

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1998
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BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603617F Command Control & Communications Applications
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COST (\$ In Thousands)	FY 1997 Actual	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	3,992	7,232	7,770	7,975	8,049	8,166	8,319	Continuing	TBD
2314 Tactical Air Surveillance	1,014	762	448	458	461	465	472	Continuing	TBD
2317 Tactical Air Information Production & Distribution	530	2,648	3,080	3,156	3,184	3,233	3,294	Continuing	TBD
2321 Tactical Battle Information Management	2,198	3,693	4,037	4,136	4,175	4,228	4,307	Continuing	TBD
3804 Tactical Air Forces Systems Integration	250	129	205	225	229	240	246	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

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

This program is designed to rapidly transition development efforts in the science and technology base directly to warfighting commands. Projects are directly responsive to operational requirements for improved battle management, communications, theater missile defense (TMD), and surveillance capability. This program takes advantage of advanced technology developments throughout the services and industry as well as off-the-shelf technology. The program also defines system architectures and develops communications technology for modernization and improving the Air Force portion of the Tri-Service communications networks which the Defense Information Systems Agency (DISA) oversees. This program is in Category 4, Demonstration and Validation, because its products are primarily advanced development models, rapid prototype efforts, and software developed through evolutionary acquisition methods.

(U) Acquisition Strategy:

All major contracts within this Program were awarded after full open competition. (When restricted technologies are involved, foreign competition is not allowed.) Most contracts are of the cost plus fixed fee (CPFF) type, but when it is deemed appropriate by procurement officials, award fee contracts or firm-fixed price contracts are utilized.

