

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0101122F AIR LAUNCHED CRUISE MISSILE	PROJECT 4797
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4797 Flight Testing & Navigation Enhancement	5,984	6,772	26,713	11,649	7,851	0	0	0	64,349
Quantity of RDT&E Articles	0	0	5	0	0	0	0	0	0

(U) A. Mission Description

AGM-86B, The Air Launched Cruise Missile (ALCM), is a subsonic, air-to-surface strategic nuclear missile, operational since 1982. Armed with a W-80 warhead, it is designed to evade air and ground-based defenses in order to strike targets at any location within any enemy's territory. The ALCM is designed for B-52H internal and external carriage.

A Service Life Extension Plan (SLEP) was developed to meet an AF Long Range Plan requirement to extend ALCM Service Life to FY30. The results of Service Life Extension Program (SLEP) studies identify system components that cannot be sustained beyond the standard service life. The current system is experiencing obsolescence of parts/components. Missile components and support equipment are becoming non-supportable. Service Life Extension of this critical weapon is essential to meet Air Combat Command (ACC) and United States Strategic Command (USSTRATCOM) Single Integrated Operational Plan (SIOP) commitments.

Initial SLEP assessment required the development and acquisition of new Conventional Air Launched Cruise Missile (CALCM)/ALCM Test Instrumentation Kit (CATIK) flight test payload doors, replacement of the current navigation system, and replacement of Operational Test & Evaluation (OT&E) hardware and software. CATIK commenced in FY00 based on the AF decision to maintain this weapon system beyond its current design life. Previous payload doors were purchased to support the original service life only. CATIK development efforts are driven by DoE redesign of the Joint Test Assembly, which simulates the W-80 warhead during Follow-On Test and Evaluation (FOT&E) flight tests and complying with Range Command Council 319 (RCC-319) safety requirements and re-certification of the Flight Termination System. Five CATIK RDT&E test articles will be developed to support Developmental Test & Evaluation (DT&E) flight tests. The five test articles will be used to conduct one ALCM Operational Test Launch, one ALCM Joint Test Assembly (JTA) integration test to ensure compatibility with the warhead package, one CALCM Operational Test Launch, one Captive Carry and a backup test asset.

CATIK payload doors, containing range transponder and battery, are required to be replaced due lack of existing payload door assets. The new CATIK payload doors will provide an adequate inventory of test assets for continued testing throughout the service life extension. The CATIK payload door is a critical component for determining Weapon System Reliability (WSR).

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<p>(U) <u>A. Mission Description Continued</u></p> <p>The current Inertial Navigation Element (INE) has been identified as the ALCM item with largest number of unscheduled maintenance hours. The INE is beset with parts obsolescence, little or no spares inventory, and manufacturers who have gone out of business or no longer support the antiquated technology. The current INE units are only maintainable through the use of a decreasing number of cannibalized parts from other INE units. The redesigned INE will utilize a more robust and maintainable solid-state circuitry.</p> <p>Operational Test & Evaluation (OT&E) hardware and software replacement will occur concurrently with the CATIK and INE development efforts.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$1,970 - Continued CATIK Hardware Interface Development, Hardware Testing/Integration.</p> <p>(U) \$1,350 - Continued Operational Flight Software Development, Software Testing and Integration.</p> <p>(U) \$1,806 - Performed Pre-EMD INE Hardware Interface Development, Testing and Integration</p> <p>(U) \$858 - Performed Pre-EMD INE Software Emulation Development, Testing and Integration</p> <p>(U) \$5,984 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$1,560 - Continue CATIK payload door Interface Design/Development and Flight Termination System Engineering Change Proposal (ECP)</p> <p>(U) \$1,747 - Continue update of CATIK Interface Control Documents to Include Flight Termination System Requirements, acquire required hardware</p> <p>(U) \$1,150 - Complete Pre-EMD INE Hardware Interface Development, Testing and Integration</p> <p>(U) \$2,315 - Complete Pre-EMD INE Software Emulation Development, Testing and Integration</p> <p>(U) \$6,772 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$15,635 - Continue CATIK payload door Interface Design/Development and accomplish pre-planning for integration testing</p> <p>(U) \$2,360 - Continue update of CATIK Interface Control Documents and purchase hardware</p> <p>(U) \$2,863 - Begin INE Hardware Interface Development, Testing and Integration</p> <p>(U) \$5,855 - Begin INE Software Emulation Development, Testing and Integration</p> <p>(U) \$26,713 Total</p> <p>(U) <u>B. Budget Activity Justification</u></p> <p>These programs are in Budget Activity 7, Operational System Development, due to efforts supporting a fielded, post Milestone III operational weapon system.</p>		
Project 4797	Page 2 of 7 Pages	Exhibit R-2 (PE 0101122F)

