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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305111F: <i>WEATHER SERVICE</i>
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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	33.151	32.373	31.084	-	31.084	31.428	31.305	31.624	32.032	Continuing	Continuing
672738: <i>Weather Service</i>	33.151	32.373	31.084	-	31.084	31.428	31.305	31.624	32.032	Continuing	Continuing

Note

The program funding includes reductions for Overhead and Reports/Studies Board efficiencies that are not intended to impact program content. The efficiencies reductions total \$0.260M in FY12.

A. Mission Description and Budget Item Justification

This budget activity funds operational development necessary to acquire, sustain, and enhance segments of the Air Force Weather Weapon System (AFWWS). Activities also include studies and analysis to support both current program planning and execution and future program planning. The AFWWS provides timely, accurate, consistent and relevant space and terrestrial weather information for global battlespace situational awareness. The AFWWS supports worldwide operations of Air Force and Army warfighters, Special Operation Forces (SOF), and other government agencies with weather observing and forecasting capabilities at in-garrison and deployed locations as well as centralized, reach-back capabilities. Air Force Weather (AFW) programs align under the five capability areas of Weather Data Collection (WDC), Weather Data Analysis (WDA), Weather Forecasting, Product Tailoring/Warfighter Applications (PT/WA), and Weather Dissemination (presently relies on Commercial-off-the-Shelf products and so does not use RDT&E funding). Through this alignment, AFW ensures an integrated and systems-oriented approach to program management decisions. WDC provides automated terrestrial and space environmental sensing capabilities at fixed and deployed locations worldwide. WDA provides a net-centric infrastructure that assimilates worldwide sources of terrestrial and space weather data and produces decision-quality information for warfighters. Improved weather analysis of real-time information also supports DoD's role in transformation of the National Airspace System through the Next Generation Air Transportation System (NextGen) and enhances Air Force energy security plans. Weather Forecasting provides advanced scientific numerical weather prediction capabilities for automated, high resolution forecast products for mission planning, rehearsal, and execution. Additionally, WDA and Forecasting capabilities will be expanded to integrate and exploit data from a new generation of environmental sensing satellites. PT/WA provides timely, local and regional target-scale weather information to operational commanders for a given Area of Responsibility, and at tactical levels, provides front-line weather information to warfighters in support of combat operations. PT/WA supports the 'train as you fight' concept by assuring fixed and deployable systems have a similar look and feel. FY12 funding will continue development of dual-polarization weather radar capability for improved severe weather detection. During FY12, the weather data analysis capability will continue to develop incremental software enhancements and integrate improved analysis capabilities including processing of data from a new generation of environmental sensing satellites. In FY12, the program plans to continue development of software to integrate advanced terrestrial and space weather forecast capabilities to improve models for warfighter operations. In PT/WA program, the FY12 funding will continue developing software for warfighter tailoring and exploitation products and integrate regional and tactical weather systems with warfighter C4I systems. These efforts will enhance the availability and integration of weather information in multiple Wings, Squadrons, Air and Space Operations Centers, Army decision processes, ATC operations, and exploitation of weather at global, regional, and tactical levels.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305111F: <i>WEATHER SERVICE</i>
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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	33.291	32.373	32.260	-	32.260
Current President's Budget	33.151	32.373	31.084	-	31.084
Total Adjustments	-0.140	-	-1.176	-	-1.176
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.140	-	-1.176	-	-1.176

