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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305111F Weather Service					PROJECT 2738		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2738	Weather Service	16,393	19,759	11,452	14,588	16,783	17,033	17,375	17,744	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**
 This budget activity funds operational development necessary to acquire, modify, and sustain segments of the Air Force Weather Weapon System (AFWWS). The AFWWS supports worldwide operations of Air Force and Army warfighters, as well as Special Operation Forces (SOF) and other government agencies, by providing observations and forecasts of terrestrial and space weather. The AFWWS provides fixed and transportable equipment supporting the Expeditionary Aerospace Force (EAF) concept with weather observing and forecasting capabilities at in-garrison and deployed locations. Efforts include: (a) Cloud Depiction and Forecast System II (CDFS II) upgrades satellite data processing, cloud depiction and forecasting weather support functions for operational commanders and classified national programs and replaces logistically unsupportable mainframe computers at the Air Force Weather (AFW) strategic center, Offutt AFB; (b) Global Theater Weather Analysis and Prediction System (GTWAPS) acquires theater weather models and associated hardware to improve AFW theater support capabilities; (c) Tactical Weather Radar (TWR) provides fixed and semi-fixed Doppler weather radar to support forward deployed combat operations worldwide; (d) Space Weather Analysis and Forecast System (SWAFS) builds space environmental support and modernizes software capabilities to meet warfighter requirements; (e) Product Tailoring/Warfighter Applications (PT/WA) [Previously named Meteorological Operations Capability (MOC) Forecast System 21st Century (FS-21)] provides user workstations capable of ingesting multiple sources of weather information to provide timely and precisely tailored weather products for the warfighter and supports the 'train as you fight' concept by assuring fixed and deployable systems are the same; (f) Weather Data Analysis (WDA) provides a fused infrastructure for the assimilation of advanced models, radar, lightning, and satellite data into a single user interface for the timely analysis and production of tailored weather products; (g) Observing System 21st Century (OS-21) provides a range of weather observing capabilities, including automated capabilities, at fixed and deployed locations worldwide; (h) Small Tactical Terminal (STT) provides worldwide tactical users with a survivable 'first-in' source of meteorological satellite data, processed by small portable terminals in forward areas of conflict [STT funding aligned to PE 35111F in FY01. Prior year funding in PE 35160F, Defense Meteorological Satellite Program.]; and (i) Forecasting integrates advanced scientific numerical weather prediction models into the AFW strategic center production capability for automated and mission-tailored weather forecast products.

(U) Air Force Weather (AFW) programs are aligned under the five core competency areas of Weather Data Collection, Weather Data Analysis, Forecasting, Product Tailoring/Warfighter Applications, and Dissemination described in the AFW Mission Support Plan. Through this alignment, AFW ensures an integrated and systems-oriented approach to program management decisions. Weather Data Collection includes terrestrial and space environmental sensors including TWR, OS-21,

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<p>(U) <u>A. Mission Description Continued</u> and STT. Weather Data Analysis provides interoperability of AFW processing infrastructure with users and data sources. Weather Forecasting will enhance cloud forecasting capabilities and weather forecasting models and begin merging strategic and operational forecasting for greater efficiency. Product Tailoring/Warfighter Applications implements AFW Reengineering at the theater and tactical levels; at theater level provides timely, fine-scale weather products and services to operational commanders within a given Area of Responsibility; and at tactical level provides front-line weather information to warfighters in support of combat operations. These consolidations and realignments implement the CSAF-directed and approved AFW Strategic Plan.</p>		
<p>(U) <u>FY 2000 (\$ in Thousands)</u></p>		
(U) \$500	TWR: Continued development of system interfaces with forecasting and analysis systems (Weather Data Collection)	
(U) \$327	OS-21: Prepared Milestones I/II/III documentation and achieved Milestones I/II/III decision (Weather Data Collection)	
(U) \$1,184	WDA: SPO support and development of architecture for AFW Strategic Center (Analysis)	
(U) \$3,394	CDFS II: Continued development of cloud depiction and forecast software (Weather Forecasting)	
(U) \$1,910	GTWAPS: Continued operational software development for incremental IOCs (Weather Forecasting)	
(U) \$6,003	SWAFS: Achieved Milestones I/II/III and began software development for incremental deliveries (Weather Forecasting)	
(U) \$3,075	PT/WA: Achieved Milestones I/II/III and awarded contract for procurement and software integration (Product Tailoring/Warfighter Applications)	
(U) \$16,393	Total	
<p>(U) <u>FY 2001 (\$ in Thousands)</u></p>		
(U) \$400	TWR: Continue development of system interfaces with forecasting and analysis systems (Weather Data Collection)	
(U) \$2,072	OS-21: Develop and integrate interfaces of component sensor systems to meet IOC (Weather Data Collection)	
(U) \$2,342	WDA: Complete development of architecture for AFW Strategic Center, prepare Milestone B/C documentation, achieve Milestone B/C decision, and conduct risk mitigation assessments (Analysis)	
(U) \$5,281	CDFS II: Complete development of cloud depiction and forecast software and achieve FOC (Weather Forecasting)	
(U) \$900	GTWAPS: Complete operational software development and achieve FOC (Weather Forecasting)	
(U) \$4,441	SWAFS: Continue software development for incremental deliveries (Weather Forecasting)	
(U) \$3,842	PT/WA: Continue software development and integration with regional and tactical weather systems (Product Tailoring/Warfighter Applications)	
(U) \$481	STT: Continue support for integration of satellite weather data in tactical environment (Weather Data Collection)	
(U) \$19,759	Total	
<p>The following net transactions are not reflected in the FY01 program total: SBIR=-700K and CANX=-2K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.</p>		
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BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
07 - Operational System Development		0305111F Weather Service		2738	
(U) <u>A. Mission Description Continued</u>					
(U) <u>FY 2002 (\$ in Thousands)</u>					
(U)	\$3,000	WDA: Begin software development for enhanced analysis infrastructure (Analysis)			
(U)	\$1,303	Forecasting: Develop documentation for Milestone B/C decision for integration of scientific advances in weather prediction capabilities (Weather Forecasting)			
(U)	\$3,364	SWAFS: Continue software development for incremental deliveries (Weather Forecasting)			
(U)	\$3,785	PT/WA: Continue software development and integration with regional and tactical weather systems (Product Tailoring/Warfighter Applications)			
(U)	\$11,452	Total			
(U) <u>B. Budget Activity Justification</u>					
This effort is in Budget Activity 7, Operational System Development, because it supports operational software development and system tests associated with the upgrade and replacement of currently operational systems, systems already in production, and systems with approved production funds in the DoD budget.					
(U) <u>C. Program Change Summary (\$ in Thousands)</u>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	18,910	19,942	11,489	TBD
(U)	Appropriated Value	19,069	19,942		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-1,241			
	b. Small Business Innovative Research	-570			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	-790			
	e. Rescissions	-75	-183		
(U)	Adjustments to Budget Years Since FY 2001 PBR			-37	TBD
(U)	Current Budget Submit/FY 2002 PBR	16,393	19,759	11,452	TBD
(U) <u>Significant Program Changes:</u>					

