



hydroweb.next  
water thematic hub

Lionel Zawadzki, [lionel.zawadzki@cnes.fr](mailto:lionel.zawadzki@cnes.fr)

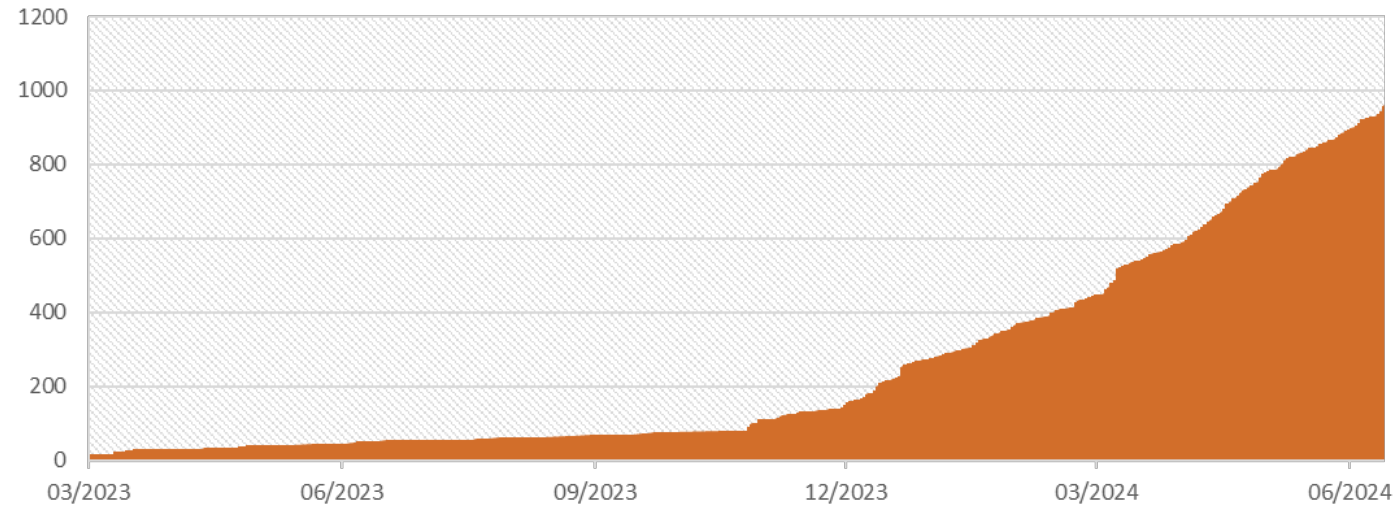
Service desk, [exp.hysope2@cnes.fr](mailto:exp.hysope2@cnes.fr)

SWOT ST 2024 – CHAPEL HILLS  
17/06/2024

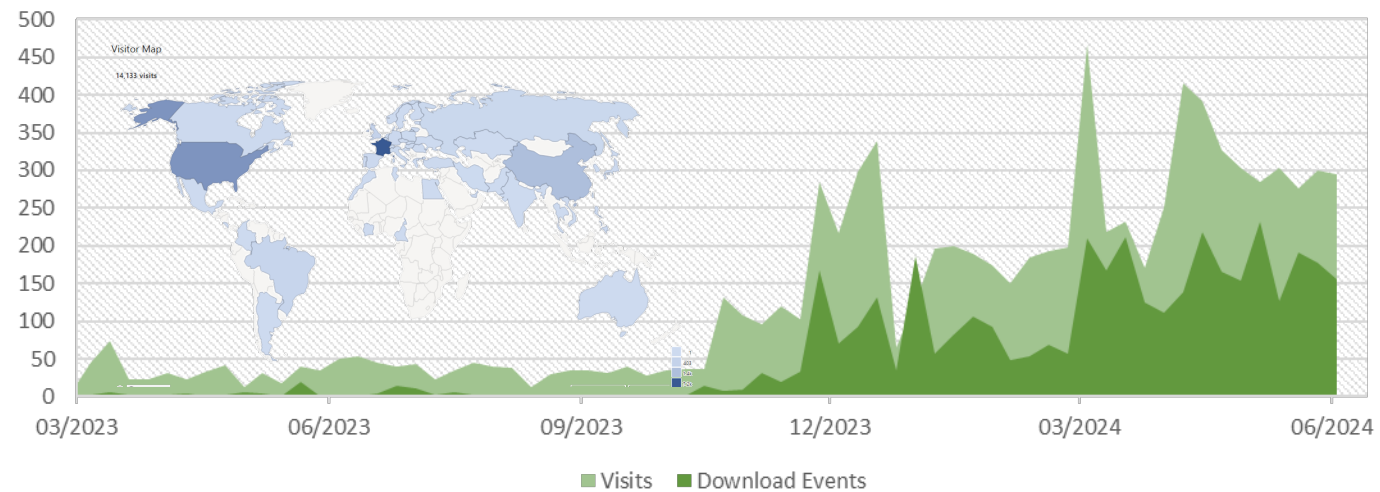
Almost 1000 accounts created in about 1 year (8 months since official announcement).

