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BMDO RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)	DATE February 1999
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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604865C PAC3 - EMD	PROJECT 2257
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COST (In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
2257 Patriot	242690	320842	29141	39119	0	0	0	0	0	1638473

A. Mission Description and Budget Item Justification

PATRIOT is a long range, mobile, field Army and Corps air defense system, using guided missiles to simultaneously engage and destroy multiple targets at varying ranges. The PATRIOT Advanced Capability Level 3 (PAC-3) Upgrade Program is the latest evolution of the phased materiel change improvement program to PATRIOT. The materiel changes will provide improved performance across the spectrum for system and threat intercept performance. In addition to modernization of the ground support equipment, funding provides for a new missile design that provides a high velocity, hit to kill, surface to air missile with the range, accuracy, and lethality necessary to effectively intercept and destroy tactical missiles with Nuclear Biological Chemical/High Explosive (NBC/HE) warheads and air breathing threats. The full capability will provide defense against TBM's, CM's, UAVs and other air breathing threats as part of a multilayered defense system. PATRIOT is pursuing integration of PATRIOT Battle Management Command, Control, Communications and Intelligence (BMC3I) with the Project Manager, Air Defense Command and Control Systems to take advantage of previous Army developments that can be incorporated into the PATRIOT program.

The PAC-3 program has experienced negative cost and schedule trends and an overall cost increase in the Engineering Manufacturing and Development (EMD) contract. BMDO and the U.S. Army have initiated a cost reduction effort aimed at reduced unit costs, realistic cost estimating, revised scheduling, and establishment of a new Program Management Baseline (PMB). Additionally, the Department has initiated an independent program review with the Defense Contract Management Command.

FY 1998 Accomplishments:

- 173168 Continued PAC-3 missile Engineering and Manufacturing Development (EMD) program; began flight test program.
- 4600 Completed modification development program.
- 25030 Continued PAC-3 EMD target and test support.
- 14892 Continued operational test and evaluation and lethality efforts.
- 25000 1998 Emergency Supplemental Appropriation for Iranian Missile Protection Act (IMPACT 98). Initiated efforts for both the Remote Launch Communication Enhanced Upgrade (RLCEU) and preparations for the PAC-3/Navy Area flight test demonstration.

Total 242690

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FY 1999 Planned Program:

- 283777 Continue PAC-3 missile Engineering and Manufacturing Development (EMD) program, with increased program funding in FY 99 and FY 00 associated with a program cost growth. Conduct Integrated Baseline Review and establish new program baseline, revised schedule, and estimated cost at complete.
 - 16925 Continue PAC-3 EMD target and test support.
 - 15376 Continue operational test and evaluation and lethality efforts.
 - 4764 Air Directed Surface to Air Missile (ADSAM) Testing
- Total 320842

FY 2000 Planned Program:

- 29141 Continue PAC-3 missile Engineering and Manufacturing Development (EMD) program. Continue to address cost reduction initiatives with the U.S. Army and the prime contractor.
- Total 29141

FY 2001 Planned Program:

- 39119 Complete PAC-3 missile Engineering and Manufacturing Development (EMD) program.
- Total 39119

B. Program Change Summary	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
Previous President's Budget (FY 1999 PB)	198273	137265	0	0
Congressional Adjustments		45000		
Appropriated Value		182265		
Adjustments to Appropriated Value				
a. Congressional Reductions (FFRDC, Inflation, etc)		-906		
b. OSD Reductions		-517		
c. Emergency Supplemental		140000*		
Adjustments to Budget Years Since <u>FY 1999 PB</u>				
Current Budget Submit (FY 2000 / 2001 PB)	242690	320842	29141	39119

* Of this amount, \$80 million will be executed in FY2000

Change Summary Explanation:

Funding: FY 1998 (+36633): Project decremented (-7784) for undistributed Defense-Wide reductions.
 Project decremented (-583) for higher priority projects
 Project increased (+25000) via Emergency Supplemental Appropriation for IMPACT 98.

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Project increased (+20000) via Omnibus Reprogramming to meet program funding requirements and cost growth.
 FY 1999 (+138577): Project decremented (-1423) for undistributed Defense-Wide reductions.
 Project increased (+140000) via Omnibus Consolidated and Emergency Supplemental Appropriations Act to meet program funding requirements and cost growth.
 FY 2000 (+29141): Project increased to meet program funding requirements and cost growth.
 FY 2001 (+39119): Project increased to meet program funding requirements and cost growth

Schedule: PAC-3 Missile flight test program extended into FY 00. FUE delayed to FY01.

