SINDBAD: An Innovative Med Sea Situation Awareness Tool

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I. INTRODUCTION

Sea Situational Awareness (SSA) is the capability to provide present and future information on the state of weather and sea conditions. SSA is needed as basic information for any kind of sea-related and maritime activity. Lacking or missing of SSA rises the degree of unpredictability and incertitude for maritime working sectors and hence has an economic impact on the whole sea industry. Key aspects which make SSA highly relevant for the sea sector and blue economy are:

1. it gives important information to improve the navigation safety;
2. it can be used to reduce energy consumption with cost-saving effects;
3. it can help to improve the on board comfort.

In this paper we are going to present the developed tool and achieved results.

II. THE SINDBAD PROJECT

A group of italian SMEs (On AIR, XEDUM and PM_TEN), in collaboration with scientific community (University of Genoa and Italian National Research Council), have developed an ICT Service Infrastructure which produces highly detailed and reliable weather-marine forecasts, together with a web-based Decision Support System (DSS) able to provide customized navigation operational suggestions for conducting a boat and avoiding any kind of risk ensuring the best degree of comfort.

This work was supported by the Operational Regional Program ERDF of Liguria and included in the SINDBAD project which focused on leisure and boating navigation in the Ligurian Sea (Italy).

SINDBAD consists of 4 modules:

1. Atmospheric - collects data on temperature, wind, rain, pressure
2. Sea Weather - provides information on wave height and direction
3. Comfort - calculates the ‘sickness index’ based on sea conditions and boat size
4. Drift - with forecasts at 2, 4, 6 hours from the starting point

The DSS integrates heterogeneous weather/sea forecasts and boat seakeeping data to provide specific tasks that may be of immediate utility for users, like weather-marine forecasts at different high spatial and temporal resolutions, the generation of comfort and risk maps and the delivery of boat-specific alerts and advices for navgation.

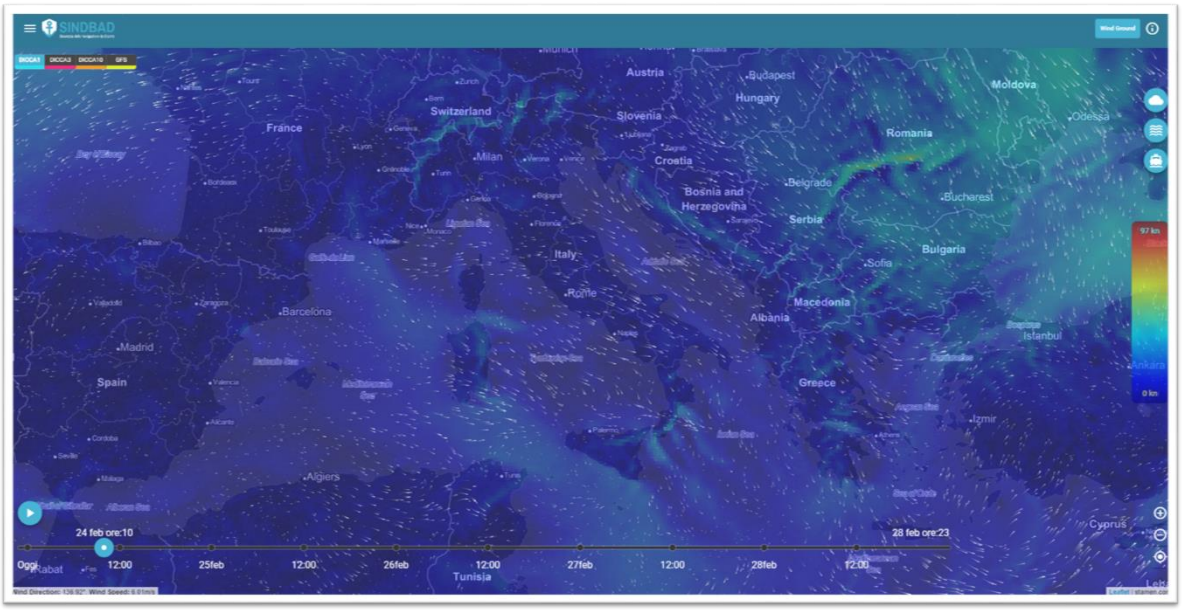

Figure 1. Sindbad's Mapviewer

The SINDBAD project output is a tool which can be easily adapted to target other of possible applications. The ultimate goal is to provide yachtsmen, fishermen, port authorities etc. with affordable and boat-specific highly detailed and personalized SSA information.

A Business Model based on free products and personalized purchased products could be applied for economic exploitations.

III. RESULTS

From April 2020 to nowaday, the SINDBAD App reached ~4.331 users, received ~10.312 pageviews (with high peeks during the vacation period) and more than 8.000 sessions. A User Experience Assessment has been carried out. Users satisfaction has been ranged between 7 and 8 out of 10, considering parmaters, such as: data visualisation quality, interfaces usability, interaction capability, etc. New evolutions of the system are planned for further improvements.