

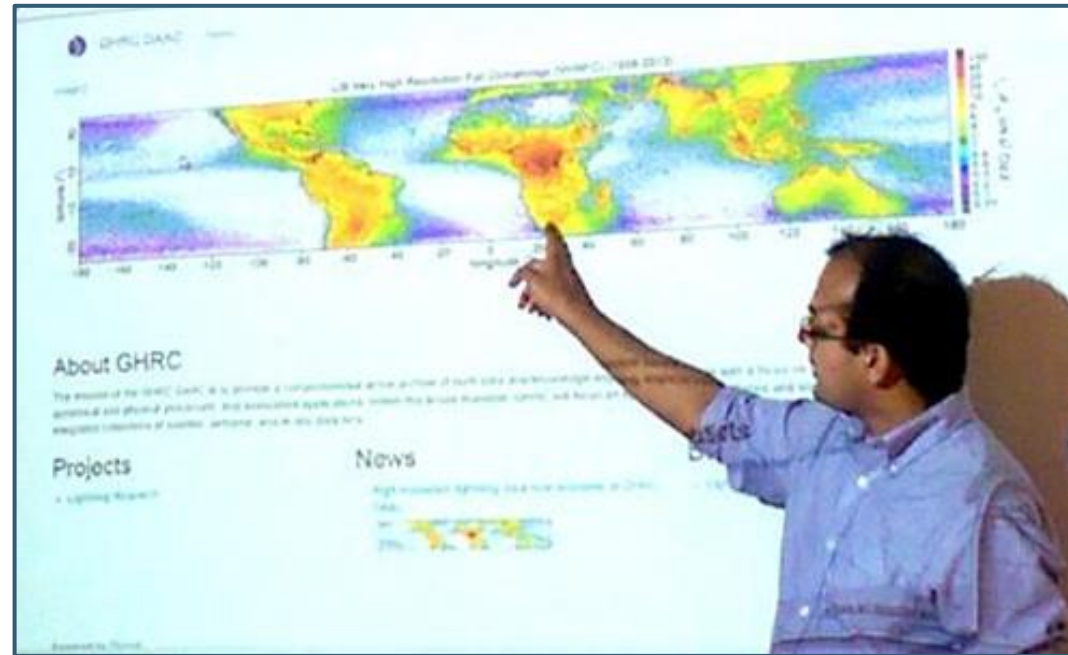
# Earthdata Pub (EDPUB)

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- Each **NASA DAAC** faces the challenge of dealing with an increasingly diverse number of publishable data products from diverse data producers.
- **Data producers**, on the other hand, may experience pain points when interacting with the DAACs and EOSDIS, when delivering their initial datasets or when publishing.
- Further, the EOSDIS Review Team's (ERT) second recommendation encourages enterprise level collaboration, when possible. It calls for common software requirements, development strategies, and APIs; uniform user experience across the DAACs; simplification of duplicate software tools.

- A common **cloud-hosted** software framework that:
  - provides desired functionality of data publication solutions (DAPPeR)
    - Includes workflow status monitoring and tracking, email tracking, DAAC staff coordination
  - provides a **common front-end interface** that uses common terminology for data producers
  - allows for increased flexibility as DAACs will be able to define **custom workflows, use metadata editor of preference, etc.**



