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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force										Date: February 2015		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0604233F I Specialized Undergraduate Flight Training							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	-	-	10.465	-	10.465	4.972	4.341	4.430	4.519	Continuing	Continuing
674101: Undergraduate Remotely Piloted Aircraft Training	-	-	-	0.720	-	0.720	0.741	0.763	0.785	0.809	Continuing	Continuing
676034: Joint Primary Aircraft Training System (JPATS)	-	-	-	2.583	-	2.583	-	-	-	-	-	2.583
676035: T-6 Operational System Development	-	-	-	4.904	-	4.904	3.107	2.433	2.479	2.523	Continuing	Continuing
676037: T-38 Operational System Development	-	-	-	2.258	-	2.258	1.124	1.145	1.166	1.187	Continuing	Continuing
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): N42												
Note												
In FY2016 PE 0604233F Specialized Undergraduate Flight Training, Project 654102 JPATS was transferred to Budget Activity 7 as it no longer met the criteria for Budget Activity 5.												
In FY2016 Project 674101 Undergraduate Remotely Piloted Aircraft Training includes a new start effort for Remotely Piloted Aircraft (RPA) Predator Reaper Integrated Mission Environment (PRIME) Desktop Training System (DTS).												
In FY2016 Project 676034 Joint Primary Aircraft Training System (JPATS) was completed.												
In FY2016 Project 676035 T-6 Operational System Development includes new start efforts for studies & development efforts to support future ACAT III Engineering Change Proposals(ECPs) to the T-6 Aircraft. This includes development for the FAA mandated ACAT III program for ADS-B Out and associated upgrades.												
In FY2016 Project 676037 T-38 Operational Systems Development includes a new start effort for Block upgrades to incorporate software and/or hardware improvements to comply with new requirements mandated by Department of Defense, Federal Aviation Administration or National Airspace System (DoD/FAA/NAS) and to address flight safety issues. The block upgrades support the T-38C aircraft and Aircrew Training Devices (ATD).												
A. Mission Description and Budget Item Justification												
Supports Air Education and Training Command's (AETC) implementation of Specialized Undergraduate Pilot Training (SUPT) and the Department of Defense initiative for joint pilot training.												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force	Date: February 2015
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Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0604233F / <i>Specialized Undergraduate Flight Training</i>
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Undergraduate Remotely Piloted Aircraft Training supports Air Education and Training Command's (AETC) implementation of Undergraduate Remotely Piloted Aircraft (RPA) Training (URT). This program provides and maintains the currency of Predator Reaper Integrated Mission Environment (PRIME) Desktop Training System (DTS) The Joint Primary Aircraft Training System (JPATS) is a joint USAF/USN venture to replace the Services' fleets of primary trainer aircraft (T-37 and T-34 respectively) and their associated Ground Based Training Systems (GBTS) with the T-6 and its GBTS. The Air Force is the Executive Service.

T-6 Operational System Development continues follow on development activities to JPATS including studies & development efforts to support future ACAT III Engineering Change Proposals (ECPs) to the T-6 Aircraft, instructional courseware, and logistics support to include Diminishing Manufacturing Sources and Material Shortages (DMSMS) and development activities related to DMSMS. Included is development for the FAA mandated ACAT III program for ADS-B Out and associated upgrades. Also included is development of the aircraft Mission Planning System (MPS) support to obtain Joint Mission Planning System (JMPS) currency and certification for T-6 flight operations. The JMPS requirements are levied from outside the T-6 JPATS program office and may or may not correlate with block upgrade requirements.

T-38 Operational System Development continues follow on development activities for the T-38 including studies & development efforts to support future ACAT III Engineering Change Proposals (ECPs) to address obsolescence issues and the regular block upgrades are required to keep the system current. Block upgrades incorporate software and/or hardware improvements to comply with new requirements mandated by Department of Defense, Federal Aviation Administration or National Airspace System (DoD/FAA/NAS) and to address flight safety issues. The block upgrades support the T-38C aircraft and Aircrew Training Devices (ATD).

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	10.465	-	10.465
Total Adjustments	-	-	10.465	-	10.465
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	10.465	-	10.465

Change Summary Explanation

In FY16, PE 0604233F transferred from BA05 to BA07 as the efforts are shifting towards sustainment.

