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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force **Date:** May 2021

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0605223F / <i>Advanced Pilot Training</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	337.008	328.414	248.216	188.898	0.000	188.898	-	-	-	-	-	-
655340: <i>Advanced Trainer Replacement T-X</i>	337.008	328.414	248.216	188.898	0.000	188.898	-	-	-	-	-	-
Quantity of RDT&E Articles	5	-	-	-	-	-	-	-	-	-	-	-

Program MDAP/MAIS Code: 436

Note

Prior Years Funding \$4.994M was executed in PE 0604233F.

A. Mission Description and Budget Item Justification

The Advanced Pilot Training (APT) program will replace the Air Education Training Command's (AETC) aging T-38C fleet with new aircraft, Ground Based Training System (simulators, training devices, computer based training systems, academics, etc.), Maintenance Training System, and support infrastructure currently used in the fighter/bomber advanced Specialized Undergraduate Pilot Training track as well as in the Introduction to Fighter Fundamentals program. The APT program acquisition strategy was approved by OSD (AT&L) in early FY 2017 (December 2016). At the same time, the APT Team completed their Development Request for Proposal (RFP) Release Defense Acquisition Board and subsequently released the RFP to industry on 30 December 2016. The Program completed source selection evaluations and Milestone B in September 2018 and awarded a Fixed Price Incentive Firm (FPIF) Indefinite Delivery/Indefinite Quantity contract to The Boeing Company on 27 September 2018.

Funding contained in this platform's documentation directly aids AETC flying training enterprise to continue its overall Future Years Defense Program pilot production increase starting in FY 2020, thus reducing the USAF Pilot Shortage.

This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Advanced Pilot Training system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605831F. In FY20 \$0.979M was expended for civilian pay expenses in this program element, and in FY21 \$1.060M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	340.373	248.669	206.417	0.000	206.417
Current President's Budget	328.414	248.216	188.898	0.000	188.898
Total Adjustments	-11.959	-0.453	-17.519	0.000	-17.519
• Congressional General Reductions	0.000	-0.453			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-11.959	0.000			
• Other Adjustments	0.000	0.000	-17.519	0.000	-17.519

Change Summary Explanation

FY 20 funding reduced by \$11.959 million for Small Business Innovation Research (SBIR).

FY 22 funding request reduced by \$17.519 million to account for availability of prior year execution balances, shift of Milestone C to FY23, and other economic adjustments.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
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Title: Advanced Pilot Training (APT) Program	328.414	248.216	188.898
<p>Description: The Advanced Pilot Training (APT) program has an approved acquisition strategy, completed Milestone B, and has progressed into the Engineering and Manufacturing Development (EMD) phase. In FY20, the APT program concluded the Critical Design Review for the Aircraft and Ground Based Training System. This effort includes studies, analysis, acquisition documentation, and market research activities to reduce risk and support the acquisition strategy and engineering and manufacturing development. It also includes Program Management Administration (PMA) such as travel, Other Government Costs (OGC), and Advisory and Assistance Services (A&AS).</p> <p>FY 2021 Plans: Program plans to continue developmental test & evaluation. Plans also include PMA such as travel, OGC's and A&AS.</p> <p>FY 2022 Plans: Program plans to continue developmental test & evaluation, accept delivery of five engineering manufacturing test aircrafts and multiple ground training devices. Plans also include PMA such as travel, OGC's and A&AS.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement:</p>			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
Funding decrease due to anticipated development test & evaluation completion and projected test article delivery by mid-year.			
Accomplishments/Planned Programs Subtotals	328.414	248.216	188.898

D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• APAF 03 Line Item APT000: <i>Advanced Trainer Replacement T-X</i>	-	-	10.397	-	10.397	-	-	-	-	-	-
• OPAF 03 Line Item 837300: <i>Base Comm Infrastructure</i>	-	-	0.000	-	0.000	-	-	-	-	-	-
• OPAF 04 Line Item 845010: <i>Base Procured Equipment</i>	-	0.300	0.000	-	0.000	-	-	-	-	-	-
• MILCON PE 0804701F: <i>T-X (Advanced Pilot Trainer) Procurement</i>	31.600	23.400	18.590	-	18.590	-	-	-	-	-	-

Remarks

E. Acquisition Strategy

This Advanced Pilot Training (APT) Program will develop, test, acquire, and sustain an affordable, agile, and integrated APT System consisting of 351 aircraft, Ground Based Training System, Maintenance Training System, support, infrastructure, and personnel to meet Air Education and Training Command's initial need date of FY 2024.

