

UNCLASSIFIED

PE NUMBER: 0604602F
 PE TITLE: Armament/Ordnance Development

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2004
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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604602F Armament/Ordnance Development
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Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	8.530	8.347	8.353	8.354	5.146	2.412	2.621	Continuing	TBD
3133 Bombs & Fuzes	7.245	6.973	6.936	6.924	3.690	0.933	1.014	Continuing	TBD
4696 Armament Standardization Program	1.150	1.238	1.275	1.285	1.305	1.326	1.441	Continuing	TBD
5613 Containers	0.135	0.136	0.142	0.145	0.151	0.153	0.166	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

The Armament Ordnance Development program provides for initial and continuing development of munition equipment for support and operational use.

Bombs and Fuzes: This project develops and improves conventional bombs and fuzes. It currently includes integration of the Joint Programmable Fuze (JPF) on legacy weapons and Insensitive Munitions (IM), an explosive fill for MK-80 series bombs to make these weapons insensitive to unplanned stimuli.

Armament Standardization/Control/Munitions Material Handling Equipment (MMHE): This continuing project develops and improves the standardization and commonality of munitions handling and armament equipment to preclude duplication. This project's efforts are limited to the study, design, and development of MMHE and armament control systems. Procurement will be performed and funded by the applicable weapons system project.

Containers: This project funds the operation of the tri-service Container Design Retrieval System (CDRS). This maintains a container database to preclude proliferation and duplication of munitions containers. It also supports organic container design, acquisition transportation, prototyping, testing capabilities, as well as the Joint Ordnance Commander's Working Group (JOCG) for Packaging, Handling, and Loading.

This program is in Budget Activity 5 - System Development and Demonstration because the projects support the SDD phase of several munitions related items and functions.

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0604602F Armament/Ordnance Development

(U) **B. Program Change Summary (\$ in Millions)**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Previous President's Budget	8.939	8.419	8.734
(U) Current PBR/President's Budget	8.530	8.347	8.353
(U) Total Adjustments	-0.409	-0.072	
(U) Congressional Program Reductions	0.000	0.000	
Congressional Rescissions	0.000	-0.072	
Congressional Increases	0.000	0.000	
Reprogrammings	-0.147	0.000	
SBIR/STTR Transfer	-0.262	0.000	
(U) <u>Significant Program Changes:</u>			
None			

Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)				PE NUMBER AND TITLE 0604602F Armament/Ordnance Development			PROJECT NUMBER AND TITLE 3133 Bombs & Fuzes			
Cost (\$ in Millions)		FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
3133	Bombs & Fuzes	7.245	6.973	6.936	6.924	3.690	0.933	1.014	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

There are two subprojects in the Bombs and Fuzes project: (1) Joint Programmable Fuze (JPF) enables the fuze settings to be changed from the aircraft, optimizing the performance of the weapon by matching the fuze setting with the target selected. JPF was developed primarily for JDAM and funded by the JDAM program (PE 0604618). This project funds the integration of JPF on other AF legacy weapons. (2) Insensitive Munitions (IM) develops an explosive fill and bomb case modification to make conventional weapons insensitive to unplanned stimuli as given in MIL-STD-2105B.

This program is in Budget Activity 5 - System Development and Demonstration (SDD) because the projects support the SDD phase of several munitions related items and functions.

(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Complete Hard Target Smart Fuze Developmental Test and Evaluation (DT&E)	1.776	0.000	0.000
(U) Support Hard Target Smart Fuze Operational Utility Evaluation	0.269	0.000	0.000
(U) Continue Insensitive Munitions (IM) development effort. Conduct lab level performance tests, environmental tests, bomb case development performance tests, and prototype booster reliability tests	5.200	0.000	0.000
(U) Integrating the Joint Programmable Fuze on legacy weapons	0.000	0.940	0.486
(U) Formulate IM explosive development fill and integrate the fuze on IM filled bombs	0.000	2.697	0.858
(U) Conduct bomb case study and comparative testing	0.000	3.336	5.592
(U) Total Cost	7.245	6.973	6.936

