

**UNCLASSIFIED**

PE NUMBER: 0604602F

PE TITLE: Armament/Ordnance Development

<b>Exhibit R-2, RDT&amp;E Budget Item Justification</b>	DATE <b>February 2006</b>
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<b>BUDGET ACTIVITY</b> <b>05 System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604602F Armament/Ordnance Development</b>
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Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	8.015	7.675	5.039	1.991	2.120	2.127	2.111	Continuing	TBD
3133 Bombs & Fuzes	6.629	6.259	3.795	0.710	0.788	0.809	0.813	Continuing	TBD
4696 Armament Standardization Program	1.247	1.272	1.088	1.123	1.159	1.141	1.118	Continuing	TBD
5613 Containers	0.139	0.144	0.156	0.158	0.173	0.177	0.180	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 enhancing and improving the reliability of the Joint Programmable Fuze (JPF), integration of the JPF on legacy weapons, other fuze development, and Insensitive Munitions (IM), the use of an insensitive explosive fill and bomb case modifications 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.

## Exhibit R-2, RDT&amp;E Budget Item Justification

DATE

February 2006

BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604602F Armament/Ordnance Development

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Previous President's Budget	8.280	7.786	4.847
(U) Current PBR/President's Budget	8.015	7.675	5.039
(U) Total Adjustments	-0.265	-0.111	
(U) Congressional Program Reductions	0.000	0.000	
Congressional Rescissions	-0.006	-0.111	
Congressional Increases	0.000	0.000	
Reprogrammings	-0.152	0.000	
SBIR/STTR Transfer	-0.107	0.000	
(U) <u>Significant Program Changes:</u>			
None			

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**Exhibit R-2a, RDT&E Project Justification**

DATE  
**February 2006**

<b>BUDGET ACTIVITY</b> <b>05 System Development and Demonstration (SDD)</b>				<b>PE NUMBER AND TITLE</b> <b>0604602F Armament/Ordnance Development</b>			<b>PROJECT NUMBER AND TITLE</b> <b>3133 Bombs &amp; Fuzes</b>		
Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
3133 Bombs & Fuzes	6.629	6.259	3.795	0.710	0.788	0.809	0.813	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) Fuzes: Joint Programmable Fuze (JPF) - 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. This project also funds the improvements to the JPF program, including reliability enhancements and producibility improvements. (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-2105C.

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 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Continue Insensitive Munitions (IM) development effort. Conduct lab level performance tests, environmental tests, bomb case development performance tests, and prototype booster reliability tests	1.100	0.480	0.246
(U) JPF legacy weapons integration and other fuze activity	0.465	0.850	0.932
(U) Formulate IM explosive development fill and integrate the fuze on IM filled bombs, and qualify MK-82/MK-84 bombs with the new IM fill	1.347	0.517	1.300
(U) Conduct bomb case study and comparative testing	3.717	4.412	1.317
(U) Total Cost	6.629	6.259	3.795

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</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**

The acquisition strategy for the MK-84/MK-82 Insensitive Munition (IM) was based on Best Value due to the redundancy of approaches presented by competing offerors.

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**Exhibit R-3, RDT&E Project Cost Analysis**

