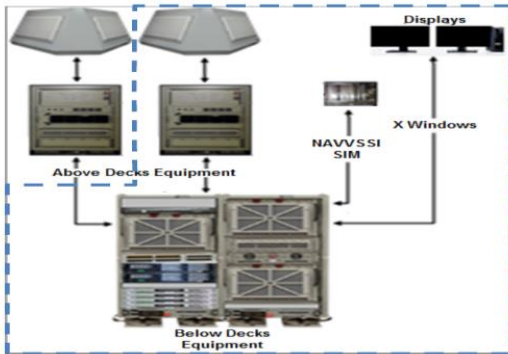


# Manufacturing Cost Reduction for Littoral Combat Ship (LCS) Scalable Electronic Warfare (EW) System

**Status:** Implementation Pending

## PROBLEM / OBJECTIVE

There is an urgent need for enhanced EW capability for LCS. Under the concept of commonality, leveraging the Surface Electronics Warfare Improvement Program (SEWIP) Block 2, which is an overhaul to the SLQ-32, will result in a cost-saving saleable EW System solution. The proposed EW system will be designed to fit on both LCS variants and will be capable of meeting the current LCS mission requirements. The desire is for a common, expandable, open-architecture system that is ready to meet current, as well as future mission requirements, equally and consistently.



Fast Lima System

Two objectives set forth for this project have been acted upon. They are as follows: (1) Perform a proof of scalability demonstrating commonality and a proof of architecture demonstrating soundness of design, and (2) Assemble and test a Reduced Block 2 Model (aka Fast Lima) for a level of requirement and technical performance measure (TPM) check-off and customer evaluation. These two objectives set the stage for this phase (Phase 2) of the ManTech project in assuring that the system meets performance objectives set forth in the LCS EW System/Subsystem Specification (SSS) resulting from Phase 1 of the project as a scaled SEWIP Block 2.

## ACCOMPLISHMENTS / PAYOFF

### **Process Improvement:**

These objectives have been successfully accomplished and met early – after only three months into the project. Lockheed Martin (LM)-Syracuse, the designer of the Block 2 architecture, assembled the first reduced Block Model (scaled version) and this unit (Fast Lima) was used to perform the testing.

### **Formal Qualification Test (FQT) Testing**

The test was performed at LM-Syracuse at the SEWIP Block 2 Land Base Test Site in their LM-Syracuse Spherical Chamber. There were five specific tests from the Block 2 master test plan that were selected and performed as check off to meet the objectives set forth:

- 1) Emitter Detection – measures probability of detection and response time
- 2) Classification – verifies correct classification of threat emitters
- 3) Sensitivity/AoA – verifies system sensitivity levels and angle-of-arrival accuracies
- 4) Longevity – verifies system stability over a 25 hour period
- 5) Size/Weight – verifies the size and weight of the system

Each test had a set of requirements that were traced from the LCS EW SSS and mapped to them for a systems-level requirements check off. The number of requirements that were checked was a representation of the system performance and to support a report out on a subset of EW technical performance measures (TPMs). ACI Technologies prepared for the FQT by performing an independent review of the LCS EW SSS and cross check of the traced requirements and TPMs prior and reviewed with LM-Syracuse for completeness and that they were verifiable.

### **Expected Benefits and Warfighter Impact:**

The Manufacturing Cost Reduction for LCS Scalable EW System ManTech Program is a multi-faceted approach to making material-related improvements that directly result in a cost reduction of the system. By enabling commonality of the Block 2 EW hardware, the insertion of advanced technology will result in a collateral benefit of cost reduction across all of SEWIP, not only in acquisition costs but also for significant life cycle cost savings for the 150 ships planned and the 32 LCS platforms. The bottom line is a variant-independent EW system meeting all current mission requirements which has just been proven. The last step to this effort of the project will be a live demonstration on a LCS platform.

## TIME LINE / MILESTONE

Start Date: March 2014  
End Date: December 2015

## FUNDING

ONR ManTech: \$8.5M  
IWS 2.0: \$2.5M

## PARTICIPANTS

COE EMPF  
Lockheed Martin MS2  
IWS 2.0; IWS 8.0  
NSWC Crane  
JHU-APL