The APT program's acquisition strategy leveraged market conditions by competing and awarding development, production, and initial sustainment in a single contract award. The program completed source selection evaluations and Milestone B in September 2018 and awarded a Fixed Price Incentive Firm Indefinite Delivery/Indefinite Quantity contract to The Boeing Company on 27 September 2018 to provide for development, integration, and testing needed to meet existing APT requirements. Additional contract options are available for Low Rate Initial Production, Full Rate Production and initial sustainment transition. The Maintenance Training System will be procured under a separate contractual vehicle.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force												Date: May 2021				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 5				PE 0605223F / Advanced Pilot Training				655340 / Advanced Trainer Replacement T-X								
Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Advanced Pilot Training Contracts	Various	Various : TBD	290.278	308.392	Nov 2019	212.327	Nov 2020	153.389	Nov 2021	-		153.389	-	-	1,084.946	
Subtotal			290.278	308.392		212.327		153.389		-		153.389	-	-	N/A	
Support (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Advanced Pilot Training Mission Support	Various	Various : Various	7.276	2.589	Mar 2020	5.218	Jun 2021	5.326	Feb 2022	-		5.326	-	-	-	
Advanced Pilot Training Direct Cite Authority Civilian Pay	Various	AFLCMC : Dayton, OH	0.000	0.979	Oct 2019	1.060	Oct 2020	-		-		-	-	-	-	
Subtotal			7.276	3.568		6.278		5.326		-		5.326	-	-	N/A	
Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Advanced Pilot Training Test Support	Various	Edwards AFB : Edwards AFB, CA	10.337	9.789	Jan 2020	13.560	Jan 2021	13.800	Jan 2022	-		13.800	-	-	-	
Subtotal			10.337	9.789		13.560		13.800		-		13.800	-	-	N/A	
Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Advanced Pilot Training A&AS	Various	AFLCMC : Dayton, OH	16.631	4.656	Mar 2020	8.459	Mar 2021	7.693	Mar 2022	-		7.693	-	-	-	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force **Date:** May 2021

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605223F / <i>Advanced Pilot Training</i>	Project (Number/Name) 655340 / <i>Advanced Trainer Replacement T-X</i>
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Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Advanced Pilot Training PMA, Other Government Costs	Various	AFLCMC : Dayton, OH	12.486	2.009	Oct 2019	7.592	Oct 2020	8.690	Oct 2021	-		8.690	-	-	-
Subtotal			29.117	6.665		16.051		16.383		-		16.383	-	-	N/A

	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		337.008	328.414	248.216	188.898	-	-	-	N/A

Remarks
 Prior years amounts under Program 0604233F, Specialized Undergraduate Flight Training.
 Advanced Pilot Training Studies and Analysis: \$0.935M
 Advanced Pilot Training PMA Government Costs: \$1.383M
 Advanced Pilot Training A&AS: \$2.676M

FINANCIAL PERFORMANCE: APT is evaluated against traditional Research and Development (R&D) program expenditure benchmarks. Unlike many traditional R&D programs, however, the APT EMD contract is a FPIF contract with progress payments. Ten percent of incurred costs are withheld until the end of the contract, when they are liquidated. Mandatory funding obligations and progress payment withholds will cause the program to lag traditional expenditure benchmarks, painting an inaccurate portrait of overall program health.

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605223F / <i>Advanced Pilot Training</i>	Project (Number/Name) 655340 / <i>Advanced Trainer Replacement T-X</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Advanced Pilot Training</i>				
Engineering and Manufacturing Development (EMD) Phase	1	2020	4	2023
Aircraft Critical Design Review (CDR)	4	2020	4	2020
APT Systems Critical Design Review (CDR)	4	2020	4	2020
Development, Test and Evaluation	1	2020	4	2022
Milestone C	4	2023	4	2023
Operational Test Readiness Review (OTRR)	4	2023	4	2023
Initial Operational Test & Evaluation (IOT&E)	1	2024	3	2024
Maintenance Training System Development	2	2024	4	2025