



SWOT Ocean Data products from AVISO

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SWOT Science Team Meeting
19-22 September 2023 – Toulouse, France

SWOT Level 2 ocean data products

- ✓ Nadir Altimeter and Radiometer (O/I)GDR products (similar to Jason-2/3)
- ✓ KaRIn LR SSH 'ocean' beta pre-validated product only



Data sets	OGDR	IGDR	GDR
Reduced 1 Hz	OGDR-SSHA	IGDR-SSHA	GDR-SSHA
1 Hz + 20 Hz	OGDR	IGDR	GDR
1 Hz + 20 Hz + waveforms	Not generated	S-IGDR	S-GDR
Latency	3-5 hours	1-2 days	~90 days

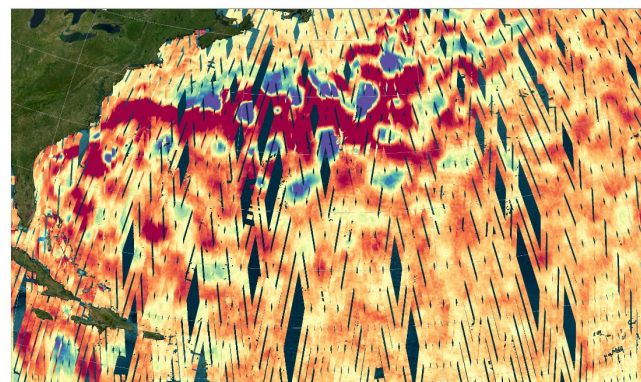
Size and Complexity



SWOT Nadir Altimeter Level 2 products

KaRIn L2_LR_SSH	Grid	Volume
		/day - /year
Basic SSH ['Basic']	2 km geographically fixed swath-aligned grid	1GB - 365 GB
Wind and Wave ['WindWave']	2 km geographically fixed swath-aligned grid	1GB - 365 GB
Expert SSH with Wind and Wave ['Expert']	2 km geographically fixed swath-aligned grid	3GB - 1 TB
Unsmoothed SSH ['Unsmoothed']	250 m sampling grid	40 GB - 15 TB

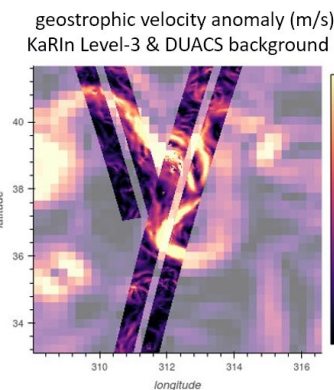
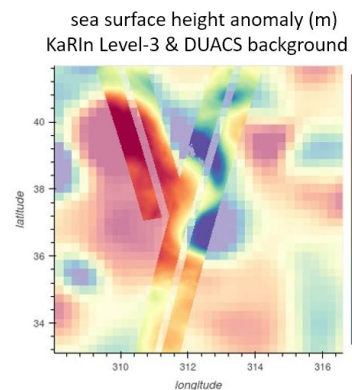
KaRIN L2 Low Rate 'ocean' products



SWOT KaRIn Level 2 SLA – Gulf Stream (2023-08-2023)

SWOT Level 3 ocean data 2-km products

- ✓ Level 3 (KaRIn + Nadir) 'basic' or lightweight (SSHA and MDT only)
- ✓ Level 3 (KaRIn + Nadir) 'expert' or extended (unedited SSHA + all calibration/corrections and geostrophic velocity anomaly)



● SWOT Level 2 ocean data access

- ✓ AVISO+ CNES Data Center's long-term archive catalog [NEW]
- ✓ AVISO+ web portal (see <https://www.aviso.altimetry.fr/en/missions/current-missions/swot/access-to-data.html>)

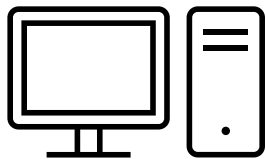


Supported protocols:

