

**UNCLASSIFIED**

PE NUMBER: 0604233F

PE TITLE: Specialized Undergraduate Pilot Training

<b>Exhibit R-2, RDT&amp;E Budget Item Justification</b>	<b>DATE</b> <b>February 2007</b>
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<b>BUDGET ACTIVITY</b> <b>05 System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604233F Specialized Undergraduate Pilot Training</b>
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Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	9.832	3.689	12.622	7.524	4.015	5.155	3.700	5.389	Continuing	TBD
4102 Joint Primary Aircraft Training System (JPATS)	5.450	2.193	2.261	2.306	2.367	3.930	2.450	4.114	Continuing	TBD
4376 T-38 Avionics Upgrade Program (AUP)	4.382	1.496	10.361	5.218	1.648	1.225	1.250	1.275	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, FY2011 and FY2013, Project 4102, JPATS, includes funding for upgrades 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 FY 2006 - 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 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	8.472	3.703	12.504	7.430
(U) Current PBR/President's Budget	9.832	3.689	12.622	7.524
(U) Total Adjustments	1.360	-0.014		
(U) Congressional Program Reductions				
Congressional Rescissions	-0.001	-0.014		
Congressional Increases				
Reprogrammings	1.599			
SBIR/STTR Transfer	-0.238			

(U) **Significant Program Changes:**  
 FY2006 includes a Below Threshold Reprogramming for T-38 AUP mission planning software.

**Exhibit R-2a, RDT&E Project Justification**

DATE  
**February 2007**

BUDGET ACTIVITY <b>05 System Development and Demonstration (SDD)</b>				PE NUMBER AND TITLE <b>0604233F Specialized Undergraduate Pilot Training</b>				PROJECT NUMBER AND TITLE <b>4102 Joint Primary Aircraft Training System (JPATS)</b>		
Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
4102 Joint Primary Aircraft Training System (JPATS)	5.450	2.193	2.261	2.306	2.367	3.930	2.450	4.114	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. Annual JPATS funding is used to develop and test upgrades and enhancements to program hardware and software components.

FY2006, FY2011, and FY2013 include 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 will 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 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) JPATS studies & development efforts.	1.362	2.193	2.261	2.306
(U) SECT software/hardware upgrade	4.088	0.000	0.000	0.000
(U) Total Cost	5.450	2.193	2.261	2.306

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

	<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>FY 2012</u>	<u>FY 2013</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E	5.450	2.193	2.261	2.306	2.267	3.930	2.450	4.114	Continuing	TBD
(U) Other APPN										
(U) Aircraft Procurement, Air										

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<b>Exhibit R-2a, RDT&amp;E Project Justification</b>	<b>DATE</b> <b>February 2007</b>
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<b>BUDGET ACTIVITY</b> <b>05 System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604233F Specialized Undergraduate Pilot Training</b>	<b>PROJECT NUMBER AND TITLE</b> <b>4102 Joint Primary Aircraft Training System (JPATS)</b>
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**(U) C. Other Program Funding Summary (\$ in Millions)**

Force, BA-3											
(U) JPATS	328.836	304.017	245.889	5.803	1.965	1.829	1.865	1.903	0.000	2,493.869	
(U) JPATS, BA-6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	25.757	
(U) JPATS Mod Funding	6.061	6.142	17.089	21.343	17.544	11.948	12.182	12.425	Continuing	TBD	
(U) JPATS Post Production	0.000	0.000	0.000	8.929	9.248	9.619	0.000	0.000	0.000	27.796	
(U) Military Construction, Air Force											
(U) PE 0804741F, JPATS	3.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	20.200	
(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	0.000	11.300	
(U) Aircraft Procurement, Navy, BA-3	19.151	145.481	295.272	330.906	348.929	353.743	362.797	243.568	37.852	2,377.473	
(U) JPATS											
(U) APN 5 Mod Funding	0.710	1.649	9.872	8.956	6.976	0.000	1.602	1.633	82.007	115.173	
(U) APN 6 Spares	0.763	2.908	8.435	11.122	10.314	10.550	9.093	6.819	0.288	71.739	
(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) Aircraft Procurement, Air Force, BA 7											
(U) SECT	1.911	0.000	5.819	0.000	0.000	0.000	0.000	0.000	0.000	7.730	

**(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 an Engineering Change Proposal (ECP) to the competitively awarded Firm Fixed Price Contractor Logistics Support (CLS) contract.