hydroweb.next is off to a good start

Accounts creation



Weekly Visits



*\*downloads via UI only, API downloads are not yet monitored (work in progress)*

A large choice of satellite products for hydrology, starring all SWOT-HR Level-2 data products

Q4 2024: in situ and model-based data products will be added from various sources to foster use of satellite data amongst the hydrology community



## SWOT

*\*Level-1B HR Single Look Complex*  
Level-2 Pixel Cloud / Pixel Cloud Vector  
Level-2 HR Raster - 100m/250m  
*\*Level-2 HR Lake/River Single Pass*  
Level-2 HR Lake/River Average  
Prior Lake Database  
SWORD

## Theia

Hydroweb Nadir Altimetry Water Level  
Sentinel-2 Surface Water L2B/L3B  
Sentinel-2 "Let It Snow" Maps L2B/L3B  
*\*Sentinel-1 Surface Water L2B/L3B*  
*\*Sentinel-2 Water Quality L2A/L2B*  
*\*GRACE/GFO Total Water Storage L3*

## MISC

*\*Precipitations models from C3S*  
*\*In situ River Discharge*  
*\*... and many more to come*

*\*soon*

Project: New project.copy

- SWOT Level-2 HR Raster - 100m - Beta
  - Water Area
  - Water Fraction
- Water Surface Elevation
- SWOT Level-2 HR River Single Pass - Reach - Beta
- Theia Hydroweb Altimetry Lake Water Level and Storage
- SWOT Level-2 HR Lake Single Pass - Prior - Beta
- My awesome SWOT Lake Prior
- Theia Sentinel-2 Surface Water - Level-2B.2
- SWOT Prior River Database - SWORD



Search features designed for Hydrology (improvements ongoing)

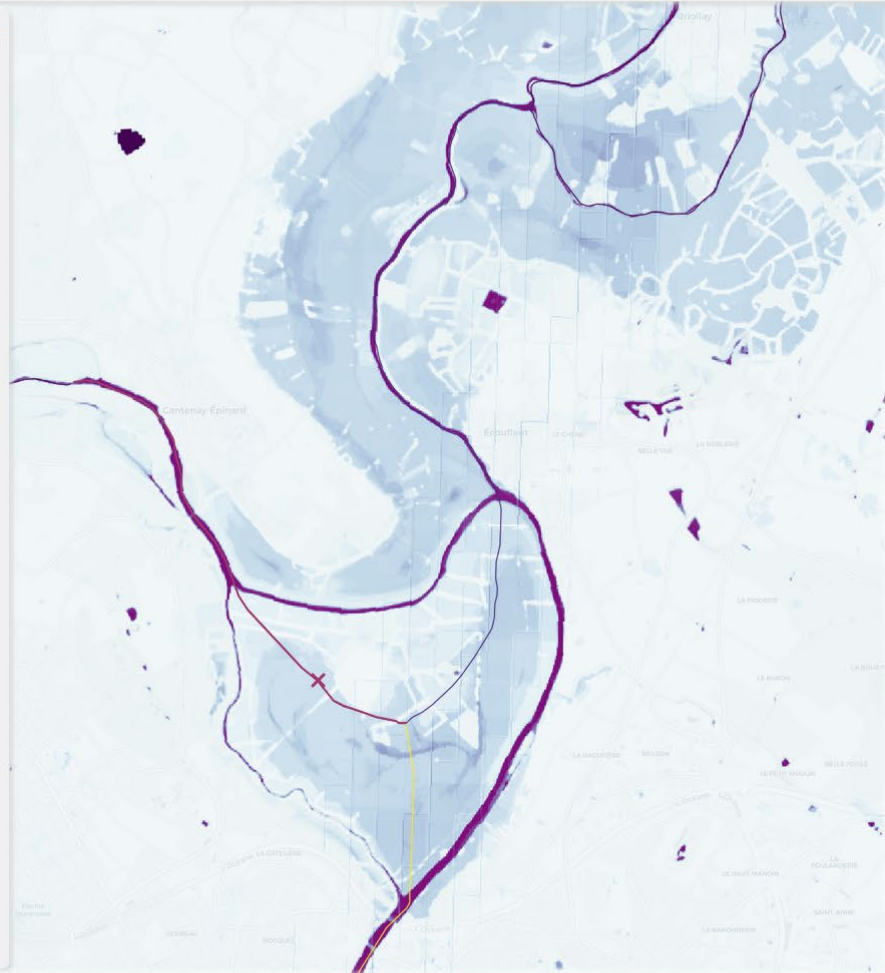


Project: New project

- SWOT lake and rivers
  - SWOT RiverSP Reach (999+)
  - SWOT LakeSP Prior (999+)
    - Total Estimated Water Surface Area
    - Water Surface Elevation
  - Theia Sentinel-2 Surface Water Yearly Synthesis- Level-3B (181)
    - Water Occurrence
- Hydrography
  - SWORD (59)

