

UNCLASSIFIED

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

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2005
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BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603851F ICBM - DEM/VAL
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Cost (\$ in Millions)	FY 2004 Actual	FY 2005 Estimate	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	58.992	69.884	44.672	45.322	40.976	41.789	42.662	43.336	Continuing	TBD
1020 ICBM Guidance Applications	16.750	16.848	9.048	9.171	9.367	9.498	9.835	10.011	Continuing	TBD
1021 ICBM Propulsion Applications	16.812	30.151	23.949	24.313	24.344	24.913	25.309	25.664	Continuing	TBD
1022 ICBM Reentry Vehicle Applications	15.712	16.830	5.609	5.690	6.211	6.321	6.456	6.602	Continuing	TBD
1023 Rocket System Launch Program	1.029	0.033	0.033	0.035	0.036	0.036	0.037	0.037	Continuing	TBD
1024 ICBM Command & Control (C2) Applications	0.400	0.439	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.747
4209 Long Range Planning (LRP)	8.289	5.583	6.033	6.113	1.018	1.021	1.025	1.022	Continuing	TBD

In FY 2006 and beyond, Project 1024 ICBM Command & Control (C2) Applications is discontinued.

In FY 2006 and FY2007, Project 4209 Long Range Planning includes concept refinement and pre-Milestone A activities for follow on Land-Based Strategic Deterrent capability.

(U) A. Mission Description and Budget Item Justification

This program's 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.

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. Program Change Summary (\$ in Millions)

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Previous President's Budget	60.117	72.503	79.186	94.734
(U) Current PBR/President's Budget	58.992	69.884	44.672	45.322
(U) Total Adjustments	-1.125	-2.619		
(U) Congressional Program Reductions		-2.619		
Congressional Rescissions				
Congressional Increases				
Reprogrammings				
SBIR/STTR Transfer	-1.125			

(U) Significant Program Changes:

FY 2006 and FY 2007: Program reductions to support higher Air Force priorities.

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 2004 Actual	FY 2005 Estimate	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	16.750	16.848	9.048	9.171	9.367	9.498	9.835	10.011	Continuing	TBD
Quantity of RDT&E Articles	0	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 2004</u>	<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	5.174	2.793	4.524	4.586
(U) Continue assessment, evaluation and test of radiation hard electronics for strategic guidance applications	0.744	0.595	0.603	0.611
(U) Continue development and test of alternate instrument technologies (e.g., accelerometers, gyros, micro electromechanical systems)	5.278	11.676	3.921	3.974
(U) Complete assessment, development and implementation of flight test experiment options to demonstrate future strategic guidance system concepts	5.554	1.784	0.000	0.000
(U) Total Cost	16.750	16.848	9.048	9.171

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

	<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>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>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

February 2005

BUDGET ACTIVITY				PE NUMBER AND TITLE							PROJECT NUMBER AND TITLE				
04 Advanced Component Development and Prototypes (ACD&P)				0603851F ICBM - DEM/VAL							1020 ICBM Guidance Applications				
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</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> ICBM Prime Integration Contract	C/CPAF	Northrop Grumman, Clearfield UT	75.065	16.590	Jan-04	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	0.000	0.100	Jan-04	15.488	Jan-05	8.168	Jan-06	8.291	Jan-07	Continuing	TBD	TBD	
Subtotal Product Development Remarks:			75.065	16.690		16.768		8.968		9.091		Continuing	TBD	TBD	
(U) <u>Support</u> SPO/Other Program Support	Various	ICBM Program Office, Hill AFB	3.575	0.060	Jan-04	0.080	Jan-05	0.080	Jan-06	0.080	Jan-07	Continuing	TBD	TBD	
Subtotal Support Remarks:			3.575	0.060		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			78.640	16.750		16.848		9.048		9.171		Continuing	TBD	TBD	

