

UNCLASSIFIED

PE NUMBER: 0604233F

PE TITLE: Specialized Undergraduate Pilot Training

Exhibit R-2, RDT&E Budget Item Justification

DATE

February 2006

BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604233F Specialized Undergraduate Pilot Training

	Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
	Total Program Element (PE) Cost	2.785	8.472	3.703	12.504	7.430	3.957	3.583	Continuing	TBD
4102	Joint Primary Aircraft Training System (JPATS)	1.579	7.040	2.201	2.244	2.282	2.334	2.374	Continuing	TBD
4376	T-38 Avionics Upgrade Program (AUP)	1.206	1.432	1.502	10.260	5.148	1.623	1.209	Continuing	TBD

(U) **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. 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). The Air Force is the Executive Service. For FY2006 only, Project 4102, JPATS, includes funding for an upgrade to the Simulator for Electronic Combat Training (SECT), a one-of-a-kind simulator at Randolph AFB TX used to train electronic warfare officers. The T-38 AUP is an integrated modernization of the T-38A and AT-38B cockpits to support mission ready fighter and bomber training. Additionally, there are funds in this project for Phase I testing of propulsion enhancements for the T-38 aircraft and to update T-38 flight performance models, Technical Orders, and AUP software for both aircraft and Aircrew Training Devices for changes brought about by the T-38 Propulsion Modernization Program (PMP). T-38 FY2002 and FY 2004 - FY2009 funding is for software block updates driven by FAA-mandated changes, National Aerospace System (NAS) requirements, and enhancements identified during test and evaluation. FY2008 - FY2009 includes development funding for improved T-38 brakes.

This program element is in Budget Activity 5, System Development and Demonstration (SDD) because it primarily involves the missionization of commercial derivative aircraft, equipment, and components.

(U) **B. Program Change Summary (\$ in Millions)**

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Previous President's Budget	3.330	8.593	2.181
(U) Current PBR/President's Budget	2.785	8.472	3.703
(U) Total Adjustments	-0.545	-0.121	1.522
(U) Congressional Program Reductions	-0.002		
Congressional Rescissions		-0.121	
Congressional Increases			
Reprogrammings	-0.450		
SBIR/STTR Transfer	-0.093		

(U) **Significant Program Changes:**

Reductions in FY2005 for Congressional General Reductions, Small Business Innovation Research, and Below Threshold Reprogrammings to support higher Air Force

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priorities. Reduction in FY2006 for Congressional Rescissions. FY2007 and out increased due to inflation rate changes. FY 2007 and out funding for Project 4376, T-38 Avionics Upgrade Program, restored.

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Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604233F Specialized Undergraduate
Pilot Training

PROJECT NUMBER AND TITLE

4102 Joint Primary Aircraft Training
System (JPATS)

Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
4102 Joint Primary Aircraft Training System (JPATS)	1.579	7.040	2.201	2.244	2.282	2.334	2.374	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) **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). The aircraft and GBTS will be 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, navigators, 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. Annual JPATS funding is used to develop and test upgrades and enhancements to program hardware and software components.

FY2006 includes funding to upgrade the Simulator for Electronic Combat Technology (SECT), which supports Air Education and Training Command's (AETC) implementation of Joint Undergraduate Navigator Training. The T25 SECT is used to train all USAF Electronic Warfare Officers. The SECT was designed in the early 1990s as a proprietary based trainer using mini-computers and workstations. Most hardware is now obsolete and is no longer supported by the vendor. Secondary sources do not exist for some hardware items, and secondary sources are also becoming scarce for other hardware items. Future reliability is questionable. Per AETC Test 99-02F T25 Force Development Evaluation Report, the SECT is "not operationally effective" because of inadequate memory, disk space and processing power. Existing hardware memory and processing power cannot be increased to build complex, realistic, up-to-date training scenarios. A non-proprietary, open-architecture trainer would provide reliability and required growth capability to accommodate dynamic EW training environment.

Budget Activity Justification: This program element is in Budget Activity 5, System Development and Demonstration (SDD) because it primarily involves the missionization of commercial derivative aircraft, equipment, and components.

