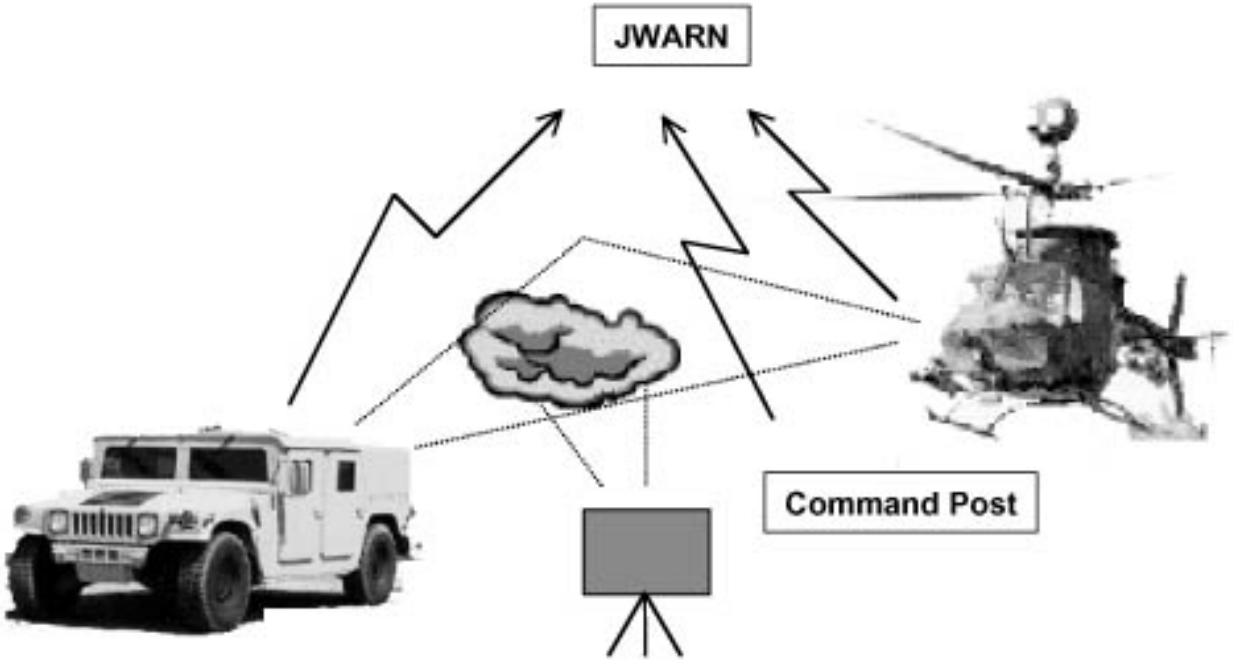
JOINT SERVICES LIGHTWEIGHT STANDOFF CHEMICAL AGENT DETECTOR (JSLSCAD)



Joint ACAT III Program		**Prime Contractor**
Total Number of Systems:	1,917	Intellitec
Army:	492	
Air Force:	567	
Navy:	627	
Marines:	231	
Total Program Cost (TY$):	$365M	
Average Unit Cost (TY$):	$105K	
Full-rate production:	4QFY02	
PQT/IOT&E Fabrication	4QFY00-2QFY01	

SYSTEM DESCRIPTION & CONTRIBUTION TO JOINT VISION 2020

The Joint Services Lightweight Standoff Chemical Action Detector (JSLSCAD) is a passive, stand-off device intended to provide stand-off detection of chemical agent vapors up to 5 km (with a 10km objective). JSLSCAD is required to provide real-time on the move, chemical agent detection for contamination avoidance and reconnaissance systems. JSLSCAD consists of four major components: Scanner Module (SM), Sensor Electronics Module (SEM), Operator Display Unit (ODU), and Power adapter (PA). There are two configurations of the scanner module. The aerial applications scanner covers a 60 degree forward looking cone, while the ground mobile/fixed site/shipboard configurations scans 360 degrees in azimuth and +50 to –10 degrees in elevation. The system, which will be used as part of the Joint Service Light NBC Reconnaissance System (JSLNBCRS), will be employed aboard

