur during manufacture and/or operation, and that reduce predictive uncertainty in design and analysis. Initiate development of advanced components and manufacturing processes for solid rocket motors including inert components, energetic components, and automated assembly operations.			
FY 2023 Plans: Continue development and test of solid rocket motors relevant to defense needs such as large air-launched boosters for high speed weapon application. Continue to design and develop modeling and simulation tools that more fully describe the physical processes that occur during manufacture and/or operation, and that reduce predictive uncertainty in design and analysis. Continue			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603216F / *Aerospace Propulsion and Power Technology*	**Project (Number/Name)** 634093 / *Missile Rocket Propulsion Integ & Demo*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
development of advanced manufacturing processes for solid rocket motors including inert components, energetic components, fabrication systems and automated assembly operations. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY2023 decrease compared to FY2022 by $5.580 million. Funding decreased due to decreased emphasis in strategic solid rocket propulsion technologies and higher AF priorities.			
Title: Transformational Technology Development ***Description:*** Continually funded effort. This funding allocation will initiate new and continue existing Transformational Technology Development efforts. The Transformational Technology Development program will select new projects, in alignment with mission focused areas which include, but are not limited to: Intelligent Planning and Wargaming; Battlespace Awareness; Integrated Base Defense; and Hypersonic Multi-Mission Aircraft. Investments focus on technology development efforts including, but are not limited to technologies to enhance survivability, operability and performance of personnel, sensors, and structures in a threat environment through sustainment technologies for solid rocket motor boosters and post boost control. This investment is overseen by senior representatives from Air and Space Forces who participate in the submission, initial review, and down-selection of Transformational Technology Development proposed efforts. Final selections will be reviewed by the Air Force Deputy Assistant Secretary for Science, Technology, and Engineering before a final recommendation for Congressional approval is made. ***FY 2022 Plans:*** This effort is starting in FY23. ***FY 2023 Plans:*** Continue to develop and demonstrate a capability for high speed delivery of area effects. Initiate projects selected from the annual WARTECH process that investigate Department of the Air Force prioritized topics. Continue to perform modeling, simulation, and analyses to establish the future force effect of candidate Transformational Component investments and continue the next cycle of WARTECH process ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 increased compared to FY 2022 by $1.160 million. Funding increased to scale investment toward the Department of the Air Force target outlined in the Air Force 2030 Science and Technology (S&T) Strategy.	0.000	0.000	1.160
Accomplishments/Planned Programs Subtotals	0.000	7.612	3.192

	FY 2021	FY 2022
Congressional Add: Program increase - Hypersonic liquid rocket propulsion	0.000	10.000

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603216F / *Aerospace Propulsion and Power Technology*	**Project (Number/Name)** 634093 / *Missile Rocket Propulsion Integ & Demo*

	FY 2021	FY 2022
FY 2021 Accomplishments: Not applicable. ***FY 2022 Plans:*** Conduct Congressionally directed efforts.		
Congressional Add: Program increase - Altitude chamber infrastructure upgrades ***FY 2021 Accomplishments:*** Not applicable. ***FY 2022 Plans:*** Conduct Congressionally directed efforts.	0.000	5.000
Congressional Adds Subtotals	0.000	15.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not applicable

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force			Date: April 2022
Appropriation/Budget Activity 3600 / 3	R-1 Program Element (Number/Name) PE 0603216F / *Aerospace Propulsion and Power Technology*	Project (Number/Name) 634921 / *Aircraft Propulsion Subsystems Int*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
634921: *Aircraft Propulsion Subsystems Int*	-	0.000	11.610	31.576	0.000	31.576	40.800	44.589	45.590	46.605	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops and demonstrates technology to increase turbine engine operational reliability, durability, mission flexibility, and performance while reducing weight, fuel consumption, and cost of ownership. The Aircraft Propulsion Subsystems Integration (APSI) project includes demonstrator engines for manned systems and efficient small-scale propulsion for remotely piloted aircraft and cruise missile applications. The demonstrator engines integrate the core (high- pressure spool) technology developed under a joint multi-agency and aerospace industry project with the engine (low-pressure spool) technology such as fans, turbines, engine controls, mechanical systems, exhaust nozzles, and augmentors. Additionally, this project includes activities to improve propulsion safety and readiness. This project also focuses on integration of inlets, nozzles, engine-to-airframe compatibility, and power and thermal management subsystems technologies. The APSI project provides aircraft with potential for longer range and higher cruise speeds with lower specific fuel consumption, surge power for successful engagements, high sortie rates with reduced maintenance, reduced life cycle cost, and improved survivability, resulting in increased mission effectiveness. Technologies developed are applicable to sustained high-speed vehicles and responsive space launch. The Aircraft Propulsion Subsystems Integration project is focused on improving propulsion capabilities while at the same time reducing the cost of ownership. Anticipated technology advances include turbine engine improvements providing approximately twice the range for a sustained supersonic combat aircraft, doubling the time on station with ten times the power output for surveillance aircraft and propulsion for a high speed supersonic missile with double the range for time sensitive targets. A portion of this project supports the demonstration of adaptive cycle technologies, which develop component technology for an adaptive cycle engine architecture that provides optimized performance, fuel efficiency, high power extraction, integrated thermal management, and durability for widely varying mission needs.