Legend: White/Blue/Purple

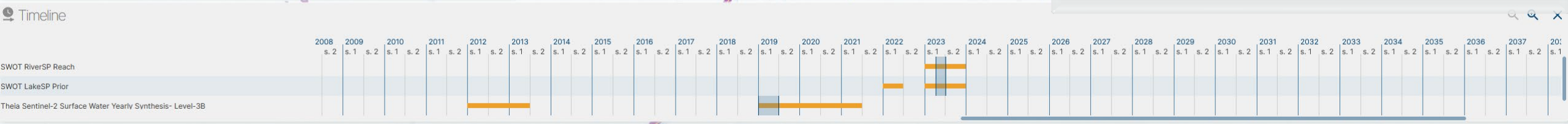
0 0.25 0.5 0.75 1



Map selection

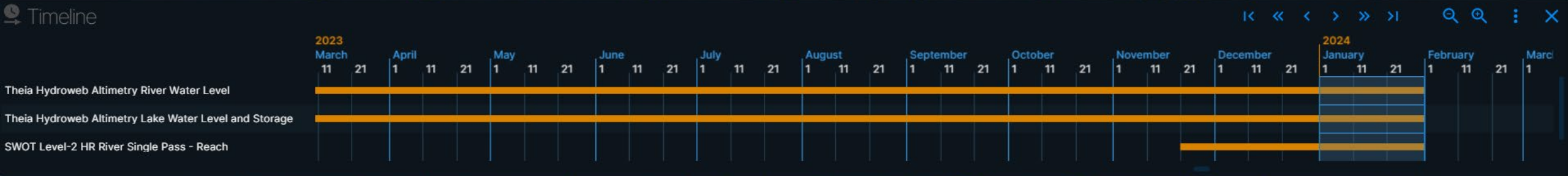
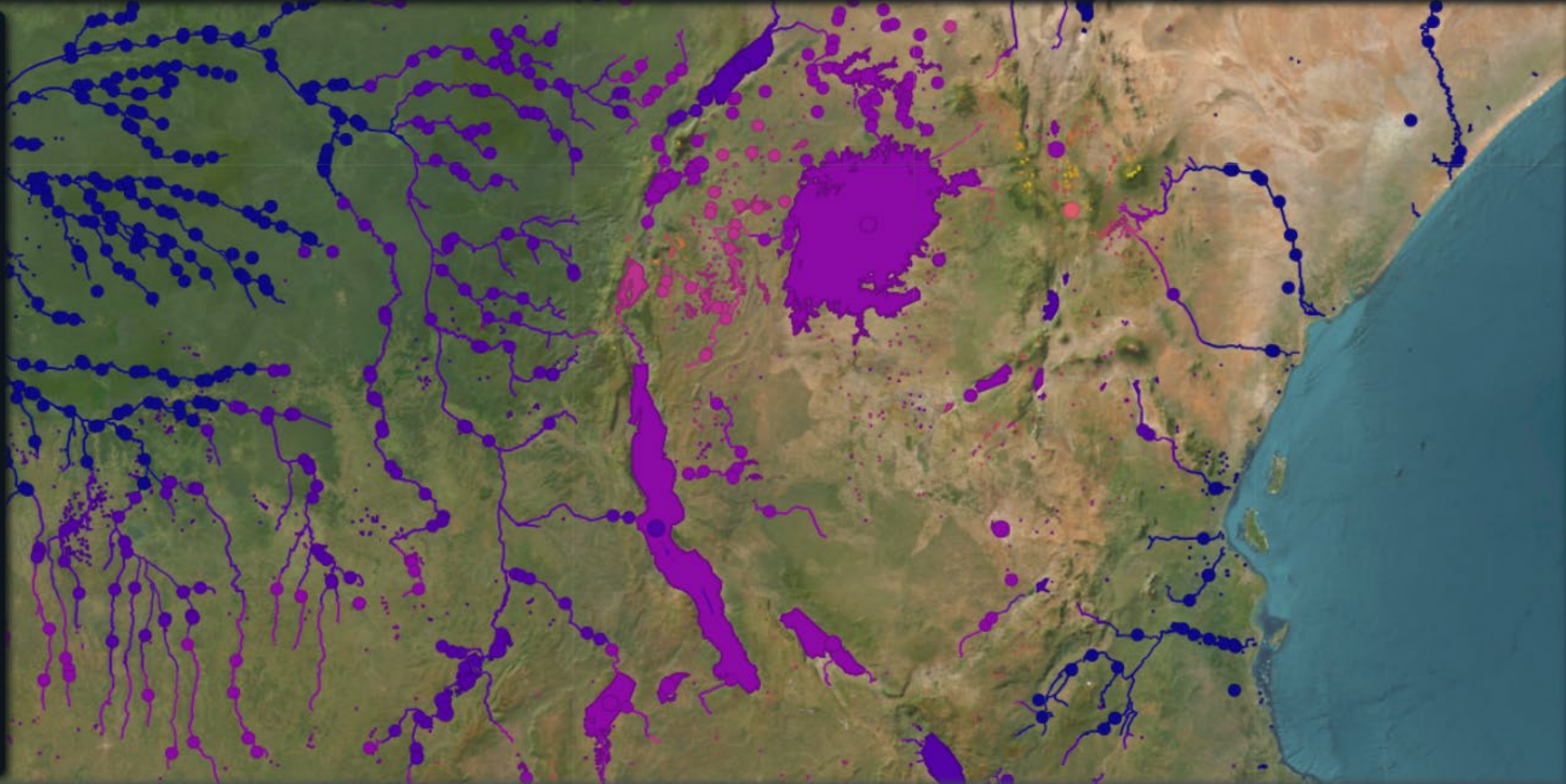
- SWOT RiverSP Reach
  - 23222000021
    - Total estimated water surface area: 2.515E6m<sup>2</sup>
    - Selection period on timeline
    - Drawing
- Theia Sentinel-2 Surface Water Yearly Synthesis- Level-3B
  - At location 47.511, -0.553
    - Water Occurrence: 0.139
    - Selection period on timeline
    - Drawing