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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 0305111F: WEATHER SERVICE				PROJECT 672738: Weather Service			
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
672738: Weather Service	33.151	32.373	31.084	-	31.084	31.428	31.305	31.624	32.032	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification											
<p>This budget activity funds operational development necessary to acquire, sustain, and enhance segments of the Air Force Weather Weapon System (AFWWS). Activities also include studies and analysis to support both current program planning and execution and future program planning. The AFWWS provides timely, accurate, consistent and relevant space and terrestrial weather information for global battlespace situational awareness. The AFWWS supports worldwide operations of Air Force and Army warfighters, Special Operation Forces (SOF), and other government agencies with weather observing and forecasting capabilities at in-garrison and deployed locations as well as centralized, reach-back capabilities. Air Force Weather (AFW) programs align under the five capability areas of Weather Data Collection (WDC), Weather Data Analysis (WDA), Weather Forecasting, Product Tailoring/Warfighter Applications (PT/WA), and Weather Dissemination (presently relies on Commercial-off-the-Shelf products and so does not use RDT&E funding). Through this alignment, AFW ensures an integrated and systems-oriented approach to program management decisions. WDC provides automated terrestrial and space environmental sensing capabilities at fixed and deployed locations worldwide. WDA provides a net-centric infrastructure that assimilates worldwide sources of terrestrial and space weather data and produces decision-quality information for warfighters. Improved weather analysis of real-time information also supports DoD's role in transformation of the National Airspace System through the Next Generation Air Transportation System (NextGen) and enhances Air Force energy security plans. Weather Forecasting provides advanced scientific numerical weather prediction capabilities for automated, high resolution forecast products for mission planning, rehearsal, and execution. Additionally, WDA and Forecasting capabilities will be expanded to integrate and exploit data from a new generation of environmental sensing satellites. PT/WA provides timely, local and regional target-scale weather information to operational commanders for a given Area of Responsibility, and at tactical levels, provides front-line weather information to warfighters in support of combat operations. PT/WA supports the 'train as you fight' concept by assuring fixed and deployable systems have a similar look and feel. FY12 funding will continue development of dual-polarization weather radar capability for improved severe weather detection. During FY12, the weather data analysis capability will continue to develop incremental software enhancements and integrate improved analysis capabilities including processing of data from a new generation of environmental sensing satellites. In FY12, the program plans to continue development of software to integrate advanced terrestrial and space weather forecast capabilities to improve models for warfighter operations. In PT/WA program, the FY12 funding will continue developing software for warfighter tailoring and exploitation products and integrate regional and tactical weather systems with warfighter C4I systems. These efforts will enhance the availability and integration of weather information in multiple Wings, Squadrons, Air and Space Operations Centers, Army decision processes, ATC operations, and exploitation of weather at global, regional, and tactical levels.</p> <p>This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.</p>											
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Weather Data Collection							0.195	0.270	0.310	-	0.310

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Description: WDC provides automated terrestrial and space environmental sensing capabilities at fixed and deployed locations worldwide.</p> <p>FY 2010 Accomplishments: Participated with National Weather Service and Federal Aviation Administration in Product Improvement Plans for automated weather sensors and the Next Generation Weather Radar.</p> <p>FY 2011 Plans: Participating with National Weather Service and Federal Aviation Administration in Product Improvement Plans for automated weather sensors and the Next Generation Weather Radar.</p> <p>FY 2012 Base Plans: Will participate with National Weather Service and Federal Aviation Administration in Product Improvement Plans for automated weather sensors and the Next Generation Weather Radar.</p> <p>FY 2012 OCO Plans:</p>						
<p>Title: Weather Data Analysis</p> <p>Description: WDA provides a net-centric infrastructure that assimilates worldwide sources of terrestrial and space weather data and produces decision-quality information for warfighters.</p> <p>FY 2010 Accomplishments: Continued incremental software development and integration of enhanced analysis capabilities including processing of data from a new generation of environmental sensing satellites.</p> <p>FY 2011 Plans: Continuing incremental software development and integration of enhanced analysis capabilities including processing of data from a new generation of environmental sensing satellites.</p> <p>FY 2012 Base Plans: Will continue incremental software development and integration of enhanced analysis capabilities including processing of data from a new generation of environmental sensing satellites.</p> <p>FY 2012 OCO Plans:</p>		8.095	7.007	6.898	-	6.898
<p>Title: Weather Forecasting</p>		13.222	13.127	16.191	-	16.191

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Description: Forecasting provides advanced scientific numerical weather prediction capabilities for automated, high resolution forecast products for mission planning, rehearsal, and execution.</p> <p>FY 2010 Accomplishments: Continued integration of advanced terrestrial and space weather forecast capabilities including exploitation of a new generation of environmental sensing satellites.</p> <p>FY 2011 Plans: Continuing integration of advanced terrestrial and space weather forecast capabilities including exploitation of a new generation of environmental sensing satellites.</p> <p>FY 2012 Base Plans: Will continue integration of advanced terrestrial and space weather forecast capabilities including exploitation of a new generation of environmental sensing satellites.</p> <p>FY 2012 OCO Plans:</p>						
<p>Title: Product Tailoring/Warfighter Applications</p> <p>Description: PT/WA provides timely, local and regional target-scale weather information to operational commanders for a given Area of Responsibility, and at tactical levels, provides front-line weather information to warfighters in support of combat operations.</p> <p>FY 2010 Accomplishments: Continued software development and integration of regional and tactical weather systems and integration with warfighter C4I systems.</p> <p>FY 2011 Plans: Continuing software development and integration of regional and tactical weather systems and integration with warfighter C4I systems.</p> <p>FY 2012 Base Plans: Will continue software development and integration of regional and tactical weather systems and integration with warfighter C4I systems.</p> <p>FY 2012 OCO Plans:</p>		11.639	11.969	7.685	-	7.685
Accomplishments/Planned Programs Subtotals		33.151	32.373	31.084	-	31.084