- FTP/SFTP
- THREDDS Data Server (TDS) using FileServer, OPeNDAP and WMS

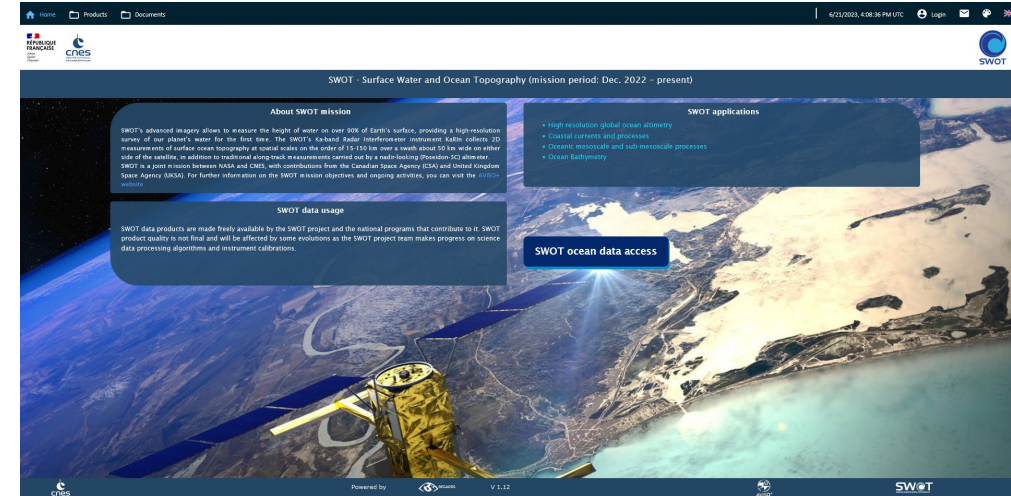


Download + local work

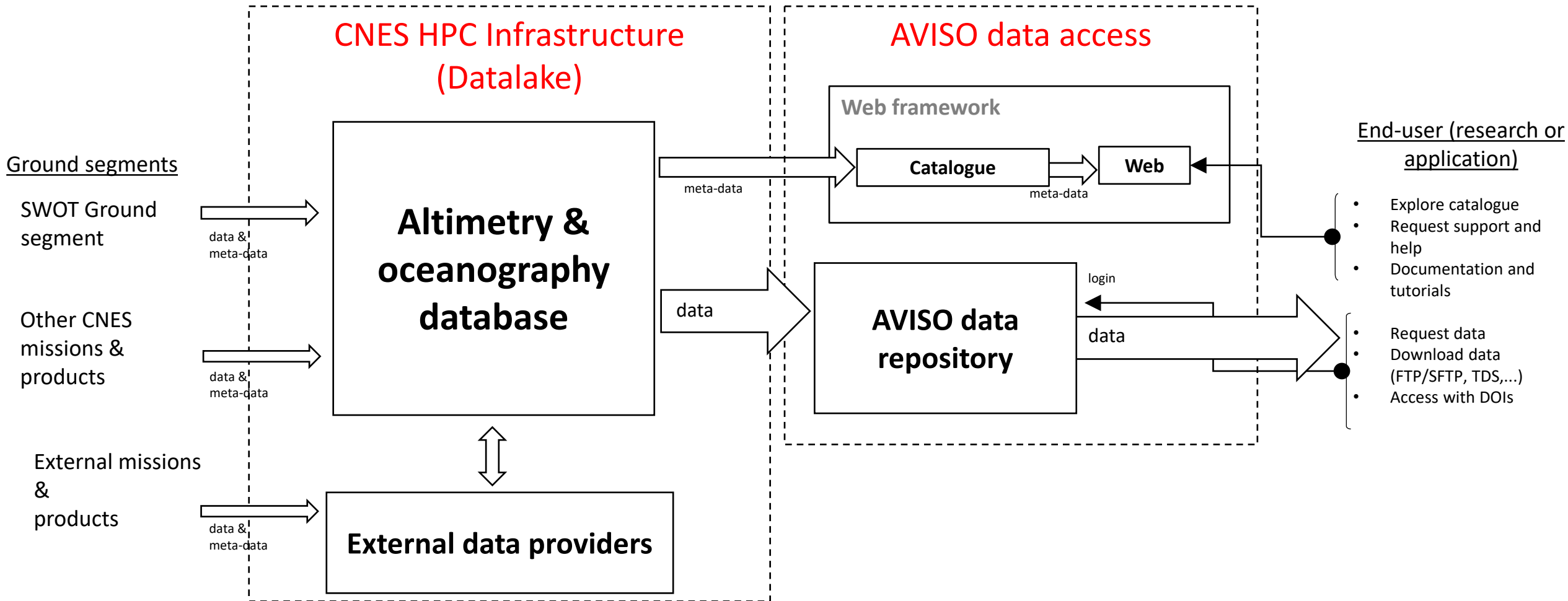


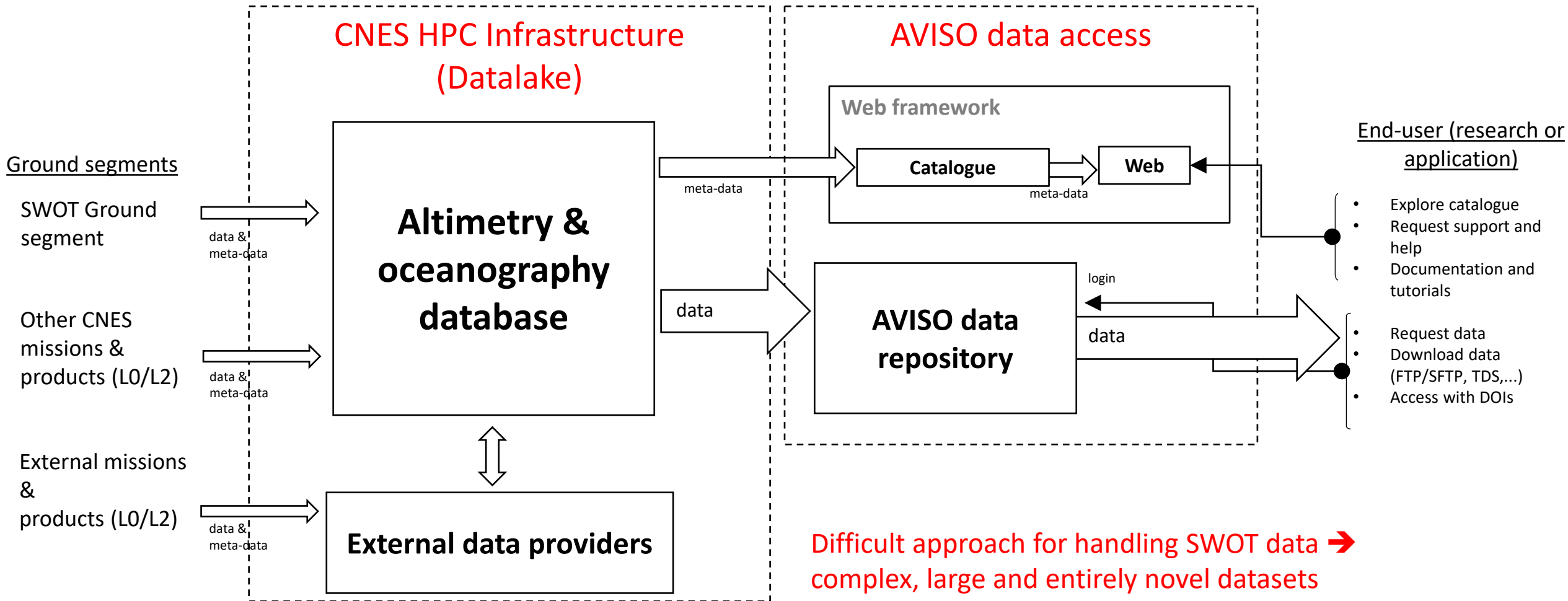
Your local machine

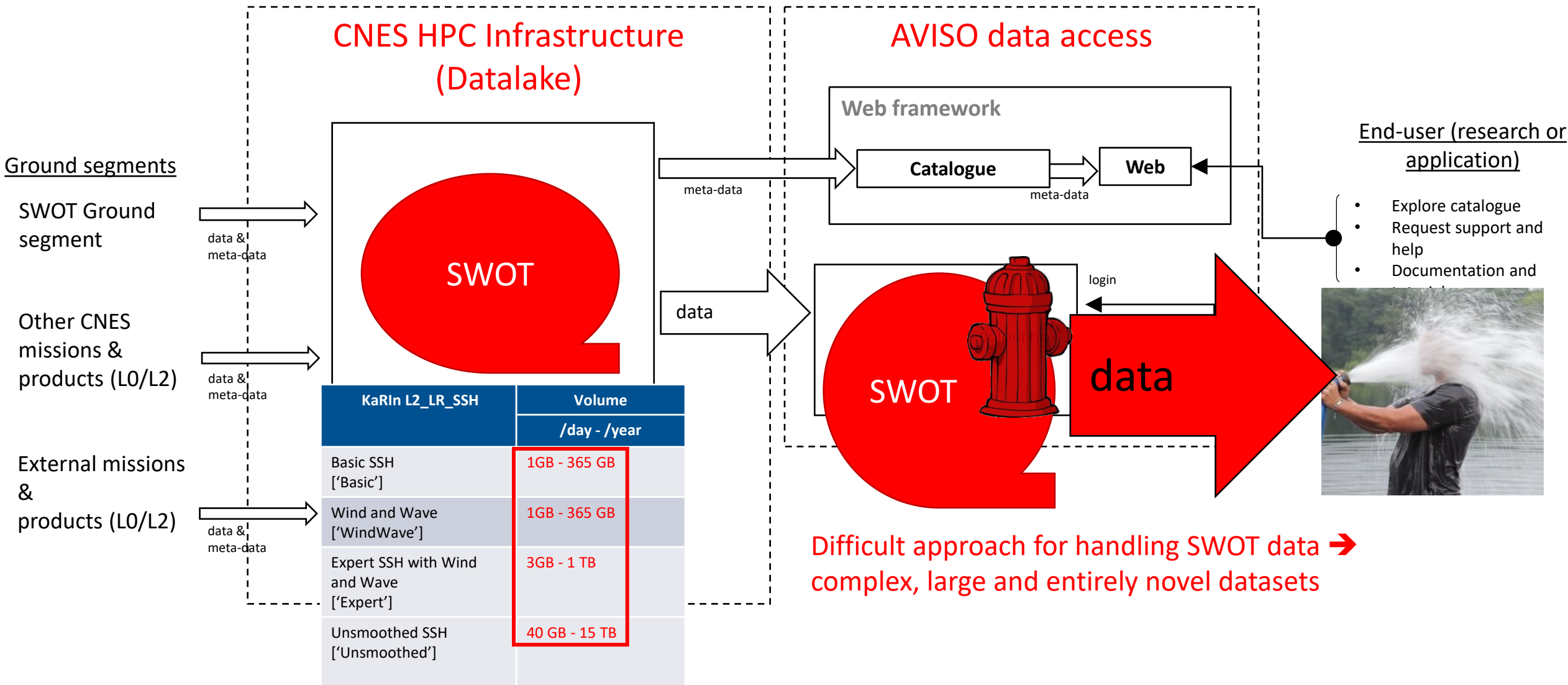
Prior registration is required
→ AVISO+ credentials



AVISO+ registered users can directly access to SWOT L2 ocean products: <https://regards.cnes.fr/user/ssalto/>





