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*CEO, Geospatial Enabling Technologies*



## Copernicus Data Driven Services for Regional & Local Government in Greece



# Making Location Matter

GeoInformatics  
Open Data  
Business Intelligence  
Environment



Geo  
ICT



Open DATA



GeoBI  
Business Intelligence



Environment



GET

## The Company

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*Copernicus Data Driven Services for Regional & Local Government in Greece*



Copernicus is the largest program of open EO data sharing. It provides continuously, global and free satellite data from the Sentinel mission as well as other supporting data from forecasting models or in-situ measurements.



Business Opportunity



Benefit for the Public



LOCAL GOVERNMENT



REGIONAL GOVERNMENT



CENTRAL GOVERNMENT



ENVIRONMENT



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## The COPERNICUS programme

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- making location matter



## Copernicus Data Driven Services for Regional & Local Government in Greece





- Existing data access hubs are characterized by technical complexity and there are only limited options for automated data services as well as API for data access and viewing using web services.
- Thus, operational services and added value products / services are still limited.



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## Bottleneck


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 The Thematic Exploitation Platforms (TEPs) and the Data and Information Access Services (DIAS) are expected to facilitate data access and maximize the use of Sentinel and Copernicus data.

 *Nevertheless, most of these tools are for developers, thus Public Authorities will benefit only when specific solutions will be available, designed explicitly to support their needs.*



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## Copernicus future

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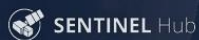
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There is **very limited** use of  
Copernicus data in the Public  
Sector in Greece  
(Except from EMS)

In Greece, Copernicus is still used almost only  
from Educational and Research Institutes



## Use of Copernicus in Public Sector in Greece



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We offer **GETOpenData**, a web based platform for satellite data sharing, visualization and analysis based on Sentinel Hub by **Sinergise**.

Customers:



**GET**

**Our solution: [www.getopendata.eu](http://www.getopendata.eu)**



**SINERGISE**

The platform supports the operations of the public authorities by providing **easy access (OGC web services)** to Copernicus satellite and thematic data as well as integration with SDIs (INSPIRE) & other Open Data Portals (PSI).

Customers:



GET

Our solution: [www.getopendata.eu](http://www.getopendata.eu)



SINERGISE

It is extended by advanced Artificial Intelligence (AI) and Machine Learning (ML) Capabilities from Similarity.

Customers:



GET

Our solution: [www.getopendata.eu](http://www.getopendata.eu)



SINERGISE

User has **SW agnostic simultaneous one stop point access** to Copernicus satellite and thematic data as well as national, regional and local open data.





