

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

07 - Operational System Development

0305913F NUDET Detection System (Space)

2808

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
2808 Nuc Detonation Det Sys (sensors)	21,420	20,865	35,834	35,491	32,696	28,069	28,952	35,036	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**

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 USSPACECOM (Integrated Tactical Warning and Attack Assessment (ITW/AA)), USSTRATCOM (Nuclear Force Management), and AFTAC (Treaty Monitoring). NDS consists of space and ground segments. The space segment consists of NUDET detection sensors (optical, x-ray, dosimeters and EMP) on Global Positioning System (GPS) satellites, and Defense Support Program (DSP) satellites (neutrons and gamma rays). The ground segment includes the Integrated Correlation and Display System (ICADS) and the Ground NDS Terminals (GNT).

This NDS program element funds Research and Development of ICADS, GNT, and NDS analysis payload (NAP). ICADS provides a fixed ground receiving station. GNT provides a survivable ground receiving station. NAP improves existing NDS capability and will be integrated onto GPS Block IIR satellites 13-21. The NDS community, as a result of the NDS National Review, moved funding for the EMP sensor research and production to DOE and integration funding for the first 12 Block IIF satellites to GPS Space and Control (PE 0305165F), with ground segment development remaining in the NDS PE.

(U) **FY 2002 (\$ in Thousands)**

(U) \$0	Accomplishments/Planned Program
(U) \$16,045	Continued ICADS and GNT development
(U) \$1,244	Continued NDS sensor on-orbit qualification
(U) \$843	Continued Mission Support and system studies
(U) \$3,288	Continued Technical Support
(U) \$21,420	Total

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07 - Operational System Development**0305913F NUDET Detection System (Space)****2808**(U) **A. Mission Description Continued**(U) FY 2003 (\$ in Thousands)

(U)	\$0	Accomplishments/Planned Program
(U)	\$15,183	Continue ICADS and GNT development
(U)	\$1,189	Continue NDS sensor on-orbit qualification
(U)	\$1,100	Continue Mission Support and system studies
(U)	\$3,393	Continue Technical Support
(U)	\$20,865	Total

(U) FY 2004 (\$ in Thousands)

(U)	\$0	Accomplishments/Planned Program
(U)	\$27,698	Continue ICADS and GNT development
(U)	\$2,604	Continue NDS sensor on-orbit qualification
(U)	\$1,860	Continue Mission Support and system studies
(U)	\$3,672	Continue Technical support
(U)	\$35,834	Total

(U) **B. Budget Activity Justification**

This program is in Budget Activity 7 - Operational System Development because it is a post-Milestone III program.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	21,525	21,180	25,944	TBD
(U) Appropriated Value	21,823	21,180		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-403	-224		
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram		-91		
d. Below Threshold Reprogram				
e. Rescissions				
(U) Adjustments to Budget Years Since FY 2003 PBR			9,890	

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BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development					0305913F NUDET Detection System (Space)					2808	
(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u>											
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>						
(U)	Current Budget Submit/FY 2004 PBR	21,420	20,865	35,834	TBD						
(U) <u>Significant Program Changes:</u>											
FY04 adjustments include; \$3,580K to add DSP to NDS Ground processing; \$6,310K increase for ICADS IIF software development.											
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>											
		<u>FY 2002</u>	<u>FY 2003</u>	<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>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)	AF RDT&E										
(U)	Other APPN										
(U)	Operations & Maintenance, (PE 0305913F, BA 1, Operating Forces	8,674	8,666	8,123	8,842	9,722	10,550	10,461	10,578	Continuing	TBD
(U)	Missile Procurement, (PE 0305913F, BA 5 - Space and Other Support, P-21)	18,211	0	0	0	0	0	0	0	0	18,933
(U)	Other Procurement, (PE 0305913F, BA 3 - Electronics and Telecom Equipment, P-63)	8,372	7,860	10,786	7,594	9,359	12,299	15,328	26,367	Continuing	TBD
(U)	Related RDT&E:										
(U)	PE 0305165F, NAVSTAR GPS (Space/Ground Segment)										
(U)	PE 0305911F, Defense Support Program										
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2808**(U) E. Acquisition Strategy**

The NDS Acquisition Strategy is to develop and procure components to sustain the U. S. NDS capability for the GPS Block IIR, IIF, and future generation satellites. Funding is sent by Military Interdepartmental Purchase Request (MIPR) from DoD and Department of Energy (DoE) to Sandia and Los Alamos National Laboratories on existing DOE contracts.

(U) F. Schedule Profile

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) GPS IIR O&M (S/W Modifications)			*		*		X		X		X	
(U) ICADS Operational Strings move to SBIRS Facility		*			*		X		X		X	
(U) GPS IIF Use Case Model Review		*	*		*		X		X		X	
(U) GPS IIF System Specification Review		*					X					
(U) GPS IIF Phase Review	*		*		*		X		X		X	

* = Completed Event; X = Planned Event

System Specification Review moved from FY03 2nd Qtr to 3rd Qtr -- User coordination will take 1 extra month

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003		
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development					0305913F NUDET Detection System (Space)				2808	
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
					FY 2002		FY 2003		FY 2004	
(U)	ICADS and GNT development				16,045		15,183		27,698	
(U)	NDS sensor on-orbit qualification				1,244		1,189		2,604	
(U)	Mission support requirements and system studies				843		1,100		1,860	
(U)	Technical support				3,288		3,393		3,672	
(U)	Total				21,420		20,865		35,834	
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
<u>Contractor or</u>		<u>Contract</u>								
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Sandia National Labs	MIPR	Oct 94			52,774	15,898	15,018	27,496	Continuing	TBD
GNT: Intermetrics	CPFF	Dec 93	1,262	1,262	1,262	0	0	0	0	1,262
SAIC (Intg/Grd Supt)	Time/Matls	Dec 95			4,787	0	0	0	0	4,787
Combined GOSC/NAP:	FFP	Oct 97	3,633	3,633	6,166	0	0	0	0	6,166
Lockheed Martin										
SAIC	Time/Matl	Dec 97	432	432	432	0	0	0	0	432
W-Sensor: SRI (Stanford	CPFF	Aug 94	415	415	415	0	0	0	0	415
Rsch Inst.)										
Los Alamos Natl Lab	MIPR	Jan 96			5,386	1,244	1,189	2,604	Continuing	TBD
<u>Support and Management Organizations</u>										
Mission Support	Multiple	N/A			3,979	843	1,100	1,860	Continuing	TBD
Prog Contractual Spt.	Multiple	Various	1,534	1,534	5,185	0	0	0	0	5,185
Technical Support	Multiple	Various	N/A	N/A	1,144	3,288	3,393	3,672	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
17th TS, Schriever AFB CO			9	9	9	147	165	202	Continuing	TBD
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development				0305913F NUDET Detection System (Space)			2808		
(U) <u>Government Furnished Property:</u>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
N/A									
<u>Support and Management Property</u>									
N/A									
<u>Test and Evaluation Property</u>									
N/A									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				71,222	17,142	16,207	30,100	TBD	TBD
Subtotal Support and Management				10,308	4,131	4,493	5,532	TBD	TBD
Subtotal Test and Evaluation				9	147	165	202	TBD	TBD
Total Project				81,539	21,420	20,865	35,834	TBD	TBD

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