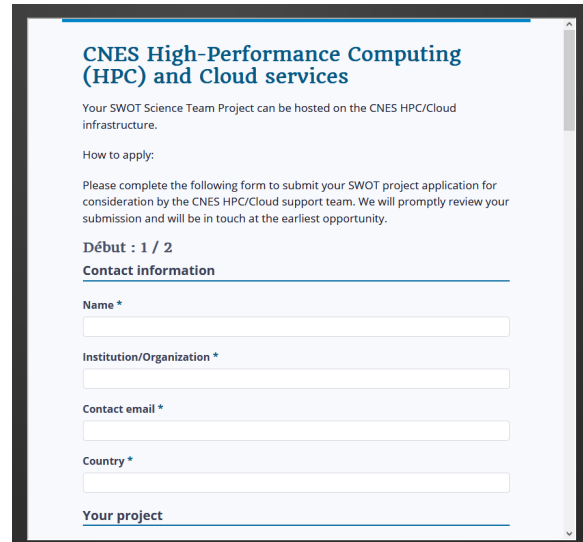


CNES Cloud Support for SWOT project hosting: what would you get?

- Free hosting of SWOT Projects on CNES HPC infrastructure in Toulouse
- High processing power connected to data
- Integrated SWOT data and specialized Tools
- Access to additional resources/data
- Technical support for smooth sailing (Helpdesk)
- Restricted (if necessary/required) Cloud environment

How to apply?

- Complete this form on AVISO website*



CNES High-Performance Computing (HPC) and Cloud services

Your SWOT Science Team Project can be hosted on the CNES HPC/Cloud infrastructure.

How to apply:

Please complete the following form to submit your SWOT project application for consideration by the CNES HPC/Cloud support team. We will promptly review your submission and will be in touch at the earliest opportunity.

