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

	Exhib	oit R-2, RDT	&E Budge	t Item Just	ification			DATE	February	2006
	□ ACTIVITY vanced Component Development a	nd Prototype	s (ACD&P)		E NUMBER AND 603851F ICB	TITLE M - DEM/VAL				
	Cost (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to	Total
	Cost (\$ iii Willions)	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
	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) A. Mission Description and Budget Item Justification

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

1		<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) Significant Program Changes:

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)

Exhibit R-2, RDT&E Budget Ite	DATE February 2006	
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603851F ICBM - DEM/VAL	•
Support Secure Transportation of Strategic Assets"; +\$5.0M for "Adaptive M	lissile Engineering Modernization".	
D.4.Oberrate	and interference No. 54.0 of 54.00	Fuhihi D 0 (DE 0000054E)
R-1 Shoppin	g List - Item No. 51-2 of 51-26	Exhibit R-2 (PE 0603851F)

	Exh	ibit R-2a, F	RDT&E Pro	ject Justi	fication			DATE	February	2006
	T ACTIVITY vanced Component Development a	nd Prototype	s (ACD&P)		PE NUMBER AND 0603851F ICB				BER AND TITLE Suidance App	lications
	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	C	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)	FY 2005	FY 2006	FY 2007
(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	8.507	3.861	4.024
	electromechanical systems)			
(U)	Completed assessment, development and implementation of flight test experiment options to demonstrate future	1.605	0.000	0.000
	strategic guidance system concepts			
(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>	FY 2010 FY 2011	Cost to	Total Cost

Estimate

Estimate

Estimate

Estimate

(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.

Estimate

Project 1020 R-1 Shopping List - Item No. 51-3 of 51-26

Actual

Estimate

Exhibit R-2a (PE 0603851F)

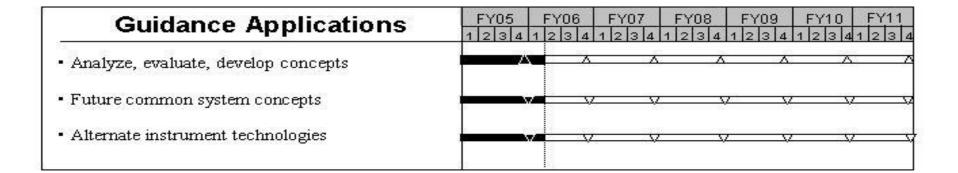
Complete

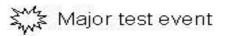
ī	Exhibit R-	3, RDT&E F		st Anal					Di	ATE Feb i	ruary 20	06		
BUDGET ACTIVITY 04 Advanced Component Developme										ROJECT NUMBER AND TITLE 120 ICBM Guidance Applications				
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2005 Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contrac		
(U) Product Development ICBM Prime Integration Contract	C/CPAF	Northrop Grumman,	91.655	1.280	Dec-04	0.800	Dec-05	0.800	Dec-06	Continuing	TBD	TBD		
Component/Technology Development	Various	Clearfield UT AFRL Kirtland AFB and	0.100	11.800	Jan-05	8.039	Jan-06	8.396	Jan-07	Continuing	TBD	TBD		
Subtotal Product Development Remarks:		others TBD	91.755	13.080		8.839		9.196		Continuing	TBD	TBD		
(U) Support 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: (U) Test & Evaluation		Arb	3.635	0.080		0.080		0.080		Continuing	TBD	TBD		
Subtotal Test & Evaluation Remarks:			0.000	0.000		0.000		0.000		0.000	0.000 0.000	0.000		
(U) Management Program Management Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000 0.000	0.000		
Remarks: (U) Total Cost			95.390	13.160		8.919		9.276		Continuing	TBD	TBD		

Project 1020

Exhibit R-3 (PE 0603851F)

Exhibit R-4, RDT&E Schedule Profile BUDGET ACTIVITY O4 Advanced Component Development and Prototypes (ACD&P) PE NUMBER AND TITLE O603851F ICBM - DEM/VAL DATE February 2006 PROJECT NUMBER AND TITLE 1020 ICBM Guidance Applications









Project 1020

R-1 Shopping List - Item No. 51-5 of 51-26

Exhibit R-4 (PE 0603851F)

