

							Date: February 1999			
Appropriation / Budget Activity/Serial No: PROCUREMENT / 3					P-1 Item Nomenclature: Patriot (TMD)					
Program Elements for Code B Items:		Code:	Other Related Program Elements:							
	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty										
Gross Cost	94.2	87.9	98.7	100.8	96.0	87.2	38.3	12.8		615.9
Less PY Adv Proc										
Plus CY Adv Proc										
Net Proc (P-1)	94.2	87.9	98.7	100.8	96.0	87.2	38.3	12.8		615.9
Initial Spares	39.3	31.5	19.9	16.0	13.6	13.6	13.7	9.7		157.3
Total Proc Cost	133.5	119.4	118.6	116.8	109.6	100.8	52.0	22.5		773.2
Flyaway U/C										
Wpn Sys Proc U/C										
<p>DESCRIPTION: The modification to the PATRIOT radar, communications equipment and launcher to increase system effectivity, survivability, flexibility of defense design, footprint and detection of low radar cross section targets. Modification of the launcher provides for incorporation of the PAC-3 missile.</p> <p>JUSTIFICATION: The above funding is required to support the planned PAC-3 PATRIOT system through modification of existing ground support equipment. Modification installation costs are included in the cost of the modification kits.</p>										

INDIVIDUAL MODIFICATION																		Date	
																		February 1999	
MODIFICATION TITLE																		Radar Phase III 1-89-03-1231	
MODELS OF SYSTEMS AFFECTED																		Radar	
DESCRIPTION / JUSTIFICATION																			
<p>The objective of this modification is to increase the average power providing greater multifunction capability and increase the reliability and maintainability of the radar. Transmitter and receiver modifications will be made to the radar.</p>																			
DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:																			
																		<u>Planned</u>	
																		<u>Accomplished</u>	
Preliminary Design Review																		2QFY92	
Critical Design Review (CDR)																		3QFY93	
Contractor Test and Evaluation (CTE)																		1QFY99	
Development Test and Evaluation (DTE)																		2QFY99	
Initial Operational Test and Evaluation (IOTE)																		4QFY99	
Installation Schedule:																			
																		Pr Yr	
																		FY 1999	
																		FY 2000	
																		FY 2001	
																		FY 2002	
																		FY 2003	
Totals																		1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4	
Inputs																		12 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	
Outputs																		9 3 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	
																		FY 2004	
																		FY 2005	
																		FY 2006	
																		FY 2007	
																		To	
																		Complete	
Totals																		54	
Inputs																		1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	
Outputs																		2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	
METHOD OF IMPLEMENTATION:																		ADMINISTRATIVE LEADTIME: 5 Months	
																		PRODUCTION LEADTIME: 24 Months	
Contract Dates:																		FY 1999 Dec 98	
																		FY 2000 Dec 99	
																		FY 2001 Dec 00	
Delivery Date:																		FY 1999 Nov 00	
																		FY 2000 Nov 01	
																		FY 2001 Nov 02	

INDIVIDUAL MODIFICATION																	Date	February 1999			
MODIFICATION TITLE (Cont)																	Radar Phase III 1-89-03-1231				
FINANCIAL PLAN: (\$ in Millions)																					
	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity	24	157.1	6	31.3	6	31.2	6	30.9	6	30.8	6	30.6							54	311.9	
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment																					
Equipment, Nonrecurring		35.7																			35.7
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	24	20.4																		24	20.4
FY 1999 Eqpt -- Kits			6	4.1																6	4.1
FY 2000 Eqpt -- Kits					6	4.1														6	4.1
FY 2001 Eqpt -- Kits							6	4.1												6	4.1
FY 2002 Eqpt -- kits									6	4.0										6	4.0
FY 2003 Eqpt -- kits											6	4.1								6	4.1
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment	24	20.4	6	4.1	6	4.1	6	4.1	6	4.0	6	4.1							54	40.8	
Total Procurement Cost		213.2		35.4		35.3		35.0		34.8		34.7									388.4

