

UNCLASSIFIED

PE NUMBER: 0603851F
PE TITLE: ICBM - DEM/VAL

Exhibit R-2, RDT&E Budget Item Justification								DATE February 2006	
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)				PE NUMBER AND TITLE 0603851F ICBM - DEM/VAL					
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	56.908	57.087	45.538	41.271	42.018	42.835	43.469	Continuing	TBD
1020 ICBM Guidance Applications	13.160	8.919	9.276	9.508	9.646	9.986	10.166	Continuing	TBD
1021 ICBM Propulsion Applications	24.299	23.419	24.393	24.492	25.016	25.375	25.703	Continuing	TBD
1022 ICBM Reentry Vehicle Applications	13.954	5.529	5.755	6.304	6.420	6.555	6.704	Continuing	TBD
1023 Rocket System Launch Program	0.031	0.033	0.028	0.029	0.027	0.026	0.025	Continuing	TBD
1024 ICBM Command & Control (C2) Applications	0.028	3.250	0.000	0.000	0.000	0.000	0.000	0.000	3.278
4209 Long Range Planning (LRP)	5.436	15.937	6.086	0.938	0.909	0.893	0.871	Continuing	TBD
In FY 2007 and beyond, Project 1024 ICBM Command & Control (C2) Applications is discontinued.									
(U) <u>A. Mission Description and Budget Item Justification</u>									
This program preserves and renews government and industry ICBM design, development, and systems engineering capabilities by demonstrating and validating emerging technologies in strategic ballistic missile applications. Efforts identify methods to reduce life cycle costs, improve nuclear safety and surety, and ensure continued ICBM viability. Program includes demonstration and validation projects for ICBM guidance options, support for reentry vehicles beyond original design life, assessment of current and future ICBM propulsion systems, and development of enhancements to ensure command and control capabilities. The program's Long Range Planning efforts include pre-Milestone A activities for follow-on Land-Based Strategic Deterrent capability.									
This program is in Budget Activity 04 - Advanced Component Development and Prototypes because the efforts demonstrate technology, component and subsystem maturity, and provide risk reduction.									
(U) <u>B. Program Change Summary (\$ in Millions)</u>									
					<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>		
(U) Previous President's Budget					69.884	44.672	45.322		
(U) Current PBR/President's Budget					56.908	57.087	45.538		
(U) Total Adjustments					-12.976	12.415			
(U) Congressional Program Reductions						-0.010			
Congressional Rescissions					-0.053	-0.825			
Congressional Increases						13.250			
Reprogrammings					-11.000				
SBIR/STTR Transfer					-1.923				
(U) <u>Significant Program Changes:</u>									
FY 2006: Reflects Appropriations Act adds as follows: +\$5.0 M for "Conventional Ballistic Missile System Engineering Studies"; +\$3.25M for "Infralynx Technology to									

R-1 Shopping List - Item No. 51-1 of 51-26

Exhibit R-2 (PE 0603851F)

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Exhibit R-2, RDT&E Budget Item Justification		DATE February 2006
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603851F ICBM - DEM/VAL	
<p>Support Secure Transportation of Strategic Assets"; +\$5.0M for "Adaptive Missile Engineering Modernization".</p>		

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Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1020 ICBM Guidance Applications

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
1020 ICBM Guidance Applications	13.160	8.919	9.276	9.508	9.646	9.986	10.166	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

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

The ICBM Guidance Applications Project is required to meet on-going needs in applied strategic guidance systems and their subcomponents. This project ensures the continued readiness of our strategic deterrent forces in response to the Nuclear Posture Review, recommendations of the US Strategic Command (USSTRATCOM) Strategic Advisory Group, Commander, USSTRATCOM guidance, and the Defense Science Board Task Force on Nuclear Deterrence. Efforts within this project are focused on current and future requirements, reduced life cycle costs, and increased nuclear surety and safety. These activities leverage the efforts of the Science and Technology community. The efforts are coordinated with the Navy guidance applications efforts to avoid duplication while realizing maximum return on the invested dollars. The key elements of the Guidance Applications Project are the continued preservation of the minimum critical technical skills and capabilities needed to respond to unexpected problems in the Minuteman guidance system, the assessment and mitigation of any degradation of aging hardware, and the development and analysis of future strategic guidance hardware.

This program is in Budget Activity 04 - Advanced Component Development and Prototypes because the efforts demonstrate technology, component, and subsystem maturity, and provide risk reduction.