Exhibit R-4a, RDT&E Schedu	ıle Detail	DATE Febru	DATE February 2006		
BUDGET ACTIVITY 14 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603851F ICBM - DEM/VAL	PROJECT NUMBER AND T	CT NUMBER AND TITLE CBM Guidance Applications		
U) Schedule Profile	FY 2005	FY 2006	FY 2007		
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	1-4 Q		
J) Progress Report	4Q	4Q	4 Q		
U) Engineering Demo/Prototype Hardware	4Q	4Q	4 Q		
U) Radiation Hardened Parts Analysis (Ongoing)	1-4Q	1-4Q	1-4 Q		
U) Progress Report	4Q	4Q	4Q		
U) Flight Test Options AnalysisU) Progress Report	1-4Q 4Q				

Exhibit R-4a (PE 0603851F)

Project 1020

	Exh	ibit R-2a, F	RDT&E Pro	ject Justi	fication			DATE	February	2006
	T ACTIVITY vanced Component Development a	nd Prototype	s (ACD&P)		PE NUMBER AND 0603851F ICB				BER AND TITLE ropulsion Ap	
	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	3 24.492	25.016	25.375	25.703	Continuing	TBD
	Quantity of RDT&E Articles	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.

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

(U) <u>C. Other Program Funding Summary (\$ in Millions)</u>

FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Total	Cost
<u>Actual</u>	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete Total	Cost

(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.

Project 1021 R-1 Shopping List - Item No. 51-7 of 51-26

Exhibit R-2a (PE 0603851F)

	E	xhibit R-	3, RDT&E I	Proiect Co	st Anal	vsis				D,	ATE		00
	DGET ACTIVITY Advanced Component Developmer		<u> </u>		PE N	JMBER ANI	D TITLE BM - DEM	/VAL			Febi IUMBER ANI M Propuls		
	Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2005 Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost 1	Target Value of Contract
(U)	Product Development 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:		oulers TBD	23.091	24.199		23.319		24.293		Continuing	TBD	TBD
(U)	Support SPO/Other Program Support	Various	526th Acquisition Group, Hill	0.186	0.100	Jan-05	0.100	Jan-06	0.100	Jan-07	Continuing	TBD	TBD
(U)	Subtotal Support Remarks: Test & Evaluation		AFB	0.186	0.100		0.100		0.100		Continuing	TBD	TBD
	Subtotal Test & Evaluation Remarks: Management			0.000	0.000		0.000		0.000		0.000	0.000 0.000	0.000
	Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000 0.000	0.000
(U)	Remarks: Total Cost			23.277	24.299		23.419		24.393		Continuing	TBD	TBD
Pı	roject 1021		-	R-1 Shopping Lis	st - Item No	. 51-8 of 51-	26				Exhi	bit R-3 (PE 0	603851F)

DATE **Exhibit R-4, RDT&E Schedule Profile** February 2006 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 **Propulsion Applications** · Analyze, evaluate, develop concepts · Post boost motor component tests • Ordnance component test · Solid rocket motor static test fires ጂጂ Major test event Report/Review/ Prototype hardware Analysis delivery

Project 1021

Exhibit R-4 (PE 0603851F)

Advanced Component Development and Prototypes (ACD&P) Schedule Profile Evaluate and test solid propulsion technologies for ICBM application Periodic Status Reports/Review Solid rocket motor static test fire Assessment/demonstration of ordnance and post-boost components technology Periodic Status Report/Reviews 0603851F ICBM - DEM/VAL FY 2005 FY 2006 FY 2006 FY 2006 FY 2006 FY 2006 FY 2006 According to the propulsion Application 1-4Q 1-4Q 4Q 4Q 4Q 4Q 4Q 4Q 4Q 4Q 4Q	Exhibit R-4a, RDT&E Schedule Detail February 2006								
Evaluate and test solid propulsion technologies for ICBM application 1-4Q 1-4Q 4Q 4Q 4Q 4Q Solid rocket motor static test fire 2Q Assessment/demonstration of ordnance and post-boost components technology Periodic Status Report/Reviews 1-4Q 1-4Q 4Q 4Q 4Q 4Q 1-4Q	DGET ACTIVITY Advanced Component Development and Prototypes (ACD&P)								
Periodic Status Reports/Review 4Q 4Q 4Q Solid rocket motor static test fire 2Q 1-4Q 1-4Q 1-4Q 1-4Q 1-4Q 1-4Q 1-4Q 4Q 4	Schedule Profile			FY 2007					
Solid rocket motor static test fire Assessment/demonstration of ordnance and post-boost components technology Periodic Status Report/Reviews 4Q 4Q 4Q 4Q 4Q 4Q 4Q 4Q 4Q 4	* *	_	•	1-4Q					
Assessment/demonstration of ordnance and post-boost components technologyPeriodic Status Report/Reviews 4Q		4Q		40					
Periodic Status Report/Reviews 4Q 4Q 44 Evaluate test protocols in support of hazard classification methods 1-4Q 1-4Q 1-4Q		1.40		1.40					
Evaluate test protocols in support of hazard classification methods 1-4Q 1-4Q 1-4Q	<u> </u>	_	_						
renout status report reviews 4Q 4Q 4Q 4Q 4Q			_						