(U) **B. Accomplishments/Planned Program (\$ in Millions)**

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) JPATS studies & development efforts.	1.579	1.735	2.201
(U) SECT software/hardware upgrade	0.000	5.305	0.000
(U) Total Cost	1.579	7.040	2.201

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E	1.579	7.040	2.201	2.244	2.282	2.334	2.374	Continuing	TBD
(U) Other APPN									
(U) Aircraft Procurement, Air Force,									

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604233F Specialized Undergraduate
Pilot Training

PROJECT NUMBER AND TITLE

4102 Joint Primary Aircraft Training
System (JPATS)(U) **C. Other Program Funding Summary (\$ in Millions)**

BA-3									
(U) JPATS	300.870	328.876	305.129	240.167	2.045	1.947	1.812	6.400	2,493.541
(U) JPATS, BA-6	7.509	0.000	0.000	0.000	0.000	0.000	0.000	0.000	25.757
(U) JPATS Mod Funding	3.792	6.061	6.164	16.873	21.128	17.387	11.839	Continuing	TBD
(U) Military Construction, Air Force									
(U) PE 0804741F, JPATS	0.000	3.013	0.000	0.000	0.000	0.000	0.000	0.000	19.253
(U) RDT&E, Navy, BA-7									
(U) PE 0603208N, Training System Aircraft, H1150, JPATS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.300
(U) Aircraft Procurement, Navy, BA-3	16.941	19.381	146.068	309.459	331.212	353.744	356.177	538.826	2,295.012
(U) JPATS									
(U) APN 5 Mod Funding	1.238	0.710	1.656	1.317	1.505	1.535	1.566	15.900	25.900
(U) APN 6 Spares	0.000	0.686	4.857	6.629	7.672	5.577	2.174	29.573	68.609
(U) Military Construction, Navy	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	13.400

(U) **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 Contractor Logistics Support (CLS) - Operations and Maintenance funds - contract and a Fixed Price Incentive Firm Target (FPIF) manufacturing development (MD)/production contract with seven options. The FY2002 (Lots 9-13) production contract for both the air vehicle and GBTS is Firm Fixed Price, FAR Part 12 (commercial). The FY2007 production contract for both the air vehicle and GBTS will be awarded as a FAR Part 15 action.

The SECT upgrade effort is planned as an Engineering Change Proposal (ECP) to the competitively awarded Firm Fixed Price Contractor Logistics Support (CLS) contract, originally awarded in FY2000 for one year plus nine one-year options.

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Exhibit R-3, RDT&E Project Cost Analysis

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05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

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Pilot Training

PROJECT NUMBER AND TITLE

4102 Joint Primary Aircraft Training
System (JPATS)

(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract</u> <u>Method &</u> <u>Type</u>	<u>Performing</u> <u>Activity &</u> <u>Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Award</u> <u>Date</u>	<u>FY 2006</u> <u>Cost</u>	<u>FY 2006</u> <u>Award</u> <u>Date</u>	<u>FY 2007</u> <u>Cost</u>	<u>FY 2007</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>	<u>Target Value</u> <u>of Contract</u>
(U) <u>Product Development</u> Raytheon Aircraft Company (RAC) */****	C/FPI	RAC, Wichita KS	217.589	1.579	Aug-05	1.735	May-06	2.201	May-07	Continuing	TBD	TBD
SECT Upgrade	C/FFP	AAI Services Corp, Hunt Valley MD	0.000	0.000		5.305	Feb-06	0.000		0.000	5.305	TBD
Subtotal Product Development			217.589	1.579		7.040		2.201		Continuing	TBD	TBD
Remarks:			* RAC contract Total Program includes contract value, 'to ceiling,' Engineering Change Order (ECO), and Production Incentive RAC EAC includes subcontracted GBTS effort, which is not individually reported ****EACs based on GBTS Only: Lots 1, 6, 7 and 8.									
(U) <u>Support</u> Various	Various		0.000	0.000		0.000		0.000		Continuing	TBD	
Subtotal Support			0.000	0.000		0.000		0.000		Continuing	TBD	0.000
Remarks:												
(U) <u>Test & Evaluation</u> Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Management</u> Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			217.589	1.579		7.040		2.201		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604233F Specialized Undergraduate
Pilot Training

