PE NUMBER: 0305160F
PE TITLE: Defense Meteorological Satellite Program

Exhibit R-2, RDT&E Budget Item Justification

DATE: February 2005

BUDGET ACTIVITY: 07 Operational System Development

PE NUMBER AND TITLE: 0305160F Defense Meteorological Satellite Program

	Cost ($ in Millions)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
	Total Program Element (PE) Cost	10.355	0.000	3.908	0.958	0.000	0.000	0.000	0.000	0.000	912.232
4758	DMSP Program	10.355	0.000	3.908	0.958	0.000	0.000	0.000	0.000	0.000	912.232

(U) A. Mission Description and Budget Item Justification

The Defense Meteorological Satellite Program (DMSP) is a fully operational program supporting a broad range of strategic and tactical national security users that require timely and accurate global weather information. DMSP is a critically important tool enabling commanders to effectively employ weapon systems and protect DoD resources in any operational battlespace. DMSP is DoD's only assured source of global weather data providing visible and infrared cloud cover imagery (1/3 nautical miles (nm) constant resolution) and other meteorological, oceanographic, land surface, and space environmental data. At least two satellites (one in each of two orbit planes) are required in sun-synchronous, 450nm polar-orbit at all times (sun-synchronous means the satellites cross the equator at the same local sun time on each of their 14 orbits/day). DMSP F-15 was the first Block 5D3 spacecraft (with legacy sensors) and was launched on a Titan-II booster in Dec 99. Premature attitude determination gyro failures on DMSP F-15 exposed a fleet-wide life-limiting problem with the attitude determination gyros that will fly on all remaining DMSP satellites. Fully redundant Mini-Inertial Measurement Units (MIMUs) are being integrated to DMSPs F-17 through F-20 to reduce risk of mission failures due to gyro problems. DMSP F-16 was launched in Oct 03 aboard the last Titan II booster and is the first 'full-up' Block 5D3 (spacecraft bus plus sensors). Operational imperatives drove a need to launch DMSP F-16 before it could be integrated with a MIMU to provide attitude determination system redundancy. DMSP F-16 flies a new series of highly capable microwave and ultraviolet sensors to perform comprehensive environmental sensing. A number of systemic problems were identified during those sensors' calibration and validation period that will be partially or fully addressed prior to the launch of all remaining satellites. DMSPs F-17 through F-20 will launch on Evolved Expendable Launch Vehicle (EELV) boosters. The Spacecraft Integration & Test (SIT) contract for spacecraft support and the Independent Verification and Validation contract for test flight software were both awarded in Jun 02. DMSP's consolidated sensors support and services follow-on contract was awarded in Nov 04. DMSP F-17 launch is planned for no earlier than 25 Nov 05.

This program is in Budget Activity 7, Operational Systems Development, because it supports the current operational DMSP constellation.

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

		FY 2004	FY 2005	FY 2006	FY 2007
(U)	Previous President's Budget	0.907	0.000	0.000	0.000
(U)	Current PBR/President's Budget	10.355	0.000	3.908	0.958
(U)	Total Adjustments	9.448	0.000		
(U)	Congressional Program Reductions	-0.011			
	Congressional Rescissions				
	Congressional Increases				
	Reprogrammings	9.459			
	SBIR/STTR Transfer				
(U)	Significant Program Changes:				

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2005
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305160F Defense Meteorological Satellite Program

Funding: Funding added to FY04 to complete calibration and validation of DMSP F-16's Ultraviolet and Microwave sensors. Funding also added to FY04, FY06 and FY07 to complete DMSP F-18 to Atlas V EELV booster mission unique interface design.

Exhibit R-2a, RDT&E Project Justification

DATE: February 2005

BUDGET ACTIVITY: 07 Operational System Development

PE NUMBER AND TITLE: 0305160F Defense Meteorological Satellite Program

PROJECT NUMBER AND TITLE: 4758 DMSP Program

Cost ($ in Millions)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
4758 DMSP Program	10.355	0.000	3.908	0.958	0.000	0.000	0.000	0.000	0.000	912.232
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The Defense Meteorological Satellite Program (DMSP) is a fully operational program supporting a broad range of strategic and tactical national security users that require timely and accurate global weather information. DMSP is a critically important tool enabling commanders to effectively employ weapon systems and protect DoD resources in any operational battlespace. DMSP is DoD's only assured source of global weather data providing visible and infrared cloud cover imagery (1/3 nautical miles (nm) constant resolution) and other meteorological, oceanographic, land surface, and space environmental data. At least two satellites (one in each of two orbit planes) are required in sun-synchronous, 450nm polar-orbit at all times (sun-synchronous means the satellites cross the equator at the same local sun time on each of their 14 orbits/day). DMSP F-15 was the first Block 5D3 spacecraft (with legacy sensors) and was launched on a Titan-II booster in Dec 99. Premature attitude determination gyro failures on DMSP F-15 exposed a fleet-wide life-limiting problem with the attitude determination gyros that will fly on all remaining DMSP satellites. Fully redundant Mini-Inertial Measurement Units (MIMUs) are being integrated to DMSPs F-17 through F-20 to reduce risk of mission failures due to gyro problems. DMSP F-16 was launched in Oct 03 aboard the last Titan II booster and is the first 'full-up' Block 5D3 (spacecraft bus plus sensors). Operational imperatives drove a need to launch DMSP F-16 before it could be integrated with a MIMU to provide attitude determination system redundancy. DMSP F-16 flies a new series of highly capable microwave and ultraviolet sensors to perform comprehensive environmental sensing. A number of systemic problems were identified during those sensors' calibration and validation period that will be partially or fully addressed prior to the launch of all remaining satellites. DMSPs F-17 through F-20 will launch on Evolved Expendable Launch Vehicle (EELV) boosters. The Spacecraft Integration & Test (SIT) contract for spacecraft support and the Independent Verification and Validation contract for test flight software were both awarded in Jun 02. DMSP's consolidated sensors support and services follow-on contract was awarded in Nov 04. DMSP F-17 launch is planned for no earlier than 25 Nov 05.