Exhibit R-4, RDT&E Schedule Profile

DATE

February 2005

BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

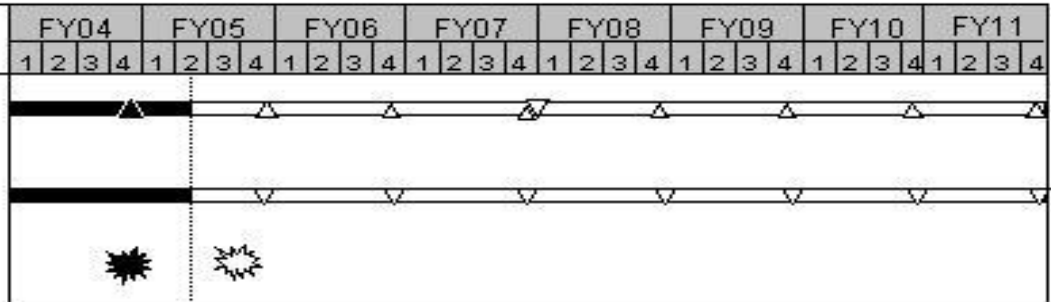
0603851F ICBM - DEM/VAL


PROJECT NUMBER AND TITLE


1020 ICBM Guidance Applications

Guidance Applications

- Analyze, evaluate, develop concepts
- Alternate instrument technologies
- Flight tests



 Major test event

 Report/Review/
Analysis

 Prototype
hardware delivery

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Exhibit R-4a, RDT&E Schedule Detail	DATE February 2005
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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
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(U) <u>Schedule Profile</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Development/Demonstration of Future Common System Concepts (Ongoing)	1-4Q	1-4Q	1-4Q	1-4Q
(U) -- Progress Reports	4Q	4Q	4Q	4Q
(U) -- Prototype Hardware Delivery				4Q
(U) Alternate Instrument Technology Development (Ongoing)	1-4Q	1-4Q	1-4Q	1-4Q
(U) -- Progress Report	4Q	4Q	4Q	4Q
(U) -- Engineering Demo/Prototype Hardware		4Q	4Q	4Q
(U) Radiation Hardened Parts Analysis (Ongoing)	1-4Q	1-4Q	1-4Q	1-4Q
(U) -- Progress Report	4Q	4Q	4Q	4Q
(U) Flight Test Options Analysis	1-4Q	1-4Q		
(U) -- Progress Report	4Q	4Q		
(U) -- Flight Test	4Q	3Q		

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 2004 Actual	FY 2005 Estimate	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	16.812	30.151	23.949	24.313	24.344	24.913	25.309	25.664	Continuing	TBD
Quantity of RDT&E Articles	0	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 approach maintains critical design development and system engineering skills and capabilities for the future.

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 2004</u>	<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	13.589	20.784	12.690	14.256
(U) Continue assessment and demonstration of ordnance and post-boost components technology developments	2.741	8.227	9.867	8.651
(U) Continue evaluation of test protocols in support of hazard classification methods for ICBM solid rocket motors	0.482	1.140	1.392	1.406
(U) Total Cost	16.812	30.151	23.949	24.313

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

	<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>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>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				PE NUMBER AND TITLE							PROJECT NUMBER AND TITLE				
04 Advanced Component Development and Prototypes (ACD&P)				0603851F ICBM - DEM/VAL							1021 ICBM Propulsion Applications				
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</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> ICBM Prime Integration Contract	C/CPAF	Northrop Grumman, Clearfield UT	6.379	16.712	Dec-03	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	N/A	15.102	Jan-05	23.849	Jan-06	24.213	Jan-07	Continuing	TBD	TBD	
Subtotal Product Development			6.379	16.712		30.051		23.849		24.213		Continuing	TBD	TBD	
Remarks:															
(U) <u>Support</u> SPO/Other Program Support	Various	ICBM Program Office, Hill AFB	0.086	0.100	Jan-04	0.100	Jan-05	0.100	Jan-06	0.100	Jan-07	Continuing	TBD	TBD	
Subtotal Support			0.086	0.100		0.100		0.100		0.100		Continuing	TBD	TBD	
Remarks:															
(U) <u>Test & Evaluation</u>													0.000		
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	
Remarks:															
(U) <u>Management</u>													0.000		
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	
Remarks:															
(U) Total Cost			6.465	16.812		30.151		23.949		24.313		Continuing	TBD	TBD	