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BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603617F Command Control & Communications Applications		
(U) B. <u>Program Change Summary (\$ in Thousands)</u>				
	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	Total <u>Cost</u>
(U) Previous Presidents Budget (FY 1998 PB)	4,179	7,650	7,926	TBD
(U) Appropriated Value	4,378	7,650		
(U) Adjustments to Appropriated Value				
a. Congressional Reductions	-114	-273		
b. Small Business Innovative Research	-85	-145		
c. Omnibus/Other Above Threshold Reprogramming				
d. Below Threshold Reprogramming	-180			
e. Rescissions	-7			
(U) Adjustments to Budget Years Since FY 1998 PB			-156	
(U) Current Budget Submit/FY 1999 President's Budget	3,992	7,232	7,770	TBD
(U) Change Summary Explanation:				
Funding: See individual projects.				
Schedule: N/A				
Technical: N/A				
(U) C. <u>Other Program Funding Summary (\$ in Thousands)</u> - See individual projects.				
(U) D. <u>Schedule Profile</u> - See individual projects.				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 1998				
BUDGET ACTIVITY 4 - Demonstration and Validation				PE NUMBER AND TITLE 0603617F Command Control & Communications Applications				PROJECT 2314			
COST (\$ In Thousands)		FY 1997 Actual	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost	
2314 Tactical Air Surveillance		1,014	762	448	458	461	465	472	Continuing	TBD	
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	
<p>(U) A. <u>Mission Description and Budget Item Justification</u> Develops advanced technology and demonstrates equipment improvements to the Theater Air Control System (TACS) ground surveillance radars. Investigates non-radar and/or adjunct radar sensors to address the Combat Air Forces (CAF) surveillance, detection, and tracking requirements not satisfied by an active radar. Develops advanced surveillance technology in support of next generation sensors and sensor signal processing.</p> <p>(U) <u>FY 1997 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$ 499 Completed tube based transmitter panel for AN/TPS-75. - (U) \$ 515 Initiated waveform and signal processor design and evaluation. - (U) \$1,014 Total <p>(U) <u>FY 1998 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$ 90 Initiate Track Before Detect for Theater Missile Defense (TMD) with adaptive elevation angle estimation - (U) \$ 103 Initiate and complete Mode S integration study for AN/TPS-75 Radar Set - (U) \$ 75 Initiate and complete analysis of solid state versus tube based transmitter for AN/TPS-75 Radar Set - (U) \$ 494 Complete waveform and signal processor design and evaluation - (U) \$ 762 Total <p>(U) <u>FY 1999 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$ 448 Continue Track Before Detect for TMD - (U) \$ 448 Total 											
Project 2314			Page 3 of 22 Pages				Exhibit R-2 (PE 0603617F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 1998			
BUDGET ACTIVITY 4 - Demonstration and Validation				PE NUMBER AND TITLE 0603617F Command Control & Communications Applications			PROJECT 2314			
(U) B. <u>Program Change Summary (\$ in Thousands)</u>										
		<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>		<u>Total</u>				
						<u>Cost</u>				
(U) Previous Presidents Budget (FY 1998 PB)		1,014	803	457		TBD				
(U) Appropriated Value		1,057	803							
(U) Adjustments to Appropriated Value										
a. Congressional Reductions		-22	-26							
b. Small Business Innovative Research		-21	-15							
c. Omnibus/Other Above Threshold Reprogramming										
d. Below Threshold Reprogramming										
e. Rescissions										
(U) Adjustments to Budget Years Since FY 1998 PB				-9						
(U) Current Budget Submit/FY 1999 President's Budget		1,014	762	448		TBD				
(U) Change Summary Explanation:										
Funding: N/A										
Schedule: N/A										
Technical: N/A										
(U) C. <u>Other Program Funding Summary (\$ in Thousands):</u>										
		<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>To</u>	<u>Total</u>
									<u>Compl</u>	<u>Cost</u>
(U) RDT&E, AF (0602204F, Project 2002)		8,775	10,046	9,529	9,314	10,863	10,344	10,598	Cont	TBD
(U) RDT&E, AF (0603789F, Project 4072)		6,114	6,841	6,941	7,146	7,917	7,846	8,051	Cont	TBD
(U) RDT&E, AF (0207412)		589	393	440	487	471	460	451	Cont	TBD
(U) Other Procurement, AF (0207412)		9,947	28,178	26,782	24,973	19,860	20,845	20,925	Cont	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)											DATE February 1998	
BUDGET ACTIVITY 4 - Demonstration and Validation					PE NUMBER AND TITLE 0603617F Command Control & Communications Applications						PROJECT 2314	
(U) D. <u>Schedule Profile</u>												
		<u>FY 1997</u>				<u>FY 1998</u>				<u>FY 1999</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	Tube-based transmitter development			X								
(U)	Tube-based transmitter panel performance and R&M testing				*	X						
(U)	Tube-based versus solid-state eval				*	X						
(U)	Develop waveform signal processor							X				
(U)	Integrate Mode S into AN/TPS-75					*		X				
(U)	Track Before Detect for TMD				*							⇒
* Indicates the start of an activity; X indicates the completion.												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 1998			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
4 - Demonstration and Validation					0603617F Command Control & Communications Applications				2314	
 (U) A. <u>Project Cost Breakdown (\$ in Thousands)</u>										
					<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>			
(U) Primary Hardware Development					899	644	329			
(U) Government Engineering Support					100	103	104			
(U) Travel					15	15	15			
(U) Total					1,014	762	448			
 (U) B. <u>Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
Performing Organizations:										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1997	Budget FY 1997	Budget FY 1998	Budget FY 1999	Budget to Complete	Total Program
<u>Product Development Organizations</u>										
Hughes	C/CPFF	June 95	1,383	1,383	1,179	204	0	0	0	1,383
DSA	Tsk Ordr Agmt	Apr 97	905	905	0	470	403	0	0	905
TBD (TMD)	Tsk Ordr Agmt	Apr 98	TBD	1,258	0	0	80	338	840	1,258
<u>Support and Management Organizations</u>										
Rome Laboratory	In-house	N/A	n/a	n/a	6,419	190	194	110	Continuing	TBD
Miscellaneous	Various	Various	n/a	n/a	0	150	85	0	Continuing	TBD
<u>Test and Evaluation Organizations</u> - Not Applicable.										
Government Furnished Property: Not Applicable.										
Project 2314					Page 6 of 22 Pages			Exhibit R-3 (PE 0603617F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 1998	
BUDGET ACTIVITY	PE NUMBER AND TITLE				PROJECT	
4 - Demonstration and Validation	0603617F Command Control & Communications Applications				2314	
(U) B. <u>Budget Acquisition History and Planning Information Continued (\$ in Thousands)</u>						
	<u>Total</u>					
	<u>Prior to</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>FY 1997</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	1,179	674	483	338	840	3,514
Subtotal Support and Management	6,419	340	279	110	Cont.	TBD
Subtotal Test and Evaluation	0	0	0	0	Cont.	TBD
Total Project	7,598	1,014	762	448	Cont.	TBD

