

**UNCLASSIFIED**

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207412F Modular Control System</b>				PROJECT <b>485L</b>		
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
485L	Theater Air Control System Imp (TACSI)	17,164	6,749	6,652	4,687	19,798	4,860	4,942	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0
<p>(U) <b><u>A. Mission Description</u></b>                      The Battle Control System (BCS), formerly known as the Ground Theater Air Control System (GTACS), and also referred to under PE Title 'Modular Control System (MCS),' is a low density/high demand rapidly deployable ground Command and Control (C2) asset conducting both deployed theater operations and homeland defense. The BCS is the tactical C2 execution element supporting the Joint Forces Air Component Commander (JFACC) and the Commander in Chief North American Aerospace Defense (CINCNORAD 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. Modernization depended on 'reusing' software development under the Region/Sector Air Operations Center Modernization (R/SAOC) Program, which was terminated in Oct 99. BCS modernization utilizes an acquisition strategy entitled Common Battle Management Software (CBMS) to develop a capability to assure technical coordination with the AWACS 40/45 upgrade, interoperability with the Region/Sector Operations Centers (R/SAOC) and Air Operations Center (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) Engineering/Manufacturing Development (EMD).</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p> <p>(U) \$6,879            Continued Concept Definition/Development of Evolutionary Upgrades to the BCS (to include, but not limited to, advanced planning, Modular Control Equipment (MCE) Upgrades, CBMS, enhanced radio/radar/data link remoting, misc. (includes Evolutionary Upgrades direct mission support))</p> <p>(U) \$704             Continued Program Support (i.e., travel, supplies, equipment, miscellaneous)</p> <p>(U) \$9,047          Continued Development of TAD MTS Upgrade for the Radar Sensors (includes TAD MTS direct mission support)</p> <p>(U) \$534             Continued Systems Engineering</p> <p>(U) \$17,164         Total</p>										
Project 485L			Page 1 of 6 Pages				Exhibit R-2 (PE 0207412F)			

UNCLASSIFIED

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>																																														
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207412F Modular Control System</b>		PROJECT <b>485L</b>																																													
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$3,674 Continue Concept Definition/Development of Evolutionary Upgrades to the BCS (to include, but not be limited to, advanced planning, MCE Upgrades, CBMS, enhanced radio/radar/data link remoting, misc. (includes Evolutionary Upgrades direct mission support))</p> <p>(U) \$469 Continue Program Support (i.e., travel, supplies, equipment, miscellaneous)</p> <p>(U) \$1,959 Continue development of TAD MTS Upgrade for the Radar Sensors (Includes TAD MTS direct mission Support)</p> <p>(U) \$647 Continued Systems Engineering</p> <p>(U) \$6,749 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$4,543 Continue Concept Definition/Development of Evolutionary Upgrades to the BCS (to include, but not be limited to, advanced planning, MCE Upgrades, CBMS, enhanced radio/radar/data link remoting, misc. (includes Evolutionary Upgrades direct mission support))</p> <p>(U) \$506 Continue Program Support (i.e., travel, supplies, equipment, miscellaneous)</p> <p>(U) \$937 Continue development of TAD MTS Upgrade for the Radar Sensors (includes TAD MTS direct mission support)</p> <p>(U) \$666 Continue Systems Engineering</p> <p>(U) \$6,652 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b> The program is in Budget Activity 7 because CRC is a fielded, operational system.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">19,691</td> <td style="text-align: center;">7,047</td> <td style="text-align: center;">6,668</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">19,691</td> <td style="text-align: center;">6,749</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: center;">-700</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: center;">-1,001</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td style="text-align: center;">-826</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Project 485L</p>					<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	19,691	7,047	6,668	TBD	(U) Appropriated Value	19,691	6,749			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions					b. Small Business Innovative Research	-700				c. Omnibus or Other Above Threshold Reprogram	-1,001				d. Below Threshold Reprogram	-826				e. Rescissions				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>																																												
(U) Previous President's Budget	19,691	7,047	6,668	TBD																																												
(U) Appropriated Value	19,691	6,749																																														
(U) Adjustments to Appropriated Value																																																
a. Congressional/General Reductions																																																
b. Small Business Innovative Research	-700																																															
c. Omnibus or Other Above Threshold Reprogram	-1,001																																															
d. Below Threshold Reprogram	-826																																															
e. Rescissions																																																
Page 2 of 6 Pages		Exhibit R-2 (PE 0207412F)																																														