INDIVIDUAL MODIFICATION										Date February 1999												
MODIFICATION TITLE Classification Discrimination Identification (CDI) Phase III 1-92-03-1238																						
MODELS OF SYSTEMS AFFECTED Radar																						
DESCRIPTION / JUSTIFICATION																						
CDI III involves the integration of state-of-the-art High Range Resolution (HRR) technology into the PATRIOT radar. This capability will provide for Tactical Ballistic Missile (TBM)/debris discrimination and categorization of Air Breathing Targets (ABT).																						
DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:																						
										Planned		Accomplished										
										2QFY94		2QFY94										
										2QFY94		2QFY94										
										1QFY99												
										2QFY99												
										4QFY99												
Installation Schedule:																						
		FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Totals																						
Inputs		12	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Outputs		9	3	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1
		FY 2004				FY 2005				FY 2006				FY 2007				To	Totals			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	Complete				
Inputs		1	2	1	2	1	2	1	2										54			
Outputs		2	1	2	1	2	1	2	1	2									54			
METHOD OF IMPLEMENTATION:										ADMINISTRATIVE LEADTIME: 5 Months					PRODUCTION LEADTIME: 18 Months							
Contract Dates: FY 1999 Dec 98					FY 2000 Dec 99					FY 2001 Dec 00												
Delivery Date: FY 1999 Nov 00					FY 2000 Nov 01					FY 2001 Nov 02												

INDIVIDUAL MODIFICATION																Date		February 1999			
MODIFICATION TITLE (Cont) CDI Phase III 1-92-03-1238																					
FINANCIAL PLAN: (\$ in Millions)																					
	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity	24	63.3	6	13.3	6	12.6	6	12.5	6	12.4	6	12.3							54	126.4	
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment																					
Equipment, Nonrecurring		7.6																			7.6
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	24	6.7																		24	6.7
FY 1999 Eqpt -- Kits			6	1.4																6	1.4
FY 2000 Eqpt -- Kits					6	1.4														6	1.4
FY 2001 Eqpt -- Kits							6	1.3												6	1.3
FY 2002 Eqpt -- kits									6	1.3										6	1.3
FY 2003 Eqpt -- kits											6	1.3								6	1.3
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment	24	6.7	6	1.4	6	1.4	6	1.3	6	1.3	6	1.3							54	13.4	
Total Procurement Cost		77.6		14.7		14.0		13.8		13.7		13.6									147.4

INDIVIDUAL MODIFICATION																Date																													
																February 1999																													
MODIFICATION TITLE																RLCEU 1-92-03-1233																													
MODELS OF SYSTEMS AFFECTED																ICC, ECS, CRG																													
DESCRIPTION / JUSTIFICATION																																													
<p>The Remote Launch/Communication Enhancement Upgrade (RLCEU) effort focuses on improving communications at the "below" battalion level through the introduction of new switching equipment and a new communications processor at the battery level in conjunction with a conversion to Band IV UHF throughout the battalion. Additionally, the project will develop and field a remote launch capability permitting emplacement of a remote launcher farm in excess of 30 Km from the parent Engagement Control System (ECS). This project is required to meet PAC-3 requirements for increased battlespace, lethality and rate of fire; additionally Operational Requirement Document (ORD) requirements for interoperability and communications are satisfied by this effort.</p>																																													
DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:																																													
																<u>Planned</u>		<u>Accomplished</u>																											
Preliminary Design Review																2QFY96		3QFY96																											
Critical Design Review (CDR)																4QFY96		4QFY96																											
Contractor Test and Evaluation (CTE)																1QFY99																													
Development Test and Evaluation (DTE)																2QFY99																													
Initial Operational Test and Evaluation (IOTE)																4QFY99																													
Installation Schedule:																																													
																Pr Yr		FY 1999		FY 2000				FY 2001				FY 2002				FY 2003													
																Totals		1		2		3		4		1		2		3		4		1		2		3		4					
Inputs																5								8		3		4		4		6		6		4		4		3					
Outputs																5						4		4		3		4		4		4		3		3		3		3		4		4	
																		FY 2004		FY 2005				FY 2006				FY 2007				To		Totals											
																		1		2		3		4		1		2		3		4		1		2		3		4		Complete			
Inputs																		4		3																						54			
Outputs																3																												54	
METHOD OF IMPLEMENTATION:																		ADMINISTRATIVE LEADTIME:								3		Months		PRODUCTION LEADTIME:								18		Months					
Contract Dates:																FY 1999		Dec 98		FY 2000				Dec 99		FY 2001				Dec 00															
Delivery Date:																FY 1999		Jun 00		FY 2000				Jun 01		FY 2001				Jun 02															