(U) C. Other Program Funding Summary (\$ in Millions)

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Procurement of Ammunition (AF), (PE 0208030F Joint Programmable Fuze)	2.750	5.143	11.447	34.744	44.899	44.169	43.291	Continuing	TBD

(U) D. Acquisition Strategy

Joint Programmable Fuze (JPF) acquisition strategy was full and open competition for Engineering and Manufacturing Development (EMD) with production options to perform specifications requirements for current and future munitions using the JPF. Acquisition strategy for Insensitive Munition is a competitive award for two contractors for concept technology development, then select one contractor for weapon qualification testing.

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Exhibit R-3, RDT&E Project Cost Analysis

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BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT NUMBER AND TITLE				
05 System Development and Demonstration (SDD)				0604602F Armament/Ordnance Development				3133 Bombs & Fuzes				
<u>(U) Cost Categories</u>	<u>Contract Method</u>	<u>Performing Activity &</u>	<u>Total</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>Cost to</u>	<u>Total</u>	<u>Target</u>
(Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>& Type</u>	<u>Location</u>	<u>Prior to FY</u>	<u>2003</u>	<u>2003</u>	<u>2004</u>	<u>2004</u>	<u>2005</u>	<u>2005</u>	<u>Complete</u>	<u>Cost</u>	<u>Value of</u>
			<u>2003</u>	<u>Cost</u>	<u>Award</u>	<u>Cost</u>	<u>Award</u>	<u>Cost</u>	<u>Award</u>			<u>Contract</u>
			<u>Cost</u>		<u>Date</u>		<u>Date</u>		<u>Date</u>			
<u>(U) Product Development</u>												
Alliant (HTSF)	CPIF	Hopkins, MN	17.863	1.746	Aug-98	0.000	N/A	0.000	N/A	0.000	19.609	19.609
Air Force Research Lab/MN (IM)	In-house	Eglin AFB, FL	0.000	2.233	N/A	2.697	N/A	0.784	N/A	1.141	6.855	6.855
General Dynamics OTS (IM)	CPFF	Niceville, FL	0.000	1.026	May-03	0.568	May-03	1.855	May-03	0.772	4.221	4.221
AAC/WMO	In-house	Eglin AFB, FL	0.000	0.180	N/A	0.000	N/A	0.000	N/A	0.000	0.180	0.180
Subtotal Product Development			17.863	5.185		3.265		2.639		1.913	30.865	30.865
Remarks: AAC/WMO is part of the Program Office. CPIF = Cost Plus Incentive Fee; CPFF = Cost Plus Fixed Fee												
<u>(U) Support</u>												
TEAS/ TEAMS (HTSF)	FFP	Eglin AFB, FL	2.150	0.103	N/A	0.000	N/A	0.000	N/A	0.000	2.253	2.253
AAC/WMG (Fuzes)	In-house	Eglin AFB, FL	2.554	0.106	N/A	0.940	N/A	0.486	N/A	Continuing	TBD	TBD
AAC/WMG (IM)	In-house	Eglin AFB, FL	0.000	0.756	N/A	1.352	N/A	1.120	N/A	1.379	4.607	4.607
TEAS/TAMS (IM)	FFP	Eglin AFB, FL	0.000	0.730	N/A	0.614	N/A	0.685	N/A	1.099	3.128	3.128
Subtotal Support			4.704	1.695		2.906		2.291		Continuing	TBD	TBD
Remarks: TEAS/TAMS contractors provide support to the System Program Office (SPO) for technical (TEAS) and management/financial (TAMS) services. AAC/WMG is part of the Program Office. FFP = Firm Fixed Price												
<u>(U) Test & Evaluation</u>												
46th Test Wing (HTSF)	In-house	Eglin AFB, FL	1.575	0.060	N/A	0.000	N/A	0.000	N/A	0.000	1.635	1.635
46th Test Wing (IM)	In-house	Eglin AFB, FL	0.000	0.200	N/A	0.377	N/A	1.006	N/A	3.393	4.976	4.976
Navy, China Lake (IM)	Navy	China Lake, CA	0.000	0.105	N/A	0.425	N/A	1.000	N/A	0.000	1.530	1.530
Subtotal Test & Evaluation			1.575	0.365		0.802		2.006		3.393	8.141	8.141
Remarks:												
<u>(U) Total Cost</u>			24.142	7.245		6.973		6.936		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