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force										Date: February 2015		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0604233F / Specialized Undergraduate Flight Training				Project (Number/Name) 674101 / Undergraduate Remotely Piloted Aircraft Training			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
674101: Undergraduate Remotely Piloted Aircraft Training	-	-	-	0.720	-	0.720	0.741	0.763	0.785	0.809	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note												
In FY 2016 Remotely Piloted Aircraft (RPA) Predator Reaper Integrated Mission Environment (PRIME) Desktop Training System (DTS) includes new Start efforts for PRIME.												
A. Mission Description and Budget Item Justification												
Supports Air Education and Training Command's (AETC) implementation of Undergraduate Remotely Piloted Aircraft (RPA) Training (URT). URT produces RPA pilots and Sensor Operators from accession sources to man RPA squadrons. Success of the program is heavily dependent on Predator Reaper Integrated Mission Environment (PRIME) Desktop Training System (DTS) to prepare undergraduate students for entry in RPA Formal Training Units (FTU). PRIME has completed 6 Phases of development and is now at baseline functionality. PRIME evolved from a Defense Advanced Research Projects Agency (DARPA) A-10 Warthog desktop trainer into a desktop similar to the Reaper training system now in use to train undergraduate RPA pilots and sensor operators. PRIME currently emulates the MQ-9 Reaper and needs to keep pace with that baseline system and expand to other RPAs in order to keep training relevant.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Predator Reaper Integrated Mission Environment (PRIME) support								-	-	0.720	-	0.720
Description: Add Phase 7 operational capabilities.												
FY 2014 Accomplishments: N/A												
FY 2015 Plans: N/A												
FY 2016 Base Plans: Extend and enhance interoperability between PRIME and Modern Air Combat Environment (MACE) software incorporated in Phase 6 for instructor operations and entity generation. Add additional instrumentation												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force			Date: February 2015		
Appropriation/Budget Activity 3600 / 7		R-1 Program Element (Number/Name) PE 0604233F / <i>Specialized Undergraduate Flight Training</i>		Project (Number/Name) 674101 / <i>Undergraduate Remotely Piloted Aircraft Training</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016 Base
functionality. Add record and playback functionality. Add multiple emergency missions. Add additional entity functionality.					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals			-	-	0.720
C. Other Program Funding Summary (\$ in Millions) N/A					
Remarks					
D. Acquisition Strategy PRIME is proprietary software designed and built by Intific Inc. A Sole Source/Brand Name Acquisition of Intific services will be pursued. The PRIME upgrade effort will be awarded as a Firm Fixed Price Contractor Logistics Support (CLS) contract.					
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.					

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force													Date: February 2015		
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0604233F / <i>Specialized Undergraduate Flight Training</i>						Project (Number/Name) 674101 / <i>Undergraduate Remotely Piloted Aircraft Training</i>					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Phase 7 software	TBD	Not specified. : ,	-	-		-		0.720	Feb 2016	-		0.720	Continuing	Continuing	-
Subtotal			-	-		-		0.720		-		0.720	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			-	-		-		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			-	-		-		-		-		-	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			-	-		-		-		-		-	-	-	-
			Prior Years	FY 2014	FY 2015	FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			-	-		-		0.720		-		0.720	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force			Date: February 2015		
Appropriation/Budget Activity 3600 / 7		R-1 Program Element (Number/Name) PE 0604233F / <i>Specialized Undergraduate Flight Training</i>		Project (Number/Name) 674101 / <i>Undergraduate Remotely Piloted Aircraft Training</i>	

