

Protecting Venice from high water levels

MIKE technology fuelling a successful real-time decision support system

© Ministero delle Infrastrutture e dei Trasporti - Provveditorato Interregionale per le Opere Pubbliche del Veneto - Trentino Alto Adige - Friuli Venezia Giulia" già Magistrato alle Acque di Venezia - tramite il Consorzio Venezia Nuova *MOSE*



Accurate forecasts of high water levels events



Decision support for operating the MOSE gates



Automatic dissemination of information and warnings

Challenge

Venice is a unique city known all over the world, listed as one of the UNESCO heritage sites since 1987. Situated on the extremity of a closed-off part of the Adriatic Sea, part of the Mediterranean Sea, the lagoon is frequently subjected to the encumbrance of fluctuations in water levels where high water periodically floods the piazzas, and low water that can obstruct navigation due to shallower canals.

The protection of Venice from high water levels is a top priority. In that respect, the Italian Government initiated the MOSE (MOdulo Sperimentale Elettromeccanico, Experimental Electromechanical Module) project to protect the city from flooding. The construction is made up of a complex system of 78 submerged gates which can be raised to separate the lagoon from the Adriatic Sea, in case of high water levels.

Solution

To support the operations at the MOSE gates, a complex Decision Support System has been set up by "Provveditorato Interregionale per le Opere Pubbliche" through "Consorzio Venezia Nuova", based on MIKE Powered by DHI's MIKE OPERATIONS. The system is mainly composed of:

- specific procedures for multiple data collection, processing and storing
- a wide range of numerical models based on MIKE Powered by DHI technology incorporating machine learning
- a wide range of tools for data as warning dissemination, including a specific web interface
- an expert graphical user interface for the configuration of an advance management of the system

MOSE

'The MIKE-based decision support system provides a reliable support for our daily work at the MOSE control room.'

Ing. Stefano Libardo,
MOSE Operations Room Manager
Consorzio Venezia Nuova



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