



Port Operational Marine Observing System

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The Port Operational Marine Observing System (POMOS) is a network of distributed sensors and centralized data collecting, processing and distributing unit. The system is designed to allow for the real-time assessment of weather and marine conditions throughout the major Bulgarian ports: Varna, Burgas and Balchik, supporting thereby Maritime administration to secure safety navigation in bays, canals and ports. Real-time information within harbors is obtained using various sensors placed at thirteen strategic locations to monitor the current state of the environment. The most important for navigation weather and sea-state parameters are measured: wind speed and direction, air temperature, relative humidity, atmospheric pressure, visibility, solar radiation, water temperature and salinity, sea level, currents speed and direction, mean wave's parameters. The system consist of: 11 weather stations (3 with extra solar radiation and 4 with extra visibility measurement), 9 water temperature and salinity sensors, 9 sea-level stations, two sea currents and waves stations and two canal currents stations. All sensors are connected to communication system which provides direct intranet access to the instruments. Every 15 minutes measured data is transmitted in real-time to the central collecting system, where data is collected, processed and stored in database. Database is triple secured to prevent data losses. Data collection system is double secured. Measuring system is secured against short power failure and instability. Special software is designed to collect, store, process and present environmental data and information on different user-friendly screens. Access to data and information is through internet/intranet with the help of browsers. Actual data from all measurements or from separate measuring place can be displayed on the computer screens as well as data for the last 24 hours. Historical data are available using report server for extracting data for selectable place and period from database. The POMOS is developed in the frame of academic-government partnerships and represents an important resource to the Bulgarian ports. In addition to providing operations and safety-critical information to the Maritime administration, PORTS will serve as a scientific tool and a platform for further developments.