This project includes the initiation and development of programs addressing DAF capability gaps and provides technologies for transformational future force capabilities. Transformational efforts will be identified through a competitive process and be responsive to DAF design priorities. Selected efforts will be designated as transformational, indicating enterprise-level priority.

In FY2023, Core Engine Technologies, High Pressure Ratio Core Engine Technologies, and Adaptive Turbine Engine Core Technology efforts transferred from Program 0603216F, Aerospace Propulsion & Power Technology, Project 63681B, Advanced Turbine Engine Gas Generator in order to effectively and efficiently align resources to Aerospace Systems Core Technical Competencies.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Missile/Remotely Piloted Aircraft Engine Performance	0.000	6.878	12.560
Description: Design, fabricate, and test component technologies for limited-life engines to improve the performance, durability, and affordability of missile and remotely piloted aircraft engines.			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603216F / *Aerospace Propulsion and Power Technology*	**Project (Number/Name)** 634921 / *Aircraft Propulsion Subsystems Int*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2022 Plans: Continue next innovative architecture, critical technologies and component designs for efficient small engines. Continue operational benefits analysis for missile and unmanned aerial vehicle (UAV) systems. Initiate development of pervasive, hydrocarbon pressure gained propulsion fueled technologies. ***FY 2023 Plans:*** Continue next innovative architecture, critical technologies and component designs for efficient small engines. Continue operational benefits analysis for missile and unmanned aerial vehicle (UAV) systems. Continue development of pervasive, hydrocarbon pressure gained propulsion fueled technologies. Initiate advanced development in rotating detonation engine technologies to advance powered munitions. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY2023 increase compared to FY2022 by $5.682 million. Funding increased due to increased emphasis in advancing development in rotating detonation engine technologies to advance powered munitions.			
Title: Adaptive Turbine Engine Technologies ***Description:*** Design, fabricate, and demonstrate performance, durability, and operability technologies to mature adaptive turbine engine technologies. ***FY 2022 Plans:*** Continue analyzing and evaluating conceptual design of adaptive engine technology and continue technology rig tests to decrease risk in core technology testing. Initiate maturation and integration of key technology through component and rig testing. ***FY 2023 Plans:*** Complete analysis and evaluation conceptual design of adaptive engine technology and complete technology rig tests to decrease risk in core technology testing. Complete maturation and integration of key technology through component and rig testing. Emphasis moving to Missile/Remotely Piloted Aircraft Engine Performance effort. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** No increase/decrease in FY2023 compared to FY2022.	0.000	4.732	4.732
Title: Core Engine Technologies ***Description:*** Design, fabricate, and demonstrate performance predictions in core engines, using innovative engine cycles and advanced materials for turbofan and for turbojet engines. ***FY 2022 Plans:***	0.000	0.000	9.067

