

UNCLASSIFIED

PE NUMBER: 0207412F
PE TITLE: Modular Control System

Exhibit R-2, RDT&E Budget Item Justification								DATE February 2005		
BUDGET ACTIVITY 07 Operational System Development					PE NUMBER AND TITLE 0207412F Modular Control System					
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	17.313	11.369	9.289	9.390	16.621	23.628	21.406	23.359	Continuing	TBD
485L Theater Air Control System Imp (TACSI)	17.313	11.369	9.289	9.390	16.621	23.628	21.406	23.359	Continuing	TBD
<p>(U) <u>A. Mission Description and Budget Item Justification</u></p> <p>Battle Control System (BCS) Family of Systems (FOS) is comprised of fixed sites for Homeland Defense [Region/Sector Operation Control Center, PE 0102326F, called the Battle Control System-Fixed {BCS-F}] and mobile Theater Battle Management (TBM) Command and Control (C2) nodes [Modular Control system, PE 0207412F [(called the Battle Control System-Mobile {BCS-M})]. The BCS-M is the replacement of the legacy Control and Reporting Center (CRC).</p> <p>The BCS-M is the tactical C2 execution element supporting the Joint Forces Air Component Commander (JFACC) and the North American Aerospace Defense/Combatant Commander (NORAD/CC) providing connectivity and interoperability among elements of the Theater Air Control System (TACS) to include United States Air Force, Navy, Marine Corps, Army, and allied/coalition assets. It is the execution arm of the Air and Space Operations Center (AOC), providing allied air defense coordination in Iraq and Afghanistan</p> <p>BCS-M is a low density/high demand rapidly deployable ground C2 asset conducting both deployed theater operations and Homeland Defense. For Homeland Defense, it enables forward deployed C2 execution capability for activities such as NASA launches, Olympics, and security for the National Capital Region.</p> <p>BCS-M is using an acquisition strategy designed to ensure technical coordination with the Airborne Warning And Control System (AWACS) 40/45 upgrade, interoperability with BCS-F and AOC, and to further advance C2 concepts supporting current and emerging aerospace operations. BCS-M acquisition activities include, but are not limited to requirements analysis, modeling and simulation, risk reduction, acquisition planning, enterprise integration, prototype development (i.e., product-izing, development suite, radio/radar/data link remoting, software development, radar development), transitioning Area Cruise Missile Defense (ACMD) technologies into BCS-M, and leveraging capabilities from BCS-F and AWACS 40/45. This program will participate in the development, testing, and implementation of international standards (to include NATO standardization agreements) to ensure joint, allied, and coalition interoperability.</p> <p>The program is in Budget Activity 7 because Modular Control System (MCS) is a fielded, operational system.</p>										

R-1 Shopping List - Item No. 145-2 of 145-8

Exhibit R-2 (PE 0207412F)

Exhibit R-2, RDT&E Budget Item Justification

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

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Previous President's Budget	15.868	11.634	9.412	9.360
(U) Current PBR/President's Budget	17.313	11.369	9.289	9.390
(U) Total Adjustments	1.445	-0.265		
(U) Congressional Program Reductions				
Congressional Rescissions		-0.265		
Congressional Increases				
Reprogrammings	1.920			
SBIR/STTR Transfer	-0.475			
(U) <u>Significant Program Changes:</u>				
FY2004 increase is due to internal below threshold reprogramming (BTR).				

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Exhibit R-2a, RDT&E Project Justification

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0207412F Modular Control System

PROJECT NUMBER AND TITLE

485L Theater Air Control System Imp
(TACSI)

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
485L Theater Air Control System Imp (TACSI)	17.313	11.369	9.289	9.390	16.621	23.628	21.406	23.359	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) **A. Mission Description and Budget Item Justification**

Battle Control System (BCS) Family of Systems (FOS) is comprised of fixed sites for Homeland Defense [Region/Sector Operation Control Center, PE 0102326F, called the Battle Control System-Fixed {BCS-F}] and mobile Theater Battle Management (TBM) Command and Control (C2) nodes [Modular Control system, PE 0207412F [(called the Battle Control System-Mobile {BCS-M})]. The BCS-M is the replacement of the legacy Control and Reporting Center (CRC).

The BCS-M is the tactical C2 execution element supporting the Joint Forces Air Component Commander (JFACC) and the North American Aerospace Defense/Combatant Commander (NORAD/CC) providing connectivity and interoperability among elements of the Theater Air Control System (TACS) to include United States Air Force, Navy, Marine Corps, Army, and allied/coalition assets. It is the execution arm of the Air and Space Operations Center (AOC), providing allied air defense coordination in Iraq and Afghanistan

BCS-M is a low density/high demand rapidly deployable ground C2 asset conducting both deployed theater operations and Homeland Defense. For Homeland Defense, it enables forward deployed C2 execution capability for activities such as NASA launches, Olympics, and security for the National Capital Region.