INDIVIDUAL MODIFICATION																	Date	February 1999					
MODIFICATION TITLE (Cont)																	RLCEU 1-92-03-1233						
FINANCIAL PLAN: (\$ in Millions)																							
	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL				
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$			
RDT&E																							
PROCUREMENT																							
Kit Quantity	16	45.0	14	16.9	10	6.2	7	5.6	7	5.6										54	79.3		
Installation Kits																							
Installation Kits, Nonrecurring																							
Equipment																							
Equipment, Nonrecurring																							
Engineering Change Orders																							
Data																							
Training Equipment																							
Support Equipment																							
Other																							
Interim Contractor Support																							
Installation of Hardware																							
FY 1998 & Prior Eqpt -- Kits	16	4.0																			16	4.0	
FY 1999 Eqpt -- Kits			14	1.6																		14	1.6
FY 2000 Eqpt -- Kits					10	0.6																10	0.6
FY 2001 Eqpt -- Kits							7	0.6														7	0.6
FY 2002 Eqpt -- kits									7	0.6												7	0.6
FY 2003 Eqpt -- kits																							
FY 2004 Eqpt -- kits																							
FY 2005 Eqpt -- kits																							
TC Equip-Kits																							
Total Installment	16	4.0	14	1.6	10	0.6	7	0.6	7	0.6												54	7.4
Total Procurement Cost		49.0		18.5		6.8		6.2		6.2													86.7

INDIVIDUAL MODIFICATION																Date					
February 1999																					
MODIFICATION TITLE Command and Launch System 1-95-03-1245																					
MODELS OF SYSTEMS AFFECTED Launcher, ECS																					
DESCRIPTION / JUSTIFICATION																					
<p>The Command and Launch System modifications combine the electronics of the Launcher Electronics Module, Missile Management Station, their associated control panels and the Launcher Missile Round Distributor into a common electronics unit capable of providing launch functions for the PAC-2 and PAC-3 missiles. It also consists of the addition of the Fire Solution Computer in the ECS which interfaces with the PATRIOT Expanded Weapon Control Computer (EWCC) accepting track data and supplying target and launch data.</p>																					
DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:																					
Major milestones not applicable.																					
Installation Schedule:																					
	Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	Totals	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Inputs	10									3	4	4	6	6	5	5	6	7	7	6	7
Outputs	10										3	4	4	6	6	5	5	6	7	7	6
		FY 2004				FY 2005				FY 2006				FY 2007				To	Totals		
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	Complete			
Inputs	6	7	6	7	6	7	6	7	6	7	6	7	2					156			
Outputs	7	6	7	6	7	6	7	6	7	6	7	6	7	2				156			
METHOD OF IMPLEMENTATION: ADMINISTRATIVE LEADTIME: 5 Months PRODUCTION LEADTIME: 8 Months																					
Contract Dates: FY 1999 Feb 99 FY 2000 Feb 00 FY 2001 Feb 01																					
Delivery Date: FY 1999 Oct 00 FY 2000 Oct 01 FY 2001 Oct 02																					

INDIVIDUAL MODIFICATION																	Date	February 1999				
MODIFICATION TITLE (Cont)																	Command and Launch System 1-95-03-1245					
FINANCIAL PLAN: (\$ in Millions)																						
	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E																						
PROCUREMENT																						
Kit Quantity	10	22.9	11	17.4	22	38.4	26	41.3	26	37.2	26	35.0	26	34.5	9	11.5					156	238.2
Installation Kits																						
Installation Kits, Nonrecurring																						
Equipment																						
Equipment, Nonrecurring																						
Engineering Change Orders																						
Data																						
Training Equipment																						
Support Equipment																						
Other																						
Interim Contractor Support																						
Installation of Hardware																						
FY 1998 & Prior Eqpt -- Kits	10	2.5																			10	2.5
FY 1999 Eqpt -- Kits			11	1.9																	11	1.9
FY 2000 Eqpt -- Kits					22	4.2															22	4.2
FY 2001 Eqpt -- Kits							26	4.5													26	4.5
FY 2002 Eqpt -- kits									26	4.1											26	4.1
FY 2003 Eqpt -- kits											26	3.9									26	3.9
FY 2004 Eqpt -- kits													26	3.8							26	3.8
FY 2005 Eqpt -- kits															9	1.3					9	1.3
TC Equip-Kits																						
Total Installment	10	2.5	11	1.9	22	4.2	26	4.5	26	4.1	26	3.9	26	3.8	9	1.3					156	26.2
Total Procurement Cost		25.4		19.3		42.6		45.8		41.3		38.9		38.3		12.8						264.4

