



Downstreaming services of CMEMS data through Social Media

Authors: G. Sylaios, N. Kokkos, K. Zachopoulos, M. Zoidou
Democritus University of Thrace, GR

COPERNICUS
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ENVIRONMENT
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COASTAL
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SAFETY



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WEATHER CLIMATE
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ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ
DEMOCRITUS UNIVERSITY OF THRACE



ODYSSEA is a user-centred project aiming to make Mediterranean marine data easily accessible and operational to a broad range of multiple end-users operating in the Mediterranean Sea.

ODYSSEA is expected to:

- Integrate existing Earth Observing systems into a single platform
- Develop a community of Mediterranean data users,
- Offer on-demand derived data services for end-users and stakeholders.



ODYSSEA will set up, operate and maintain a network of nine local/regional Observatories around the Mediterranean Sea aiming to cover and support end-users' specific needs in marine data.

ODYSSEA will train and educate policy-makers and end-users on marine data usage, demonstrate all new technologies (sensors, models, systems) and educate young scientists, engineers and entrepreneurs

- Industrial Users
- Public Authorities
- Science & Education
- Civil Society



MARKET SECTOR

ODYSSEA develops services for end-users operating in the Coastal and Marine Environment. We will provide historic data, real-time and NRT data and operational forecasts (raw and processed).

INTERMEDIATE USER

ODYSSEA acts as an intermediate user that uses Marine Copernicus Service to develop and foster businesses for end users.

END USERS

We target end users such as fishery and mariculture SMEs, port authorities, oil & gas operators, maritime industry, public health and civil protection authorities, etc.





CONTEXT

Mussel culture operators may need marine and weather data and early warnings on approaching toxic algal blooms or heat waves affecting mussels growth.

Port authorities request salinity and density data to compute cargo ship buoyancy and decide for the appropriate entering time in harbor.

National/regional authorities request wind and wave/currents data to indicate appropriate waterways for seaplanes.



OBJECTIVES AND CHARACTERISTICS

ODYSSEA platform is the final project deliverable, integrating data from existing Earth Observing Systems (external data) and the data produced at ODYSSEA Observatories (internal data, in-situ systems and models).

Until platform's final development, an ODYSSEA platform 'mock-up' was designed by DUTH to contact and interact with end-users. CMEMS data and data from other systems (NOAA, Metar) were retrieved and synthesized to develop easy to understand graphs and texts.

Social media (Facebook and twitter) were used to approach and develop a community of regular end-users throughout the Med.

CONDITIONS OF USE AND ACCESSIBILITY

Our tool is free and available on

<https://www.facebook.com/ODYSSEAPlatform.Greece/>

We use CMEMS products from:

- Model
- Satellite reanalysis
- In situ RT-NRT data

We use products in:

- Real time & Forecast

We use products in various areas:
Mediterranean Sea

Parameters

All physical, chemical and biological

HOW DO WE USE CMEMS PRODUCTS? (1/4)

We retrieve CMEMS data and combine them with data from other platforms (NOAA, Metar, etc.) to automatically produce synthetic diagrams and explanatory texts to inform end-users on conditions at sea and weather (present and forecasted).

We post-process CMEMS products to derive indices and issue warnings.

HOW DO WE USE CMEMS PRODUCTS? (2/4)

Facebook page for ODYSSEA-Greece. The main post features a map titled "Χωρική κατανομή πρόβλεψης ύψους κύματος κατά την 08-09-2017 στο Θρακικό Πέλαγος" (Spatial distribution of wave height forecast for 08-09-2017 in the Thracian Sea). The map shows wave height contours and a color scale from 0.00 to 0.25 meters. The text below the map reads: "ODYSSEA OPERATING A NETWORK OF INTEGRATED OBSERVATORY SYSTEMS IN THE MEDITERRANEAN SEA".

Facebook page for ODYSSEA-Egypt. The main post features a map titled "Distribution de prévisions spatiales de la hauteur des vagues le 11-09-2017 dans le golfe de Gabès" (Spatial distribution of wave height forecasts for 11-09-2017 in the Gulf of Gabès). The map shows wave height contours and a color scale from 0.15 to 2.89 meters. The text below the map reads: "ODYSSEA OPERATING A NETWORK OF INTEGRATED OBSERVATORY SYSTEMS IN THE MEDITERRANEAN SEA".



BENEFIT 1

A community of end-users has started to develop along the Med. Within a month more than 600 people are following ODYSSEA fb pages and about 4,000 people receive daily posts with CMEMS data.

Presently, in Greece we cover four broad areas (Thracian Sea, Thermaikos Gulf and Eastern Evoia) and seven point locations with specific end-users interest.

In Egypt in collaboration with NGO RAED we cover the Abu Qir bay.

In Tunisia in collaboration with NGO ANDDCSV we cover the Gulf of Gabes.



BENEFIT 2

A group of young scientists (2 PhD students and 1 postDoc) work daily to promote ODYSSEA-Greece and provide services to end-users. Software engineers in Egypt and Tunisia collaborate for the maintenance and expansion of the system.



IMPACT OF H2020 PROGRAM

- A) We estimate that 400 tn of mussels were saved from massive death during July and August heat waves in Greece.
- B) Kavala and Alexandroupolis port authorities receive prompt information on local winds, waves, salinity and water density conditions

IMPROVEMENT NEEDED



IMPROVEMENT 1

Increase the spatial resolution of CMEMS hydrodynamic grid.
Present Med grid 1/16 deg, it could be improved into 1/32 deg.

IMPROVEMENT 2

Automatic change to backup servers during periods of backup, servicing and maintenance to avoid changing algorithms in motu client.

IMPROVEMENT 3

Retrieving long time-series via motu client should be improved.



CONCLUSION



ODYSSEA will offer on-demand derived data services for end-users and stakeholders along the Mediterranean Sea. DUTH developed an algorithm to retrieve data from CMEMS and other platforms, to develop synthetic diagrams, maps and explanatory texts and upload them automatically in social media networks (facebook and twitter).

Main Benefits for ODYSSEA to use of CMEMS products are:

- Faster, continuous, robust data delivery. Data are daily downloaded and processed without problems.
- Results enabled end-users to understand weather and marine interaction and processes and monitor the impact on their operations.
- Such methodology will be replicated in many parts of Med. We foresee 10K active users receiving daily posts and more than 50K receiving posts indirectly.





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THANKS FOR YOUR ATTENTION



Kavala, Greece!

North Aegean's best kept secret, finally revealed

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