NEWS 09.08.2017

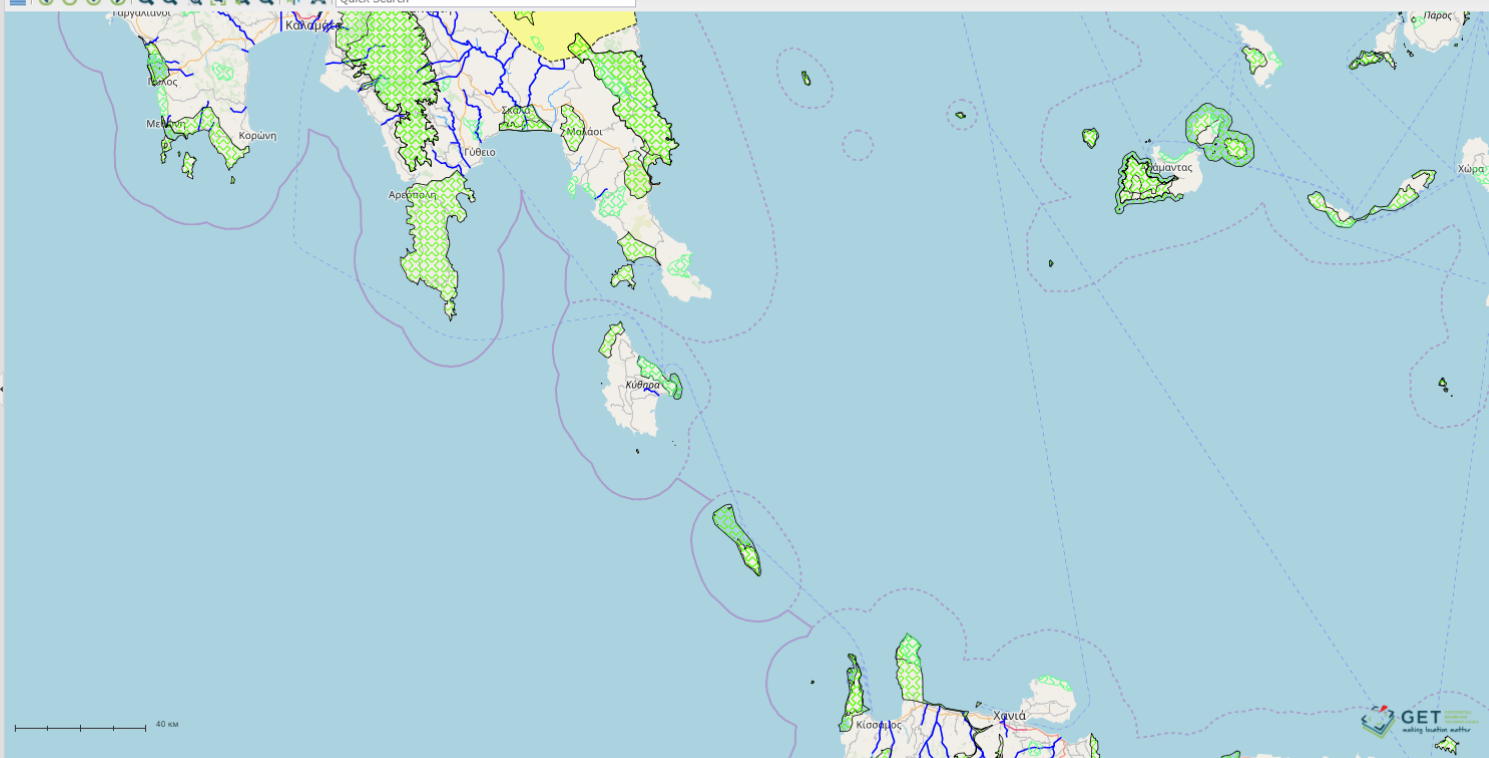
## Kythira fire was this year's most devastating



Fires

More than 2,300 hectares of land was burnt by the recent wildfire that swept across much of the island of Kythira,

- ☒ Basemaps
- ☒ Layers
  - ☒ Wetlands
  - ☒ Environment (geodata.gov.gr)
    - ☒ Protected Sites
      - ☒ Cores of National Parks
      - ☒ Wild Life Park
      - ☒ Aesthetic Forests
      - ☒ National Forests
      - ☒ National Parks
      - ☒ Areas Protected by International Regulations
      - ☒ NATURA 2000
      - ☒ Management Bodies of Protected Areas
      - ☒ Eco-development Areas
  - ☒ Water Bodies
    - ☒ Hydrographic Network
    - ☒ Rivers
    - ☒ Lakes
    - ☐ Drainage Basins
    - ☐ Water Departments
  - ☒ Administrative Units (Hellenic Statistical Authority)
    - ☐ Settlements
    - ☐ Municipal Local Communities
    - ☐ Municipal Units
    - ☐ Kalikratis Municipalities
    - ☐ Regional Units
    - ☐ Regions of Greece








Copernicus EMS wasn't activated.  
By using Region's of Attica, open infrastructure,  
damage assessment is completed in few hours.



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-  Corine 2012
-  Δασικοί Χάρτες - Κύθηρα
-  Δασικοί Χάρτες 1945 - Κύθηρα
-  False color
-  Normalized Burn Ratio

Type

WMS Manager

WMS

Service Address: <http://dev3.getmap.gr:18083/geoserver/wms>

WFS

WMTS

CSW

☐ Authentication Required [+ Register](#)

KML

☐

ATOM

☐

GEORSS

☐

SHAPEFILE

☐

WMC

☒

| Title                                     | Address   | Version |
|---|---|---------|
| Υγρότοποι Αττικής - Υμητταίες Αεικόνισσης | <a href="http://services.atticawetlands.eu/geoserver/wms/">http://services.atticawetlands.eu/geoserver/wms/</a>   | 1.3.0   |
| Υγρότοποι Αττικής - Υμητταίες Αεικόνισσης | <a href="http://services.atticawetlands.eu/geoserver/ekby/wms/">http://services.atticawetlands.eu/geoserver/ekby/wms/</a>   | 1.3.0   |
| Wetlands of Attica Satellite Service      | <a href="http://services.sentinel-hub.com/v1/wms/c6430c5c-db4f-429c-8857-4e06c0354b48">http://services.sentinel-hub.com/v1/wms/c6430c5c-db4f-429c-8857-4e06c0354b48</a> | 1.3.0   |
| Υμητταίες Αεικόνισσης ΔΑΦΝΗ               | <a href="http://dev3.getmap.gr:18083/geoserver/wms">http://dev3.getmap.gr:18083/geoserver/wms</a>   | 1.3.0   |