INDIVIDUAL MODIFICATION																	Date																																																																																																									
MODIFICATION TITLE																	February 1999																																																																																																									
Radar Control Group/Signal Processing Group 1-95-03-1244																																																																																																																										
MODELS OF SYSTEMS AFFECTED																	Radar																																																																																																									
DESCRIPTION / JUSTIFICATION																																																																																																																										
This modification provides upgrades to the control and signal processing groups in preparation for Post Deployment Build 5 software implementation																																																																																																																										
DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:																																																																																																																										
Major milestones not applicable.																																																																																																																										
Installation Schedule:																																																																																																																										
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 5%;">Pr Yr</th> <th colspan="4" style="width: 10%;">FY 1999</th> <th colspan="4" style="width: 10%;">FY 2000</th> <th colspan="4" style="width: 10%;">FY 2001</th> <th colspan="4" style="width: 10%;">FY 2002</th> <th colspan="4" style="width: 10%;">FY 2003</th> </tr> <tr> <th>1</th><th>2</th><th>3</th><th>4</th> <th>1</th><th>2</th><th>3</th><th>4</th> <th>1</th><th>2</th><th>3</th><th>4</th> <th>1</th><th>2</th><th>3</th><th>4</th> <th>1</th><th>2</th><th>3</th><th>4</th> </tr> </thead> <tbody> <tr> <td>Totals</td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> </tr> <tr> <td>Inputs</td> <td>75</td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> </tr> <tr> <td>Outputs</td> <td>75</td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> </tr> </tbody> </table>																			Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	Totals																					Inputs	75																				Outputs	75																			
Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003																																																																																																									
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																																																																																																						
Totals																																																																																																																										
Inputs	75																																																																																																																									
Outputs	75																																																																																																																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 5%;">Pr Yr</th> <th colspan="4" style="width: 10%;">FY 2004</th> <th colspan="4" style="width: 10%;">FY 2005</th> <th colspan="4" style="width: 10%;">FY 2006</th> <th colspan="4" style="width: 10%;">FY 2007</th> <th rowspan="2" style="width: 5%;">To Complete</th> <th rowspan="2" style="width: 10%;">Totals</th> </tr> <tr> <th>1</th><th>2</th><th>3</th><th>4</th> <th>1</th><th>2</th><th>3</th><th>4</th> <th>1</th><th>2</th><th>3</th><th>4</th> <th>1</th><th>2</th><th>3</th><th>4</th> </tr> </thead> <tbody> <tr> <td>Inputs</td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td> <td>75</td> </tr> <tr> <td>Outputs</td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td> <td>75</td> </tr> </tbody> </table>																			Pr Yr	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	Inputs																		75	Outputs																		75																															
Pr Yr	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals																																																																																																								
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																																																																																																										
Inputs																		75																																																																																																								
Outputs																		75																																																																																																								
METHOD OF IMPLEMENTATION:																																																																																																																										
ADMINISTRATIVE LEADTIME: 6 Months																																																																																																																										
PRODUCTION LEADTIME: 6 Months																																																																																																																										
Contract Dates: FY 1999 FY 2000 FY 2001																																																																																																																										
Delivery Date: FY 1999 FY 2000 FY 2001																																																																																																																										

INDIVIDUAL MODIFICATION																Date		February 1999			
MODIFICATION TITLE (Cont) Radar Control Group/Signal Processing Group 1-95-03-1244																					
FINANCIAL PLAN: (\$ in Millions)																					
	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity	75	41.7																		75	41.7
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment																					
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	75	1.7																		75	1.7
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment	75	1.7																		75	1.7
Total Procurement Cost		43.4																			43.4

Exhibit P-40, Budget Item Justification Sheet							Date: February, 1999			
Appropriation / Budget Activity/Serial No: 0300D / PROCUREMENT / 1 / 17-10				P-1 Item Nomenclature: Patriot						
Program Elements for Code B Items:		Code: A	Other Related Program Elements:							
	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty	20		32	68	90	90	120	90	50	560
Gross Cost	183.3	126.1	182.3	251.0	290.6	278.4	314.2	244.4	191.0	2061.3
Less PY Adv Proc										
Plus CY Adv Proc										
Net Proc (P-1)	183.3	126.1	182.3	251.0	290.6	278.4	314.2	244.4	191.0	2061.3
Initial Spares										
Total Proc Cost	183.3	126.1	182.3	251.0	290.6	278.4	314.2	244.4	191.0	2061.3
Flyaway U/C										
Wpn Sys Proc U/C										
<p>DESCRIPTION: PATRIOT is an advanced Surface-to-Air guided missile system with a high single shot kill probability capable of operation in the presence of Electronic Countermeasures (ECM) and able to conduct multiple simultaneous engagements against high performance air breathing targets and ballistic missiles likely to be encountered by US Forces during the 90's and beyond. The system utilizes a multifunction Phased Array Radar, a digital computer controlling system function, a guidance system combining command and homing (track-via-missile) features, and provides the operator the ability to control operations. PATRIOT totally replaced Nike Hercules and partially replaced HAWK. It has the advantage of reducing manpower and logistics costs associated with the replaced systems while providing improved high and medium altitude air defense. Deployment is to the field Army and the system is integrated with the U.S. Air Force and U.S. Navy in the overall air defense of the theater of operations. The PATRIOT Advanced Capability (PAC)-3 program is a result of a series of integrated, phased system improvements in combination with the PAC-3 missile which utilizes hit-to-kill technology. Modification to the system, which includes radar enhancements, communication upgrades and increased command, control, and computer capability, will increase PATRIOT's effectivity, survivability, flexibility of defense design, footprint and detection of smaller low radar cross section targets.</p> <p>JUSTIFICATION: FY00-FY05 includes costs for PAC-3 procurement and delivery.</p>										

