



NeXOS, developing and evaluating a new generation of insitu ocean observation systems.

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Ocean biological, chemical or physical processes occur over widely varying scales in space and time: from micro- to kilometer scales, from less than seconds to centuries. While space systems supply important data and information, insitu data is necessary for comprehensive modeling and forecasting of ocean dynamics. Yet, collection of in-situ observation on these scales is inherently challenging and remains generally difficult and costly in time and resources. This paper address the innovations and significant developments for a new generation of insitu sensors in FP7 European Union project “Next generation, Cost- effective, Compact, Multifunctional Web Enabled Ocean Sensor Systems Empowering Marine, Maritime and Fisheries Management” or “NeXOS” for short.

Optical and acoustics sensors are the focus of NeXOS but NeXOS moves beyond just sensors as systems that simultaneously address multiple objectives and applications are becoming increasingly important. Thus NeXOS takes a perspective of both sensors and sensor systems with significant advantages over existing observing capabilities via the implementation of innovations such as multiplatform integration, greater reliability through better antifouling management and greater sensor and data interoperability through use of OGC standards. This presentation will address the sensor system development and field-testing of the new NeXOS sensor systems. This is being done on multiple platforms including profiling floats, gliders, ships, buoys and subsea stations. The implementation of a data system based on SWE and PUCK furthers interoperability across measurements and platforms. This presentation will review the sensor system capabilities, the status of field tests and recommendations for long-term ocean monitoring.