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BUDGET ACTIVITY
4 - Demonstration and Validation

PE NUMBER AND TITLE
0603617F Command Control & Communications Applications

COST (\$ In Thousands)	FY 1997 Actual	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
2317 Tactical Air Information Production & Distribution	530	2,648	3,080	3,156	3,184	3,233	3,294	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description and Budget Item Justification:** Transitions advanced communications to the Theater Deployable Communications (TDC) program in support of Theater Battle Management (TBM) command and control enhancements. The goal is to reduce the risk of transitioning advanced government or commercial off-the-shelf technology into military communications systems. Capabilities developed include modular programmable radio technologies and improvements to survivability, deployability, interoperability, and control of communications networks. The SPEAKeasy program core technologies and concept were demonstrated and transitioned to support the Joint Tactical Radio System (JTRS) JPO acquisition activities. This project will continue to develop and transition risk-reduced capabilities to airborne platforms required for these airborne platforms to effectively host the JTRS. Unmanned Airborne Vehicles (UAV)/Advanced Communications Node (ACN) platforms are intended to be the first so equipped, followed by other wider body aerospace platforms.

(U) FY 1997 (\$ in Thousands):

- (U) \$ 500 Completed SSCN Phase II/Conduct Joint Demonstration.
- (U) \$ 30 Planned airborne-transportable radio development.
- (U) \$ **530 Total**

(U) FY 1998 (\$ in Thousands):

- (U) \$ 200 Extend SSCN capability to demonstrate capability in a rapid deployment scenario (SOCOM).
- (U) \$ 608 Initiate airborne-transportable radio wideband/multi-band antenna development.
- (U) \$1,000 Initiate airborne-transportable radio electromagnetic interference/compatibility research and test.
- (U) \$ 840 Initiate airborne-transportable radio wideband power amplifier development.
- (U) \$2,648 Total

(U) FY 1999 (\$ in Thousands):