Début : 1 / 2

Contact information

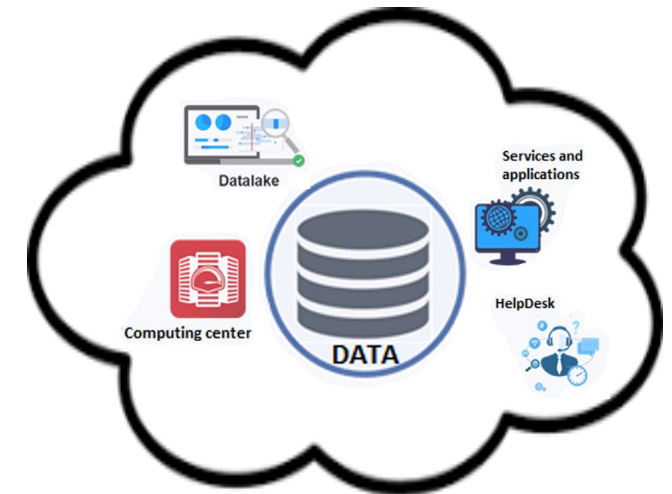
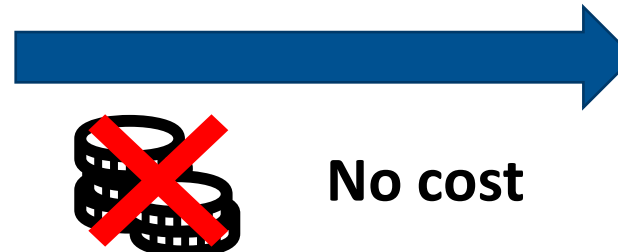
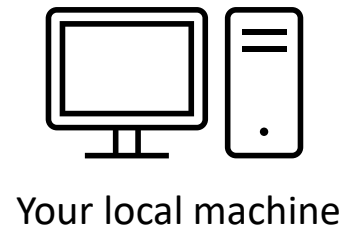
Name *

Institution/Organization *

Contact email *

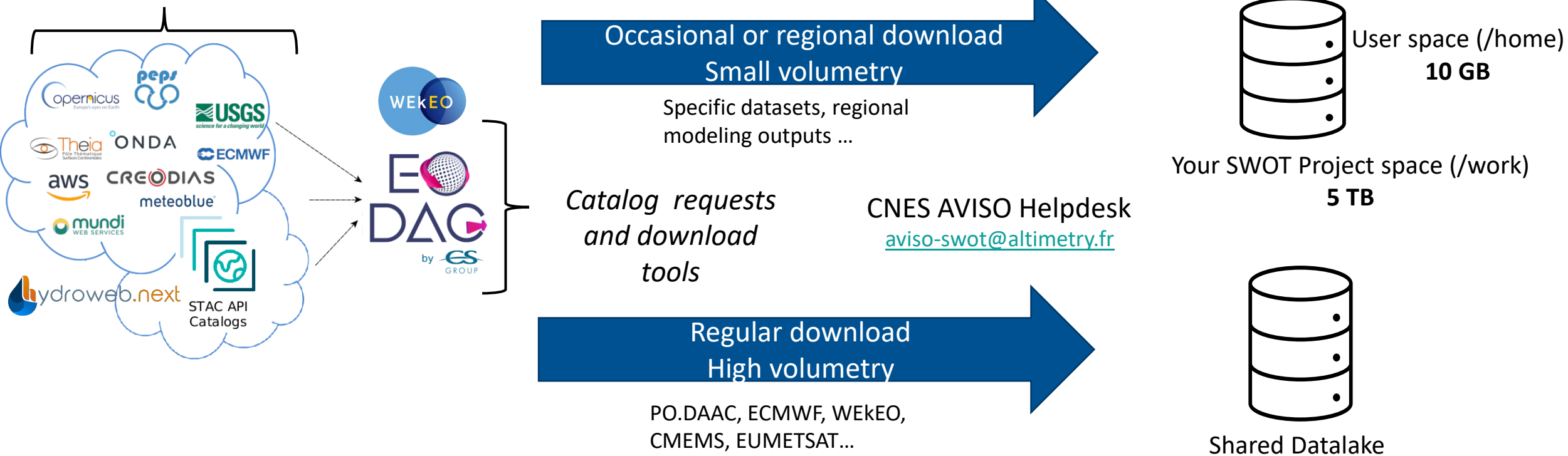
Country *

Your project



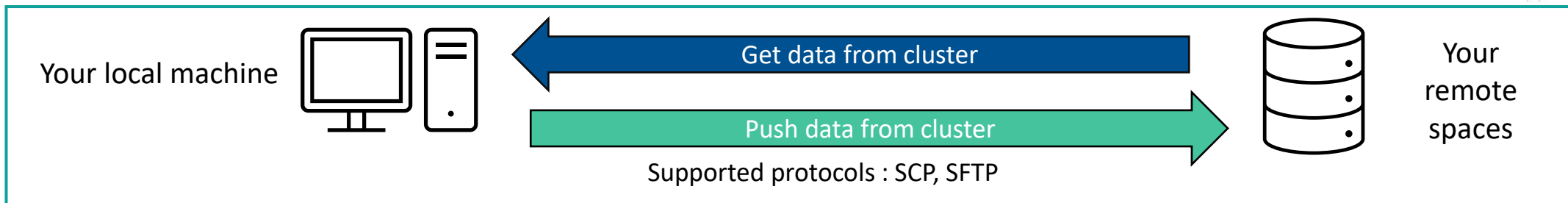
*<https://www.aviso.altimetry.fr/en/missions/current-missions/swot/utilizing-cnes-hpc-infrastructure-for-swot-project-hosting.html>