Visualize and comparing  
without downloading



Project: New project 2

- Theia Sentinel-2 Surface Water - Level-2B (66)
- Land/Water Mask
- Hydroweb
- Theia Hydroweb Altimetry River Water Level (999+)
- Theia Hydroweb Altimetry Lake Water Level... (536)
- SWOT
- SWOT Level-2 HR River Single Pass - Reach (999+)
- SWOT Level-2 HR Raster - 100m (999+)
- SWOT Level-2 HR Lake Single Pass - Prior (999+)





Project

Timeline

Download

search products or filter...

Where

When

What

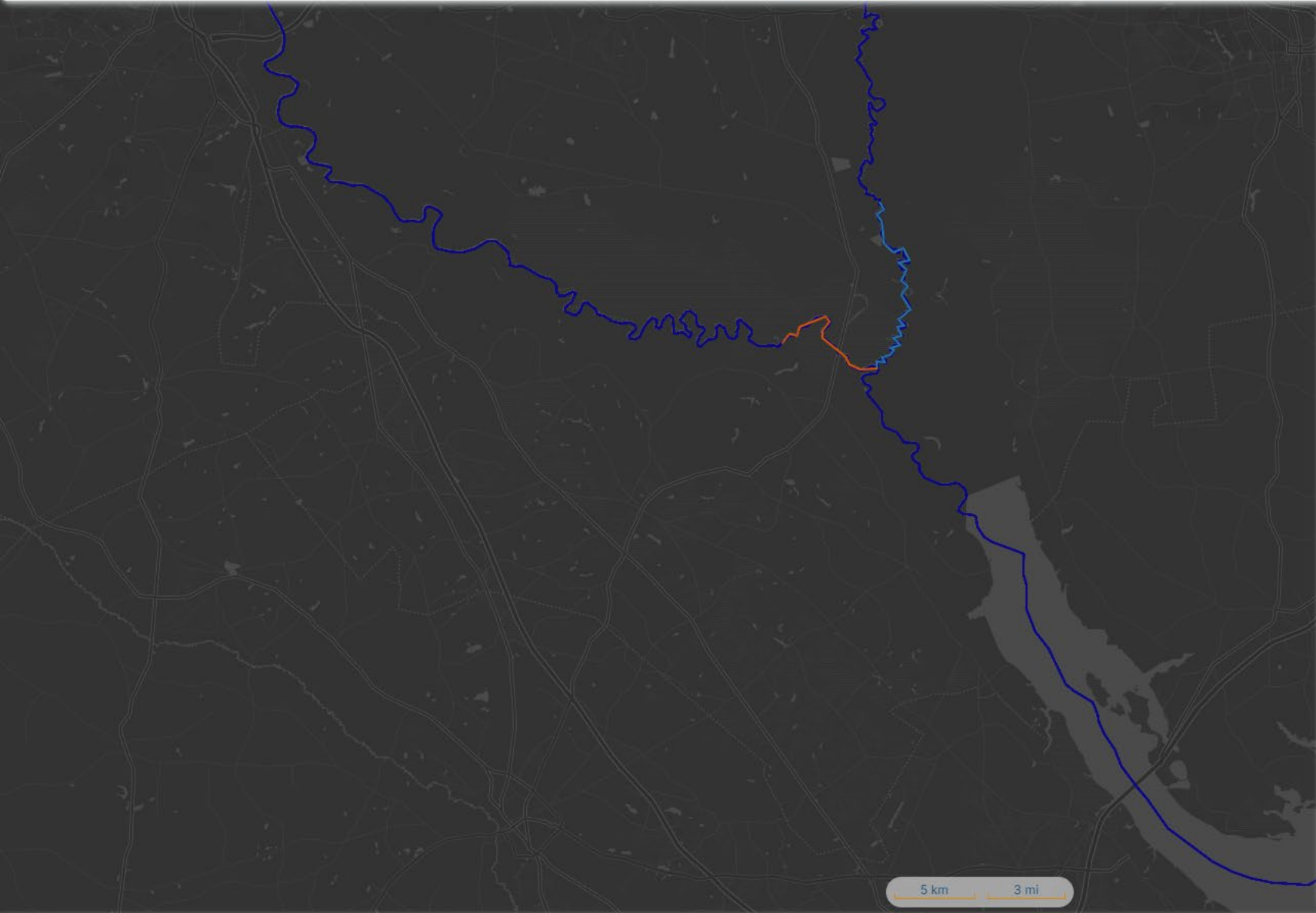
How

Select

Filters

Results

Log in



### Map selection

- SWOT Level-2 HR River Single Pass - Reach
  - 73240300011
    - Water Surface Elevation: 25.743m
    - Selection period on timeline
    - Drawing
  - 73240200011
    - Water Surface Elevation: 23.534m
    - Selection period on timeline
    - Drawing



Project

Timeline

Download

search products or filter...