Project 1021

R-1 Shopping List - Item No. 51-10 of 51-26

Exhibit R-4a (PE 0603851F)

	Exh	nibit R-2a, F	RDT&E Pro	ject Justi	fication			DATE	February 2006		
	BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)					TITLE M - DEM/VAL		PROJECT NUMI 1022 ICBM R Applications	le		
	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 5.753		5 6.304	6.420	6.555	6.704	Continuing	TBD	
	Quantity of RDT&E Articles	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>	FY 2010 FY 2011	Cost to	Total Cost

(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.

Estimate

Project 1022 R-1 Shopping List - Item No. 51-11 of 51-26

Actual

Estimate

Exhibit R-2a (PE 0603851F)

Complete

Total Cost

Estimate

Estimate

Estimate

Estimate

	E	xhibit R-	3, RDT&E F	Project Co	st Anal	ysis				D	ATE Feb	ruary 20	06
	OGET ACTIVITY Advanced Component Developmer	nt and Prot	otypes (ACD&	ßР)		UMBER ANI 8851F ICE		/VAL	1		NUMBER ANI M Reentry ons		
	Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2005 Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U)	Product Development 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
(II)	Component/materials development Subtotal Product Development Remarks:	Various	TBD	0.000 94.449	0.000 13.424	Jan-05	0.000 4.569	N/A	0.000 4.670	N/A	Continuing Continuing	TBD TBD	TBD TBD
(U)	Support SPO/Other Program Support	Various	526th Acquisition Group, Hill	1.216	0.060	Jan-05	0.510	Jan-06	0.510	Jan-07	Continuing	TBD	TBD
(U)	Subtotal Support Remarks: Test & Evaluation		AFB	1.216	0.060		0.510		0.510		Continuing	TBD	TBD
(-)	Materials	MIPR	AFRL Materials Lab, Wright-Patters on AFB	2.740	0.290	Jan-05	0.450	Jan-06	0.450	Jan-07	Continuing	TBD	TBD
	Ground Testing	РО	Arnold Engineering & Development Center	3.702	0.180	Jan-05	0.000	N/A	0.125	Jan-07	Continuing	TBD	TBD
(U)	Subtotal Test & Evaluation Remarks: Management		Center	6.442	0.470		0.450		0.575		Continuing	TBD	TBD
	Subtotal Management Remarks:			0.000	0.000		0.000		0.000		0.000	0.000 0.000	0.000
(U)	Total Cost			102.107	13.954		5.529		5.755		Continuing	TBD	TBD
Pr	oject 1022		R	-1 Shopping Lis	t - Item No.	51-12 of 51	-26				Exh	ibit R-3 (PE	U603851F)

DATE **Exhibit R-4, RDT&E Schedule Profile** February 2006 PROJECT NUMBER AND TITLE BUDGET ACTIVITY PE NUMBER AND TITLE 04 Advanced Component Development and Prototypes (ACD&P) 0603851F ICBM - DEM/VAL 1022 ICBM Reentry Vehicle **Applications** FY06 FY07 FY08 Reentry Vehicle Applications · Analyze, evaluate, develop concepts · Flight tests · Component ground tests Report/Review/ ₹₩≵ Major test event Prototype hardware Analysis delivery Project 1022 R-1 Shopping List - Item No. 51-13 of 51-26 Exhibit R-4 (PE 0603851F)

