

UNCLASSIFIED

PE NUMBER: 0604233F

PE TITLE: Specialized Undergraduate Pilot Training

Exhibit R-2, RDT&E Budget Item Justification

DATE

February 2005

BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604233F Specialized Undergraduate Pilot Training

	Cost (\$ in Millions)	FY 2004 Actual	FY 2005 Estimate	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	3.099	3.330	8.593	2.181	6.792	2.249	2.302	2.340	Continuing	TBD
4102	Joint Primary Aircraft Training System (JPATS)	1.799	1.926	7.141	2.181	2.213	2.249	2.302	2.340	Continuing	TBD
4376	T-38 Avionics Upgrade Program (AUP)	1.300	1.404	1.452	0.000	4.579	0.000	0.000	0.000	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 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Previous President's Budget	3.267	3.359	8.548	3.629
(U) Current PBR/President's Budget	3.099	3.330	8.593	2.181
(U) Total Adjustments	-0.168	-0.029		
(U) Congressional Program Reductions	-0.028			
Congressional Rescissions		-0.029		
Congressional Increases				
Reprogrammings	-0.056			
SBIR/STTR Transfer	-0.084			

(U) **Significant Program Changes:**

Reductions in FY2004 for Congressional General Reductions, Small Business Innovation Research, and Below Threshold Reprogrammings. Reduction in FY2005 for Congressional Rescissions. FY2005 reduced for Congressional rescissions. FY2006 and out increased due to inflation rate changes. FY 2007 and out funding for Project

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Exhibit R-2, RDT&E Budget Item Justification		DATE February 2005
BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604233F Specialized Undergraduate Pilot Training	
<p>4376, T-38 Avionics Upgrade Program, reduced.</p>		

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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 2004 Actual	FY 2005 Estimate	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)	1.799	1.926	7.141	2.181	2.213	2.249	2.302	2.340	Continuing	TBD
Quantity of RDT&E Articles	0	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.

Supports Air Education and Training Command's (AETC) implementation of Joint Undergraduate Navigator Training. The T25 Simulator for Electronic Combat Training (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 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) JPATS studies & development efforts.	1.799	1.926	1.760	2.181
(U) SECT software/hardware upgrade	0.000	0.000	5.381	0.000
(U) Total Cost	1.799	1.926	7.141	2.181

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

	<u>FY 2004</u>	<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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E	1.799	1.926	7.141	2.181	2.213	2.249	2.302	2.340	Continuing	TBD
(U) Other APPN										
(U) Aircraft Procurement, Air Force, BA-3										

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Exhibit R-2a, RDT&E Project Justification

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

(U) JPATS	271.171	302.373	333.307	306.074	237.446	2.901	2.871	2.780	6.400	2,495.044
(U) JPATS, BA-6	6.925	7.509	0.000	0.000	0.000	0.000	0.000	0.000	0.000	25.757
(U) JPATS Mod Funding	4.660	3.792	6.143	6.063	16.632	20.833	17.135	11.654	94.798	181.110
(U) Military Construction, Air Force	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(U) PE 0804741F, JPATS	2.240	0.000	3.013	0.000	0.000	0.000	0.000	0.000	0.000	19.253
(U) RDT&E, Navy, BA-7 PE 0603208N, Training										
(U) System Aircraft, H1150, JPATS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.300
(U) Aircraft Procurement, Navy, BA-3	24.291	2.034	2.356	159.916	305.906	327.623	349.750	351.530	499.469	2,221.467
(U) JPATS										
(U) APN 5 Mod Funding	0.530	0.648	0.714	1.640	1.305	1.490	1.520	1.550	15.704	25.101
(U) APN 6 Spares	0.000	0.000	0.000	3.838	7.818	7.146	7.194	4.912	15.670	58.025
(U) Military Construction, Navy	0.000	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).

For SECT, the intent is to compete contract to maximize use of commercially available equipment and best commercial practices. Daily operations and maintenance is provided via a separate, competitively awarded Firm Fixed Price Contractor Logistics Support (CLS) contract, originally awarded in FY2000 for 1 year plus nine one-year options.