DATE  
**February 2006**

<b>BUDGET ACTIVITY</b> <b>05 System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604602F Armament/Ordnance Development</b>	<b>PROJECT NUMBER AND TITLE</b> <b>3133 Bombs &amp; Fuzes</b>
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(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior to FY 2005 Cost</u>	<u>FY 2005 Cost</u>	<u>FY 2005 Award Date</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u>												
ATK (HTSF)	CPIF/CPFF	Hopkins, MN	23.968	0.000	N/A	0.000	N/A	0.000	N/A	0.000	23.968	23.968
Kaman/Dayron (JPF)	FPIF	Orlando, FL	8.190	0.465	Dec-04	0.000	N/A	0.000	N/A	0.000	8.655	8.190
Air Force Research Lab (Fuze)	In-house	Eglin AFB, FL	0.000	0.000	N/A	0.053	N/A	0.000	N/A	0.000	0.053	
Air Force Research Lab/MN (IM)	In-house	Eglin AFB, FL	4.235	1.400	N/A	0.550	N/A	0.628	N/A	0.000	6.813	6.813
General Dynamics OTS (IM)	CPFF	Niceville, FL	2.081	0.600	Jan-05	0.405	Jan-06	0.000	N/A	0.000	3.086	3.086
McAAP	Army	McAllester, OK	0.339	0.850	N/A	0.400	N/A	0.000	N/A	0.000	1.589	1.589
Subtotal Product Development			38.813	3.315		1.408		0.628		0.000	44.164	43.646
Remarks:	CPIF = Cost Plus Incentive Fee; CPFF = Cost Plus Fixed Fee											
(U) <u>Support</u>												
TEAS/ TEAMS (Fuze Activity)	FFP	Eglin AFB, FL	4.625	0.000	N/A	0.000	N/A	0.000	N/A	0.000	4.625	4.625
AAC/YU-FUZES (Fuze Activity)	In-house	Eglin AFB, FL	1.444	0.000	N/A	0.000	N/A	0.000	N/A	1.537	2.981	4.133
AAC/XR (IM)	In-house	Eglin AFB, FL	0.681	0.300	N/A	0.300	N/A	0.480	N/A	0.000	1.761	1.761
TEAS/TAMS (IM)	FFP	Eglin AFB, FL	1.202	0.440	Oct-04	0.365	Oct-05	0.477	Oct-06	0.000	2.484	2.522
Subtotal Support			7.952	0.740		0.665		0.957		1.537	11.851	13.041
Remarks:	TEAS/TAMS contractors provide support to the System Program Office (SPO) for technical (TEAS) and management/financial (TAMS) services. FFP = Firm Fixed Price											
(U) <u>Test &amp; Evaluation</u>												
Fuze Testing (gov't agencies)	In-house	Various	6.331	0.232	N/A	0.797	N/A	0.938	N/A	1.537	9.835	9.993
46th Test Wing (IM)	In-house	Eglin AFB, FL	1.120	1.400	N/A	0.356	N/A	0.000	N/A	0.000	2.876	2.876
Navy, China Lake ( IM)	Navy	China Lake, CA	0.445	0.942	N/A	3.033	N/A	1.272	N/A	0.000	5.692	6.160
Subtotal Test & Evaluation			7.896	2.574		4.186		2.210		1.537	18.403	19.029
Remarks:												
(U) Total Cost			54.661	6.629		6.259		3.795		3.073	74.418	75.716

Exhibit R-4, RDT&E Schedule Profile

DATE

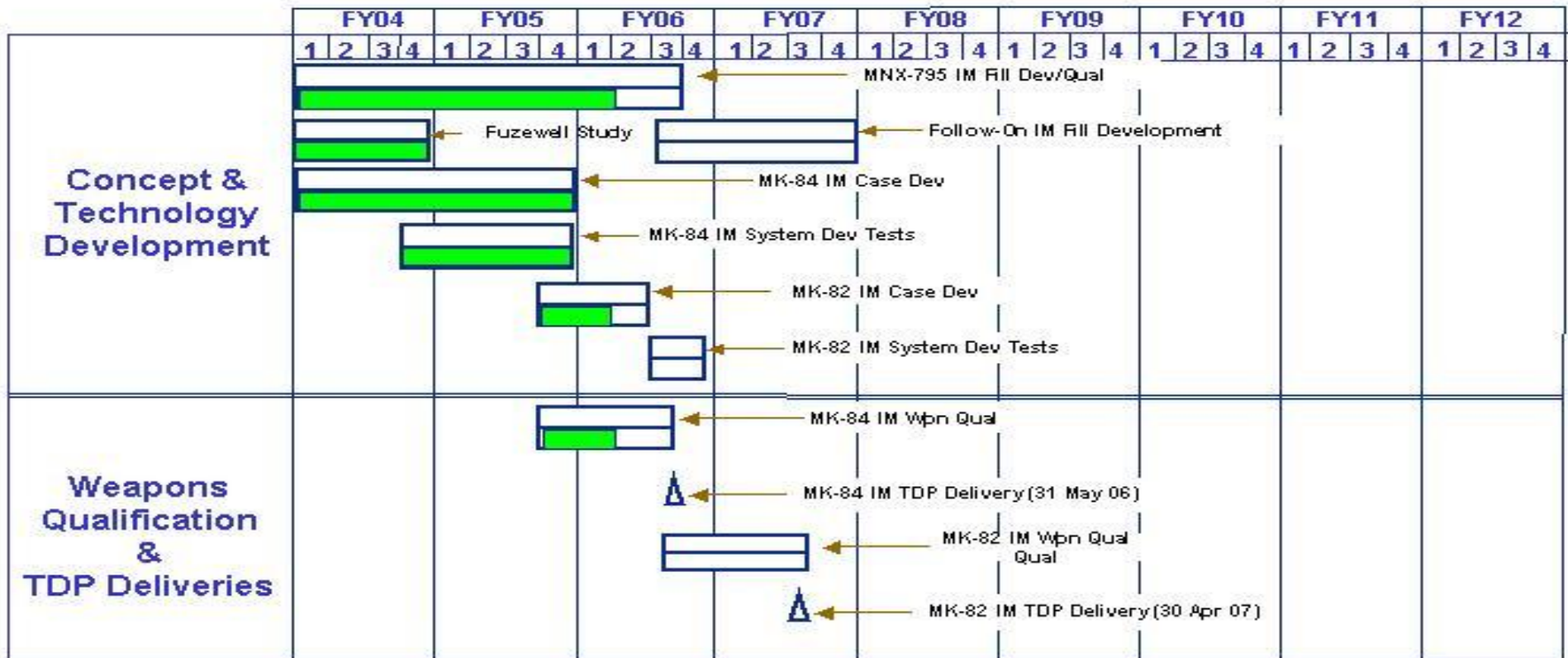
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BUDGET ACTIVITY  
05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE  
0604602F Armament/Ordnance  
Development

