

Executive Summary

The Secretary of the Navy (SecNav), Chief of Naval Operations (CNO), and Commander, Naval Sea Systems Command have all listed Total Ownership Cost Reduction to be one of their stated priorities for both 2009 and 2010. This priority no doubt stems from the economic crisis the world just went through in addition to the increasing cost of acquiring, maintaining, and modernizing ships. These aspects coupled with the desire to shrink instead of expand the defense budget creates quite an opportunity to implement powerful and lasting changes to the acquisition and maintenance processes and standards for the surface fleet.

The proposed platform, SCAMP, was created under these pretexts. The goal of the SCAMP was to decouple the Hull, Mechanical, and electrical (HM&E) and Combat Systems portions of the acquisition process as much as possible. The SCAMP aimed to accomplish this through modularity, standard interfaces and the use of existing fleet equipment (commonality), and the postulation of new design standards such as cable and piping highways (supporting the scalability concept). Further, the SCAMP aims to reduce life cycle cost through the inclusion of real options via design flexibility. These options will reduce required contractor man-hours in the future for maintenance and modernization of the proposed platform, instead moving the required man-hours to intermediate level or removing the need entirely.

The proposed platform can replace or reinforce the current combatant classes of ships. The SCAMP can scale from about 7,000 metric tons (MT) to about 9,500 MT, enveloping the Oliver Hazard Perry, Arleigh Burke, and Ticonderoga class surface combatants. The SCAMP will be able to carry out all the common missions of both these classes as well as incorporating enough modularity to accomplish uncommon mission requirements. The aim is to meet the SecNav's and CNO's goals of a diverse fleet capable of responding to an ever changing threat environment that creates ever-changing requirements of naval vessels.

This project successfully creates 5 variants of a baseline platform, and runs evaluations and analysis on 3 of them (the smallest, the middle variant, and the largest). The SCAMP uses fleet common components in both engineering and combat systems, incorporates an IPS, scales from a 1-module variant to a 5-module variant while staying within all strength and seakeeping criteria, and provides adequate space, volume, and service life allowances for future expansion of mission capabilities of the platform. Despite an estimated R&D budget to accomplish all this that is about 150% higher than that of the DDG 51, the overall Acquisition Cost of the lead ship of the class is 96% that of the DDG 51 due to Procurement savings in Government Furnished Equipment (GFE) costs. Also, for a class size of 71 vessels, the SCAMP's Program Acquisition Unit Cost (PAUC) is estimated at 70% of the PAUC of the DDG 51 class. These savings are even greater when compared to the Ticonderoga class, but the class is more expensive than the Oliver Hazard Perry class, albeit with more installed capability.