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Predator Reaper Integrated Mission Environment (PRIME) Contract Award																												
Phase 7 Design/Development																												
Phase 8 Planning																												
Phase 8 Design/Development																												
Phase 9 Planning																												
Phase 9 Design/Development																												
Phase 10 Planning																												
Phase 10 Design/Development																												
Phase 11 Planning																												
Phase 11 Design/Development																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Air Force			Date: February 2015
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0604233F / <i>Specialized Undergraduate Flight Training</i>	Project (Number/Name) 674101 / <i>Undergraduate Remotely Piloted Aircraft Training</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Predator Reaper Integrated Mission Environment (PRIME) Contract Award	2	2016	2	2016
Phase 7 Design/Development	2	2016	1	2017
Phase 8 Planning	1	2017	1	2017
Phase 8 Design/Development	2	2017	1	2018
Phase 9 Planning	1	2018	1	2018
Phase 9 Design/Development	2	2018	1	2019
Phase 10 Planning	1	2019	1	2019
Phase 10 Design/Development	2	2019	1	2020
Phase 11 Planning	1	2020	1	2020
Phase 11 Design/Development	2	2020	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force										Date: February 2015		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0604233F / Specialized Undergraduate Flight Training				Project (Number/Name) 676034 / Joint Primary Aircraft Training System (JPATS)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
676034: Joint Primary Aircraft Training System (JPATS)	-	-	-	2.583	-	2.583	-	-	-	-	-	2.583
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: N42												
Note In FY2016 PE 0604233F Specialized Undergraduate Flight Training, Project 654102 JPATS was transferred to Budget Activity 7 as it no longer met the criteria for Budget Activity 5. In FY2016 Project 676034 Joint Primary Aircraft Training System (JPATS) was completed.												
A. Mission Description and Budget Item Justification The Joint Primary Aircraft Training System (JPATS) is a joint USAF/USN venture to replace the Services' fleets of primary trainer aircraft (T-37 and T-34, respectively) and associated Ground Based Training Systems (GBTS). Additionally the US Army will be purchasing four T-6 Army Variant aircraft to replace the T-34 aircraft for the Army Test and Evaluation Command. The T-6 aircraft and GBTS are used to train entry-level student aviators in the fundamentals of flying so they can transition into advanced training tracks leading to qualification as military pilots, combat systems officers, and naval flight officers. The program includes the purchase of aircraft, simulators, and other associated ground-based training devices, Training Integration Management System (TIMS), instructional courseware, and logistics support to include Diminishing Manufacturing Sources and Material Shortages (DMSMS) and development activities related to DMSMS.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Joint Primary Aircraft Training System (JPATS) Studies Description: JPATS airframe studies & development efforts. FY 2016 Base Plans: Completion of JPATS studies and development activities including of the T-6 Power Management Unit (PMU) software upgrade, parachute surveillance study, Ejection Seat safe/arm handle development.								-	-	2.076	-	2.076
Title: Engine Upgrade Studies Description: Studies to investigate potential upgrade options to increase service life and decrease life cycle costs of the T106-PW-100 engine FY 2016 Base Plans:								-	-	0.278	-	0.278

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force									Date: February 2015		
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0604233F / Specialized Undergraduate Flight Training				Project (Number/Name) 676034 / Joint Primary Aircraft Training System (JPATS)			
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Compilation of six individual studies to investigate engine life limiting issues and to evaluate and recommend potential upgrade options to increase service life and decrease life cycle costs for the T106-PW-100 engine.											
Title: High Cycle Engine Fatigue Research							-	-	0.229	-	0.229
Description: Analysis of Hight Cycle Fatigue (HCF) and Structural Health Monitoring (SHM) of the T106-PW-100 engine.											
FY 2016 Base Plans: Completion of research and analysis of High Cycle Fatigue (HCF) and Structural Health Monitoring (SHM) of the T106-PW-100 engine.											
Accomplishments/Planned Programs Subtotals							-	-	2.583	-	2.583
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APAF BA06 Line Item #000999: Initial Spares/Repair Parts	0.538	0.948	0.910	-	0.910	2.556	2.605	2.653	2.716	-	-
• APAF BA05 Line Item#JPAT00: T-6	5.392	14.486	17.968	-	17.968	26.300	25.844	26.246	26.689	Continuing	Continuing
• APN BA03 Line Item#033900: JPATS	249.080	-	8.914	-	8.914	5.913	-	-	-	-	-
• APN BA05 Line Item#057100: JPATS Series	1.576	1.085	7.594	-	7.594	14.439	22.200	27.613	24.652	Continuing	Continuing
• APN BA06 Line Item#060500: Spares & Repair Parts	3.046	0.011	0.264	-	0.264	0.099	0.102	-	-	Continuing	Continuing
• APA BA01 Line Item#A11300: Utility F/W Aircraft	12.617	-	-	-	-	-	-	-	-	-	29.919
Remarks											
D. Acquisition Strategy											
JPATS was competitively awarded with the intent of maximizing the use of commercially available equipment and best commercial practices. Initially, the JPATS Program competitively awarded two contracts: a Firm Fixed Price (FFP) Contractor Logistics Support (CLS) Operations and Maintenance funded contract and a Fixed											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0604233F / <i>Specialized Undergraduate Flight Training</i>	Project (Number/Name) 676034 / <i>Joint Primary Aircraft Training System (JPATS)</i>

