

April 2022



## A SPACE-BASED SOLUTION FOR OIL SPILL DETECTION

### >>> A few years later

Our Copernicus-based solution is suitable for oil spill monitoring in open seas. However, in the last few years, the need for identifying oil spills in inland waters has risen. To address such a requirement, a novel method that focuses on inland water and oil spills is being developed.

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BENEFICIARIES	Water utility operator (EYATH) Regional Authorities (Central Macedonia)	Maritime authorities (Hellenic Navy) Regional Authorities (Central Macedonia)	Maritime authorities (Hellenic Navy); Coastguards; Environmental Protection Agencies	Citizens and society
SERVICES	<b>TIER 1: SERVICE PROVIDER</b> Sentinel-1 Sentinel-2 CMEMS	<b>TIER 2 PRIMARY USER</b> A web application that tackles oil spill identification in EU maritime areas (detection masks)	<b>TIER 3 SECONDARY USER</b> Aid in maritime surveillance; Estimates of the size and the movement of the slick; Aid for clean-up operations; Identification of the polluters	<b>TIER 4 END USER BENEFICIARIES</b> Protection of environment; Public health monitoring

Value chain definition following SeBS Methodology - <https://earsc.org/sebs>

### The space-based solution

Copernicus-based solution produced by a scientific entity for other users such as professionals, agencies, associations, single citizens. In the past few years, in addition to Sentinel-1 SAR imagery, Sentinel-2 data are now used.

### The Usage Maturity Level

Since 2018, the solution has transitioned to the higher level due to the new funds allocated within the organisation itself. Additionally, a new method is being developed that focuses on oil spills in inland waters.

Thematic Area



**BIODIVERSITY AND ENVIRONMENTAL PROTECTION**

Region of Application



**CENTRAL MACEDONIA**

Sentinel mission used



S1, S2

Copernicus Service used



CMEMS

Usage Maturity Level



4

## Overall benefits

### ECONOMIC



Cost savings of operating expenditure have been registered

### ENVIRONMENTAL



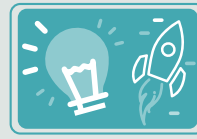
Faster identification of event that allows timely intervention

### REGULATORY



The solution has facilitated or improved the compilation of institutional reports by the PA

### INNOVATION



The solution has helped to introduce some innovation in the functioning of the Public Administration

### SCIENCE



- The solution has enabled some technological advancement
- There was an increase in technical/scientific expertise related to Copernicus/EO within the PA
- There was an increase in the research budget share of the institutions involved in the solution

### SOCIETAL



An increased overall quality of life for citizens has been detected

Benefits classification following SeBS Methodology - <https://earsc.org/sebs>

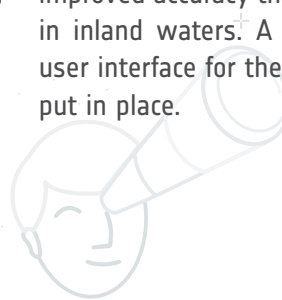
## Interesting facts...

The proposed solution allows the low cost supervision of a lake (~70 sq km) without any sensor installation. The solution is built upon of state-of-the-art deep learning techniques that are used for image segmentation.



## Outlook to the future

The current solution is suitable for open seas. The future improvement foresees a development of a new method and improved accuracy that will support identification of oil spills in inland waters. A complete alert-system with a friendly user interface for the involved stakeholders is planned to be put in place.



## Acknowledgements

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