- (U) \$ 942 Continue airborne-transportable radio wideband/multi-band antenna development.
- (U) \$1,100 Continue airborne-transportable radio electromagnetic interference/compatibility research and test.
- (U) \$1,038 Continue airborne-transportable radio wideband power amplifier development.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 1998		
BUDGET ACTIVITY	PE NUMBER AND TITLE						PROJECT		
4 - Demonstration and Validation	0603617F Command Control & Communications Applications						2317		
 (U) B. <u>Program Change Summary (\$ in Thousands)</u>									
	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 1999</u>	<u>FY 1999</u>	<u>FY 1999</u>	<u>Total Cost</u>		
(U) Previous Presidents Budget (FY 1998 PB)	530	2,808		3,142			TBD		
(U) Appropriated Value	569	2,808							
(U) Adjustments to Appropriated Value									
a. Congressional Reductions	-28	-107							
b. Small Business Innovative Research	-11	-53							
c. Omnibus/Other Above Threshold Reprogramming									
d. Below Threshold Reprogramming									
e. Rescissions									
(U) Adjustments to Budget Years Since FY 1998 PB				-62					
(U) Current Budget Submit/FY 1999 President's Budget	530	2,648		3,080			TBD		
 (U) Change Summary Explanation:									
Funding: N/A									
Schedule: N/A									
Technical: N/A									
 (U) C. <u>Other Program Funding Summary (\$ in Thousands):</u>									
	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) RDT&E, AF (0602702F, Project 4519)	12,286	11,550	12,455	10,861	12,389	111,959	12,260	Cont	TBD
(U) RDT&E, AF (0603789F, Project 2335)	4,121	4,636	4,119	4,269	5,414	5,363	5,511	Cont	TBD
(U) RDT&E, AF (0603789F, Project 4216)	0	1,420	2,441	2,564	2,768	2,834	2,919	Cont	TBD
(U) RDT&E, AF (0603238F, Project 4216)	2,187	0	0	0	0	0	0	0	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 1998			
BUDGET ACTIVITY 4 - Demonstration and Validation					PE NUMBER AND TITLE 0603617F Command Control & Communications Applications			PROJECT 2317		
(U) A. <u>Project Cost Breakdown (\$ in Thousands)</u>										
					<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>			
(U) Primary Hardware Development					190	2,348	2,780			
(U) Government Engineering Support					50	60	60			
(U) Travel					40	40	40			
(U) Contractor Engineering Support					250	200	200			
(U) Total					530	2,648	3,080			
(U) B. <u>Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
Performing Organizations:										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1997	Budget FY 1997	Budget FY 1998	Budget FY 1999	Budget to Complete	Total Program
<u>Product Development Organizations</u>										
ESC	PD	Various	1,040	1,040	210	230	200	200	200	1,040
SOCOM	PD	Sept 96	592	592	392	0	200	0	0	592
TBD (Airborne-transportable radio support)	TBD	TBD	TBD	TBD	0	0	1,948	2,580	Cont.	TBD
<u>Support and Management Organizations</u>										
Rome Laboratory	In-house	n/a	n/a	TBD	12,153	139	300	300	Cont.	TBD
Miscellaneous	Various	Various	n/a	TBD	Cont.	161	0	0	Cont.	TBD
<u>Test and Evaluation Organizations</u> - Not Applicable										
Project 2317					Page 11 of 22 Pages			Exhibit R-3 (PE 0603617F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 1998	
BUDGET ACTIVITY	PE NUMBER AND TITLE				PROJECT	
4 - Demonstration and Validation	0603617F Command Control & Communications Applications				2317	
Government Furnished Property: Not Applicable						
(U) B. <u>Budget Acquisition History and Planning Information Continued (\$ in Thousands)</u>						
	<u>Total</u>					
	<u>Prior to</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>FY 1997</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	602	230	2,348	2,780	Cont.	TBD
Subtotal Support and Management	12,153	300	300	300	Cont.	TBD
Subtotal Test and Evaluation	0	0	0	0	Cont.	TBD
Total Project	12,755	530	2,648	3,080	Cont.	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 1998					
BUDGET ACTIVITY 4 - Demonstration and Validation				PE NUMBER AND TITLE 0603617F Command Control & Communications Applications				PROJECT 2321				
<i>COST (\$ In Thousands)</i>				FY 1997 Actual	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
2321 Tactical Battle Information Management				2,198	3,693	4,037	4,136	4,175	4,228	4,307	Continuing	TBD
Quantity of RDT&E Articles				0	0	0	0	0	0	0	0	0
<p>(U) A. <u>Mission Description and Budget Item Justification:</u> Designs and integrates improvements to system software and C3 applications modules via rapid prototyping and maximum user participation in all design activities. Current focus is the functional development and rapid prototyping of the Force Level Execution (FLEX) system, which will assist the combat operations personnel in an AOC to quickly replan or reallocate resources based on real-time threat inputs, including time critical targets (TCTs) and changes in the wartime scenario. The Joint Defensive Planner system will provide an automated system that aids the air defense duty officers in planning the integrated employment of Defensive Counter-Air and Active and Passive Defenses in conjunction with Offensive Counter-Air, to destroy or neutralize enemy aircraft and theater missiles. (The Joint Defensive Planner (JDP) was previously named the Defensive Planning and Execution (DPE) system. The change was made due to the decision by the Joint Standards Air Operations Software Configuration Control Board to make the Defensive Planning and Execution system the joint software application for theater air and missile defensive planning and monitoring.)</p> <p>(U) <u>FY 1997 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$1,433 Continued FLEX development and initiate integration into TBM Core Systems. - (U) \$ 640 Initiated accelerated Joint Defensive Planner software development for joint use. - (U) \$ 125 Completed TBM systems integration evaluations. - (U) \$2,198 Total <p>(U) <u>FY 1998 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$2,435 Complete initial FLEX integration into TBMCS V1.0 and TBMCS remote terminals. - (U) \$1,169 Continue Joint Defensive Planner software development - (U) \$ 89 Demonstrate FLEX airborne capabilities via TBMCS remote terminals (i.e. AWACS, JSTARS, ABCCC). - (U) \$3,693 Total 												
Project 2321				Page 13 of 22 Pages				Exhibit R-2 (PE 0603617F)				

