



Downstream VRE: Land and Marine domain toolboxes

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Mission 4 “Education and Research” - Component 2: “From research to business” - Investment
3.1: “Fund for the realisation of an integrated system of research and innovation infrastructures”



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Collection Data and Platform - Downstream VRE

ITINERIS Downstream VRE

Communication

Members

Analytics

JupyterLab

RStudio

WebODV

ERDDAP Navigator

Spatial Data Services

Catalogue

Land applications

How-tos

Marine toolbox

Land toolbox

About

Shared Folder

ITINERIS Downstream ...

Name	Owner	Last modified
Land Toolbox	NS	11 Jun 14:28 24
Marine Toolbox	NS	11 Jun 14:28 24

1 to 2 of 2 items

Go to shared workspace

Analytics Engine

Analytics Engine (DataMiner) permits the execution of an array of analytics methods by transparently relying on distributed computing infrastructure. Executions can run either on multi-core machines or on different computational platforms, such as D4Science and other different private and commercial Cloud providers. New software can be integrated by using the dedicated Software Importer (SAI).

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DOWNSTREAM VRE ITINERIS

The ITINERIS Downstream VRE is dedicated to the use of OGS and RI data on climate, carbon, landslides and environment response nexus and provides its users with services for the visualization, analysis, and sharing of available data provided by the different RIs.

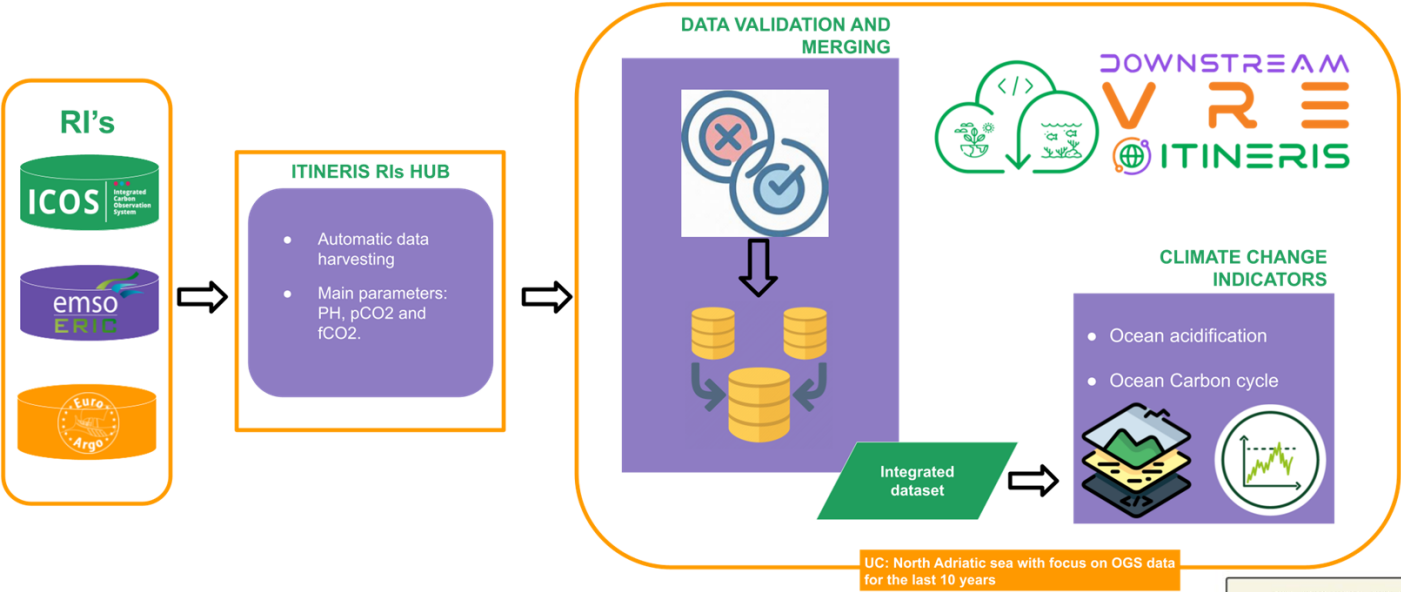
Other options ...

