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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				PE 0305913F: <i>NUDET Detection System (Space)</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	78.140	72.199	81.989	-	81.989	79.325	60.344	49.309	50.200	Continuing	Continuing
672808: <i>Nuc Detonation Det Sys (sensors)</i>	78.140	72.199	81.989	-	81.989	79.325	60.344	49.309	50.200	Continuing	Continuing

Note

The program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total \$0.556M in FY12.

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 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, neutron and gamma rays) on Defense Support Program (DSP) satellites and Space and Atmospheric Burst (SABRS) systems on Geostationary (GEO) satellites. The ground segment includes the Integrated Correlation and Display System (ICADS), Universal Ground NDS Terminals (UGNT).

This NDS Program Element (PE) includes research and development, systems engineering, testing and fielding of ICADS, UGNT and the integration of SABRS sensors on GEO satellites. ICADS provides two fixed ground receiving stations and UGNT provides the survivable ground receiving station for sensor data from GPS satellites. UGNT, also known as GNT Build 6, is a transportable set of satellite ground station equipment and software. The UGNT will receive and processes data from sensors on GPS and DSP satellites and disseminates NUDET reports to users. SABRS is the next generation neutron/gamma sensor payload that will be hosted on two classified GEO satellites 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 all NDS sensor research and production .

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

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B. Program Change Summary (\$ in Millions)	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>
Previous President's Budget	83.846	72.199	82.818	-	82.818
Current President's Budget	78.140	72.199	81.989	-	81.989
Total Adjustments	-5.706	-	-0.829	-	-0.829
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-0.351	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-5.355	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.829	-	-0.829

Change Summary Explanation

No significant program changes.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force									DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0305913F: NUDET Detection System (Space)				PROJECT 672808: Nuc Detonation Det Sys (sensors)			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
672808: Nuc Detonation Det Sys (sensors)	78.140	72.199	81.989	-	81.989	79.325	60.344	49.309	50.200	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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 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, neutron and gamma rays) on Defense Support Program (DSP) satellites and Space and Atmospheric Burst (SABRS) systems on Geostationary (GEO) satellites. The ground segment includes the Integrated Correlation and Display System (ICADS), Universal Ground NDS Terminals (UGNT).

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

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: NDS	78.140	72.199	81.989	-	81.989
Description: Research and development, testing and fielding of ICADS, GNT, UGNT and the integration of SABRS on GEO satellites.					
FY 2010 Accomplishments:					

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
ICADS and GNT development, NDS sensor on-orbit qualification testing, SABRS on GEO host development and integration, SE&I and technical support. FY 2011 Plans: ICADS, and GNT development, NDS sensor on-orbit qualification testing, SABRS on GEO host development and integration, SE&I and technical support. Begin development of hardware and software for UGNT. FY 2012 Base Plans: Continue ICADS and UGNT development, NDS sensor on-orbit qualification testing, SABRS on GEO host development and integration, SE&I and technical support and program technical support. FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	78.140	72.199	81.989	-	81.989

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• Related Activities:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• OPAF PE 0305913F: <i>NDS</i>	15.389	5.926	4.863	0.000	4.863	5.564	5.915	6.157	6.267	Continuing	Continuing

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 the host satellite Designated Program Office (DPO).	

E. Performance Metrics	
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force										DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0305913F: NUDET Detection System (Space)				PROJECT 672808: Nuc Detonation Det Sys (sensors)				
Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ICADS and GNT	MIPR	Sandia National Laboratory:Albuquerque, NM	249.097	31.125	Nov 2010	26.374	Nov 2011	-		26.374	Continuing	Continuing	0.000
UGNT	MIPR	Various:Albuquerque, NM	-	12.700	Nov 2010	24.744	Nov 2011	-		24.744	Continuing	Continuing	0.000
SABRS	MIPR	Various:Classified,	79.526	16.500	Nov 2010	12.800	Nov 2011	-		12.800	Continuing	Continuing	0.000
Completed NDS Development Efforts	Various	Various:Various,	13.062	-		-		-		-	0.000	13.062	0.000
Subtotal			341.685	60.325		63.918		-		63.918			0.000
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Support	Various	Various:Various,	32.832	6.048	Nov 2010	11.137	Nov 2011	-		11.137	Continuing	Continuing	0.000
Technical Support (FFRDC)	Various	Aerospace:El Segundo, CA	29.036	2.541	Nov 2010	2.588	Nov 2011	-		2.588	Continuing	Continuing	0.000
System Engeering & Integration (SE&I)	Various	MITRE:El Segundo, CA	5.684	0.564	Nov 2010	0.588	Nov 2011	-		0.588	Continuing	Continuing	0.000
Completed NDS Support Efforts	Various	Various:Various,	5.185	-		-		-		-	0.000	5.185	0.000
Subtotal			72.737	9.153		14.313		-		14.313			0.000
Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing	PO	17th Test Squadron:Schriever AFB, CO	1.141	0.257	Nov 2010	0.259	Nov 2011	-		0.259	Continuing	Continuing	0.000
On-orbit Sensor Testing	MIPR		26.360	2.464	Nov 2010	3.499	Nov 2011	-		3.499	Continuing	Continuing	0.000

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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		Various:Albuquerque, NM											
Subtotal			27.501	2.721		3.758		-		3.758			0.000

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
			-	-		-		-		-	0.000	0.000	0.000
Subtotal			-	-		-		-		-			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	441.923	72.199		81.989		-		81.989			0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force			DATE: February 2011
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Space & Atmospheric Burst Reporting System (SABRS) on Alt Host 1 Complete	1	2011	3	2012
Integrated Correlation & Display System (ICADS) Build 6 Installation	1	2011	3	2011
Development and integration of SABRS on Alt Host 2	3	2011	3	2012
Development of Universal Ground NDS Terminal (UGNT)	1	2011	2	2013
Deliver final 2 Global Burst Detectors (GBD) for GPS IIF	3	2011	1	2012
ICADS SABRS Build 6 Transition to Operations	1	2012	1	2012
ICADS Build 6 Test	2	2012	3	2012

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