

# Water Monitoring Sentinel Cloud platform (WORSICA): a new service for detecting coastline, coastal inundation areas, and inland water bodies using remote sensing.

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Coastline monitoring is a significantly demanded task with substantial costs and an inherent need for computational power to process the imagery data. Therefore, LNEC has developed a new service to work with water indexes to determine water extensions in the areas of study.

Water mOnitoRing Sentinel Cloud platform (WORSICA) is a new service that detects the coastline, coastal inundation areas, and the limits of inland water bodies using remote sensing. This service was developed under the scope of the H2020-EOSC-Synergy project and aimed at integrating multiple-source remote sensing and in-situ data to determine the presence of water in coastal and inland areas. It applies to various purposes, from determining flooded areas (caused by rainfall, storms, hurricanes, or tsunamis) to detecting large water leaks in major water distribution networks. It builds on components developed in national and European projects, integrated to provide a one-stop-shop service for remote sensing information, integrating data from the Copernicus satellite and drone/unmanned aerial vehicles, validated by existing online in-situ data. In addition, the WORSICA service was integrated into the European Open Science Cloud (EOSC) infrastructure and available to all European public research groups. The users can access the service through a web portal with a simple browser without additional computational costs, which are frequently needed for image satellite processing.

The present publication will present an application to the Óbidos lagoon to demonstrate some service features. This application will monitor the inlet of the Óbidos lagoon and provide an estimate of the inter-tidal bathymetry of the area based on the sentinel-2 images tidal and wave modeling data for a specific seasonal period.

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