PE NUMBER: 0305913F
PE TITLE: NUDET Detection System (Space)

Exhibit R-2, RDT&E Budget Item Justification

DATE: May 2009

BUDGET ACTIVITY: 07 Operational System Development

PE NUMBER AND TITLE: 0305913F NUDET Detection System (Space)

	Cost ($ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
	Total Program Element (PE) Cost	38.279	41.102	84.021	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
2808	Nuc Detonation Det Sys (sensors)	38.279	41.102	84.021	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

The Nuclear Detonation (NUDET) Detection System (NDS) provides a worldwide, highly survivable capability to detect, locate, and report any nuclear detonations in the earth's atmosphere or in near space in near-real time. The NDS supports NUDET detection requirements for United States Northern Command (USNORTHCOM)/North American Aerospace Defense Command (NORAD) (Integrated Tactical Warning and Attack Assessment (ITW/AA)), United States Strategic Command (USSTRATCOM) (Nuclear Force Management), and Air Force Technical Applications Center (AFTAC) (Treaty Monitoring). NDS consists of space and ground segments. The current space segment consists of NUDET detection sensors (optical, x-ray, dosimeters and electromagnetic pulse (EMP) sensor) on Global Positioning System (GPS) satellites and (optical, x-rays, and neutron and gamma rays) on Defense Support Program (DSP) satellites. The ground segment includes the Integrated Correlation and Display System (ICADS) and the Ground NDS Terminals (GNT).

The NDS program element funds research and development, testing and fielding of ICADS, GNT, and the integration of Space and Atmospheric Burst Reporting System (SABRS) sensors on Geostationary (GEO) satellites. ICADS provides a fixed ground receiving station and GNT provides the survivable ground receiving station. SABRS is the future neutron/gamma sensor payload that will be hosted on a classified GEO satellite and on a GEO host to replace the NDS sensor payload on DSP satellites. Sensor integration for GPS satellites is funded in the GPS Space & Control PE (0305165F) for GPS Block IIF and the GPS III Space Segment PE (0305265F) for GPS III satellites. Ground segment development remains in the NDS PE. DOE funds new NDS sensor research and production .

This program is in Budget Activity 7 - Operational System Development because it supports operational systems.

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

		FY 2008	FY 2009	FY 2010
(U)	Previous President's Budget	38.279	41.292	39.384
(U)	Current PBR/President's Budget	38.279	41.102	84.021
(U)	Total Adjustments	0.000	-0.190	
(U)	Congressional Program Reductions		-0.078	
	Congressional Rescissions		-0.112	
	Congressional Increases			
	Reprogrammings			
	SBIR/STTR Transfer			

(U) Significant Program Changes:

Increase in FY10 for SABRS integration on GEO host and associated ground processing.

Exhibit R-2a, RDT&E Project Justification

DATE: May 2009

BUDGET ACTIVITY: 07 Operational System Development

PE NUMBER AND TITLE: 0305913F NUDET Detection System (Space)

PROJECT NUMBER AND TITLE: 2808 Nuc Detonation Det Sys (sensors)

Cost ($ in Millions)		FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
2808	Nuc Detonation Det Sys (sensors)	38.279	41.102	84.021	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The Nuclear Detonation (NUDET) Detection System (NDS) provides a worldwide, highly survivable capability to detect, locate, and report any nuclear detonations in the earth's atmosphere or in near space in near-real time. The NDS supports NUDET detection requirements for United States Northern Command (USNORTHCOM)/North American Aerospace Defense Command (NORAD) (Integrated Tactical Warning and Attack Assessment (ITW/AA)), United States Strategic Command (USSTRATCOM) (Nuclear Force Management), and Air Force Technical Applications Center (AFTAC) (Treaty Monitoring). NDS consists of space and ground segments. The current space segment consists of NUDET detection sensors (optical, x-ray, dosimeters and electromagnetic pulse (EMP) sensor) on Global Positioning System (GPS) satellites and (optical, x-rays, and neutron and gamma rays) on Defense Support Program (DSP) satellites. The ground segment includes the Integrated Correlation and Display System (ICADS) and the Ground NDS Terminals (GNT).

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This program is in Budget Activity 7 - Operational System Development because it supports operational systems.

