



CMA, an Operational Oceanography Downstream Service for Ports

Susana Pérez Rubio (1), Enrique Alvarez Fanjul (1), Luis Ripollés (2), Marcos García Sotillo (1), Begoña Pérez Gómez (1), Jose María García-Valdecasas (1), Marta de Alfonso-Alonso-Muñoyerro (1), Maria Isabel Ruiz-Gil de la Serna (1), Pablo Rodríguez Rubio (3), and Francisco De los Santos (3)

(1) Puertos del Estado, Madrid, Spain, (2) Nologin Consulting, Zaragoza, Spain, (3) Autoridad Portuaria Bahía de Algeciras, Cadiz, Spain

CMA (Cuadro de Mando Ambiental-Environmental Dashboard) is a visualization tool specifically developed for the Port Authorities in order to exploit properly all the Operational Oceanography products developed in the framework of SAMOA (Met-Oceanographic System for Port Authorities Support) initiative. SAMOA objective is to offer an integrated approach to the Operational Oceanography needs of the Port Authorities, providing personalized tools and data access in order to facilitate harbour operations and activities. The service consists of several modules, including deployment and maintenance of sensors and high-resolution forecast systems, accompanied also by several added value sub-systems that improve the exploitation of data (i.e. alert system, oil-spill monitoring tool). Within SAMOA, CMA can be considered the end-users module, where all previously existing and new products are fully integrated in a specific visualization tool.

The front end of CMA was designed as a web interface that has a unique access point (<http://cma.puertos.es>), although each Port Authority has a specific configuration of the interface adapted to the location and the available SAMOA modules in the harbour. The access to CMA is controlled by a system manager appointed by each one of the Port Authorities that grants the access to the tool and define the level of permission the users have.

The service is currently in use in 25 ports and will be implemented in 19 more in the next three years. CMA reached 1300 users by the end of 2018, which includes the companies working at the port facilities. In Algeciras Harbour, a very good example of how the CMA can be exploited, the number of active users is actually over 370. CMA is showing forecasted information of a total of 29 high-resolution models operationally implemented. In terms of instrumentation CMA is giving access to meteo-oceanographic data from more than 70 stations providing real time data.

SAMOA and its downstream tool, CMA, have brought a true revolution in the way solutions are provided to the Spanish Port Authorities. Building on the success of SAMOA, a second phase of the project has been launched. At the end of it, a total of 44 out of 46 Ports in the National System will have an upgraded version of the CMA implementation that will include new added value modules.