Navy Landing Ship Docks (LSDs) or equivalent aviation capable amphibious ships. JSLSCAD will also be carried on Army and Navy helicopters, and outboard on Air Force MC-130E aircraft. Present plans call for the JSLSCAD to be carried as an Unmanned Aerial Vehicle (UAV) payload, but the UAV to be used has not been selected. This system will be installed in fixed locations for protection of facilities and installations such as air bases. JSLSCAD will provide visual and audible indicators, and will display the chemical agent class (nerve, blister, and blood) and indicate the location (azimuth and elevation) of the detection. Detection and warning information may be entered automatically into Service C^4 systems, or the information may be reviewed and distributed manually. JSLSCAD is to be interoperable with the Joint Warning and Reporting System (JWARN), and thus will provide chemical agent vapor detection warning for a Joint Task Force commander or a theater command and control function.

BACKGROUND INFORMATION

JSLSCAD is intended to meet the CW threat to U.S. Forces as documented in the Capstone System Threat Report, "Chemical and Biological Warfare Defense Systems-Non Medical," dated November 1996. Current systems cannot be operated on the move, nor do they provide 360-degree coverage. The current operational requirements document was approved in June 1997, but is now being revised. JSLSCAD achieved Milestone II on September 17, 1996. The TEMP for JSLSCAD was approved in 1997 by the program manager, before the system came under DOT&E oversight in January 2000. A revised TEMP was prepared in mid-2000 that includes Part IV, OT&E, with annexes addressing the Navy's shipboard OT&E, NAVAIR's OT&E on the CH-53E Super Sea Stallion helicopter, and the Air Force's possible OT&E on MC-130E aircraft.

TEST & EVALUATION ACTIVITY

JSLSCAD is currently undergoing engineering development tests, scheduled to be completed January 31, 2001. Production qualification testing will begin in April 2001, and will include arctic, tropic, and desert performance and storage as well as safety of flight certifications and agent chamber tests at Dugway Proving Ground. Field testing of this system includes the use of four simulants: sulfur hexafluoride (SF_6), acetic acid, tri-ethyl phosphate (TEP), and paraxylene. Paraxylene will be used in DT only, not OT. The Navy plans to test JSLSCAD with simulant releases at sea and on the Potomac River near Dahlgren, VA, during DT. There may be simulant releases at sea during IOT&E, but this has not yet been decided. IOT&E is planned to begin in September 2001, and continue through October 2001. There is to be a system evaluation report by April 30, 2002, with a Milestone III decision expected by the end of June 2002.

TEST & EVALUATION ASSESSMENT

Operational testing is planned to be conducted under conditions representative of the expected employment environments with a representative friendly force and C4 network, but will be limited in that no live agent will be used [except in controlled chamber testing]. Airborne, fixed site, and ground mobile testing will be at Dugway Proving Ground; shipboard testing will be done aboard a U.S. Navy FFG. Two problems may affect PQT/IOT&E. The test budget for FY01 is not fully funded ($5,417,000 is funded, with $2,750,000 unfunded). In addition, the Utah Department of Environmental Quality has approved only three of the four simulant chemicals intended for open-air DT at Dugway; approval remains in doubt for paraxylene. All three simulants to be used for OT (SF_6, acetic acid, and TEP) have been approved. Cost and environmental factors prevented the use of an air base or other military installation in OT.

CONCLUSIONS, RECOMMENDATIONS AND LESSONS LEARNED

The test and evaluation program for JSLSCAD appears to be sound, but the artificialities imposed by the danger of open-air testing with active agent will leave some doubt as to the operational effectiveness and operational utility of this system. Testing limitations include the use of simulants in OT&E instead of live agent. These simulants approximate the chemical characteristics of real agent, but do not entirely match actual agents. Other limitations include simulation of delivery of agent by use of explosive and line and stack release devices instead of actual weapons, and the use of a restricted C^4 network warning capability instead of a full theater or Joint Task Force C^4 system. Also, achieving ideal delivery conditions during testing is difficult because of the vagaries of weather, and the desired effects of the atmospheric mixing layer dictates that releases are best made during the night and early morning hours. The test site, Dugway Proving Ground, is itself a limitation in that it is an isolated, desert location that does not replicate military installations, urban areas, or many types of battlefields where JSLSCAD likely will be deployed.