(U)	B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010
(U)	Continue ICADS and GNT development	22.567	21.170	36.911
(U)	Continue NDS sensor on-orbit qualification	1.884	2.130	2.465
(U)	Continue SABRS on GEO host development/integration	5.200	8.376	34.400
(U)	Continue Mission and Program support and system studies	4.155	4.417	5.478
(U)	Continue System Engineering & Integration (SE&I)	2.647	2.773	2.419
(U)	Continue Technical Support	1.826	2.236	2.348
(U)	Total Cost	38.279	41.102	84.021

Exhibit R-2a, RDT&E Project Justification		DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0305913F NUDET Detection System (Space)	PROJECT NUMBER AND TITLE: 2808 Nuc Detonation Det Sys (sensors)

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

	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total Cost
(U) Operations & Maintenance, (PE 0305913F, BA 1, Operating Forces, SAG 12A)	8.958	9.049	8.066							TBD
(U) Other Procurement, (PE 0305913F, BA 3 - Electronics and Telecom Equipment, WSC 836750 P-63)	15.801	27.545	15.436							TBD
(U) Missile Procurement, (PE 0305913F, BA 5 - Space & Other support, P-23)	0.000	1.246	0.000							1.246

(U) D. Acquisition Strategy

The NDS Acquisition Strategy is to develop, field and sustain NDS satellite sensors and NDS ground data processing and distribution hardware and software as well as mission operational and technical program support to sustain the NDS capability on GPS and GEO satellites; funding is sent by Military Interdepartmental Purchase Request (MIPR) from DoD and Department of Energy (DoE) to Sandia and Los Alamos National Laboratories and other agencies on existing DOE contracts. Funding is MIPR'd to host satellite program office.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: May 2009

BUDGET ACTIVITY: 07 Operational System Development

PE NUMBER AND TITLE: 0305913F NUDET Detection System (Space)

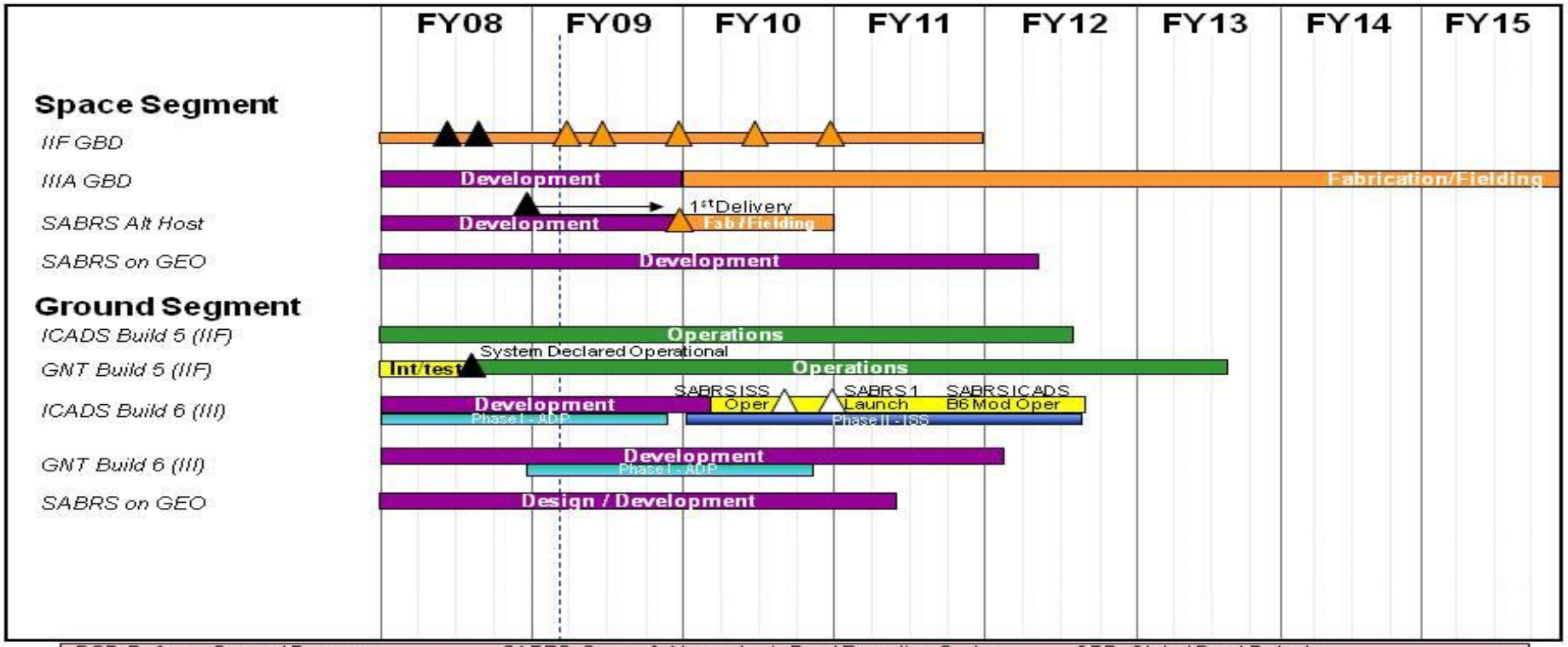
PROJECT NUMBER AND TITLE: 2808 Nuc Detonation Det Sys (sensors)