Where

When

What

How

Select

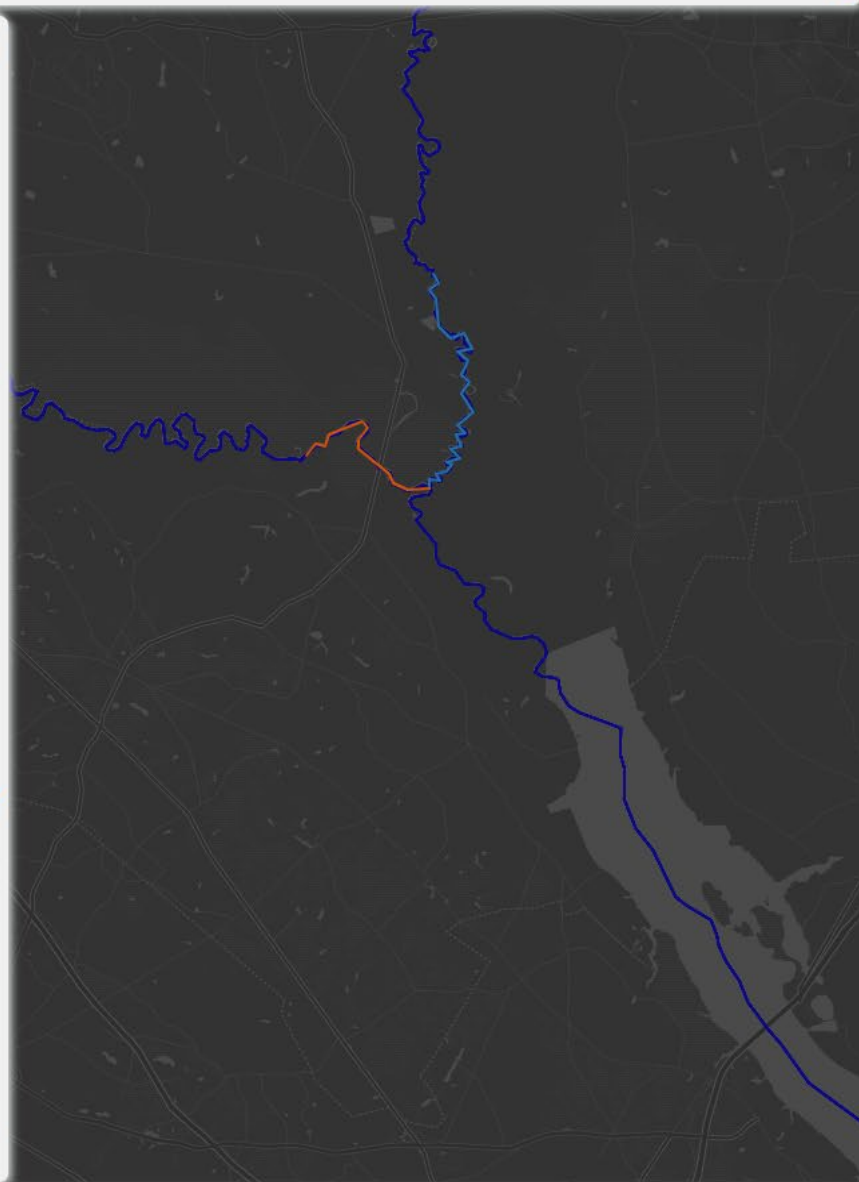
