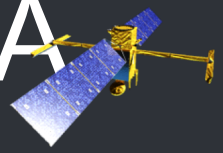
podaac
Physical Oceanography Distributed Active Archive Center

PO.DAAC SWOT DATA Access



Suresh Vannan, Michael Gangl, Michelle Gierach, Jessica Hausman, Catalina Oaida

Contact: suresh.vannan@jpl.nasa.gov

Jet Propulsion Laboratory, California Institute of Technology

June 19th, 2019
SWOT Science Team Meeting 2019
Bordeaux, France

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PO.DAAC : NASA Archive For SWOT

Launch: Sept 2021

https://podaac.jpl.nasa.gov/SWOT

Stay Connected

- ✓ Learn about datasets, tools, and services release timelines
- ✓ Test-Drive SWOT tools and services
- ✓ PO.DAAC SWOT road shows: When and Where?
- ✓ Training and user engagement [*In partnership with the SWOT Applications Early Adopters program*]

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PO.DAAC Science Team Support

Pre-launch

Cal/Val Support:

- Archive and distribution of Cal/Val datasets
- Data Engineering support for effective integration of Cal/Val data in support of SWOT
- Support data access across Hydrology and Ocean Cal/Val Sites (Example Hydrology: Tier 1 Gold Standard and Tier 2 Sites; Ocean: California Site)

Supporting datasets:

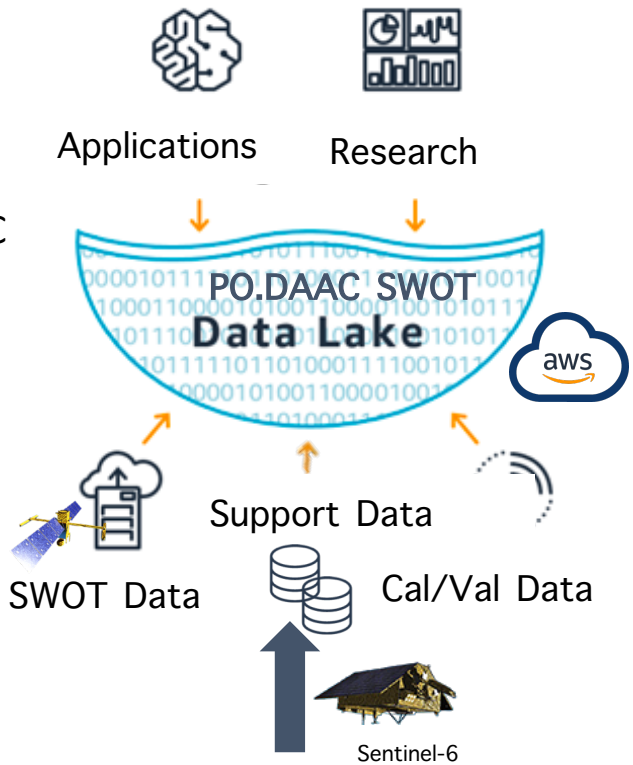
- Collocate AirSWOT datasets (e.g. ABOVE campaign)
- Access to pre-SWOT datasets

Dataset publication workflow:

- Simplified and Efficient dataset submission workflow into PO.DAAC
  - *Improved communication within PO.DAAC and with data providers*
  - *Uniform data provider experience*

Post-launch

- Restricted Access to Cal/Val datasets (Project Requirement)
- Download or Subscribe to data
- User services support (e.g. on-boarding hydrology users)
- Impact metrics
  - *Dataset Citation metrics, Download metrics etc.*



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PO.DAAC SWOT Capabilities

2019
Services Development

2020
Service & Data Integration

2021
Services, Advanced Cloud Usage

SWOT Launch

Today
June 2019

2020 SWOT STM
Hands-on Workshop 1

2021 SWOT STM
Hands-on Workshop 2

Search and Download

- Geometry Type
- HUC
- SWOT Feature ID
- Spatial and Temporal Search

Dissemination

- Subscribe
- Subset (space, time, variable, polygon, Quality)

Analysis

- Analysis in place (Cloud)
- Integration with other datasets

Transformations

- On-Demand Raster
- Re-grid
- Reformat
- Data Product Specific: e.g. River Reach Averaging