Price Incentive Firm Target (FPIF) manufacturing development (MD)/production contract with seven options. The follow-on contract production for both the air vehicle and GBTS was awarded as a FAR Part 15 action. The FFP CLS Operations and Maintenance funded contract is a FAR Part 15 action.

FY16 is the final year of development funded efforts under the JPATS ACAT IC program.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0604233F / Specialized Undergraduate Flight Training				Project (Number/Name) 676034 / Joint Primary Aircraft Training System (JPATS)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
JPATS Studies	Various	Various : Various,	-	-		-		2.076	Feb 2016	-		2.076	-	2.076	TBD
JPATS Engine Upgrade Study	C/CPFF	BDC : Various,	-	-		-		0.278	Feb 2016	-		0.278	-	0.278	TBD
JPATS High Cycle Fatigue Research	C/FFP	Universal Technology Corp : Dayton, OH	-	-		-		0.229	Feb 2016	-		0.229	-	0.229	TBD
Subtotal			-	-		-		2.583		-		2.583	-	2.583	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			-	-		-		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			-	-		-		-		-		-	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			-	-		-		-		-		-	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	-		-		2.583		-		2.583	-	2.583	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force							Date: February 2015			
Appropriation/Budget Activity 3600 / 7			R-1 Program Element (Number/Name) PE 0604233F / <i>Specialized Undergraduate Flight Training</i>			Project (Number/Name) 676034 / <i>Joint Primary Aircraft Training System (JPATS)</i>				
	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force			Date: February 2015		
Appropriation/Budget Activity 3600 / 7		R-1 Program Element (Number/Name) PE 0604233F / <i>Specialized Undergraduate Flight Training</i>		Project (Number/Name) 676034 / <i>Joint Primary Aircraft Training System (JPATS)</i>	

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JPATS Engine Studies																												
JPATS Avionics Upgrades for FAA Compliance																												
JPATS Continuing USN / USA T-6 Deliveries																												
JPATS Engine Upgrade Study																												
JPATS High Cycle Fatigue Research																												
JPATS GBTS ATD IOS Joystick & Throttle																												
JPATS GBTS ATD DAS II Control Loading/ Flight Retrofit																												
SECT Update Software and Threat Library (FY2015/FY2016)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Air Force			Date: February 2015
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0604233F / <i>Specialized Undergraduate Flight Training</i>	Project (Number/Name) 676034 / <i>Joint Primary Aircraft Training System (JPATS)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JPATS Engine Studies	1	2014	4	2017
JPATS Avionics Upgrades for FAA Compliance	1	2016	4	2017
JPATS Continuing USN / USA T-6 Deliveries	1	2014	1	2016
JPATS Engine Upgrade Study	2	2015	1	2017
JPATS High Cycle Fatigue Research	4	2014	1	2017
JPATS GBTS ATD IOS Joystick & Throttle	1	2015	1	2016
JPATS GBTS ATD DAS II Control Loading/Flight Retrofit	1	2015	3	2017
SECT Update Software and Threat Library (FY2015/FY2016)	2	2015	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force										Date: February 2015		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0604233F / Specialized Undergraduate Flight Training				Project (Number/Name) 676035 / T-6 Operational System Development			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
676035: T-6 Operational System Development	-	-	-	4.904	-	4.904	3.107	2.433	2.479	2.523	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: N42												
Note In FY2016 Project 676035 T-6 Operational System Development includes new start efforts for studies & development efforts to support future ACAT III Engineering Change Proposals(ECPs) to the T-6 Aircraft. This includes development for the FAA mandated ACAT III program for ADS-B Out and associated upgrades.												
A. Mission Description and Budget Item Justification T-6 Operational System Development continues follow on development activities to JPATS including studies & development efforts to support future ACAT III Engineering Change Proposals (ECPs) to the T-6 Aircraft, instructional courseware, and logistics support to include Diminishing Manufacturing Sources and Material Shortages (DMSMS) and development activities related to DMSMS. Included is development for the FAA mandated ACAT III program for ADS-B Out and associated upgrades. Also included is development of the aircraft Mission Planning System (MPS) support to obtain Joint Mission Planning System (JMPS) currency and certification for T-6 flight operations. The JMPS requirements are levied from outside the T-6 JPATS program office and may or may not correlate with block upgrade requirements.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: T-6 Aircraft Studies								-	-	0.978	-	0.978
Description: - T-6 Aircraft studies & development efforts												
FY 2016 Base Plans: T-6 Aircraft studies and development activities include development of the T-6 Power Management Unit (PMU) software upgrade, parachute surveillance study, safe/arm handle development.												
Title: Avionics Upgrades for FAA (Federal Aviation Administration) Compliance								-	-	3.926	-	3.926
Description: Funding supports component selection, integration, test and certification of Automated Dependent Surveillance Broadcast (ADS-B Out)capability for use in T-6A aircraft and Ground Based Training System (GBTS).												
FY 2016 Base Plans:												