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207412F Modular Control System</b>				PROJECT <b>485L</b>				
<b>(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u></b>												
				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>					
(U)	Adjustments to Budget Years Since FY 2002 PBR					-16						
(U)	Current Budget Submit/FY 2003 PBR			17,164	6,749	6,652			TBD			
(U)	<u>Significant Program Changes:</u>											
<b>(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u></b>												
		<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>Complete</u>			
(U)	Other APPN											
(U)	Other Procurement Air Force, WSC 833040, Theater Air Control System Improvement			1,932	10,500	3,273	22,300	27,025	44,661	45,103	Continuing	TBD
(U)	Other Procurement Air Force, WSC 838010, Comm Electronic Mods			745	787	592						TBD
(U)	Other Procurement Air Force, WSC 86190A, Initial Spares			921	1,071	421	386	88	0	0	Continuing	TBD
<b>(U) <u>E. Acquisition Strategy</u></b>												
Primary emphasis on this program continues to be sustainment, while more modest steps toward upgrade/improvement were initiated in FY01 and are as outlined below.												
Concept Definition/Development of Evolutionary Upgrades Strategies:												
1. In FY00, funding was used to perform an environmental assessment and independent study. The principle portion of the Radio Remoting effort [to include design, prototype and Secure Voice Adapter (SVA) productization] was funded and begun in FY01 with the remaining effort to be funded through FY03. This strategy satisfies both an upgrade and an improvement, which allows for rapid insertion of technology and accommodates enhanced capability necessary to meet critical EAF requirements (reduces forward deployed footprint, keeping personnel out of harms way). This capability ensures connectivity with Forward C2 platforms and fighters.												
2. The BCS Program is utilizing an acquisition strategy entitled Common Battle Management Software (CBMS) to develop a capability to be used to further advance												
Project 485L				Page 3 of 6 Pages				Exhibit R-2 (PE 0207412F)				

