	RDT&E BUDGET ITEM	DATE	DATE <b>February 2003</b>								
04 - /										PROJECT <b>2597</b>	
	COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
2597	Noncooperative Identification Subsystems	12,849	12,135	16,575	19,633	19,839	20,201	20,492	20,767	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

#### (U) A. Mission Description

U.S. Combat Air Forces have a critical requirement to positively identify (enemy, friendly, neutral) aircraft, battlefield equipment and personnel/combatants. Multiple other Joint Mission Needs Statements (MNS), Air Force Operational Requirements Documents (ORD), and NATO requirements documents also state Combat Identification (CID) operational needs. High confidence & high probability of ID, all weather & day/night operational needs as well as timely and reliable CID will improve combat effectiveness, reduce fratricide and enable battlespace commanders to effectively manage and control their forces.

The Combat Identification Technology program analyzes, develops, demonstrates, and transitions to SDD programs promising target identification technologies. These technologies include both cooperative and non-cooperative techniques that improve US ability to positively identify ground and air targets in Air-to-Surface and Air-to-Air CID engagements.

Air-to-Surface technologies funded by this program include Laser Vision, an electro-optical (EO) system that significantly increases ID ranges, Vibration Vision, which exploits vibration signatures to increase probability and confidence of ground target ID, and the maturation of algorithms for these efforts to support Automatic Target Cueing and Automatic Target Recognition.

Air-to-Air technologies funded by this program include High Range Resolution (HRR) radar techniques to increase ID ranges as well as confidence, and improvements to the Mark XII system to implement Mode V, which will enable robust, secure Identification Friend or Foe (IFF).

#### (U) FY 2002 (\$ in Thousands)

(U) \$0 Accomplishment/Planned Prog	gram
-------------------------------------	------

(U) \$2,970 Continued the HRR synthetic target database development in conjunction with the National Air Intelligence Center (NAIC). Implemented risk

reduction measures to increase the fidelity of the HRR database and prepared to transition database management/maintenance from the lab

environment to a System Program Office (SPO).

(U) \$7,706 Continued development and demonstration of promising air-to-ground and air-to-air identification techniques for reduced battlefield fratricide

Project 2597 Page 1 of 9 Pages Exhibit R-2 (PE 0603742F)

	RD	T&E BUDGET ITEM JUSTIFICATION	SHEET (R-2 Exhibit)	DATE February 2003
04 -	GET ACTIVITY	omponent Development and Prototypes	PE NUMBER AND TITLE  0603742F Combat Identification Tecl	PROJECT
(U)	A. Mission Desc	ription Continued		
(U)	FY 2002 (\$ in Th	and enhanced mission performance. Transition progra and Sensing laser Radar (ERASER)/Laser Vision, bas Recognition) capability, performing Multi Vision mili Night Navigation and Attack (JOANNA) and related to Other potential candidates could include the Air-to-Grands	elining associated EO/ATC (Automatic Target Cueing tary utility assessments/trade studies to define a transicechnologies, and continuing to mature/harden camera	y)/ATR (Automatic Target tion roadmap for the Joint Airborne
(U)	\$673	Funded AIMS Program Office support of Mark XII sy documentation and individual IFF system/box certific	stems to include next generation IFF equipment integral	ration, including Mode V
(U)	\$988	Provided for CID Integrated Management Team and o	ther engineering support for integration and managem	ent of Air Force CID programs.
(U)	\$512	Conducted CID related studies/demos and conference fidelity requirements, wring out Tactics Techniques, a increase warfighter's CID capabilities.	•	
(U)	\$12,849	Total		
(U)	FY 2003 (\$ in Th	nousands)		
(U)	\$0	Accomplishment/Planned Program		
(U)	\$3,046	Continue the HRR synthetic target database developm HRR database and prepare for the transition of databa		
(U)	\$6,349	Continue development and demonstration of promisin enhanced mission performance. Transition program c baselining associated EO/ATC/ATR capability, continuing for JOANNA and related technologies, and continuing could include (Air-to-Ground Radar Imaging) AGRI a	andidates include continuing development and integra nuing Multi-Vision military utility assessments/trade st g to mature/harden camera technologies for flight envir	ation of ERASER/Laser Vision, rudies to define a transition roadmap
(U)	\$713	Fund AIMS Program Office support of Mark XII system documentation and individual IFF system/box certifications.	ems to include next generation IFF equipment integrat	ion, including Mode V
(U)	\$966	Provides for the CID Integrated Management Team ar	nd other engineering support necessary for managemen	nt of CID efforts.
(U)	\$1,061	Conduct CID related studies/demos and conferences. fidelity requirements, wring out Tactics Techniques, a	· · · · · · · · · · · · · · · · · · ·	
F	Project 2597	Pag	e 2 of 9 Pages	Exhibit R-2 (PE 0603742F)