**Project Management**

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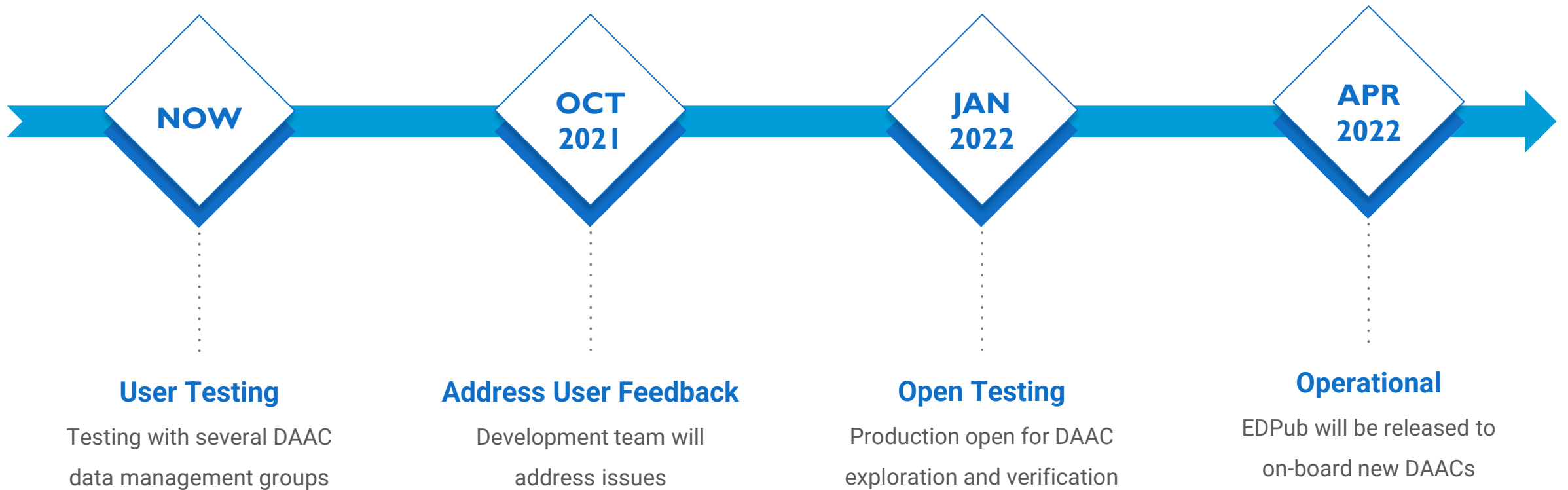
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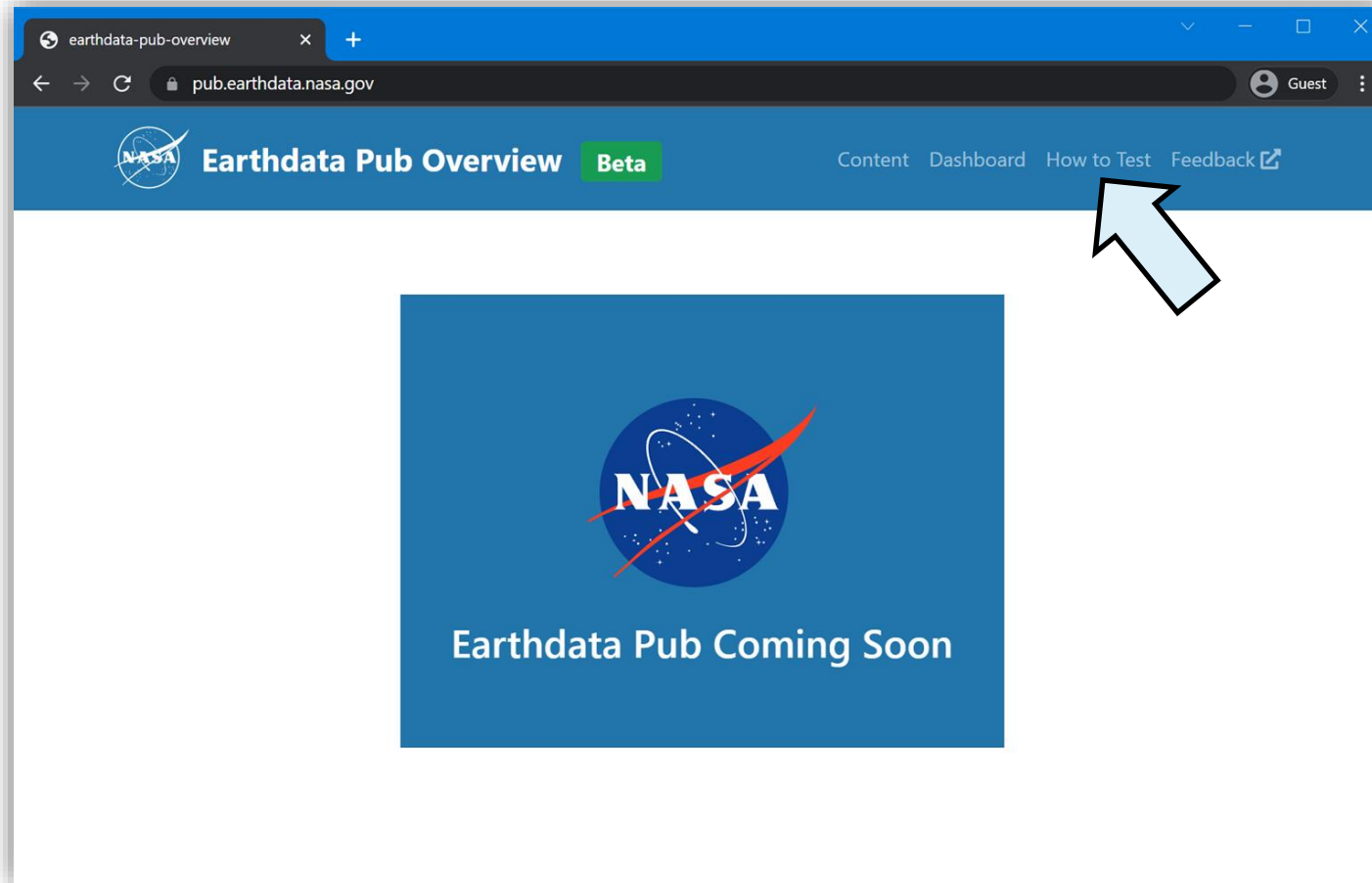
**ORNL Developer**