UNCLASSIFIED

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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0101122F AIR LAUNCHED CRUISE MISSILE			PROJECT 4797			
(U) C. Program Change Summary (\$ in Thousands)										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>				<u>Total Cost</u>		
(U)	Previous President's Budget	6,392	6,841	13,178				50,890		
(U)	Appropriated Value	6,457	6,841							
(U)	Adjustments to Appropriated Value									
	a. Congressional/General Reductions	-59	-69							
	b. Small Business Innovative Research	-407								
	c. Omnibus or Other Above Threshold Reprogram									
	d. Below Threshold Reprogram									
	e. Rescissions	-7								
(U)	Adjustments to Budget Years Since FY 2002 PBR				13,535					
(U)	Current Budget Submit/FY 2003 PBR	5,984	6,772	26,713				64,349		
(U) Significant Program Changes:										
FY03 funding increase is a result of an appropriation realignment in order to appropriately support further engineering and testing of the flight termination system to meet test range safety requirements.										
(U) D. Other Program Funding Summary (\$ in Thousands)										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</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)	MPAF, Missile Modifications (BA 03, PE 0101122F, P-13)	3,929	0	1,998	11,789	16,026	17,294	9,843	Continuing	TBD
(U)	MPAF, Missile Modifications Initial Spares (BA 04 PE 0101122F, P-16)	0	0	1,006	1,722	392	185	188	Continuing	TBD
(U)	MPAF, Replenishment Spares (BA 04, PE 0101122F, P-17)	4,576	9,759	4,143	4,225	4,321	4,415	291	Continuing	TBD
(U)	OPAF, Electronics and Telecommunications Equipment (BP83) (BA 03,	1,287	1,318	1,324	1,355	1,378	1,429	1,458	Continuing	TBD
Project 4797		Page 3 of 7 Pages					Exhibit R-2 (PE 0101122F)			

UNCLASSIFIED

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(U) D. Other Program Funding Summary (\$ in Thousands)									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</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>	
PE 0101122F, P-18)									
(U) E. Acquisition Strategy									
Begun in FY00, CATIK payload door development efforts are performed by Boeing utilizing a Cost Plus Award Fee (CPAF) contract.									
Begun in FY02, Pre-EMD INE replacement is being performed by TRW and Boeing. TRW's effort is defining requirements for enhancement of the INE computer utilizing their patented RePLACE technology using a Time and Materials (T&M) contract. Boeing's efforts concentrate on complete INE replacement using a Cost Plus Award Fee (CPAF) contract.									
(U) F. Schedule Profile									
		<u>FY 2001</u>				<u>FY 2002</u>			<u>FY 2003</u>
	1	2	3	4	1	2	3	4	1
(U) Development Contract Milestones									
(U) -- Contract Award - CATIK (2QFY00)									
(U) -- Contract Award - INE			*						
(U) CATIK Development Milestones									
(U) -- Critical Design Review (CDR)									X
(U) INE Pre-EMD Milestones									
(U) -- System Requirements Review (SRR)						X			
Project 4797									
Page 4 of 7 Pages									
Exhibit R-2 (PE 0101122F)									

UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE February 2002		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
07 - Operational System Development	0101122F AIR LAUNCHED CRUISE MISSILE	4797		
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>				
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
(U) CATIK:				
(U) Hardware Development				
(U) - Test Articles		0	0	5,000
(U) - Interface Development		1,870	1,160	8,095
(U) - Testing/Integration		100	400	2,540
(U) - Development of Interface Control Documents & Hardware purchase		0	1,747	2,360
(U) Software Development				
(U) - Operational Flight Software		778	0	0
(U) - Automated Test Equipment Development		430	0	0
(U) - Testing/Integration		142	0	0
(U) INE:				
(U) Hardware Definition/Development				
(U) - Card Development		1,409	1,150	2,863
(U) - Nuclear Certification		195	0	0
(U) - Testing/Integration		202	0	0
(U) Software Definition/ Development				
(U) - Operational Flight Software		735	2,027	5,250
(U) - Nuclear Certification		0	100	270
(U) - Mission Planning		52	0	0
(U) - Testing/Integration		71	88	180
(U) - Data Collection/Documentation		0	100	155
(U) Total		5,984	6,772	26,713
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>				
(U) <u>Performing Organizations:</u>				

UNCLASSIFIED

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(U) Performing Organizations Continued:										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Development:										
Boeing - CATIK	Eng Asgn/CPAF	Jul 00	29,727	29,727	5,104	3,290	3,358	17,975	0	29,727
TRW - INE	Eng Asgn/T&M	Jun 01	1,444	1,444	0	1,096	348	0	0	1,444
Boeing - INE	Eng Asgn/CPAF	Jul 01	27,288	27,288	0	1,598	3,066	8,738	13,886	27,288
<u>Support and Management Organizations</u>										
N/A										
<u>Test and Evaluation Organizations</u>										
Utah Test Range	MIPR	TBD	3,390	3,390	0	0	0	0	3,390	3,390
49th Test Wing	MIPR	TBD	2,500	2,500	0	0	0	0	2,500	2,500
(U) Government Furnished Property:										
<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>										
N/A										
<u>Support and Management Property</u>										
N/A										
<u>Test and Evaluation Property</u>										
None										
Project 4797					Page 6 of 7 Pages			Exhibit R-3 (PE 0101122F)		

UNCLASSIFIED

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		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Total</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development		5,104	5,984	6,772	26,713	13,886
Subtotal Support and Management						
Subtotal Test and Evaluation		0	0	0	0	5,890
Total Project		5,104	5,984	6,772	26,713	19,776
						58,459
						5,890
						64,349