IHO

International Hydrographic Organization

HSWG 3
HYDROGRAPHIC SURVEYS WORKING GROUP

SAINT-GERMAIN-EN-LAYE, FRANCE, 11TH – 13TH OCTOBER 2022

INTERNATIONAL HYDROGRAPHIC ORGANIZATION

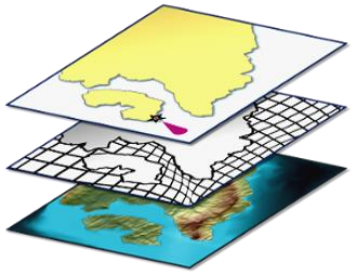
MEASURING THE PHYSICS & FEATURES OF THE OCEAN

PYDRO & HYDROFFICE

OPEN TOOLS FOR OCEAN MAPPERS

Pydro

- A NOAA Python Distribution
- A Collection of Open-Source Hydrographic Tools
- A Growing Community of People with Interests in Ocean Mapping



HydrOffice

- A framework of libraries and tools for Ocean Mapping
- Quickly prototype and test innovative ideas
- Ease the transition from research to operation

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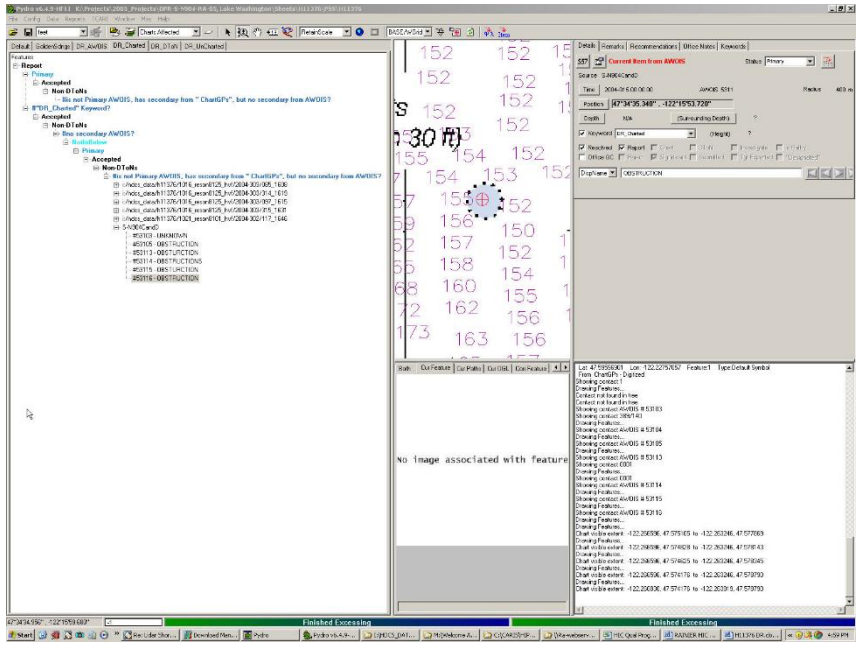
PYDRO TIMELINE

- 1994: Conception
  - SSS Contacts ->Pydro GIS
- 2016: Transitioning to Open Source
  - Collaboration with the University of New Hampshire
  - Release of NOAA built apps
  - Open underlying code for use



Pydro GIS

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HYDROFFICE TIMELINE

- 2013 Conception
- 2015 White Paper: HydrOffice
- 2017 First Tool: Sound Speed Manager released

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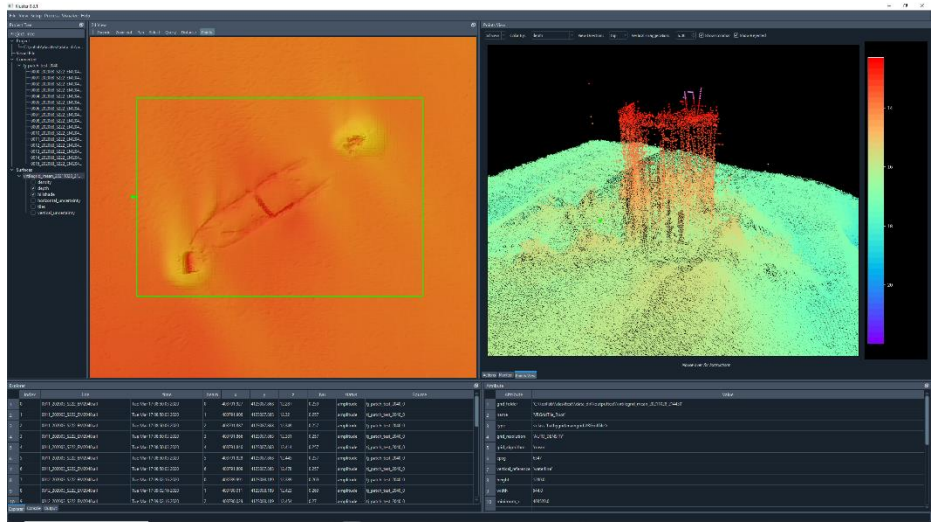
HYDROFFICE APPLICATION EXAMPLES