C. Other Program Funding Summary	<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>FY 2004</u>	<u>FY 2005</u>	To <u>Compl</u>	Total <u>Cost</u>
2257, PAC3 Procurement, PE 0208865C	316789	245494	300898	367762	400205	379220	366228	266880	191000	3809878

D. Acquisition Strategy: The design objective of the PATRIOT system was to provide a system capable of being modified to cope with the evolving threat. This alternative minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems. The PATRIOT program consists of two interrelated acquisition programs – the PATRIOT Growth Program and the PAC-3 Missile Program. Growth Program modifications are grouped into configurations which are scheduled to be fielded in the same time frame. Configuration groupings are a convenience for managing block changes and are not a performance related grouping. However, incremental increases in performance will be determined for each configuration in order to provide benchmarks for configuration testing and for the development of user doctrine and tactics.

E. Schedule Profile	<u>FY 1996</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>FY 2004</u>	<u>FY 2005</u>
Configuration 1 First Unit Equipped (FUE)	1 st Qtr									
PAC-3 Missile CDR	2 nd Qtr									
Configuration 2 Contractor Development Test & Evaluation (CDT&E)	1 st Qtr									
Configuration 2 Follow-On Test & Evaluation (FOT&E)	3 rd Qtr									
PDB-4 Software Release		1 st Qtr								
Configuration 2 FUE		1 st Qtr								
Controlled Test Flight 1		4 th Qtr								
Controlled Test Flight 2			1 st Qtr							
Guidance Test Flight 1				2 nd Qtr						

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BMDO RDT&E COST ANALYSIS (R-3)										DATE February 1999		
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604865C PAC3 - EMD					PROJECT 2257		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	<u>FY 1999</u> Cost	<u>FY 1999</u> Award Date	<u>FY 2000</u> Cost	<u>FY 2000</u> Award Date	<u>FY 2001</u> Cost	<u>FY 2001</u> Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. PAC-3 Missile EMD	SS-CPIF	LMVS/TX	707639	173286	Oct 98	9714	Oct 99	10000	Oct 00		900639	900639
b. PAC-3 Missile Integration	SS-CPIF	Raytheon/MA	118863	32727	Dec 98	5828	Nov 99	5756	Nov 00		163174	163174
c. RDEC		MRDEC/AL	47417	16958	Apr 99	971	Dec 99	543	Nov 00		65889	65889
Subtotal Product Development:			873919	222971		16513		16299			1129702	1129702
Remark:												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	<u>FY 1999</u> Cost	<u>FY 1999</u> Award Date	<u>FY 2000</u> Cost	<u>FY 2000</u> Award Date	<u>FY 2001</u> Cost	<u>FY 2001</u> Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. SETA	C-CPAF	CAS/AL	24437	9763	Jan 99	971	Oct 99	1000	Oct 00		36171	35671
b. OGA/In-House	PO		47522	14516	Apr 99	3857	Nov 99	500	Nov 00		66395	66395
c. Engineering Support	SS-CPIF	Raytheon/MA	51779	11660	Jan 99						63439	63439
Subtotal Support Costs:			123738	35939		4828		1500			166005	165505
Remark:												
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	<u>FY 1999</u> Cost	<u>FY 1999</u> Award Date	<u>FY 2000</u> Cost	<u>FY 2000</u> Award Date	<u>FY 2001</u> Cost	<u>FY 2001</u> Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. White Sands Missile Range	MIPR	WSMR/NM	55248	24867	Apr 99	7800	Oct 99	13813	Oct 00		101728	101728
b. ADSAM				4764							4764	4764
c. Operational Test Support	MIPR		15163	12150	Nov 98			5362	Nov 00		32675	32675
d. Targets	MIPR	SMDC/AL	66932	16925	Nov 98			2145	Nov 00		86002	86002
e. Lethality	MIPR	SMDC/AL	34402	3226	Nov 98						37628	37628
Subtotal Test and Evaluation:			171745	61932		7800		21320			262797	262797
Remark:												

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a.												
b.												
c.												
d.												
e.												
f.												
Subtotal Management Services:												

Remark:

Project Total Cost:			1169402	320842		29141		39119			1558504	1558004
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Remark:

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