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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force **Date:** April 2022

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force</i> / BA 6: <i>RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0605807F / <i>Test and Evaluation Support</i>
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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	-	770.149	811.032	826.854	0.000	826.854	863.012	834.939	945.630	1,003.260	Continuing	Continuing
6606TG: <i>704th Test Group</i>	-	39.801	52.868	46.257	0.000	46.257	44.337	45.249	56.067	49.565	Continuing	Continuing
6606TS: <i>Test and Evaluation Support</i>	-	730.348	758.164	780.597	0.000	780.597	818.675	789.690	889.563	953.695	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element provides resources to operate the Air Force Test Center (AFTC) test activities which are included in the Department of Defense (DoD) Major Range and Test Facility Base (MRTFB). Test facilities/capabilities include wind tunnels, rocket and jet engine test cells, hypersonic and subsonic testing, modeling and simulation, technology, limited space environmental simulation chambers, armament test ranges, hardware-in-the-loop test facilities, climatic test facilities, avionics test facilities, aircraft testbeds, dry lake bed landing sites, instrumented test ranges, and test aircraft maintenance, as well as USAF Test Pilot School.

Test and Evaluation (T&E) Support funds institutional test infrastructure activities including: Command and supervisory staffs; supply stocks; maintenance, repair, and replacement of worn or obsolete test equipment and facilities; test infrastructure for data collection, transmission, reduction, and analysis; civilian salaries; temporary duty travel; range operations and material support contract costs for hardware and software engineering and maintenance; and minor improvement and modernization projects. It also funds institutional test aircraft depot level maintenance such as: Programmed Depot Maintenance (PDM), the calendar-based cyclic scheduling of aircraft into depots for update/inspection; modifications and any other depot level repairs required by the aircraft System Program Directors (SPD); engine overhauls; depot-provided area assistance; and assorted ground support equipment overhauls.

Within AFTC there are three test wings. The first is Arnold Engineering and Development Complex (AEDC), located at Arnold Air Force Base (AFB), TN. The AEDC institutional test infrastructure supports operations of the largest complex of ground test facilities in the world (including transonic, supersonic, and hypersonic wind tunnels; rocket motor and turbine engine test cells; space environmental test chambers, hyper ballistic ranges; and other specialized facilities). AEDC also supports geographically separated facilities which include the National Full-Scale Aerodynamic Complex (NFAC) located at NASA's AMES Research Center, California, Tunnel 9 located at White Oak, Maryland, and the McKinley Climatic Lab located on Eglin AFB, Florida. The 412 Test Wing (TW) is located at Edwards AFB, CA. Its institutional test infrastructure supports weapons system development and operational test and evaluation for aircraft, aircraft subsystems and aircraft weapon systems, aerospace research vehicles, unmanned miniature vehicles, cruise missiles, parachute delivery/recovery systems, cargo handling systems, communications, information operations, and Electronic Warfare (EW) systems for DoD and allied forces. The 412TW mission also includes the USAF Test Pilot School. Lastly, the 96 TW, located at Eglin AFB, FL, is a joint test and training complex comprised of 724 square miles of land area, and approximately 123,000 square miles of water area. The 96TW provides the institutional test infrastructure required to conduct developmental and operational test and evaluation of non-nuclear air armaments (including aircraft guns, ammunition, and air-to-surface and air-to-air guided munitions); Command, Control, Communications, Computers and Intelligence/Surveillance/Reconnaissance (C4ISR) systems; target acquisition and weapon delivery systems; and special operations aircraft systems. 96TW provides a scientific test process that supports the development, production, sustainment, and enhancement of munitions systems that support tri-service digital weapons development. T&E support services contracts are awarded on the basis of full and open competition.

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This program is in Budget Activity 6, RDT&E Management Support because this budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation.

B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	761.307	811.032	0.000	0.000	0.000
Current President's Budget	770.149	811.032	826.854	0.000	826.854
Total Adjustments	8.842	0.000	826.854	0.000	826.854
• 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	8.842	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	826.854	0.000	826.854

Change Summary Explanation

FY 2021: Increase of \$8.842 million for to support additional sustainment requirements.

FY 2023: The FY 2022 President's Budget submittal did not reflect FY 2023 through FY 2026 funding. Therefore, an explanation of the change between the two budget positions for FY2023 cannot be made in a relevant manner.