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**Exhibit R-3, RDT&E Project Cost Analysis**

DATE  
**February 2007**

BUDGET ACTIVITY				PE NUMBER AND TITLE						PROJECT NUMBER AND TITLE				
<b>05 System Development and Demonstration (SDD)</b>				<b>0604233F Specialized Undergraduate Pilot Training</b>						<b>4102 Joint Primary Aircraft Training System (JPATS)</b>				
<u>(U) Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior to FY 2006 Cost</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
<u>(U) Product Development</u>														
Raytheon Aircraft Company (RAC) */****	C/FPI	RAC, Wichita KS	219.168	1.362	May-06	2.193	May-07	2.261		2.306		Continuing	TBD	TBD
SECT Upgrade	C/FFP	AAI Services Corp, Hunt Valley MD	0.000	4.088	Jun-06	0.000		0.000				0.000	4.088	TBD
Subtotal Product Development			219.168	5.450		2.193		2.261		2.306		Continuing	TBD	TBD
Remarks:														
<u>(U) Support</u>														
Various	Various											Continuing	TBD	
Subtotal Support			0.000	0.000		0.000		0.000		0.000		Continuing	TBD	0.000
Remarks:														
<u>(U) Test &amp; Evaluation</u>														
Subtotal Test & Evaluation			0.000	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	0.000
Remarks:														
<u>(U) Total Cost</u>			219.168	5.450		2.193		2.261		2.306		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE

February 2007

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	06				07				08				09			
		Q1	Q2	Q3	Q4												
1	TAS Development																
2	UWARS Development																
3	Life Raft Development																
4	Parachute Surveillance Development																
5	Brake System Redesign																
6	IDARS Memory Upgrade Development																
7	Canopy Fracture Initiation System																

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<b>Exhibit R-4a, RDT&amp;E Schedule Detail</b>	DATE <b>February 2007</b>
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<b>BUDGET ACTIVITY</b> <b>05 System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604233F Specialized Undergraduate Pilot Training</b>	<b>PROJECT NUMBER AND TITLE</b> <b>4102 Joint Primary Aircraft Training System (JPATS)</b>
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<b>(U) <u>Schedule Profile</u></b>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) SECT Contract Award	3Q			
(U) SECT Software and Hardware Design/Development	3-4Q	1Q		
(U) SECT Software and Hardware Design/Development Complete		2Q		
(U) SECT System Integration Complete		3Q		
(U) SECT System Acceptance		4Q		
(U) JPATS GBTS Traffic Alert System Development Complete	1Q	3Q		
(U) JPATS - Certification of New Emergency Locator Transponder		1Q		
(U) JPATS Follow-on Contract Award		3Q		
(U) JPATS Complete FOT&E		3Q		
(U) JPATS Integrated Data Acquisition Recording System (IDARS) Memory Upgrade Development		1-4Q		
(U) JPATS Brake System Redesign		3Q	3Q	
(U) JPATS Canopy Fracture Initiation System Development			1Q	2Q
(U) JPATS Start of Student Training at Sheppard AFB TX			2Q	
(U) JPATS Parachute Surveillance System Development Complete			4Q	

**Exhibit R-2a, RDT&E Project Justification**

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**February 2007**

BUDGET ACTIVITY <b>05 System Development and Demonstration (SDD)</b>				PE NUMBER AND TITLE <b>0604233F Specialized Undergraduate Pilot Training</b>				PROJECT NUMBER AND TITLE <b>4376 T-38 Avionics Upgrade Program (AUP)</b>		
Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
4376 T-38 Avionics Upgrade Program (AUP)	4.382	1.496	10.361	5.218	1.648	1.225	1.250	1.275	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.

FY 2006 - FY2013 funding is to develop and test aircraft and 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 such as Selective Availability Anti-Spoofing Module (SAASM), and precision and GPS approaches. Other upgrades will include enhancements identified during Development Testing, Operational Testing and Force Development Evaluation (FDE), and AETC operations, such as a 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.

FY 2008 - FY 2009 includes development funding for the T-38C Improved Brake System Program (IBSP). This effort will include development/missionization of Commercial Off The Shelf (COTS) brakes, wheels, and anti-skid systems as well as necessary flight testing, validation and any additional studies and analysis.