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Continue development and prototype of concepts for future common strategic guidance system technology	2.513	4.455	4.641
(U) Continue assessment, evaluation and test of radiation hard electronics for strategic guidance applications	0.535	0.603	0.611
(U) Continue development and test of alternate instrument technologies (e.g., accelerometers, gyros, micro electromechanical systems)	8.507	3.861	4.024
(U) Completed assessment, development and implementation of flight test experiment options to demonstrate future strategic guidance system concepts	1.605	0.000	0.000
(U) Total Cost	13.160	8.919	9.276

(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) None.									

(U) **D. Acquisition Strategy**

Accomplish studies, analyses, and limited engineering/pre-prototype hardware development; efforts will be conducted using contracting strategies deemed most appropriate.

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Exhibit R-3, RDT&E Project Cost Analysis

DATE

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1020 ICBM Guidance Applications

(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract</u> <u>Method &</u> <u>Type</u>	<u>Performing</u> <u>Activity &</u> <u>Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Award</u> <u>Date</u>	<u>FY 2006</u> <u>Cost</u>	<u>FY 2006</u> <u>Award</u> <u>Date</u>	<u>FY 2007</u> <u>Cost</u>	<u>FY 2007</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>	<u>Target Value</u> <u>of Contract</u>
(U) <u>Product Development</u> ICBM Prime Integration Contract	C/CPAF	Northrop Grumman, Clearfield UT	91.655	1.280	Dec-04	0.800	Dec-05	0.800	Dec-06	Continuing	TBD	TBD
Component/Technology Development	Various	AFRL Kirtland AFB and others TBD	0.100	11.800	Jan-05	8.039	Jan-06	8.396	Jan-07	Continuing	TBD	TBD
Subtotal Product Development Remarks:			91.755	13.080		8.839		9.196		Continuing	TBD	TBD
(U) <u>Support</u> SPO/Other Program Support	Various	526th Acquisition Group, Hill AFB	3.635	0.080	Jan-05	0.080	Jan-06	0.080	Jan-07	Continuing	TBD	TBD
Subtotal Support Remarks:			3.635	0.080		0.080		0.080		Continuing	TBD	TBD
(U) <u>Test & Evaluation</u> Subtotal Test & Evaluation Remarks:			0.000	0.000		0.000		0.000		0.000	0.000	0.000
(U) <u>Management</u> Program Management Subtotal Management Remarks:			0.000	0.000		0.000		0.000		0.000	0.000	0.000
(U) Total Cost			95.390	13.160		8.919		9.276		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1020 ICBM Guidance Applications

Guidance Applications

- Analyze, evaluate, develop concepts
- Future common system concepts
- Alternate instrument technologies

FY05				FY06				FY07				FY08				FY09				FY10				FY11			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4



Major test event

Report/Review/
AnalysisPrototype
hardware delivery

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Exhibit R-4a, RDT&E Schedule Detail

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1020 ICBM Guidance Applications

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) <u>Schedule Profile</u>			
(U) Development/Demonstration of Future Common System Concepts (Ongoing)	1-4Q	1-4Q	1-4Q
(U) -- Progress Reports	4Q	4Q	4Q
(U) -- Prototype Hardware Delivery	4Q	4Q	4Q
(U) Alternate Instrument Technology Development (Ongoing)	1-4Q	1-4Q	1-4Q
(U) -- Progress Report	4Q	4Q	4Q
(U) -- Engineering Demo/Prototype Hardware	4Q	4Q	4Q
(U) Radiation Hardened Parts Analysis (Ongoing)	1-4Q	1-4Q	1-4Q
(U) -- Progress Report	4Q	4Q	4Q
(U) Flight Test Options Analysis	1-4Q		
(U) -- Progress Report	4Q		

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Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1021 ICBM Propulsion Applications

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
1021 ICBM Propulsion Applications	24.299	23.419	24.393	24.492	25.016	25.375	25.703	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

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

(U) The ICBM Propulsion Application Program develops the ICBM strategic propulsion capability through projects exploring improvements and/or alternatives to current ICBM propulsion systems, conducting studies assessing application of new technologies to meet future ICBM propulsion system requirements, assessing opportunities for applying common materials and technology between the ICBM and submarine-launched ballistic missile (SLBM) propulsion systems, and demonstrating application of technology developed by the Science and Technology community to the ICBM strategic systems.

This program is in Budget Activity 04 - Advanced Component Development and Prototypes because the efforts demonstrate technology, component, and subsystem maturity, and provide risk reduction.