External data repositories

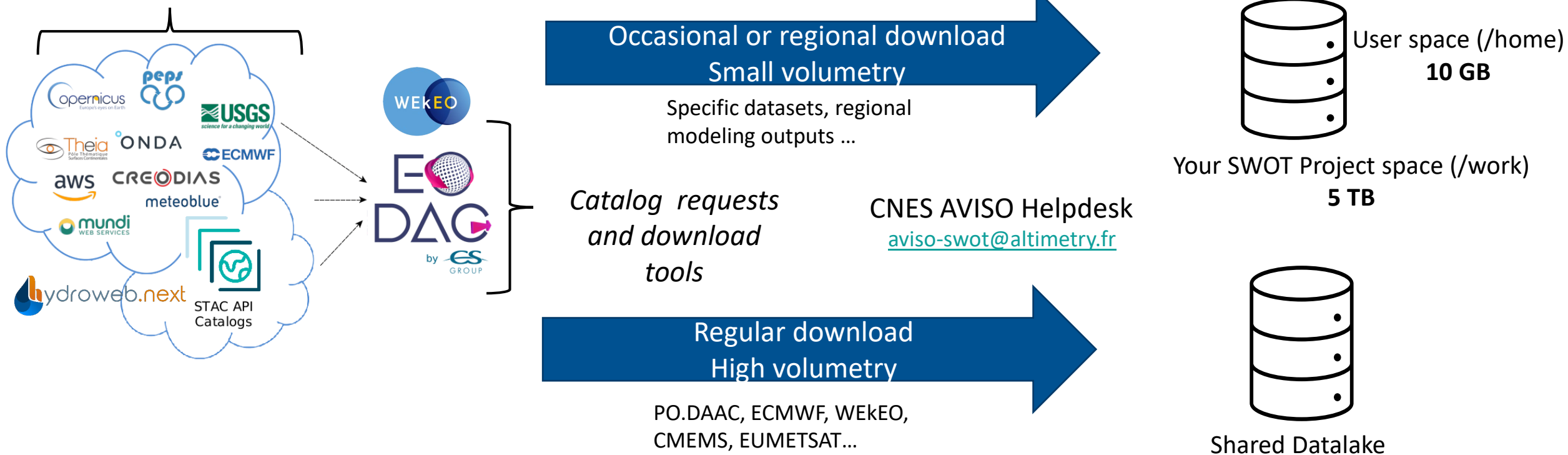


*Earth Observation Data Access Gateway=Python package with unified API for data access