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(U) D. Other Program Funding Summary (\$ in Thousands)											
	<u>FY 2000</u>	<u>FY 2001</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>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) Other Procurement, AF, Weather Service (PE35111F WSC 833070 & 838010)	48,875	38,990	51,485	47,132	45,480	46,693	47,592	48,648	Continuing	TBD	
(U) E. Acquisition Strategy											
All major contracts within this program used precompeted DoD contract vehicles or were awarded after full and open competition. Programs support DII COE compliance and use an evolutionary acquisition strategy with a series of incremental IOCs and software releases. This approach accommodates refinement and prioritization of user requirements and improves adaptability to evolving commercial activities.											
(U) F. Schedule Profile											
				<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>		
				1	2	3	4	1	2	3	4
(U) CDFS II FOC									X		
(U) GTWAPS FOC									X		
(U) SWAFS Milestones I/II/ III						*					
(U) PT/WA Milestones I/II/III				*							
(U) OS-21 Milestones I/II/III						*					
(U) WDA Milestones B/C							*				
* - Denotes completed event											
X - Denotes planned event											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305111F Weather Service			PROJECT 2738		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	1st Article Development					742		0		0
(U)	System Software Integration					1,217		2,984		1,950
(U)	System Engineering Support					2,145		5,435		1,032
(U)	Contractor Engineering Support					2,390		2,715		390
(U)	Software Development					8,264		6,720		6,973
(U)	Travel					243		301		183
(U)	Program Management Support					1,358		1,518		924
(U)	Laboratory Support					34		86		0
(U)	Total					16,393		19,759		11,452
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<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 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Sterling	CPAF	Jun 95	21,621	21,621	18,403	3,186	4,786	0	0	26,375
CCPL (TRW)	LOE	Dec 97	4,988	4,988	3,620	1,398	900	0	0	5,918
Raytheon	MIPR	Sep 98	1,184	1,184	482	453	338	0	0	1,273
CCPL (TRW/Raytheon)	LOE	Mar 00	TBD	TBD	0	2,813	3,637	2,809	Continuing	TBD
TBD [OS-21]	CFFP	Jun 01	327	327	0	327	2,072	0	Continuing	TBD
TBD [WDA]	TBD	TBD	TBD	TBD	0	202	1,100	2,126	Continuing	TBD
CCPL (TRW)	LOE	Dec 99	4,780	4,780	0	5,343	3,893	2,985	Continuing	TBD
AFRL	LOE	Sep 00	165	165	0	34	131	0	Continuing	TBD
TBD [Forecasting]	TBD	TBD	TBD	TBD	0	0	0	1,053	Continuing	TBD

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(U) <u>Performing Organizations Continued:</u>									
<u>Support and Management Organizations</u>									
Electronic Systems Center (ESC)				824	551	151	625	Continuing	TBD
Space and Missile Systems Center (SMC)				72	197	817	159	Continuing	TBD
MITRE/Aerospace/ITSP				2,151	1,889	1,934	1,695	Continuing	TBD
<u>Test and Evaluation Organizations</u>									
(U) <u>Government Furnished Property:</u>									
	<u>Contract</u>	<u>Award or</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>Item</u>	<u>Method/Type</u>	<u>or Funding</u>	<u>Obligation</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>						
<u>Product Development Property</u>									
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
<u>Subtotals</u>				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				22,505	13,756	16,857	8,973	TBD	TBD
Subtotal Support and Management				3,047	2,637	2,902	2,479	TBD	TBD
Subtotal Test and Evaluation									
Total Project				25,552	16,393	19,759	11,452	TBD	TBD