PROJECT NUMBER AND TITLE

4102 Joint Primary Aircraft Training
System (JPATS)

ID	Task Name	'04				'05				'06				'07			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Aircraft RM&A Verification																
2	ISS Development																
3	Cockpit Upgrade Development																
4	ASV Development																
5	UWARS Development																
6	TAS Development																

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Exhibit R-4a, RDT&E Schedule Detail

DATE

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604233F Specialized Undergraduate
Pilot Training

PROJECT NUMBER AND TITLE

4102 Joint Primary Aircraft Training
System (JPATS)(U) Schedule ProfileFY 2005FY 2006FY 2007

(U) JPATS Complete FOT&E

1Q

(U) SECT Request for Information

3Q

(U) SECT Request for Proposal

4Q

(U) SECT Contract Award

2Q

(U) SECT Software and Hardware Design/Development

2-4Q

1Q

(U) SECT Software and Hardware Design/Development Complete

2Q

(U) SECT System Integration Complete

3Q

(U) SECT System Acceptance

4Q

(U) JPATS Follow-on Contract Award

1Q

(U) JPATS - Certification of New Emergency Locator Transponder

1Q

(U) JPATS GBTS Traffic Alert System Development Complete

2Q

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Exhibit R-2a, RDT&E Project Justification								DATE February 2006	
BUDGET ACTIVITY 05 System Development and Demonstration (SDD)				PE NUMBER AND TITLE 0604233F Specialized Undergraduate Pilot Training			PROJECT NUMBER AND TITLE 4376 T-38 Avionics Upgrade Program (AUP)		
Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
4376 T-38 Avionics Upgrade Program (AUP)	1.206	1.432	1.502	10.260	5.148	1.623	1.209	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		
<p>(U) <u>A. Mission Description and Budget Item Justification</u></p> <p>The T-38 Avionics Upgrade Program (AUP) is an integrated modernization of the T-38A and AT-38B cockpits to support mission-ready fighter training and converts all T-38A and AT-38B aircraft to T-38C configuration. The modernized digital cockpit will include Global Positioning System (GPS), Head-Up Display (HUD), Inertial Navigation System (INS), Multi-Function Displays (MFDs), Up-Front Control Panel (UFCP), Data Transfer System (DTS), No-Drop Bombing System (NDBS), and Hands-On Throttle and Stick (HOTAS) switchology. HUD symbology is the new USAF standard recently certified as a primary flight reference. Also included is the acquisition of three types of Aircrew Training Devices (ATDs) to replace the existing T-51 simulators. The program includes the design, integration, test, and installation of the cockpit prototype in aircraft, ATDs, and other training devices, as well as engineering services, studies, analysis and support to determine the feasibility of incorporating changes for purposes of making informed life-cycle cost business decisions. FY 2005 - FY2011 funding is to develop & test aircraft & ATD hardware/software block updates, mission planning software, requirements driven by DoD, FAA and National Aerospace System (NAS) mandated changes (Crash Survivable Flight Data Recorder, Cockpit Voice Recorder, Emergency Locator Transmitter, etc.), enhancements identified during test and evaluation (Global Air Traffic Management (GATM), Joint Precision Approach and Landing System (JPALS), GPS, GPS Embedded Module (GEM) issues (Selective Availability Anti-Spoofing Module (SAASM), precision and GPS approaches), and/or enhancements identified during Development Testing, Operational Testing and Force Development Evaluation (FDE), and AETC operations such as scratch pad, improvements to UFCP, HUD, Built In Test (BIT), mechanization of menus/modes and mission planning/debriefing system, ATD HUD projectors, and Companion Aircraft Model (CAM) operations. FY2008 - FY2009 includes development funding for improved T-38 brakes.</p> <p>Budget Activity Justification. This project is in Budget Activity 5, System Development and Demonstration (SDD) because it primarily involves the missionization of commercial derivative aircraft, equipment, and components.</p>									
(U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u>						<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	
(U) Develop and test Block 5 AUP aircraft and ATD hardware/software upgrades, mission planning software, requirements driven by DoD/ FAA/NAS mandates, and/or improvements identified during Test and Evaluation and AETC operations.						1.206	0.000	0.000	
(U) Develop and test Block 6 AUP aircraft and ATD hardware/software upgrades, mission planning software, requirements driven by DoD/ FAA/NAS mandates, and/or improvements identified during Test and Evaluation and AETC operations.						0.000	1.432	0.000	
(U) Future software Block Upgrades, mission planning software, requirements driven by DoD/ FAA/NAS mandates, and/or improvements identified during Test and Evaluation and AETC operations.						0.000	0.000	1.502	
(U) Total Cost						1.206	1.432	1.502	
Project 4376		R-1 Shopping List - Item No. 68-9 of 68-13					Exhibit R-2a (PE 0604233F)		