R

RStudio

RStudio provides an integrated development environment for R. It includes a console and a syntax-highlighting editor and it enables code execution. Tools for plotting are also included. This RStudio environment is (i) preconfigured with libraries and packages to ease the execution of common data analytics tasks, and (ii) provides seamless access to the Workspace enabling sharing of resources with other members much easier.

Marine and Land domain toolbox


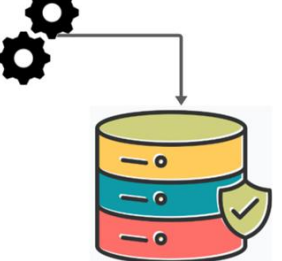

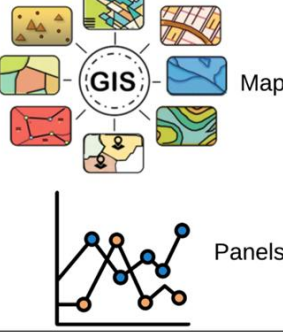


← Marine domain toolbox

The marine domain toolbox focalizes in carbon cycling and acidification data available in the North Adriatic Sea mainly pH, pCO2, fCO2, temperature and salinity within the different Ris in the ITINERIS project.

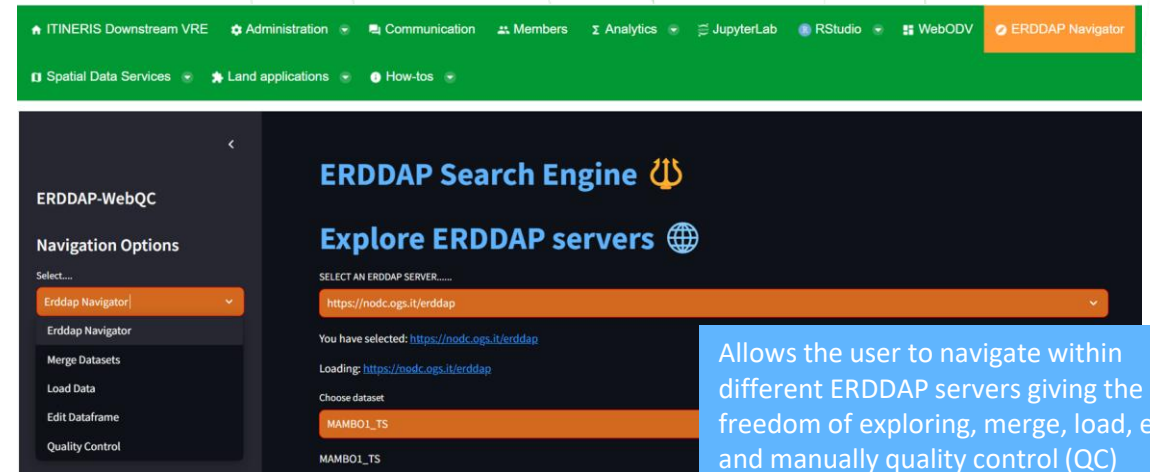
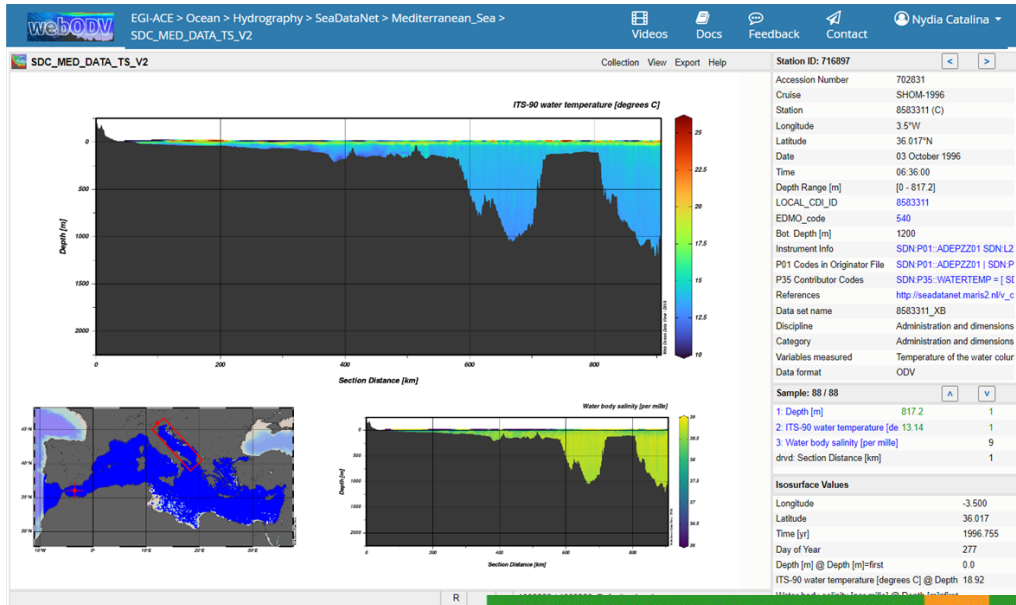
Land domain toolbox