Daine Wright, Kimberly Broughton

# Timeline & Status



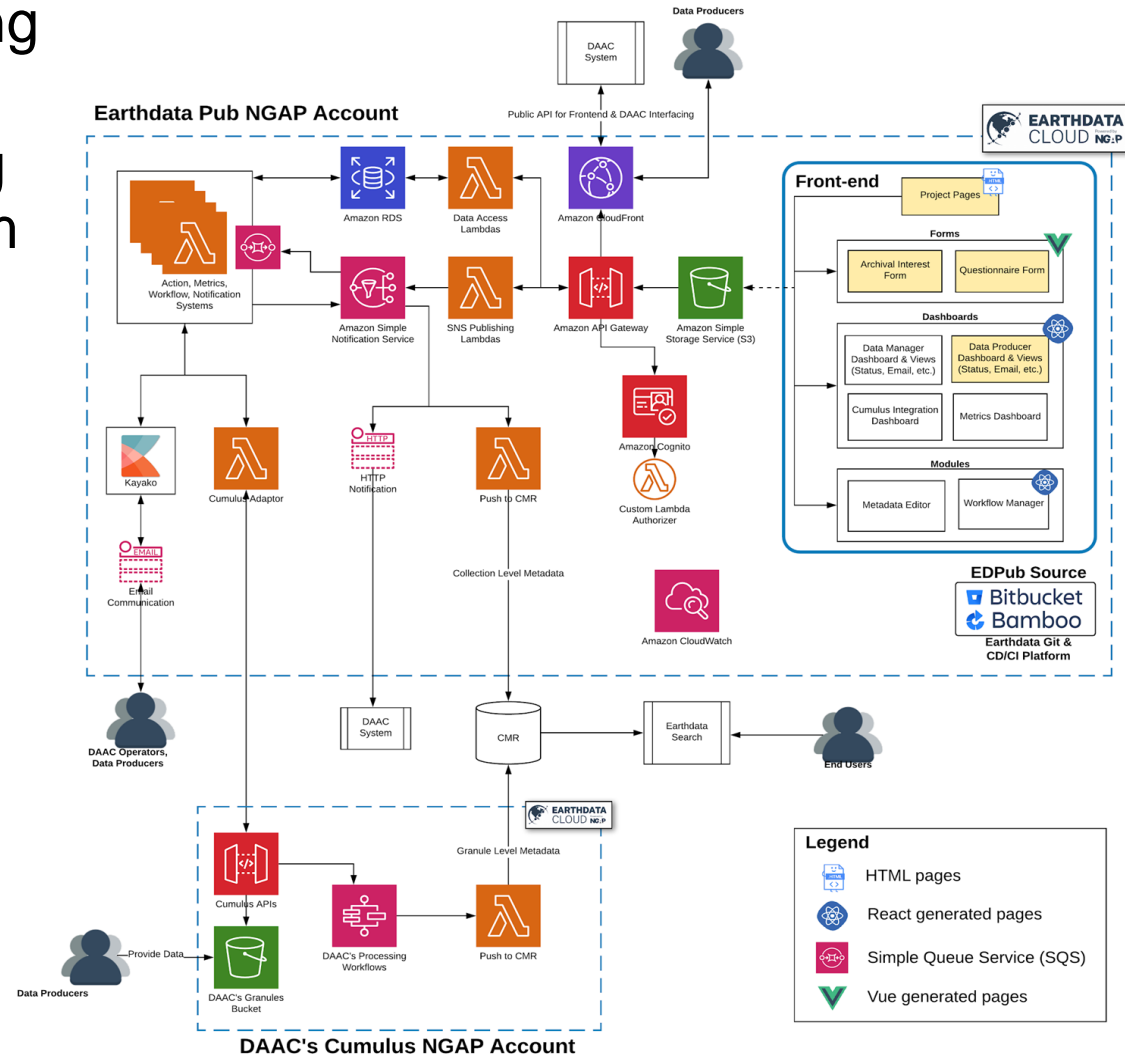
# Earthdata Pub Website



<https://pub.earthdata.nasa.gov>

- Developed to be cloud native using all serverless technologies
- Path-based routing allows serving multiple frontend applications from a common domain
- Frontend apps served via API Gateway and S3 integration
- Persistent data storage with Amazon Aurora RDS (Postgres compatible)
- Event based architecture that allows synchronous and asynchronous integration