https://podaac.jpl.nasa.gov/SWOT
Website: Major update coming Fall 2019

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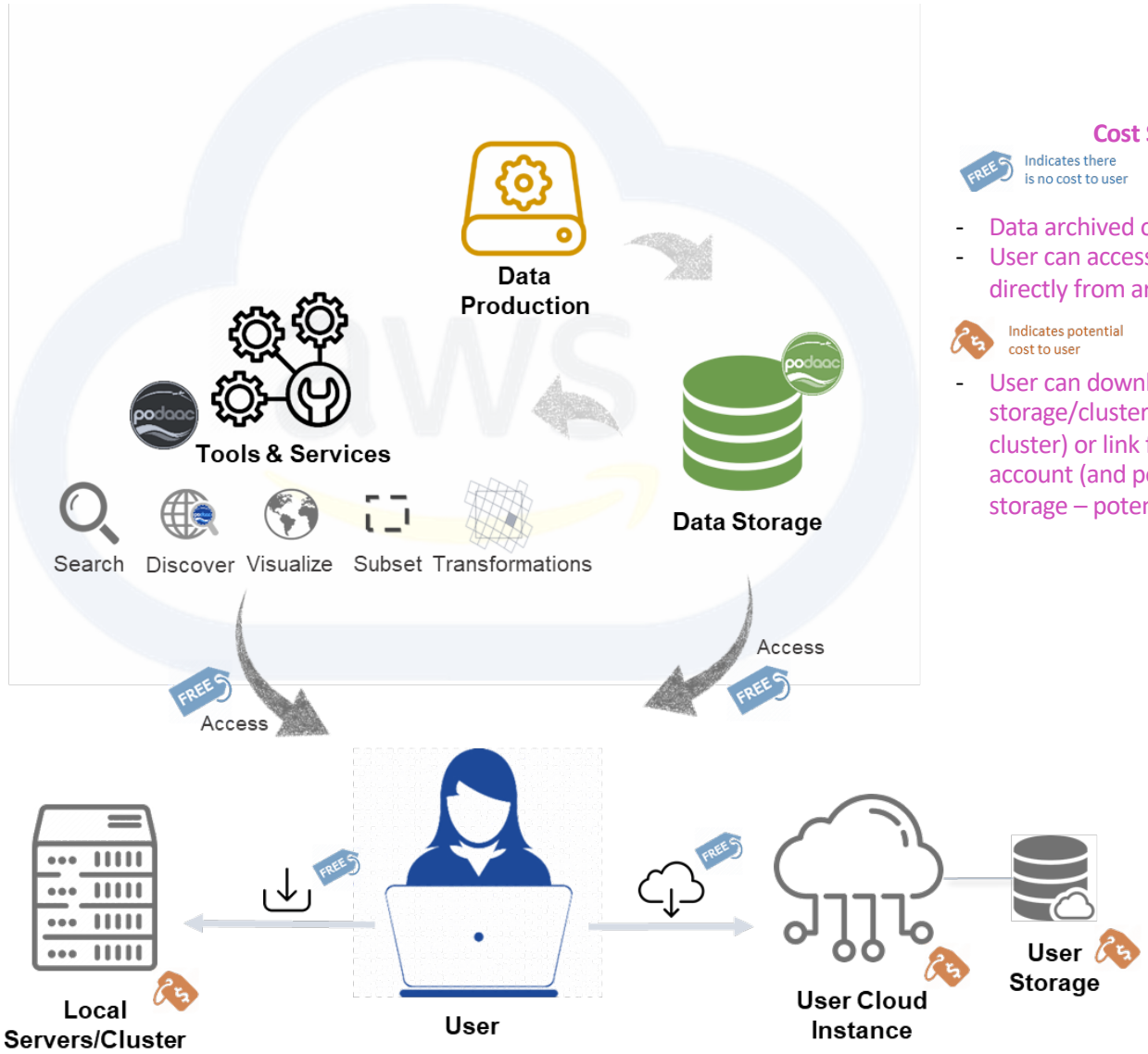
PO.DAAC SWOT (Cloud) Data Flow



Cost Summary:

FREE — Indicates there is no cost to user

- Data archived on Cloud (free to user)
- User can access data thru T&S or directly from archive (free to user)

$ — Indicates potential cost to user

- User can download to local storage/cluster (potential $ for cluster) or link from user's own cloud account (and potential associated storage – potential $)

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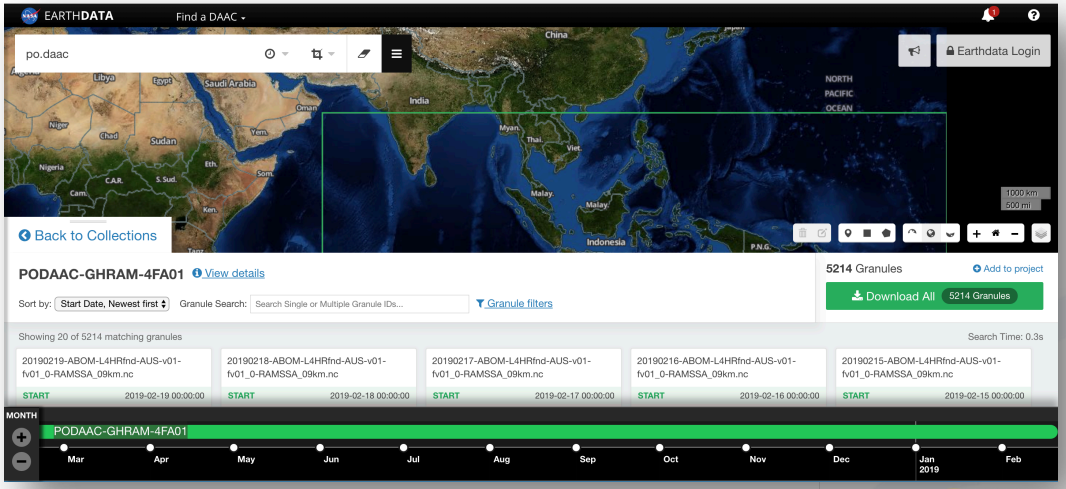
PO.DAAC SWOT – Hydrology User Workflow