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Exhibit R-3, RDT&E Project Cost Analysis												DATE February 2005		
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) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2004 Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development														
Raytheon Aircraft Company (RAC) */****	C/FPI	RAC, Wichita KS	215.790	1.799	Feb-04	1.926	Aug-05	1.760	May-06	2.181	May-07	Continuing	TBD	TBD
SECT Upgrade	TBD	TBD	0.000	0.000		0.000		5.381	Oct-05	0.000		0.000	5.381	TBD
Subtotal Product Development			215.790	1.799		1.926		7.141		2.181		Continuing	TBD	TBD
* RAC contract Total Program includes contract value, 'to ceiling,' Engineering Change Order (ECO), and Production Incentive														
Remarks: RAC EAC includes subcontracted GBTS effort, which is not individually reported														
****EACs based on GBTS Only: Lots 1, 6, 7 and 8.														
(U) Support														
Various	Various		44.210	0.000								Continuing	TBD	
Subtotal Support			44.210	0.000		0.000		0.000		0.000		Continuing	TBD	0.000
Remarks:														
(U) Test & Evaluation														
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) Management														
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) Total Cost			260.000	1.799		1.926		7.141		2.181		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

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 Profile**FY 2004FY 2005FY 2006FY 2007

(U) JPATS Begin FOT&E

1Q

(U) JPATS Begin RM & A Verification

2Q

(U) JPATS Complete RM & A Verification

3Q

(U) JPATS Complete FOT&E

1Q

(U) SECT Request for Information

3Q

(U) SECT Request for Proposal

4Q

(U) SECT Contract Award

1Q

(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

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Exhibit R-2a, RDT&E Project Justification									DATE February 2005	
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 2004 Actual	FY 2005 Estimate	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)	1.300	1.404	1.452	0.000	4.579	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) **A. Mission Description and Budget Item Justification**

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. FY2004 - FY2011 funding is required for AUP block software updates driven by FAA-mandated changes; National Aerospace System (NAS) requirements such as 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.

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.

(U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Develop and test Block 4 T-38C AUP aircraft and ATD software for requirements driven by FAA/NAS mandates and/or improvements identified during Test and Evaluation and AETC operations.	1.264	0.000	0.000	0.000
(U) Develop and test Block 5 T-38C AUP aircraft and ATD software for requirements driven by FAA/NAS mandates and/or improvements identified during Test and Evaluation and AETC operations.	0.000	1.354	0.000	0.000
(U) Develop and test Block 6 T-38C aircraft and ATD software Block Upgrade	0.000	0.000	1.402	0.000
(U) Future software Block Upgrades	0.000	0.000	0.000	0.000
(U) Other Government Cost and Test	0.036	0.050	0.050	0.000
(U) Total Cost	1.300	1.404	1.452	0.000

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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 2004</u>	<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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E	1.300	1.404	1.452	1.487	10.027	5.068	1.599	1.631	Continuing	TBD
(U) Other APPN										
(U) PE 0804741F, T-38 Avionics Upgrade, BP 1100	69.177	52.465	45.949	39.262	30.470	0.000	0.000	0.000	0.000	558.514
(U) PE 0804741F, T-38 Propulsion Modification, BP 1100	59.432	101.210	113.354	50.391	71.482	62.867	55.634	56.747	139.409	855.387
(U) PE 0804741F, T-38 Improved Brakes, BP 1100	0.000	0.000	0.000	0.000	0.000	9.398	0.165	5.500	26.837	50.900

(U) **D. Acquisition Strategy**

The T-38 AUP competitively awarded three contracts to a single prime: 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 contract 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 February 2005		
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 Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</u>	<u>FY 2005 Cost</u>	<u>FY 2005 Award Date</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u> The Boeing Corporation	C/CPAF	The Boeing Corporation St. Louis MO		1.284	Dec-03	1.384	Jan-05	1.432		0.000		Continuing	TBD	TBD
ASC/YT	Various	ASC/YT WPAFB OH		0.016		0.020		0.020		0.000		Continuing	TBD	TBD
Subtotal Product Development Remarks:			0.000	1.300		1.404		1.452		0.000		Continuing	TBD	TBD
(U) <u>Support</u> Subtotal Support Remarks:			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
(U) <u>Test & Evaluation</u> Subtotal Test & Evaluation Remarks:	PO		0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
(U) <u>Management</u> Subtotal Management Remarks:			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
(U) Total Cost			0.000	1.300		1.404		1.452		0.000		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE

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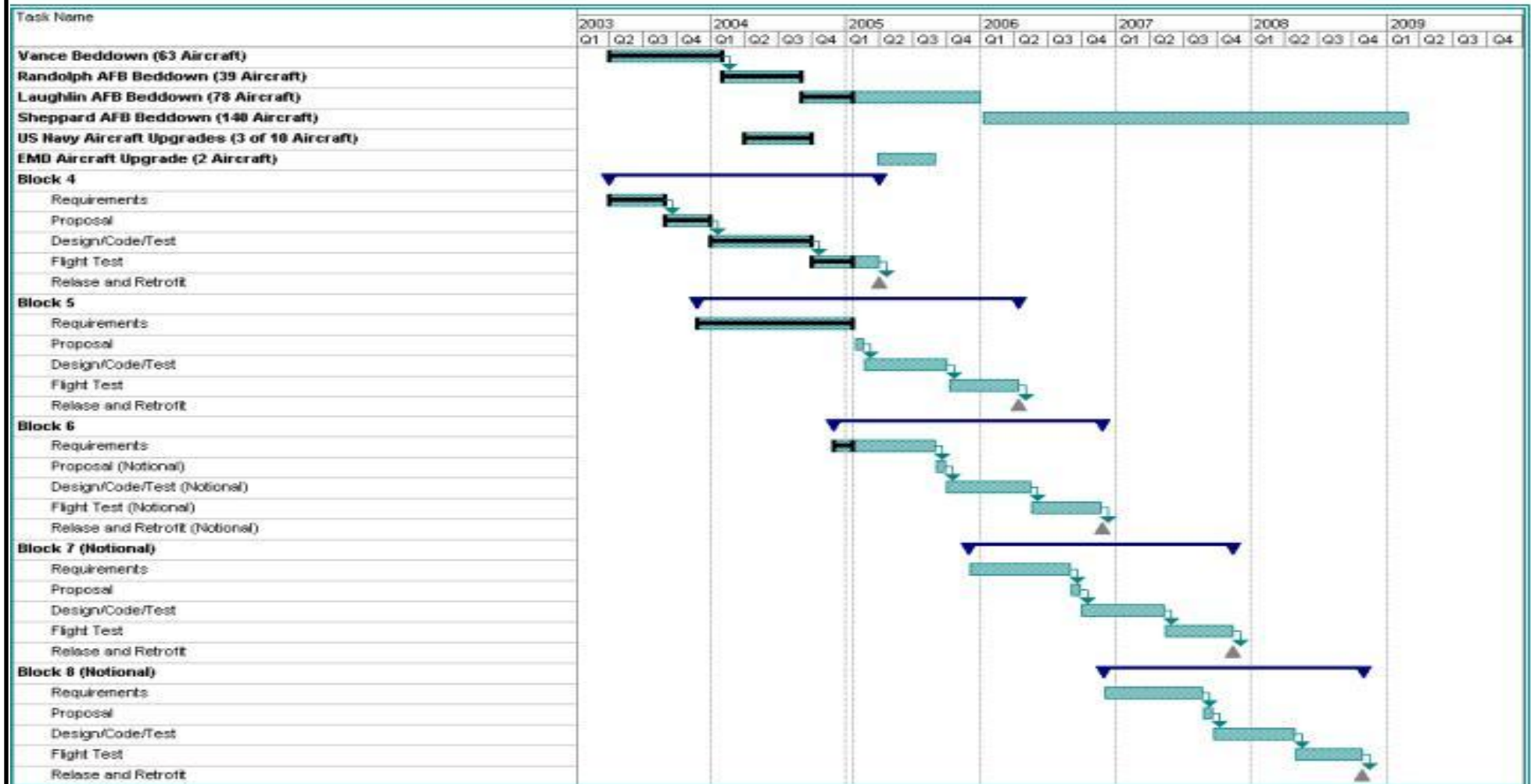
BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604233F Specialized Undergraduate
Pilot Training

PROJECT NUMBER AND TITLE

4376 T-38 Avionics Upgrade Program
(AUP)

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Exhibit R-4a, RDT&E Schedule Detail

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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) Schedule Profile**FY 2004FY 2005FY 2006FY 2007

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

1Q

(U) Initiate Software Block 4 on AUP

1Q

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

3Q

(U) Field Software Block 4

4Q

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

2Q

(U) Initiate Software Block 5 on AUP

2Q

(U) Field Software Block 5

4Q

(U) Initiate Software Block 6

2Q

(U) Field Software Block 6

4Q

(U) Post Deployment Support 4 (PDS 4)

2Q

(U) PDS 5

2Q

(U) PDS 6

2Q