



→ THE EVER GROWING USE OF COPERNICUS ACROSS EUROPE'S REGIONS

A selection of 99 user stories by local and regional authorities





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Dear Reader,

We, the European Commission, the European Space Agency and NEREUS – the Network of European Regions Using Space Technologies, are pleased to present the publication “*The Ever Growing Use of Copernicus across Europe’s Regions*”, a collection of articles which document, for a non-specialist audience, **the growing capabilities of European regions to benefit from Copernicus Sentinel data and information.**

This edition builds upon the 2012 publication “*The Growing Use of GMES across Europe’s Regions*” and provides an updated snapshot of how Copernicus is being used, primarily by public authorities at local and regional levels, six years on. Since 2012, the system has significantly evolved and, with seven Copernicus Sentinel satellites and six Copernicus Services in operation and with planning for the future well underway, data availability has expanded tremendously. Awareness and understanding about the Programme have also increased and a refined set of activities has been put in place to stimulate the emergence of new Copernicus-based services and products.

The current publication portrays 99 Copernicus user stories submitted by authors from almost all of the Copernicus Participating Countries. The geographical and structural diversity of the examples collected here demonstrate that, from brownfield mapping in Wallonia to afforestation monitoring in Thuringia, from public utility management in Milan to farmland monitoring in Lithuania, Copernicus is truly a shared system producing common benefits across Europe. These articles also show that, in parallel to its global and EU-wide dimension, Copernicus is increasingly bringing concrete benefits to the daily lives of our citizens. With respect to the 2012 edition, local and regional administrations form a much larger group, pursuant to their responsibilities in key public policy domains and mandatory EU directives for which Copernicus provides relevant information, e.g. agriculture, regional development and environmental management. Their stories collectively testify to the **Programme’s contribution in modernising the public sector and enabling it to deliver more efficient public services, thereby contributing to an increased quality of life and level of satisfaction for European citizens.**

In June, we celebrated the 20th anniversary of the Baveno Manifesto, which called for a long-term commitment for the development of a space-based system to support EU policies and Europe’s international endeavours in protecting the environment, adapting to global climate change, enforcing sustainable development and ensuring civil security. Putting European public users in the driving seat, and recognising their pivotal role in stimulating and shaping the downstream market, the Programme is a clear example of European cooperation at its best.

Copernicus is achieving its operational maturity. The European Commission, the European Space Agency and NEREUS will continue to improve its uptake within Europe’s regions, yet the Programme is now speaking for itself as a decision-making tool in a broad range of application domains. **The public officers, private companies and researchers who contributed to this collection provide tangible accounts that the Copernicus-based information is now diffusing into society.** In doing so, they are amongst the best testimonials of the Programme: We are confident you will recognise this whilst going through the pages of “*The Ever Growing Use of Copernicus across Europe’s Regions*”.

We wish you a pleasant reading,



Philippe Brunet

Director of Copernicus,
Space Policy and Defence

European Commission
(DG-GROW)



Dr. Josef Aschbacher

Director of Earth Observation
Programmes

European Space Agency



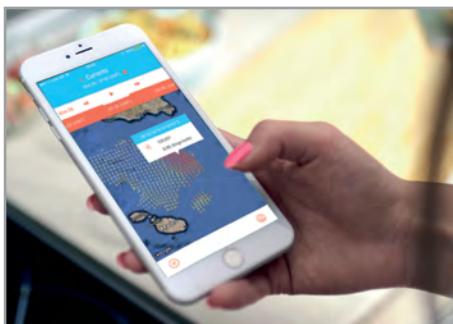
Michele Emiliano

NEREUS President



A SMARTPHONE APPLICATION DELIVERING METEO-MARINE DATA TO THE PUBLIC

Seafarers in the Malta-Sicily Channel are just a few clicks away from access to meteo and sea conditions for marine navigation and more.



KAPTAN is a smartphone application available on both Android and iOS platforms.