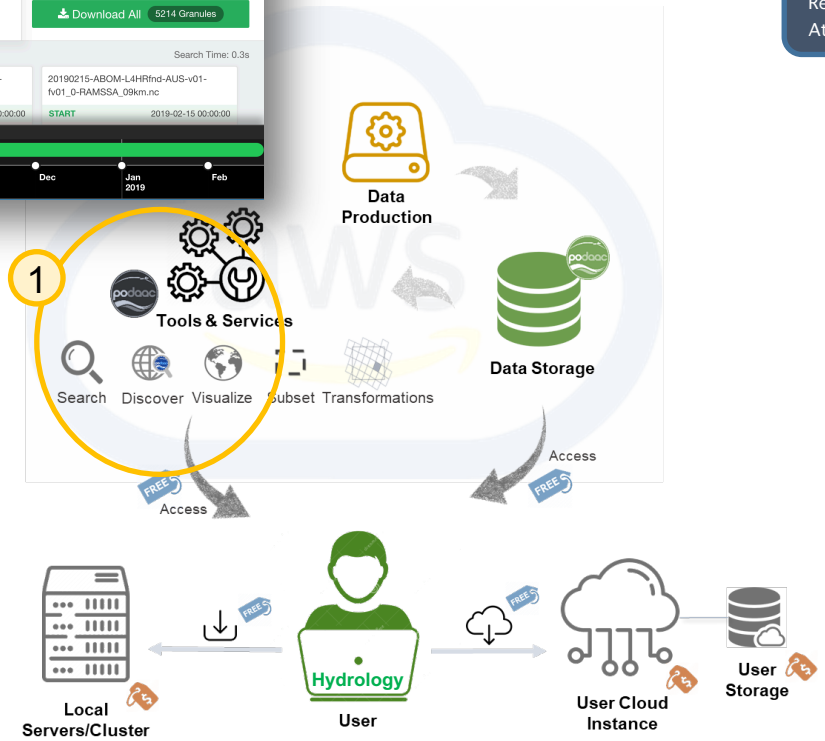
1 SWOT Data Search Portal

https://search.earthdata.nasa.gov/portal/**SWOT**/search

→ Earthdata Search available now
→ SWOT Search portal available fall 2019

More Information

Meet with PO.DAAC Representatives
Attend the Hydro Splinter



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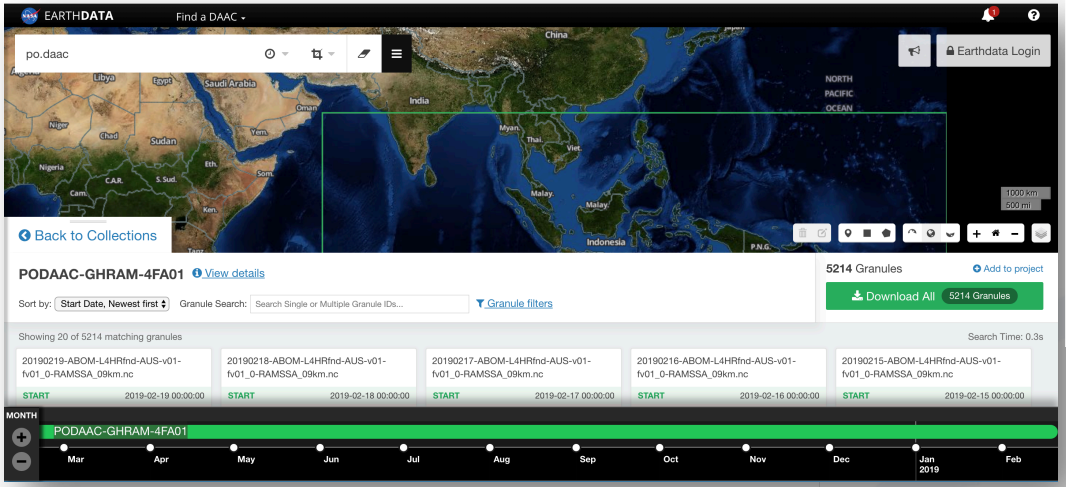
PO.DAAC SWOT – Hydrology User Workflow



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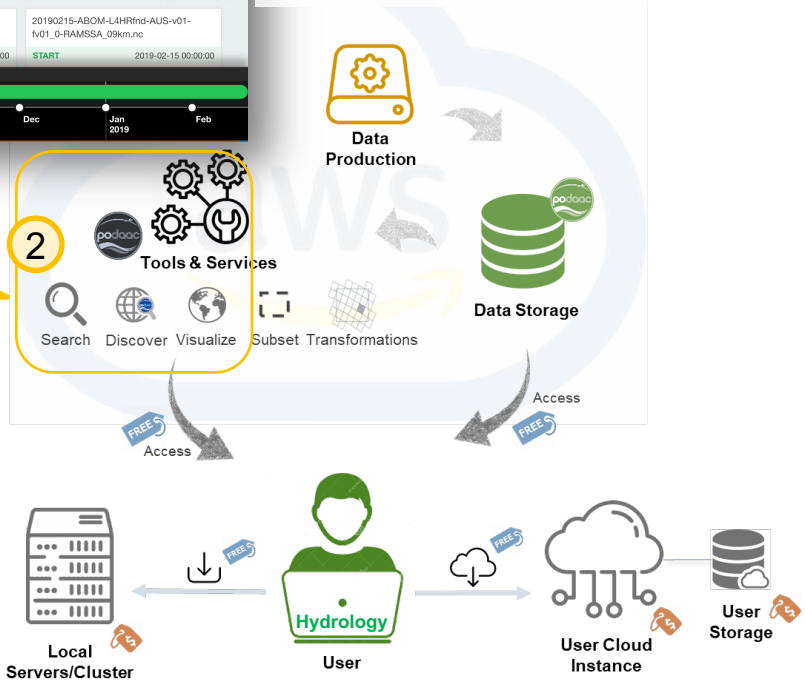
2

SWOT Feature **Search**

HUC **Search**

Subscribe by HUC (Search-based Subscription)



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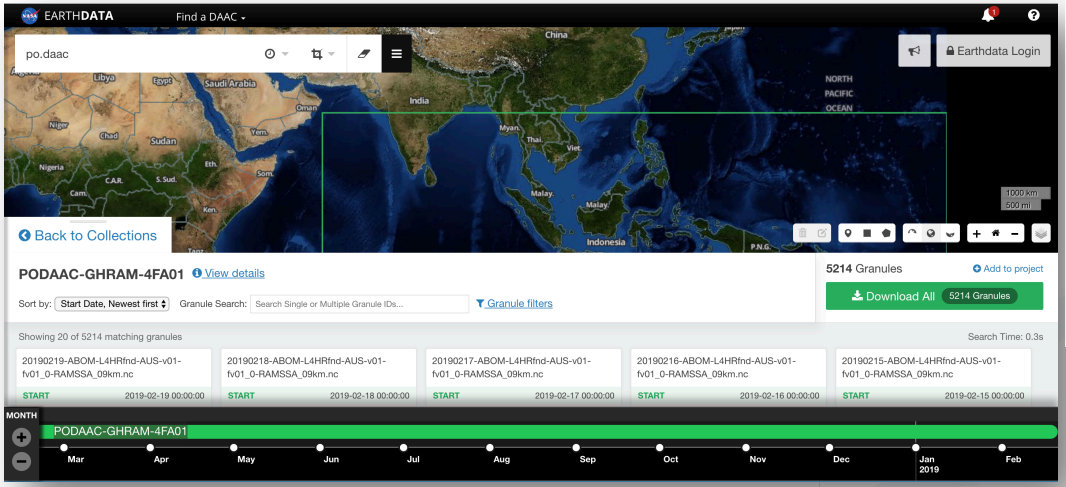