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603216F / *Aerospace Propulsion and Power Technology*	**Project (Number/Name)** 634921 / *Aircraft Propulsion Subsystems Int*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
In FY2022, this effort is performed in Program 0603216F, Aerospace Propulsion & Power Technology, Project 63681B, Advanced Turbine Engine Gas Generator. ***FY 2023 Plans:*** Continue core tests for medium scale engines maturing key technologies. Continue risk reduction component tests for medium-scale engine advanced fan and core. Initiate advanced propulsion air frame integration experiments to enable embedded propulsion systems. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY2023 increased compared to FY2022 by $9.067 million. Funding increase is due to transfer from Program 0603216F, Aerospace Propulsion & Power Technology, Project 63681B, Advanced Turbine Engine Gas Generator and increased emphasis in design/validation in medium scale core engine technologies.			
Title: High Pressure Ratio Core Engine Technologies ***Description:*** Design, fabricate, and demonstrate high overall pressure ratio engine cores to provide increased durability and affordability with lower fuel consumption for turbofan and for turboshaft engines. ***FY 2022 Plans:*** In FY2022, this effort is performed in Program 0603216F, Aerospace Propulsion & Power Technology, Project 63681B, Advanced Turbine Engine Gas Generator. ***FY 2023 Plans:*** Continue assessing innovative architecture, critical technologies and component designs for efficient, small engines. Continue assembly of advanced concept additive manufacturing heat exchanger for small core engines. Continue fabrication of recuperator for demonstration of increased core efficiency in small core engines. Continue to work and mature medium scale core technologies. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY2023 increased compared to FY2022 by $1.478 million. Funding increase is due to transfer from Program 0603216F, Aerospace Propulsion & Power Technology, Project 63681B, Advanced Turbine Engine Gas Generator and increased emphasis in design/validation in medium scale core engine technologies.	0.000	0.000	1.478
Title: Adaptive Turbine Engine Core Technologies ***Description:*** Design, fabricate, and demonstrate adaptive turbine engine cores to provide increased durability and affordability with lower fuel consumption for turbofan and for turboshaft engines. ***FY 2022 Plans:***	0.000	0.000	0.149

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603216F / *Aerospace Propulsion and Power Technology*	**Project (Number/Name)** 634921 / *Aircraft Propulsion Subsystems Int*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
In FY2022, this effort is performed in Program 0603216F, Aerospace Propulsion & Power Technology, Project 63681B, Advanced Turbine Engine Gas Generator. ***FY 2023 Plans:*** Complete component tests of advanced variable turbine and innovative compression rear block designed to accept flow variations caused by variable turbine operation. Emphasis moving to in Core Engine Technologies effort. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY2023 increased compared to FY2022 by $0.149 million. Funding increase is due to transfer from Program 0603216F, Aerospace Propulsion & Power Technology, Project 63681B, Advanced Turbine Engine Gas Generator and increased emphasis in design/validation in medium scale core engine technologies.			
Title: Transformational Technology Development ***Description:*** Continually funded effort. This funding allocation will initiate new and continue existing Transformational Technology Development efforts. The Transformational Technology Development program will select new projects, in alignment with mission focused areas which include, but are not limited to: Intelligent Planning and Wargaming; Battlespace Awareness; Integrated Base Defense; and Hypersonic Multi-Mission Aircraft. Investments focus on technology development efforts including, but are not limited to technologies to enhance survivability, operability and performance of personnel, sensors, and structures in a threat environment through engine core and low spool component technologies. This investment is overseen by senior representatives from Air and Space Forces who participate in the submission, initial review, and down-selection of Transformational Technology Development proposed efforts. Final selections will be reviewed by the Air Force Deputy Assistant Secretary for Science, Technology, and Engineering before a final recommendation for Congressional approval is made. ***FY 2022 Plans:*** This effort is starting in FY2023. ***FY 2023 Plans:*** Continue to develop and demonstrate a capability for high speed delivery of area effects. Initiate projects selected from the annual WARTECH process that investigate Department of the Air Force prioritized topics. Continue to perform modeling, simulation, and analyses to establish the future force effect of candidate Transformational Component investments and continue the next cycle of WARTECH process. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 increased compared to FY 2022 by $3.590 million. Funding increased to scale investment toward the Department of the Air Force target outlined in the Air Force 2030 Science and Technology (S&T) Strategy.	0.000	0.000	3.590
Accomplishments/Planned Programs Subtotals	0.000	11.610	31.576