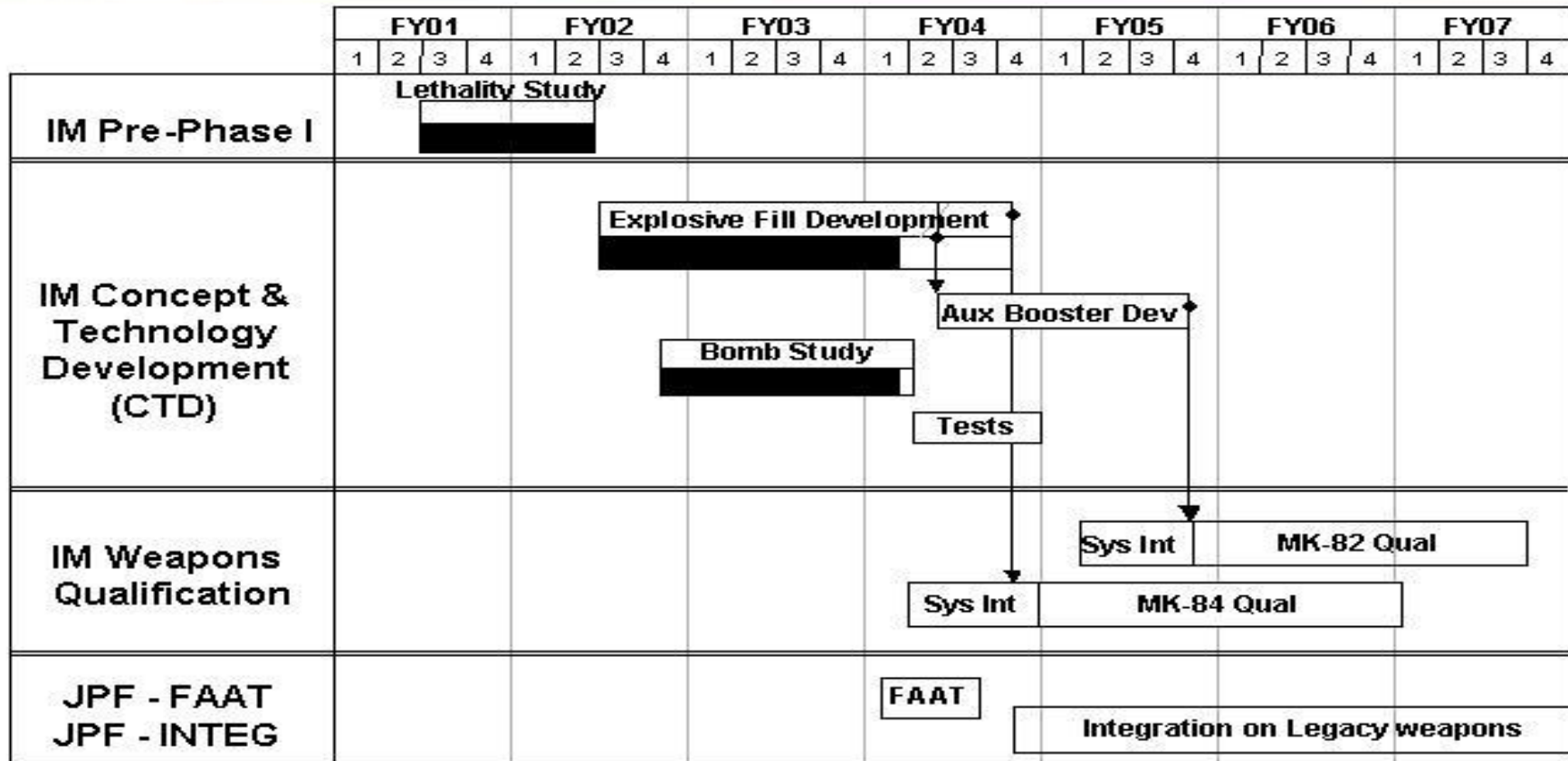
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BUDGET ACTIVITY
05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604602F Armament/Ordnance
Development