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Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604233F Specialized Undergraduate
Pilot Training

PROJECT NUMBER AND TITLE

4376 T-38 Avionics Upgrade Program
(AUP)(U) **C. Other Program Funding Summary (\$ in Millions)**

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E	1.206	1.432	1.502	10.260	5.148	1.623	1.209	Continuing	TBD
(U) Other APPN									
(U) PE 0804741F, T-38 Avionics Upgrade, BP 1100	51.868	41.466	40.508	0.770	0.000	0.000	0.000	0.000	522.578
(U) PE 0804741F, T-38 Improved Brakes, BP 1100	0.000	0.000	0.000	0.000	9.791	9.590	5.710	52.383	77.474

(U) **D. Acquisition Strategy**

The T-38C AUP competitively awarded three contracts: a) a cost plus award fee EMD contract with six firm fixed price production options; b) a firm fixed price CLS contract for avionics including Contractor Owned and Maintained Base Supply (COMBS) (O&M funds); and c) a fixed price award fee maintenance contract for the current and new Aircrew Training Devices (ATDs). During FY2004 new firm fixed priced contracts were negotiated to complete the AUP modification, and unpriced delivery orders for the period FY2005-2008 were negotiated for the aircraft CLS contract. FY2002 and FY2004 software block updates were changes to existing contracts and FY2005-2009 block updates will be performed on the new contract.

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Exhibit R-3, RDT&E Project Cost Analysis

DATE

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604233F Specialized Undergraduate
Pilot Training

PROJECT NUMBER AND TITLE

4376 T-38 Avionics Upgrade Program
(AUP)

(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract</u> <u>Method &</u> <u>Type</u>	<u>Performing</u> <u>Activity &</u> <u>Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Award</u> <u>Date</u>	<u>FY 2006</u> <u>Cost</u>	<u>FY 2006</u> <u>Award</u> <u>Date</u>	<u>FY 2007</u> <u>Cost</u>	<u>FY 2007</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>	<u>Target Value</u> <u>of Contract</u>
(U) <u>Product Development</u> The Boeing Corporation	C/CPAF	The Boeing Corporation St. Louis MO		1.206	Apr-05	1.432		1.502		Continuing	TBD	TBD
TASG T-38SS	Various	TASG T-38SS WPAFB OH		0.000		0.000		0.000		Continuing	TBD	TBD
Subtotal Product Development			0.000	1.206		1.432		1.502		Continuing	TBD	TBD
Remarks:												
(U) <u>Support</u>											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Test & Evaluation</u>	PO										0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Management</u>											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			0.000	1.206		1.432		1.502		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

