

<b>Exhibit R-2, RDT&amp;E Budget Item Justification</b>	DATE <b>May 2009</b>
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<b>BUDGET ACTIVITY</b> <b>05 System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604329F Small Diameter Bomb</b>
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Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	147.586	126.324	153.815	0.000	0.000	0.000	0.000	0.000	0.000	TBD
5191 Small Diameter Bomb Increment II	140.306	126.324	153.815	0.000	0.000	0.000	0.000	0.000	0.000	TBD
5258 Focused Lethality Munition (FLM)	7.280	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	TBD

FY2008 funding totals include \$7.280M in GWOT Supplemental Funding.

**(U) A. Mission Description and Budget Item Justification**

Small Diameter Bomb Increment I (SDB I) RDT&E completed in Sep 08. SDB I is currently in Full Rate Production (FRP).

Small Diameter Bomb Increment II (SDB II) is a joint interest program providing the warfighter a capability to attack mobile targets from stand-off in weather. SDB II addresses the following warfighter requirements: attack mobile targets, provides a migration path to net-centric ops capability, multiple kills per pass, multiple ordnance carriage, adverse weather operations, precision munitions capability, capability against fixed targets, reduced munitions footprint, increased weapons effectiveness, minimized potential for collateral damage, and reduced susceptibility of munitions to countermeasures. Threshold aircraft for the US Air Force is the F-15E and the F-35 B/C Joint Strike Fighter (JSF) for the US Navy. SDB II will be compatible with the BRU-61 miniature munitions carriage and the SDB I container systems. SDB II began a competitive Risk Reduction phase in FY06 and Milestone B is scheduled for FY10. Milestone C is planned for FY13 followed by Required Assets Available (RAA) on the F-15E in FY14. Objective aircraft include: F-22, F-16, F-35A, B-2, A-10, MQ-9, B-1, B-52, and the F/A-18 E/F. SDB will continue incremental development to pursue network centric interoperability. SDB is a key component of the Air Force's Global Strike Task Force CONOP.

Small Diameter Bomb (SDB) Focused Lethality Munition (FLM) is a Joint Capabilities Technology Demonstration (JCTD) program that increases the near field blast and decreases collateral damage, thus giving increased options to the war fighter. Extends access to targets restricted by collateral damage limitations.

The technical approach combined and leveraged 4 technologies: 1) MBX-1209 Multi-phase Blast Explosive (MBX) increases Near-Field Blast Impulse over SDB I, reduces collateral damage in far-field and allows designer to approximate SDB I weight & balance, 2) A carbon fiber warhead case reduces to tiny non-lethal fibers upon fill detonation, minimizing fragmentation effects to personnel & property, 3) Using SDB I hardware except warhead and approximating SDB I longitudinal center of gravity, weapon Operational Flight Program (OFP) changes allow it to match SDB I accuracy 4) Remains compatible with BRU-61 miniature munition carriage and SDB I container system. The Military Utility Assessment was completed in Jun 08 with positive feedback in all areas. Insensitive munitions testing completed in Aug 08 with satisfactory results. FLM completed the original JCTD activities in Aug 08. The FY08 GWOT supplemental funds will procure 100 additional residual weapons. Contract award occurred in Mar 09.

This program is in Budget Activity 5 - System Development and Demonstration (SDD) because this RDT&E effort develops the Small Diameter Bomb weapon system.

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

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604329F Small Diameter Bomb

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Previous President's Budget	144.279	125.067	128.670
(U) Current PBR/President's Budget	147.586	126.324	153.815
(U) Total Adjustments	3.307	1.257	
(U) Congressional Program Reductions			
Congressional Rescissions		-0.343	
Congressional Increases	7.280	1.600	
Reprogrammings			
SBIR/STTR Transfer	-3.973		

(U) **Significant Program Changes:**

FY08 includes \$7.28M of GWOT Supplemental funding for SDB I FLM. Congressional add of \$1.6M in FY09 for M-PACT High Pressure Air Generator System. SDB II program fully funded in FY10.