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BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603617F Command Control & Communications Applications	PROJECT 2321																																																																																															
<p>(U) <u>FY 1999 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$ 814 Assess FLEX airborne application for integration into TBMCS remote terminals for airborne use. - (U) \$3,223 Initiate integration of Joint Defensive Planner as a TBMCS application. - (U) \$4,037 Total <p>(U) <u>B. Program Change Summary (\$ in Thousands)</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: right; width: 10%;"><u>FY 1997</u></th> <th style="text-align: right; width: 10%;"><u>FY 1998</u></th> <th style="text-align: right; width: 10%;"><u>FY 1999</u></th> <th style="text-align: right; width: 10%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous Presidents Budget (FY 1998 PB)</td> <td style="text-align: right;">2,385</td> <td style="text-align: right;">3,894</td> <td style="text-align: right;">4,118</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">2,485</td> <td style="text-align: right;">3,894</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional Reductions</td> <td style="text-align: right;">-52</td> <td style="text-align: right;">-127</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: right;">-48</td> <td style="text-align: right;">-74</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus/Other Above Threshold Reprogramming</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogramming</td> <td style="text-align: right;">-180</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td style="text-align: right;">-7</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 1998 PB</td> <td></td> <td></td> <td style="text-align: right;">-81</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 1999 President's Budget</td> <td style="text-align: right;">2,198</td> <td style="text-align: right;">3,693</td> <td style="text-align: right;">4,037</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table> <p>(U) Change Summary Explanation:</p> <p style="padding-left: 40px;">Funding: FY97 BTR to PE 0305176F to support Combat Survivor Evader Locator requirement.</p> <p style="padding-left: 40px;">Schedule: N/A</p> <p style="padding-left: 40px;">Technical: N/A</p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands):</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="text-align: right; width: 5%;"><u>FY 1997</u></th> <th style="text-align: right; width: 5%;"><u>FY 1998</u></th> <th style="text-align: right; width: 5%;"><u>FY 1999</u></th> <th style="text-align: right; width: 5%;"><u>FY 2000</u></th> <th style="text-align: right; width: 5%;"><u>FY 2001</u></th> <th style="text-align: right; width: 5%;"><u>FY 2002</u></th> <th style="text-align: right; width: 5%;"><u>FY 2003</u></th> <th style="text-align: right; width: 5%;"><u>ToCompl</u></th> <th style="text-align: right; width: 5%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) RDT&E, AF (0603789F, Project 2335)</td> <td style="text-align: right;">4,121</td> <td style="text-align: right;">4,636</td> <td style="text-align: right;">4,119</td> <td style="text-align: right;">4,269</td> <td style="text-align: right;">5,414</td> <td style="text-align: right;">5,363</td> <td style="text-align: right;">5,511</td> <td style="text-align: right;">Cont</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) RDT&E, AF (0207438F, Project 4287)</td> <td style="text-align: right;">23,916</td> <td style="text-align: right;">12,886</td> <td style="text-align: right;">9,222</td> <td style="text-align: right;">8,693</td> <td style="text-align: right;">6,733</td> <td style="text-align: right;">11,332</td> <td style="text-align: right;">11,879</td> <td style="text-align: right;">Cont</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) RDT&E, AF (0603827C, Project 3261)</td> <td style="text-align: right;">0</td> <td style="text-align: right;">528</td> <td style="text-align: right;">282</td> <td style="text-align: right;">281</td> <td style="text-align: right;">37</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td></td> <td></td> </tr> </tbody> </table>				<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>Total Cost</u>	(U) Previous Presidents Budget (FY 1998 PB)	2,385	3,894	4,118	TBD	(U) Appropriated Value	2,485	3,894			(U) Adjustments to Appropriated Value					a. Congressional Reductions	-52	-127			b. Small Business Innovative Research	-48	-74			c. Omnibus/Other Above Threshold Reprogramming					d. Below Threshold Reprogramming	-180				e. Rescissions	-7				(U) Adjustments to Budget Years Since FY 1998 PB			-81		(U) Current Budget Submit/FY 1999 President's Budget	2,198	3,693	4,037	TBD		<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>ToCompl</u>	<u>Total Cost</u>	(U) RDT&E, AF (0603789F, Project 2335)	4,121	4,636	4,119	4,269	5,414	5,363	5,511	Cont	TBD	(U) RDT&E, AF (0207438F, Project 4287)	23,916	12,886	9,222	8,693	6,733	11,332	11,879	Cont	TBD	(U) RDT&E, AF (0603827C, Project 3261)	0	528	282	281	37	0	0		
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Project 2321	Page 14 of 22 Pages	Exhibit R-2 (PE 0603617F)																																																																																															