Exhibit R-4a, RDT&E Sched	ule Detail	DATE Febru	DATE February 2006		
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603851F ICBM - DEM/VAL	PROJECT NUMBER AND T 1022 ICBM Reentry V Applications			
(U) Schedule Profile	FY 2005	FY 2006	FY 2007		
(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		
Project 1022 R-1 Shopping Lie	st - Item No. 51-14 of 51-26	Exhibit F	R-4a (PE 0603851F)		

	Exh	DATE	February 2006							
	T ACTIVITY vanced Component Development a		PE NUMBER AND TITLE 0603851F ICBM - DEM/VAL			PROJECT NUMBER AND TITLE 1023 Rocket System Launch Pro				
	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	C	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.

ı	(U)	B. Accomplishments/Planned Program (\$ in Millions)	FY 2005	FY 2006	FY 2007
ı	(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
ı	(U)	Total Cost	0.031	0.033	0.028

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

FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to	Total Cost
Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	Total Cost

(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.

Project 1023

R-1 Shopping List - Item No. 51-15 of 51-26

Exhibit R-2a (PE 0603851F)

ACTIVITY anced Component Developmen					ysis					Febi	ruary 20	06
inoca component Bevelopmen	&P)		JMBER AND 851F ICB		/VAL			T NUMBER AND TITLE ocket System Launch Program				
Categories or to WBS, or System/Item Requirements) Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2005 Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ct Development us tal Product Development rks: ort	Various	Various	8.338 8.338	0.000 0.000	N/A	0.000 0.000	N/A	0.000 0.000	N/A	0.000 0.000	8.338 8.338	8.338 8.338
eering 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
eering Support	Various	SMC Det 12 Kirtland AFB	1.517	0.031	Jan-05	0.033	Jan-06	0.028	Jan-07	Continuing	TBD	TBD
tal Support rks:			9.920	0.031		0.033		0.028		Continuing	TBD	TBD
tal Test & Evaluation rks:			0.000	0.000		0.000		0.000		0.000	0.000 0.000	0.000
tal Management			0.000	0.000		0.000		0.000		0.000	0.000 0.000	0.000
rks: Cost			18.258	0.031		0.033		0.028		Continuing	TBD	TBD
	Millions) ct Development us tal Product Development rks: ort eering Support eering Support tal Support rks: be Evaluation tal Test & Evaluation rks: gement tal Management rks:	Millions) Type ct Development us Various tal Product Development rks: ort eering Support SS/T&M eering Support Various tal Support rks: b Evaluation tal Test & Evaluation rks: gement tal Management rks:	Millions) Type Location Ct Development US US Various Various Various Various Various Various Various Various Various Various SS/T&M Northrop Grumman Grumman eering Support Various SMC Det 12 Kirtland AFB tal Support rks: E Evaluation tal Test & Evaluation rks: gement tal Management rks:	Millions) Type Location Cost Cost Cost Cost Cost Cost Cost Cost	Millions) Type Location 2005 Cost ct Development Cost Cost us Various Various 8.338 0.000 tal Product Development rks: 8.338 0.000 8.338 0.000 rks: ort SS/T&M Northrop Grumman 8.403 0.000 eering Support Various SMC Det 12 Kirtland AFB 1.517 0.031 tal Support 9.920 0.031 9.920 0.031 rks: Evaluation 0.000 0.000 0.000 rks: eement 0.000 0.000 0.000 rks: eement 0.000 0.000 0.000	Type Location 2005 Date	Type Location 2005 Cost Cost	Type Location 2005 Date Date	Type Location 2005 Date Date Date	Millions Type Location 2005 Date Date Date Date Date	Type Location 2005 Date Dat	Type Location 2005 Date Dat

Project 1023

R-1 Shopping List - Item No. 51-16 of 51-26

Exhibit R-3 (PE 0603851F)

DATE **Exhibit R-4, RDT&E Schedule Profile** February 2006 PROJECT NUMBER AND TITLE BUDGET ACTIVITY PE NUMBER AND TITLE 04 Advanced Component Development and Prototypes (ACD&P) 0603851F ICBM - DEM/VAL 1023 Rocket System Launch Program FY06 **FY07** FY08 Rocket System Launch Program · Analyze, evaluate concepts ₹₩ Major test event Prototype hardware Report/Review/ delivery Analysis