Exhibit P-5, Weapon Missiles Cost Analysis		Appropriation/ Budget Activity/Serial No: PROCUREMENT / 1 / 17-10			P-1 Line Item Nomenclature: PAC-3			Weapon System Type:			Date: February 1999		
Missiles Cost Elements	ID CD	FY98			FY99			FY00			FY01		
		TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000
Missile Hardware-Recurring SUBTOTAL		85489 85489	20	4274			88925 88925	32	2779	159461 159461	68	2345	
Non-Recurring Costs -- Initial Prod. Fac. SUBTOTAL					30000 30000								
Ground Support Equipment SUBTOTAL													
Support Cost													
Contractor Engineering		31048			31248		31007			31174			
Government/Software Engineering		21774			21604		20424			19388			
Sys Engrg/Proj Mgmt (SEPM)		18129			17952		17654			17146			
Integrated Logistics Support		14966			13804		12892			12615			
Depot Maint Plant Eq (DMPE)		3281			2408		1603			1602			
Fielding		8602			9111		9773			9564			
SUBTOTAL		97800			96127		93353			91489			
Gross P-1 End Cost		183289			126127		182278			250950			
Less: Prior Year Adv Proc													
Net P-1 Full Funding Cost		183289			126127		182278			250950			
Plus: P-1 CY Adv Proc													
Other Non P-1 Costs													
Initial Spares		39300			31453		19948			16036			
Mods		94200			87914		98672			100776			
TOTAL		316789			245494		300898			367762			

Exhibit P-5a, Budget Procurement History and Planning										Date: February 1999		
Appropriation / Budget Activity/Serial No: 0300D / PROCUREMENT / 1 / 1710				Weapon System Type:			P-1 Line Item Nomenclature: PAC-3					
WBS Cost Elements: Fiscal Years		Contractor and Location		Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
PAC-3 MISSILE												
	FY98	LMVS	Dallas, TX	SS/CPIF	AMCOM	Jun-99	Oct-00	20	4274	N/A		
	FY 00	LMVS	Dallas, TX	SS/CPIF	AMCOM	Nov-99	Nov-01	32	2779	N/A		
	FY 01	LMVS	Dallas, TX	SS/CPIF	AMCOM	Mar-01	Mar-03	68	2345	N/A		
REMARKS:												

Exhibit P-20, Requirements Study		Appropriation/Budget Activity/Serial No:					Date:				
P-1 Line Item Nomenclature (Include DODIC for Ammunition Items):		Missile Procurement/ 2 / Other Missiles					February 1999				
PAC-3		Admin Leadtime (after Oct 1):					Prod Leadtime:				
		5 Months					13 Months				
		FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005		
Buy Summary		20		32	68	90	90	120	90		
Unit Cost		4.3		2.8	2.4	2.5	2.2	2.0	2.0		
Total Cost		85.5		91.0	163.5	205.6	197.1	234.6	167.0		
Asset Dynamics											
Beginning Asset Position					16	12	40	104	190		
Deliveries from All Prior Year Funding				20							
Deliveries from:	FY 1999 Funding					32					
Deliveries from:	FY 2000 Funding						68				
Deliveries from:	FY 2001 Funding							90			
Deliveries from Subsequent Years Funds									90		
Other Gains											
Combat Losses / Usage											
Training Losses / Usage											
Test Losses / Usage				2	2	2	2	2	2		
Other Losses / Usage											
Disposals/Retirements/Attritions				2	2	2	2	2	2		
End of Year Asset Position				16	12	40	104	190	276		
Inventory Objective or Current Authorized Allowance											
Inventory Objective		Actual Training Expenditures		Other than Training Usage		Disposals (Vehicles/Other)		Vehicles Eligible for Replacement		Aircraft: TOAI	
1900		FY 1997 thru		FY 1997 thru		FY 1997 thru		FY 2000		PAA: TAI	
Assets Rqd for Combat Loads:	1728		0		8						
WRM Rqmt:		1996		1996		1996		FY 2001		Attrition Res	
Pipeline:	172	1995		1995		1995		Augment		BAI	
Other:		1994		1994		1994				Inactive Inv	
Total:	1900									Storage	
Remarks:											

