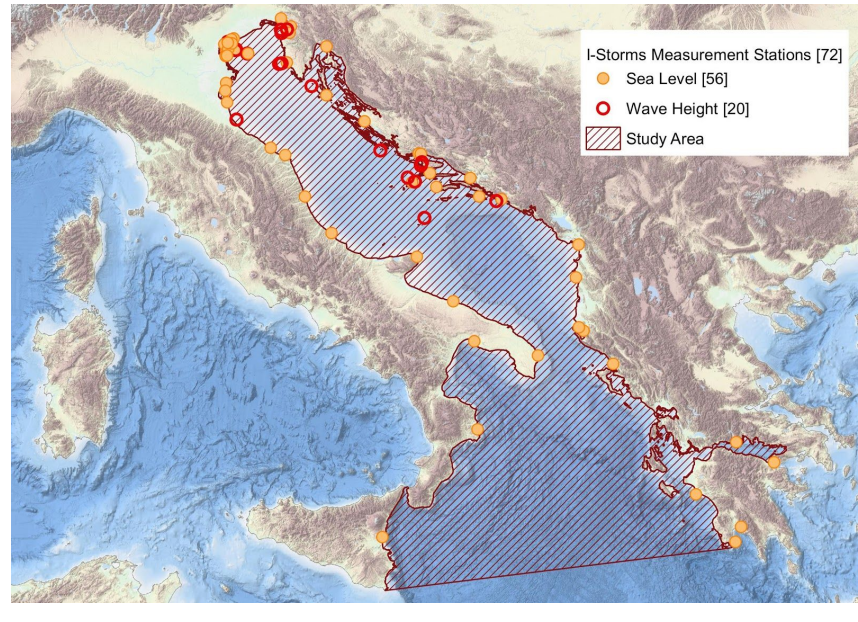


Stefano Menegon<sup>1</sup>, Amedeo Fadini<sup>1</sup>, Christian Ferrarin<sup>1</sup>, Alessandro Sarretta<sup>1</sup> and Giovanni Massaro<sup>2</sup>  
<sup>1</sup> CNR – National Research Council, ISMAR – Institute of Marine Sciences, Venice, Italy.  
<sup>2</sup> City of Venice – Tide Forecasting and Early Warning Center, Italy.