External data retrieval – Data access from other catalogs



External data repositories



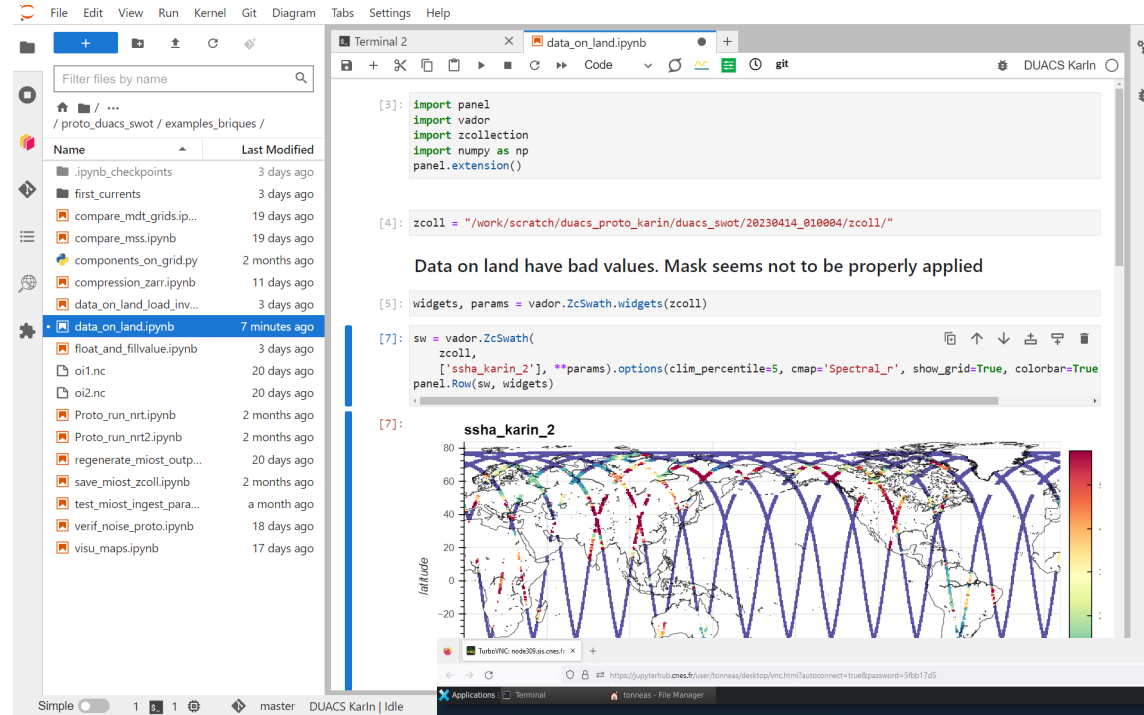
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JupyterLab <https://jupyterhub.cnes.fr/>



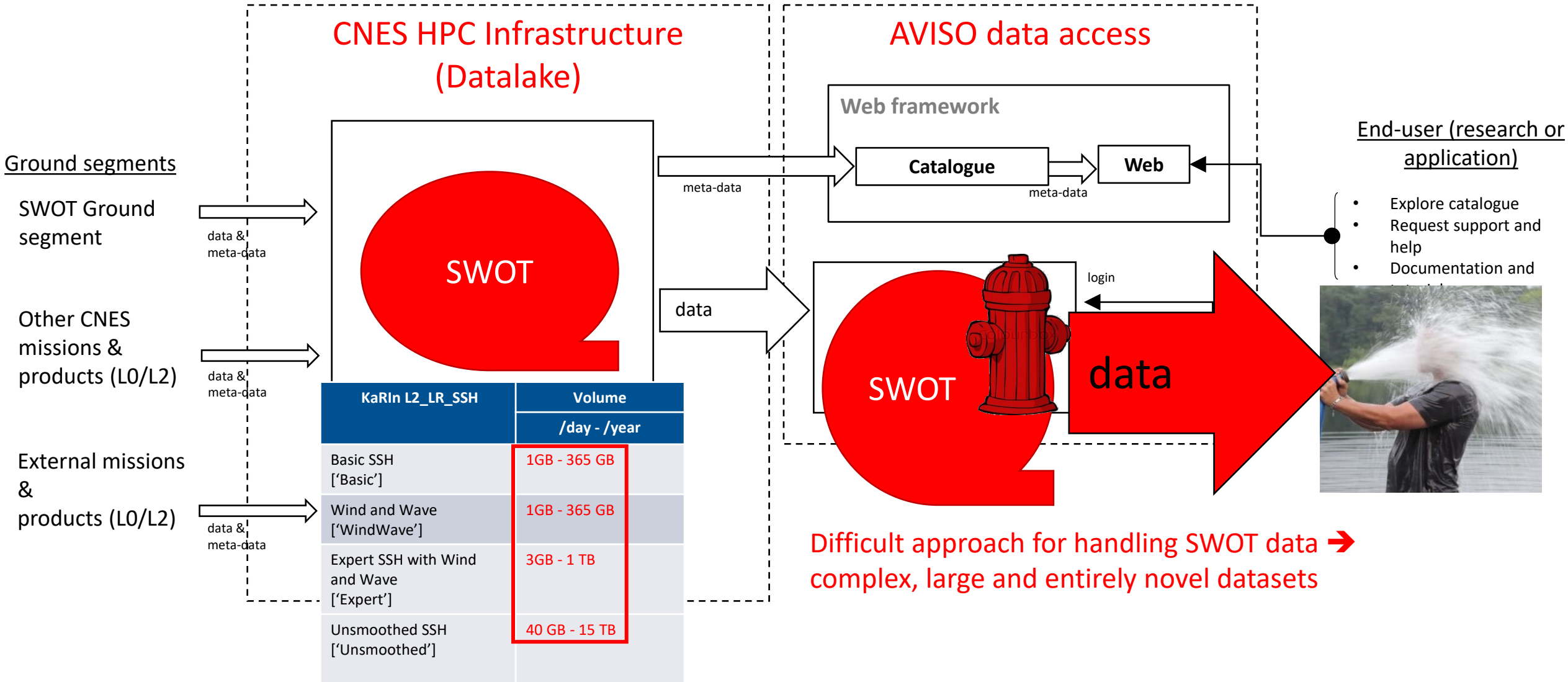
Access to a set of tools for SWOT data exploration:

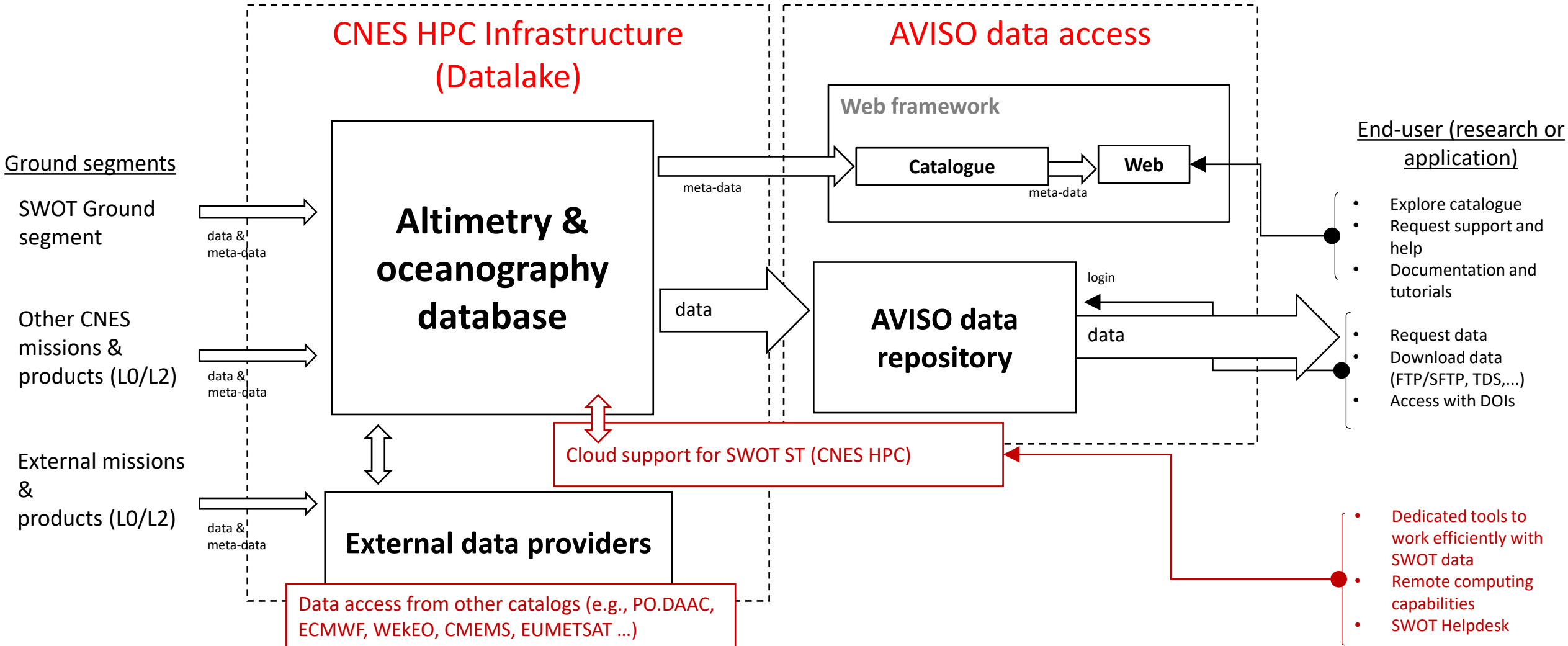
- Complete access through a web browser
- File explorer, terminal, ready-to-use environments
- Jupyter Notebooks* to work on SWOT data, parallel computing
- SWOT-specific Python libraries for SWOT ocean swath data access
- Virtual Research Environment (Remote Desktop) <https://jupyterhub.cnes.fr/user/loqin/desktop/vnc.html>
- Tutorials, documentation



*More information:

<https://www.dataquest.io/blog/jupyter-notebook-tutorial/>
<https://jupyter-notebook.readthedocs.io/en/latest/notebook.html>







Thanks for your attention

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