BUDGET ITEM JUSTIFICATION SHEET						DATE February 1999							
APPROPRIATION/BUDGET ACTIVITY 0300D / PROCUREMENT, DEFENSEWIDE / 1 / 17 350						P-1 ITEM NOMENCLATURE Navy Area Theater Ballistic Missile Defense -AEGIS TBM Upgrades							
	Prior Years	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	To Complete	Total Program	
QUANTITY (BMDO)					1	6	11	8	8	9	36	79	
COST (In Millions)	30.8	9.087	14.859	36.489	20.418	45.556	60.469	58.730	71.108	74.823	277.7	700.0	
Initial Spares (In M)													
TOTAL (in Millions)	30.8	9.087	14.859	36.489	20.418	45.556	60.469	58.730	71.108	74.823	277.7	700.0	
Unit Cost (in Millions)													
<p>DESCRIPTION/JUSTIFICATION:</p> <p>The Navy Area Theater Ballistic Missile Defense (TBMD) Project builds on the national investment in AEGIS ships, AEGIS Weapon Systems (AWS), and Navy Standard Missile II (SM-2) Block IV missiles. Two classes of ships continue to be deployed with the AEGIS combat system: CG-47 Ticonderoga-Class Cruisers and DDG-51 Burke-Class Destroyers. In addition, four shore-centers will be upgraded with funding in FYs 1999 through 2001: (1) the Combat System Engineering Development Site (CSEDS), (2) the AEGIS Computer Center (ACC), (3) the AEGIS Education Center (AEC) and (4) the AEGIS Combat System Center (ACSC), to properly accommodate the CG-47 and DDG-51 combat system for 79 ships and associated Vertical Launch System (VLS) Modifications. Funds provide for modifications to the AEGIS Combat System (ACS) to include modifications to the command and decision system, the AEGIS Display System, and the Radar System (AN/SPY-1B/D).</p> <p>FY00-01 reductions to AWS modifications were made to reflect Navy Area TBMD program schedule changes to the developmental program known at the time of the budget submittal. The development schedule was affected due to incorporating lessons learned from AEGIS/CEC integration efforts and recommendations from the Welch Report on Reducing Risk in Ballistic Missile Defense Flight Test Programs. Adjustments in AWS modifications in FY02 and beyond have not yet been resolved. These adjustments will be incorporated into the next budget cycle after the program restructure baseline and new ship fielding schedule is determined.</p>													
						P-1 SHOPPING LIST NO.	PAGE NO. 1 OF 1			EXHIBIT P-40			

BUDGET ITEM JUSTIFICATION SHEET						DATE February 1999							
APPROPRIATION/BUDGET ACTIVITY 0300D / PROCUREMENT, DEFENSEWIDE / 1 / 17 350						P-1 ITEM NOMENCLATURE Navy Area Theater Ballistic Missile Defense SM-2 Block IVA Procurement							
	Prior Years	FY 97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	To Complete	Total Program	
QUANTITY (BMDO)					7	4	20	28	33	46	117	255	
COST (In Millions)	N/A	0.000	0.000	6.700	33.568	14.981	58.257	72.750	78.108	102.468	211.4	578.2	
Initial Spares (In M)					1.016	0.529	2.309	2.899	3.103	4.090	10.0	24	
TOTAL (in Millions)		0.000	0.000	6.700	34.584	15.510	60.566	75.649	81.211	106.558	221.4	602.2	
Unit Cost (in Millions)					4.941	3.878	3.028	2.702	2.461	2.316	1.892*	2.361*	
<p>DESCRIPTION/JUSTIFICATION:</p> <p>*Missile pricing is being updated and potential shortfall to buy total missile quantity will be addressed in FY01 POM</p> <p>The Navy Area Theater Ballistic Missile Defense (TBMD) Project builds on the national investment in AEGIS ships, AEGIS Weapon Systems (AWS), and Navy Standard Missile II (SM-2) Block IV missiles. Missile procurement funds provide for production of the Theater Ballistic Missile Defense version of the Standard Missile (SM-2 Block IVA), with BMDO funded production deliveries beginning in FY 2001. The SM-2 Block IVA will be capable of engaging Theater Ballistic Missiles in the endoatmosphere.</p> <p>Additional missile procurement funding, under Weapons Procurement, Navy Appropriations is budgeted by the Navy beginning in FY 1999. SM-2 Block IVA procurement funded by both the Navy (Weapons Procurement, Navy Appropriation) and the Ballistic Missile Defense Organization (Procurement, Defense-Wide) beginning in FY 1999. The Navy WPN funding will procure the remaining SM-2 Block IVA variant missiles to achieve the total TBMD/AW inventory objective. Because the SM-2 Block IVA upgrade is based on the Block IV acquisition strategy, and are produced on the same production line as other SM-2 variant missiles, unit cost, total cost, and cost to complete information are influenced by the Navy procurement of those SM-2 variant missiles (primarily SM-2 Block III and SM-2 Block IV).</p>													
						P-1 SHOPPING LIST NO.	PAGE NO. 1 OF 1			EXHIBIT P-40			