**UNCLASSIFIED**

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>											<b>DATE</b> February 2002																																																																																																																																																																																																			
<b>BUDGET ACTIVITY</b>					<b>PE NUMBER AND TITLE</b>						<b>PROJECT</b>																																																																																																																																																																																																			
<b>07 - Operational System Development</b>					<b>0207412F Modular Control System</b>						<b>485L</b>																																																																																																																																																																																																			
<p>(U) <b><u>E. Acquisition Strategy Continued</u></b>            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.</p>																																																																																																																																																																																																														
<p>(U) <b><u>F. Schedule Profile</u></b></p> <table border="0" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:35%;"></th> <th colspan="4" style="text-align:center"><u>FY 2001</u></th> <th colspan="4" style="text-align:center"><u>FY 2002</u></th> <th colspan="4" style="text-align:center"><u>FY 2003</u></th> </tr> <tr> <th></th> <th style="text-align:center">1</th> <th style="text-align:center">2</th> <th style="text-align:center">3</th> <th style="text-align:center">4</th> <th style="text-align:center">1</th> <th style="text-align:center">2</th> <th style="text-align:center">3</th> <th style="text-align:center">4</th> <th style="text-align:center">1</th> <th style="text-align:center">2</th> <th style="text-align:center">3</th> <th style="text-align:center">4</th> </tr> </thead> <tbody> <tr> <td>(U) TAD MTS Contract Award</td> <td style="text-align:center">*</td> <td></td> </tr> <tr> <td>(U) TAD MTS Software Build 1</td> <td></td> <td></td> <td style="text-align:center">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) TAD MTS Critical Design Review</td> <td></td> <td></td> <td style="text-align:center">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) TAD MTS Software Build 2</td> <td></td> <td></td> <td></td> <td style="text-align:center">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) TAD MTS Software Build 3</td> <td></td> <td></td> <td></td> <td style="text-align:center">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) TAD MTS Software Build 4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align:center">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) TAD MTS Developmental Test &amp; Evaluation (DT&amp;E)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align:center">X</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) TAD MTS Operational Test &amp; Evaluation (OT&amp;E)</td> <td></td> <td style="text-align:center">X</td> <td></td> </tr> <tr> <td>(U) Radio Remoting (RR) Spiral 1 Contract Award</td> <td></td> <td style="text-align:center">*</td> <td></td> </tr> <tr> <td>(U) RR Critical Design Review</td> <td></td> <td></td> <td></td> <td style="text-align:center">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) RR Secure Voice Adapter Integration</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align:center">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) RR Spiral 1 Follow-On Test &amp; Evaluation (FOT&amp;E)</td> <td></td> <td style="text-align:center">X</td> <td></td> </tr> <tr> <td>(U)</td> <td></td> </tr> </tbody> </table> <p>* Denotes completed event            x Denotes planned event</p>													<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) TAD MTS Contract Award	*												(U) TAD MTS Software Build 1			*										(U) TAD MTS Critical Design Review			*										(U) TAD MTS Software Build 2				*									(U) TAD MTS Software Build 3				*									(U) TAD MTS Software Build 4							*						(U) TAD MTS Developmental Test & Evaluation (DT&E)								X					(U) TAD MTS Operational Test & Evaluation (OT&E)											X		(U) Radio Remoting (RR) Spiral 1 Contract Award		*											(U) RR Critical Design Review				*									(U) RR Secure Voice Adapter Integration							*						(U) RR Spiral 1 Follow-On Test & Evaluation (FOT&E)											X		(U)												
	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>																																																																																																																																																																																																					
	1	2	3	4	1	2	3	4	1	2	3	4																																																																																																																																																																																																		
(U) TAD MTS Contract Award	*																																																																																																																																																																																																													
(U) TAD MTS Software Build 1			*																																																																																																																																																																																																											
(U) TAD MTS Critical Design Review			*																																																																																																																																																																																																											
(U) TAD MTS Software Build 2				*																																																																																																																																																																																																										
(U) TAD MTS Software Build 3				*																																																																																																																																																																																																										
(U) TAD MTS Software Build 4							*																																																																																																																																																																																																							
(U) TAD MTS Developmental Test & Evaluation (DT&E)								X																																																																																																																																																																																																						
(U) TAD MTS Operational Test & Evaluation (OT&E)											X																																																																																																																																																																																																			
(U) Radio Remoting (RR) Spiral 1 Contract Award		*																																																																																																																																																																																																												
(U) RR Critical Design Review				*																																																																																																																																																																																																										
(U) RR Secure Voice Adapter Integration							*																																																																																																																																																																																																							
(U) RR Spiral 1 Follow-On Test & Evaluation (FOT&E)											X																																																																																																																																																																																																			
(U)																																																																																																																																																																																																														
Project 485L					Page 4 of 6 Pages				Exhibit R-2 (PE 0207412F)																																																																																																																																																																																																					

UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0207412F Modular Control System</b>				<b>485L</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Program Support (i.e. travel, supplies, and miscellaneous)					704		469		506	
(U)	Systems Engineering					534		647		666	
(U)	Concept Definition/Development for Evolutionary Upgrades to the BCS [includes CBMS, enhanced radio/radar remoting, and misc. (includes dedication Evolutionary Upgrades SPO Support)]					6,879		3,674		4,543	
(U)	Development of TAD MTS Upgrade for the Radar Sensors (includes dedicated TAD MTS direct mission support)					9,047		1,959		937	
(U)	Total					17,164		6,749		6,652	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation Date</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
<u>Product Development Organizations</u>											
Contractor Northrop Grumman, Baltimore - TAD MTS	FFP	1QFY01	N/A	N/A	5,604	9,047	1,959	937	Continuing	TBD	
Rome Labs & NAWCAD - Concept Definition/Development of Evolutionary Upgrades	FFP	2QFY01	N/A	N/A	425	6,879	3,674	4,543	Continuing	TBD	
<u>Support and Management Organizations</u>											
Miscellaneous program support (travel, supplies, etc.)	Various	Various	N/A	N/A	325	704	469	506	Continuing	TBD	
Systems Engineering.	Various	Various	N/A	N/A	0	534	647	666	Continuing	TBD	
Project 485L				Page 5 of 6 Pages				Exhibit R-3 (PE 0207412F)			