PROJECT NUMBER AND TITLE  
3133 Bombs & Fuzes

**Insensitive Munitions (IM) and  
Joint Programmable Fuze (JPF) Schedule**



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<b>Exhibit R-4a, RDT&amp;E Schedule Detail</b>	DATE <b>February 2006</b>
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<b>BUDGET ACTIVITY</b> <b>05 System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604602F Armament/Ordnance Development</b>	<b>PROJECT NUMBER AND TITLE</b> <b>3133 Bombs &amp; Fuzes</b>
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<b>(U) <u>Schedule Profile</u></b>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) FUZES			
(U) JPF Integration on Legacy Weapons & Other Fuze Activity	1-4Q	1-4Q	1-4Q
(U) INSENSITIVE MUNITIONS (IM)			
(U) Follow-on IM Fill Development		2-4Q	1-4Q
(U) MK-84 IM Bomb Case Study/Test	1-2Q		
(U) Small-scale Sensitivity/Qual Testing	1-3Q		
(U) MK-84 IM System Integration/Weapons Qual	3-4Q	1-2Q	
(U) MK-82 IM System Integration/Weapons Qual	3-4Q	1-4Q	1-3Q

**Exhibit R-2a, RDT&E Project Justification**

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BUDGET ACTIVITY <b>05 System Development and Demonstration (SDD)</b>				PE NUMBER AND TITLE <b>0604602F Armament/Ordnance Development</b>			PROJECT NUMBER AND TITLE <b>4696 Armament Standardization Program</b>		
Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
4696 Armament Standardization Program	1.247	1.272	1.088	1.123	1.159	1.141	1.118	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): These continuing projects develop and provide for acquisition of standardized, safe, and user-friendly munitions handling and armament equipment with common life cycle support. Projects will reduce proliferation and increase workload efficiencies while reducing mobility footprint. Project efforts are limited to study, design, test and development. Procurement will be performed and funded by the applicable weapons system project or air logistics center.

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 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Design, prototype, test and develop various MMHE projects for AF use.	1.247	1.272	1.088
(U) Total Cost	1.247	1.272	1.088

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</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 program of continuing efforts (projects) with activities performed organically or through contracted services.

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**Exhibit R-3, RDT&E Project Cost Analysis**