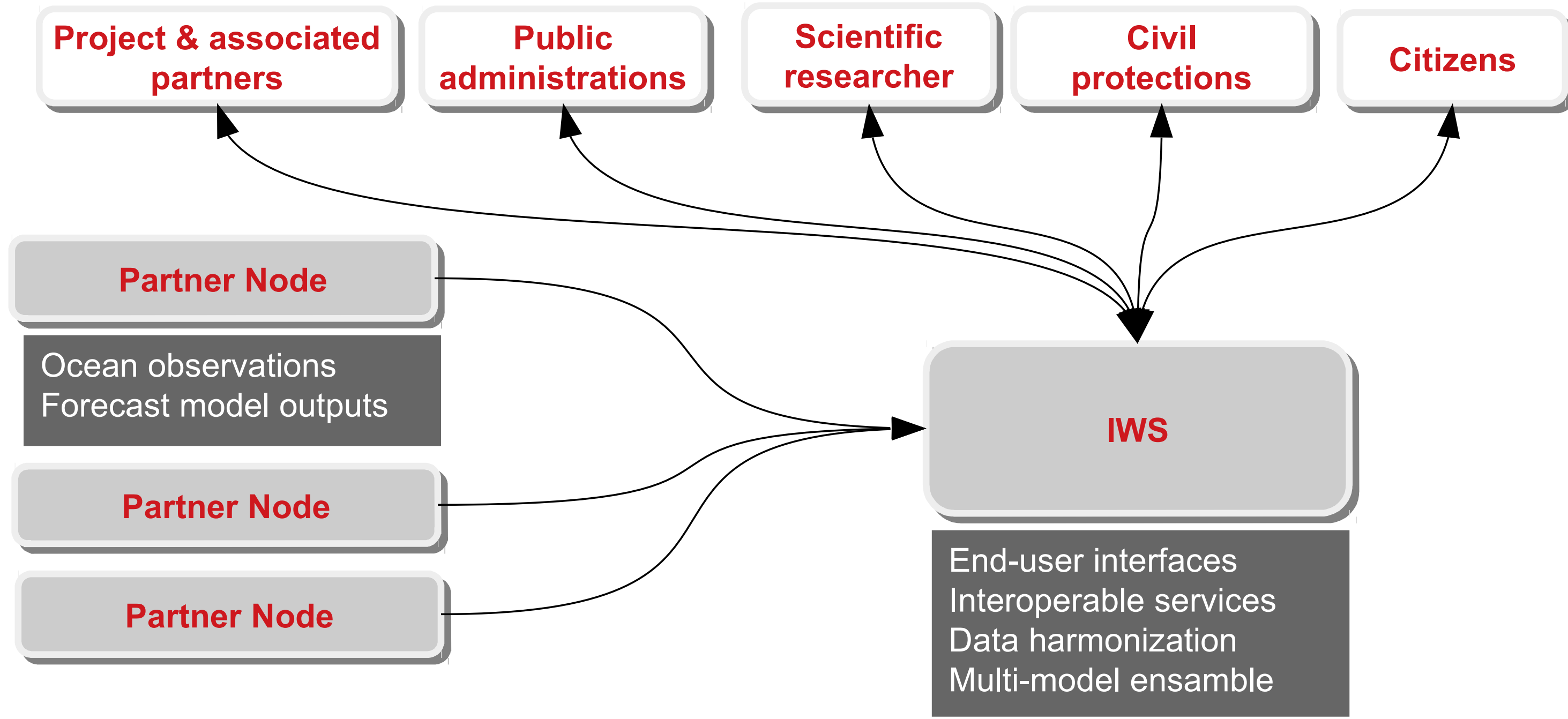
## 1. Introduction



I-STORMS project aims to develop a shared and interoperable system (I-STORMS Web integrated System - IWS) to allow a better exchange of information among partners and stakeholders in the Adriatic-Ionian area in order to address the territorial challenges related to sea storms effects on the coastal areas. The IWS has been designed to specifically store, visualize and share: i) historically and real-time (or near real-time) time series of sea level and wave from fixed-point sensor networks; ii) outputs from existing oceanographic operational forecast models; iii) localization and description about coastal sea storm events (historical and more recent) that have damaged environment, social-cultural and economic assets.