The challenge

Mariners, fishermen and leisure craft owners are always in search of the most accurate and updated information on weather and marine conditions ahead of starting their voyages at sea. Seafarers navigating across the stretch of sea between Malta and Sicily, now have an aid for planning their journeys and safer trips. KAPTAN, the Maltese word for "Captain", is supplying this data on personal smartphones, making access to data easier and more direct, based on marine and weather prediction services, with higher resolution and local data. Just a few clicks on a phone app leads users to a suite of sea and weather data in the form of interactive spatial maps providing instantaneous user friendly and user defined access to prevailing conditions at sea as well as short term past and forecast information. KAPTAN is really an on board assistant, a phone app created to serve local mariners.

The space based solution

KAPTAN was developed within the CALYPSO project, an Italy-Malta cross-border cooperation initiative led by the Physical Oceanography Research Group (PO.Res. Grp) within the Dept. of Geosciences at the University of Malta. The service integrates real time observations with satellite data and

numerical model forecasts. Sea surface current maps are provided every hour at a spatial resolution of 3 km x 3 km by the CALYPSO HF radar network consisting of four CODAR SeaSonde installations at selected sites on the northern Maltese and southern Sicilian shores. Sea surface temperature satellite observations from the COPERNICUS Marine Environment Monitoring Service (CMEMS) are added to high resolution 3-hourly maps from weather and marine numerical models specific to the Malta-Sicily Channel, providing a full suite of local scale meteo-marine reports, and complementing other weather forecasts. The big difference is that KAPTAN provides maps and point data showing how the dynamical structures of the atmosphere and the variability of sea surface currents, temperature and waves evolve in space and with time, allowing the user to zoom and to interact with a selection of specific waypoints as well as to select the viewing of sea current conditions along a user defined journey track. Most importantly the users can get the specific data they need when they need it and at no cost.

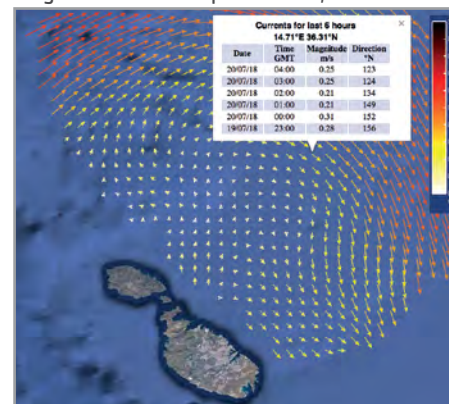
Benefits to Citizens

KAPTAN is delivered by making use of and integrating data from CMEMS to local marine

“Great app! Easy to navigate and excellent visuals!”

Kristie Lormand, Android app user

observations and the high-resolution sub-regional and coastal scale operational forecasting activities of the PO.Res.Grp in Malta. It is an example of how the merging of national datasets to marine core data supplied from CMEMS is leading to a proliferation of dedicated services with downscaling to the geographical detail in demand by local communities, coastal users and national responsible entities. KAPTAN is showcasing the benefits of and need for sustained marine observations in the coastal seas to complement the data acquired at regional level. Marine data and information services delivered by operational oceanography are triggering an unprecedented leap in the economic value of met-ocean data, becoming essential for managing marine resources efficiently, and feeding benefits to the marine-related industry and the services sectors. The sharing and access to data, as a public good, is the basis for the use and re-use of data to generate a multiplier effect, and for value



Screenshot of sea surface currents on the KAPTAN online version.

TRANSPORTS, CIVIL INFRASTRUCTURE AND SAFETY



addition by a wide range of users, leading to the generation of knowledge, supporting service provision and economic activity.

Outlook to the future

Besides fishermen and sailing enthusiasts, KAPTAN also appeals to divers, surfers, beach tourists and coastal users in general. The service is secured in the long term by the PO.Res.Grp. Data is only worth by how much it is used. Produce data once, to be used by many. This is a key added value of KAPTAN by making data easily and freely available not only to researchers, public authorities and environmental agencies, but also to the public for general consumption as a service to improve the quality of life. KAPTAN is a perfect example of such an approach, and exploits easily accessible and popular media to maximise the use of data and information about the sea and atmosphere. The phone app can be downloaded for free for both Android and iOS devices (Google Play and App Store on iTunes respectively). KAPTAN exploits the good SatCom reception in the region besides the 3G or 4G coverage up to 13 nautical miles from the coast.

Acknowledgements

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Prof. Aldo Drago
University of Malta, Malta
Email: aldo.drago@um.edu.mt