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY

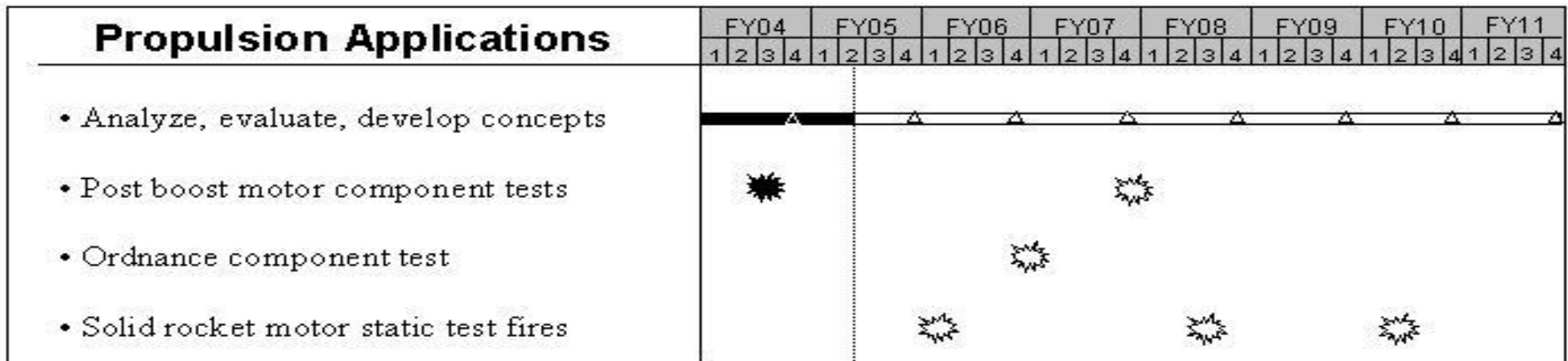
04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1021 ICBM Propulsion Applications



Major test event



Report/Review/
Analysis



Prototype hardware
delivery

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Exhibit R-4a, RDT&E Schedule Detail	DATE February 2005
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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
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	<u>FY 2004</u>	<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	1-4Q
(U) -- Periodic Status Reports/Review	2-4Q	2-4Q	2-4Q	2-4Q
(U) -- Solid rocket motor static test fire			1Q	
(U) Assessment/demonstration of ordnance and post-boost components tech	1-4Q	1-4Q	1-4Q	1-4Q
(U) --Periodic Status Report/Reviews	2-4Q	2-4Q	2-4Q	2-4Q
(U) -- Ordnance component test			4Q	
(U) -- Post-boost component test	3Q			4Q
(U) Evaluate test protocols in support of hazard classification methods	1-4Q	1-4Q	1-4Q	1-4Q
(U) --Periodic Status Report/Reviews	2-4Q	2-4Q	2-4Q	2-4Q

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 1022 ICBM Reentry Vehicle Applications			
Cost (\$ in Millions)	FY 2004 Actual	FY 2005 Estimate	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	15.712	16.830	5.609	5.690	6.211	6.321	6.456	6.602	Continuing	TBD	
Quantity of RDT&E Articles	0	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 RV applications program to eliminate duplication and realize synergistic cost savings. Program products are tested on a space available basis on Minuteman and Peacekeeper 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 2004</u>	<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	4.568	5.316	1.322	1.864
(U) Continue identification and ground testing of potential replacement options for critical RV components	1.333	2.953	0.878	1.158
(U) Continue evaluation of improved accuracy measurements and methodologies	0.779	0.817	0.106	0.000
(U) Continue evaluation of alternate flight test experiment options	2.555	1.604	0.412	0.000
(U) Continue evaluation of advanced common RV designs, applications, and technologies	3.219	1.352	1.394	1.447
(U) Continue development and assessment of RV Test & Evaluation methodologies and subsystems	2.234	2.024	0.815	0.257
(U) Continue design, development, and prototype flight testing of selected fuze assessment/measurement	1.024	2.764	0.682	0.964
(U) Total Cost	15.712	16.830	5.609	5.690