Project 1023

R-1 Shopping List - Item No. 51-17 of 51-26

Exhibit R-4 (PE 0603851F)

Exhibit R-4a, RDT&E Sche	edule Detail	DATE	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 stem Launch Program		
(U) Schedule Profile (U) Start/Complete Annual Studies/Analysis	FY 2005 1-4Q	FY 2006 1-4Q	<u>FY 2007</u> 1-4Q		
Project 1023 R-1 Shopping	g List - Item No. 51-18 of 51-26		Exhibit R-4a (PE 0603851F)		

	Exh	DATE	February 2006							
	r ACTIVITY vanced Component Development a		PE NUMBER AND TITLE 0603851F ICBM - DEM/VAL			PROJECT NUMBER AND TITLE 1024 ICBM Command & Control (Complications				
	Cost (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to	Total
		Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
1024	ICBM Command & Control (C2) Applications	0.028	3.250	0.00	0.000	0.000	0.000	0.000	0.000	3.278
	Quantity of RDT&E Articles	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</u>	2005	<u>FY 2006</u>	<u>FY 2007</u>
(U)	Completed development of concepts for transfer	rmation of ICBM c	ommand, contro	l, communicatio	ns, computers,		0.028	0.000	0.000
	intelligence, surveillance, and reconnaisance (C	4ISR) architecture	for future ICBM	missions, include	ling analysis of				
	requirements for modeling, simulation, demons	trations, and flight t	ests; complete	development of p	olans for				
	preserving unique strategic C2 skills and capab	ilities.							
(U)	Demonstrate Infralynx technology to support se	ecure transportation	of strategic asse	ts			0.000	3.250	0.000
(U)	Total Cost						0.028	3.250	0.000
(U)	C. Other Program Funding Summary (\$ in M	(illions							
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to	Total Cost
	<u>Actua</u>	<u>Estimate</u>	Estimate	Estimate	Estimate	Estimate	Estimate	<u>Complete</u>	10tal Cost

(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.

Project 1024 R-1 Shopping List - Item No. 51-19 of 51-26

Exhibit R-2a (PE 0603851F)

	E	xhibit R-	3, RDT&E	Project Co	st Anal	ysis				DA	TE Feb	ruary 20	06	
	OGET ACTIVITY Advanced Component Developmer	nt and Prot	otypes (ACI)&P)		JMBER AND 8851F ICE		/VAL			M Comma	MBER AND TITLE Command & Control (C2) s		
(U)	Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2005 Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	<u>Γarget Value</u> <u>of Contract</u>	
(U)	Product Development 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	
(II)	Subtotal Product Development Remarks:		Research Lab	4.062	0.000		3.250		0.000		0.000	7.312	7.312	
(U)	Support 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	
(U)	Subtotal Support Remarks: Test & Evaluation		Alb	0.052	0.028		0.000		0.000		0.000	0.080	0.062	
	Subtotal Test & Evaluation Remarks: Management			0.000	0.000		0.000		0.000		0.000	0.000 0.000	0.000	
(0)	Subtotal Management Remarks:			0.000	0.000		0.000		0.000		0.000	0.000 0.000	0.000	
(U)	Total Cost			4.114	0.028		3.250		0.000		0.000	7.392	7.374	
Pr	oject 1024			R-1 Shopping Lis	t - Item No.	51-20 of 51	-26				Exh	ibit R-3 (PE ()603851F)	

	UNCLASS	IFIED				
Exhibit R-4, RDT&E	Schedule Pro	file		DATE February 2006		
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&	D&P) 0603851F ICBM - DEM/VAL		AL 1024	PROJECT NUMBER AND TITLE 1024 ICBM Command & Control (Ca Applications		
	•		I Abb			
Command & Control Applicat	tions		Y07 FY08 2341234	FY09 FY10 FY11		
Analyze, evaluate, develop conc	epts =					
• Demonstrate Infralynx technolog						
Å×						
క్రామ్ Major test event	△ Rep Analy	ort/Review/ ysis	∇ Prototy deliver	vpe hardware y		
Project 1024 R-1	1 Shopping List - Item N	No. 51-21 of 51-26		Exhibit R-4 (PE 0603851F)		