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

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**May 2009**

BUDGET ACTIVITY <b>05 System Development and Demonstration (SDD)</b>							PE NUMBER AND TITLE <b>0604329F Small Diameter Bomb</b>		PROJECT NUMBER AND TITLE <b>5191 Small Diameter Bomb Increment II</b>		
Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total	
5191 Small Diameter Bomb Increment II	140.306	126.324	153.815	0.000	0.000	0.000	0.000	0.000	0.000	TBD	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0			

**(U) A. Mission Description and Budget Item Justification**

Small Diameter Bomb Increment II (SDB II) is a joint interest program providing the warfighter a capability to attack mobile targets from stand-off in weather. SDB II addresses the following warfighter requirements: attack mobile targets, provides a migration path to net-centric ops capability, multiple kills per pass, multiple ordnance carriage, adverse weather operations, precision munitions capability, capability against fixed targets, reduced munitions footprint, increased weapons effectiveness, minimized potential for collateral damage, and reduced susceptibility of munitions to countermeasures. Threshold aircraft for the US Air Force is the F-15E and the F-35 B/C Joint Strike Fighter (JSF) for the US Navy. Objective aircraft include: F-22, F-35A, F-16, B-2, A-10, MQ-9, B-1, B-52, and the F/A-18 E/F. SDB II will be compatible with the BRU-61 miniature munitions carriage and the SDB I container systems. SDB II began a competitive Risk Reduction phase in FY06 and Milestone B is scheduled in FY10. Milestone C is planned for FY13 followed by RAA on the F-15E in FY14. SDB will continue incremental development to pursue network centric interoperability. SDB is a key component of the Air Force's Global Strike Task Force CONOP.

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) SDB II Risk Reduction	122.798	102.775	129.882
(U) Aircraft Integration	7.895	10.855	17.072
(U) Program Office Support	9.613	11.094	6.861
(U) M-PACT High Pressure Air Generator System		1.600	
(U) Total Cost	140.306	126.324	153.815

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) Missile Procurement, AF 0207327F, Appn 3020									Continuing	TBD
(U) RDT&E,Navy 0604329N (Includes F-35 B/C Integration and Support Cost)	11.251	19.574	44.100						Continuing	TBD

**(U) D. Acquisition Strategy**

All major contracts within this Program Element were awarded through full and open competition. Two contractors were selected for a 42 month Risk Reduction phase using Cost Plus Fixed Fee contracts. Down select to one contractor will occur prior to System Development and Demonstration (SDD). SDD will be a Cost Plus Fixed Fee contract with performance incentives. The DoN is funding the integration of the SDB II on the threshold F-35 B/C Joint Strike Fighter.

The Government is buying the SDB II based on contractor-developed System Performance Specification (SPS) which will become contractually binding at down

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		DATE <b>May 2009</b>
BUDGET ACTIVITY <b>05 System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604329F Small Diameter Bomb</b>	PROJECT NUMBER AND TITLE <b>5191 Small Diameter Bomb Increment II</b>

select. The contractor will be accountable for system performance as defined in the SPS and will include a system warranty. Accordingly, the contractor is accountable to the government for the design of the weapon system, as well as the planning and executing the Development Test and Evaluation (DT&E) program to verify the system performance. The Government formally arranges and funds the use of Government flight test support for DT&E. Although funded by the Government, flight test support funds are part of the negotiated commitment between the contractor and the Government ensuring the contractor is able to execute the DT&E Program according to the scope of the SDD contract.

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

DATE

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<b>BUDGET ACTIVITY</b> <b>05 System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604329F Small Diameter Bomb</b>	<b>PROJECT NUMBER AND TITLE</b> <b>5191 Small Diameter Bomb Increment II</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 2008 Cost</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>FY 2010 Cost</u>	<u>FY 2010 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
<u>(U) Product Development</u>												
Risk Reduction Contract 1	CPFF	Boing, St. Louis MO	48.386	61.399		51.387	May-06	0.000		Continuing	TBD	TBD
Risk Reduction Contract 2	CPFF	Raytheon, Tucson AZ	48.386	61.399		51.387	May-06	0.000		Continuing	TBD	TBD
SDD	CPIF	TBD						129.882		Continuing	TBD	TBD
M-PACT High Pressure Air Generator System						1.600					1.600	TBD
Subtotal Product Development			96.772	122.798		104.374		129.882		Continuing	TBD	TBD
Remarks:												
<u>(U) Support</u>												
F-15 SPO	PO (In-House)	Wright Patterson AFB, OH	4.455	4.351		7.955	Apr-06	4.000		Continuing	TBD	TBD
BRU-61/A	PO (In-House)	St. Louis, MO	0.674	2.500		0.000	N/A	0.600		Continuing	TBD	TBD
Other	Misc.	Various	4.550	5.588		6.075	N/A	1.767		Continuing	TBD	TBD
Subtotal Support			9.679	12.439		14.030		6.367		Continuing	TBD	TBD
Remarks:												
<u>(U) Test &amp; Evaluation</u>												
Test Support	PO (In-House)	Eglin AFB, FL	2.436	1.045		2.901	N/A	8.525		Continuing	TBD	TBD
46 TW	PO (In-House)	Eglin AFB, FL	0.000	0.000		0.000		3.947		Continuing	TBD	TBD
Subtotal Test & Evaluation			2.436	1.045		2.901		12.472		Continuing	TBD	TBD
Remarks:												
<u>(U) Management</u>												
TAMS	C/CPAF	Eglin AFB, FL	0.000	0.064		0.190	Oct-06	0.287		Continuing	TBD	TBD
TEAS	C/CPAF	Eglin AFB, FL	5.075	3.388		3.918		3.019		Continuing	TBD	TBD
PMA	PO (In-House)	Eglin AFB, FL	1.065	0.572		0.911		1.788		Continuing	TBD	TBD
Subtotal Management			6.140	4.024		5.019		5.094		Continuing	TBD	TBD
Remarks:												
<u>(U) Total Cost</u>			115.027	140.306		126.324		153.815		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  
0604329F Small Diameter Bomb

