

A generic interface for remote sensor network integration.

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Vital requirements for both terrestrial and marine-based wireless sensor network deployments are having remote control access to the sensors while in the field and visualisation of the sensed data. The maintenance of these networks includes travelling to the remote sites to check for damage or to reconfigure equipment which often involves significant expense and sometimes dangerous conditions. The ability to visualise sensed data is important during and post deployment, for quality assurance and/or to discover trends. Most user interfaces are specific to the sensor network they are designed for and practitioners are continually duplicating the basic methods and code for each deployment. This paper presents a web-based user interface developed as part of the Smart Environmental Monitoring and Analysis Technologies (SEMAT) project. The interface is designed to be generic in that it offers portal functionality and visualisation for any environmental sensor network regardless of the underlying infrastructure. The ultimate goal is to create an open source package that can be downloaded and easily applied by anyone with a sensor network application. Currently, the interface presents the locations of the deployed equipment via Google Maps and provides the user with features for remote power monitoring, error alerting/system status monitoring and graphical visualisation of the collected data. Data from different sensor networks can be visualised concurrently. The system has been successfully used during a five week deployment of a SEMAT sensor network at Heron Island. There, the interface was used to not only visualise data collected from the SEMAT network but at the same time data from the IMOS sensor buoys deployed around Heron Island.