BCS-M is using an acquisition strategy designed to ensure technical coordination with the Airborne Warning And Control System (AWACS) 40/45 upgrade, interoperability with BCS-F and AOC, and to further advance C2 concepts supporting current and emerging aerospace operations. BCS-M acquisition activities include, but are not limited to requirements analysis, modeling and simulation, risk reduction, acquisition planning, enterprise integration, prototype development (i.e., product-izing, development suite, radio/radar/data link remoting, software development, radar development), transitioning Area Cruise Missile Defense (ACMD) technologies into BCS-M, and leveraging capabilities from BCS-F and AWACS 40/45. This program will participate in the development, testing, and implementation of international standards (to include NATO standardization agreements) to ensure joint, allied, and coalition interoperability.

The program is in Budget Activity 7 because Modular Control System (MCS) is a fielded, operational system.

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

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U)				
(U) Continue concept definition & development of evolutionary upgrades to the BCS to include, but not limited to, advanced planning, Modular Control System (MCS) upgrades, enhanced radio/radar/data link remoting, transition of ACMD technology into BCS-M, leveraging capabilities from BCS-F and AWACS 40/45, integrating evolutionary upgrades into BCS-M, sensor replacement/upgrade, and misc.	16.447	10.722	8.695	8.305
(U) Continue Program Support (i.e., travel, supplies, equipment, miscellaneous)	0.559	0.329	0.267	0.750
(U) Continue Systems Engineering	0.307	0.318	0.327	0.335
(U)				

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Exhibit R-2a (PE 0207412F)

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Exhibit R-2a, RDT&E Project Justification								DATE February 2005			
BUDGET ACTIVITY 07 Operational System Development				PE NUMBER AND TITLE 0207412F Modular Control System				PROJECT NUMBER AND TITLE 485L Theater Air Control System Imp (TACSI)			
(U)	Total Cost			17.313				11.369	9.289	9.390	
(U)	C. Other Program Funding Summary (\$ in Millions)										
		<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>FY 2010</u>	<u>FY 2011</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 APPN										
	OPAF PE 0207412F (Other										
(U)	Procurement Air Force, WSC										
	833040, Theater Air Control										
	System Improvement										
(U)	D. Acquisition Strategy										
	The Battle Control System (BCS) Program Family of Systems is utilizing a spiral development acquisition strategy to further advance C2 concepts supporting future aerospace operations.										

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Exhibit R-2a (PE 0207412F)

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Exhibit R-3, RDT&E Project Cost Analysis												DATE February 2005		
BUDGET ACTIVITY 07 Operational System Development						PE NUMBER AND TITLE 0207412F Modular Control System					PROJECT NUMBER AND TITLE 485L Theater Air Control System Imp (TACSI)			
(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</u>	<u>FY 2005 Cost</u>	<u>FY 2005 Award Date</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u>														
Rome Labs & Naval Air Warfare Center/Aircraft Division (NAWC/AD) - Concept Definition/Development of Evolutionary Upgrades	MIPR	Naval Air Warfare Center/Aircra ft Division, Patuxent River, MD	16.028	14.438	Nov-03	2.866	Apr-05	3.486	Oct-05	3.675	Oct-06	Continuing	TBD	TBD
TBD-BCS-M	TBD	TBD	0.000			7.856	May-05	3.828	Oct-05	2.630	Oct-06	Continuing	TBD	TBD
Risk Reduction activity (Thales Raytheon BCS-F)	FFP	Fullerton, CA	0.000	2.009	May-04							0.000	2.009	2.009
TBD-Sensor Replacement/Upgrade	TBD	TBD						1.381	Oct-05	2.000	Oct-06	Continuing	TBD	TBD
Subtotal Product Development			16.028	16.447		10.722		8.695		8.305		Continuing	TBD	TBD
Remarks:														
(U) <u>Support</u>														
Program Office Support	Various	Various	2.225	0.559	Nov-03	0.329	Nov-04	0.267	Nov-05	0.750	Nov-06	Continuing	TBD	TBD
Systems Engineering.	Various	Various	1.234	0.307	Feb-04	0.318	Feb-05	0.327	Jan-06	0.335	Jan-07	Continuing	TBD	TBD
Subtotal Support			3.459	0.866		0.647		0.594		1.085		Continuing	TBD	TBD
Remarks:														
(U) Total Cost			19.487	17.313		11.369		9.289		9.390		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY

07 Operational System Development

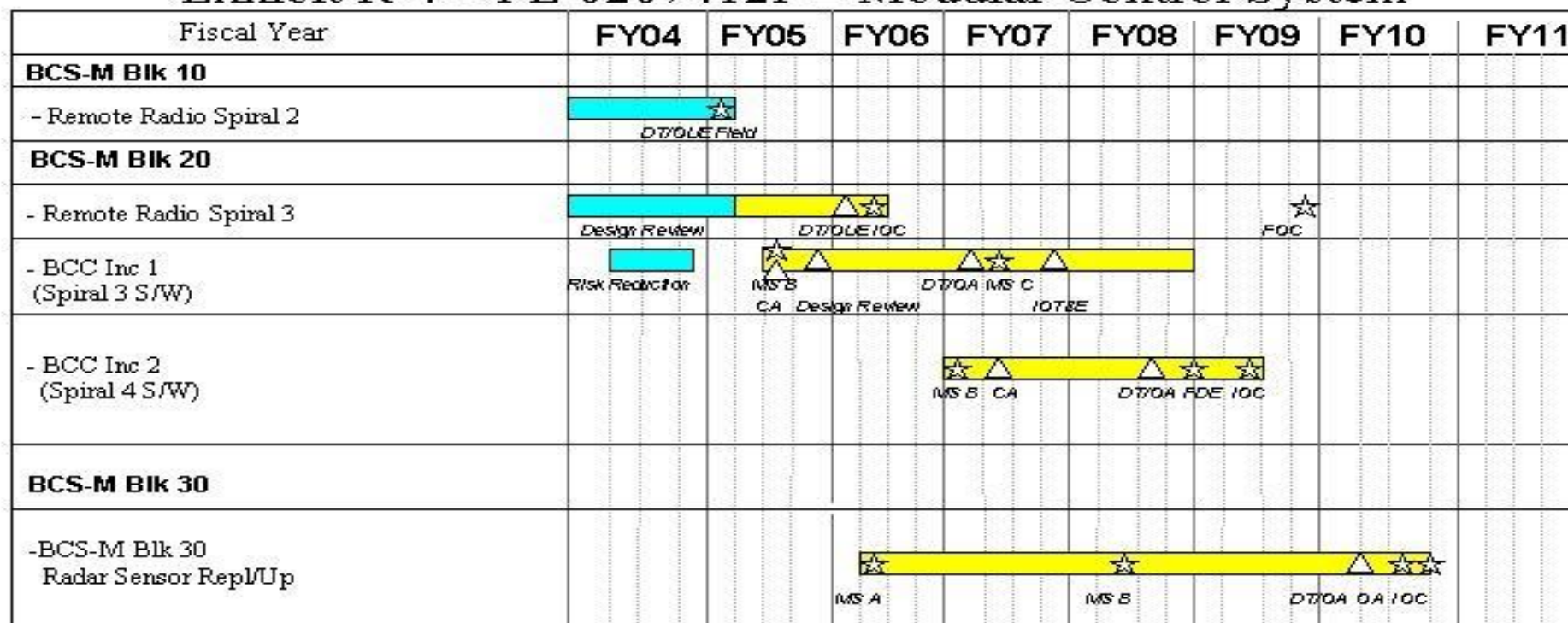
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Exhibit R-4 – PE 0207412F – Modular Control System



- ☆ Major Event or Milestone
 Ongoing Activity that is on-going
 Ongoing Activity that is Complete
 ▲ Completed Event
 △ Planned Task(s)

RR- Remote Radio
 BCS-M- Battle Control System-Mobile
 Sensor Repl/Up- Sensor Replacement/Upgrade
 MS- Milestone
 Inc- Increment
 OUE- Operational Utility Evaluation
 DT/OA- Development Test/Operational Assessment
 FOC- Final Operational Capability
 FDE- Force Deployment Evaluation
 CA- Contract Award
 IOC- Initial Operations Capability

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Exhibit R-4a, RDT&E Schedule Detail

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(TACSI)(U) Schedule ProfileFY 2004FY 2005FY 2006FY 2007

(U) BCS-M Blk 10 Radio Remote (RR) Spiral 2 DT/OUE

4Q

(U) BCS-M Blk 10 RR Spiral 2 Field

1Q

(U) BCS-M Blk 20 RR Spiral 3 Design Review

2Q

(U) BCS-M Blk 20 RR Spiral 3 DT/OUE

1Q

(U) BCS-M Blk 20 RR Spiral 3 IOC

2Q

(U) BCC-M Blk 20 Battle Control Center (BCC) Inc 1 Risk Reduction

2-4Q

(U) BCC-M Blk 20 BCC Inc 1 (Spiral 3 software Milestone B)

3Q

(U) BCC-M Blk 20 BCC Inc 1 Contract Award

3Q

(U) BCC-M Blk 20 BCC Inc 1 Design Review

4Q

(U) BCC-M Blk 20 BCC Inc 1 (Spiral 3 software DT/OA)

1Q

(U) BCC-M Blk 20 BCC Inc 1 (Spiral 3 software Milestone C)

2Q

(U) BCC-M Blk 20 BCC Inc 1 (Spiral 3 software IOT&E)

4Q

(U) BCC-M Blk 20 BCC Inc 2 (Spiral 4 software Milestone B)

1Q

(U) BCC-M Blk 20 BCC Inc 2 (Spiral 4 software Contract Award)

2Q

(U) BCS-M Blk 30 Sensor Repl/Up Milestone A

2Q