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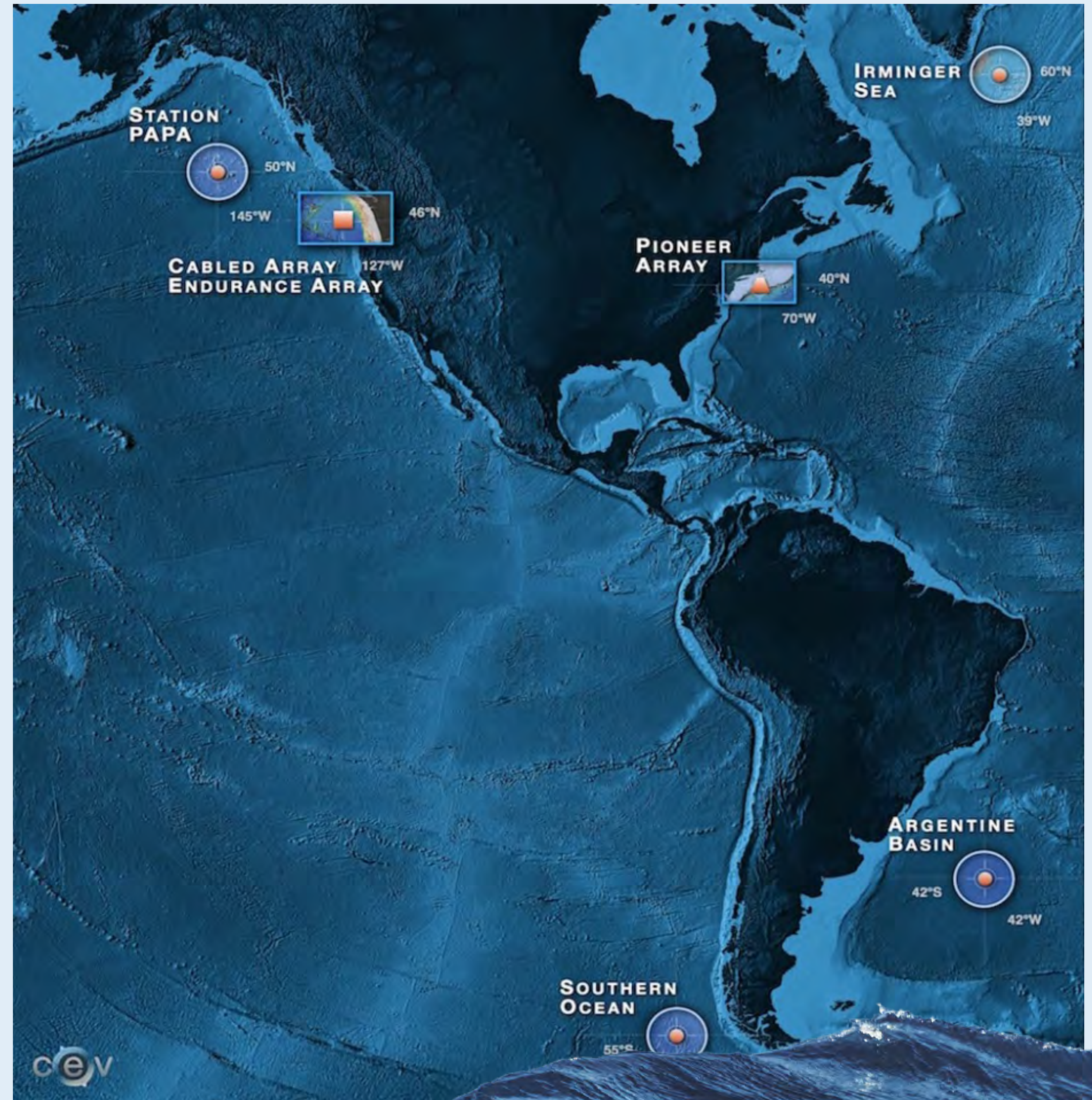
CI and Data Delivery Update

Tuesday 13 October 2020

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Agenda

- PYII Plan Presented at OOIFB 11/2019 Meeting
- PYII Plan Progress Details
- PYII Unplanned Events
- PYIII Work Plan