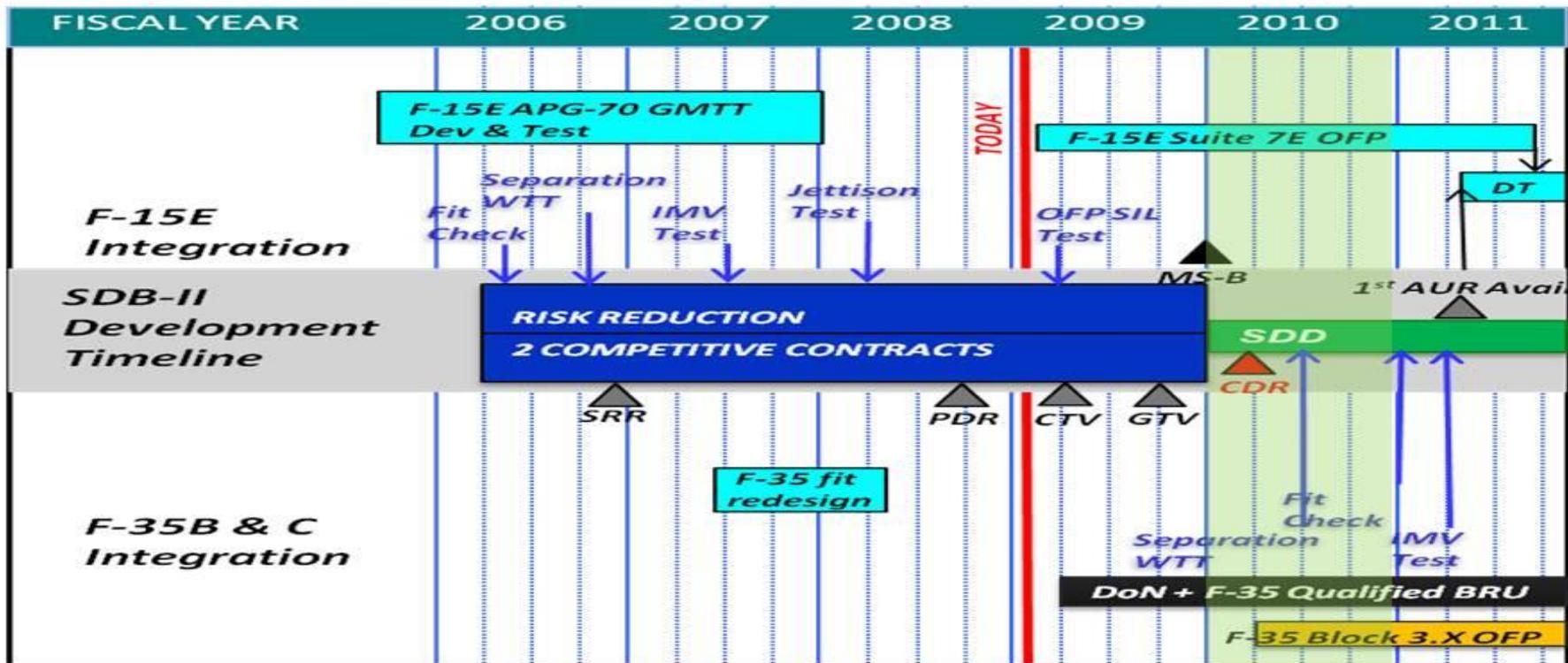
PROJECT NUMBER AND TITLE  
5191 Small Diameter Bomb Increment II



FOUO -- Competition Sensitive

# SDB II Schedule

FY10 Highlighted



FOUO -- Competition Sensitive

<b>Exhibit R-4a, RDT&amp;E Schedule Detail</b>	DATE <b>May 2009</b>
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BUDGET ACTIVITY <b>05 System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604329F Small Diameter Bomb</b>	PROJECT NUMBER AND TITLE <b>5191 Small Diameter Bomb Increment II</b>
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(U) <b><u>Schedule Profile</u></b>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Complete Risk Reduction Phase		4Q	
(U) SDD Contract Award			1Q

**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>0604329F Small Diameter Bomb</b>			PROJECT NUMBER AND TITLE <b>5258 Focused Lethality Munition (FLM)</b>		
Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
5258 Focused Lethality Munition (FLM)	7.280	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

FY2008 funding total includes \$7.280M in GWOT supplemental funding.