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Continue evaluation and test of solid propulsion technologies for ICBM application through process development and stage manufacture leading to static fire testing	16.750	12.409	14.303
(U) Continue assessment and demonstration of ordnance and post-boost components technology developments	6.630	9.649	8.679
(U) Continue evaluation of test protocols in support of hazard classification methods for ICBM solid rocket motors	0.919	1.361	1.411
(U) Total Cost	24.299	23.419	24.393

(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) None									

(U) **D. Acquisition Strategy**

Studies, analyses, and motor ground test firings will be accomplished; efforts will be conducted using contracting strategies deemed most appropriate.

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Exhibit R-3, RDT&E Project Cost Analysis

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

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PROJECT NUMBER AND TITLE

1021 ICBM Propulsion Applications

(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract</u> <u>Method &</u> <u>Type</u>	<u>Performing</u> <u>Activity &</u> <u>Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Award</u> <u>Date</u>	<u>FY 2006</u> <u>Cost</u>	<u>FY 2006</u> <u>Award</u> <u>Date</u>	<u>FY 2007</u> <u>Cost</u>	<u>FY 2007</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>	<u>Target Value</u> <u>of Contract</u>
(U) <u>Product Development</u> ICBM Prime Integration Contract	C/CPAF	Northrop Grumman, Clearfield UT	23.091	14.949	Dec-04	0.000	N/A	0.000	N/A	Continuing	TBD	TBD
Component Development	Various	AFRL Edwards AFB, others TBD	0.000	9.250	Jan-05	23.319	Jan-06	24.293	Jan-07	Continuing	TBD	TBD
Subtotal Product Development Remarks:			23.091	24.199		23.319		24.293		Continuing	TBD	TBD
(U) <u>Support</u> SPO/Other Program Support	Various	526th Acquisition Group, Hill AFB	0.186	0.100	Jan-05	0.100	Jan-06	0.100	Jan-07	Continuing	TBD	TBD
Subtotal Support Remarks:			0.186	0.100		0.100		0.100		Continuing	TBD	TBD
(U) <u>Test & Evaluation</u> Subtotal Test & Evaluation Remarks:			0.000	0.000		0.000		0.000		0.000	0.000	0.000
(U) <u>Management</u> Subtotal Management Remarks:			0.000	0.000		0.000		0.000		0.000	0.000	0.000
(U) Total Cost			23.277	24.299		23.419		24.393		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY

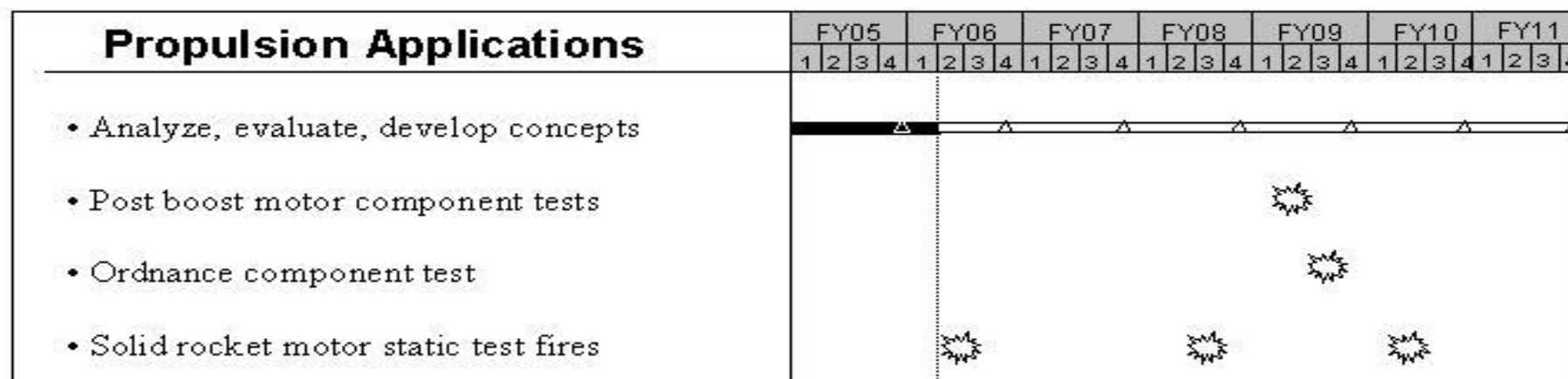
04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

	PROJECT NUMBER AND TITLE
--	--------------------------

1021 ICBM Propulsion Applications



Major test event

Report/Review/
Analysis

7 Prototype hardware delivery

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Exhibit R-4a, RDT&E Schedule Detail

