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<b>ARMY RDT&amp;E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)</b>								DATE <b>February 1999</b>		
BUDGET ACTIVITY <b>4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603774A Night Vision Systems - Advanced Development</b>				PROJECT <b>D131</b>		
COST <i>(In Thousands)</i>	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D131 Night Vision Systems Advanced Development	2152	2664	3188	4036	4790	4773	5424	5395	Continuing	Continuing
<p><b>A. <u>Mission Description and Justification:</u></b> This project encompasses the advanced development phase of the Army acquisition cycle for Night Vision and Electro-Optic (NVEO) devices/systems and prepares them for engineering development. The key objective of this program is to provide NVEO devices/systems for acquisition and engagement of enemy targets at maximum weapon system ranges under degraded battlefield/weather conditions and in countermeasure environments. This project provides the funding necessary to implement advances for product improvement or horizontal technology integration (HTI) to upgrade current capabilities in the future. The efforts are centered around development of countermeasure and electro-optic sensors improved capabilities for the individual soldiers and combat vehicles to meet stated Army deficiencies such as fratricide reduction.</p> <p><b>FY 1998 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 405 Developed additional Laser Protection for HTI SGF ground "B" Kit to be integrated into M2A3, M3A3, M1A2 SEP, and LRAS3.</li> <li>• 231 Integrated and demonstrated sight level ground "B" kit advanced capabilities for the HTI SGF.</li> <li>• 758 Prepared, demonstrated and improved FLIR capability for aviation systems.</li> <li>• 308 Evaluated lightweight multispectral sensor package at White Sands Missile Range.</li> <li>• 450 Developed Sensor Risk Reduction Project (SR2P) Testbed</li> </ul> <p>Total 2152</p> <p><b>FY 1999 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 510 Complete development of laser protection for HTI SGF ground "B" Kit to be integrated into M2A3, M3A3, M1A2 SEP, and LRAS3.</li> <li>• 100 Demonstrate existing Automatic Target Recognition/Automatic Target Cueing (ATR/ATC) interface capability with "B" kit.</li> <li>• 1337 Prepare and initiate sight level demonstration of improved FLIR capabilities (one test unit).</li> <li>• 300 Develop A &amp; B Kit HTI Laser designs to include solid models.</li> <li>• 346 Complete development and demonstrate Sensor Risk Reduction Project (SR2P) Testbed (one test unit)</li> <li>• 71 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs</li> </ul> <p>Total 2664</p>										
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**FY 2000 Planned Program:**

- 988 Develop Laser protection for high performance detectors
  - 793 Complete sight level demonstration of improved FLIR capabilities (one test unit)
  - 1107 Develop sensor fusion for targeting and surveillance
  - 300 Continue demonstration of Sensor Risk Reduction Project (SR2P) Testbed (one test unit)
- Total 3188

**FY 2001 Planned Program:**

- 1456 Develop advanced system level optical improvements
  - 1326 Demonstrate sensor fusion in a combat vehicle (two test units)
  - 1254 Develop advanced processing capability for "B" Kit (improve low contrast)
- Total 4036

<b>B. Program Change Summary</b>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
Previous President's Budget (FY 1999 PB)	2848	2681	3015	3779
Appropriated Value	2939	2681		
Adjustments to Appropriated Value				
a. Congressional General Reductions	-91	-17		
b. SBIR / STTR	-64			
c. Omnibus or Other Above Threshold Reduction	-21			
d. Below Threshold Reprogramming	-611			
e. Rescissions				
Adjustments to Budget Years Since FY 1999 PB			+173	+257
Current Budget Submit (FY 2000/2001 PB)	2152	2664	3188	4036

Changes Summary Explanation: Funding: FY 1998 – Funds reprogrammed to a higher priority requirement (-611).