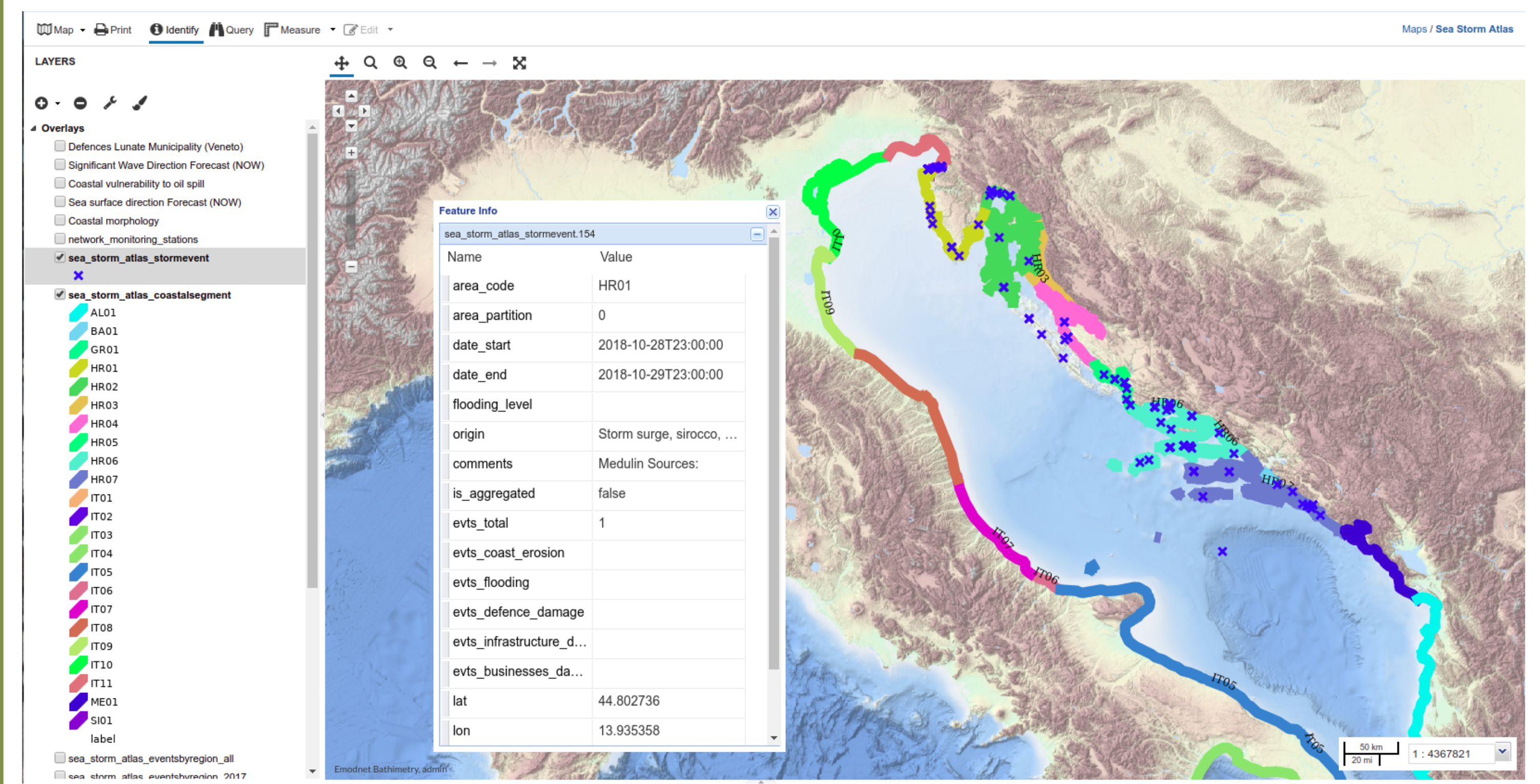
## 2. Data collection and sharing

IWS operationally collects and harmonize data from already existing forecast systems and monitoring networks.



## 5. Sea Storm Atlas

Web tool for collecting and mapping sea storm disaster in Adriatic-Ionian region.



