

**UNCLASSIFIED**

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								DATE <b>February 1997</b>		
<b>BUDGET ACTIVITY</b> <b>4 - Demonstration and Validation</b>				<b>PE NUMBER AND TITLE</b> <b>0603864C Battle Management and C41 for TMD Acquisition</b>					<b>PROJECT</b> <b>3261</b>	
<i>COST (\$ In Thousands)</i>	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
3261 TMD BM/C3I (BM/C3I Concepts)	27,147	0	0	0	0	0	0	0	TBD	TBD
<p><b>A. <u>Mission Description and Budget Item Justification</u></b></p> <p>The primary mission of this project is to provide the warfighter with an integrated and interoperable Theater Missile Defense (TMD) Battle Management/Command, Control, Communications, and Intelligence (BM/C3I) capability having the flexibility to meet a wide range of threats and expected needs. The BM/C3I architecture for TMD is built upon the existing command and control (C2) structure for Theater Air Defense (TAD) and adds the communications linking TMD C2 nodes, weapons, and sensors, and the TMD interfaces to intelligence systems and other supporting capabilities. The BMDO, from its joint perspective, uses this project to oversee independent weapon systems development and to provide guidance, standards, equipment, integration, and analysis to maximize the performance of a multitude of sensors, interceptors, and C2 nodes and to synergize their individual contributions to an integrated Joint theater-wide TMD system. BMDO has three major thrusts to the TMD BM/C3I integration program.</p> <p>The first thrust establishes the links and means for receipt and in-theater early warning and dissemination of launch warning information from space-based and intelligence systems external to TMD. This project supports the system engineering of their capability and prototype development of items such as improved displays for early in-theater warning information. This project focuses on linking separate external systems into the theater.</p> <p>The second thrust of the BM/C3I program focuses on communication of, and interoperability among, TMD weapon systems. Interoperability includes both the communications equipment, and protocols as well as the common command and control procedures among different weapons systems to ensure a truly integrated theater-wide ballistic missile defense system. The cornerstone of TMD interoperability is the Joint Data Net (JDN) which uses the Joint Tactical Information Distribution System (JTIDS) and the Tactical Data Information Link-JTIDS (TADIL-J) message format. This project integrates JTIDS terminals into existing Theater Ballistic Missile Defense (TBMD) C2 platforms and provides the necessary software upgrades. This funding is critical for timely inter-Service interoperability.</p> <p>The third thrust of the BM/C3I program directs attention to upgrades of Service C2 centers. Various command center upgrades are included in this project to reduce decision-making time necessary to effectively engage ballistic missiles. Again, BMDO leverages off several existing Service-funded theater air defense command center upgrades and this project funds only the specific TMD-related aspects of these upgrades. BMDO's central direction and support of hardware and software developments will produce an integrated C2 capability for TMD.</p> <p>The joint warfighters and BM/C3I developers evaluate the effects of early warning, improved interoperability, integration, and command center upgrades on joint TBMD doctrine through BM/C3I work shops and analysis.</p>										
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<p>All of the efforts in this project are designed to provide a seamless interoperable architecture to provide timely warning and information necessary to reduce decision times and allow more opportunities to efficiently and effectively engage hostile missiles. The end result will kill more missiles and will reduce casualties to U.S. and other friendly forces.</p> <p><u>FY 1996 (\$ in Thousands)</u></p> <ul style="list-style-type: none"> <li>- \$7,120 Army: Complete debris techniques analysis plan and track correlation and flexible firing doctrine analysis; evaluate software maturity for operational tests; develop a data link handbook; establish a software library and re-use database</li> <li>- \$1,523 Air Force: Start integration of JTIDS on multiple additional USAF platforms; complete initial JTIDS integration on AWACS; produce two additional TMD intelligence support templates; prototype the decision support aids for Joint Force Air Component Commander (JFACC) battle management; complete gateway software development and testing; multi-sensor tracking algorithm development; implement situation targeting algorithms; develop, simulate, and demonstrate prototypes of the recommended Theater Battle Management Core Systems (TBMCS) application for the distributed C2 nodes; update Information Exchange Requirements (IER) and resolve interoperability issues; produce technical baseline for Time-Critical Target Aid (TCTA) and JTIDS gateway.