User Needs to be met through the OOI Net UI and supplementing applications.

This document is intended to describe concept of operations, roles and responsibilities, and user’s operation needs. From this framework, we will develop use cases that define the UI screens.

OOI has the following categories of users:

* 1. Science
  2. Education and Outreach,
  3. OOI Operations Users
  4. Data Manager/Evaluators
  5. Configuration and Observatory Asset Data Management,
  6. Cyberinfrastructure Management
  7. OOI Management & Observatory Director.

These categories include Chief Scientists, OOI staff that conduct quality control/build/integrate/deploy/turn/recover/refurbish staff, glider/AUV pilots, and the level of effort personnel who support the daily operations of the observatory.

1. **All Users**
   1. All Users go through www.oceanobservatories.org website to provide access to differentiated categories based on type of User.
   2. All Users need access to:
      1. Glossaries and maps in order to understand OOI vocabulary and context.
      2. Status & Health of observatory infrastructure and data, including roll-ups and drill downs based on users.
      3. Sort, search and download OOI data. Users may subscribe to any data from OOI. Data includes all of the following:
         1. Metadata
         2. Shipboard
         3. In-situ sampling
         4. Calibration data
         5. Real time data
         6. Delayed mode data
         7. Raw data
         8. Quality Controlled data
      4. OOI data quality and evaluation policies and procedures.
      5. System Performance Metrics.
      6. a system for reporting performance or data issues. This requires a trouble reporting mechanism (ala Redmine), that can track issues and their resolution status.
   3. Before downloading or subscribing to data, users must register for an OOI account (this requires acceptance of a “data policy”).
   4. All users need access to OOI data policy, and the attribution of OOI data usage. This includes registration and login to download data.
   5. All users need to submit requests for assistance, and receive timely response.
2. **Science Users**
   1. Science users need access to OOI data and interfaces required to script and download data via the ERDDAP server, which will require accepting the data policy before access is granted.
   2. Science users require receipt of all metadata associated with their data product requests. Expect metadata to be a separate file associated with the science data.
   3. Science users need access to ancillary data unlikely to be suitable for delivery via ERDDAP, i.e. CTD casts from mooring turn cruises, laboratory analyses of water samples, shipboard meteorology or thermosalinograph data from cruises, etc.
   4. Science users need access to OOI documents (e.g. mooring drawing) and reports (e.g. cruise report) that are different from metadata that would be associated with a specific data product.
   5. Science users need to understand data provenance. The OOI must fully describe data, including all transformations, analyses, and interpretations. This includes calibration factors, cross calibration, and observatory configurations for all deployments.
   6. Science users need access to algorithm codes, input parameters and quality flag limits, as well as any records of configuration change.
   7. Science users need access to all OOI data evaluation and associated observatory actions being taken to address data quality and data quality improvements. At the observatory level this ties directly to the calibration history for instruments/sensors and the service records. Observatory actions include flagging suspect data stream and opening a TR for service/calibration.
   8. Science users need to plot and display data through the user interface, from one or more instruments, including support for the scalable display of the following:
      1. Single Instrument Time Series
      2. Multiple overlaid Instrument Time Series
         1. same type, same platform
         2. same type, multiple platforms
         3. different type, same platform
         4. different type, multiple platforms
   9. By Spring of 2016, Science users need technical and pricing information on the OOI website, to include Technical Data Packages (TDP) and Interface Specifications, to inform a proposed instrument addition to the network. Science users will work with their NSF Program Officer to answer any proposal questions during the OOI transition to operations period in 2015-2016. (Non CI User need current, future CI Use Case)
   10. Science Users need quarterly updates from OOI management as the facility transitions to operations in 2015 via email.
3. **All OOI Operations Users**
   1. System Health
      1. Obtain an overview (e.g., green, yellow, red) of status for instruments, platforms, components, data flow, data storage, etc. (system ‘dashboard’ concept with configurable display, parameters may differ for cabled versus uncabled, moored versus mobile platforms).
      2. The users need to be able to configure the screens to track and manage specific trouble areas as required.
      3. Submit trouble tickets for assignment, review and tracking (Internal, external, quality matters).
      4. Retrieve history, per asset or process, of alert or alarm thresholds and history of occurrences for that asset.
      5. System Metrics.
4. **Configuration and Observatory Asset Data Management** 
   1. Within permissions, enter authorized configuration set up, quality status and testing results into OOI Net, on-site (lab or at-sea), for instrument or platform (e.g, quality conformance, burn-in, verification). Edit information when configuration changes occur (e.g., at time of calibration, build, deploy, recover, refurbish). Results are linked to each specific asset and each specific step in the OOI process. In-situ data entry will inform observatory management and metrics.
   2. Establish initial configuration (pre-load) for instrument, platform, array using input screens in OOI Net and selections from OOI Asset Tracking database. CGSN is expending substantial effort to create standardized configuration sheets (presently in Excel). OOI Net should read and digest these sheets, not require the information to be entered again by an operator at a GUI. What is the OOI database, and how does it relate to the CGSN-created configuration sheets?
   3. Retrieve history of configuration status for any instrument or platform from Asset Tracking Database.
   4. Enter/Submit necessary documentation and data to OOI Net following each deployment and each recovery (e.g. cruise reports, at-sea sampling and subsequent analysis).