PROJECT NUMBER AND TITLE
3133 Bombs & Fuzes

In insensitive Munitions (IM) and Joint Programmable Fuze (JPF) Schedule



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Exhibit R-4a, RDT&E Schedule Detail	DATE February 2004
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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604602F Armament/Ordnance Development	PROJECT NUMBER AND TITLE 3133 Bombs & Fuzes
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<u>(U) Schedule Profile</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) JOINT PROGRAMMABLE FUZE (JPF)			
(U) JPF First Article Acceptance Test (FAAT)		1-3Q	
(U) JPF Integration on Legacy Weapons		4Q	1-4Q
(U) INSENSITIVE MUNITIONS (IM)			
(U) IM Fill Development	1-4Q	1-3Q	
(U) IM Bomb Case Study/Test	1-4Q	1-2Q	
(U) Small-scale Sensitivity/Qual Testing		2-4Q	
(U) MK-84 IM System Integration/Weapons Qual		2-4Q	1-4Q
(U) MK-82 IM System Integration/Weapons Qual			2-4Q

Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)				PE NUMBER AND TITLE 0604602F Armament/Ordnance Development			PROJECT NUMBER AND TITLE 4696 Armament Standardization Program		
Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
4696 Armament Standardization Program	1.150	1.238	1.275	1.285	1.305	1.326	1.441	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

Armament Standardization/Control/Munitions Material Handling Equipment (MMHE): This continuing project develops and improves the standardization and commonality of improved munitions handling and armament equipment to preclude duplication and proliferation. This project's efforts are limited to the study, design, and development of MMHE and armament control systems. Procurement will be performed and funded by the applicable weapons system project.

This program is in Budget Activity 5 - System Development and Demonstration (SDD) because the projects support the SDD phase of several munitions related items and functions.

(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Design, prototype, and test various MMHE projects	1.150	1.238	1.275
(U) Total Cost	1.150	1.238	1.275

(U) C. Other Program Funding Summary (\$ in Millions)

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) N/A									

(U) D. Acquisition Strategy

MMHE is a continuing effort program with activities performed organically and/or contracted through Military Interdepartmental Purchase Requests (MIPR). Procurement will be performed and funded by the applicable equipment project.

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Exhibit R-3, RDT&E Project Cost Analysis										DATE February 2004		
BUDGET ACTIVITY 05 System Development and Demonstration (SDD)				PE NUMBER AND TITLE 0604602F Armament/Ordnance Development				PROJECT NUMBER AND TITLE 4696 Armament Standardization Program				
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total</u> Prior to FY 2003 Cost	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
				2003	2003	2004	2004	2005	2005			
				Cost	Award	Cost	Award	Cost	Award			
					Date		Date		Date			
(U) <u>Support</u>												
TEAS/TAMS	FFP	Eglin AFB, FL	2.785	0.534	N/A	0.709	N/A	0.738	N/A	Continuing	TBD	
AAC/FM	In-house (RREO)	Eglin AFB, FL	0.611	0.063	N/A	0.070	N/A	0.077	N/A	Continuing	TBD	
64 SSUPS/LGS	In-house (RREO)	Eglin AFB, FL	0.226	0.290	N/A	0.294	N/A	0.298	N/A	Continuing	TBD	
EDSC	In-house (RREO)	Eglin AFB, FL	0.030	0.013	N/A	0.015	N/A	0.017	N/A	Continuing	TBD	
Subtotal Support			3.652	0.900		1.088		1.130		Continuing	TBD	0.000
Remarks:	TEAS/TAMS contractors provide support to the System Program Office (SPO) for technical (TEAS) and management/financial (TAMS) services. AAC/FM is part of the Program Office and 64 SSUPS/LGS and EDSC are other Govt (Defense) organizations. FFP = Firm Fixed Price; RREO = Reimbursable Order/Request for Support From other Agencies											
(U) <u>Test & Evaluation</u>												
46th Test Wing	In-house (RREO)	Eglin AFB, FL	0.800	0.250	N/A	0.150	N/A	0.145	N/A	Continuing	TBD	
Subtotal Test & Evaluation			0.800	0.250		0.150		0.145		Continuing	TBD	0.000
Remarks:												
(U) Total Cost			4.452	1.150		1.238		1.275		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604602F Armament/Ordnance
Development