## 3. FOSS Technological stack

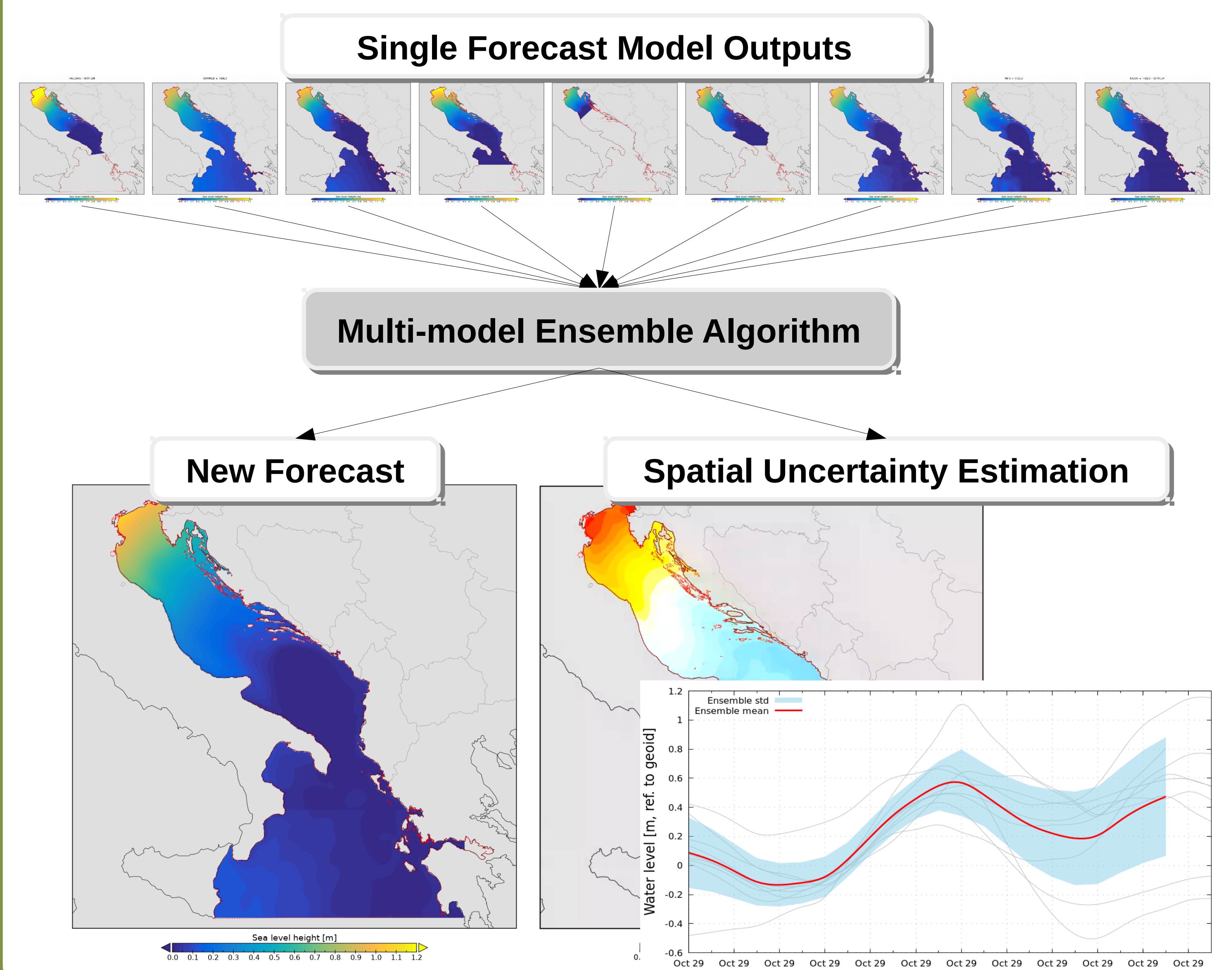
IWS has been build on a completely FOSS technological stack. The core software products are:

**GeoNode**: a complete suite for collaborative managing of geospatial data.  
**THREDDS Data Server (TDS)**: web application that provides meta-data and data access for scientific datasets (especially netCDF and GRIB formats), using a variety of remote data access protocols (e.g. OpenDAP, NetCDF Subset Service, OGC WMS, OGC WCS, OGC SOS).