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force										Date: April 2022		
Appropriation/Budget Activity 3600 / 6					R-1 Program Element (Number/Name) PE 0605807F / <i>Test and Evaluation Support</i>				Project (Number/Name) 6606TG / <i>704th Test Group</i>			
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
6606TG: <i>704th Test Group</i>	-	39.801	52.868	46.257	0.000	46.257	44.337	45.249	56.067	49.565	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project infrastructure support is provided for the unique capabilities of the 704th Test Group (TG) facilities: Central Inertial and Global Positioning System (GPS) Test Facility (CIGTF/746th Test Squadron), the Holloman High Speed Test Track (HHSTT/846th Test Squadron) and the National Radar Cross Section (RCS) Test Facility (NRTF/704 TG Det 2), the 586th Flight Test Squadron including Detachment 1 (Det 1), 704 TG Operating Location (704 TG OL-AA) at Kirtland AFB, and 704 TG Operation Location (704 TG OL-AC) at Wright-Patterson AFB.

CIGTF provides independent test and evaluation of inertial, Global Positioning System, and integrated systems used for aircraft navigation and missile guidance systems, including vulnerability to electronic interference.

HHSTT capabilities include full-scale testing in flight representative environments, realistic live-fire simulations, test item and target fragment recovery, precision trajectory analysis and high speed photography.

NRTF provides radar cross section (RCS) monostatic and bistatic amplitude and phase measurements, antenna pattern measurements, glint and near field measurements for low observable targets.

The 586th Flight Test Squadron executes flight test and test support for advanced avionics and weapons development of joint, international and commercial test programs. Det 1 provides the liaison function for coordinating and scheduling all US Air Force test and training operations at White Sands Missile Range (WSMR). OL-AA provides test support for the Air Force Research Lab (AFRL) Directed Energy Division.

The 704 TG OL-AC includes the Landing Gear Test Facility (LGTF) with capabilities such as variable and fixed inertia dynamometers, compression/tension load applicators, 4 drop towers, a burst pit and a dynamic load simulator. The 704 TG OL-AC also includes the Air Vehicle Survivability Office that provides support for Air Force aircraft acquisition programs. The 704th TG support services contracts are awarded on the basis of full and open competition.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2021	FY 2022	FY 2023
Title: Civ Pay	23.715	31.207	25.380
Description: Provide civilian pay at the 704th Test Group (TG) to support testing of DoD, other Government Agencies, foreign military sales, and commercial weapon systems. The FY23 PB provides 193 DBA workyears with an FY23 Average Work Year Cost (AWYC) of \$127.254K.			
FY 2022 Plans:			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
Continue civilian pay at the 704th Test Group (TG) to support testing of DoD, other Government Agencies, foreign military sales, and commercial weapon systems. FY 2023 Plans: Continue civilian pay at the 704th Test Group (TG) to support testing of DoD, other Government Agencies, foreign military sales, and commercial weapon systems. FY 2022 to FY 2023 Increase/Decrease Statement: The 5.8M decrease from FY22 to FY23 is due an increase in work years to 193 without a corresponding increase in civ pay.				
Title: Non Pay Description: Provide infrastructure at the 704th Test Group (TG) to support testing of DoD, other Government Agencies, foreign military sales, and commercial weapon systems. FY 2022 Plans: Resources provide operational support for AFTC test activates. Efforts include Civilian pay, Aircraft Ops, Flying Hour Program (FHP), contracted services, test equipment and supplies, general operations and maintenance, and utilities (list not all inclusive). FY 2023 Plans: Resources provide operational support for AFTC test activates. Efforts include Civilian pay, Aircraft Ops, Flying Hour Program (FHP), contracted services, test equipment and supplies, general operations and maintenance, and utilities (list not all inclusive). FY 2022 to FY 2023 Increase/Decrease Statement: N/A		16.086	21.661	20.877
Accomplishments/Planned Programs Subtotals		39.801	52.868	46.257
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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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
6606TS: <i>Test and Evaluation Support</i>	-	730.348	758.164	780.597	0.000	780.597	818.675	789.690	889.563	953.695	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program activity provides resources to operate the Air Force Test Center (AFTC) test activities which are included in the Department of Defense (DoD) Major Range and Test Facility Base (MRTFB). Test facilities/capabilities operated through this program include wind tunnels, rocket and jet engine test cells, hypersonic and subsonic testing, modeling and simulation, technology, limited space environmental simulation chambers, armament test ranges, hardware-in-the-loop test facilities, climatic test facilities, avionics test facilities, aircraft testbeds, dry lakebed landing sites, instrumented test ranges, and test aircraft maintenance, as well as USAF Test Pilot School.

