

## UNCLASSIFIED

## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0207412F Modular Control System**

PROJECT

**485L**

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
485L Theater Air Control System Imp (TACSI)	6,625	6,472	16,083	24,664	24,438	24,379	14,560	14,480	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**

Battle Control System (BCS) Family of Systems (FOS) is comprised of fixed Homeland Defense (HLD) [BCS-Fixed (BCS-F) PE 12326F] and mobile Theater Battle Management (TBM) Command and Control (C2) nodes [BCS-Mobile (BCS-M) PE27412F]. The BCS-M is the modernization activity for the Modular Control System (MCS). The BCS-M is a low density/high demand rapidly deployable ground C2 asset conducting both deployed theater operations and homeland defense. 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 Operations Center (AOC). BCS modernization is using an acquisition strategy designed to ensure technical coordination with the Airborne Warning And Control System (AWACS) 40/45 upgrade, interoperability with the Region/Sector Air Operations Centers (R/SAOC) and AOC, and to further advance C2 concepts supporting current and emerging aerospace operations. BCS acquisition activities will include, but not be limited to requirements analysis, modeling and simulation, risk reduction, acquisition planning, enterprise integration, prototype development (i.e., productizing, development suite, radio/radar/data link remoting, software development), and continued development of Theater Air Defense (TAD) Missile Tracking System (MTS), incorporating the fixed and mobile radar requirements for the air picture under one Operational Requirements Document (ORD) for BCS, transitioning the Area Cruise Missile Defense (ACMD) Advanced Capabilities Technology Demonstration (ACTD) into BCS Modernization, and leveraging capabilities from BCS-F and AWACS 40/45.

(U) **FY 2002 (\$ in Thousands)**

(U) \$0	Accomplishments/Planned Program
(U) \$3,993	Continued Concept Definition/Development of Evolutionary Upgrades to the BCS-M (to include, but not be limited to, advanced planning, Modular Control Equipment (MCE) Upgrades enhanced radio/radar/data link remoting, misc.)
(U) \$584	Continued Program Support (i.e., travel, supplies, equipment, miscellaneous)
(U) \$1,558	Completed development of TAD MTS Upgrade for the Radar Sensors
(U) \$490	Continued Systems Engineering
(U) \$6,625	Total

Project 485L

Page 1 of 6 Pages

Exhibit R-2 (PE 0207412F)

1323

UNCLASSIFIED

## UNCLASSIFIED

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PROJECT

**07 - Operational System Development****0207412F Modular Control System****485L**(U) **A. Mission Description Continued**(U) **FY 2003 (\$ in Thousands)**

(U) \$0 Accomplishments/Planned Program

(U) \$5,681 Continue Concept Definition/Development of evolutionary upgrades to the BCS to include, but not be limited to, advanced planning, MCE Upgrades, enhanced radio/radar/data link remoting

(U) \$575 Continue Program Support (i.e., travel, supplies, equipment, miscellaneous)

(U) \$216 Continue Systems Engineering

(U) \$6,472 Total

(U) **FY 2004 (\$ in Thousands)**

(U) \$0 Accomplishments/Planned Program

(U) \$15,273 Continue Concept Definition/Development of Evolutionary Upgrades to the BCS-M to include, but not be limited to, advanced planning, MCE Upgrades, enhanced radio/radar/data link remoting, ACMD/ACDT transition into BCS-M, leveraging capabilities from BCS-F and AWACS 40/45, integrating evolutionary upgrades into BCS-M, and misc.

(U) \$480 Continue Program Support (i.e., travel, supplies, equipment, miscellaneous)

(U) \$330 Continue Systems Engineering

(U) \$16,083 Total

(U) **B. Budget Activity Justification**

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

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	6,749	6,652	4,687	TBD
(U) Appropriated Value	7,047	6,652		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-79	-114		
b. Small Business Innovative Research	-193			
c. Omnibus or Other Above Threshold Reprogram		-66		
d. Below Threshold Reprogram	-150			
e. Rescissions				

Project 485L

Page 2 of 6 Pages

Exhibit R-2 (PE 0207412F)

1324

UNCLASSIFIED

## UNCLASSIFIED

## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

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485L

(U) **C. Program Change Summary (\$ in Thousands) Continued**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Adjustments to Budget Years Since FY 2003 PBR			11,396	
(U) Current Budget Submit/FY 2004 PBR	6,625	6,472	16,083	TBD

(U) **Significant Program Changes:**

This document reflects the addition of \$66M across the FYDP to continue Evolutionary Upgrades to the Battle Control System-Mobile (BCS-M).

(U) **D. Other Program Funding Summary (\$ in Thousands)**

	<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>FY 2008</u>	<u>FY 2009</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										
(U) Other Procurement Air Force, WSC 833040, Theater Air Control System Improvement	10,431	11,561	18,987	27,374	43,410	38,650	38,611	38,480	Continuing	TBD
(U) Other Procurement Air Force, WSC 838010, Comm Electronic Mods	2,381	586								TBD
(U) Other Procurement Air Force, WSC 86190A, Initial Spares	1,067	419	373	85	0	0			Continuing	TBD

(U) **E. Acquisition Strategy**

1. 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. This strategy improves warfighting capabilities, better utilizes Low Density/High Demand (LD/HD) crews, enables C2ISR data fusion and forwarding, and fully supports the enterprise integration strategy.