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2008 Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
ICADS and GNT	MIPR	Department of Energy; Sandia National Laboratory, Albuquerque NM	174.330	22.567	Jan-08	21.170	Nov-08	36.911	Nov-09	Continuing	TBD	
On-orbit sensor testing	MIPR	Department of Energy; Los Alamos National Laboratory, Los Alamos NM, Sandia National Laboratory, Albuquerque NM	19.881	1.884	Jan-08	2.130	Nov-08	2.465	Nov-09	Continuing	TBD	
SABRS	MIPR	Classified	31.550	5.200	Jan-08	8.376	Nov-08	34.400	Nov-09	Continuing	TBD	
Completed NDS Development Efforts	Various	Various	13.062	0.000		0.000		0.000		0.000	13.062	
Subtotal Product Development			238.823	29.651		31.676		73.776		Continuing	TBD	0.000
Remarks:												
(U) Support												
Mission Support	Various	Various	17.294	3.991	Jan-08	4.168	Nov-08	5.225	Nov-09	Continuing	TBD	
Technical Support	Various	Various	22.625	1.826	Jan-08	2.236	Nov-08	2.348	Nov-09	Continuing	TBD	
System Engeering & Integration (SE&I)	Various	El Segundo, CA	0.000	2.647	Jan-08	2.773	Nov-08	2.419	Nov-09	Continuing	TBD	
Completed NDS Support Efforts	Various	Various	5.185	0.000		0.000		0.000		0.000	5.185	
Subtotal Support			45.104	8.464		9.177		9.992		Continuing	TBD	0.000
Remarks:												
(U) Test & Evaluation												
17th TS, Schriever AFB CO	Various		0.475	0.164	Jan-08	0.249	Nov-08	0.253	Nov-09	Continuing	TBD	
Subtotal Test & Evaluation			0.475	0.164		0.249		0.253		Continuing	TBD	0.000
Remarks:												
(U) Management												
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												

Exhibit R-3, RDT&E Project Cost Analysis			DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0305913F NUDET Detection System (Space)	PROJECT NUMBER AND TITLE: 2808 Nuc Detonation Det Sys (sensors)	

(U) Total Cost	284.402	38.279	41.102	84.021	Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile		DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0305913F NUDET Detection System (Space)	PROJECT NUMBER AND TITLE: 2808 Nuc Detonation Det Sys (sensors)



DSP: Defense Support Program
SAVE: SABRS Validation Experiment
ICADS: Integrated Correlation & Display System
SABRS: Space & Atmospheric Burst Reporting System
GNT: Ground NDS Terminal
GBD: Global Burst Detector
SBIRS: Space Based InfraRed Systems
ISS: Interim Support System

Exhibit R-4a, RDT&E Schedule Detail		DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0305913F NUDET Detection System (Space)	PROJECT NUMBER AND TITLE: 2808 Nuc Detonation Det Sys (sensors)

(U) Schedule Profile	FY 2008	FY 2009	FY 2010
(U) GNT IIF Operational	3Q		
(U) SABRS on Alt Host development complete		4Q	
(U) ICADS Build 6 Install			1Q
(U) ICADS Build 6 Test			3Q