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1998		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
4 - Demonstration and Validation					0603617F Command Control & Communications Applications					2321		
(U) D. <u>Schedule Profile</u>												
		<u>FY 1997</u>				<u>FY 1998</u>				<u>FY 1999</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) TBM Systems Integration Evaluation		X										
(U) FLEX												
- TBMCS V1.0 integration						X						
- Airborne application					*							
(U) Joint Defensive Planner software development			*									
- Evolutionary Prototype (EP) #1						X						
- EP #2								X				
- EP #3									X			
- Advanced Technology Demonstration										X		
- Functional Validation Model #1											X	
- Initial integration into TBMCS												*
(U) Sensor Management Development (2Q00)												
* Indicates the start of an activity; X indicates the completion.												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 1998			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
4 - Demonstration and Validation					0603617F Command Control & Communications Applications				2321	
 (U) A. <u>Project Cost Breakdown (\$ in Thousands)</u>										
					<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>			
(U) Software Development					1,573	2,958	3,337			
(U) Government Engineering Support					250	310	200			
(U) Travel					150	150	200			
(U) Contractor Engineering Support					225	275	300			
(U) Total					2,198	3,693	4,037			
 (U) B. <u>Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
Performing Organizations:										
<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 1997</u>	<u>Budget FY 1997</u>	<u>Budget FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Logicon	C/CPFF	June 94	8,439	8,439	6,033	631	1,775	0	0	8,439
PRB Assoc.	C/CPAF	Feb 97	7,600	7,600	0	650	750	2,600	3,600	7,600
TBD (Sensor Mgmt)	TBD	Apr 00	TBD	7,100	0	0	0	0	7,100	7,100
<u>Support and Management Organizations</u>										
Rome Laboratory	In-house	n/a	n/a	TBD	27,423	604	754	944	Cont	TBD
Miscellaneous	Various	Various	n/a	TBD	0	313	414	493	Cont	TBD
<u>Test and Evaluation Organizations</u> - Not Applicable										
Project 2321					Page 16 of 22 Pages			Exhibit R-3 (PE 0603617F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE February 1998
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603617F Command Control & Communications Applications	PROJECT 2321

(U) B. Budget Acquisition History and Planning Information Continued (\$ in Thousands)