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603216F / *Aerospace Propulsion and Power Technology*	**Project (Number/Name)** 634921 / *Aircraft Propulsion Subsystems Int*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force			Date: April 2022
Appropriation/Budget Activity 3600 / 3	R-1 Program Element (Number/Name) PE 0603216F / *Aerospace Propulsion and Power Technology*	Project (Number/Name) 634922 / *Space & Missile Rocket Propulsion*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
634922: *Space & Missile Rocket Propulsion*	-	75.666	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops and demonstrates advanced and innovative low-cost rocket turbo-machinery and components, and low-cost space launch propulsion technologies. Additionally, this project develops technologies for the sustainment of strategic systems (including solid rocket motor boosters and missile propulsion, post boost control, and aging and surveillance efforts) and tactical rockets. Characteristics such as environmental acceptability, affordability, reliability, responsiveness, reduced weight, and reduced operation and launch costs are emphasized. Increased life and performance of propulsion systems are key goals. Technology areas investigated include ground demonstrations of compact, lightweight, advanced propulsion technologies, higher efficiency energy conversion systems (derived from an improved understanding of combustion fundamentals), and high-energy propellants. Technological advances in this project could improve the performance of expendable payload capabilities by approximately twenty to fifty percent and reduce launch, operations, and support costs by approximately thirty percent. Responsiveness and operability of propulsion systems will be enhanced for reusable launch systems. Aging and surveillance thrusts for solid rocket motors could reduce lifetime prediction uncertainties for individual motors by fifty percent, enabling motor replacement for cause. The efforts in this project contribute to the sustainment of the rocket propulsion industry, providing rocket propulsion technology for the entire Department of Defense (DoD) and National Aeronautics and Space Administration (NASA). The efforts in this project are part of the Rocket Propulsion 21st Century (RP21) program. The efforts in this project are reviewed by a DoD level steering committee annually for relevance to DoD missions and achievement of technical goals defined by the RP21 program.

This project includes the initiation and development of programs addressing DAF capability gaps and provides technologies for transformational future force capabilities. Transformational efforts will be identified through a competitive process and be responsive to DAF design priorities. Selected efforts will be designated as transformational, indicating enterprise-level priority.

In FY2022, the work and funding associated with space demonstrations in Project 634922, Space & Missile Rocket Propulsion, are transferred to Appropriation 3620F, Research, Development, Test & Evaluation, Space Force, PE 1206616SF, Project 634922, Space & Missile Rocket Propulsion, due to the creation of a new Appropriation for Space Force.

In FY2022, the work and funding associated with missile technology demonstrations in Project 634922, Space & Missile Rocket Propulsion, are transferred to Project 634093, Missile Rocket Propulsion Integ & Demo, due to the creation of a new Appropriation for Space Force.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Liquid Rocket Propulsion Technologies	26.574	0.000	0.000
Description: Develop liquid rocket propulsion technology for current and future space launch vehicles.			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603216F / *Aerospace Propulsion and Power Technology*	**Project (Number/Name)** 634922 / *Space & Missile Rocket Propulsion*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2022 Plans: In FY2022, the work and funding associated with space demonstrations in Project 634922, Space & Missile Rocket Propulsion, are transferred to Appropriation 3620F, Research, Development, Test & Evaluation, Space Force, PE 1206616SF, Project 634922, Space & Missile Rocket Propulsion, due to the creation of a new Appropriation for Space Force. ***FY 2023 Plans:*** Not applicable. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** There is no increase or decrease.			
Title: On-Orbit Propulsion Technologies ***Description:*** Develop solar electric, electric, and monopropellant propulsion technologies for existing and future satellites, upper stages, orbit transfer vehicles, and satellite maneuvering. ***FY 2022 Plans:*** In FY2022, the work and funding associated with space demonstrations in Project 634922, Space & Missile Rocket Propulsion, are transferred to Appropriation 3620F, Research, Development, Test & Evaluation, Space Force, PE 1206616SF, Project 634922, Space & Missile Rocket Propulsion, due to the creation of a new Appropriation for Space Force. ***FY 2023 Plans:*** Not applicable. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** There is no increase or decrease.	20.021	0.000	0.000
Title: Ballistic Missile Technologies ***Description:*** Develop and demonstrate missile propulsion and post-boost control systems technologies for ballistic missiles. ***FY 2022 Plans:*** In FY2022, the work and funding associated with missile technology demonstrations in Project 634922, Space & Missile Rocket Propulsion, are transferred to Project 634093, Missile Rocket Propulsion Integ & Demo, due to the creation of a new Appropriation for Space Force. ***FY 2023 Plans:*** Not applicable. ***FY 2022 to FY 2023 Increase/Decrease Statement:***	4.895	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603216F / *Aerospace Propulsion and Power Technology*	**Project (Number/Name)** 634922 / *Space & Missile Rocket Propulsion*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
There is no increase or decrease.			
Title: Strategic System Motor Surveillance ***Description:*** Develop and demonstrate aging and surveillance technologies for strategic systems to reduce lifetime prediction uncertainty for individual motors, enabling motor replacement for cause. ***FY 2022 Plans:*** Not applicable. ***FY 2023 Plans:*** Not applicable. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** There is no increase or decrease.	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	51.490	0.000	0.000