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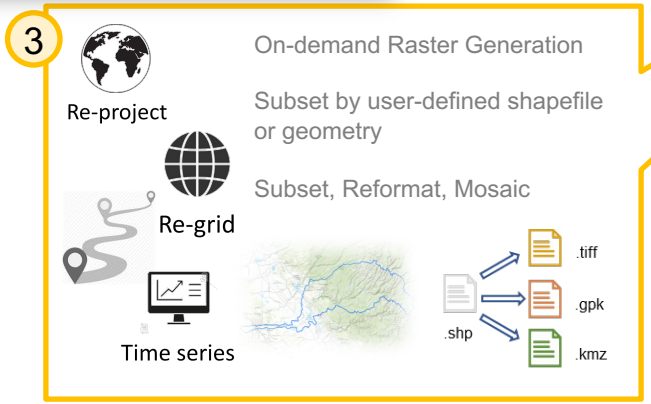
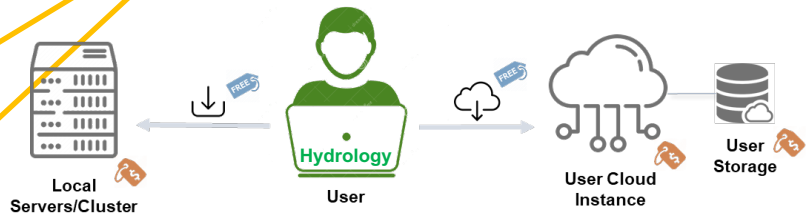
GIS Services, Integrations and Standards





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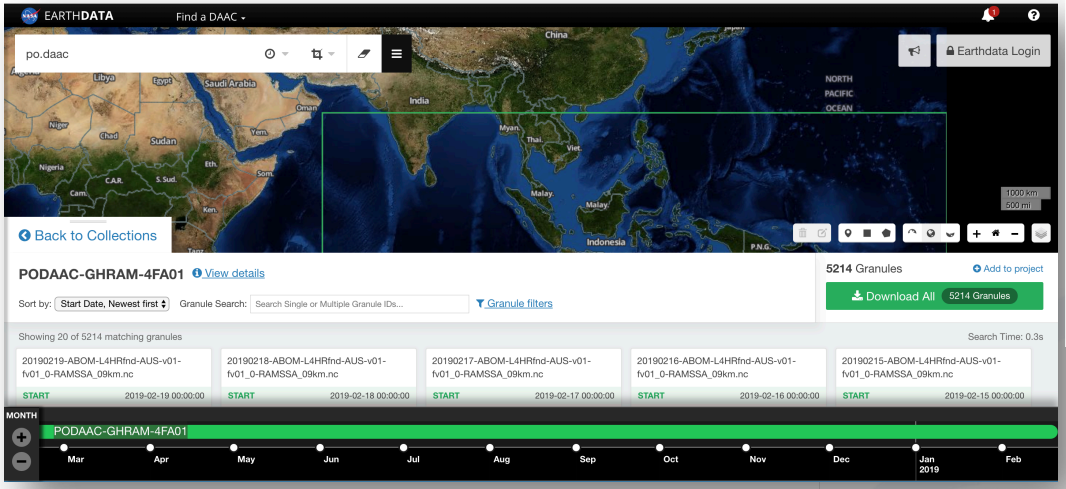

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More Information

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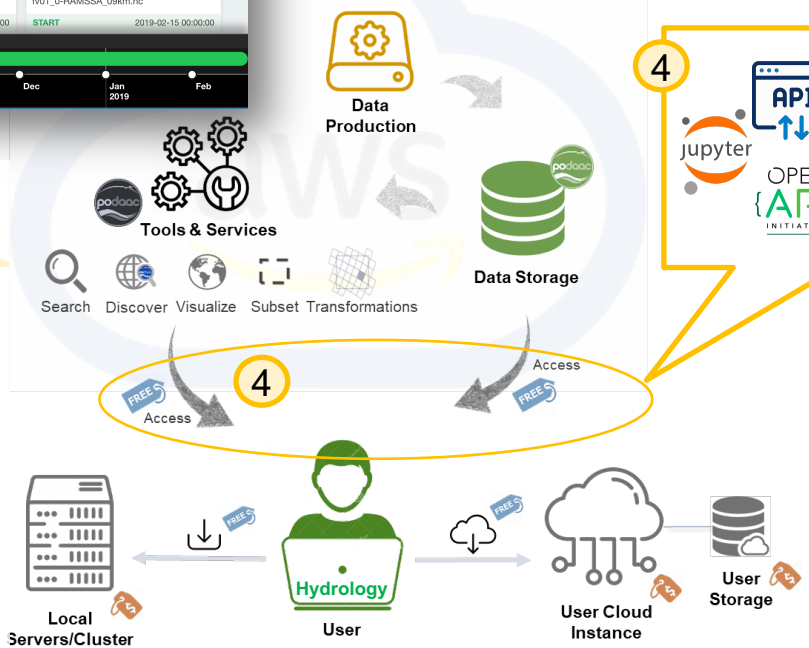
2 SWOT Feature **Search**
HUC **Search**
Subscribe by HUC (Search-based Subscription)

3 On-demand Raster Generation
Re-project
Subset by user-defined shapefile or geometry
Re-grid
Subset, Reformat, Mosaic
Time series
.tiff
.gpk
.shp
.kmz