PROGRAM COST BREAKDOWN (P-5)										A. DATE February 1999						
B. APPROPRIATION/BUDGET ACTIVITY 0300D / PROCUREMENT, DEFENSE WIDE / 1					C. P-1 ITEM NOMENCLATURE Navy Area Theater Ballistic Missile Defense											
COST CODE	ELEMENT OF COST	IDENT CODE	TOTAL COST IN THOUSANDS OF DOLLARS													
			FY1997		FY1998		FY1999		FY2000		FY2001		FY2002		FY2003	
			QTY	TOTAL COST	QTY	TOTAL COST	QTY	TOTAL COST	QTY	TOTAL COST	QTY	TOTAL COST	QTY	TOTAL COST	QTY	TOTAL COST
	<u>AWS MODIFICATIONS</u>															
	ACS MODIFICATION			7,091	13,638		33,380		11,333		33,948		39,764		23,391	
	PRODUCTION SUPPORT			1,996	1,221		3,109		586		3,414		8,030		4,719	
	INSTALLATION/DESIGN												7,837		17,670	
	SHIP QUALIFICATIONS								8,499		8,194		4,838		12,950	
	AWS TOTAL			9,087	14,859		36,489	1	20,418	6	45,556	11	60,469	8	58,730	8
	<u>SM-2 Block IVA</u>															
	HARDWARE								20,317		10,572		46,183		57,988	
	INITIAL SPARES								1,016		529		2,309		2,899	
	NRE						6,700		6,900		1,600		8,672		9,865	
	PRODUCTION SPT								5,243		2,161		3,402		4,897	
	CANNISTERS								1,108		648					
	SM-2 BLK IVA TOTAL						6700	7	34,584	4	15,510	20	60,566	28	75,649	33
	TOTAL PROCUREMENT			9087	14,859		43,189		55,002		61,066		121,035		134,379	

D. REMARKS:

AEGIS Weapon Systems (AWS) procurement funding in FY98/99/00 also includes upgrades to four shore centers to properly accommodate the CG-47 and DDG-51 class combat system upgrades. FY00-01 reductions to AWS modifications were made to reflect Navy Area TBMD program schedule changes to the developmental program known at the time of the BES submittal. The developmental schedule was affected by incorporating lessons learned from AEGIS Cooperative Engagement Capability (CEC) integration efforts and recommendations from the Welch Report on reducing risk in Ballistic Missile Defense Flight Test Programs. Adjustments in AWS modifications in FY02 and beyond have not been resolved. These adjustments will be incorporated into the next budget cycle after the program restructure baseline and new ship fielding schedule is determined.

FY99 funding has been added to contribute to the costs associated with transition to production of the Standard Missile Blk IVA.

P-1 SHOPPING LIST
ITEM NO.

FY2004		FY2005	
TOTAL COST	QTY	TOTAL COST	
24,243		34,944	
4,869		6,910	
23,331		18,261	
18,665		14,708	
71,108	9	74,823	
62,054		81,790	
3,103		4,090	
10,242		12,408	
5,812		8,270	
81,211	46	106,558	
152,319		181,381	