**(U) A. Mission Description and Budget Item Justification**

Small Diameter Bomb (SDB) Focused Lethality Munition (FLM) is a Joint Capabilities Technology Demonstration (JCTD) program that increases the near field blast and decreases collateral damage, thus giving increased options to the war fighter. Extends access to targets restricted by collateral damage limitations.

The technical approach combined and leveraged 4 technologies: 1) MBX-1209 Multi-phase Blast Explosive (MBX) increases Near-Field Blast Impulse over SDB I, reduces collateral damage in far-field and allows designer to approximate SDB I weight & balance, 2) A carbon fiber warhead case reduces to tiny non-lethal fibers upon fill detonation, minimizing fragmentation effects to personnel & property, 3) Using SDB I hardware except warhead and approximating SDB I longitudinal center of gravity, weapon OFP changes allow it to match SDB I accuracy 4) Remains compatible with BRU-61 miniature munition carriage and SDB I container system. The Military Utility Assessment was completed in Jun 08 with positive feedback in all areas. Insensitive munitions testing completed in Aug 08 with satisfactory results. FLM completed the original JCTD activities in Aug 08. The FY08 GWOT supplemental funds will procure up to 100 additional residual weapons; Contract award occurred in Mar 09.

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Continue Support, Design, Development, and Integration contract	7.280	0.000	0.000
(U) Testing, Targets and Test support	0.000	0.000	0.000
(U) Program Office Support	0.000	0.000	0.000
(U) Mission Support	0.000	0.000	0.000
(U) Total Cost	7.280	0.000	0.000

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) RDT&E Defense Agency (Fund Code 5K)	5.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	12.000

**(U) D. Acquisition Strategy**

The Focused Lethality Munition (FLM) Joint Capabilities Technology Demonstration (JCTD) contract was sole sourced to Boeing based on only one responsible source to field this capability. It is a Cost Plus Fixed Fee contract with an additional Incentive Fee to motivate schedule.

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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				
<b>05 System Development and Demonstration (SDD)</b>				<b>0604329F Small Diameter Bomb</b>				<b>5258 Focused Lethality Munition (FLM)</b>				
(U) Cost Categories (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 2008 Cost</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>FY 2010 Cost</u>	<u>FY 2010 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u>												
System Support Development	CPFF	Boeing, St Louis Mo	23.918	7.280	Mar-09	0.000				0.000	31.198	31.198
Subtotal Product Development			23.918	7.280		0.000		0.000		0.000	31.198	31.198
Remarks:												
(U) <u>Support</u>												
Air Force Research Lab (AFRL)	PO	Eglin AFB FL	0.445	0.000							0.445	0.445
Sverdrup, Inc.	C/CPAF	Eglin AFB FL	0.000	0.000							0.000	0.000
Other	MISC	Eglin AFB FL	2.031	0.000							2.031	2.031
Subtotal Support			2.476	0.000		0.000		0.000		0.000	2.476	2.476
Remarks:												
(U) <u>Test &amp; Evaluation</u>												
Testing and Test support	PO	Eglin AFB FL	3.780	0.000							3.780	3.780
Subtotal Test & Evaluation			3.780	0.000		0.000		0.000		0.000	3.780	3.780
Remarks:												
(U) <u>Management</u>												
COLSA	C/CPAF	Eglin AFB FL	0.000	0.000							0.000	0.000
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			30.174	7.280		0.000		0.000		0.000	37.454	37.454



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<b>Exhibit R-4a, RDT&amp;E Schedule Detail</b>	DATE <b>May 2009</b>
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BUDGET ACTIVITY <b>05 System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604329F Small Diameter Bomb</b>	PROJECT NUMBER AND TITLE <b>5258 Focused Lethality Munition (FLM)</b>
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	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) <b><u>Schedule Profile</u></b>			
(U) Military Utility Assessment	2-3Q		
(U) Delivery of Residual Assets	2Q		
(U) FLM Contract Award for additional residuals		2Q	
(U) Delivery of additional residuals			2Q

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