☒

☐

☐

☐

☐

Unregister

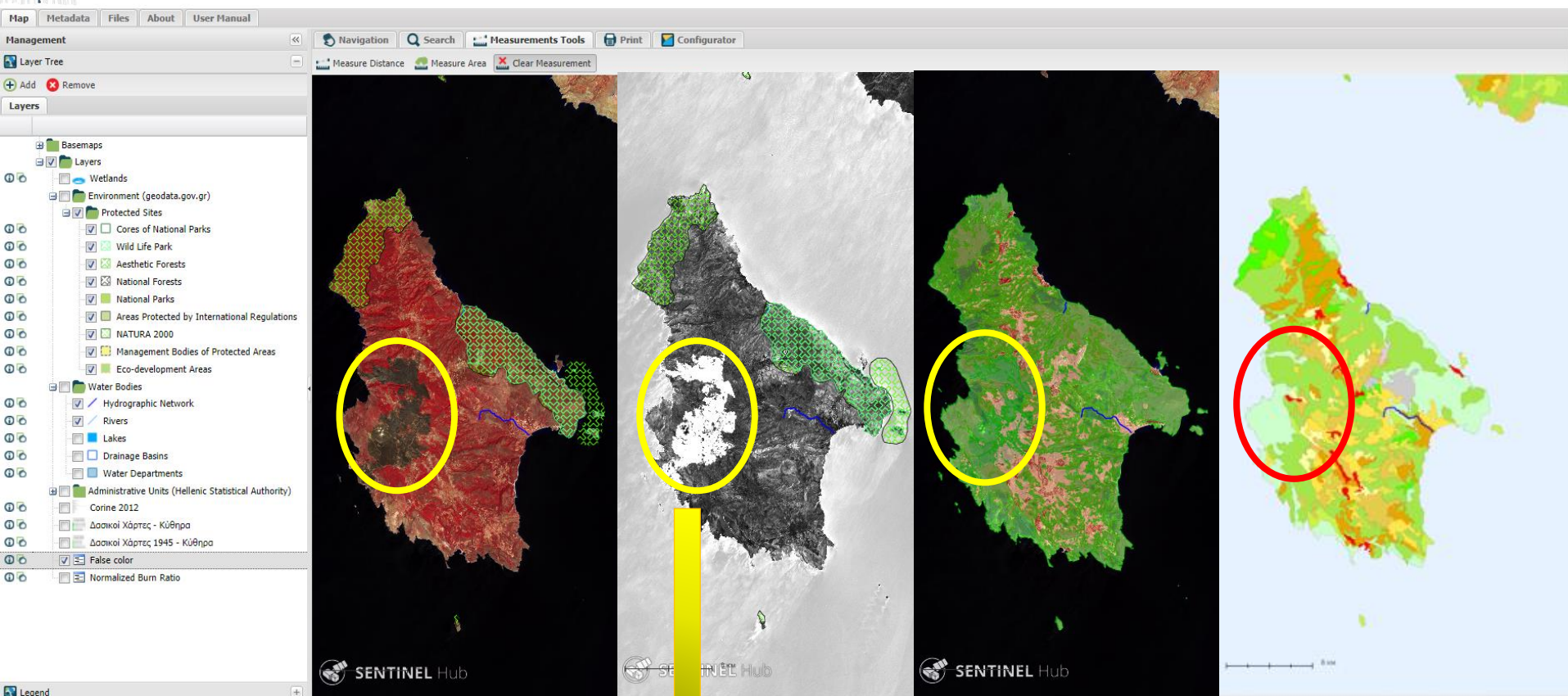
Show Layers

| Name                  | Title                 |                                     |
|-----------------------|-----------------------|-------------------------------------|
| AGRICULTURE           | Agriculture           |                                     |
| FALSE_COLOR           | False color           | <input checked="" type="checkbox"/> |
| NORMALIZED_BURN_RATIO | Normalized Burn Ratio | <input checked="" type="checkbox"/> |
| TRUE_COLOR            | True color            |                                     |

Remove from map

Add to map

# Access through OGC web services to other open data



Automatic calculation of burned area used for immediate damage estimation.