DATE

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1021 ICBM Propulsion Applications

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) <u>Schedule Profile</u>			
(U) Evaluate and test solid propulsion technologies for ICBM application	1-4Q	1-4Q	1-4Q
(U) -- Periodic Status Reports/Review	4Q	4Q	4Q
(U) -- Solid rocket motor static test fire		2Q	
(U) Assessment/demonstration of ordnance and post-boost components technology	1-4Q	1-4Q	1-4Q
(U) --Periodic Status Report/Reviews	4Q	4Q	4Q
(U) Evaluate test protocols in support of hazard classification methods	1-4Q	1-4Q	1-4Q
(U) --Periodic Status Report/Reviews	4Q	4Q	4Q

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1022 ICBM Reentry Vehicle
Applications

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
1022 ICBM Reentry Vehicle Applications	13.954	5.529	5.755	6.304	6.420	6.555	6.704	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

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

ICBM Reentry Vehicle (RV) Applications efforts ensure the Minuteman force is equipped with the safest and most reliable RVs and explore options to meet future requirements. These efforts support RVs beyond their original design life by addressing problems with operational reentry systems, meeting real on-going needs, and ensuring the availability of long-lead components/materials. This project develops methods to better predict aging phenomena and identify life cycle cost reduction methods. A key element of the RV Applications efforts is the continued preservation of the minimum critical technical skills and capabilities needed to respond to unexpected problems, aging phenomena and future requirements. RV work under this program will leverage the Science & Technology community investments and coordinate with Navy reentry systems applications program to eliminate duplication and realize synergistic cost savings. Program products are tested on a space available basis on Minuteman Force Development Evaluation (FDE) flights.

This program is in Budget Activity 04 - Advanced Component Development and Prototypes because the efforts demonstrate technology, component, and subsystem maturity, and provide risk reduction.

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Continue evaluation of RV material subsystems, aging, and replacements through ground and flight tests	4.408	1.960	1.980
(U) Continue identification and ground testing of potential replacement options for critical RV components	2.448	0.249	0.906
(U) Continue evaluation of improved accuracy measurements and methodologies	0.677	0.868	0.402
(U) Continue evaluation of alternate flight test experiment options	1.330	1.086	0.593
(U) Continue evaluation of advanced common RV designs, applications, and technologies	1.121	0.128	0.919
(U) Continue development and assessment of RV Test & Evaluation methodologies and subsystems	1.678	0.989	0.430
(U) Continue design, development, and prototype flight testing of selected fuze assessment/measurement	2.292	0.249	0.525
(U) Total Cost	13.954	5.529	5.755

(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) None									

(U) **D. Acquisition Strategy**

Studies, analyses, limited engineering, and pre-prototype hardware development will be accomplished; efforts will be conducted using contracting strategies deemed most appropriate.

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Exhibit R-3, RDT&E Project Cost Analysis

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PROJECT NUMBER AND TITLE

1022 ICBM Reentry Vehicle
Applications

(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract</u> <u>Method &</u> <u>Type</u>	<u>Performing</u> <u>Activity &</u> <u>Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Award</u> <u>Date</u>	<u>FY 2006</u> <u>Cost</u>	<u>FY 2006</u> <u>Award</u> <u>Date</u>	<u>FY 2007</u> <u>Cost</u>	<u>FY 2007</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>	<u>Target Value</u> <u>of Contract</u>
(U) <u>Product Development</u> ICBM Prime Integration Contract	C/CPAF	Northrop Grumman, Clearfield, UT	94.449	13.424	Dec-04	4.569	Dec-05	4.670	Dec-06	Continuing	TBD	TBD
Component/materials development	Various	TBD	0.000	0.000	Jan-05	0.000	N/A	0.000	N/A	Continuing	TBD	TBD
Subtotal Product Development			94.449	13.424		4.569		4.670		Continuing	TBD	TBD
Remarks:												
(U) <u>Support</u> SPO/Other Program Support	Various	526th Acquisition Group, Hill AFB	1.216	0.060	Jan-05	0.510	Jan-06	0.510	Jan-07	Continuing	TBD	TBD
Subtotal Support			1.216	0.060		0.510		0.510		Continuing	TBD	TBD
Remarks:												
(U) <u>Test & Evaluation</u> Materials	MIPR	AFRL Materials Lab, Wright-Patterson on AFB	2.740	0.290	Jan-05	0.450	Jan-06	0.450	Jan-07	Continuing	TBD	TBD
Ground Testing	PO	Arnold Engineering & Development Center	3.702	0.180	Jan-05	0.000	N/A	0.125	Jan-07	Continuing	TBD	TBD
Subtotal Test & Evaluation			6.442	0.470		0.450		0.575		Continuing	TBD	TBD
Remarks:												
(U) <u>Management</u> Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			102.107	13.954		5.529		5.755		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