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<b>BUDGET ACTIVITY</b> <b>05 System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604602F Armament/Ordnance Development</b>	<b>PROJECT NUMBER AND TITLE</b> <b>4696 Armament Standardization Program</b>
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<u>(U) Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior to FY 2005 Cost</u>	<u>FY 2005 Cost</u>	<u>FY 2005 Award Date</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
<u>(U) Support</u>												
AAC/YBC (Program Office)	In-house (RREO)	Eglin AFB, FL	0.824	0.114	N/A	0.000	N/A	0.097	N/A	Continuing	TBD	TBD
Subtotal Support			0.824	0.114		0.000		0.097		Continuing	TBD	TBD
Remarks:												
<u>(U) Product Development</u>												
AAC/YBC (Program Office)	In-house (RREO)	Eglin AFB, FL	0.000	0.000	N/A	0.815	N/A	0.767	N/A	Continuing	TBD	TBD
J.E. Sverdrup	FFP	Fort Walton Beach, FL	4.306	0.685	Jan-05	0.000	N/A	0.000	N/A	Continuing	TBD	TBD
96 LRS	In-house (RREO)	Eglin AFB, FL	0.885	0.278	N/A	0.115	N/A	0.138	N/A	Continuing	TBD	TBD
EDSD	In-house (RREO)	Eglin AFB, FL	0.078	0.020	N/A	0.006	N/A	0.006	N/A	Continuing	TBD	TBD
Phototype Fabrication Shop	In-house (RREO)	Eglin AFB, FL	1.200	0.150	N/A	0.336	N/A	0.080	N/A	Continuing	TBD	TBD
Subtotal Product Development			6.469	1.133		1.272		0.991		Continuing	TBD	TBD
Remarks:												
<u>(U) Total Cost</u>			7.293	1.247		1.272		1.088		Continuing	TBD	TBD



## Exhibit R-4, RDT&amp;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

The Armament Standardization Program consists of several continuing projects that support the SDD phase of several munitions-related items and functions.

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Exhibit R-4a, RDT&E Schedule Detail

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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

(U) Schedule Profile

FY 2005

FY 2006

FY 2007

(U) Study, Design, and Test MMHE

1-4Q

1-4Q

1-4Q

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**Exhibit R-2a, RDT&E Project Justification**

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<b>BUDGET ACTIVITY</b> <b>05 System Development and Demonstration (SDD)</b>				<b>PE NUMBER AND TITLE</b> <b>0604602F Armament/Ordnance Development</b>			<b>PROJECT NUMBER AND TITLE</b> <b>5613 Containers</b>		
Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
5613 Containers	0.139	0.144	0.156	0.158	0.173	0.177	0.180	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 organic container design, development, and acquisition capabilities and 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 2005</u>	<u>FY 2006</u>	<u>FY 2007</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 BLU-122/A, MAALD, P5, and WCMD	0.006	0.006	0.006
(U) Manage and operate the CDRS database and support service	0.127	0.132	0.144
(U) Total Cost	0.139	0.144	0.156

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</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**

Containers is a program of continuing effort throughout the year, mostly to support the Tri-Service Container Design and Retrieval System (CDRS). The purpose of this SDRS is to share ideas and standardize munitions containers throughout the Services.

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**Exhibit R-3, RDT&E Project Cost Analysis**

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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**

(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract</u> <u>Method &amp;</u> <u>Type</u>	<u>Performing</u> <u>Activity &amp;</u> <u>Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2005</u> <u>Cost</u>	<u>FY 2005</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2007</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>	<u>Target Value</u> <u>of Contract</u>
				<u>Cost</u>	<u>Award</u> <u>Date</u>	<u>Cost</u>	<u>Award</u> <u>Date</u>	<u>Cost</u>	<u>Award</u> <u>Date</u>			
(U) <u>Support</u> AAC/YBC (Program Office)	In-house	Eglin AFB, FL	1.054	0.122	N/A	0.126	N/A	0.136	N/A	Continuing	TBD	TBD
Subtotal Support			1.054	0.122		0.126		0.136		Continuing	TBD	TBD
Remarks:												
(U) <u>Product Development</u> J.E.Sverdrup	FFP	Fort Walton Beach, FL	1.604	0.017	Feb-05	0.018	Feb-06	0.020	Feb-07	Continuing	TBD	TBD
Subtotal Product Development			1.604	0.017		0.018		0.020		Continuing	TBD	TBD
Remarks:												
(U) Total Cost			2.658	0.139		0.144		0.156		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE

February 2006

BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604602F Armament/Ordnance  
Development

PROJECT NUMBER AND TITLE

5613 Containers

The Munitions Container Program is a continuing projects that supports container standardization activities/meetings throughout the year.

<b>Exhibit R-4a, RDT&amp;E Schedule Detail</b>	DATE <b>February 2006</b>
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BUDGET ACTIVITY <b>05 System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604602F Armament/Ordnance Development</b>	PROJECT NUMBER AND TITLE <b>5613 Containers</b>
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(U) <b><u>Schedule Profile</u></b>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Support CDRS Activities/Meetings	1-4Q	1-4Q	1-4Q