## Πλημμύρισε ο Σπερχειός λόγω της κακοκαιρίας – ΦΩΤΟ

🕒 3:27 μμ, Παρασκευή 10 Μάρ 2017

Κοινωνία



Οι βροχοπτώσεις των τελευταίων ημερών σε συνδυασμό με τα χιόνια που λιώνουν από την Οίτη, "φούσκωσαν" επικίνδυνα τον Σπερχειό.

### Region of Central Greece.

### Floods 10<sup>th</sup> /3/2017.

### Copernicus EMS wasn't activated.



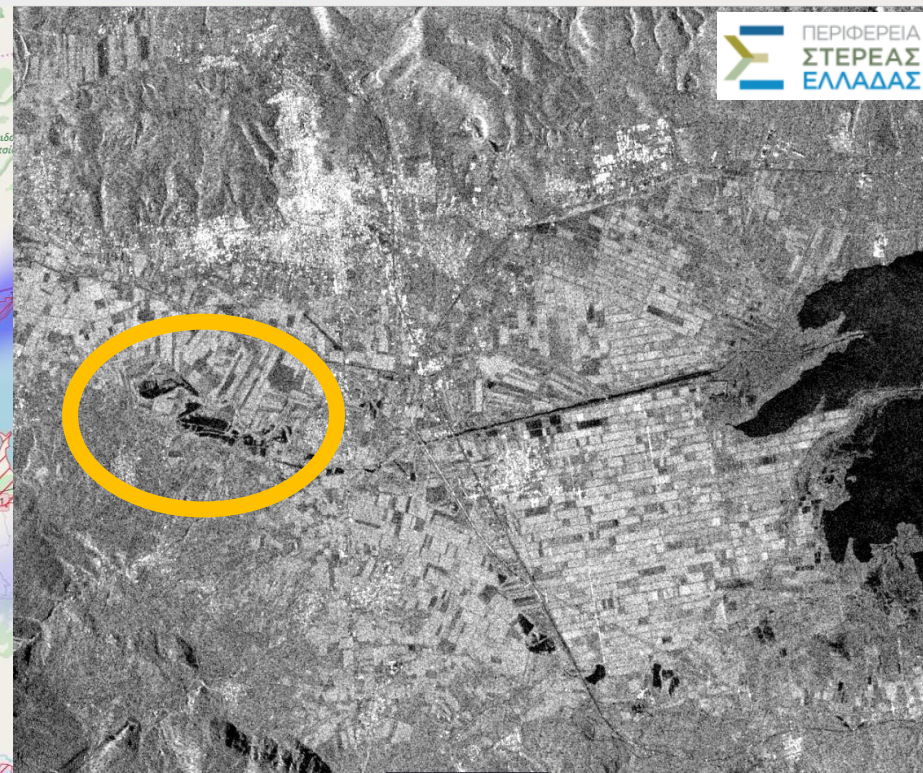
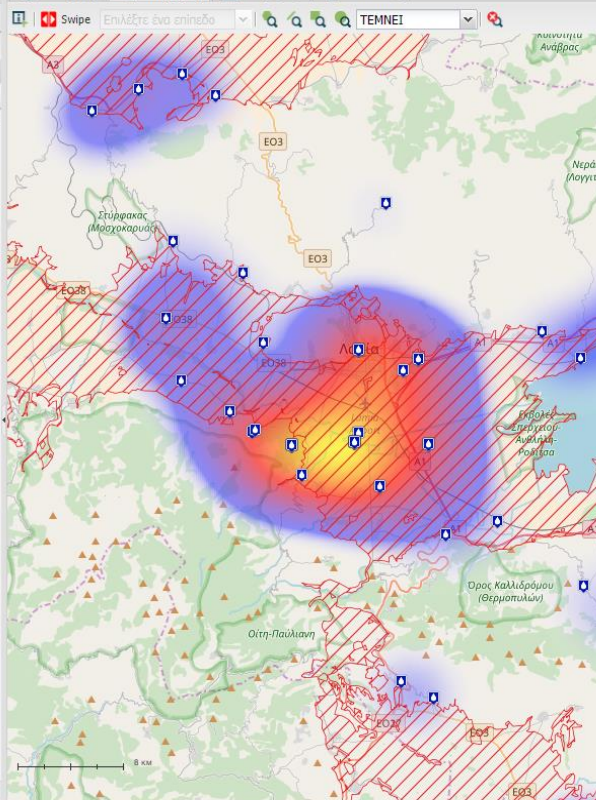
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- ☒ ΕΚΤΩΣΗ
- ☒ Ατμοσφαιρικά - Ρύποι
- ☒ Βιομηχανία - Βιοτεχνία
- ☒ Γενική Διεύθυνση Αλιείας - ΥΠΑΑΤ
- ☒ Δάση - Πανίδα
- ☒ Δημόσιες Υπηρεσίες
- ☒ Διαχείριση Αποβλήτων
- ☒ Διοικητικά Όρια
- ☒ Εκπαίδευση
- ☒ Ενέργεια
- ☒ Θαλάσσιες Περιοχές Περιβαλλοντικού Ενδιαφέροντος
- ☒ Ιστορικές Πλημμύρες
- ☒ Προκαταρκτική Αξιολόγηση Κινδύνων Πλημμύρας (2007/60) ΕΚ
- ☒ Ιστορικές Πλημμύρες Ελλάδας
- ☒ Σημαντικές Ιστορικές Πλημμύρες Ελλάδας
- ☒ Ζώνες Δυναμικά Υψηλού Κινδύνου Ελλάδας
- ☒ Χάρτης Έντασης: Ιστορικές Πλημμύρες
- ☒ Ελλάδας
- ☒ Υπόγειες Υδάτινες Επιφανείες
- ☒ Υπόγειες Υδάτινες Επιφανείες Ελλάδας
- ☒ Υδατικά Διαμερίσματα
- ☒ Υδατικά Διαμερίσματα Ελλάδας
- ☒ Λίμνες
- ☒ Λίμνες Ελλάδας
- ☒ Λεκάνες Απορροής
- ☒ Λεκάνες Απορροής Ελλάδας
- ☒ Κτηνοτροφία-Πτηνοτροφία
- ☒ Λατομεία
- ☒ Περιοχές Προστασίας
- ☒ Πολιτισμός - Πολιτιστικά
- ☒ Πράξεις Χαρακτηρισμού Εκτάσεων
- ☒ Ρυθμιστική Αρχή Ενέργειας
- ☒ Υπόμνημα
- ☒ Επιλεγμένα