	R	DT&E BUDGET ITEM JUSTIFICATION	SHEET (R-2 Exhibit)	DATE February 2003		
04 -	GET ACTIVITY - Advanced ( CD&P)	Component Development and Prototypes	PE NUMBER AND TITLE  0603742F Combat Identification Tecl	PROJECT <b>2597</b>		
(U)	A. Mission Des	scription Continued				
(U)	FY 2003 (\$ in 7	<u> Thousands) Continued</u>				
		increase warfighter's CID capabilities.				
(U)	\$12,135	Total				
(U)	FY 2004 (\$ in 7	<u>l'housands</u> )				
(U)	\$0	Accomplishment/Planned Program				
(U)	\$5,174	Continue the HRR synthetic target database developm environment to a SPO.	nent and complete the transition of database manageme	nt/maintenance from the lab		
(U)	\$8,269	* · · ·	of promising air-to-ground and air-to-air identification tion programs include Laser Vision, ERASER, associate (AGRI), phase I technology.	*		
(U)	\$791	Fund AIMS Program Office support of IFF equipmen	- · · · · ·			
(U)	\$1,023		er engineering support necessary for management of C	ID efforts. Includes support for		
(U)	\$1,318	implementation and evaluation of a family of CID systechnologies/systems, and to attempt to quantify the re-	Studies/demos will include those directed by the Joint stems, linkage between airborne and ground-based non-elationship between CID and improved combat effective stem operational capacity, interoperability, and equipm	-cooperative CID veness. Also includes Mode V IFF		
(U)	\$16,575	Total		88		
(U)	This program is	ivity Justification s in Budget Activity 4 - Advanced Component Development and logies from laboratory to operational use.	and Prototypes (ACD&P). The PE includes advanced	technology demonstrations that help		

Exhibit R-2 (PE 0603742F)

Project 2597

	RDT&E BUD	GET IT	EM JUS	TIFICA	TION S	SHEET (F	R-2 Exhi	bit)		Februar	y 2003
04 -	ET ACTIVITY  Advanced Component  D&P)	Develop	ment and	d Prototyբ	-	PE NUMBER A <b>0603742F</b>		Identification	on Techr	nology	PROJECT <b>2597</b>
(U)	C. Program Change Summary	y (\$ in Tho	usands)								
(U) (U)	Previous President's Budget Appropriated Value						FY 2002 11,409 11,523	FY 2003 12,434 12,434		<u>7 2004</u> 6,955	<u>Total Cost</u>
(U)	Adjustments to Appropriated V a. Congressional/General Reduc b. Small Business Innovative Re	ctions esearch					-114 -315	-44			
	<ul><li>c. Omnibus or Other Above Thr</li><li>d. Below Threshold Reprogram</li><li>e. Rescissions</li></ul>						1,818 -63	-123 -132			
(U) (U)	Adjustments to Budget Years S Current Budget Submit/FY 200		3 PBR				12,849	12,135	1	-380 6,575	TBD
(U)	Significant Program Changes:										
	D. Other Program Funding Su	mmary (\$ i FY 2002 Actual 0	in Thousand FY 2003 Estimate 0	<u>s)</u> <u>FY 2004</u> <u>Estimate</u> 0	FY 200: Estimat	e Estimate	-	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete 0	<u>Total Cost</u> 0
	E. Acquisition Strategy The High Range Resolution (HR focus on developing and demons (RFP) process. Laser Vision wa proposal submittal and negotiation	strating the r s awarded u	nost promising of the state of	ng Air-to-Gro r Transaction	ound Con	bat ID techni	ques and were	e contracted for	under a con	npetitive Request I	For Proposal
(U)	F. Schedule Profile					FY 2002		FY 20	03	FY	2004
Р	roject 2597				Page 4	of 9 Pages				Exhibit R-2 (F	PE 0603742F)