<b>C. Other Program Funding Summary</b>	<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>FY 2004</u>	<u>FY 2005</u>	To <u>Compl</u>	Total <u>Cost</u>
PE 0602709A/Night Vision and Electro-Optical Technology RDTE, A Budget Activity 2	16563	19008	20111	20966	21624	20527	21870	23436	Continue	Continue

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<b>C. Other Program Funding Summary</b>	<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>FY 2004</u>	<u>FY 2005</u>	To Compl	Total Cost
PE 0603710A/Night Vision Advanced Development RDTE, A Budget Activity 3	17628	27273	36628	37035	41416	37726	34348	32756	Continue	Continue
PE 0604710A/Night Vision Devices Engineering Development RDTE, A Budget Activity 5	33338	21167	30644	31270	32577	23440	18348	130844	Continue	Continue
PE 0203735A/Abrams and Bradley A-Kit Development RDTE, A Budget Activity 7	71604	67473	3221	0	0	0	9508	9761	Continue	Continue
<b>D. Acquisition Strategy:</b> The advances and improvements for Second Generation FLIR (SGF) utilize various cost reimbursement development contracts that were competitively awarded using best value source selection procedures.										
<b>E. Schedule Profile</b>	<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>FY 2004</u>	<u>FY 2005</u>		
Prepare/Demonstrate Ground B Kit Advanced Capabilities (Test)	1Q-4Q									
Develop advanced optical assembly	1Q-4Q									
Evaluate Light Weight Multispectral Sensor package	2Q-4Q									
Develop laser protection for vehicles	1Q-4Q	1Q-4Q								
Demonstrate ATR/ATC capability/interface with Aviation and Ground B Kit		2Q-4Q								
Prepare/Demonstrate improved FLIR capabilities (Test)		1Q-4Q								
Develop HTI Laser design		1Q-4Q								
Develop and Demo Laser Protection for high performance detectors			1Q-4Q							
Demonstrate improved FLIR Capabilities			1Q-2Q							
Develop Sensor Fusion			1Q-4Q							
Develop & demonstrate SR2P Testbed	1Q-4Q	1Q-4Q	1Q-2Q							
Develop advanced system level optical improvements				1Q-4Q	1Q-4Q					
Demonstrate Sensor Fusion				1Q-3Q						
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<b>E. Schedule Profile</b>	<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>FY 2004</u>	<u>FY 2005</u>
Develop Advanced processing capability				1Q-4Q	1Q-4Q			
Develop & Demonstrate Advanced capabilities for Staring Arrays						1Q-4Q	1Q-4Q	1Q-4Q
Develop & Demonstrate Laser Protection for Advanced Staring Arrays						1Q-4Q	1Q-4Q	1Q-4Q

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**ARMY RDT&E COST ANALYSIS (R-3)**

DATE **February 1999**

**BUDGET ACTIVITY**  
**4 - Demonstration and Validation**

**PE NUMBER AND TITLE**  
**0603774A Night Vision Systems - Advanced Development**

**PROJECT**  
**D131**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Laser Protection	Various	Various	405			988	2Q	1326	1Q-2Q	Continue	2719	
b. SR2P	C/CP	Westinghouse, Linthicum, MD	450	346	1Q	300	1Q				1096	
c. FLIR Develop/Integrate	Various	Various	541	1397	1Q	466	1Q				2404	
d. HTI Laser Design	C/CP	Raytheon, Dallas, TX		300	2Q						300	
e. Sensor Fusion Activities	C/CP	To Be Selected				892	2Q	734	1Q	Continue	1626	
f. Advanced Processing Activities	C/CP	To Be Selected						1115	2Q	Continue	1115	
g. SBIR/STTR	Various	To Be Selected		71							71	
Subtotal Product Development:			1396	2114		2646		3175			9331	

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Matrix Support	MIPR	Various	139	174	1Q	232	1Q	301	1Q	Continue	846	
Subtotal Support Costs:			139	174		232		301			846	

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Multispectral Eval	MIPR	WSMR	308								308	
b. FLIR Evals	MIPR	Various	275	352	1Q	284	1Q				911	
c. Sensor Fusion Evals	MIPR	To Be Selected						533	1Q	Continue	533	
Subtotal Test and Evaluation:			583	352		284		533			1752	

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<b>ARMY RDT&amp;E COST ANALYSIS (R-3)</b>	DATE <b>February 1999</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Program Management		PM-NV/RSTA, Ft. Belvoir, VA	34	24	1Q	26	1Q	27	1Q	Continue	111	
Subtotal Management Services:			34	24		26		27			111	
<b>Project Total Cost:</b>			2152	2664		3188		4036			12040	