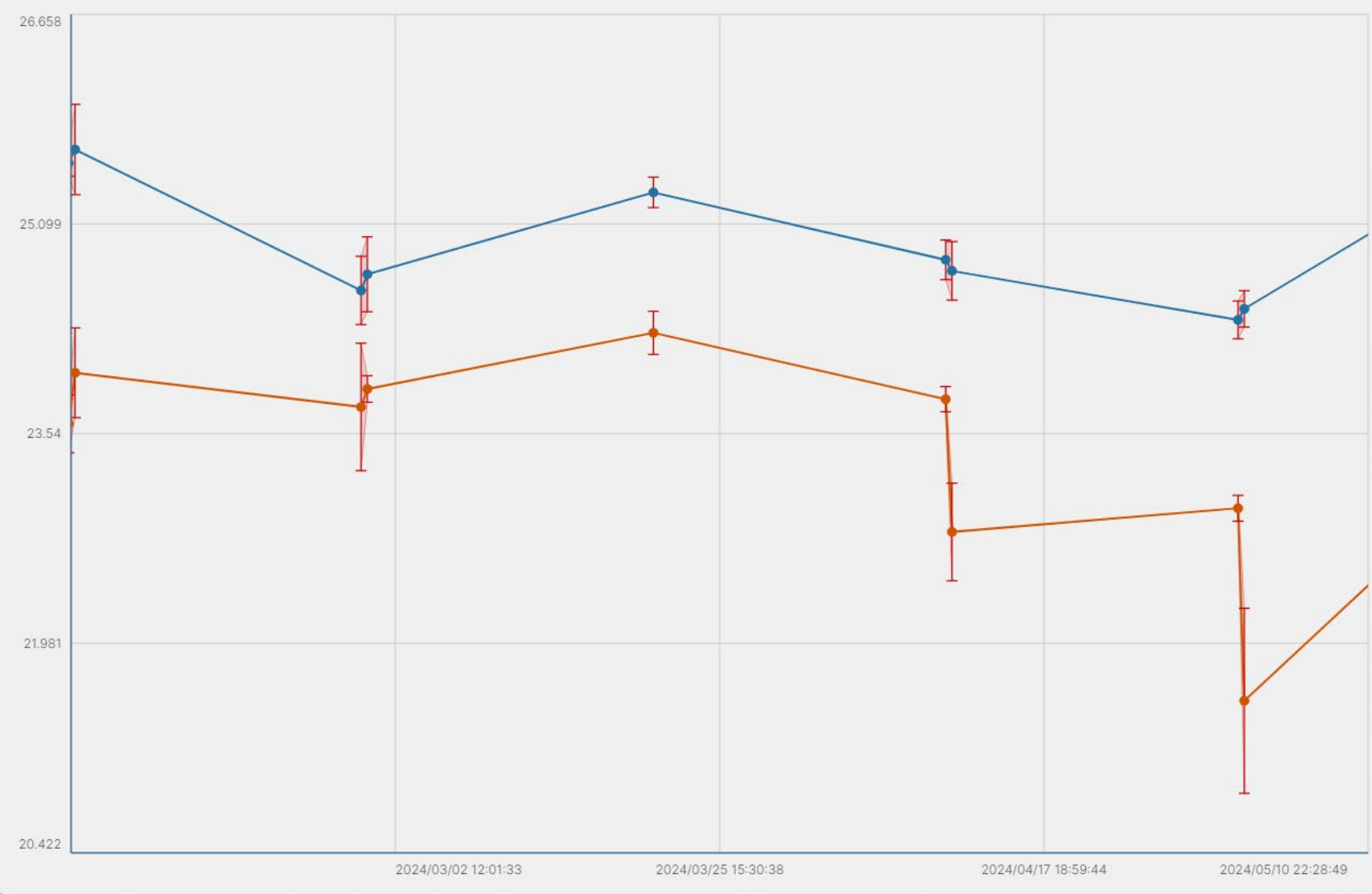
Filters