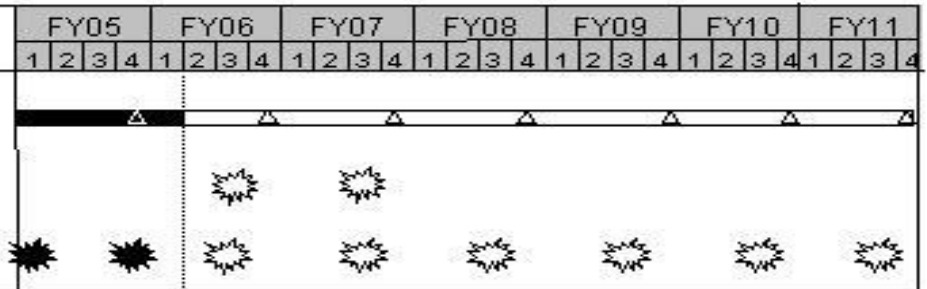
PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1022 ICBM Reentry Vehicle
Applications**Reentry Vehicle Applications**

- Analyze, evaluate, develop concepts
- Flight tests
- Component ground tests



Major test event

Report/Review/
AnalysisPrototype hardware
delivery

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Exhibit R-4a, RDT&E Schedule Detail

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1022 ICBM Reentry Vehicle
Applications

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) <u>Schedule Profile</u>			
(U) Materials Replacement & Aging Evaluations	1-4Q	1-4Q	1-4Q
(U) --Periodic Status Reports/Reviews	4Q	4Q	4Q
(U) Fuze Assessment/Measurement Tool Development	1-4Q	1-4Q	1-4Q
(U) --Periodic Status Reports/Reviews	4Q	4Q	4Q
(U) Critical Components Evaluations	1-4Q	1-4Q	1-4Q
(U) --Periodic Status Reports/Reviews	4Q	4Q	4Q
(U) RV Test & Evaluation Methodologies Development	1-4Q	1-4Q	1-4Q
(U) --Periodic Status Reports/Reviews	4Q	4Q	4Q
(U) Accuracy Assessment Methodologies Development	1-4Q	1-4Q	1-4Q
(U) --Periodic Status Reports/Reviews	4Q	4Q	4Q
(U) Advanced Common RV Designs, Applications & Technologies Evaluations	1-4Q	1-4Q	1-4Q
(U) --Periodic Status Reports/Reviews	4Q	4Q	4Q
(U) Alternate Flight Test Options Development	1-4Q	1-4Q	1-4Q
(U) --Periodic Status Reports/Reviews	4Q	4Q	4Q
(U) Flight Tests		3Q	3Q
(U) Component Level Ground Tests	1-4Q	3Q	3Q

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04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1023 Rocket System Launch Program

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
1023 Rocket System Launch Program	0.031	0.033	0.028	0.029	0.027	0.026	0.025	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

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

This task supports studies/analyses on hardware for cost effective use of excess missile assets.

This program is in Budget Activity 04 - Advanced Component Development and Prototypes because the efforts demonstrate technology, component, and subsystem maturity, and provide risk reduction.

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Continue on-going study/analysis for the adoption of low cost front-end systems for use on deactivated missile assets	0.031	0.033	0.028
(U) Total Cost	0.031	0.033	0.028

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

	<u>FY 2005</u> <u>Actual</u>	<u>FY 2006</u> <u>Estimate</u>	<u>FY 2007</u> <u>Estimate</u>	<u>FY 2008</u> <u>Estimate</u>	<u>FY 2009</u> <u>Estimate</u>	<u>FY 2010</u> <u>Estimate</u>	<u>FY 2011</u> <u>Estimate</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>
(U) None									

(U) **D. Acquisition Strategy**

Studies and analyses will be performed primarily in-house augmented with contractor support as required. Special projects that might be funded under this project that require the development and/or evaluation of hardware along with the associated employment concepts will be awarded to qualified industry sources following open competition. Type contract used (e.g., CPIF, FPIF, etc) will be that deemed most advantageous to the government.

