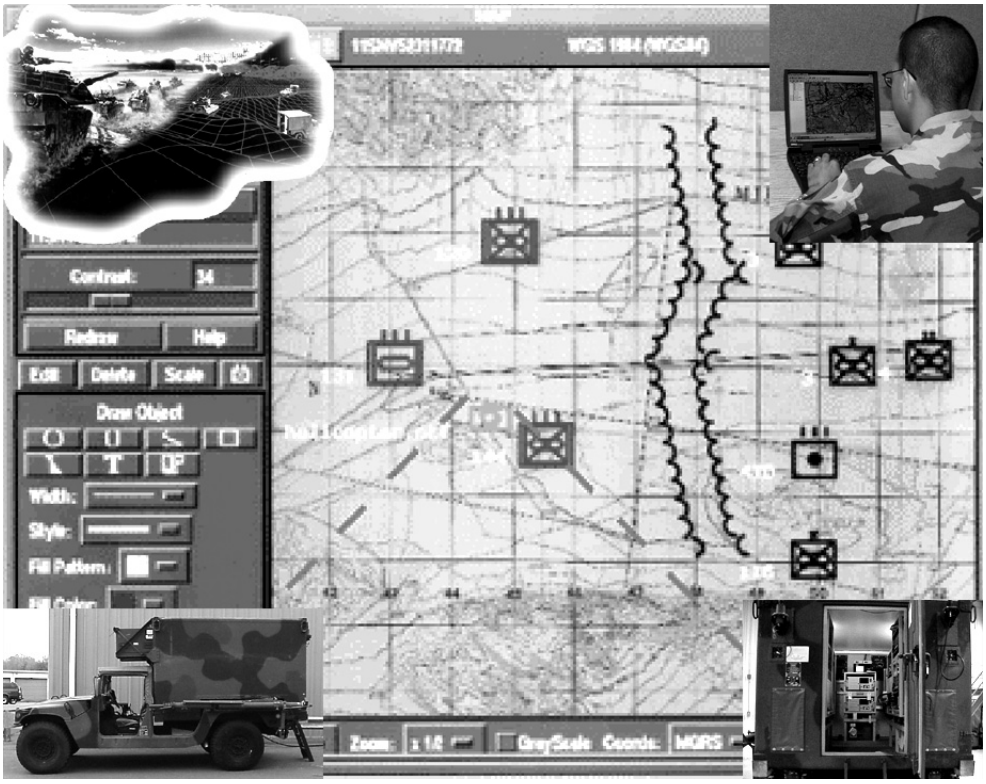
ALL SOURCE ANALYSIS SYSTEM (ASAS)



Army ACAT II Program:		**Prime Contractor**
Total Number of Systems:	79 Block II ACE	Lockheed Martin Mission Systems
	1,031 RWS	Austin Information Systems
	1,477 ASAS Light	Potomac Research, Inc.
	82 ACT-E	Electronic Warfare Associates
	37 CCS	
Total Program Cost (TY$):	$613M (FY99-FY05)	
Cost Per Heavy Division (TY$):	$6M	
Full-rate production:	FY03	

SYSTEM DESCRIPTION & CONTRIBUTION TO JOINT VISION 2020

Information superiority underpins the operational concepts outlined in ***Joint Vision 2020***. Intelligence provided by the All Source Analysis System (ASAS) allows commanders to identify key points for ***dominant maneuver*** and find high priority targets for ***precision targeting***. Accomplishment of these operational concepts supports attaining the ***Joint Vision 2020*** concepts of ***full spectrum dominanc***e and ***conduct of joint operations***. ASAS contributes to attaining information superiority through a network of computer workstations that process and exchange sensor data, fuse multi-source data into a single intelligence picture, and support management of intelligence sensors. ASAS is tactically deployable to support intelligence and electronic warfare operations at battalion through echelons above corps, and provides interoperability with joint intelligence and sensor systems.

BACKGROUND INFORMATION

The requirement for ASAS was approved initially in 1986. Subsequently, the requirements were structured so that the ASAS could be developed, acquired, and fielded in discrete increments or blocks. ASAS Block I successfully completed OT in 1993, and is fielded to selected theater, corps, and division units throughout the Army. The current development focus is on Block II. The Block II development is structured to attain an interim capability through a series of stand-alone products that can be tested and fielded as the overall development continues. The ASAS Block III is the objective capability. The ASAS Remote Workstation began fielding after completing its operational test program in March 1999. Another product, an upgrade to the Communications Control Set, obtained a conditional materiel release in June 1999 following a series of developmental tests.

TEST & EVALUATION ACTIVITY

The Test and Evaluation Master Plan for the ASAS Block II program was updated to more accurately reflect ASAS Block II development. This TEMP completed an intensive integrated product team process leading to OSD approval in August 2000.