PROJECT NUMBER AND TITLE

4696 Armament Standardization
Program**Armament Standardization Program Schedule**

- Not Applicable

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Exhibit R-4a, RDT&E Schedule Detail

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Development

PROJECT NUMBER AND TITLE

4696 Armament Standardization
Program

(U) Schedule Profile

FY 2003

FY 2004

FY 2005

(U) N/A

Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)				PE NUMBER AND TITLE 0604602F Armament/Ordnance Development			PROJECT NUMBER AND TITLE 5613 Containers		
Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
5613 Containers	0.135	0.136	0.142	0.145	0.151	0.153	0.166	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

Containers: This project funds the operation of the Tri-Service Container Design Retrieval System (CDRS). The CDRS maintains a container database to preclude proliferation and duplication of munitions containers. It also supports the Joint Ordnance Commander's Working Group (JOCWG) for packaging, handling and loading. In addition, CDRS supports organic container design, acquisition transportation, prototyping and testing capabilities.

This program is in Budget Activity 5 - System Development and Demonstration (SDD) because the projects support the SDD phase of several munitions related items and functions.

(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Initiate/continue/complete design/development of various CDRS projects	0.006	0.006	0.006
(U) Provide container design expertise and technical support to programs such as Joint Standoff Weapon, Munitions Material Handling Equipment, and Small Diameter Bomb	0.006	0.006	0.006
(U) Manage and operate the CDRS database and support service	0.123	0.124	0.130
(U) Total Cost	0.135	0.136	0.142

(U) C. Other Program Funding Summary (\$ in Millions)

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to Complete</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>		
(U) N/A									

(U) D. Acquisition Strategy

Not Applicable

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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604602F Armament/Ordnance Development	PROJECT NUMBER AND TITLE 5613 Containers
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(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2003</u> <u>Cost</u>	<u>FY</u> <u>2003</u> <u>Cost</u>	<u>FY</u> <u>2003</u> <u>Award</u> <u>Date</u>	<u>FY</u> <u>2004</u> <u>Cost</u>	<u>FY</u> <u>2004</u> <u>Award</u> <u>Date</u>	<u>FY</u> <u>2005</u> <u>Cost</u>	<u>FY</u> <u>2005</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total</u> <u>Cost</u>	<u>Target</u> <u>Value of</u> <u>Contract</u>
(U) <u>Support</u> Sverdrup (TEAS)	FFP	Eglin AFB, FL	1.575	0.014	Jun-01	0.015	Jun-01	0.017	Jun-01	Continuing	TBD	
AAC/WMO	In-house	Eglin AFB, FL	0.811	0.121	N/A	0.121	N/A	0.125	N/A	Continuing	TBD	
Subtotal Support			2.386	0.135		0.136		0.142		Continuing	TBD	0.000
Remarks: AAC/WMO is part of the Program Office. FFP = Firm Fixed Price												
(U) Total Cost			2.386	0.135		0.136		0.142		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile

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Development

PROJECT NUMBER AND TITLE

5613 Containers

Containers Program Schedule

- Not Applicable

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Development

PROJECT NUMBER AND TITLE

5613 Containers

(U) Schedule Profile

FY 2003

FY 2004

FY 2005

(U) Not Applicable