



# Oceans Systems Engineering

MAR has been at the forefront of Ocean Systems Engineering technology since we were originally founded in 1971. Our engineers draw on the vast amount of experience and resources we have accumulated in this field to provide the finest engineering, scientific, and technical support services available. Our ocean engineering capabilities include geotechnical studies and analytical research, integrated hardware and software implementation, technical program management, corrosion protection, at-sea testing and evaluation, and much more.

In addition, the MAR team specializes in engineering services related to the design, development, prototyping, manufacturing, testing, installation, and in-service support for underwater acoustic systems and components such as those used for surface and subsurface navigation and positioning, ocean bottom remote characterization, sonar marker transponders, and small vehicle sonar. In support of these activities, we perform conceptual studies, acoustic performance analysis, and design tradeoff studies addressing acoustic, electronic, mechanical, software, and ocean engineering considerations. We also provide detailed designs of new systems and/or improvements to existing systems and products, and perform factory and field (at-sea) testing of these designs.

An example of our past performance in this area include:

## **Naval Facilities Engineering Service Center (NFESC), Advanced Ocean Technology Program**

MAR is providing System Engineering and Integrated Logistics Support for a complex deep ocean survey system being developed by NFESC's Advanced Ocean Technology Program (AOTP). The MAR team has collaborated with NFESC to generate Top Level Requirements and derive System Level Requirements for acquisition of the new system. During the acquisition cycle, we developed the Requirements Verification Traceability Matrices and test plans to verify the requirements. Additionally, MAR has developed the Interface Specification between the deep ocean survey system and the other segments of the Navy's survey and work system, thus ensuring that all segments were interoperable and met power, signal, data, mechanical, structural, and information system interface requirements.