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

	<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>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>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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BUDGET ACTIVITY				PE NUMBER AND TITLE						PROJECT NUMBER AND TITLE					
04 Advanced Component Development and Prototypes (ACD&P)				0603851F ICBM - DEM/VAL						1022 ICBM Reentry Vehicle Applications					
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</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> ICBM Prime Integration Contract	C/CPAF	Northrop Grumman, Clearfield, UT	79.397	15.052	Dec-03	14.770	Dec-04	2.994	Dec-05	2.599	Dec-06	Continuing	TBD	TBD	
Component/materials development	Various	TBD		0.000	N/A	1.000	Jan-05	2.130	Feb-06	2.606	Feb-07	Continuing	TBD	TBD	
Subtotal Product Development			79.397	15.052		15.770		5.124		5.205		Continuing	TBD	TBD	
Remarks:															
(U) <u>Support</u> SPO/Other Program Support	Various	ICBM Program Office Hill AFB	1.156	0.060	Jan-04	0.060	Jan-05	0.060	Jan-06	0.060	Jan-07	Continuing	TBD	TBD	
Subtotal Support			1.156	0.060		0.060		0.060		0.060		Continuing	TBD	TBD	
Remarks:															
(U) <u>Test & Evaluation</u> Materials	MIPR	AFRL Wright Lab, Wright-Patterson AFB	2.540	0.200	Jan-04	0.500	Jan-05	0.300	Jan-06	0.300	Jan-07	Continuing	TBD	TBD	
Ground Testing	PO	Arnold Engineering & Development Center	3.402	0.300	Jan-04	0.250	Jan-05	0.125	Jan-06	0.125	Jan-07	Continuing	TBD	TBD	
Flight Testing	PO	Vandenberg AFB	0.646	0.100	Jan-04	0.250	Jan-05	0.000		0.000		Continuing	TBD	TBD	
Subtotal Test & Evaluation			6.588	0.600		1.000		0.425		0.425		Continuing	TBD	TBD	
Remarks:															
(U) <u>Management</u>													0.000	0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	
Remarks:															
(U) Total Cost			87.141	15.712		16.830		5.609		5.690		Continuing	TBD	TBD	

Exhibit R-4, RDT&E Schedule Profile

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February 2005

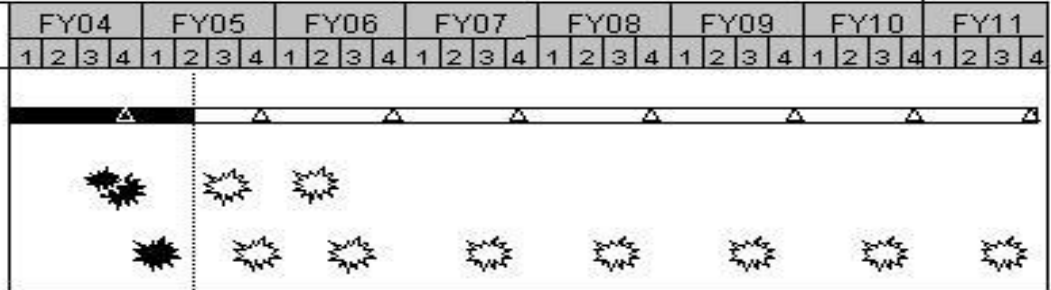
BUDGET ACTIVITY
04 Advanced Component Development and Prototypes (ACD&P)