This program is in Budget Activity 7, Operational Systems Development, because it supports the current operational DMSP constellation.

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007
(U) Continue system integration and test, studies, and related support activities	1.243		0.650	
(U) Continue EELV interface design (transition to EELV)	5.578		3.258	0.958
(U) Complete DMSP F-16 sensor calibration and validation	3.534			
(U) Total Cost	10.355	0.000	3.908	0.958

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

	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
(U) AF RDT&E										
(U) Other APPN										
(U) Missile Procurement/PE	65.455	73.531	67.175	70.500	82.541	77.792	78.400	79.449	71.043	2,832.230

Exhibit R-2a, RDT&E Project Justification		DATE February 2005
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0305160F Defense Meteorological Satellite Program**	PROJECT NUMBER AND TITLE **4758 DMSP Program**

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

0305160F (P-24)

Related RDT&E:

PE 0305178F, National Polar-orbiting Operational Environmental Satellite System (NPOESS)

PE 0305160N, Navy Meteorological and Oceanographic Sensor-Space (METOC) (provides funds for Navy unique studies)

(U) D. Acquisition Strategy

Support and services contracts for the spacecraft, sensors, ground systems, and supporting software have been awarded to various contractors. No major milestone decisions remain. Production of DMSP satellites has been completed. Remaining effort is to continue spacecraft and sensor integration and test and successfully launch remaining DMSP satellites.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: **February 2005**

BUDGET ACTIVITY: **07 Operational System Development**

PE NUMBER AND TITLE: **0305160F Defense Meteorological Satellite Program**

PROJECT NUMBER AND TITLE: **4758 DMSP Program**

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2004 Cost	FY 2004 Cost	FY 2004 Award Date	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														
Lockheed -Martin	SS/CPAF		3.764									0.000	3.764	
Lockheed-Martin	SS/CPAF		11.064										11.064	
Northrop-Grumman (CSS&S)	SS/CPAF		12.596	0.612									13.208	
Lockheed-Martin	C/CPAF		39.513									0.000	39.513	
Lockheed-Martin	C/CPAF		2.058	4.567				2.831	Oct-05	0.958	Oct-06		10.414	
Harris (SSMIS/STT SW)	C/CPAF		8.617									0.000	8.617	
Det 11/GSA (Mark IVB P3I)	MIPR		2.986									0.000	2.986	
Lockheed-Martin (Titan II Msn Unique Studies)	SS/CPAF		5.953									0.000	5.953	
Boeing (EELV Msn Unique Studies & Services)	SS/CPAF		1.557	1.010				1.077	Oct-05			0.000	3.644	
Aerojet	SS/CPAF		2.530									0.000	2.530	
Aerojet	C/CPAF/FFP		85.979									0.000	85.979	
Aerojet (SSM/TW/IS S&S & Model + SSMIS)	SS/CPAF		2.183									0.000	2.183	
Raytheon, formerly Hughes (SSMI Spt & Svc)	SS/CPFF		0.236									0.000	0.236	
AFRL	MIPR/PD		5.289	0.549								0.000	5.838	
NRL	MIPR/Var		14.051	1.579								0.000	15.630	
APL	MIPR/Var		3.538	0.794								0.000	4.332	
SMC (Det 3 SSSG/NPOESS)	FCA/MIPR		2.506									0.000	2.506	
Sandia	MIPR/Var		0.820									0.000	0.820	
NOAA			0.034									0.000	0.034	
Other	Various		6.671									0.000	6.671	
Historical Satellite Blocks	Various		583.786										583.786	
NONE													0.000	
Subtotal Product Development			795.731	9.111		0.000		3.908		0.958		0.000	809.708	0.000
Remarks:														
(U) Support														
FFRDC	AF 277		25.623										25.623	
PRC/BD Systems/TASS	C/CPAF		9.515									0.000	9.515	
Program Mgmt			22.720									0.000	22.720	
Litigation Support			1.809									0.000	1.809	
Other	Various		3.083	1.244								0.000	4.327	
Historical Satellite Blocks	Various		38.530									0.000	38.530	
NONE													0.000	
Subtotal Support			101.280	1.244		0.000		0.000		0.000		0.000	102.524	0.000