4 API-based **access** to metadata/data

Scripted Access: PO.DAAC Webservices 2.0

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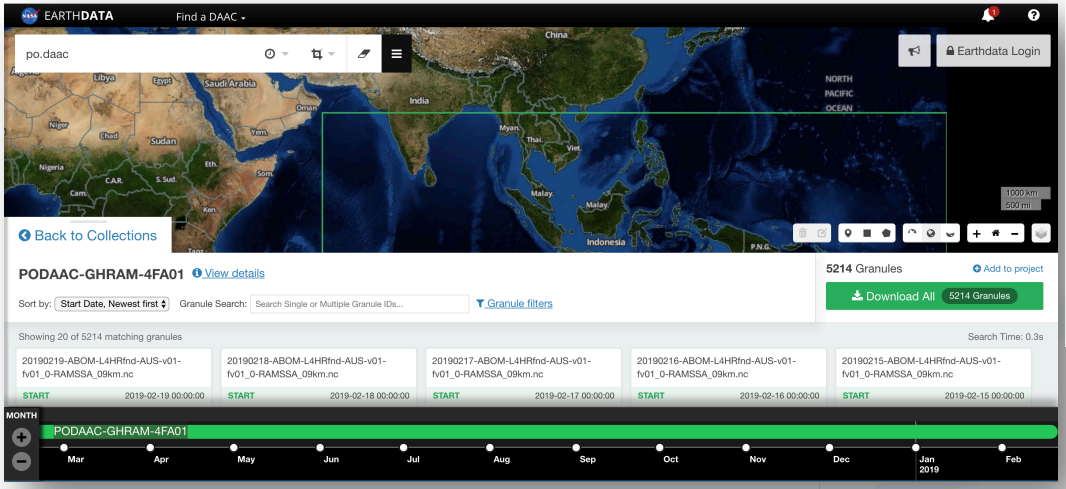
PO.DAAC SWOT – Hydrology User Workflow



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Re-project
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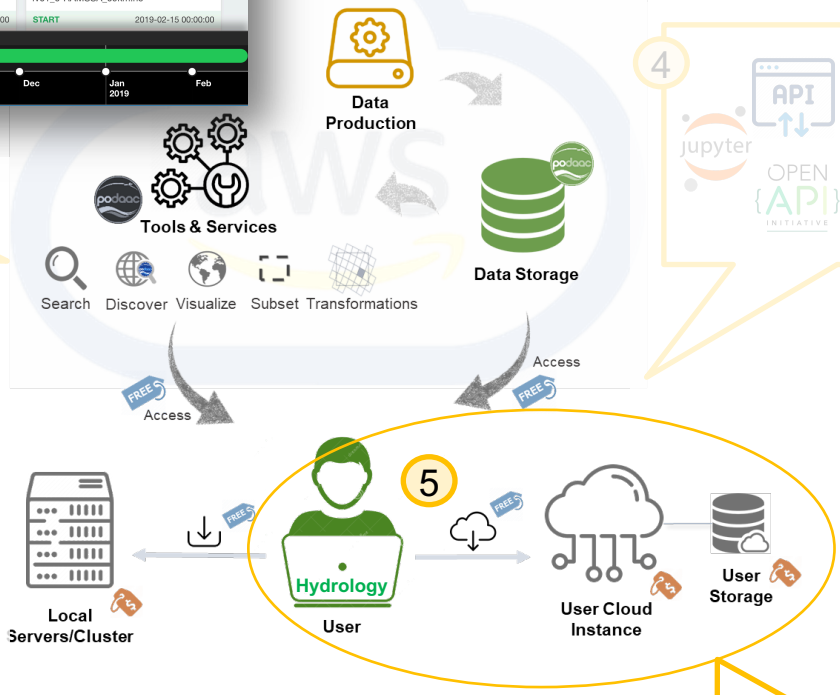

4 API-based **access** to metadata/data
Scripted Access: PO.DAAC Webservices 2.0

5 Access from User Cloud-based workspace, or View in GIS Client

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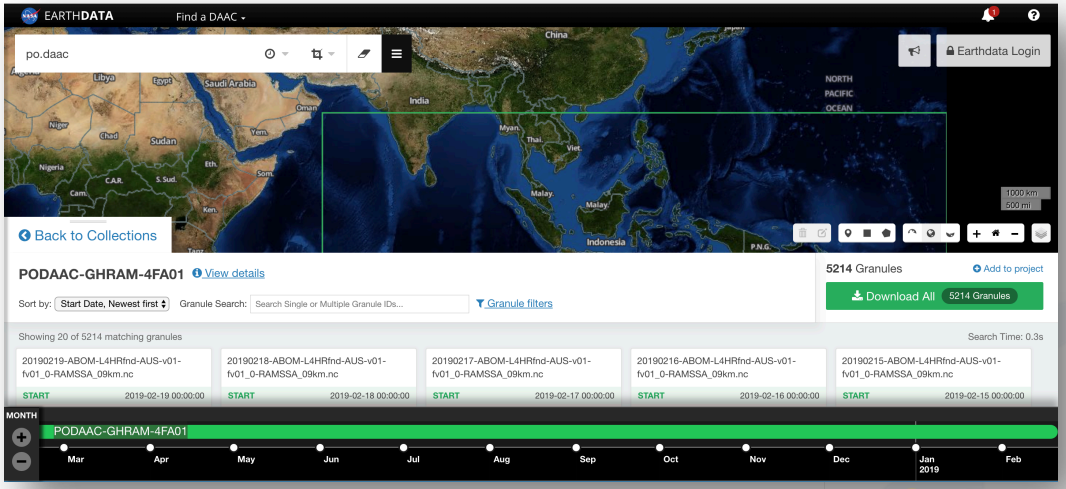
PO.DAAC SWOT – Oceans User Workflow