	FY 2021	FY 2022
Congressional Add: Program increase - chemical apogee engines ***FY 2021 Accomplishments:*** Not applicable.	0.000	-
Congressional Add: Program increase - upper stage engine maturation ***FY 2021 Accomplishments:*** Not applicable.	0.000	-
Congressional Add: Program increase - space propulsion technologies ***FY 2021 Accomplishments:*** Not applicable.	0.000	-
Congressional Add: Program increase - multi-mode propulsion ***FY 2021 Accomplishments:*** Conduct Congressionally directed efforts.	4.835	-
Congressional Add: Program increase - upper stage engine technology ***FY 2021 Accomplishments:*** Conduct Congressionally directed efforts.	19.341	-
Congressional Adds Subtotals	24.176	-

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603216F / *Aerospace Propulsion and Power Technology*	**Project (Number/Name)** 634922 / *Space & Missile Rocket Propulsion*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force			Date: April 2022
Appropriation/Budget Activity 3600 / 3	R-1 Program Element (Number/Name) PE 0603216F / *Aerospace Propulsion and Power Technology*	Project (Number/Name) 635098 / *Advanced Aerospace Propulsion*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
635098: *Advanced Aerospace Propulsion*	-	0.000	17.019	17.437	0.000	17.437	23.213	36.438	37.255	38.083	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops and demonstrates, via ground and flight tests, the scramjet propulsion cycle to a technology readiness level appropriate for full integration with other engine cycles (including turbine and rocket-based) to provide the Air Force with transformational military capabilities. The primary focus is on the hydrocarbon-fueled, scramjet engine. Multi-cycle engines will provide the propulsion systems for possible application to support aircraft and weapon platforms. Efforts include: scramjet flow-path optimization to enable operation over the widest possible range of Mach numbers; active combustion control to assure continuous positive thrust (even during mode transition); robust flame-holding to maintain stability through flow distortions; and maximized volume-to-surface area to minimize the thermal load imposed by the high-speed engine. Thermal management plays a vital role in scramjet and combined cycle engines, including considerations for protecting low speed propulsion systems (e.g., turbine engines) during hypersonic flight.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Scramjet Technologies	0.000	17.019	17.437
Description: Develop and demonstrate technologies for a hydrocarbon-fueled scramjet with robust operation.			
FY 2022 Plans: Continue development of scramjet technologies to enhance operability including robust operation during maneuvers and extended operating time. Continue development and demonstration of tactically-relevant, long range, high speed strike scramjet engine designs, technologies, and components including ground and flight demonstrations needed for potential follow-on acquisition program. Continue propulsion technology maturation activities for Multi-Mission Cruiser concept to expand performance capabilities of high speed systems.			
FY 2023 Plans: Continue development and integration of larger scale scramjet component technologies to enhance operability including robust operation during maneuvers and extended operating time. Continue development and demonstration of tactically-relevant, high speed strike scramjet engine designs, technologies, and components including ground and flight demonstrations needed for potential follow-on acquisition program. Continue propulsion technology maturation activities for multi-mission cruiser concept to expand performance capabilities of high speed systems.			
FY 2022 to FY 2023 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603216F / *Aerospace Propulsion and Power Technology*	**Project (Number/Name)** 635098 / *Advanced Aerospace Propulsion*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY2023 increased compared to FY2022 by $0.418 million. Funding increase due to increased emphasis on high speed propulsion technology.			
Accomplishments/Planned Programs Subtotals	0.000	17.019	17.437

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force			Date: April 2022
Appropriation/Budget Activity 3600 / 3	R-1 Program Element (Number/Name) PE 0603216F / *Aerospace Propulsion and Power Technology*	Project (Number/Name) 63681B / *Advanced Turbine Engine Gas Generator*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
63681B: *Advanced Turbine Engine Gas Generator*	-	40.152	20.816	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops and demonstrates technology to increase turbine engine operational reliability, durability, mission flexibility, and performance while reducing weight, fuel consumption, and cost of ownership. The objective is to provide continuous evolution of technologies into an advanced gas generator in which the performance, cost, durability, repairability, and maintainability can be assessed in a realistic engine environment. The gas generator, or core, is the basic building block of the engine and nominally consists of a compressor, a combustor, a high-pressure turbine, mechanical systems, and core subsystems. Experimental core engine demonstration validates engineering design tools and enhances rapid, low-risk transition of key engine technologies into engineering development, where they can be applied to derivative and/or new systems. These technologies are applicable to a wide range of military and commercial systems including aircraft, missiles, land combat vehicles, ships, and responsive space launch. Component technologies are demonstrated in a core (sub-engine). This project also assesses the impact of low spool components such as; inlet systems, fans, low pressure turbines, exhaust systems, and system level technologies such as; integrated power generators and thermal management systems on core engine performance, and durability in ground demonstrations of engine cores. The core performances of this project are validated on demonstrator engines in the Aircraft Propulsion Subsystem Integration Project of this program. A portion of this project supports the demonstration of adaptive cycle technologies, which develop component technology for an adaptive cycle engine architecture that provides optimized performance, fuel efficiency, and durability for widely varying mission needs.