PYII Plan Presented at OOIFB 11/2019 Meeting

- Fill Values (analysis from 1.0)
- Annotations Indicators
- Data Management – be able to maintain database entries more flexibly
- Digital Object Identifier (DOI) on raw data
- Instrument centric approach on ticket resolution of bugs, enhancements and data (e.g. ADCP, PCO2, HYDBB, etc…)
- Engage Axiom Data Science to re-architect the Data Portal and implement user experience improvements
- Develop the Roundabout asset tracking solution into a full asset management application
- QA/QC – continue implementing QARTOD logic and communicating QC results (dashboard)
- OOI CI Software stack upgrade
- Disaster recovery planning
- Implement Two Factor authentication
- Technology refresh plan
- Storage upgrades as needed
- Support

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PYII Plan Progress Details

- Fill Values (analysis from 1.0) – *Work in Progress*
  - Architecture as outlined in 1.0 was not ideal for data management in Cassandra
  - Requires altering of original instrument data
  - More effectively handled in the Pre-load database
  - Next step is to document approach
- Annotations Indicators – *Completed as part of Keryx project*
- Data Management – be able to maintain database entries more flexibly – *Work in Progress*
  - Replay of data by time bounds completed
  - Ability to update data in Cassandra completed
  - Delete of data by timebounds 90% completed
- Digital Object Identifier (DOI) on raw data – *Not started*
  - Impacted by AoA findings and start of the Keryx project. Data Explorer is a better platform for DOI implementation.
- Instrument centric approach on ticket resolution of bugs, enhancements and data (e.g. ADCP, PCO2, HYDBB, etc…) – *Completed*
  - ADCP bugs and enhancements - completed
  - Pressure values fixes - currently being worked and will continue into PYIII
  - ZPLS echogram generation and metadata ingestion – currently being worked and will continue into PYIII

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PYII Plan Progress Details

- Engage Axiom Data Science to re-architect the Data Portal and implement user experience improvements – *Completed/On-going*
  - Keryx project developed v1.0 of the Data Explorer data discovery tool released on October 5th 2020
  - Functionality derived from user stories collected through:
    - In person user interviews
    - Follow-up interviews utilizing live Beta software over Zoom
    - User review of pre-production code shortly prior to release
  - Built on pre-calculated data stored in NetCDF files
  - Robust exploration and search features
  - Ability to create data views – narratives that can explain particular events of interest such as Hurricanes
  - Enhanced plotting features such as time scale sliders and ability to see multiple graphs on one page
  - Download data from ERDDAP servers or Thredds server

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PYII Plan Progress Details

- Develop the Roundabout asset tracking solution into a full asset management application *– Work in Progress*
  - Initial architecture and database development to support OOI instrument configuration
  - Search features
  - Capture calibration coefficients, instrument constants and configuration information with dates
- QA/QC – continue implementing QARTOD logic and communicating QC results (dashboard) *– Work in Progress*
  - Gross range test migrated to production and used for CTD data
  - Climatology test development completed
  - Gap and timing tests currently being scoped
- OOI CI Software stack upgrade *– Work in Progress*
  - Critical path milestone for Data Center Migration
  - Upgrading uFrame from version 14 to 18
  - Upgrading operating system, databases and drivers to latest compatible version

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PYII Plan Progress Details

- Disaster recovery planning – *Work in Progress*
  - Tabletop recovery exercise performed
  - Disaster recovery planning moved to Data Center migration
- Implement Two Factor authentication – *Not Started*
  - Moved to Data Center migration
- Technology refresh plan – *Not Started*
  - Not needed due to Data Center migration
- Storage upgrades as needed – *Work in Progress*
  - Dell upgrading disk controllers to allow for storage upgrades
- Support – *Ongoing*

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PYII Impactful Unplanned Events

- CI Systems sub-awardee search
  - Oregon State University selected
  - Nine month process
  - Panel was charged to consider the applicant's ability to provide both a new CI system architecture and a new PI
  - Five member panel including three from outside of the OOI Program
  - Eligible applicants were current sub-awardees with the exception of WHOI and Rutgers
- Cassandra health check and node drops
  - Optimization of configuration settings and identification of areas outside best practice for architecture
  - Nodes dropping over time issue identified
  - Cassandra down time reduced from potential days to hours through support agreement with DataStax Luna
  - More work to do
    - Upgrade to 2.1.22 and 3.1.11
    - Reduce number of tables
    - Balance partitions to contain no more than 100mb of data