   5. Retrieve history of, lifecycle status for, and current disposition of (storage, deployed, at vendor) any asset (e.g, instrument, buoy hull, low voltage node, riser cable).
   6. Within specified observatory parameters and permissions, create, edit, and submit (upload via OOI Net), or reference approved mission plans or changes for instrument or platform, prior to deployment and while deployed.
5. **Chief Scientist & Cruise preparation staff**
   1. Work with the institution Project Manager to align workflow and labor workforce for build, integrate with next scheduled deployment(s) (non OOINet).
   2. Request vessel and necessary supplemental equipment (e.g., ROV, winches, lab vans) through UNOLS Website, (non OOINet)..
   3. Arrange pre- and post-cruise logistics (e.g., equipment pack & ship, storage at ports, personnel transportation), (non OOINet).
   4. Obtain and renew approvals or permits for work in marine sanctuaries, fishing zones, other nations’ EEZ (records updated within document section of OOI, accessible via OOI Net)
   5. Have access to weather information during cruises, including weather, sea state, sea surface height, and ocean state conditions. In support of glider and mooring operations, to include derived geostrophic currents, SST, SSS, and ocean color. The main issues are: 1) combining disparate sources into useful summaries or overlays for a given geographic region, 2) bundling summary information for low-bandwidth connections.
   6. Access to functional status and telemetered data from to-be-deployed platforms during burn in, and from just-deployed platforms at sea, prior to the formal transfer of the platform to "operational" status.
   7. Ability to set up a "tracking page" for an asset that has gone adrift and is sending regular position updates.
6. **OOI Staff Engineers**
   1. Respond to alerts and alarms via a duty watch roster that will enable safe operations. Personnel will need email, text and cellular/voice communication capabilities. Need access to status and health to perform diagnostics.
   2. Within permissions and authorities, resolve trouble tickets, log the action, record the resolution in OOINET
   3. Search, retrieve previous trouble tickets
   4. Manage the OOI Power Budget for all systems. For mobile assets this could mean comparing trends or changes for several instances of the same instrument or platform (e.g., side-by-side displays of power consumption by different gliders). This will include the need to display and resolve trends or changes in engineering parameter values (e.g., battery voltage, cable system performance, etc.).
   5. Implement the OOI configuration, quality and safety plans and within authorities. This could include establishing or modifying event, alert or alarm thresholds that trigger remote notification. This would be done using an integrated configuration management approach that involves scientists, managers, data evaluators and operations personnel as required.
   6. Manage and support the lifecycle of OOI data and infrastructure assets.
7. **Data Management**
   1. Manage Report quality and evaluations, including trends, instrument stats, metrics, quick look visualizations, etc.
   2. Coordinate with the research scientist and OOI team to resolve trouble ticket issues. (algorithms, equipment set up questions, etc).
   3. Focus on collecting and applying lessons learned to improve observatory data and operations quality.
8. **CyberInfrastructure Manager**
   1. Monitor/manage lifecycle
      1. acquisition and distribution network
      2. hardware: tech refresh, licenses
      3. Define fence between OMC/OMS and CyberPop(s)
      4. software: license management, build management
   2. User support
      1. Trouble ticket system for tracking and assigning user issuer queries
      2. Frequently asked questions
9. **Education & Outreach**
   1. User Support - Respond to user questions (i.e. support questions sent to the "help desk” email). Add or revise “Knowledge Base” articles to improve online documentation.
   2. Training - Conduct face-to-face and online sessions to train users on how to use EPE tools, and how to incorporate the use of EPE tools into Broader Impact components of research proposals.
   3. Customized, simplified data interfaces targeting specific stakeholders, e.g. bottom temperature from the Pioneer Array for fishermen.
10. **Glider/AUV Management**
    1. Within specified parameters and conditions create, edit, submit (upload via OOI Net) approved mission plan(s) for Vehicle instrument or platform, prior to deployment and while deployed.
    2. Record all data for Appendix 2 workflow into OOINET in-situ, including the following:
       1. SOPs including pre-deployment checklists, ballasting spreadsheet and endurance calculations (already available from TWR, but semi-proprietary)
       2. deployment templates
       3. vehicle mobilization docs
       4. deployment and recovery photos
       5. post-recovery vehicle evaluation
       6. generation of itemized refurbishment list.
    3. Coordinate Vehicle fleet operations and maintenance (partially allocated to TWR).
11. **OOI Management**
    1. Manage and implement OOI (and institutional) safety, quality, security and configuration management requirements. Amend and control all SOPs, software, infrastructure per the approved plans and specifications.
    2. Provide the research community access to all project documentation to assist in answering questions, inquiry (as permissible by institutional and security policies).
    3. Plan and manage to the annual work plans and OOI project documents per their award terms and conditions.
    4. Review OOI Metrics.
    5. Develop, document (via the configuration management plan) and assign approved permissions to the observatory. This includes authorities for remote access to power and operational settings for instruments, platforms, etc.
    6. Manage and assure activation of safety responses (e.g., emergency shutdown, power isolation) with deployed instruments and platforms in event of alarm that threatens life or property
       1. Validate performance (e.g. sampling rate, fidelity to or deviation from approved configuration of instrument, platform)
       2. Correct deviations from approved configuration (e.g., data throughput via telemetry compared to target rate +/- operating thresholds)
       3. Manage observatory to the established quality plan
       4. Manage to baseline standard operating procedures.
       5. Establish and maintain standby contract for vessel response for Gliders and AUVs.
12. **Observatory Director (Ocean Leadership) (outside OOI Net)**
    1. Establishes configuration of observatory following approvals by NSF and resolution of technical and scheduling issues