The land domain aims to analysis areas exposed to hydrogeological hazards, in particular landslides. The focus is on the potential impact of climate change on pilot test sites. Data from the test site is collected using monitoring systems.

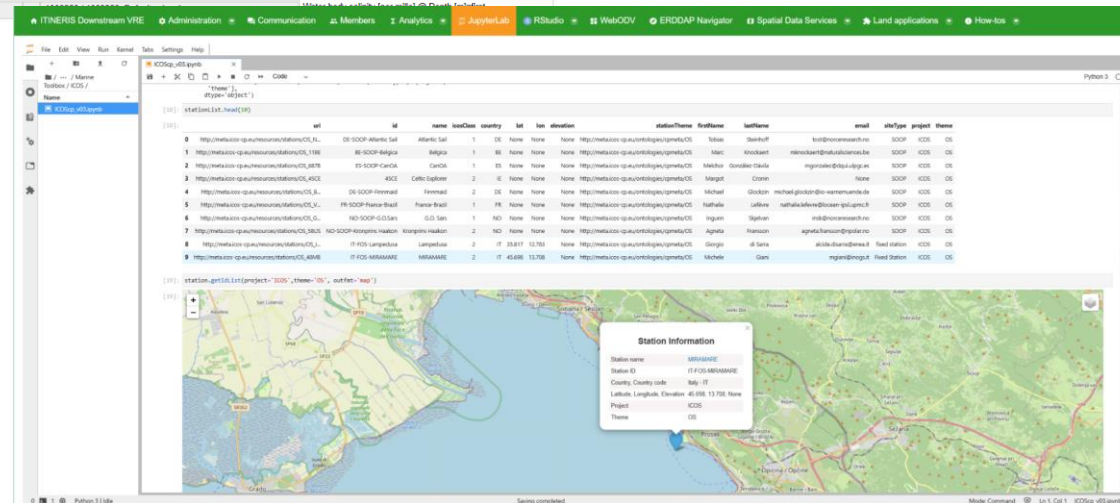
STUDY AREA and MONITORING	COLLECTION DATA	PLATFORM	PRODUCTS and VISUALIZATION
 Landslide Instruments	 Database		 GIS Maps Panels
Data acquisition via on-site tools	Data organization from instrument	Destination data: VRE	Output data, Format data available on VRE

Marine domain

Three user driven tools have been made available based on different user skills and the most common tools for marine domain users: WebODV access, jupyter notebooks to access ICOS data and the ERDDAP navigator.



Allows the user to navigate within different ERDDAP servers giving the freedom of exploring, merge, load, edit and manually quality control (QC) datasets by exploiting ERDDAP RESTful API



Land domain



Spatial Data Services with Geoserver and Geonetwork

listOfCategories

Road (close to landslide FVG)

The route includes two sections of road, the former S.S. 52 Camica, which is currently closed due to the landslide. A tunnel or bypass has been built upstream to restore road capacity. Overall, the road route represented is about 7.5 km long. This dataset was produced in the context of the ITINERIS PNRR Italian project - project code No. IR0000032 - ESFRU Environment: Data harmonisation process - Rachele Franceschini

listOfCategories

Monitoring landslide FVG

Passo della Morte is located near the village of Form di Sotto in the province of Udine. Passo della Morte was one of the first sites to be monitored under the ITINERIS project. The site was chosen because the area is subject to frequent rock collapses, which led in recent years to the closure of the tunnel and the subsequent construction of an upstream by-pass. This