Results

Log in

Plot: New plot 6

Display unit: m

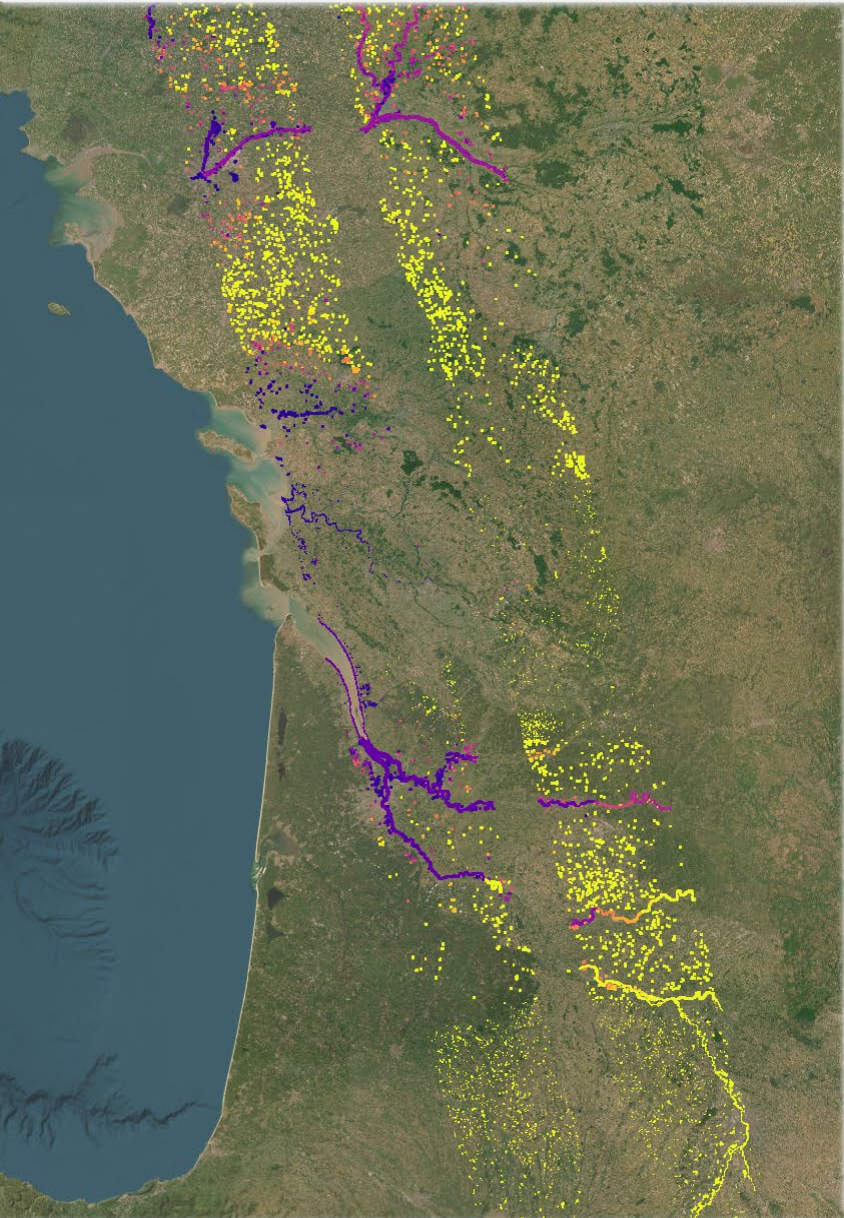


© Leaflet • OpenStreetMap contributors, CARTO

Etc/Universal (UTC) 33.438 -81.506

hydroweb.next.theia-land.fr





Download order

Web download 3TB | Download by script

10 SWOT Level-2 HR Raster - 100m - Sample V1.2  
Product (3GB) | Sample (276MB) | No filter

898+ SWOT Level-2 Pixel Cloud Vector  
Product (3TB) | Sample (294MB) | No filter

82 SWOT Level-2 HR River Single Pass - Reach  
Product (306MB) | Sample (1MB) | No filter

3 selected products  
6,126 included items  
49,122 files to download

My order

- Download Zip from browser
- Or download a ready-to-use customizable python script
- Or use STAC API

# ROADMAP 2024

Roadmap Theia routine products, companions for SWOT:



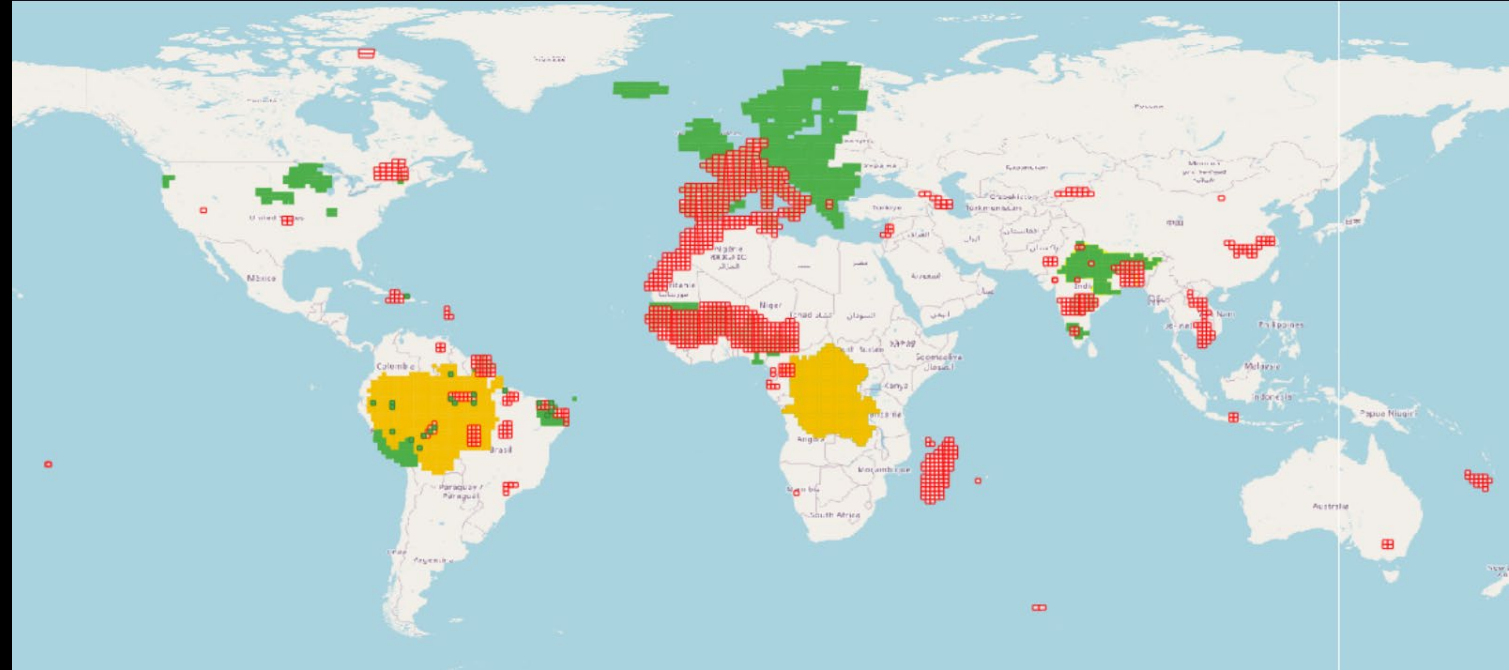
Priority zones for optical (Sentinel-2) water surfaces and water quality

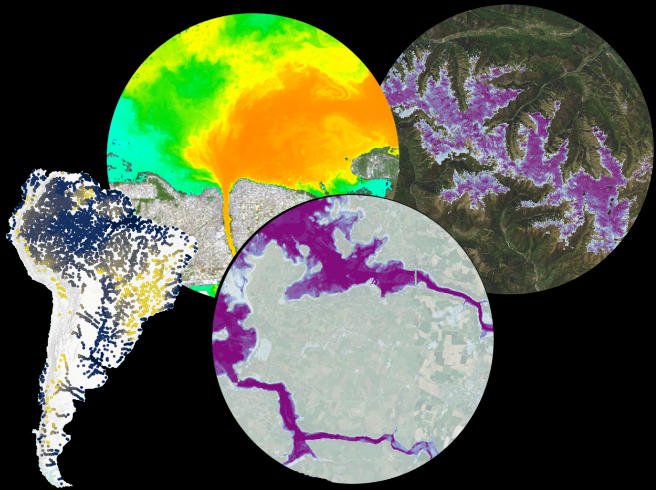


Secondary zones and addition of RADAR (Sentinel-1) water surface products



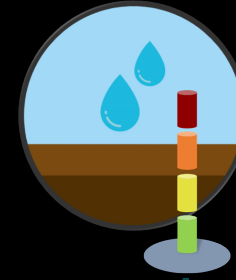
RADAR (Sentinel-1) water surface zones





### Q1 2024

- All SWOT HR pre-validated products publicly available
- European Coverage of Theia products

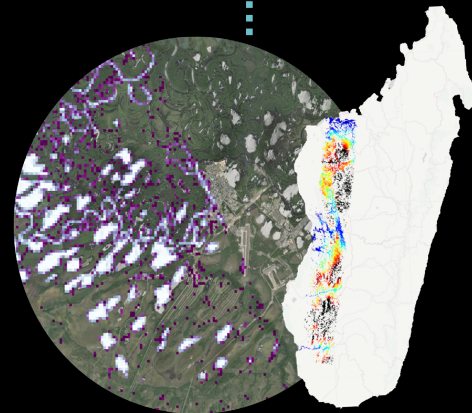


### Q4 2024

- Improved Search features
- Hydrology Products from Copernicus Land Service
- Improved Theia Water Surface product with Sentinel-1

### Q4 2023

- Theia Water Surface,
- Theia Water Quality
- Hydroweb Altimetry Water Level products
- available with daily updates over France



### Q3 2024

- In situ products from national (France) sources
- Precipitation products from Copernicus
- International Coverage of Theia products
- Tutorials and notebooks on how to use the products

