

UNCLASSIFIED

PE NUMBER: 0305178F
 PE TITLE: National Polar-Orbiting Op Env Satellite

Exhibit R-2, RDT&E Budget Item Justification	DATE May 2009
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BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0305178F National Polar-Orbiting Op Env Satellite
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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	330.972	287.532	396.641	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
4056 National Polar-orbiting Operational Env. Sat. Syst.	330.972	287.532	396.641	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

This table represents the RDT&E portion of the Air Force share of the NPOESS program, which is funded 50/50 by the Department of Defense and Department of Commerce. Total program funding is listed in section C, Other Program Funding Summary. In FY05, Project 4056, PE 0603434F NPOESS, BA 04, funding was transferred to Project 4056, PE 0305178 NPOESS, BA 04 Advanced Component Development and Prototypes.

(U) A. Mission Description and Budget Item Justification

Presidential Decision Directive/National Science and Technology Council-2 (PDD/NSTC-2) (May 1994) directs the Department of Defense (DoD), Department of Commerce (DOC), and the National Aeronautics and Space Administration (NASA) to establish a converged national polar-orbiting weather satellite program. The converged program, the National Polar-orbiting Operational Environmental Satellite System (NPOESS), combines the follow-on to DoD's Defense Meteorological Satellite Program (DMSP) and the DOC's Polar-orbiting Operational Environmental Satellite (POES) program. The Air Force (DoD) and NOAA (DOC) fund NPOESS 50/50 (by year) at the total program level. Note: part of the Air Force share also resides in the launch vehicle PE MPAF 0305953F. However, apportionment of DoD and DOC funds to specific activities does not have to be 50/50 and is at the program office's discretion.

The converged program will be the nation's primary source of global weather and environmental data for operational military and civil use. It will provide visible and infrared cloud cover imagery and other atmospheric, oceanographic, terrestrial, and space environmental information. NPOESS will provide a constellation of satellites in sun synchronous, 450 nautical mile (NM) polar-orbits (sun synchronous means the satellites cross the equator at the same local sun time on each of their 14 orbits/day).

This PE has been consolidated with PE 0603434F, beginning in FY05. The program remains in BA 04 because near-term efforts focus on Engineering and Manufacturing Development with the PE 0603434F portion of the contract.

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04 Advanced Component Development and Prototypes (ACD&P)

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Previous President's Budget	332.525	289.469	359.584
(U) Current PBR/President's Budget	330.972	287.532	396.641
(U) Total Adjustments	-1.553	-1.937	
(U) Congressional Program Reductions		-1.155	
Congressional Rescissions		-0.782	
Congressional Increases			
Reprogrammings	-1.553		
SBIR/STTR Transfer			

(U) **Significant Program Changes:**

FY08: \$1.553M reprogrammed for higher priorities.

FY10 changes: Additional funds were added to support the NPOESS program restructure activities [per the July 2008 Cost Analysis Improvement Group (CAIG) cost assessment] and the increased costs associated with the sensor development effort during the Engineering and Manufacturing Development (EMD) phase of the program.

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BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)				PE NUMBER AND TITLE 0305178F National Polar-Orbiting Op Env Satellite				PROJECT NUMBER AND TITLE 4056 National Polar-orbiting Operational Env. Sat. Syst.		
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
4056 National Polar-orbiting Operational Env. Sat. Syst.	330.972	287.532	396.641	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		

This table represents the RDT&E portion of the Air Force share of the NPOESS program, which is funded 50/50 by the Department of Defense and Department of Commerce. Total program funding is listed in section C, Other Program Funding Summary. In FY2005, Project 4056, PE 0603434F NPOESS, BA 04, funding was transferred to Project 4056, PE 0305178F NPOESS, BA 04 Advanced Component Development and Prototypes.

(U) A. Mission Description and Budget Item Justification

Presidential Decision Directive/National Science and Technology Council-2 (PDD/NSTC-2) (May 1994) directs the Department of Defense (DoD), Department of Commerce (DOC), and the National Aeronautics and Space Administration (NASA) to establish a converged national polar-orbiting weather satellite program. The converged program, the National Polar-orbiting Operational Environmental Satellite System (NPOESS), combines the follow-on to DoD's Defense Meteorological Satellite Program (DMSP) and the DOC's Polar-orbiting Operational Environmental Satellite (POES) program. The Air Force (DoD) and NOAA (DOC) fund NPOESS 50/50 (by year) at the total program level. Note: part of the Air Force share also resides in the launch vehicle PE MPAF 0305953F. However, apportionment of DoD and DOC funds to specific activities does not have to be 50/50 and is at the program office's discretion.