</li> <li>- \$6,885 Navy: Conduct JTIDS network design analysis; enhance evolution of Joint Maritime Command Information System (JMCIS) TBMD segments; participate in Joint TMD BM/C3I work shops; complete testing of JTIDS C2P modifications; begin development of ICD for AEGIS/Joint Maritime Command Information Services (JMCIS) interface; begin implementation of TBMD modifications necessary for Advanced Combat Direction system (ACDS). The last two efforts are critical to maintain schedule with AEGIS and ACDS.</li> <li>- \$3,500 USMC: Integrate additional JTIDS terminals into Air Defense Communications Platform (ADCP); commence development of cue acceptance software in the AN/TPS-59 (HAWK) radar; initiate integration efforts for JTIDS (TADIL-J) into the Tactical Air Operations Module (TAOM)</li> <li>- \$8,119 Joint/Combined: Conduct TMD BM/C3I work shops; conduct command and control (C2) tests to refine C2 procedures; initiate Multifunctional Information Distribution System (MIDS) Army development efforts; complete rapid &amp; contingency deployable prototypes of the Combat Integration Capability (CIC) and the Sector Anti-Air Warfare Facility (SAAWF); conduct modeling and analysis of JTIDS network structure in support of TMD; support inter-Service integration efforts; initiate joint TMD planning capability; develop follow-on TADIL-J messages; test and refine existing messages.</li> <li>- \$27,147 Total</li> </ul> <p><u>FY 1997 (\$ in Thousands)</u></p> <ul style="list-style-type: none"> <li>- \$0</li> <li>- \$0 Total</li> </ul> <p><u>FY 1998 (\$ in Thousands)</u></p> <ul style="list-style-type: none"> <li>- \$0</li> </ul>		
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<p>– \$0 Total</p> <p><u>FY 1999 (\$ in Thousands)</u></p> <p>– \$0</p> <p>– \$0 Total</p> <p><u>Acquisition Strategy</u> The 3261 Project acquisition strategy leverages existing system acquisition programs (which are subject to milestone decisions and testing) and accomplishes supporting tasks to satisfy BM/C3I performance requirements. A significant portion of this project entails systems engineering of separately funded and managed service programs so that all systems will interoperate when fielded.</p> <p><b>B. Program Change Summary (\$ in Thousands)</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY 1996</u></th> <th style="text-align: center;"><u>FY 1997</u></th> <th style="text-align: center;"><u>FY 1998</u></th> <th style="text-align: center;"><u>FY 1999</u></th> <th style="text-align: center;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>Previous President's Budget</td> <td style="text-align: center;">23,160</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">23,160</td> </tr> <tr> <td>Current Budget Submit/President's Budget</td> <td style="text-align: center;">27,147</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">27,147</td> </tr> </tbody> </table> <p>Change Summary Explanation:</p> <p>Funding: Congressional direction eliminated the TMD BM/C3I program elements 0603864/0604864C and placed this project under the Joint TMD activities program element. Consistent with this direction, a determination was made that this program is more appropriately funded with Dem/Val funds. Navy tasks directly supporting the Navy Area TBMD program were deleted from this project for FY1997 and beyond and funded under the Navy Area TBMD program element (Project 2263) to unify control.</p> <p>Schedule: None</p> <p>Technical: None</p>				<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	Total Cost	Previous President's Budget	23,160	0	0	0	23,160	Current Budget Submit/President's Budget	27,147	0	0	0	27,147
	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	Total Cost															
Previous President's Budget	23,160	0	0	0	23,160															
Current Budget Submit/President's Budget	27,147	0	0	0	27,147															
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**C. Other Program Funding Summary (\$ in Thousands)**

While this program is not dependent upon funding from other programs, it supports these programs by providing capstone systems engineering, common BM/C3I guidance, government furnished equipment, interface support, joint network design analysis, and other actions necessary to achieve interoperability among independent systems.

	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>To</u> <u>Compl</u>	<u>Total</u> <u>Cost</u>
3261 TMD BM/C3I PE: 0604864C	10,115	0	0	0	0	0	0	0	TBD	TBD
3261 TMD BM/C3I PE: 0603872C	0	32,357	34,094	35,864	43,717	44,576	43,210	43,286	Comp	Comp

**D. Schedule Profile**

	<u>FY 1996</u>			<u>FY 1997</u>			<u>FY 1998</u>			<u>FY 1999</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
Data link handbook published (Army)				X								
TMD software library & re-use database established (Army)				X								
Two CIC/SAAWF prototypes fielded (USAF/USMC)				X								