listOfCategories

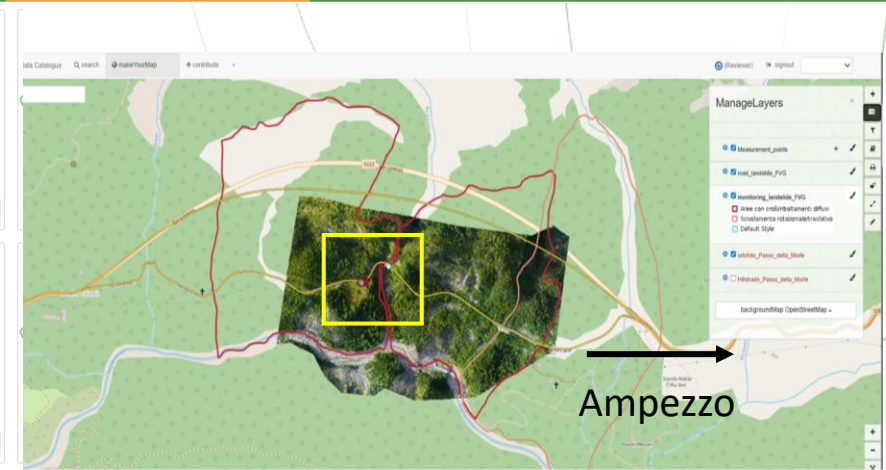
DSM Passo della Morte

Digital Surface Model (DSM) was acquired by drone at Passo della Morte on 17 June 2025. The resolution is about 13 cm. This dataset was produced in the context of the ITINERIS PNRR Italian project - project code No. IR0000032 - ESFRU Environment: Data harmonisation process - Rachele Franceschini - Supported by D4Science infrastructure.

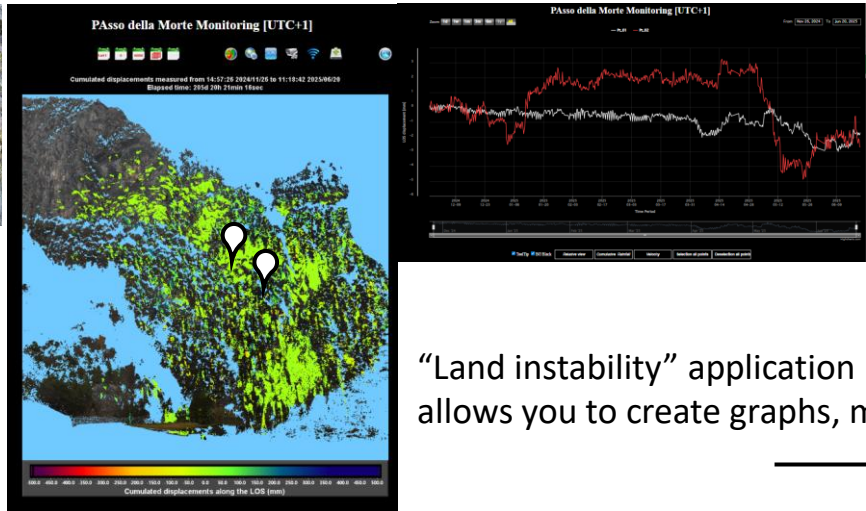
listOfCategories

Hillshade Passo della Morte

Hillshade has been processed from DTM. Vegetation and any element limiting the delineation of elevation has been removed from the DSM. The resolution is about 13 cm. This dataset was produced in the context of the ITINERIS PNRR Italian project - project code No. IR0000032 - ESFRU Environment: Data harmonisation process - Rachele Franceschini



Monitoring system: GB-Insar has been installed, in November 2024, and every 1 h it captures an interferogram



“Land instability” application allows you to create graphs, make



Dashboard

Info

Welcome to Downstream - Land Domain

Data Analysis and Plotting

Here you can upload and view your data on a map and plot. Use the side window to upload your files, and the dashboard will display the various products: Statistics and Map Generator. Choose the chart format, correlate, and implement simple analyses. There is no data loading limit.

Statistics

Map Generator

Seasonality Aggregate

Monthly Aggregate

Expedient analysis

Upload one or more data

Analyze data by means of Statistics or Map Generator

Different analysis can be chosen

Downloadable data plot



THANKS!

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