UNCLASSIFIED								
Exhibit R-4a, RDT&E Sche	Febru	DATE February 2006						
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603851F ICBM - DEM/VAL	PROJECT NUMBER AND T 1024 ICBM Command Applications	CBM Command & Control (C2)					
(U) Schedule Profile (U) Future Concepts Study for Command & Control (U) Infralynx technology demonstration (U) Concept and prototype development (U) Field demonstration and assessment	FY 2005 1-4Q		FY 2007 1-4Q 1-4Q					

Exhibit R-4a (PE 0603851F)

Project 1024

	Ext	nibit R-2a, F	RDT&E Pro	ject Justi	fication			DATE	February	2006
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)								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	C	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)	FY 2005	FY 2006	FY 2007
(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	4.945	0.000	0.000
	Deterrent (LBSD) capability			
(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)			

FY 2008

Estimate

FY 2009

Estimate

FY 2010

Estimate

FY 2011

Estimate

FY 2007

Estimate

(U) None

(U) D. Acquisition Strategy

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

FY 2006

Estimate

Project 4209 R-1 Shopping List - Item No. 51-23 of 51-26

FY 2005

Actual

Exhibit R-2a (PE 0603851F)

Cost to

Complete

Total Cost

	E	khibit R-	3, RDT&E F	Project Co	st Anal	ysis				D	ATE Feb	ruary 20	006
	OGET ACTIVITY Advanced Component Development	and Prot	otypes (ACD&	kP)		UMBER AN B 851F ICE		I/VAL			NUMBER ANI I g Range F		(LRP)
	Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2005 Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U)	Product Development 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	Northop 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 Land Based Strategic Deterrent (LBSD) AoA and pre-systems acquisition planning	MIPR/PO Various	Various Various	1.110 5.437	0.000 4.800	N/A Jan-05	0.507 0.000	Jan-06 N/A	0.525 0.000	Jan-07 N/A	Continuing 0.000	TBD 10.237	TBD 10.237
	LBSD concept refinement and pre-Milestone A activities Subtotal Product Development	Various	Various	0.000 15.152	0.000 5.291	N/A	4.953 15.792	Oct-05	5.093 5.948	Oct-06	0.000 Continuing	10.046 TBD	10.046 TBD
(U)	Remarks: Support 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	
(T.D.	Subtotal Support Remarks:		Ard UI	2.782	0.145		0.145		0.138		Continuing	TBD	0.000
(U)	Test & Evaluation None Subtotal Test & Evaluation Remarks:			0.000	0.000		0.000		0.000		0.000	0.000 0.000	0.000
(U)	Management Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000 0.000	0.000
(U)	Remarks: Total Cost			17.934	5.436		15.937		6.086		Continuing	TBD	TBD
Pr	oject 4209		R	-1 Shopping Lis	t - Item No.	51-24 of 51	-26				Exh	ibit R-3 (PE	0603851F)

DATE **Exhibit R-4, RDT&E Schedule Profile** February 2006 PROJECT NUMBER AND TITLE BUDGET ACTIVITY PE NUMBER AND TITLE 04 Advanced Component Development and Prototypes (ACD&P) 0603851F ICBM - DEM/VAL 4209 Long Range Planning (LRP) FY09 FY05 FY06 FY07 FY08 FY10 **FY11** Long Range Planning · LBSD Analysis of Alternatives • LBSD Concept Refinement & M/S A pre-Milestone A activities · Analyze, evaluate options · Conventional ballistic missile studies • Adaptive missile engineering modernization X Major test event Report/Review/ Prototype hardware Analysis delivery R-1 Shopping List - Item No. 51-25 of 51-26 Exhibit R-4 (PE 0603851F) Project 4209

UNCLASSIFIED								
Exhibit R-4a, RDT&E Sche			DATE February 2006					
	PE NUMBER AND TITLE 0603851F ICBM - DEM/VAL		CT NUMBER AND TITLE Long Range Planning (LRP)					
Advanced Component Development and Prototypes (ACD&P) (U) Schedule Profile (U) Contract Award for Annual Studies/Analyses (U)Program Reviews/ Reports Received (U) LBSD Analysis of Alternatives & pre-acquisition planning (U) AoA Report (U) LBSD Concept Refinement and pre-Milestone A activities (U) Milestone A (U) Conventional ballistic missile system engineering study (U) Adaptive missile engineering modernization		PROJECT NUMBER AND	TITLE					

Exhibit R-4a (PE 0603851F)

Project 4209