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Exhibit R-3, RDT&E Project Cost Analysis

DATE

February 2006

BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1023 Rocket System Launch Program

(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract</u> <u>Method &</u> <u>Type</u>	<u>Performing</u> <u>Activity &</u> <u>Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Award</u> <u>Date</u>	<u>FY 2006</u> <u>Cost</u>	<u>FY 2006</u> <u>Award</u> <u>Date</u>	<u>FY 2007</u> <u>Cost</u>	<u>FY 2007</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>	<u>Target Value</u> <u>of Contract</u>
(U) <u>Product Development</u>												
Various	Various	Various	8.338	0.000	N/A	0.000	N/A	0.000	N/A	0.000	8.338	8.338
Subtotal Product Development			8.338	0.000		0.000		0.000		0.000	8.338	8.338
Remarks:												
(U) <u>Support</u>												
Engineering Support	SS/T&M	Northrop Grumman	8.403	0.000	N/A	0.000	N/A	0.000	N/A	0.000	8.403	8.403
Engineering Support	Various	SMC Det 12 Kirtland AFB	1.517	0.031	Jan-05	0.033	Jan-06	0.028	Jan-07	Continuing	TBD	TBD
Subtotal Support			9.920	0.031		0.033		0.028		Continuing	TBD	TBD
Remarks:												
(U) <u>Test & Evaluation</u>												
None											0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Management</u>												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			18.258	0.031		0.033		0.028		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE

February 2006

BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1023 Rocket System Launch Program

Rocket System Launch Program

- Analyze, evaluate concepts

FY05				FY06				FY07				FY08				FY09				FY10				FY11			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4



Major test event

Report/Review/
AnalysisPrototype hardware
delivery

UNCLASSIFIED

Exhibit R-4a, RDT&E Schedule Detail

DATE

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1023 Rocket System Launch Program

(U) Schedule ProfileFY 2005FY 2006FY 2007

(U) Start/Complete Annual Studies/Analysis

1-4Q

1-4Q

1-4Q

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Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1024 ICBM Command & Control (C2)
Applications

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
1024 ICBM Command & Control (C2) Applications	0.028	3.250	0.000	0.000	0.000	0.000	0.000	0.000	3.278
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

In FY2007 and beyond, project is discontinued to support higher Air Force priorities.

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

To maintain the ICBM weapon systems as a credible deterrent to a hostile attack requires an extremely high confidence in the Command and Control (C2) systems providing connectivity to the President and Secretary of Defense. To ensure the ICBMs can be tasked in all manners of hostile environments requires assured, survivable, and secure channels of communication to the missile Launch Control Centers (LCCs). While assured connectivity is mandated for ICBMs, ways must be found to make the C2 systems more cost effective. Continuing studies are needed to identify existing and future technologies as well as concepts that exploit state-of-the-art communications and information transfer techniques that will guarantee the required C2 support to both the current ICBM mission and those ICBM systems and missions that will evolve in the 21st century. This program accomplishes studies, demonstrations, and tests to ensure future ICBM C2 architectures, networks, and systems evolve in a planned, orderly, and cost effective manner while meeting the stringent requirements of nuclear command and control.

This program is in Budget Activity 04 - Advanced Component Development and Prototypes because the efforts demonstrate technology, component, and subsystem maturity, and provide risk reduction.

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Completed development of concepts for transformation of ICBM command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) architecture for future ICBM missions, including analysis of requirements for modeling, simulation, demonstrations, and flight tests; complete development of plans for preserving unique strategic C2 skills and capabilities.	0.028	0.000	0.000
(U) Demonstrate Infralynx technology to support secure transportation of strategic assets	0.000	3.250	0.000
(U) Total Cost	0.028	3.250	0.000

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

	<u>FY 2005</u> <u>Actual</u>	<u>FY 2006</u> <u>Estimate</u>	<u>FY 2007</u> <u>Estimate</u>	<u>FY 2008</u> <u>Estimate</u>	<u>FY 2009</u> <u>Estimate</u>	<u>FY 2010</u> <u>Estimate</u>	<u>FY 2011</u> <u>Estimate</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>
(U) None									

(U) **D. Acquisition Strategy**

Studies and analyses, and limited engineering and pre-prototype hardware development will be accomplished; efforts will be conducted using contracting strategies deemed most appropriate.

