

# UNCLASSIFIED

FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: June 2001

BUDGET ACTIVITY: 3      PROGRAM ELEMENT: 0603123N  
PROGRAM ELEMENT TITLE: FORCE PROTECTION ADVANCED TECHNOLOGY

COST: (Dollars in Thousands)

PROJECT

NUMBER & TITLE	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE
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Force Protection Advanced Technology			
R2192	**	**	85,297

\*\* The Science and Technology Program Element (PE) were restructured in FY 2002. The work described in FY 2000 & 2001 was funded in PE(s) 0603238N, 0603270N, 0603508N, 0603792N, and 0603217N.

MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Includes RDT&E funds to develop and demonstrate advanced technologies that support platform self protection and theatre wide and missile defense of naval platforms and forces. The new capabilities include the areas of all-weather, day/night protection of naval platforms and forces against all weapon threats, counterstealth and countermeasures. These new capabilities also include affordable technologies for platform structural systems as well as platform systems, sub-systems and components and aircraft vectoring technologies. Demonstrated capabilities support the ability to prevent or control platform damage while preserving operational capability.

Due to the number of efforts in this PE, the programs described are representative of the work included in this PE.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is budgeted within the ADVANCED TECHNOLOGY DEVELOPMENT Budget Activity because it encompasses design development, simulation, or experimental testing of prototype hardware to validate technological feasibility and concept of operations and reduce technological risk prior to initiation of a new acquisition program or transition to an ongoing acquisition program.

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Budget Item Justification  
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PROGRAM CHANGE FOR TOTAL PE:

	FY 2000	FY 2001	FY 2002
FY 2001 President's Budget	**	**	-
Adjustments from FY 2001 President's Budget:			
PE Restructure			37,219
NWCF Adjustment			21
Non Pay Inflation Adjustment			3
Minor Adjustment			-46
Additional Program Adjustment			48,100
FY 02 PRESBUDG Submission	**	**	85,297

\*\* The Science and Technology Program Element (PE) were restructured in FY 2002. The work described in FY 2000 & 2001 was funded in PE(s) 0603238N, 0603270N, 0603508N, 0603792N, and 0603217N.

Schedule: Not Applicable.

Technical: Not Applicable.

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PROJECT TITLE: Force  
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PROGRAM ACCOMPLISHMENTS AND PLANS:

Surface Ship & Submarine Hull, Mechanical & Electrical (HM&E)	FY00	FY01	FY02  \$60,344
Initiate	<ul style="list-style-type: none"> <li>Reconfigurable Engineering Plant</li> <li>Superconducting (SC) and Permanent Magnet (PM) Propulsion Motors</li> </ul>		<ul style="list-style-type: none"> <li>Dynamic Magazine Protection</li> <li>Passive Magazine Protection</li> <li>Advanced Damage Countermeasures</li> <li>Near Field Deamping</li> <li>Coastal Area Protection System</li> <li>Electric warship technologies, including directed energy</li> <li>Ship technology demonstrator platform</li> </ul>
Continue	<ul style="list-style-type: none"> <li>Damage Control Automation to Reduce Manning (DCARM)</li> <li>Quiet Electric Drive</li> <li>Ship Service Fuel Cell</li> <li>Power Electronic Building Blocks</li> <li>Advanced Machinery Support System</li> </ul>	<ul style="list-style-type: none"> <li>Damage Control Automation to Reduce Manning (DCARM)</li> <li>Quiet Electric Drive</li> <li>Ship Service Fuel Cell</li> <li>Advanced Machinery Support System</li> <li>Reconfigurable Engineering Plant</li> <li>SC and PM Propulsion Motors</li> </ul>	<ul style="list-style-type: none"> <li>Advanced Machinery Support System</li> <li>Reconfigurable Engineering Plant</li> <li>Ship Service Fuel Cell</li> <li>Quiet Electric Drive</li> <li>SC and PM Propulsion Motors</li> </ul>