Test and Evaluation (T&E) Support funds institutional test infrastructure activities including: Command and supervisory staffs; supply stocks; maintenance, repair, and replacement of worn or obsolete test equipment and facilities; test infrastructure for data collection, transmission, reduction, and analysis; civilian salaries; temporary duty travel; range operations and material support contract costs for hardware and software engineering and maintenance; and minor improvement and modernization projects. It also funds institutional test aircraft depot level maintenance such as: Programmed Depot Maintenance (PDM), the calendar-based cyclic scheduling of aircraft into depots for update/inspection; modifications and any other depot level repairs required by the aircraft System Program Directors (SPD); engine overhauls; depot-provided area assistance; and assorted ground support equipment overhauls.

The AFTCs three test wings are supported by this project: (1) Arnold Engineering and Development Complex (AEDC), located at Arnold Air Force Base (AFB), TN, whose institutional test infrastructure supports operations of the largest complex of ground test facilities in the world (includes transonic, supersonic, and hypersonic wind tunnels; rocket motor and turbine engine test cells; space environmental test chambers, hyperballistic ranges; and other specialized facilities). Included are operations at the National Full-Scale Aerodynamic Complex (NFAC) located at NASA's AMES Research Center, California as well as operations at Tunnel 9 located at White Oak, Maryland.(2) 412 Test Wing (TW), located at Edwards AFB, CA, whose institutional test infrastructure supports weapons system development and operational test and evaluation for aircraft, aircraft subsystems and aircraft weapon systems, aerospace research vehicles, unmanned miniature vehicles, cruise missiles, parachute delivery/recovery systems, cargo handling systems, communications, information operations, and Electronic Warfare (EW) systems for DoD and allied forces. The 412TW mission includes the USAF Test Pilot School. (3) 96 TW, located at Eglin AFB, FL, is a joint test and training complex of 724 square miles of land area, and approximately 123,000 square miles of water area. 96TW provides the institutional test infrastructure required to conduct developmental and operational test and evaluation of non-nuclear air armaments (including aircraft guns, ammunition, and air-to-surface and air-to-air guided munitions); Command, Control, Communications, Computers and Intelligence/Surveillance/Reconnaissance (C4ISR) systems; target acquisition and weapon delivery systems; the McKinley Climatic Lab, multi-service climatic simulation capability, located at Eglin AFB, FL; and special operations aircraft systems. 96TW provides a scientific test process that supports the development, production, sustainment, and enhancement of munitions systems that support tri-service digital weapons development. T&E support services contracts are awarded on the basis of full and open competition.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2021	FY 2022	FY 2023
Title: Civ Pay	159.609	352.905	346.712

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<p>Description: Provide civ pay to support testing at Arnold Engineering and Development Complex (AEDC), the 412TW and USAF Test Pilot School at Edwards AFB, and the 96TW at Eglin AFB. The FY23 PB provides 2,731 DBA work years. The FY23 budgeted Average Work Year Cost (AWYC) is \$127.254K.</p> <p>FY 2022 Plans: Total consists of civilian pay to support testing at Arnold Engineering and Development Complex (AEDC), the 412TW and USAF Test Pilot School at Edwards AFB, and the 96TW at Eglin AFB.</p> <p>FY 2023 Plans: Total consists of civilian pay to support testing at Arnold Engineering and Development Complex (AEDC), the 412TW and USAF Test Pilot School at Edwards AFB, and the 96TW at Eglin AFB.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: The \$6.2 million decrease from FY22 to FY23 is a result of an increase in work years from 2,717 in FY22 to 2,731 in FY23 without a corresponding increase in civ pay funding.</p>				
<p>Title: Non Pay</p> <p>Description: Provide infrastructure to support testing at Arnold Engineering and Development Complex (AEDC), the 412TW and USAF Test Pilot School at Edwards AFB, and the 96TW at Eglin AFB.</p> <p>FY 2022 Plans: Resources provide operational support for AFTC test activates. Efforts include Civilian pay, Aircraft Ops, Flying Hour Program (FHP), Program Depot Maintenance (PDM), contracted services, test equipment and supplies, general operations and maintenance, utilities, and Test Pilot School (list not all inclusive).</p> <p>FY 2023 Plans: Resources provide operational support for AFTC test activates. Efforts include Civilian pay, Aircraft Ops, Flying Hour Program (FHP), Program Depot Maintenance (PDM), contracted services, test equipment and supplies, general operations and maintenance, utilities, and Test Pilot School (list not all inclusive).</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: The FY22 increase over FY23 is a result of \$9.4 million added to restore sustainment for NFAC, \$14.9 million to address non-pay/non-fuel inflation, and \$8.3 million to continue hypersonic infrastructure sustainment.</p>		570.739	405.259	433.885
Accomplishments/Planned Programs Subtotals		730.348	758.164	780.597
C. Other Program Funding Summary (\$ in Millions)				
N/A				

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C. Other Program Funding Summary (\$ in Millions)

Remarks

D. Acquisition Strategy

N/A