



Ocean Observing Systems

Currently, there are numerous observing systems in use across the country, measuring ocean activity, climate changes, and other scientific phenomena. In order to maximize the usefulness of the data collected, the marine science community is working together to develop the Integrated Ocean Observing System (IOOS). Noblis is providing critical system engineering support to the National Oceanographic and Atmospheric Administration's (NOAA's) National Ocean Service (NOS) for this effort. When completed, IOOS will serve as a network of regional, national, and global systems that rapidly and systematically acquires and disseminates coastal and ocean data and information products.

In response to a direction from Congress, the National Oceanographic Partnership Program created Ocean.US—a network of U.S. marine science communities—to work together to plan, design, and implement IOOS. As stated in the *First Annual Integrated Ocean Observing System (IOOS) Development Plan* (January 2005), the goal of IOOS is to significantly improve the nation's ability to accomplish the following:

- Improve predictions of climate change and weather and their effects on coastal communities and the nation
- Improve the safety and efficiency of maritime operations
- More effectively mitigate the effects of natural hazards
- Improve national and homeland security
- Reduce public health risks
- Protect and restore healthy coastal ecosystems
- Enable the sustained use of ocean and coastal resources

Because there will be many organizations, programs, and activities interacting in this effort, a high degree of formality and disciplined engineering practice is essential in the IOOS environment. To streamline the process, Noblis is helping NOS develop requirements documentation for ocean and coastal observations, to identify NOS IOOS requirements, and to develop and implement a requirements management process (knowledge, discipline, and capacity). This process would then be incorporated into a system engineering process for implementation by the IOOS community.

Noblis is also drawing upon its system engineering expertise to initiate development of an IOOS Enterprise Architecture that is consistent and compliant with the Office of Management and Budget's Federal Enterprise Architecture framework. The new architecture would enable systems to work together seamlessly.