Exhibit P-40, Budget Item Justification Sheet							Date: February 1999			
Appropriation / Budget Activity/Serial No: 0300D / PROCUREMENT /01-17/205				P-1 Item Nomenclature: NMD INTEGRATION						
Program Elements for Code B Items:		Code: B	Other Related Program Elements:							
	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty						18	28	15	CONT	CONT
Gross Cost	0,000	0,000	0,000	781,372	972,760	861,509	957,825	607,515	CONT	CONT
Less PY Adv Proc										
Plus CY Adv Proc										
Net Proc (P-1)	0,000	0,000	0,000	781,372	972,760	861,509	957,825	607,515	CONT	CONT
Initial Spares										
Total Proc Cost	0,000	0,000	0,000	781,372	972,760	861,509	957,825	607,515	CONT	CONT
Flyaway U/C										
Wpn Sys Proc U/C										
<p>DESCRIPTION: The National Missile Defense (NMD) Program was designated a Major Defense Acquisition Program (MDAP) in April 1996. The goal of the NMD program is to develop, demonstrate and maintain an option to deploy a national missile defense system to defend the United States against a limited strategic ballistic missile threat by a rouge nation. The technological maturity of the system will be assessed at a Deployment Readiness Review (DRR) in 3Q/00. Following this review a decision may be made to implement the FY2005 deployment option, which is supported by programmed funds in the FYDP. However, if the threat warrants and the technology has sufficiently matured, a decision maybe made to deploy sooner than FY2005. In that event funds programmed for FY2003-2005 would have to be accelerated.</p> <p>The NMD system consists of a ground based interceptor, ground based sensors, and a Battle Management Command, Control, and Communications (BMC3) system. The interceptor consists of an Exoatmospheric Kill Vehicle (EKV) atop a Commercial Off-The-Shelf (COTS) booster stack. The ground-based sensors include the development of an X-band radar and the upgrade of existing early warning radars. The BMC3 system includes integration with existing national command and control systems, a ground communication network, and a communication system to transmit data to and from the interceptor while in flight. The NMD system will also use space-based assets for threat launch detection and tracking. The Air Force Space Based Infrared System – Low-Earth Orbit (SBIRS Low) is an integral part of enhancing future NMD capabilities.</p>										

Exhibit P-40, Budget Item Justification Sheet		Date: February 1999
Appropriation / Budget Activity/Serial No: 0300D / PROCUREMENT /01-17/205		P-1 Item Nomenclature: NMD INTEGRATION
Program Elements for Code B Items:	Code: B	Other Related Program Elements:
<p>DESCRIPTION: (cont) The primary supporting system development functions consist of NMD integration, system engineering, test and evaluation, deployment planning, and sensor technology efforts. NMD integration addresses the activities of a single contractor (Boeing North America) as the Lead System Integrator (LSI). The LSI will develop and integrate the individual NMD elements into a cohesive NMD system. System Engineering activities include development of system-level performance and integration requirements as prescribed in the Capstone Requirements Document (CRD), and Operational Requirements Document (ORD). Test and Evaluation activities include the execution of the lethality ground and flight test programs. Deployment planning activities focus on the planning and logistics requirements of fielding an NMD system. The sensor technology efforts include research and development efforts for critical sensor components that support infrared surveillance, acquisition, tracking, and discrimination functions to be used in SBIRS Low.</p>		

Exhibit P-5, Weapon Missiles Cost Analysis		Appropriation/ Budget Activity/Serial No: 0300-PROCUREMENT /01-017/205			P-1 Line Item Nomenclature: NMD INTEGRATION			Weapon System Type:			Date: February 1999			
NMD INTEGRATION Cost Elements		ID CD	FY98			FY99			FY00			FY01		
			TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000
Non-Recurring Support			0,000			0,000			0,000			29,718		
Element Test & Evaluation			0,000			0,000			0,000			69,051		
Operational Site Activation			0,000			0,000			0,000			21,975		
SE/PM			0,000			0,000			0,000			177,613		
Spares			0,000			0,000			0,000			93,210		
NMD SUBTOTAL			0,000			0,000			0,000			395,475		
GBI														
Prime Mission Hardware			0,000			0,000			0,000			107,297		
GBI SUBTOTAL			0,000			0,000			0,000			107,297		
GBR/XBR														
Prime Mission Hardware			0,000			0,000			0,000			212,000		
GBR/XBR SUBTOTAL			0,000			0,000			0,000			212,000		
BMC3														
Prime Mission Hardware			0,000			0,000			0,000			66,600		
BMC3 SUBTOTAL			0,000			0,000			0,000			66,600		
UEWR														
Prime Mission Hardware			0,000			0,000			0,000			00,000		
UEWR SUBTOTAL			0,000			0,000			0,000			00,000		
D&S														
Prime Mission Hardware			0,000			0,000			0,000			00,000		
D&S SUBTOTAL			0,000			0,000			0,000			00,000		
TOTAL			0,000			0,000			0,000			781,372		