# Region of Central Greece infrastructure is used for historical data analysis of the flood based on Sentinel 1 data

## Sperchios river & Maliakos gulf.



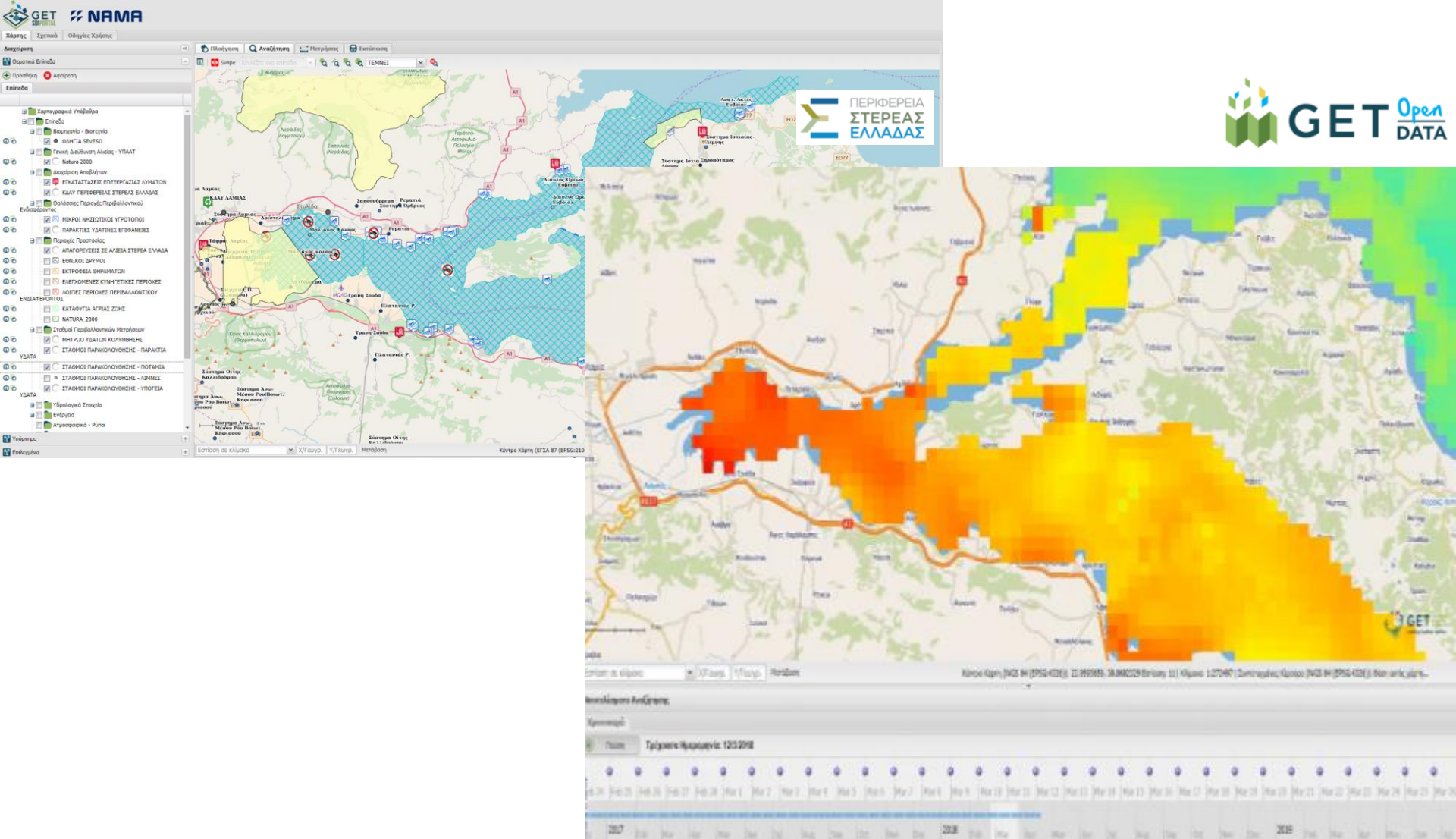
GET

## Water Quality for Region of Central Greece