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

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0305111F: <i>Weather Service, OPAF</i>	38.941	37.743	24.763	0.000	24.763	22.920	22.487	23.109	23.282	Continuing	Continuing
• PE 0305111F (1): <i>Weather Service, O&M</i>	153.520	145.759	132.562	0.000	132.562	142.573	146.432	148.930	152.121	Continuing	Continuing

D. Acquisition Strategy

AFWWS employs an incremental development strategy with a series of incremental Initial Operational Capabilities (IOCs) and software releases to enable rapid development and fielding of capabilities using full and open competition.

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			
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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	
Development and integration of weather forecast software	C/CPAF	Northrop Grumman:Bellevue, NE	5.549	5.835	Jan 2011	9.052	Jan 2012	-		9.052	Continuing	Continuing	TBD	
Development and integration of weather analysis software	C/CPFF	Raytheon:Long Beach, CA	6.620	6.467	Dec 2010	5.060	Oct 2011	-		5.060	Continuing	Continuing	TBD	
Integrate weather systems with warfighter C4I systems	C/CPIF	Raytheon:Bellevue, NE	8.617	5.671	May 2011	4.893	Feb 2012	-		4.893	Continuing	Continuing	TBD	
Improve numerical weather prediction	MIPR	NCAR:Boulder, CO	3.676	5.381	Feb 2011	4.500	Feb 2012	-		4.500	Continuing	Continuing	TBD	
Improve weather forecast capabilities	MIPR	NASA:Greenbelt, MD	0.837	1.050	Feb 2011	1.100	Feb 2012	-		1.100	Continuing	Continuing	TBD	
Hardware and software integration	C/CPAF	Northrop Grumman:Redondo Beach, CA	1.903	-		-		-		-	0.000	1.903	0.000	
Various	Various	Various:Various,	2.206	2.494	Oct 2010	2.639	Oct 2011	-		2.639	Continuing	Continuing	TBD	
Subtotal			29.408	26.898		27.244		-		27.244				
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	
Subtotal			-	-		-		-		-	0.000	0.000	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	
Subtotal			-	-		-		-		-	0.000	0.000	0.000	

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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
Electronic Systems Center	Various	ESC:Hanscom AFB, MA	3.713	5.445	Oct 2010	3.805	Oct 2011	-		3.805	Continuing	Continuing	TBD
Space & Missile Systems Center	Various	SMC:Los Angeles AFB, CA	0.030	0.030	Oct 2010	0.035	Oct 2011	-		0.035	Continuing	Continuing	TBD
Air Force Weather Agency	TBD	AFWA:Offutt AFB, NE	-	-		-		-		-	Continuing	Continuing	TBD
Subtotal			3.743	5.475		3.840		-		3.840			

	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	33.151	32.373		31.084		-		31.084			

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
Collections -- NWS/FAA Tri-agency weather sensor/radar agreement	1	2010	4	2016
Weather Data Analysis (WDA) Milestone C	4	2011	4	2011
WDA Increment 4 Build A Delivery	4	2011	4	2011
WDA Increment 4 Build B2 Delivery	2	2014	2	2014
WDA Increment 4 Build C Delivery	2	2015	2	2015
Forecasting -- Numerical Weather Modeling	1	2010	4	2016
Forecasting -- Space Weather Modeling	1	2010	4	2016
Product Tailoring/Warfighter Applications (PT/WA) Milestone C	1	2012	1	2012
PT/WA Increment 2 Build A Fielding	1	2012	1	2012
PT/WA Increment 2 Build B Fielding	3	2012	3	2012
PT/WA Increment 2 Build C Fielding	4	2014	4	2014