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

	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(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.	4.382			
(U) Develop and test Block 7 AUP aircraft and ATD hardware/software upgrades, mission planning software, requirements driven by DoD/ FAA/NAS mandates, and/or improvements identified during		1.496		

Exhibit R-2a, RDT&E Project Justification

DATE  
February 2007

BUDGET ACTIVITY <b>05 System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604233F Specialized Undergraduate Pilot Training</b>	PROJECT NUMBER AND TITLE <b>4376 T-38 Avionics Upgrade Program (AUP)</b>
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(U) <b><u>B. Accomplishments/Planned Program (\$ in Millions)</u></b>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Test and Evaluation and AETC operations.				
(U) Develop and test additional block updates for 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.			1.492	1.615
(U) Improved Brake System Program, wheel and brake replacement, anti-skid capability modification and its associated integration issues, studies and analyses			8.869	3.603
(U) Total Cost	4.382	1.496	10.361	5.218

(U) <b><u>C. Other Program Funding Summary (\$ in Millions)</u></b>	<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>FY 2012</u>	<u>FY 2013</u>	<u>Cost to Complete</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>								
(U) AF RDT&E	4.382	1.496	10.361	5.218	1.648	1.225	1.250	1.275	Continuing	TBD
(U) Other APPN										
(U) PE 0804741F, T-38 Avionics Upgrade, BP 1100	29.636	40.345	0.781	0.000	0.000	0.000	0.000	0.000	0.000	510.596
(U) PE 0804741F, T-38 Improved Brakes, BP 1100	0.000	0.000	0.000	9.901	9.684	5.580	5.663	5.739	29.804	66.371

(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 are being exercised under the new contract.

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**Exhibit R-3, RDT&E Project Cost Analysis**

DATE  
**February 2007**

<b>BUDGET ACTIVITY</b> <b>05 System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604233F Specialized Undergraduate Pilot Training</b>	<b>PROJECT NUMBER AND TITLE</b> <b>4376 T-38 Avionics Upgrade Program (AUP)</b>
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<u>(U) Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior to FY 2006 Cost</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 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		4.382		1.496		1.492		1.615		Continuing	TBD	TBD
TBD	PO	TBD	0.000	0.000		0.000		8.869	Nov-08	3.603		0.000	12.472	TBD
Subtotal Product Development			0.000	4.382		1.496		10.361		5.218		Continuing	TBD	TBD
Remarks:														
<u>(U) Support</u>													0.000	0.000
Subtotal Support			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
<u>(U) Test &amp; Evaluation</u>													0.000	0.000
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
<u>(U) Management</u>													0.000	0.000
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
<u>(U) Total Cost</u>			0.000	4.382		1.496		10.361		5.218		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

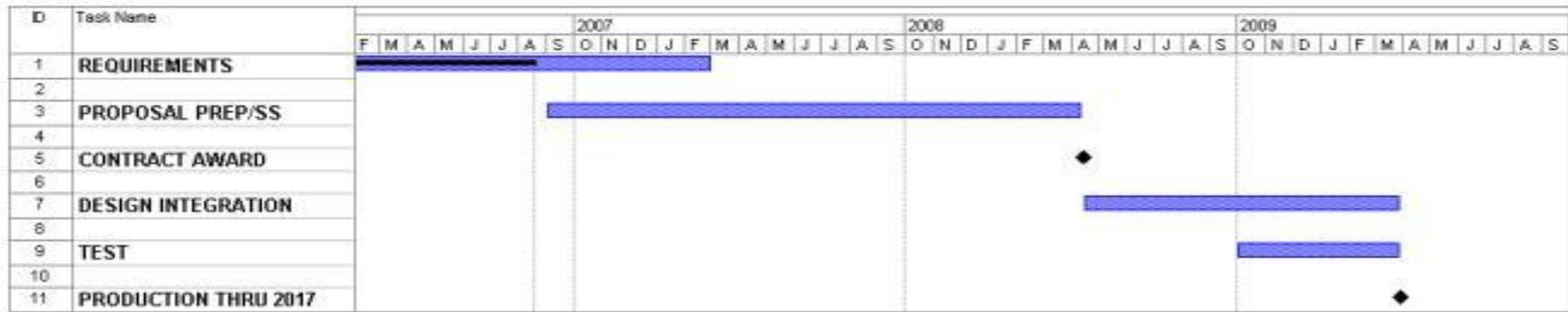
DATE  
February 2007

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)

# Improved Braking System Program (IBSP)





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<b>Exhibit R-4a, RDT&amp;E Schedule Detail</b>	DATE <b>February 2007</b>
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BUDGET ACTIVITY <b>05 System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604233F Specialized Undergraduate Pilot Training</b>	PROJECT NUMBER AND TITLE <b>4376 T-38 Avionics Upgrade Program (AUP)</b>
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<u>(U) Schedule Profile</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) AUP Block 6	1Q	3Q		
(U) AUP Block 7	2Q		3Q	
(U) AUP Block 8		2Q		4Q
(U) AUP Block 9			2Q	
(U) IBSP Requirements	1Q	2Q		
(U) IBSP Proposal Preparation/Source Selection	4Q		3Q	
(U) IBSP Contract Award			3Q	
(U) IBSP Design Intergration			3Q	3Q