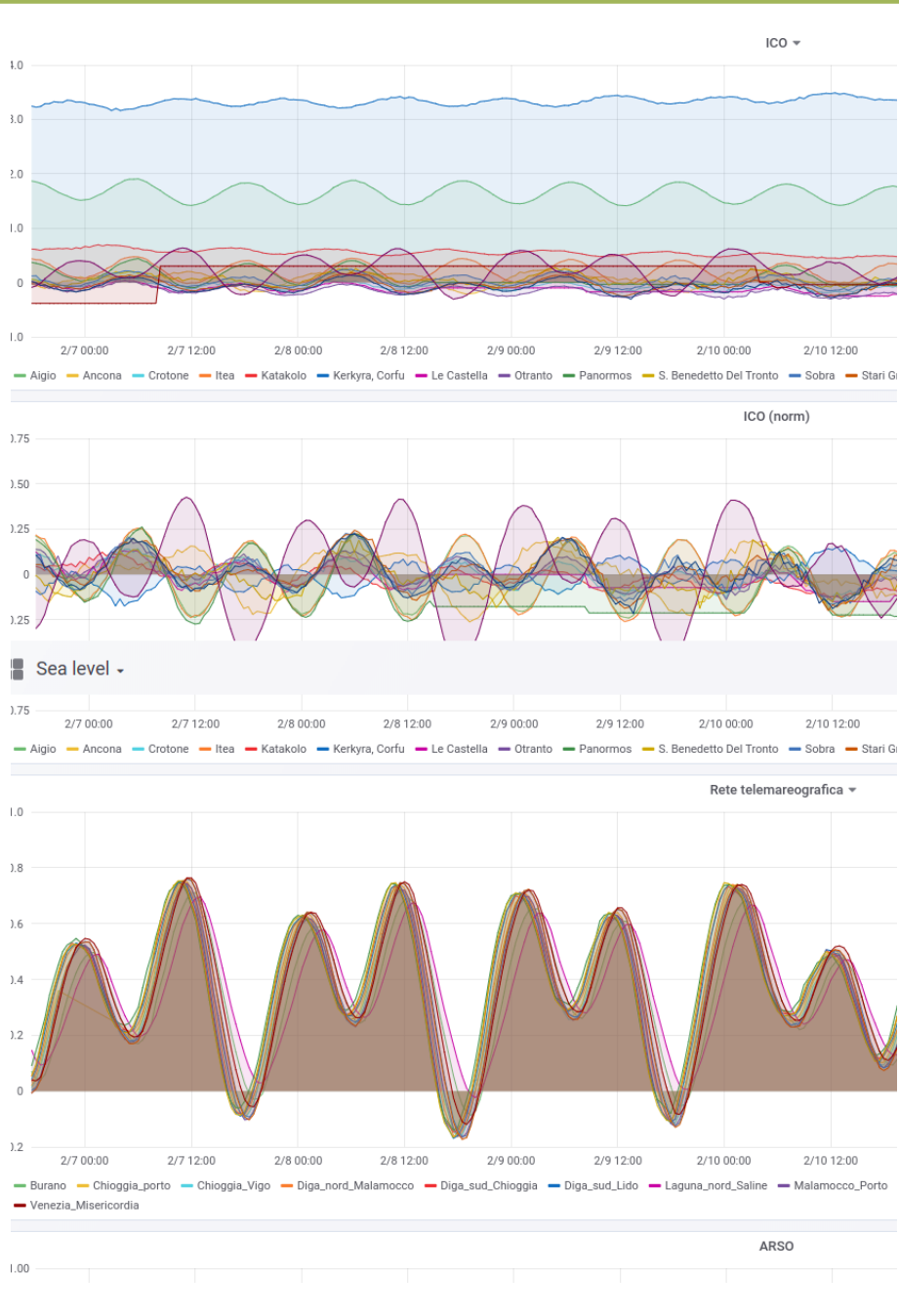


## 6. TMES

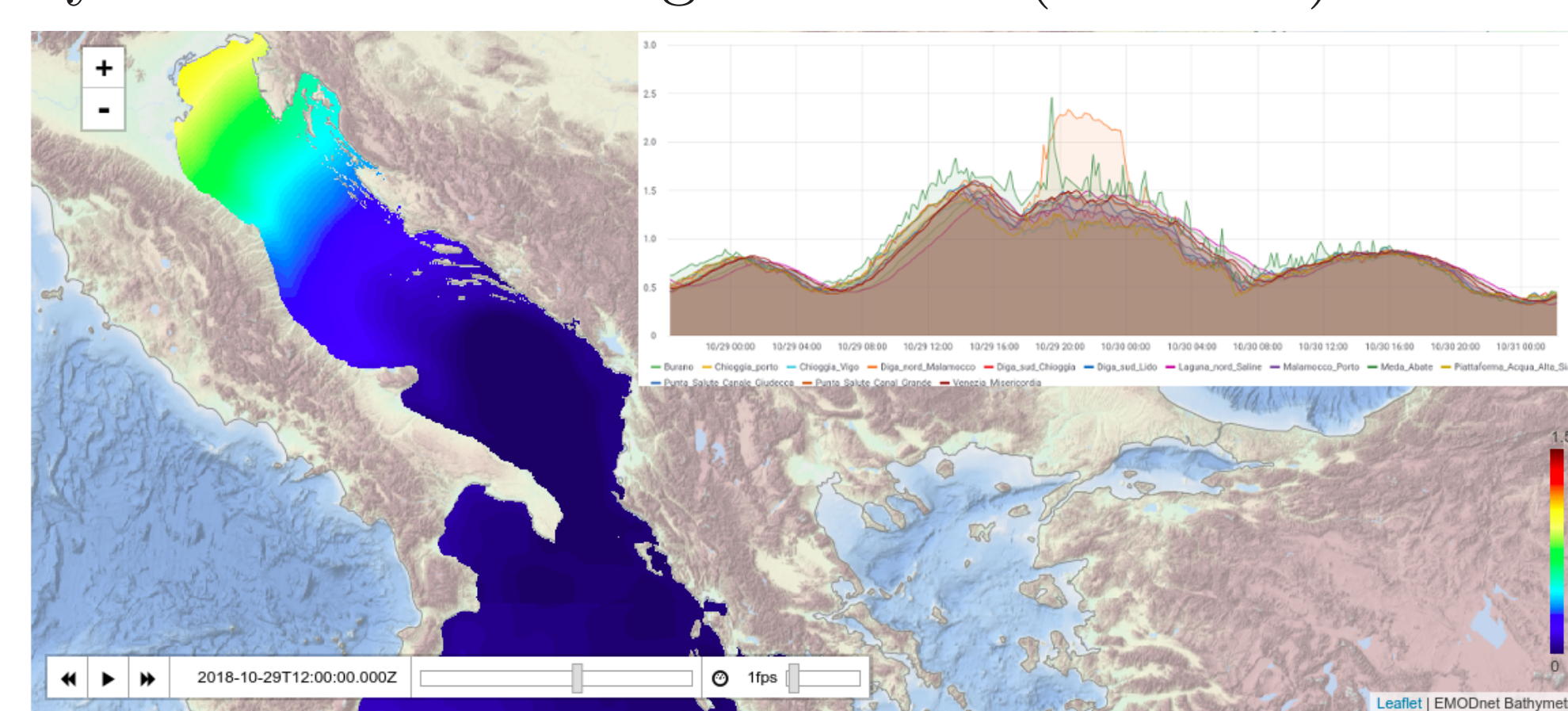
The Transnational Multi-model Ensemble System (TMES) collects outputs from different and heterogeneous forecast models and generates a sea level and wave multi-model ensemble forecast for the Adriatic-Ionian region. The multi-model ensemble is also published in THREDDS Data Server and visualized with Leaflet Time Dimension.



## 4. Time series support



IWS supports the management and visualization of geospatial temporal data (provided through THREDDS Data Server) and time-series obtained by in-situ monitoring networks (Grafana).



## 7. Software and Data Policy

IWS GitHub repository: <https://github.com/CNR-ISMAR/iws>  
 IWS software license: GPL3  
 TMES Forecast outputs: CC-BY  
 IWS Prototype: <https://iws.ismar.cnr.it>  
 IWS Stable Release: expected by September 2019