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More Information

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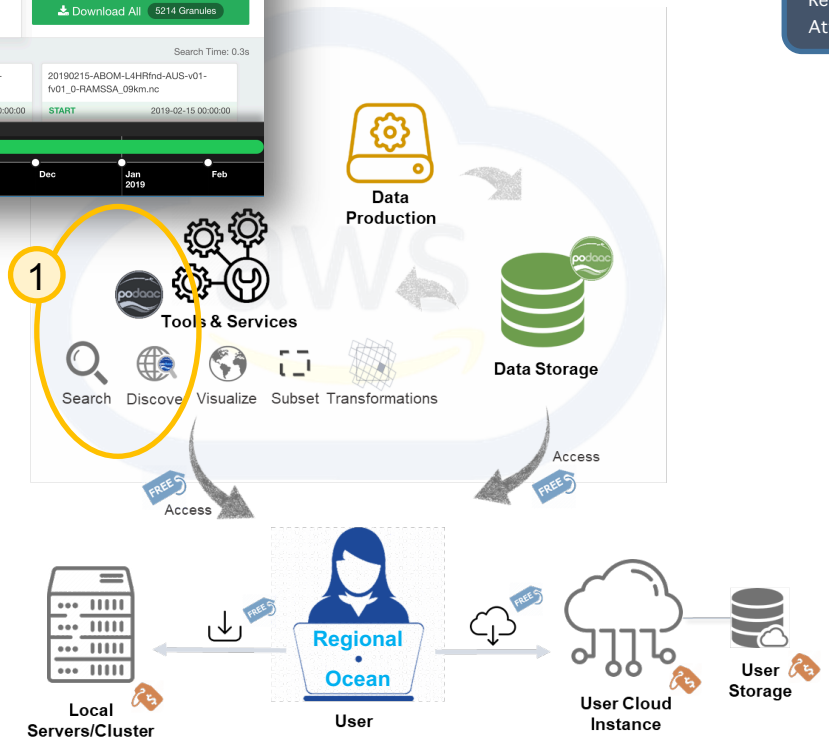

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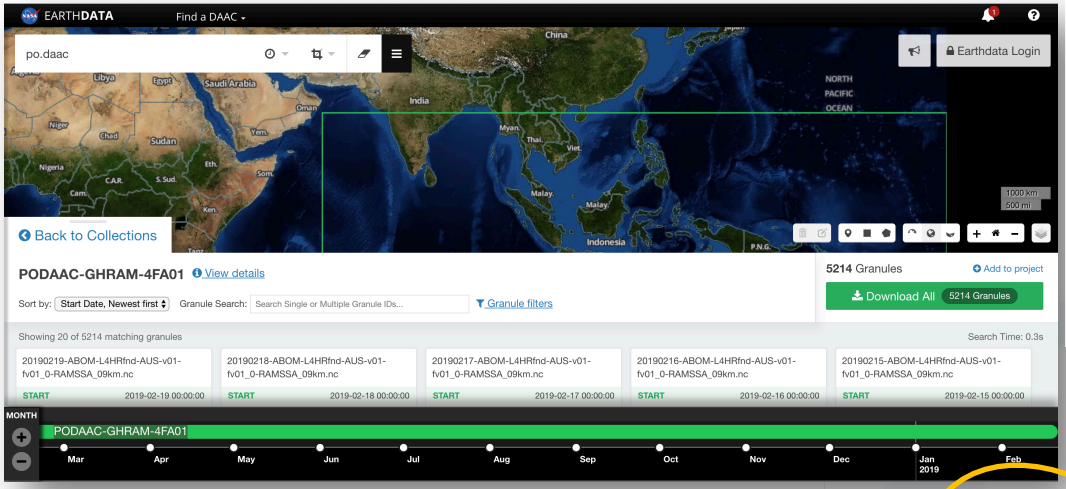

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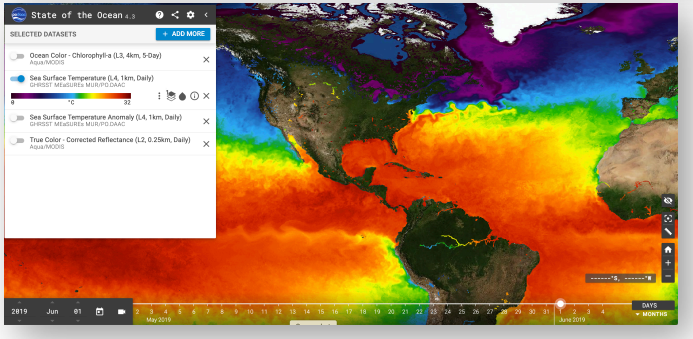
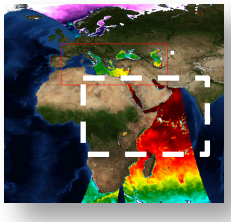
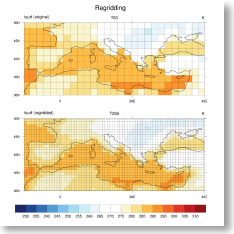


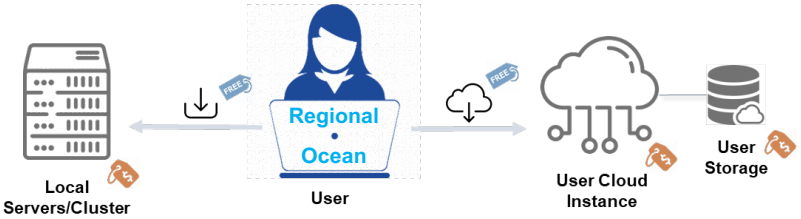
Visualize SWOT Products
State of the Ocean (SOTO)