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Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0604233F / <i>Specialized Undergraduate Flight Training</i>				Project (Number/Name) 676035 / <i>T-6 Operational System Development</i>				
B. Accomplishments/Planned Programs (\$ in Millions)												
								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Funding will be used to develop and test upgrades and enhancements to hardware and software components to include Avionics Upgrades for Federal Aviation Administration (FAA) Compliance. Funding supports development, integration, test and certification of the Automated Dependent Surveillance Broadcast (ADS-B Out) capability in the T-6 Training System to comply with the January 1, 2020 Federal Aviation Administration (FAA)ADS-B Out mandate												
Accomplishments/Planned Programs Subtotals								-	-	4.904	-	4.904
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• APN BA05 Line Item#057100: <i>JPATS Series</i>	1.576	1.085	7.594	-	7.594	14.439	22.200	27.613	24.653	Continuing	Continuing	
• APN BA06 Line Item#060500: <i>Spares & Repair Parts</i>	3.046	0.011	0.264	-	0.264	0.099	0.102	-	-	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
The Air Force is lead service for the JPATS program and currently manages upgrades to the entire family of systems for both the Air Force and Navy. The JPATS Operations acquisition strategy for satisfying emerging software and hardware requirements is designed to enable competition and control cost. Development resulting from Diminishing Manufacturing Sources and Material Shortages requirement will be evaluated and implemented incrementally to efficiently deliver required capabilities to AETC.												
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.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0604233F / Specialized Undergraduate Flight Training				Project (Number/Name) 676035 / T-6 Operational System Development					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Avionics Upgrades for FAA Compliance	C/FFP	TBD : TBD,	-	-		-		3.926	Mar 2016	-		3.926	Continuing	Continuing	TBD
T-6 High Cycle Engine Fatigue	C/CPFF	Universal Technology Corp : Dayton, OH	-	-		-		0.150	Mar 2016	-		0.150	Continuing	Continuing	TBD
T-6 Parachute Surveillance	C/FFP	Martin Baker Aircraft Co LTD : Various,	-	-		-		0.450	Mar 2016	-		0.450	Continuing	Continuing	TBD
T-6 Engine CIP	PO	Arnold Engineering Development Center : Arnold AFB, TN	-	-		-		0.378	Feb 2016	-		0.378	Continuing	Continuing	TBD
Subtotal			-	-		-		4.904		-		4.904	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			-	-		-		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			-	-		-		-		-		-	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			-	-		-		-		-		-	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force											Date: February 2015				
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0604233F / Specialized Undergraduate Flight Training				Project (Number/Name) 676035 / T-6 Operational System Development						
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	-		-		4.904		-		4.904	-	-	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force			Date: February 2015
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0604233F / <i>Specialized Undergraduate Flight Training</i>	Project (Number/Name) 676035 / <i>T-6 Operational System Development</i>	