The converged program will be the nation's primary source of global weather and environmental data for operational military and civil use. It will provide visible and infrared cloud cover imagery and other atmospheric, oceanographic, terrestrial, and space environmental information. NPOESS will provide a constellation of satellites in sun synchronous, 450 nautical mile (NM) polar-orbits (sun synchronous means the satellites cross the equator at the same local sun time on each of their 14 orbits/day).

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(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Continue system development effort including ground and space system development, design and fabrication for risk reduction missions (includes GFE Microwave Imager and Space Environmental Monitoring development).	319.625	278.160	394.641
(U) Continue DoD funded program office support for system development efforts.	1.105	1.061	1.000
(U) Continue Launch and Mission Integration Phase II Studies	1.374	1.201	1.000
(U) Technical analysis/resolution of anomalies/failures, Independent Verification and Validation (IV&V) and risk reduction of NPOESS sensors and payload program			
(U) SBIR Transfer	8.868	7.110	
(U) Total Cost	330.972	287.532	396.641

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BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0305178F National Polar-Orbiting Op Env Satellite	PROJECT NUMBER AND TITLE 4056 National Polar-orbiting Operational Env. Sat. Syst.
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(U) **C. Other Program Funding Summary (\$ in Millions)**

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) Related NOAA PAC funding: Polar Convergence*	330.969	287.985	381.794	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
(U) Related NPOESS RDT&E: PE 0603434F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	922.221
(U) NPOESS RDT&E: PE 0305178F	330.972	287.532	396.641	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
(U) Related NPOESS MPAF: PE 0305178F	0.000	0.000	3.900	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
(U) Related EELV MPAF: PE 0305953F**	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
(U) Other operations and sustainment funding***	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
(U) Total NPOESS Air Force	330.972	287.532	400.541	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

* National Oceanic and Atmospheric Administration Procurement, Acquisition, and Construction (NOAA PAC) appropriation. Total NOAA total cost include prior-year amount of \$1,881.0M. The NOAA funding profile represents the FY09 PB position. A revised FY10 NOAA funding position was not finalized at the time the Air Force submitted the FY10 budget. The Air Force (DoD) and NOAA (DOC) fund NPOESS 50/50. AF total cost includes prior-year amount of \$970.8M in PE 0305178F and \$922.2M in PE 0603434F. Total NPOESS program cost is the sum of NPOESS RDT&E AF PE 0603434F/AF PE 0305178F, MPAF PE 0305178F, NPOESS portion of Evolved Expendable Launch Vehicle (EELV) MPAF PE 0305953F, and Polar Convergence NOAA PAC. The actual share of funding for specific program expenses is determined in the year of execution based on the availability of DoD and DOC funds.

** NPOESS launch vehicle funding is budgeted entirely in EELV PE 0305953F and represents a portion of the DoD's 50% funding contribution.

*** Operations and Sustainment (O&S) after Initial Operational Capability (IOC) may be funded as either Operations & Maintenance AF, NOAA Operations Research and Facilities (ORF) or other appropriations depending on the concept selected for post IOC O&S. Prior to IOC, O&S funding will be through a combination of RDT&E (AF) and NOAA PAC. These funds will be transferred to the specific appropriation as the budget enters the FYDP.

(U) **D. Acquisition Strategy**

Accomplish substantial risk reduction with a focus on developing payloads, enhancing data utility to users, and protecting maximum flexibility to ensure the best overall system design by pursuing a significant investment in the development and on-orbit testing of selected payload sensors; the first two satellites will be incrementally funded with RDT&E funding. In addition, the Nunn-McCurdy certified production units (C-3 and C-4) were assumed to be incrementally funded by the certifying official (USD (AT&L)).

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Exhibit R-3, RDT&E Project Cost Analysis

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04 Advanced Component Development and Prototypes (ACD&P)				0305178F National Polar-Orbiting Op Env Satellite					4056 National Polar-orbiting Operational Env. Sat. Syst.			
(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) <u>Product Development</u>												
Northrop Grumman (system development)	CPAF	Redondo Beach, CA	931.870	308.599	Oct-07	253.900	Oct-08	349.193	Oct-09	Continuing	TBD	
GFE Sensor Development	Various	Various		9.363	Aug-08	24.260	Dec-08	45.448	Dec-09	Continuing	TBD	
Controlled Cryptographic Items	Gov. Orgs.	Lackland AFB		1.663	Aug-08						1.663	
Government Led Studies	Gov. Orgs.	Various	7.249								7.249	
Launch Mission Integration Studies	Gov. Orgs.	Various	3.917	1.374	Mar-08	1.201	Mar-09	1.000	Mar-10	Continuing	TBD	
Small Business Innovative Reseach			24.852	8.868	Apr-08	7.110					40.830	
Subtotal Product Development			967.888	329.867		286.471		395.641		Continuing	TBD	0.000
Remarks:	FY05 funding consolidated in PE 0305178F. Prior year costs included in PE 0603434F.											
(U) <u>Support</u>												
Integrated Program Office (IPO) Support	Various	Program Office, Silver Spring, MD	2.961	1.105	Oct-06	1.061	Oct-08	1.000	Oct-09	Continuing	TBD	
Subtotal Support			2.961	1.105		1.061		1.000		Continuing	TBD	0.000
Remarks:	FY05 funding consolidated in PE 0305178F. Prior year costs included in PE 0603434F.											
(U) <u>Test & Evaluation</u>												
Included in IPO Support											0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Management</u>												
Included in IPO Support											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			970.849	330.972		287.532		396.641		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile

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

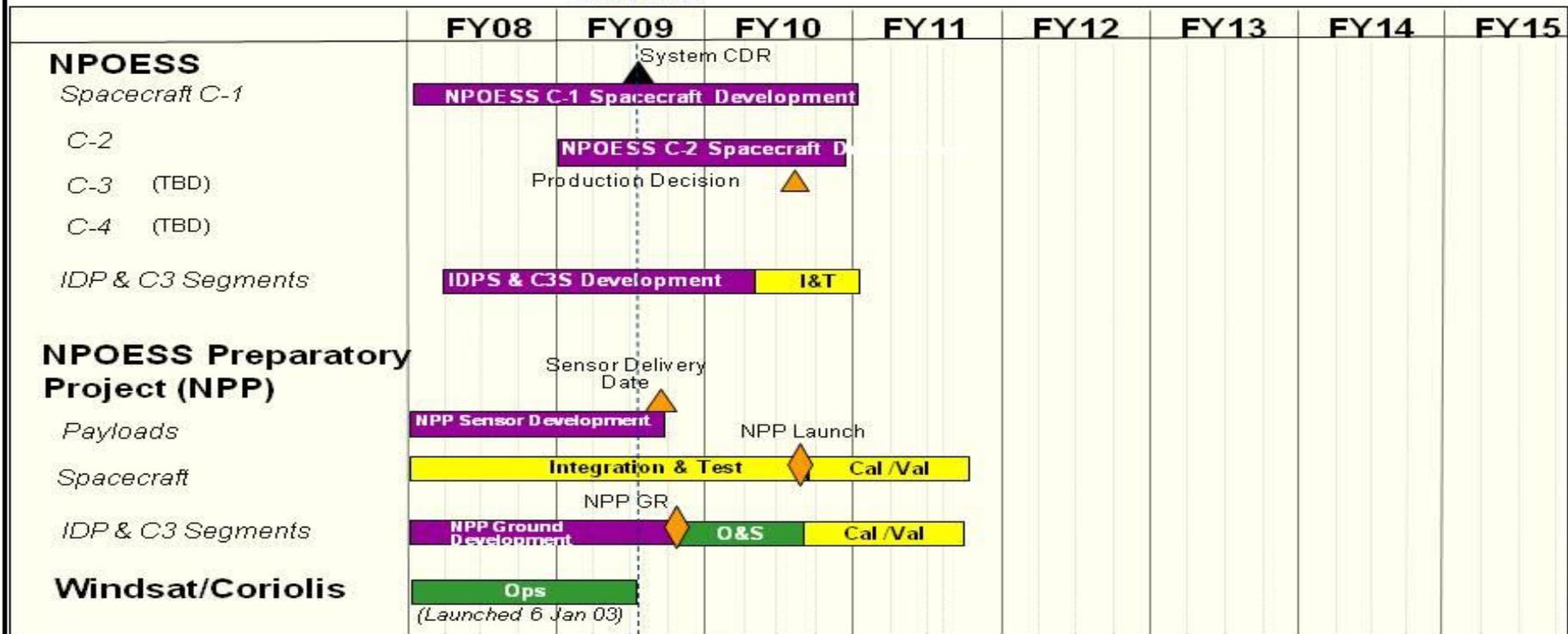
PE NUMBER AND TITLE
0305178F National Polar-Orbiting Op
Env Satellite

PROJECT NUMBER AND TITLE
4056 National Polar-orbiting
Operational Env. Sat. Syst.



Program Schedule

Time now



Production / fielding
 Design / development
 Integration / test
 Operations / sustainment
 Key events

Exhibit R-4a, RDT&E Schedule Detail

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PE NUMBER AND TITLE

0305178F National Polar-Orbiting Op
Env Satellite

PROJECT NUMBER AND TITLE

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Operational Env. Sat. Syst.

(U) Schedule Profile

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Cross-track Infrared Sounder (CrIS) for NPP		2Q	
(U) Ozone Mapping and Profiler Suite (OMPS) for NPP	4Q		
(U) Visible Infrared Imager Radiometer Suite (VIIRS) for NPP		3Q	
(U) NPP Ground Ready		4Q	
(U) NPOESS System Critical Design Review		3Q	
(U) NPP Launch			3Q

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