The Analysis Control Team Enclave (ACT-E), a Warfighter Rapid Acquisition Program initiative, is a shelter mounted on a High Mobility Multipurpose Wheeled Vehicle that integrates the ASAS Remote Workstations used by the brigade ACT with networking capabilities, radios, and other supporting equipment. The integrated shelter facilitates set-up/tear down, integration of information, and provides environmental protection for the computer equipment and a work area for the operators. The ACT-E is the integrating focal point for intelligence surveillance and reconnaissance management within the maneuver brigade. The ACT-E completed a test program that resulted in a successful In-Process Review in September 2000 for acquisition and fielding. The test program included Factory Acceptance Tests and a logistics demonstration at Vint Hill Farms, technical tests at the Central Technical Support Facility and the Aberdeen Test Center, and a Limited User test at the Pinon Canyon Maneuver Area.

The ASAS Light, a laptop providing a sub-set of Remote Workstation functionality to the intelligence sections at the maneuver battalions, completed developmental testing in May 2000. The two-phase operational test program included a controlled event in August 2000 at the Central Technical Support Facility focusing on ASAS Light functionality and a field training exercise in October 2000 focusing on the operational integration and contributions of the ASAS Light to the battalion intelligence staff.

Planning continues for remaining ASAS Block II products. The focus for 2001 is testing of the ASAS Remote Workstation implementing the Army Battle Command System Version 6 software. Planning also continues for the FY02 Analysis and Control Element operational test that will serve as an IOT&E for the ASAS Block II and support a Milestone III production decision.

TEST & EVALUATION ASSESSMENT

ACT-E is a unique product within the ASAS family as it is a shelter housing existing computer hardware and software. The integration of existing components into a single shelter supported the ACT staff in their operations. Further, the ASAS Remote Workstations supporting the ACT mission operated with no apparent degradation of their inherent functions and capability. ACT-E demonstrated acceptable reliability and logistics support. Consequently, ACT-E was assessed as operationally effective and

operationally suitable to support a positive In-Process Review and conditional materiel release. The conditions result from three of the integrated systems having conditional materiel releases: the ASAS Remote Workstation, the Quick Erect Antenna Mast, and the High Mobility Multi-Wheeled Vehicle Model 1097 A4.

ASAS Light completed a two-phase Limited User Test to support an In-Process Review scheduled for mid-FY01. The conclusive evaluation of ASAS Light performance is ongoing as of the publication date of this Annual Report. However, we observed significant problems in establishing digital connectivity between the ASAS devices at brigade with those in the two battalions in the second phase of the Limited User Test. Issues included hardware problems at brigade, one battalion exceeding typical communications ranges, and the other battalion having network-addressing issues. ASAS Light was not well integrated into the unit's operations and did not contribute greatly to their execution of the firefight. ASAS Light was of more value in the preparatory phases of intelligence preparation of the battlefield and planning. The tests also identified general concerns with functionality and interoperability, many of which are related to the migration towards interoperability through the standardized software of the mandated Common Operating Environment. ASAS Light using Microsoft Windows NT further complicates the process because Common Operating Environment software applications typically are developed on Unix-based workstations. While envisioned as eventually being beneficial, the migration is causing problems for programs such as ASAS, which are currently fielded because the Common Operating Environment applications often provide less capability than and are not fully backwards compatible with fielded software. For example, implementing the newer Military Standard 2525 symbols in the Joint Mapping Tool Kit complicates exchange of overlays with fielded systems using a different graphics standard. These concerns complicate decisions to field newer systems such as ASAS Light and the new version of the ASAS Remote Workstation.

CONCLUSIONS, RECOMMENDATIONS AND LESSONS LEARNED

ASAS Light testing confirmed the value of information obtained by carefully combining testing with training events. The information obtained from the ASAS Light October 2000 field-training exercise is proving invaluable to the evaluation. Careful planning and focused data collection are necessary prerequisites for successfully combining testing and training.

ASAS operational tests highlighted the challenges of integrating automation into field units. The ability of computers to rapidly gather and access large quantities of information places increasing emphasis on the analytical skills and experience of the operators. Realizing the potential benefits from these systems requires operators with strong intelligence analysis skills and staffs that thoroughly understand how to integrate automation into intelligence processes. Classroom training alone is proving insufficient and no substitute for operational experience. Acquiring this experience requires opportunities to operate with actual sensors and staffs or the development of realistic embedded training and simulations.

The pace of technological change during software development essentially dictates that computer hardware not be procured until absolutely necessary. Funding to procure laptop computers for ASAS Light was available and computers procured for eventual fielding months before ASAS Light entered testing. Software growth and performance caused the program to upgrade the computer configurations before the test program was completed. Further, the early availability of hardware often leads to its distribution and de facto fielding for "experimentation" purposes. Although hardware is typically presented as a low-cost and risk item, oversight agencies should carefully monitor and program offices

should report hardware procurements for systems that are in software development to avoid unnecessary costs and unauthorized fielding.