EXPERIENCES OF APPLICATION OF OPERATIONAL OCEANOGRAPHY SERVICES AND TOOLS

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This poster presents the main results and some stakeholders' feedbacks of the research projects TESSA (Italian PON - Programma Operativo Nazionale "Ricerca e Competitività" 2007-2013) and Chemarefarà (LivingLab2020 within the investment plan P.O. FESR PUGLIA 2007-2013 - ASSE I – Linea di Intervento 1.4 - Azione 1.4.2)

Ship Routing

A service for ship routing called VISIR , was developed within TESSA. VISIR is a prototype of maritime safety service providing optimized nautical routes in the Mediterranean Sea. The optimization regards total navigation time, taking into account safety of navigation. Both motorboats and sailboats are considered.
The computation of the routes depends on model forecasts of sea-state and wind.
The user can specify departure date and time, departure and arrival locations, vessel type, and other parameters.
The routes are displayed on top of the forecast fields, superimposed on a Google-map.

Sea Situational Awareness

SeaConditions is the main results of TESSA project. Seaconditions provides ocean and weather forecasts at sea. Forecasts concerning the Mediterranean Sea are produced by numerical models using satellite observations and in situ data (e.g. opportunity ships, buoys). The computation is based on state-of-the-art ocean models, delivering detailed information with high spatial and temporal resolution. Forecasts refer to a time-span of four and a half days, with a time schedule of 3 hours for the first two and a half days and of 6 hours for the second two. SeaConditions provides the following information:

- **"sea-forecasts"**: sea surface temperature, surface currents, significant wave height and direction, wave period and direction;
- **"atmospheric conditions"**: air-temperature at 2 meters a.g.l., surface pressure, precipitation, cloud coverage, wind at 10 meters a.g.l.;
- **"sea satellite observations"**: chlorophyll concentration, water transparency;

The forecasts are displayed as an information layer superimposed on a Google-map. The graphical rendering includes color shading and/or arrows, depending on the information to be displayed.

Nautibox is a new mobile device consisting of two elements:

1. A **BoatServer** is the module that interfaces NEMEA bus instruments and makes data available to other instruments/devices. Manage the communications (GSM, SAT) and make connectivity available trough WiFi.
2. The **NautiTab** is a tablet suited for use on sea: high level of protection and sealed to external agent (IP>=67, glove operable, with high visibility even in bright light.

An experience from a research sailing cruise

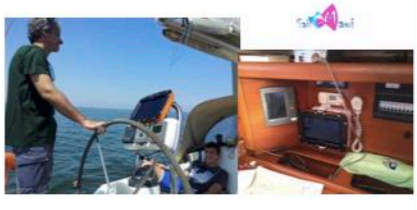
A 5-year sailing throughout the Mediterranean Sea, the Black Sea and the Northern Red Sea, Mediterranea wants to be a scientific floating laboratory. During the Mediterranea sailing, it was possible to test our systems (in particular SeaConditions). ***www.progettomediterranea.com***

The crew says: "A good system, with multiple choices in order to know the real weather condition and forecast, easily usable and with a smart design with arrows and colors. A great mix of sources that let the user trust the data and the projections. Quite good for sailors due to the accurate list of parameters to be consulted. One of the few systems that gives period of the waves, so important in the route definition. SeaConditions, in the North Aegean Sea, was a great help for studying the routes and navigate them. Let's go south now and validate the system for the rest of the Mediterranea trip!"

Experiences from a sailor and a local fisherman

Patrizio Schifa, **a sailor of Sail On Maui** Association (**www.sailonmaui.com**), says: "The Nautitab is a valuable instrument for our navigation. In particular, we daily consult precipitations and winds forecasts and we find them accurate. The system allows a constant knowledge of sailing conditions . We also run VISIR® from Porto Cesareo (Lecce , Italy) to Lefkada (Greece) in order to find the fastest and safest route. The result? A valuable instrument for optimal sailing!"

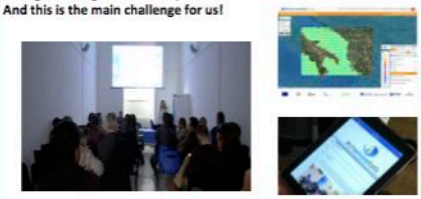
A fisherman of Porto Cesareo (Lecce, Italy), reports: "The Nautitab is a suitable instrument for those having activities related to the sea, because it is solid and easy to handle even with wet hands. About the forecasts? More frequent updates are needed!"



Experiences of fishermen in Apulia region

*The aim of "Chemarefarà?"(**www.chemarefarainpuglia.com**) project is to improve the safety of users at sea (maritime transport companies, coastal guard, environmental protection agency, sport fans) through an innovative process of formation and information. The project provides weather-marine forecasts using new technologies. All the services are delivered via multichannels and multidevices, including TV and web format, multimedia materials and documents.*

Some local fishermen from Apulia region declare: "SeaConditions is a very innovative system to view weather-marine forecasts. In Chemarefarà project for the Apulia region, it is also possible to view the currents and salinity in depth and he profile of temperature by clicking directly on the point of interest at sea.
Which is the biggest problem of this system? The wireless connection during the navigation in the open sea..."
And this is the main challenge for us!



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