2. BCS-Mobile (BCS-M) Modernization will transition the Area Cruise Missile Defense (ACMD) Advanced Capabilities Technology Demonstration (ACTD) capabilities. BCS-M will leverage capabilities from BCS-Fixed (BCS-F), AWACS 40/45 and integrate evolutionary upgrades from legacy Modular Control System (MCS) into BCS-M. This strategy satisfies the long-term modernization solution for a command and control (C2) BCS family of systems that incorporates a common hardware/battle management software solution for BCS-Fixed and BCS-Mobile air defense and air sovereignty C2 platforms.

Project 485L

Page 3 of 6 Pages

Exhibit R-2 (PE 0207412F)

1325

UNCLASSIFIED

## UNCLASSIFIED

## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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(U) **F. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) TAD MTS Software Build 4		*										
(U) TAD MTS Developmental Test & Evaluation (DT&E)				*								
(U) TAD MTS Operational Test & Evaluation (OT&E)				*								
(U) TAD MTS Milestone 3 Production Decision					*							
(U) Radio Remote (RR) Secure Voice Adapter Integration		*										
(U) RR Spiral 1 Follow-On Test & Evaluation (FOT&E)				*								
(U) RR Milestone 3 Production Decision					*							
(U) RR Spiral 2A (Radio Control) Contract Award					*							
(U) RR Spiral 2A Developmental Test & Evaluation (DT&E)								X				
(U) RR Spiral 2A Operational Test & Evaluation (OT&E)								X				
(U) RR Spiral 2B (External Radio Operations) Contract Award						X						
(U) BCS-M Concept Evaluation							X					
(U) BCS-M Contract Award									X			
(U) BCS-M Test												X
* Denotes completed event												
x Denotes planned event												

## UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT		
07 - Operational System Development				0207412F Modular Control System					485L		
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>											
				FY 2002		FY 2003		FY 2004			
(U) Program Support (i.e. travel, supplies, and miscellaneous)				584		575		480			
(U) Systems Engineering				490		216		330			
(U) Concept Definition/Development for Evolutionary Upgrades to the BCS to include enhanced radio/radar remoting, and misc. (includes dedicated Evolutionary Upgrades direct mission support)				3,993		5,681		15,273			
(U) Development of TAD MTS Upgrade for the Radar Sensors (includes dedicated TAD MTS direct mission support)				1,558							
(U) Total				6,625		6,472		16,083			
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
(U) <u>Performing Organizations:</u>											
<u>Contractor or Government Performing Activity</u>		<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
Contractor Northrop Grumman, Baltimore - TAD MTS		FFP	1QFY01	17,303	17,303	14,688	1,558	0	0	0	16,246
Rome Labs & NAWCAD - Concept Definition/Development of Evolutionary Upgrades		MIPR	2QFY01	N/A	N/A	6,762	3,993	5,681	3,869	Continuing	TBD
TBD - BCS-M		TBD	1QFY04	TBD	TBD	0	0	0	11,404	Continuing	TBD
<u>Support and Management Organizations</u>											
Miscellaneous program support (travel, supplies, etc.)		Various	Various	N/A	N/A	1,029	584	575	480	Continuing	TBD
Systems Engineering.		Various	Various	N/A	N/A	530	490	216	330	Continuing	TBD
Project 485L				Page 5 of 6 Pages				Exhibit R-3 (PE 0207412F)			

## UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development				0207412F Modular Control System				485L	
(U) <u>Performing Organizations Continued:</u>									
<u>Test and Evaluation Organizations</u>									
GFP/GFE: None									
(U) <u>Government Furnished Property:</u>									
<u>Contract</u>									
<u>Method/Type</u>									
<u>Award or</u>									
<u>Obligation</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>Description</u>									
<u>Vehicle</u>									
<u>Date</u>									
<u>Date</u>									
<u>to FY 2002</u>									
<u>FY 2002</u>									
<u>FY 2003</u>									
<u>FY 2004</u>									
<u>Complete</u>									
<u>Program</u>									
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
<u>Subtotals</u>									
<u>to FY 2002</u>									
<u>FY 2002</u>									
<u>FY 2003</u>									
<u>FY 2004</u>									
<u>Complete</u>									
<u>Program</u>									
Subtotal Product Development									
21,450									
5,551									
5,681									
15,273									
TBD									
TBD									
Subtotal Support and Management									
1,559									
1,074									
791									
810									
TBD									
TBD									
Subtotal Test and Evaluation									
Total Project									
23,009									
6,625									
6,472									
16,083									
TBD									
TBD									
Project 485L									
Page 6 of 6 Pages									
Exhibit R-3 (PE 0207412F)									