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/
Analysis



Prototype hardware
delivery

UNCLASSIFIED

Exhibit R-4a, RDT&E Schedule Detail	DATE February 2005
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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
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(U) <u>Schedule Profile</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Materials Replacement & Aging Evaluations	1-4Q	1-4Q	1-4Q	1-4Q
(U) --Periodic Status Reports/Reviews	2-4Q	2-4Q	2-4Q	2-4Q
(U) Fuze Assessment/Measurement Tool Development	1-4Q	1-4Q	1-4Q	1-4Q
(U) --Periodic Status Reports/Reviews	2-4Q	2-4Q	2-4Q	2-4Q
(U) Critical Components Evaluations	1-4Q	1-4Q	1-4Q	1-4Q
(U) --Periodic Status Reports/Reviews	2-4Q	2-4Q	2-4Q	2-4Q
(U) RV Test & Evaluation Methodologies Development	1-4Q	1-4Q	1-4Q	1-4Q
(U) --Periodic Status Reports/Reviews	2-4Q	2-4Q	2-4Q	2-4Q
(U) Accuracy Assessment Methodologies Development	1-4Q	1-4Q	1-4Q	
(U) --Periodic Status Reports/Reviews	2-4Q	2-4Q	2-4Q	1-4Q
(U) Advanced Common RV Designs, Applications & Technologies Evaluations	1-4Q	1-4Q	1-4Q	2-4Q
(U) --Periodic Status Reports/Reviews	2-4Q	2-4Q	2-4Q	
(U) Alternate Flight Test Options Development	1-4Q	1-4Q	1-4Q	
(U) --Periodic Status Reports/Reviews	2-4Q	2-4Q	2-4Q	
(U) Flight Tests	4Q	3Q	2Q	
(U) Component Level Ground Tests		1-4Q	3Q	3Q

Exhibit R-2a, RDT&E Project Justification

DATE

February 2005

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		
Cost (\$ in Millions)	FY 2004 Actual	FY 2005 Estimate	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	1.029	0.033	0.033	0.035	0.036	0.036	0.037	0.037	Continuing	TBD
Quantity of RDT&E Articles	0	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 2004</u>	<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	0.029	0.033	0.033	0.035
(U) Conducted California Space Infrastructure Program	1.000			
(U) Total Cost	1.029	0.033	0.033	0.035

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

	<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>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>Estimate</u>	<u>Complete</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 2005

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
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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 Prior to FY 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</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>														
California Space Infrastructure Program	SS	California Spaceport Authority	0.000	1.000	Apr-04	0.000	N/A	0.000	N/A	0.000	N/A	0.000	1.000	1.000
Various	Various	Various	7.338	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	0.000	7.338	7.338
Subtotal Product Development			7.338	1.000		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	N/A	0.000	8.403	8.403
Engineering Support	Various	SMC Det 12 Kirtland AFB	1.488	0.029	Jan-04	0.033	Jan-05	0.033	Jan-06	0.035	Jan-07	Continuing	TBD	TBD
Subtotal Support			9.891	0.029		0.033		0.033		0.035		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	0.000
Remarks:														
<u>(U) Management</u>														
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
<u>(U) Total Cost</u>			17.229	1.029		0.033		0.033		0.035		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

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February 2005

BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

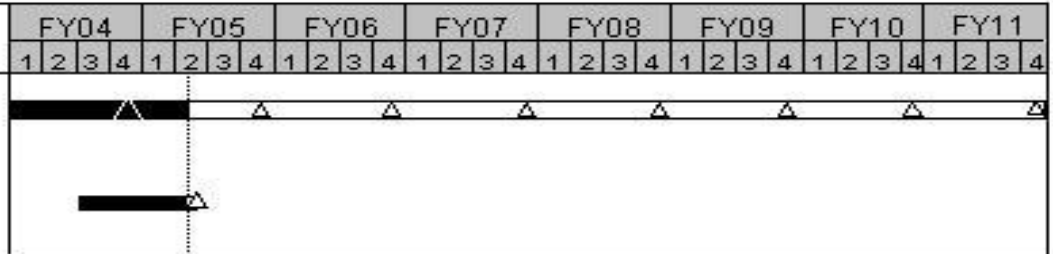
0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