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Exhibit R-3, RDT&E Project Cost Analysis

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1024 ICBM Command & Control (C2)
Applications

(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract</u> <u>Method &</u> <u>Type</u>	<u>Performing</u> <u>Activity &</u> <u>Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Award</u> <u>Date</u>	<u>FY 2006</u> <u>Cost</u>	<u>FY 2006</u> <u>Award</u> <u>Date</u>	<u>FY 2007</u> <u>Cost</u>	<u>FY 2007</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>	<u>Target Value</u> <u>of Contract</u>
(U) <u>Product Development</u>												
ICBM Prime Integration Contract	C/CPAF	Northrop Grumman, Clearfield UT	4.062	0.000	N/A	0.000	N/A	0.000	N/A	0.000	4.062	4.062
Infralynx technology demonstration	MIPR	Naval Research Lab	0.000	0.000	N/A	3.250	Mar-06	0.000	N/A	0.000	3.250	3.250
Subtotal Product Development			4.062	0.000		3.250		0.000		0.000	7.312	7.312
Remarks:												
(U) <u>Support</u>												
SPO/other program support	Various	526th Acquisition Group Hill AFB	0.052	0.028	Jan-05	0.000	N/A	0.000	N/A	0.000	0.080	0.062
Subtotal Support			0.052	0.028		0.000		0.000		0.000	0.080	0.062
Remarks:												
(U) <u>Test & Evaluation</u>												
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Management</u>												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			4.114	0.028		3.250		0.000		0.000	7.392	7.374

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

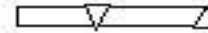
0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1024 ICBM Command & Control (C2)
Applications**Command & Control Applications**

- Analyze, evaluate, develop concepts
- Demonstrate Infralynx technology

FY05				FY06				FY07				FY08				FY09				FY10				FY11			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4



Major test event

Report/Review/
AnalysisPrototype hardware
delivery

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Exhibit R-4a, RDT&E Schedule Detail

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1024 ICBM Command & Control (C2)
Applications(U) Schedule ProfileFY 2005FY 2006FY 2007

(U) Future Concepts Study for Command & Control

1-4Q

(U) Infralynx technology demonstration

2-4Q

1-4Q

(U) -- Concept and prototype development

2-4Q

(U) -- Field demonstration and assessment

1-4Q

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Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

4209 Long Range Planning (LRP)

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
4209 Long Range Planning (LRP)	5.436	15.937	6.086	0.938	0.909	0.893	0.871	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

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

The Long Range Planning (LRP) task analyzes ICBM systems to identify potential modifications required to meet user objectives relative to long term sustainment, technology insertion, employment, and force structure. The studies focus on system supportability, operability, reliability, and maintainability. Options/concepts generated by these studies are evaluated for feasibility, system impacts, and cost. The LRP also lays the groundwork for analysis supporting future ICBM weapon systems development and deployment.

This program is in Budget Activity 04 - Advanced Component Development and Prototypes because the efforts demonstrate technology, component, and subsystem maturity, and provide risk reduction.

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Continue support of the consolidated ICBM Master Plan	0.491	0.477	0.473
(U) Continue feasibility and life extension studies	0.000	0.507	0.520
(U) Completed Analysis of Alternatives (AoA) and pre-systems acquisition planning for follow on Land-Based Strategic Deterrent (LBSD) capability	4.945	0.000	0.000
(U) Continue LBSD capability concept refinement and pre-Milestone A activities	0.000	4.953	5.093
(U) Conduct conventional ballistic missile systems engineering studies	0.000	5.000	0.000
(U) Conduct adaptive missile engineering modernization	0.000	5.000	0.000
(U) Total Cost	5.436	15.937	6.086

(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) None									

(U) **D. Acquisition Strategy**

Studies and analyses will be accomplished; efforts will be conducted using contracting strategies deemed most appropriate.

