

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

**04 - Advanced Component Development and Prototypes
(ACD&P)**

PE NUMBER AND TITLE

0604327F Hardened Target Munitions

PROJECT

4641

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
4641	Hard and Deeply Buried Target Defeat System (HDBTDS)	0	7,338	12,633	0	0	0	0	0	0	19,971
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**

The Hard and Deeply Buried Target Defeat System (HDBTDS) program is an effort designed to hold at risk those highest priority assets essential to the enemy's war fighting ability, which are heavily defended and protectively hardened. Hardening techniques include construction of facilities, many of which are deep underground with multiple layers of reinforced concrete, rock rubble, and/or earth overburden. Other hardened targets include operations within caves, tunnels, and mountains built using rapidly improving construction equipment exported by allies and adversaries on a large scale. (Examples include enemy command and control facilities, air defense facilities, facilities for the production, storage, and deployment of weapons including weapons of mass destruction, surface to surface missile launch sites, aircraft storage sites, artillery sites.) Potential solutions include (but are not limited to) Special Forces, conventional short or long range ballistic missiles (land or sea launched), cruise missiles, direct attack munitions, and standoff weapons.

An Analysis of Alternatives (AOA) was conducted to evaluate the weapon concepts to determine the most promising concepts to move forward into a follow-on program. The potential weapon concepts were evaluated in an air campaign analysis. The results of the AOA were presented to the Joint Requirements Oversight Council (JROC) in 4th Quarter FY 1999. The AOA has been documented into a report for future reference. The primary legacy hard target penetrator weapon, GBU-28, was tested in rock to validate computer models used in the AOA analysis and to provide test data for future use when considering weapon design alternatives for increased penetration capability. The results were presented in 1st Quarter FY 2001.

In FY 2003, a GBU-28 upgrade program was begun to enhance the effectiveness of the BLU-113 penetrator warhead against the hard and deeply buried target set, and integrate the new warhead into the GBU-28B/B system and the B-2 and F-15E aircraft. The BLU-113 warhead will be redesigned to increase weapon penetration, improve survivability. A nose redesign will improve penetration; an explosive upgrade will increase weapon lethality; a material upgrade will enhance warhead survivability; a fuze well redesign will enhance fuze survivability. These performance improvements would increase the number of targets within the target set held at risk; would reduce the number of weapons required to defeat the targets that were previously held at risk.

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		PROJECT 4641

(U) **A. Mission Description Continued**

(U) FY 2002 (\$ in Thousands)

(U) \$0	Accomplishments/Planned Program
(U) \$0	No Activity
(U) \$0	Total

(U) FY 2003 (\$ in Thousands)

(U) \$0	Accomplishments/Planned Program
(U) \$1,638	Begin HDBTDS. Design warhead, integrate explosive and upgrade case material.
(U) \$2,200	Weapon system and aircraft integration
(U) \$700	Plan and prepare for testing redesigned warhead
(U) \$500	Air Force Research Laboratory provide technical engineering design support and analysis.
(U) \$1,800	Perform field agency activities, including project office and computer support to manage the Hardened Target Munitions program.
(U) \$500	System Engineering and Technical Analysis (SETA) support including independent analysis and evaluation of prototype warhead designs.
(U) \$7,338	Total

(U) FY 2004 (\$ in Thousands)

(U) \$0	Accomplishments/Planned Program
(U) \$3,515	Design warhead, integrate explosive and upgrade case material.
(U) \$2,642	Weapon system and aircraft integration
(U) \$3,239	Plan and prepare for testing redesigned warhead
(U) \$126	Air Force Research Laboratory provide technical engineering design support and analysis.
(U) \$1,944	Perform field agency activities, including project office and computer support to manage the Hardened Target Munitions program.
(U) \$1,167	System Engineering and Technical Analysis (SETA) support including independent analysis and evaluation of prototype warhead designs.
(U) \$12,633	Total

(U) **B. Budget Activity Justification**

This program is in budget activity 4 - ACD&P, because the program would examine a Hard Target Munitions capability to precisely hit and destroy hard and deeply buried targets not currently held at risk.

Project 4641
Page 2 of 6 Pages
Exhibit R-2 (PE 0604327F)

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(U) F. Schedule Profile Continued

		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
		1	2	3	4	1	2	3	4	1	2	3	4
(U)	Begin Warhead Design							X					
(U)	Conduct Subscale Testing									X			
(U)	Manufacture Prototype Warheads										X		
(U)	Integrate Warhead with Weapon System												X
(U)	Begin Aircraft Integration												X

X - Planned event

Note: Begin Warhead Design moved from 1Q03 to 3Q03 because FY03 funding was not received until late in 1Q03 for this new start program and the time necessary to conduct a competition for the warhead prime contractor. Consequently, the follow-on milestones moved to the right in FY04.

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
04 - Advanced Component Development and Prototypes (ACD&P)					0604327F Hardened Target Munitions				4641	
(U) A. Project Cost Breakdown (\$ in Thousands)										
							FY 2002	FY 2003		FY 2004
(U)	Warhead Design						0	1,638		3,515
(U)	Weapon System and Aircraft Integration						0	2,200		2,642
(U)	Test Planning and Preparation						0	700		3,239
(U)	AFRL Engineering						0	500		126
(U)	Field Agency and Contract Support						0	1,800		1,944
(U)	SETA Support						0	500		1,167
(U)	Total						0	7,338		12,633
(U) B. 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 2002	Budget FY 2002	Budget FY 2003	Budget FY 2004	Budget to Complete	Total Program
Product Development Organizations										
Prime Contractor	CPFF/IF	May 03	TBD	TBD	0	0	1,638	3,515	0	5,153
Raytheon	SS/CP	Aug 03	TBD	TBD	0	0	2,200	2,642	0	4,842
Support and Management Organizations										
AFRL	MIPR	May 03	N/A	N/A	0	0	500	126	0	626
AAC/WMG (Eglin)	MIPR	May 03	N/A	N/A	0	0	1,800	1,944	0	3,744
SETA Contractor	Various	May 03	N/A	N/A	0	0	500	1,167	0	1,667
Test and Evaluation Organizations										
DTRA/WSMR	MIPR	Aug 03	N/A	N/A	0	0	250	111	0	361
Qual/Certification testing -- Organizations at Eglin	MIPR	Nov 03	N/A	N/A	0	0	450	2,977	0	3,427
Project 4641					Page 5 of 6 Pages			Exhibit R-3 (PE 0604327F)		

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(U) Government Furnished Property:

<u>Item</u>	<u>Contract</u> <u>Method/Type</u> <u>or Funding</u>	<u>Award or</u> <u>Obligation</u> <u>Date</u>	<u>Delivery</u> <u>Date</u>	<u>Total Prior</u> <u>to FY 2002</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget</u> <u>FY 2004</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Product Development Property</u>									
N/A									
<u>Support and Management Property</u>									
N/A									
<u>Test and Evaluation Property</u>									
Fuzes				0	0	0	151	0	151
<u>Subtotals</u>				<u>Total Prior</u> <u>to FY 2002</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget</u> <u>FY 2004</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
Subtotal Product Development				0	0	3,838	6,157	0	9,995
Subtotal Support and Management				0	0	2,800	3,237	0	6,037
Subtotal Test and Evaluation				0	0	700	3,239	0	3,939
Total Project				0	0	7,338	12,633	0	19,971

Project 4641

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Exhibit R-3 (PE 0604327F)

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