1023 Rocket System Launch Program

Rocket System Launch Program

- Analyze, evaluate concepts
- California Space Infrastructure



Major test event



Report/Review/
Analysis



Prototype hardware
delivery

Exhibit R-4a, RDT&E Schedule Detail	DATE February 2005
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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
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	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Schedule Profile				
(U) Start/Complete Annual Studies/Analysis	1-4Q	1-4Q	1-4Q	1-4Q
(U) California Space Infrastructure Contract Award	3Q			
(U) California Space Infrastructure Contract Complete		2Q		

Exhibit R-2a, RDT&E Project Justification

DATE
February 2005

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 2004 Actual	FY 2005 Estimate	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	0.400	0.439	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.747	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0			

In FY2006 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 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Complete 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.	0.400	0.439	0.000	0.000
(U) Total Cost	0.400	0.439	0.000	0.000

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

	<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>FY 2010</u>	<u>FY 2011</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>Estimate</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

DATE

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BUDGET ACTIVITY				PE NUMBER AND TITLE								PROJECT NUMBER AND TITLE		
04 Advanced Component Development and Prototypes (ACD&P)				0603851F ICBM - DEM/VAL								1024 ICBM Command & Control (C2) Applications		
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</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> ICBM Prime Integration Contract	C/CPAF	Northrop Grumman, Clearfield UT	3.674	0.390	Dec-03	0.000	N/A	0.000	N/A	0.000	N/A	0.000	4.064	4.062
C4I technology/demonstration	TBD	TBD		0.000	N/A	0.429	Dec-04	0.000	N/A	0.000	N/A	0.000	0.429	0.433
Subtotal Product Development			3.674	0.390		0.429		0.000		0.000		0.000	4.493	4.495
Remarks:														
(U) <u>Support</u> SPO/other program support	Various	ICBM Program Office Hill AFB	0.042	0.010	Jan-04	0.010	Jan-05	0.000	N/A	0.000	N/A	0.000	0.062	0.062
Subtotal Support			0.042	0.010		0.010		0.000		0.000		0.000	0.062	0.062
Remarks:														
(U) <u>Test & Evaluation</u>													0.000	0.000
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) <u>Management</u>													0.000	0.000
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) Total Cost			3.716	0.400		0.439		0.000		0.000		0.000	4.555	4.557

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

FY04				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	1	2	3	4
																															
																															

- Analyze, evaluate, develop concepts



Major test event



Report/Review/
Analysis



Prototype hardware
delivery

UNCLASSIFIED

Exhibit R-4a, RDT&E Schedule Detail		DATE February 2005
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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
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(U) <u>Schedule Profile</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Future Concepts Study for Command & Control (Ongoing)	1-4Q	1-4Q		
(U) --Periodic Progress Reports/Reviews	4Q			
(U) --Final Report/Review		4Q		

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 2004 Actual	FY 2005 Estimate	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)	8.289	5.583	6.033	6.113	1.018	1.021	1.025	1.022	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

In FY 2005, task "Continue Analysis of Alternatives (AoA) and pre-systems acquisition planning for follow on Land-Based Strategic Deterrent (LBSD)" is reduced by \$2.0M per Appropriations Act.

In FY 2006 and FY2007, project includes concept refinement and pre-Milestone A activities for follow on Land-Based Strategic Deterrent (LBSD) capability.

(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 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Continue support of the consolidated ICBM Master Plan	0.504	0.504	0.485	0.475
(U) Continue feasibility and life extension studies	2.348	0.000	0.515	0.525
(U) Complete Analysis of Alternatives (AoA) and pre-systems acquisition planning for follow on Land-Based Strategic Deterrent (LBSD) capability	5.437	5.079	0.000	0.000
(U) Begin LBSD capability concept refinement and pre-Milestone A activities	0.000	0.000	5.033	5.113
(U) Total Cost	8.289	5.583	6.033	6.113

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

	<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>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>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