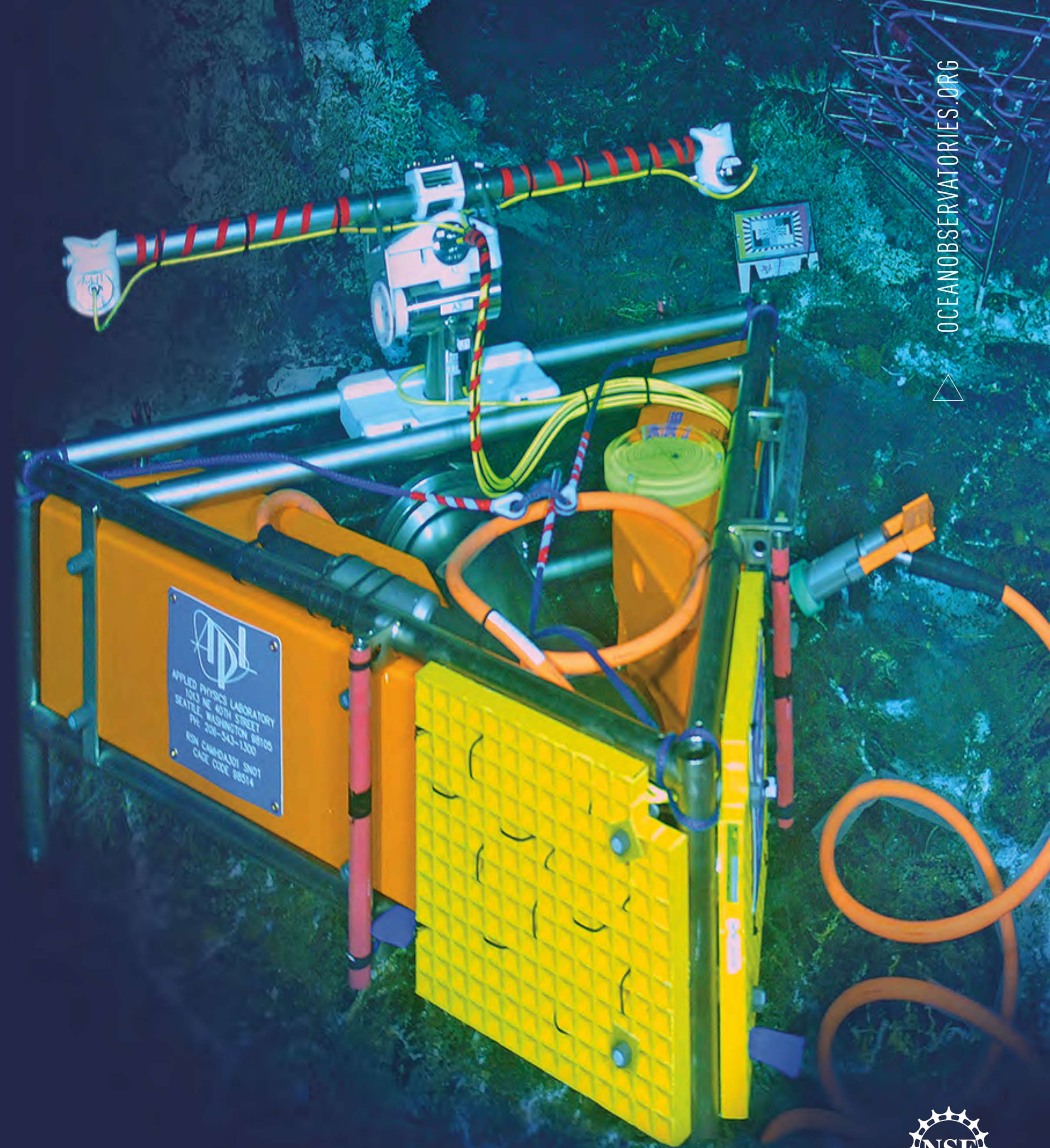OOI OCEAN OBSERVATORIES INITIATIVE

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PYIII Work Plan

- Data Center migration to OSU including Dev through Prod set-up
- OOI CI Software stack upgrade
- QA/QC – continue implementing QARTOD logic
- Complete Roundabout development for connectivity to uFrame
- Data Explorer v1.x
  - Continued increase in science data provided
  - Discrete sample data
  - Prototype for visualization of data <1min resolution
  - Login function
  - Support Jupyter notebook access
- Media server for HD video, Hydrophone, HD pictures and Echograms
- Migration of real-time streaming from OOINET to Django
- Instrument centric approach on ticket resolution
- Pre-load and NetCDF compliance
- "Redmine" redesign including public access

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Questions?

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