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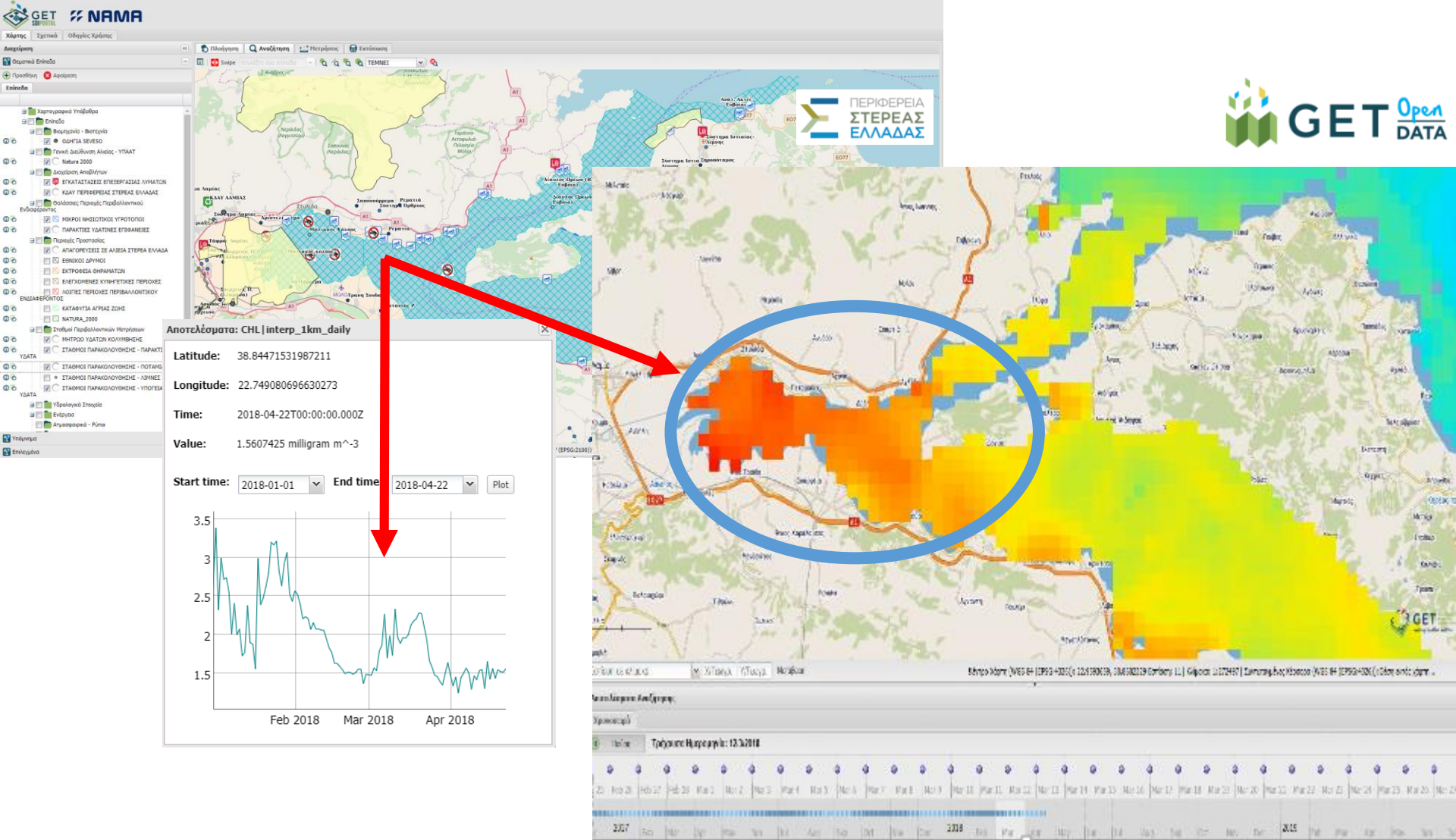
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## Water Quality: Chlorophyll (Interpolation, Daily/1km) based on Copernicus Marine data