Exhibit R-3, RDT&E Project Cost Analysis

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
07 Operational System Development	**0305160F Defense Meteorological Satellite Program**	**4758 DMSP Program**

	Remarks:								
(U)	Test & Evaluation								
	NONE							0.000	
	NONE							0.000	
	Subtotal Test & Evaluation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Remarks:								
(U)	Management								
								0.000	
	Subtotal Management	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Remarks:								
(U)	Total Cost	897.011	10.355	0.000	3.908	0.958	0.000	912.232	0.000

Exhibit R-4, RDT&E Schedule Profile		DATE February 2005
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305160F Defense Meteorological Satellite Program	PROJECT NUMBER AND TITLE 4758 DMSP Program

DMSP Schedule

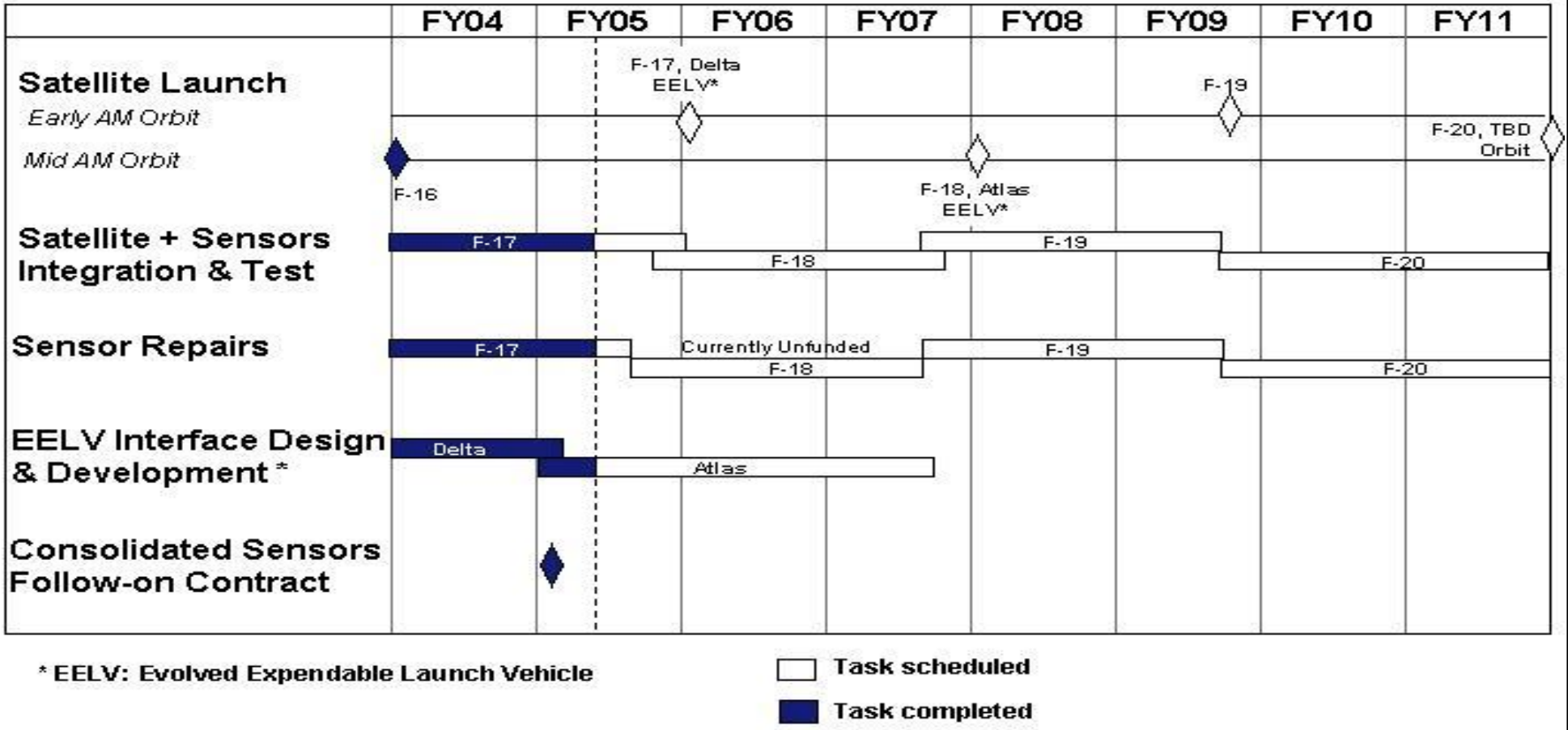

Exhibit R-4a, RDT&E Schedule Detail		DATE: February 2005
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0305160F Defense Meteorological Satellite Program	PROJECT NUMBER AND TITLE: 4758 DMSP Program

(U) Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007
(U) F-16 Satellite Launch	1Q			
(U) F-17 Satellite Launch			1Q	