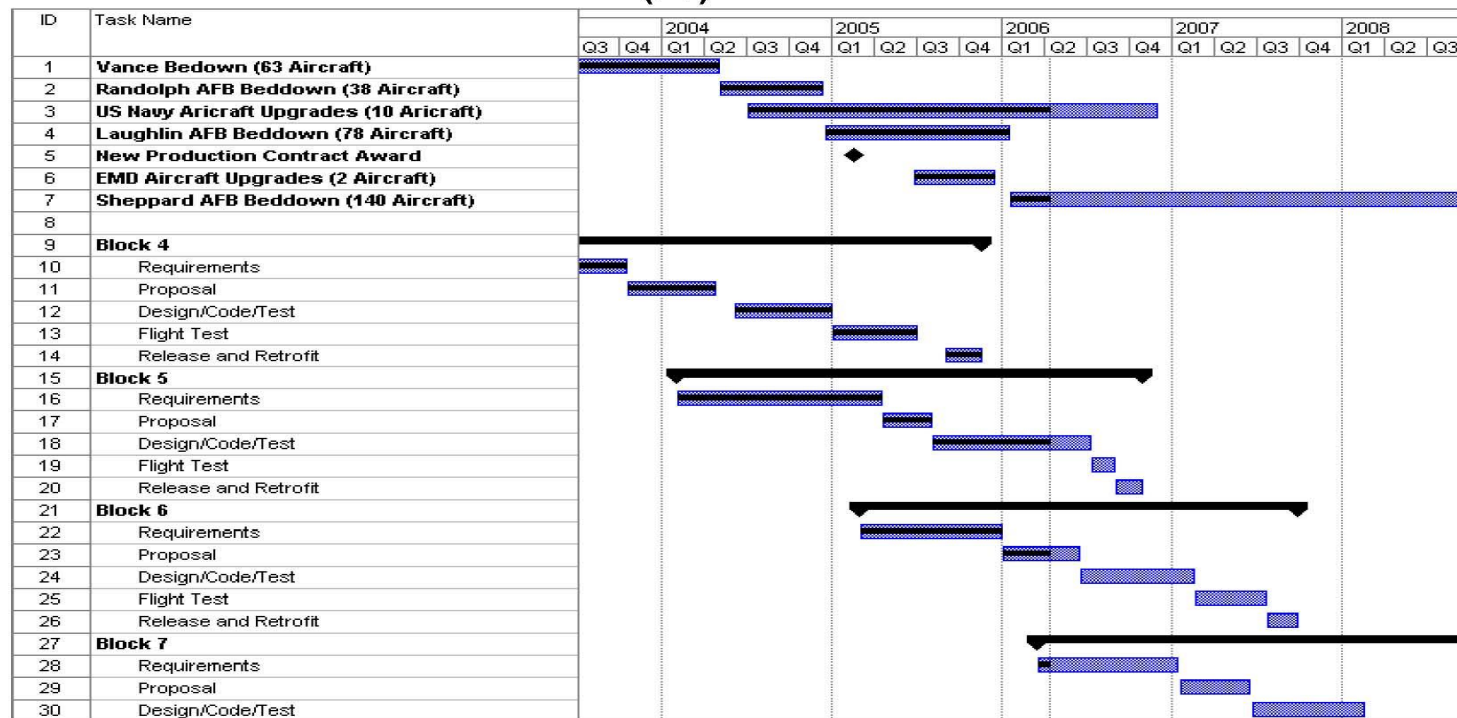
PE NUMBER AND TITLE

0604233F Specialized Undergraduate
Pilot Training

PROJECT NUMBER AND TITLE

4376 T-38 Avionics Upgrade Program
(AUP)

Exhibit R-4, RDT&E Schedule Profile (FY)



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Exhibit R-4a, RDT&E Schedule Detail

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05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

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Pilot Training

PROJECT NUMBER AND TITLE

4376 T-38 Avionics Upgrade Program
(AUP)(U) Schedule ProfileFY 2005FY 2006FY 2007

(U) Field Software Block 4

4Q

(U) Required Assets Available (RAA), Laughlin AFB

2Q

(U) Initiate Software Block 5 on AUP

2Q

(U) Initiate Software Block 6

2Q

(U) Field Software Block 5

4Q

(U) Field Software Block 6

4Q

(U) Post Deployment Support 4 (PDS 4)

2Q

(U) PDS 5

2Q

(U) PDS 6

2Q