Subset
by area of interest



Re-grid
to model resolution



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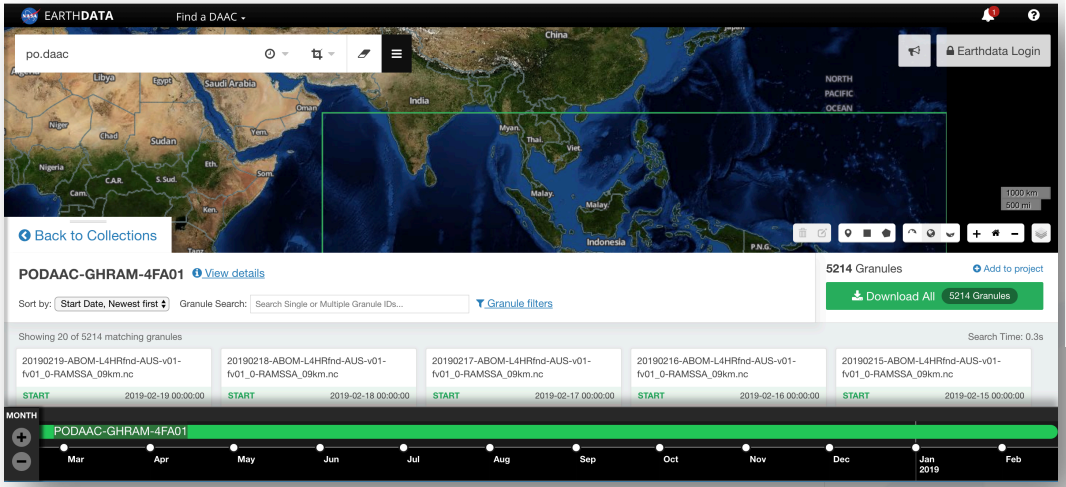

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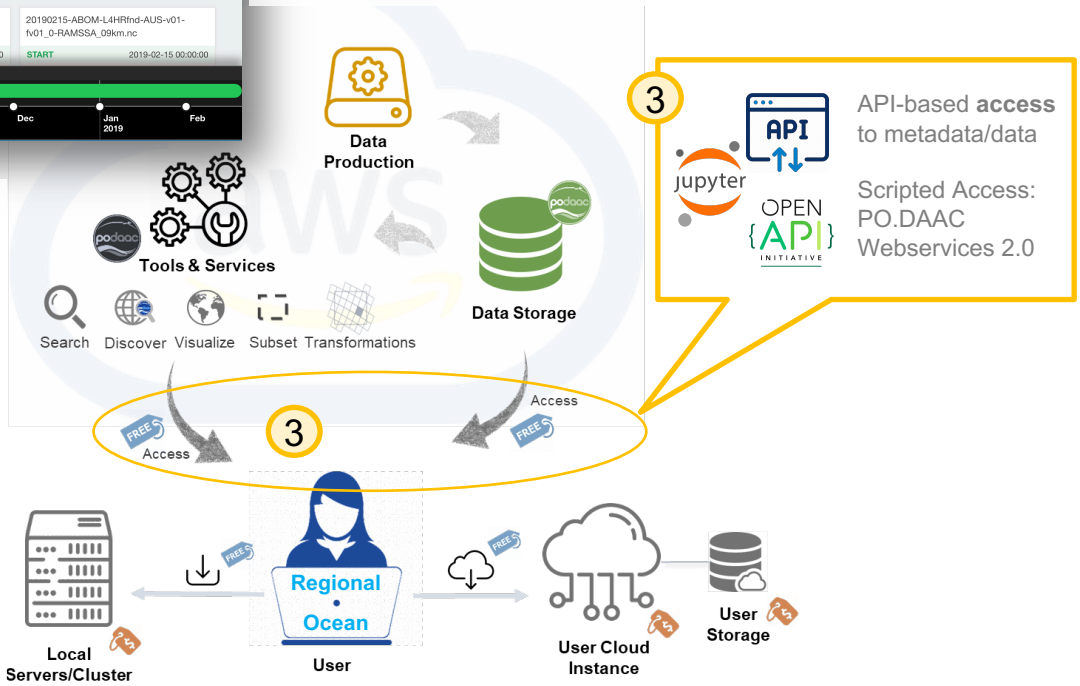

Subset
by area of interest

Re-grid
to model resolution

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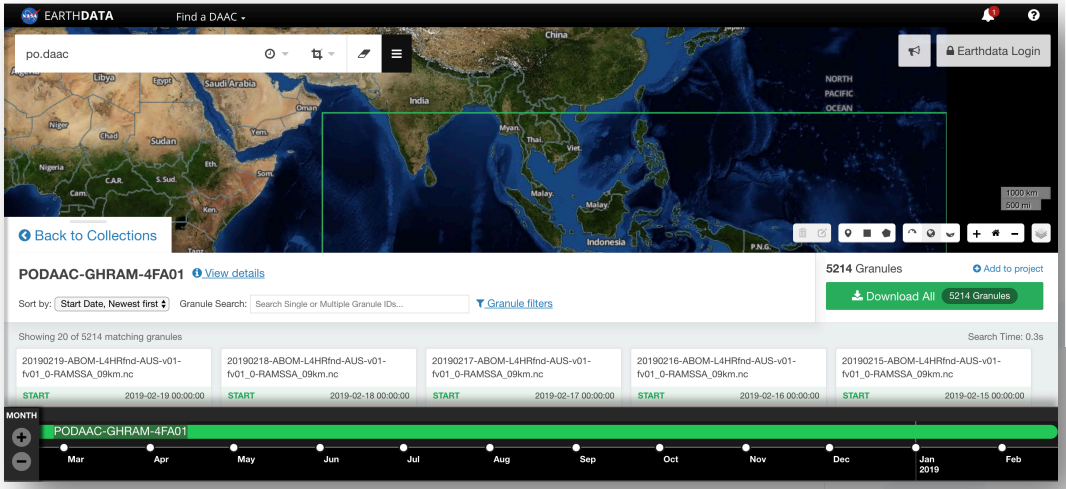
PO.DAAC SWOT – Oceans User Workflow



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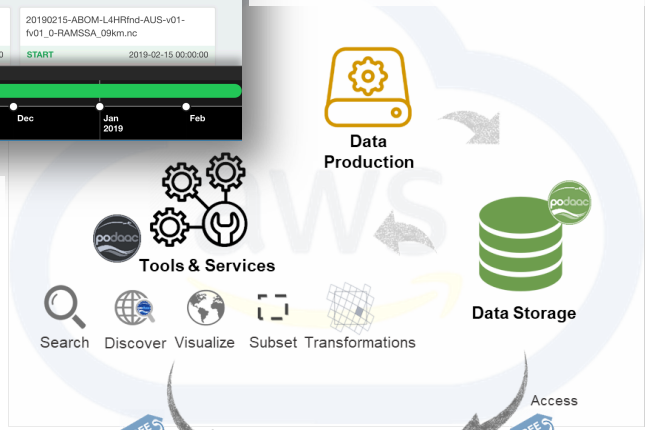

Subset
by area of interest

Re-grid
to model resolution

Download to local cluster 4

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Will I be charged for downloading data from PO.DAAC?

