



Navy SBIR/STTR Success

Aviation Lighting System Control Panel Set (ALS-CPS) and the Advanced Communication and Control System (ACCS®)



C3I, Inc.

Founded 2000
Privately held (Owner/Chief
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TOPIC NUMBER:
NO4-081

SBIR INVESTMENT:
\$2,400,000

PHASE III FUNDING:
\$23,000,000

combined PMS 500, PMA-251 and Industry

THE TECHNOLOGY

The Advanced Communication and Control System (ACCS) provides the network hardware and software to communicate with and/or control multiple shipboard aviation launch and recovery systems. These systems include navigation and task lighting, personnel safety barriers, telerobotic firefighting nozzles, flight deck lighting, and fuel quality monitors used during the launching and recovery of air assets from a variety of Navy combatant, amphibious, and support ships, and Marine Corps air stations and Air Force training fields.

THE CHALLENGE

Current Navy/Coast Guard flight deck lighting and launch/recovery methods included stove-piped systems--each requiring individual control devices to communicate with separate pieces of equipment. In addition, these legacy control devices do not incorporate Night Vision compatible display screens, which is now a NAVAIR requirement for conducting air operations onboard naval ships.

THE NAVAL BENEFIT

The Navy continues modernization and replacement of legacy shipboard aviation traffic control systems in order to develop a common operator interface to control Next Generation Visual Landing Aids. The ALS-CPS and ACCS systems are replacing legacy system-specific remote operator control panels with Night Vision compliant control panels, and a modular software program capable of controlling devices used in the launch and recovery of helicopters and JSF-STO aircraft from US Navy and Coast Guard ships. The ACCS and ALS-CPS systems meet cybersecurity requirements, and are easily modifiable to add future systems as they come on-line. Additionally, the ALS-CPS and ACCS systems provide enhanced operational awareness for the crew, reduce the number of crew needed to operate previous systems, have reduced repair costs and less down time, and can easily add new software features to handle improved or upgraded peripheral systems.

THE TRANSITION

As a result of the initial SBIR investments and the associated technical development contracts, C3I has sold the ALS-CPS and ACCS systems as COTS since 2007 to NAVSEA PMS 500 and NAVAIR PMA 251. C3I has received more than 40 contracts over the past 10 years for the purchase of the ACCS and ALS-CPS hardware and software, which had its origins in various SBIR contracts. The ALS-CPS and ACCS systems are now installed onboard more than 35 Navy and Coast Guard ships including the DDG 1000, LHA, LHD, LCS, EPS, MSV, MLP, USNS, and NSC ship classes as well as on MCAS Yuma, MCAS Beaufort, Bogue Field, Iwo Jima and Eglin AFB aircraft training fields.

THE FUTURE

C3I remains on schedule to complete final equipment qualification of the ALS-CPS system in early 2019. The current maturity of ALS-CPS and ACCS has led to the Navy seeking development of additional hardware devices and software modifications to meet expanding mission requirements onboard DDG 1000 and other Navy ships equipped with helicopter recovery systems, advanced flight deck lighting and the Advanced Stabilized Glide Slope Indicator. NAVAIR has recently commented that they intend to install the ALS-CPS system on all air capable ships in the US Navy/Coast Guard fleets.

"The SBIR awards to C3I gave the Navy the great savings in personnel and materials to sustain its program to modernize fleet aviation control systems for current and future air traffic control system needs."

Charles J. Wagner, Chairman and Chief Technical Officer, C3I, Inc.

"The ALS-CPS system consolidated control of shipboard Visual Landing Aid (VLS) systems and lights into a single user-friendly control panel. This Consolidation of controls will reduce operator workload and errors through the use of single button settings of all VLA lights using preset conditions on the ALS-CPS Control Panels."

George Bray, NAVAIR Esteemed Fellow (retired)