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Complete	<ul style="list-style-type: none"> <li>Advanced Machinery Support System</li> <li>- ER Truss Assessment</li> <li>- Project M Large Scale Demo</li> </ul>	<ul style="list-style-type: none"> <li>Advanced Machinery Support System</li> <li>- Truss Shock Demo</li> <li>Power Electronic Building Blocks</li> </ul>	<ul style="list-style-type: none"> <li>Damage Control Automation to Reduce Manning (DCARM)</li> <li>Advanced Machinery Support System</li> <li>- Coating Demo</li> </ul>
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Sensors & Associated Processing	FY00	FY01	FY02 \$16,077
Initiate	<ul style="list-style-type: none"> <li>Multifunction Infrared Distributed Aperture System (MIDAS) Maritime Technology Demonstration (MTD). Objective is to demonstrate a passive infrared sensor system to provide pilots and other platform operators with visual quality spherical tactical situational awareness.</li> <li>Ship Infrared Search &amp; Track (IRST) Sensor</li> </ul>	<ul style="list-style-type: none"> <li>Affordable Ground Based Radar</li> </ul>	<ul style="list-style-type: none"> <li>Missile Warning System (MWS)</li> <li>Shipboard Electro-optic (EO)/Infrared (IR) Closed loop Self Protection</li> <li>EO/IR Self Protection for Small Ground Vehicles</li> <li>Submarine &amp; Surface Platform Self Protection Classified Project</li> <li>Develop Quantum Cascade and Diode Pump Solid State Lasers for EO/IR Self Protection</li> </ul>
Continue		<ul style="list-style-type: none"> <li>MIDAS-Maritime Technology Demonstration (MTD)</li> <li>Ship Based IRST Sensor</li> </ul>	<ul style="list-style-type: none"> <li>Affordable Ground Based Radar</li> <li>Ship Based IRST Sensor</li> </ul>
			<ul style="list-style-type: none"> <li>MIDAS-MTD: Assemble flight</li> </ul>

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Complete			demonstration system and conduct flight demonstration.
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Missile Defense	FY00	FY01	FY02 \$7,679
Initiate			<ul style="list-style-type: none"><li>• Development of affordable sensor system elements which can be used ashore against air threats targeted at Marine Corps units or Critical assets ashore protected by Naval Forces.</li><li>• Development of affordable elements of airborne and shipboard multi-spectral sensor and combat systems for the purpose of early detect through engage functions over-the-horizon from firing ships.</li></ul>

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			<ul style="list-style-type: none"> <li>Develop a demonstration system for Threat prioritization and weapon assignment in a multi-mission environment.</li> <li>Affordable and highly effective interceptor components which can be integrated into variants of surface-to-air interceptors currently envisioned.</li> </ul>
Continue	<ul style="list-style-type: none"> <li>Develop &amp; flight demo enhanced air platform operational capability</li> </ul>	<ul style="list-style-type: none"> <li>Develop &amp; flight demo enhanced air platform operational capability</li> </ul>	<ul style="list-style-type: none"> <li>Develop &amp; flight demo enhanced air platform operational capability</li> </ul>

Underwater Platform Self Defense	FY00	FY01	FY02
			\$1,197
Continue	<ul style="list-style-type: none"> <li>Anti-torpedo Torpedo Trip Wire System</li> </ul>	<ul style="list-style-type: none"> <li>Anti-torpedo Torpedo Trip Wire System</li> </ul>	<ul style="list-style-type: none"> <li>Anti-torpedo Torpedo Trip Wire System</li> </ul>

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## OTHER PROGRAM FUNDING SUMMARY:

### NAVY RELATED RDT&E:

- PE 0601153N (Defense Research Sciences)
- PE 0602123N (Force Protection Applied Research)
- PE 0603561N (Advanced Submarine Systems Development)
- PE 0603563N (Ship Concept Advanced Design)
- PE 0603573N (Advanced Surface Machinery Systems)
- PE 0603609N (Conventional Munitions)
- PE 0603755N (Ship Self Defense)
- PE 0603790N (NATO Research and Development)
- PE 0603792N (Advanced Technology Transition)
- PE 0603794N (C3 Advanced Technology)
- PE 0603800N (Joint Advanced Strike Technology Program)
- PE 0604270N (EW Development)
- PE 0604366N (Standard Missile Improvements)
- PE 0604558N (New Design SSN Development)
- PE 0604561N (SSN-21 Development)

### NON-NAVY RELATED RDT&E:

- PE 0602201F (Aerospace flight Dynamics)
- PE 0602203F (Aerospace Propulsion)
- PE 0602204F (Aerospace Avionics)
- PE 0602270F (Electronic Combat Technology)
- PE 0603202F (Aerospace Propulsion Subsystems Integration)
- PE 0603245F (Advanced Flight Technology Integration)
- PE 0603205F (Flight Vehicle Technology)
- PE 0603216F (Aerospace Propulsion and Power Technology)
- PE 0603270F (Electronic Combat Technology)
- PE 0603401F (Advanced Spacecraft Technology)
- PE 0603601F (Conventional Weapons Technology)
- PE 0603726F (C3I Subsystem Integration)

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PE 0604770F (Joint Surveillance/Target Attack Radar Systems (JSTARS)

PE 0602270A (Electronic Warfare Technology)

PE 0603270A (Electronic Warfare Technology)

PE 0603772A (Advanced Tactical Computer Science and Sensor Technology)

PE 0604866C (Patriot Risk Reduction Mitigation)

SCHEDULE PROFILE: Not applicable.

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