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February 2005

BUDGET ACTIVITY				PE NUMBER AND TITLE							PROJECT NUMBER AND TITLE				
04 Advanced Component Development and Prototypes (ACD&P)				0603851F ICBM - DEM/VAL							4209 Long Range Planning (LRP)				
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</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> ICBM Prime Integration Contract	C/CPAF	Northrop Grumman, Clearfield UT	7.008	1.597	Dec-03	0.504	Dec-04	0.340	Jan-06	0.330	Jan-07	Continuing	TBD	TBD	
Studies	MIPR/PO	Various	0.000	1.110	Dec-03	0.000	N/A	0.515	Jan-06	0.525	Jan-07	0.000	2.150	0.560	
Land Based Strategic Deterrent (LBSD) AoA and pre-systems acquisition planning	Various	Various	0.000	5.437	Jan-04	4.934	Jan-05	0.000	N/A	0.000	N/A	0.000	10.371	11.529	
LBSD concept refinement and pre-Milestone A activities	Various	Various	0.000	0.000	N/A	0.000	N/A	5.033	Jan-06	5.113	Jan-06	0.000	10.146	10.000	
Subtotal Product Development			7.008	8.144		5.438		5.888		5.968		Continuing	TBD	TBD	
Remarks:															
(U) <u>Support</u> SPO/Other program support	Various	ICBM Program Office, Hill AFB UT	2.637	0.145	Jan-04	0.145	Jan-05	0.145	Jan-06	0.145	Jan-07	Continuing	TBD		
Subtotal Support			2.637	0.145		0.145		0.145		0.145		Continuing	TBD	0.000	
Remarks:															
(U) <u>Test & Evaluation</u> None													0.000	0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	
Remarks:															
(U) <u>Management</u> None													0.000	0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	
Remarks:															
(U) Total Cost			9.645	8.289		5.583		6.033		6.113		Continuing	TBD	TBD	

Exhibit R-4, RDT&E Schedule Profile

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February 2005

BUDGET ACTIVITY

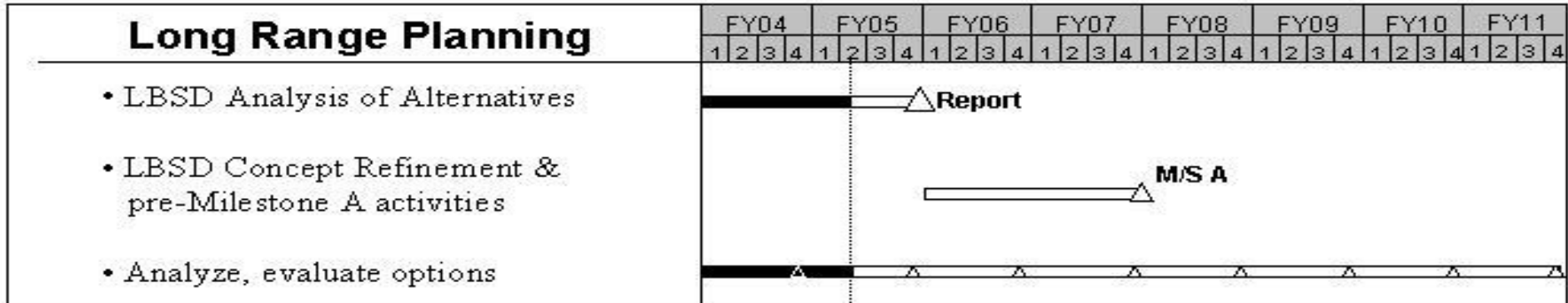
04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT NUMBER AND TITLE

4209 Long Range Planning (LRP)



Major test event



Report/Review/
Analysis



Prototype hardware
delivery

UNCLASSIFIED

Exhibit R-4a, RDT&E Schedule Detail	DATE February 2005
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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)
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	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Schedule Profile				
(U) Contract Award for Annual Studies/Analyses	2Q			
(U) --Program Reviews/ Reports Received	2-4Q			
(U) LBSD Analysis of Alternatives & pre-acquisition planning	1-4Q	1-4Q		
(U) -- AoA Report		4Q		
(U) LBSD Concept Refinement and pre-Milestone A activities			1-4Q	1-4Q
(U) -- Concept Refinement Contract Award			2Q	
(U) -- Milestone A				4Q