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Exhibit R-3, RDT&E Project Cost Analysis										DATE February 2006		
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)					PE NUMBER AND TITLE 0603851F ICBM - DEM/VAL					PROJECT NUMBER AND TITLE 4209 Long Range Planning (LRP)		
(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract</u> <u>Method &</u> <u>Type</u>	<u>Performing</u> <u>Activity &</u> <u>Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Award</u> <u>Date</u>	<u>FY 2006</u> <u>Cost</u>	<u>FY 2006</u> <u>Award</u> <u>Date</u>	<u>FY 2007</u> <u>Cost</u>	<u>FY 2007</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>	<u>Target Value</u> <u>of Contract</u>
(U) <u>Product Development</u> ICBM Prime Integration Contract	C/CPAF	Northrop Grumman, Clearfield UT	8.605	0.491	Dec-04	0.332	Jan-06	0.330	Jan-07	Continuing	TBD	TBD
Conventional Ballistic Missile System Engineering Studies	C/CPAF	Northrop Grumman, San Bernardino CA	0.000	0.000	N/A	5.000	May-06	0.000	N/A	0.000	5.000	5.000
Adaptive Missile Engineering Modernization	C/CPAF	Northrop Grumman, San Bernardino CA	0.000	0.000	N/A	5.000	May-06	0.000	N/A	0.000	5.000	5.000
Studies	MIPR/PO	Various	1.110	0.000	N/A	0.507	Jan-06	0.525	Jan-07	Continuing	TBD	TBD
Land Based Strategic Deterrent (LBSD) AoA and pre-systems acquisition planning	Various	Various	5.437	4.800	Jan-05	0.000	N/A	0.000	N/A	0.000	10.237	10.237
LBSD concept refinement and pre-Milestone A activities	Various	Various	0.000	0.000	N/A	4.953	Oct-05	5.093	Oct-06	0.000	10.046	10.046
Subtotal Product Development			15.152	5.291		15.792		5.948		Continuing	TBD	TBD
Remarks:												
(U) <u>Support</u> SPO/Other program support	Various	526th Acquisition Group, Hill AFB UT	2.782	0.145	Jan-05	0.145	Jan-06	0.138	Jan-07	Continuing	TBD	
Subtotal Support			2.782	0.145		0.145		0.138		Continuing	TBD	0.000
Remarks:												
(U) <u>Test & Evaluation</u> None											0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Management</u> Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			17.934	5.436		15.937		6.086		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

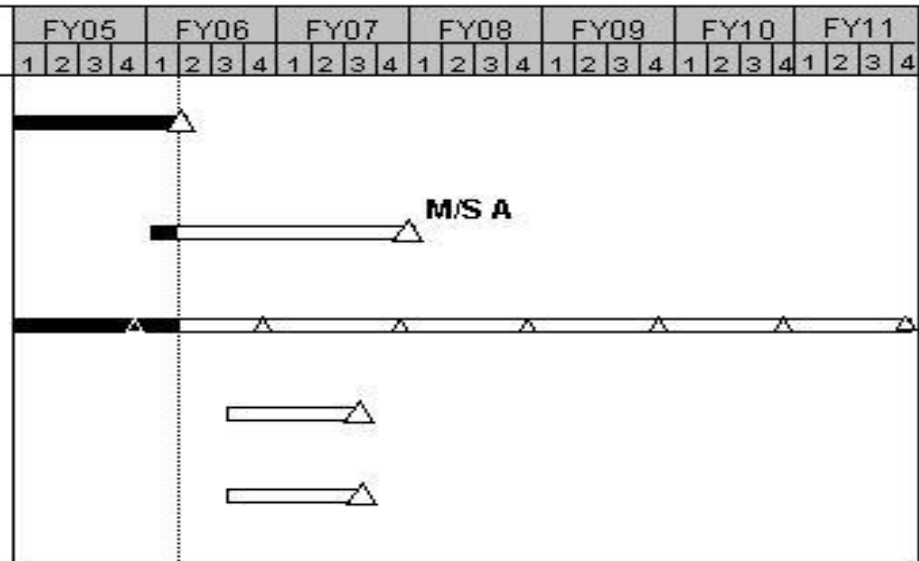
0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

4209 Long Range Planning (LRP)

Long Range Planning

- LBSD Analysis of Alternatives
- LBSD Concept Refinement & pre-Milestone A activities
- Analyze, evaluate options
- Conventional ballistic missile studies
- Adaptive missile engineering modernization



Major test event

 Report/Review/
Analysis

 Prototype hardware
delivery

UNCLASSIFIED

Exhibit R-4a, RDT&E Schedule Detail

DATE

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

4209 Long Range Planning (LRP)

(U) Schedule ProfileFY 2005FY 2006FY 2007

(U) Contract Award for Annual Studies/Analyses

2Q

2Q

2Q

(U) --Program Reviews/ Reports Received

4Q

4Q

4Q

(U) LBSD Analysis of Alternatives & pre-acquisition planning

1-4Q

(U) -- AoA Report

2Q

(U) LBSD Concept Refinement and pre-Milestone A activities

1-4Q

1-4Q

(U) -- Milestone A

4Q

(U) Conventional ballistic missile system engineering study

3-4Q

1-3Q

(U) Adaptive missile engineering modernization

3-4Q

1-3Q