In FY2023, Core Engine Technologies, High Pressure Ratio Core Engine Technologies, and Adaptive Turbine Engine Core Technologies efforts will transfer to Program 0603216F, Aerospace Propulsion and Power Technology, Project 634921, Aircraft Propulsion Subsystems Integration in order to effectively and efficiently align resources to Aerospace Systems Core Technical Competencies.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Core Engine Technologies	9.980	8.761	0.000
Description: Design, fabricate, and demonstrate performance predictions in core engines, using innovative engine cycles and advanced materials for turbofan and for turbojet engines.			
FY 2022 Plans: Continue core tests for medium scale engines maturing key technologies. Initiate risk reduction component tests for medium-scale engine advanced fan and core.			
FY 2023 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603216F / *Aerospace Propulsion and Power Technology*	**Project (Number/Name)** 63681B / *Advanced Turbine Engine Gas Generator*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
In FY2023, this effort will transfer to Program 0603216F, Aerospace Propulsion & Power Technology, Project 634921, Aircraft Propulsion Subsystems Integration in order to effectively and efficiently align resources to Aerospace Systems Core Technical Competencies. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY2023 decreased compared to FY2022 by $8.761 million. Funding decrease is due to transfer to Program 0603216F, Aerospace Propulsion & Power Technology, Project 634921, Aircraft Propulsion Subsystems Integration.			
Title: High Pressure Ratio Core Engine Technologies ***Description:*** Design, fabricate, and demonstrate high overall pressure ratio engine cores to provide increased durability and affordability with lower fuel consumption for turbofan and for turboshaft engines. ***FY 2022 Plans:*** Continue assessing innovative architecture, critical technologies and component designs for efficient, small engines. Continue assembly of advanced concept additive manufacturing heat exchanger for small core engines. Continue fabrication of recuperator for demonstration of increased core efficiency in small core engines. Continue to work and mature medium scale core technologies. ***FY 2023 Plans:*** In FY2023, this effort will transfer to Program 0603216F, Aerospace Propulsion & Power Technology, Project 634921, Aircraft Propulsion Subsystems Integration in order to effectively and efficiently align resources to Aerospace Systems Core Technical Competencies. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY2023 decreased compared to FY2022 by $3.295 million. Funding decrease is due to transfer to Program 0603216F, Aerospace Propulsion & Power Technology, Project 634921, Aircraft Propulsion Subsystems Integration.	3.754	3.295	0.000
Title: Adaptive Turbine Engine Core Technologies ***Description:*** Design, fabricate, and demonstrate adaptive turbine engine cores to provide increased durability and affordability with lower fuel consumption for turbofan and for turboshaft engines. ***FY 2022 Plans:*** Continue component tests of advanced variable turbine and innovative compression rear block designed to accept flow variations caused by variable turbine operation. ***FY 2023 Plans:***	9.978	8.760	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 3	**R-1 Program Element (Number/Name)** PE 0603216F / *Aerospace Propulsion and Power Technology*	**Project (Number/Name)** 63681B / *Advanced Turbine Engine Gas Generator*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
In FY2023, this effort will transfer to Program 0603216F, Aerospace Propulsion & Power Technology, Project 634921, Aircraft Propulsion Subsystems Integration in order to effectively and efficiently align resources to Aerospace Systems Core Technical Competencies. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY2023 decreased compared to FY2022 by $8.760 million. Funding decrease is due to transfer to Program 0603216F, Aerospace Propulsion & Power Technology, Project 634921, Aircraft Propulsion Subsystems Integration.			
Accomplishments/Planned Programs Subtotals	23.712	20.816	0.000

	FY 2021	FY 2022
Congressional Add: Program increase - small turbine engines for long range weapons	16.440	-
FY 2021 Accomplishments: Conduct Congressionally directed efforts		
Congressional Adds Subtotals	16.440	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not applicable.