Government Furnished Property: Not Applicable

	<u>Total</u>					
	<u>Prior to</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>FY 1997</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	6,033	1,281	2,525	2,600	10,700	23,139
Subtotal Support and Management	27,423	917	1,168	1,437	Cont	TBD
Subtotal Test and Evaluation	0	0	0	0	Cont	TBD
Total Project	33,456	2,198	3,693	4,037	Cont	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 1998			
BUDGET ACTIVITY 4 - Demonstration and Validation				PE NUMBER AND TITLE 0603617F Command Control & Communications Applications				PROJECT 3804		
COST (\$ In Thousands)	FY 1997 Actual	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost	
3804 Tactical Air Forces Systems Integration	250	129	205	225	229	240	246	Continuing	TBD	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	
<p>(U) A. <u>Mission Description and Budget Item Justification:</u> Provides systems engineering and integration support to the Combat Air Forces (CAF) or to other development efforts. Project addresses integration and interoperability issues associated with TBM General Officers Steering Group (GOSG) directed efforts, makes recommendations, identifies deficiencies, and establishes requirements for development efforts.</p> <p>(U) <u>FY 1997 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$ 100 Prepared for AOC Defensive Planning Development. - (U) \$ 150 Completed Sensor Management analysis. - (U) \$ 250 Total <p>(U) <u>FY 1998 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$ 75 Support and Analyze TBMCS Theater Integration - (U) \$ 54 Evaluate Joint Defensive Planner Prototype - (U) \$ 129 Total <p>(U) <u>FY 1999 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$ 105 Evaluate Joint Defensive Planner advanced technology demonstration prototype - (U) \$ 100 Initiate transition of Joint Defensive Planner System to TBMCS - (U) \$ 205 Total 										
Project 3804			Page 18 of 22 Pages				Exhibit R-2 (PE 0603617F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE February 1998
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603617F Command Control & Communications Applications		PROJECT 3804	
(U) B. <u>Program Change Summary (\$ in Thousands)</u>				
	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	Total <u>Cost</u>
(U) Previous Presidents Budget (FY 1998 PB)	250	145	209	TBD
(U) Appropriated Value	267	145		
(U) Adjustments to Appropriated Value				
a. Congressional Reductions	-12	-13		
b. Small Business Innovative Research	-5	-3		
c. Omnibus/Other Above Threshold Reprogramming				
d. Below Threshold Reprogramming				
e. Rescissions				
(U) Adjustments to Budget Years Since FY 1998 PB			-4	
(U) Current Budget Submit/FY 1999 President's Budget	250	129	205	TBD
 (U) Change Summary Explanation:				
Funding: N/A				
Schedule: N/A				
Technical: N/A				
 (U) C. <u>Other Program Funding Summary (\$ in Thousands)</u> : Not Applicable.				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)											DATE February 1998	
BUDGET ACTIVITY 4 - Demonstration and Validation					PE NUMBER AND TITLE 0603617F Command Control & Communications Applications						PROJECT 3804	
(U) D. <u>Schedule Profile</u>												
		<u>FY 1997</u>				<u>FY 1998</u>				<u>FY 1999</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Analysis of TBM Core Systems theater integration	X											
(U) Sensor Management Analysis		*		X								
(U) Defensive Planning and Execution - Develop Plan		*		X								
(U) TBM Force Level System prototype Evaluations												
- AOC Combat Operations	X											
- Joint Operations	*				X							
- TBMCS Integration					*		X					
(U) Joint Defensive Planner Evaluation/ Integration into TBMCS												
- Evaluate JDP Prototype							*				X	
- Transition to TBMCS											*	
* Indicates the start of an activity; X indicates the completion.												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 1998			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
4 - Demonstration and Validation					0603617F Command Control & Communications Applications				3804	
(U) A. <u>Project Cost Breakdown (\$ in Thousands)</u>										
					<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>			
(U) Systems Engineering					189	120	180			
(U) Government Engineering Support					11	9	25			
(U) Contractor Engineering Support					50	0	0			
(U) Total					250	129	205			
(U) B. <u>Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
Performing Organizations:										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1997	Budget FY 1997	Budget FY 1998	Budget FY 1999	Budget to Complete	Total Program
<u>Product Development Organizations - Not Applicable.</u>										
<u>Support and Management Organizations</u>										
MITRE	SS/TO&P	Various	n/a	TBD	2138	189	120	180	Continuing	TBD
Rome Laboratory	In-house	n/a	n/a	TBD	132	11	9	25	Continuing	TBD
Miscellaneous	Various	Various	n/a	TBD	Cont.	50	0	0	Continuing	TBD
<u>Test and Evaluation Organizations - Not Applicable.</u>										
Government Furnished Property: Not Applicable.										
Project 3804										
Page 21 of 22 Pages										
Exhibit R-3 (PE 0603617F)										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE February 1998
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603617F Command Control & Communications Applications	PROJECT 3804

(U) B. Budget Acquisition History and Planning Information Continued (\$ in Thousands)

	<u>Total</u>					
	<u>Prior to</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>FY 1997</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	0	0	0	0	Continuing	TBD
Subtotal Support and Management	2270	250	129	205	Continuing	TBD
Subtotal Test and Evaluation	0	0	0	0	Continuing	TBD
Total Project	2270	250	129	205	Continuing	TBD