- No. There is no charge involved. NASA's policy is free and open data
- End-user computational costs are not PO.DAAC's responsibility
- Understanding computational costs is an important aspect when working with SWOT like data volumes. PO.DAAC will assist as needed by providing primer documents, tutorials, webinars etc.

Will there be a FTP service?

No, per NASA Policy. There will be an equivalent service. Login will be required per NASA Policy.

Are you working with Google Earth Engine?

Yes, We are working with Google. Ongoing discussion is to determine protocols to help them find, access, and update NASA data that Google would like to host on the platform

Who helps guide PO.DAAC's tools and Services development?

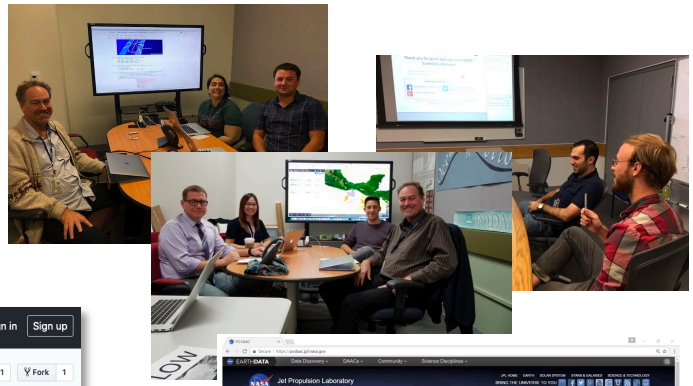
You.

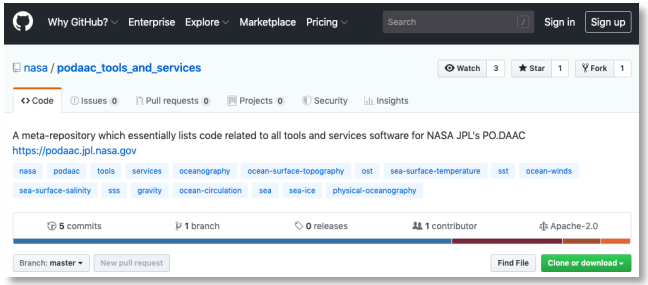
This science team.

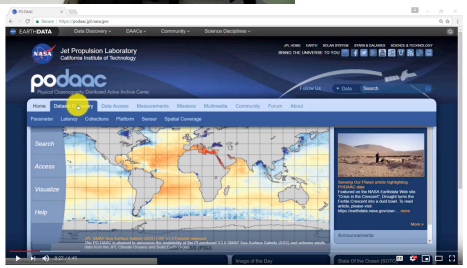
The next science team.

PO.DAAC cloud Early adopters (14 individuals representing the community)

PO.DAAC User Working Group







PO.DAAC 101 – Web Portal Navigation Tutorial

What is your outreach plan?

Hands-on training

Sign up to test-drive

PO.DAAC Website

Need More Details:

Meet with PO.DAAC Representatives

Attend the Hydro Splinter

Github and Github forum for community adoption

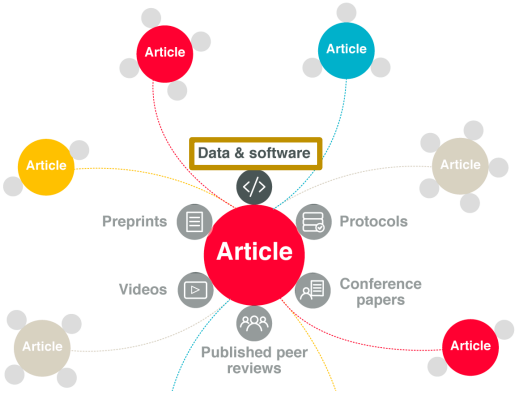
PO.DAAC SWOT Levels of Service

Data Package

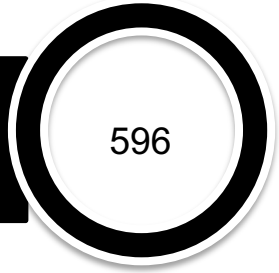
Documentation
Metadata
Browse Imagery
Data Files

- ✓ Curator of data files, metadata, browse images, and documentation
- ✓ Provide tools to explore, access, and extract data
- ✓ Provide long-term, secure archiving (back-up and recovery)
- ✓ Address user questions, and serve as a buffer between users and data contributors
- ✓ Provides usage & download statistics and data citation statistics

Measuring Impact

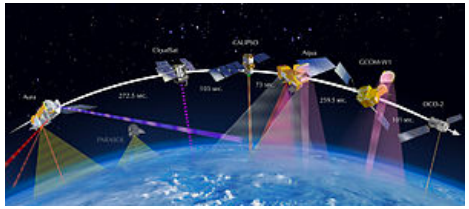


PO.DAAC datasets Cited in peer-reviewed literature (2016-2017)



SWOT usage

Data Integration Across Missions, Organizations



- PO.DAAC would like to be plugged in to cross-mission integration topics/discussions (Important to understand and support value added product capabilities)
- Cognizant of complementary capabilities across AVISO and NASA (PO.DAAC would like to propose a joint data workshop for 2020)

Questions?

@podaac

https://podaac.jpl.nasa.gov/SWOT

https://podaac.jpl.nasa.gov/rss.xml