RDT&E BUDGET ITEM JUSTIFICATION	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								February 2003			
BUDGET ACTIVITY  04 - Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE  0603742F Combat Identification				n Ted	hno		PROJECT <b>2597</b>				
(U) F. Schedule Profile Continued												
· /	FY 2002			FY 2003				FY 2	2004			
1	2 3	4	1	2	3	4	1	2	3	4		
(U) 1. HRR Classifier Dev/Qual												
(U) Technique Selection for Model Creation	*											
(U) Completion of 150 Feature Quality Models			*									
(U) Start of Lab-based Model Validation				2	K							
(U) Completion of Lab Validation				2	K							
(U) Comp of 6 High-Fidelity NAIC Models						X						
(U) Start work on next set of Feature Quality Models								X				
(U) 2. LASER VISION (flt test of ERASER technology)												
(U) Completion of Lab Demos	*											
(U) Phase II, Part III Contract Modification	*											
(U) Tower Demonstrations		*				X						
(U) Mountaintop Demo			*			X						
(U) Flight Testing							X					
(U) Completion of Phase II							X					
(U) Start of SDD								X				
(U) 3. VIBRATION VISION ANALSYSIS												
(U) Completion of Multivision Feasibility Analysis	*											
(U) Transition Strategy Decision				2	K							
(U) Beginning of Integration Activities								X				
(U) 4. AIMSPO Integration and Certification Support												
(U) AN/APX-117, 118, & 119 IFF Systems Certified		*										
(U) AN/TPX-56 IFF System Certified		*										
(U) AN/UPX-37 IFF System Certified		*										
(U) Complete AN/APX-113, 114 Certification							X					
(U) Complete ATCBI-6 Certification							X					
(U) C-35, C-40 IFF Integration Support Completed		*										
Project 2597	age 5 of 9 Pages						Exhibit	R-2 (Pl	E 06037	'42F)		

RDT&E BUDGET ITEM JUSTIFICATION	DATE February 2003	
BUDGET ACTIVITY 04 - Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE  0603742F Combat Identification T	PROJECT
(U) F. Schedule Profile Continued  (U) Mode V Engineering Specification Comp (U) F-35 IFF Integration Support Started (U) F-15, F-16 IFF Integration Support Started (U) F-22 IFF Integration Support Started (U) 5. Integrated Management Team (U) Initial Air-to-Air CID Tech Roadmap Comp (U) Air-to-Air CID Tech Roadmap Update (U) Initial Air-to-Ground CID Tech Roadmap Comp (U) Air-to-Ground CID Tech Roadmap Update (U) Complete Mode V Acquisition Strategy (U) Start Mode V Fielding Support (U) Start Mode V Fielding Support (U) AFSAA Analysis of Alternative Start (U) AFSAA Analysis of Alternative Start (U) AFSAA AoA Completion (V) Mode V IFF Flight Demonstration  * denotes completed events  X denotes planned events	FY 2002 2 3 4 1 2 3 x *  *  X  X  X  X  X  X  X  X  X	FY 2004 4 1 2 3 4  X X  X
Project 2597	ige 6 of 9 Pages	Exhibit R-2 (PE 0603742F)

	RDT&E PROG	RAM ELE	MENT/P	ROJECT C	OST BI	REAKDO	WN (R-3)	)	DATE <b>F</b>	ebruary 2	2003
04 -	SET ACTIVITY  Advanced Componer  D&P)	-	ER AND TITLE  12F Comba	at Identific	chnology		PROJECT <b>2597</b>				
(U)	A. Project Cost Breakdown	(\$ in Thousan	ds)								
								<u>2002</u>	FY 20		FY 2004
(U)	Analysis/Modeling and Simulation							512	1,0		787
(U)	Data Synthesis, Algorithm De							,970	3,0		5,174
(U)	Hardware/Software and Prime							,556	6,3		6,000
(U)	IFF Equip Config Control, Co		tegration Supp	port				673		13	791
(U)	CID Training, Travel, & Ope	erations						988	90	66	1,023
(U)	Flight Test							150		0	2,800
(U)	Total						12,	,849	12,1	35	16,575
( <b>U</b> )	B. Budget Acquisition Histo	ry and Plannin	g Informatio	n (\$ in Thousand	<u>s)</u>						
(U)	<b>Performing Organizations:</b>										
	Contractor or	Contract									
	Government	Method/Type	Award or	<b>Performing</b>	<b>Project</b>						
	Performing	or Funding	<b>Obligation</b>	<u>Activity</u>	<u>Office</u>	Total Prior	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	Budget to	<u>Total</u>
	Activity	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	to FY 2002	FY 2002	FY 2003	FY 2004	<u>Complete</u>	<u>Program</u>
	Product Development Organiz										
	Raytheon Co, El Segundo CA		Nov 98	TBD	TBD	900	1,215	1,215	1,215	Continuing	TBD
	Veridian (Veda) Dayton, OH		Aug 98	TBD	TBD	400	400	400	400	Continuing	TBD
	Simulation Support, Inc.	CP	May 99	330	330	330	0	0	0	330	660
	National Air Intel Center	AF616	Annually	3,329	3,329	3,329	0	0	0	0	3,329
	Northrop Grumman Corp	CPFF	Aug 93	2,270	2,270	1,856	0	0	0	Continuing	TBD
	ERASER-Raytheon, Plano TX	CPFF	Dec 97	TBD	TBD	462	0	0	0	Continuing	TBD
	Raytheon Co, El Segundo	OTA	Mar 00	TBD	TBD	150	0	0	0	Continuing	TBD
	Lockheed Martin, Orlando	OTA	Mar 00	TBD	TBD	150	5,485	3,985	2,090	Continuing	TBD
	Northrup Grumman, Rolling	OTA	Mar 00	TBD	TBD	150	0	0	0	Continuing	TBD
	Meadows, IL									C	
	TBD	TBD	TBD	TBD	TBD	0	0	0	3,906	Continuing	TBD
Р	roject 2597			Pag	e 7 of 9 Pag	res			Exhil	oit R-3 (PE (	)603742F)