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
T-6 Engine Studies																												
T-6 Avionics Upgrades for FAA Compliance																												
T-6 Engine Upgrade Study																												
T-6 High Cycle Fatigue Research																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Air Force			Date: February 2015
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0604233F / <i>Specialized Undergraduate Flight Training</i>	Project (Number/Name) 676035 / <i>T-6 Operational System Development</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
T-6 Engine Studies	1	2016	1	2020
T-6 Avionics Upgrades for FAA Compliance	1	2016	4	2018
T-6 Engine Upgrade Study	1	2016	1	2017
T-6 High Cycle Fatigue Research	4	2016	1	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force										Date: February 2015		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0604233F / Specialized Undergraduate Flight Training				Project (Number/Name) 676037 / T-38 Operational System Development			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
676037: T-38 Operational System Development	-	-	-	2.258	-	2.258	1.124	1.145	1.166	1.187	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: N42												
Note In FY2016 Project 676037 T-38 Operational Systems Development includes a new start effort for Block upgrades to incorporate software and/or hardware improvements to comply with new requirements mandated by Department of Defense, Federal Aviation Administration or National Airspace System (DoD/FAA/NAS) and to address flight safety issues. The block upgrades support the T-38C aircraft and Aircrew Training Devices (ATD). Due to T-38's advanced age, many parts are either obsolete or will become obsolete. Research is necessary to determine how, and with what to address the issues. When solutions are identified, source funding may either be acquisition or sustainment, whichever is appropriate.												
A. Mission Description and Budget Item Justification T-38 Operational System Development continues follow on development activities for the T-38 including studies & development efforts to support future ACAT III Engineering Change Proposals (ECPs) to address obsolescence issues and the regular block upgrades are required to keep the system current. Block upgrades incorporate software and/or hardware improvements to comply with new requirements mandated by Department of Defense, Federal Aviation Administration or National Airspace System (DoD/FAA/NAS) and to address flight safety issues. The block upgrades support the T-38C aircraft and Aircrew Training Devices (ATD).												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Avionics Post Production Support (APPS)								-	-	2.258	-	2.258
Description: T-38C Avionics System obsolescence remediation effort is intended to develop and qualify replacement components/LRUs that are becoming non-supportable. Additionally the T-38C program will begin development of a solution for the FAA ADS-B (Out) mandate.												
FY 2016 Base Plans: Complete Block 10 aircraft operational testing and JMPS IV&V and developmental testing. Complete data chain management audit requirements with the Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM) Center of Excellence to ensure the T-38C aircraft is compliant with Air Force navigation data chain management standards and directives. Obtain Authority to Operate and field T-38C Block 10.												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force				Date: February 2015	
Appropriation/Budget Activity 3600 / 7		R-1 Program Element (Number/Name) PE 0604233F / <i>Specialized Undergraduate Flight Training</i>		Project (Number/Name) 676037 / <i>T-38 Operational System Development</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue research and development of a replacement Heads-Up Display and Up-Front Control panel.					
Accomplishments/Planned Programs Subtotals	-	-	2.258	-	2.258

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APAF: BA05: Line Item #T03800: T-38	-	-	-	-	-	-	-	-	-	-	-

Remarks

D. Acquisition Strategy

The T-38 Operations System Development acquisition strategy for satisfying emerging software and hardware requirements is designed to enable competition and cost control. Developmental requirements resulting from Diminishing Manufacturing Sources and Material Shortages will be evaluated and implemented incrementally to efficiently deliver required capabilities to AETC. System Block upgrades will utilize technical data rights to enable support the T-38C's federated systems architecture. The Avionics Component Integration (AvCI) contract is currently in the source selection process. The current contract strategy is projected to be a Type D IDIQ contract competitively awarded to address T-38C avionics system obsolescence issues and provide CLS follow-on support.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0604233F / Specialized Undergraduate Flight Training				Project (Number/Name) 676037 / T-38 Operational System Development					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
T-38C Avionics System obsolescence remediation	C/Various	AFMCLCMC/WLDM T-38 Program office : Dayton, OH	-	-		-		0.900	Nov 2014	-		0.900	Continuing	Continuing	-
Heads-Up Display Development	C/FFP	TBD : ,	-	-		-		1.273	Jan 2016	-		1.273	Continuing	Continuing	-
Subtotal			-	-		-		2.173		-		2.173	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			-	-		-		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			-	-		-		-		-		-	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
PMA Contract support	C/FFP	Not specified. : ,	-	-		-		0.030	Dec 2015	-		0.030	Continuing	Continuing	-
Government Travel	Various	Not specified. : ,	-	-		-		0.055	Oct 2015	-		0.055	Continuing	Continuing	-
Subtotal			-	-		-		0.085		-		0.085	-	-	-
			Prior Years	FY 2014	FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			-	-		-		2.258		-		2.258	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force							Date: February 2015			
Appropriation/Budget Activity 3600 / 7			R-1 Program Element (Number/Name) PE 0604233F / <i>Specialized Undergraduate Flight Training</i>			Project (Number/Name) 676037 / <i>T-38 Operational System Development</i>				
	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force			Date: February 2015		
Appropriation/Budget Activity 3600 / 7			R-1 Program Element (Number/Name) PE 0604233F / <i>Specialized Undergraduate Flight Training</i>		
			Project (Number/Name) 676037 / <i>T-38 Operational System Development</i>		

