

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)							February 2003				
BUDGET ACTIVITY 7 - Operational system development				PE NUMBER AND TITLE 0305206A - Airborne Reconnaissance Adv Development				PROJECT K98			
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
K98	MASINT SENSOR INTEGRATION (JMIP)	10910	11438	4751	5094	5366	5449	5181	5465	Continuing	Continuing
<p><u>A. Mission Description and Budget Item Justification:</u> This project continues development of advanced tactical reconnaissance and surveillance sensor technologies and develops technology for the on-board fusion of multidiscipline intelligence sensors, i.e. Signals Intelligence (SIGINT), Moving Target Indicator/Synthetic Aperture (MTI/SAR) Radar, and Measure and Signature Intelligence (MASINT). Hyperspectral, multi-spectral, interferometric synthetic aperture radar sensors, advanced target and image exploitation software will be developed for imagery intelligence (IMINT) and MASINT applications. The Hyperspectral Longwave Imager for the Tactical Environment (HyLITE) develops the next generation airborne day/night hyperspectral reconnaissance sensor for the countermine mission, and detection and identification of camouflaged and concealed targets in all terrain environments. The Signals Warfare Project Office will develop MASINT/IMINT technologies for Aerial Common Sensor (ACS). Efforts will be directed toward the development of advanced multi-mode Electroptical/Infrared (EO/IR), multi-mode MTI/SAR radar, foliage penetration radar, multi-spectral/hyperspectral imageries (MSI/HSI), MASINT on-board fusion and registration, and cueing of the EO/IR/SAR/HSI imaging sensor. FY04/05 funds continue MTI/SAR and MSI/HSI technology development and supports the integration of these for system demonstrations.</p> <p>MASINT was provided a supplemental fund called Defense Emergency Response Fund (DERF), as a non-add, for \$2.6 million in FY 2002.</p> <p>This system supports the Objective transition path of the Transformation Campaign Path (TCP).</p>											
<u>Accomplishments/Planned Program</u>							<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	
-Conducted Critical Design Review (CDR)of the Hyperspectral Long Wave Imager for the Tactical Environment (HyLITE) sensor. Completed system integration and initial testing. Participated in joint spectral data collection and exercises of various terrain and environmental backgrounds for algorithm development (day only). Developed and integrated multiple algorithm exploitation and processing techniques for advanced spectral detection and recognition (day only)							6037	1721	0	0	
Spiral development and integration of multi-mode MTI/SAR/MSI/HSI/EO/IR capabilities for the ACS program							4873	4882	4751	5094	
Development of Signature-based unattended MASINT sensor							0	2950	0	0	
- Sensor development and improvements of the HyLITE system for application in the tactical environment. Conduct integration of HyLITE with the NVESD test bed aircraft. Conduct lab characterization, flight tests, data collections, and field experimentations.							0	1885	0	0	

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<p><u>D. Acquisition Strategy:</u> The HyLITE system acquisition strategy provided for the award of an R&D effort beginning in FY 1999 under best value full and open competition procedures. Data collection efforts to support analytic studies began in FY1998 using existing sensor and hardware integrated on a NVESD testbed aircraft. The ACS CE phase completed in 1QFY02 and two ACS CAD contracts were awarded in 3QFY02 on a competition basis. The CAD contract's efforts will develop MTI/SAR/MSI/HSI and multi-sensor technologies identified and found critical to the Aerial Common Sensor (ACS) program based upon the ACS Concept Exploration (CE) phase. The System Development and Demonstration (SDD) phase will be a competitive solicitation with contract award scheduled in 1QFY04.</p>		

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY 7 - Operational system development					PE NUMBER AND TITLE 0305206A - Airborne Reconnaissance Adv Development					PROJECT K98		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Night Vision Development Support; HyLITE	C/CPFF	BAE Systems, NY	10086	1396	3Q	0		0		0	11482	11494
b . ACS Development Support; Hyperspectral Imagery	C-CPFF	BAE Systems, NY	0	1155	3Q	0		0		0	1155	1194
c . ACS Technology contract for MTI/SAR/MIS/HSI/EO/IR	C-CPXF	Multiple	4403	4270	1-2Q	4009	1Q	4318		Continue	Continue	Continue
Subtotal:			14489	6821		4009		4318		Continue	Continue	Continue
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ACS System Engineering; Hyperspectral Imagery	C/T&M	EOIR, Fredricksburg VA	1615	125	2Q	0		0		0	1740	1615
b . Technical Support; HyLITE	C/T&M	SAIC Corp, San Diego, CA	228	0		0		0		0	228	228
c . ACS Technical Support; Hyperspectral Imagery	C/T&M	IDA; Washington, DC	260	50	2Q	0		0		0	310	260

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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
d . NV Technical Support HyLITE	C/T&M	Northrop Grumman, Los Angeles, CA	0	250	2Q	0		0		0	250	0
e . ACS Technical Support; Hyperspectral Imagery	C/T&M	Northrup Grumman, Los Angeles, CA	0	250	2Q	0		0		0	250	0
Subtotal:			2103	675		0		0		0	2778	2103
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ACS Systems Evaluation: Hyperspectral Imagery	MIPR	BCBL; Ft. Huachuca AZ	10	0		0		0		0	10	10
b . ACSTest & Demonstration; Hyperspectral Imagery	MIPR	CECOM; NVSED, NJ	922	200	2Q	0		0		0	1122	922
c . ACS Integration and Demonstration of MTI/SAR/MSI/HSI/EO/IR technologies	C-CPXF and MIPR	Multiple	0	375	2Q	489	1Q	508	1Q	Continue	Continue	Continue
Subtotal:			932	575		489		508		Continue	Continue	Continue

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . NV Program & Engineering Support; HyLITE	MIPR	CECOM; NVESD	1265	75	2Q	0		0		0	1340	1265
b . ACS Program & Engineering Support; MTI/SAR/MSI/HSI/EO/IR	MIPR	CECOM; I2WD	468	237	2Q	253	1Q	268	1Q	Continue	Continue	Continue
c . ACS Program & Engineering Support: Hyperspectral Imagery			0	105	2Q	0		0		0	105	0
d . Signature based unattended MASINT sensors			0	2950		0		0		0	2950	0
Subtotal:			1733	3367		253		268		Continue	Continue	Continue
Project Total Cost:			19257	11438		4751		5094		Continue	Continue	Continue

Schedule Profile Detail (R-4a Exhibit)							February 2003	
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<u>Schedule Detail</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>FY 2008</u>	<u>FY 2009</u>
HyLITE Algorithm Design/Implementation (day/night) and analysis	1-4Q	1-4Q						
HyLITE Aircraft Integration	3-4Q	3Q						
HyLITE Test and Demonstrate	3-4Q	1-4Q						
ACS MTI/SAR/MSI/HSI/EO/IR technology demonstrations		3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
ACS MS B Decision Review		4Q						
ACS MS C Decision Reivew								2Q