- QC Tools
  - Tools to automate manually-intensive efforts with data review and chart compilation
- BAG Explorer
  - access to BAG features tools to verify and manipulate BAG data files
- CA Tools
  - collection of libraries and tools to evaluate the adequacy of nautical charts
- Sound Speed Manager
  - improve (e.g., by using oceanographic atlases) and extend the collected raw samples
- Stormfix
  - reduce artifacts in a backscatter mosaics
- Many more!……..

PYDRO APPLICATION EXAMPLES (NOT IN HYDROFFICE)



XmlDR

- GUI interface which generates PDF/Word/HTML (e.g. reporting)
- Enables database functionality (e.g. query attributes from reports)

Kluster

- Puts multibeam data processing to the Cloud and offers processing as a service
- Currently supports Kongsberg and Reson raw data, with the potential to support other formats in the future
- Also supports many of the tasks familiar to users, like cleaning data, and gridding including CUBE gridding

SUMMARY – PYDRO & HYDROFFICE

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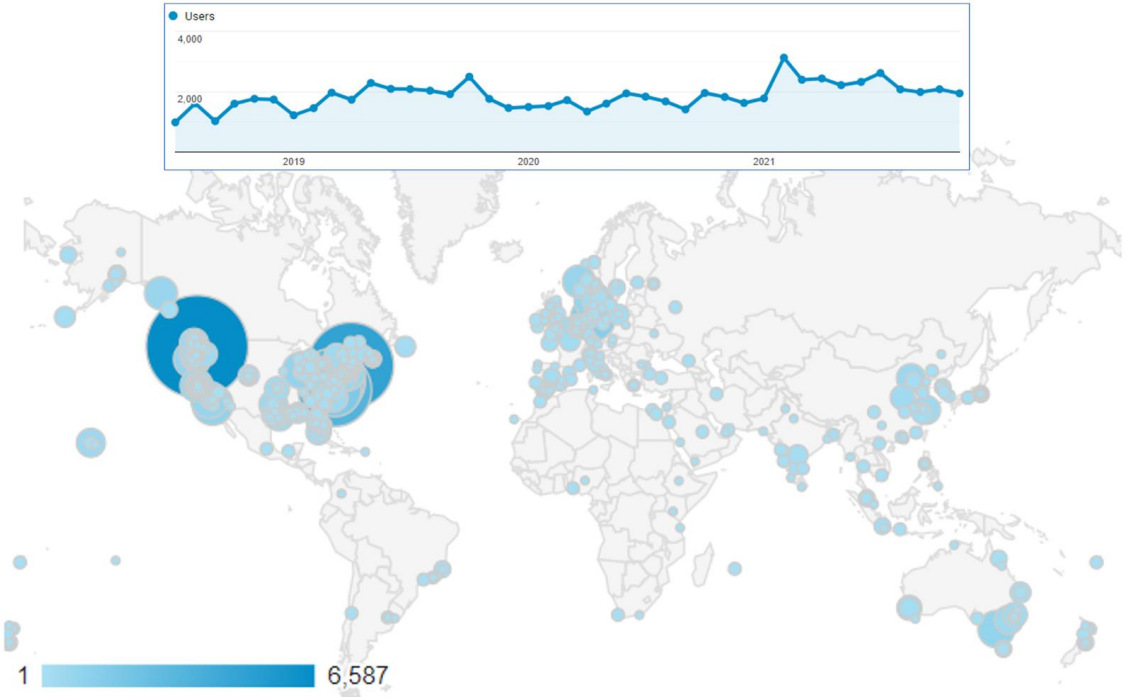
- Framework of tools to support hydrographic data acquisition, processing, quality control, and chart compilation
- Tools are open source and available to the public. We want to collaborate!
- Tools to work alongside commercial software, not as a replacement



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RESOURCES

- Pydro Installation and Contacts: https://svn.pydro.noaa.gov/
- HydrOffice White Paper: https://www.hydroffice.org/manuals/whitepaper.pdf
- HydrOffice Contact: support@hydroffice.org
- Distribution:
  - Pydro Universe: www.nauticalcharts.noaa.gov
  - Stand Alone Apps: www.hydroffice.org
  - Python Packages: GitHub/PyPi/Conda
- Kluster
  - GIT Hub repository: https://github.com/noaa-ocs-hydrography/kluster
  - Youtube Playlist: https://www.youtube.com/playlist?list=PLrjCvP_J9AA_memBs2ZyKXGHG1AMx0GWx