RDT&E PROG	NAIVI ELE		COJECT			AIA (K-2)	February 2003			
UDGET ACTIVITY 4 - Advanced Component Development and Prototypes ACD&P)				PE NUMBER <b>0603742</b>	F Comba	ation Tecl	nnology	PROJECT <b>2597</b>		
Performing Organizations										
Product Development Organi		A 0.4	TDD	TDD	C COA	0	0	0	0	( (0
Demaco	CPFF	Aug 94	TBD	TBD	6,604	1 100	1 100	0	0	6,60
SAIC (Demaco, Inc)	CPFF	May 99	TBD	TBD	800	1,180	1,180	409	Continuing	TB
Cyberdynamics	CPFF	May 99	2,112	2,112	10	0	0	0	Continuing	TB
AIMS Program Office	MIPR	Annual	N/A	N/A	954	673	713	791	Continuing	
Wright Laboratory (Camera	MIPR	Jan 01	N/A	N/A	2,000	0	0	0	Continuing	TB
& ATR development)	) (IDD	NT/ A	27/4	37/4	1.050	2 100	2.226	0	<i>a</i> .: .	TTD.
Wright Laboratory (LV)	MIPR	N/A	N/A	N/A	1,353	2,100	2,226	0	Continuing	TB
Telephonics	TBD	Apr 03	TBD	TBD	0	0	586	305	Continuing	TB
Support and Management Or		NT/ A	27/4	37/4	4.504	1.505	1 274	1.505	<i>a</i> .: .	TED.
USAF Combat ID IMT and	Various	N/A	N/A	N/A	4,584	1,505	1,374	1,535	Continuing	TB
Engineering Support	1 (110)	27/4	The P	TTD D	2 202	<b>5</b> 0		2.12.1	a	-
Wright Laboratory (HRR)	MIPR	N/A	TBD	TBD	2,392	70	456	3,124	Continuing	TB
Wright Laboratory	MIPR	N/A	N/A	N/A	0	50	0	0	0	4
(ERASER)							_		_	
US Army Tank Command	MIPR	N/A	N/A	N/A	0	21	0	0	0	2
Test and Evaluation Organiza										
3246th Test Wing, Eglin	Mixed, CPF,	N/A	TBD	TBD	4,089	0	0	2,270	Continuing	TE
AFB, FL 544th Range										
Group, Nellis AFB, NV										
412 Test Wing, Edwards AFI		N/A	TBD	TBD	239	150	0	0	Continuing	
552nd Air Control Wing,	MIPR	N/A	TBD	TBD	0	0	0	530	Continuing	TE
Tinker, OK										
Project 2597				ge 8 of 9 Pages					oit R-3 (PE 0	<b>.</b> .

RDT&E PROGRAM ELEMENT/PROJECT	DATE February 2003					
BUDGET ACTIVITY  04 - Advanced Component Development and Prototypes (ACD&P)	pe number and title <b>0603742F Comb</b>		PROJECT <b>2597</b>			
Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 2002 19,448 6,976 4,328 30,752	Budget FY 2002 11,053 1,646 150 12,849	Budget FY 2003 10,305 1,830 0 12,135	Budget FY 2004 9,116 4,659 2,800 16,575	Budget to Complete TBD TBD TBD TBD	Tota Program TBI TBI TBI TBI
Project 2597	Page 9 of 9 Pages			Exhib	it R-3 (PE 06	603742F)