## Automatic Urban Change Monitoring for Region of Central Greece.





Rapid awareness of critical anomalies on the ground or Region based on AI techniques from



analyzing immense volumes of data.



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Rapid awareness of critical anomalies on the ground or Region based on AI techniques from



analyzing immense volumes of data.

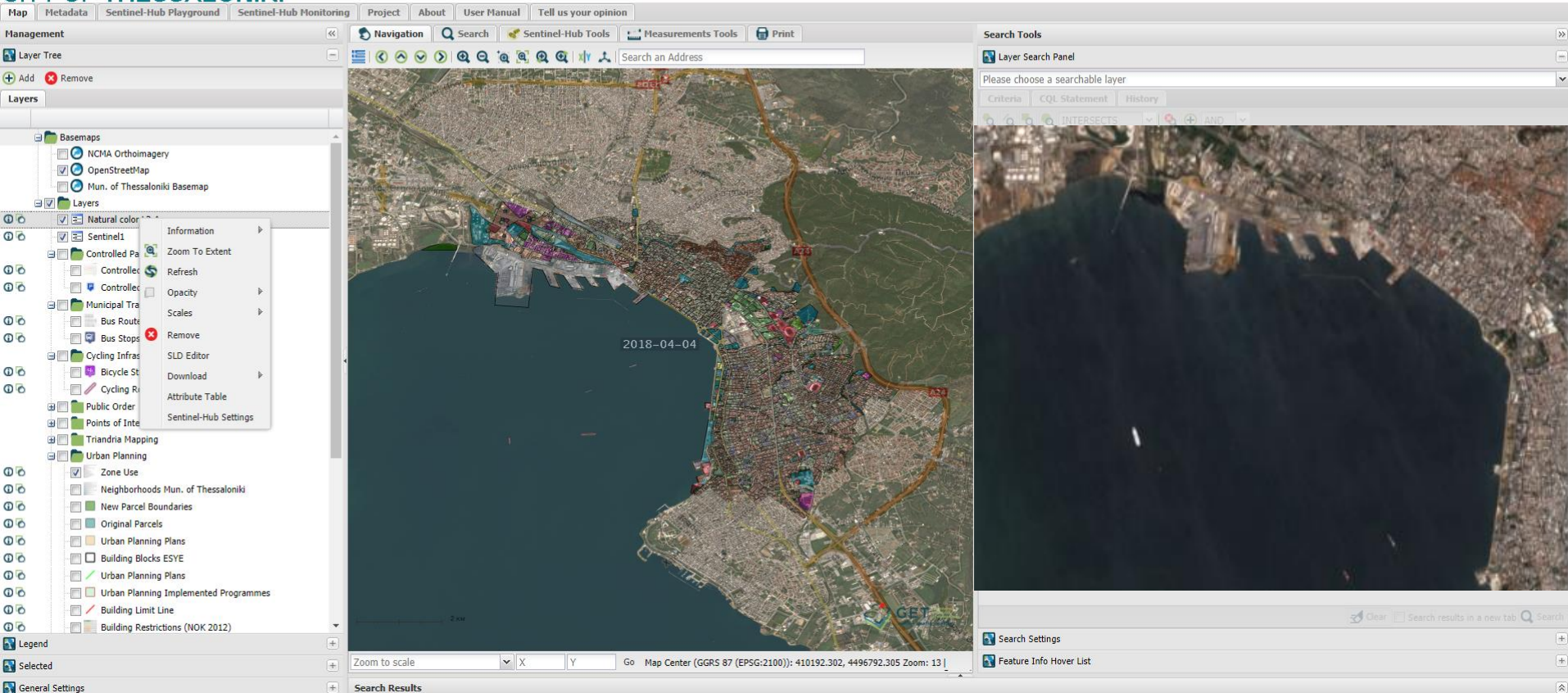


GET



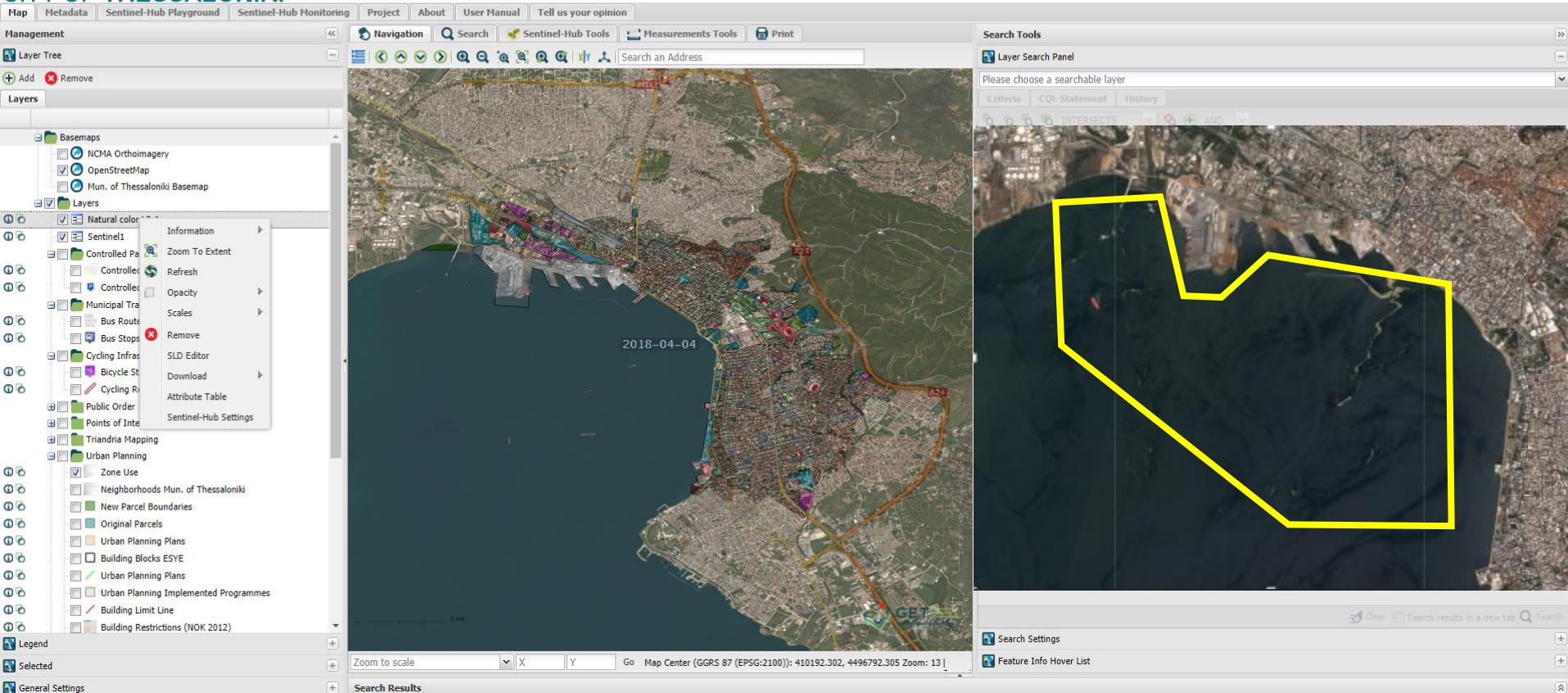


# Municipality of Thessaloniki: Study of the harmful algal bloom in the seashore during summer 2017



# Municipality of Thessaloniki: Study of the harmful algal bloom in the seashore during summer 2017





# Municipality of Thessaloniki: Study of the harmful algal bloom in the seashore during summer 2017



- ☐ Provide Services for Air Quality using both Forecast and Near Real Time Satellite Data from Sentinel 4 and 5
- ☐ Integrating sophisticated Data Analytics and Dashboard Tools in the workflows



<http://www.getopendata.eu> 



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 /getmapgr

 Geospatial Enabling Technologies  
[www.getmap.eu](http://www.getmap.eu)