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
AUP Block 10 Integration and Test																												
AUP Block 10 Fielding																												
AUP Block 10 Release																												
AUP Block 11 Requirements																												
AUP Block 11 Design/Development																												
Heads-Up Display Development																												
Heads-Up Display Integration																												
Heads-Up Display Qualification Testing																												
Heads-Up Display Procurment																												
Mission Display Processor Development																												
Mission Display Processor Integration																												
Mission Display Processor Qualification Testing																												
Mission Display Processor Procurement																												
Automatic Dependent Surveillance Broadcast Development																												
Automatic Dependent Surveillance Broadcast Integration																												
Automatic Dependent Surveillance Broadcast Qualification Testing																												
Automatic Dependent Surveillance Broadcast Procurement																												
Very High Frequency Radio Development																												
Very High Frequency Radio Integration																												
Very High Frequency Radio Qualification Testing																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force																				Date: February 2015																	
Appropriation/Budget Activity 3600 / 7										R-1 Program Element (Number/Name) PE 0604233F / Specialized Undergraduate Flight Training								Project (Number/Name) 676037 / T-38 Operational System Development																			
										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Very High Frequency Radio Procurement																																					
Very High Frequency Navigation Unit Development																																					
Very High Frequency Navigation Unit Integration																																					
Very High Frequency Navigation Unit Qualification Testing																																					
Very High Frequency Navigation Unit Procurement																																					

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Air Force			Date: February 2015
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0604233F / <i>Specialized Undergraduate Flight Training</i>	Project (Number/Name) 676037 / <i>T-38 Operational System Development</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AUP Block 10 Integration and Test	1	2016	2	2016
AUP Block 10 Fielding	2	2016	3	2016
AUP Block 10 Release	3	2016	3	2016
AUP Block 11 Requirements	3	2017	4	2018
AUP Block 11 Design/Development	1	2019	4	2020
Heads-Up Display Development	2	2016	1	2018
Heads-Up Display Integration	4	2016	1	2018
Heads-Up Display Qualification Testing	3	2017	2	2018
Heads-Up Display Procurement	3	2018	4	2020
Mission Display Processor Development	1	2017	1	2019
Mission Display Processor Integration	1	2018	1	2019
Mission Display Processor Qualification Testing	1	2019	4	2019
Mission Display Processor Procurement	1	2020	4	2020
Automatic Dependent Surveillance Broadcast Development	1	2017	1	2019
Automatic Dependent Surveillance Broadcast Integration	1	2018	1	2019
Automatic Dependent Surveillance Broadcast Qualification Testing	1	2019	4	2019
Automatic Dependent Surveillance Broadcast Procurement	1	2020	4	2020
Very High Frequency Radio Development	1	2017	1	2019
Very High Frequency Radio Integration	1	2018	1	2019
Very High Frequency Radio Qualification Testing	1	2019	4	2019
Very High Frequency Radio Procurement	1	2020	4	2020
Very High Frequency Navigation Unit Development	1	2017	1	2019

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Air Force			Date: February 2015	
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0604233F / Specialized Undergraduate Flight Training		Project (Number/Name) 676037 / T-38 Operational System Development	
	Start		End	
Events	Quarter	Year	Quarter	Year
Very High Frequency Navigation Unit Integration	1	2018	1	2019
Very High Frequency Navigation Unit Qualification Testing	1	2019	4	2019
Very High Frequency Navigation Unit Procurement	1	2020	4	2020