## Earthdata Pub Architecture (Overview)

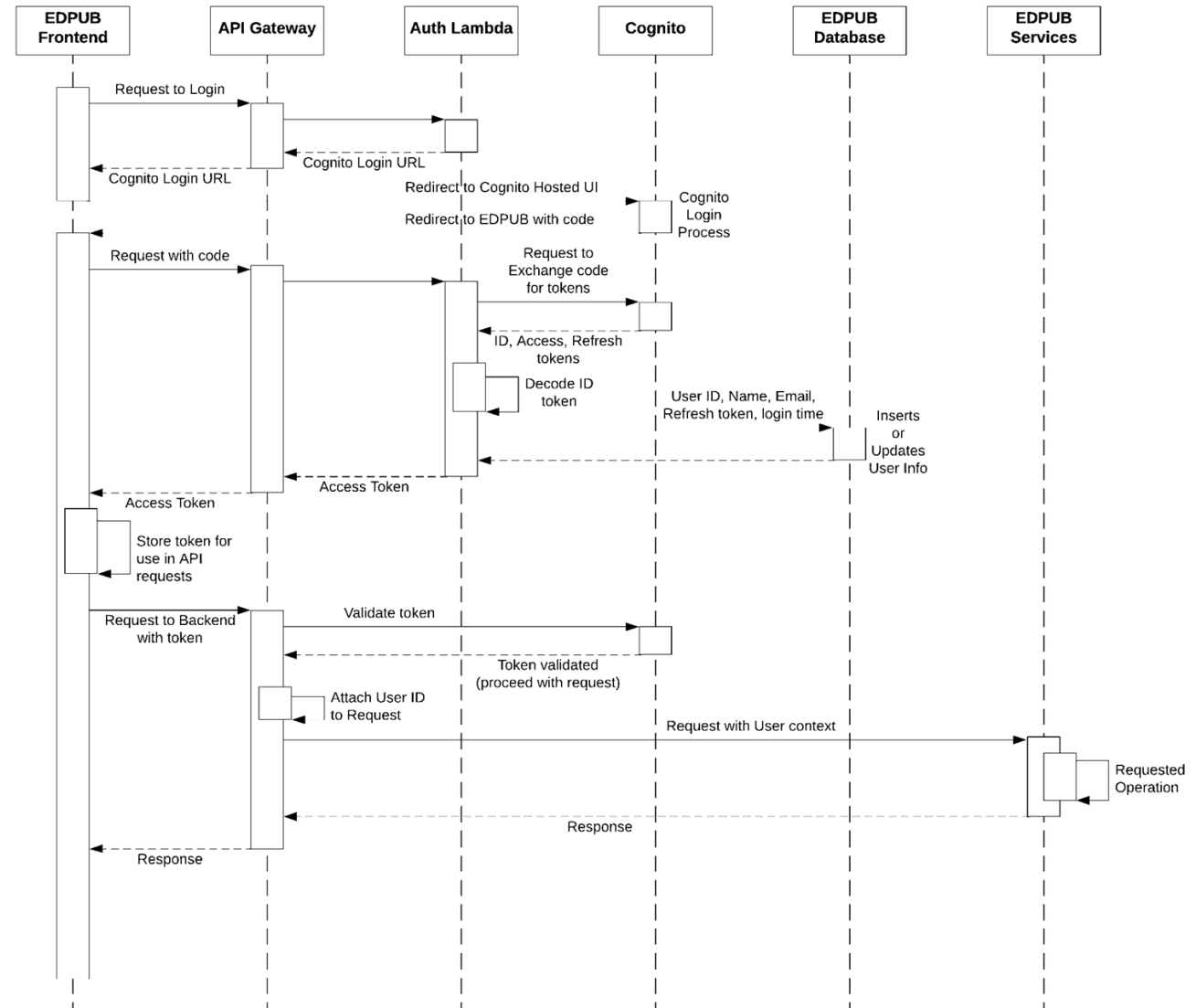


# Authentication



The EDPub frontend authenticates through a Cognito User Pool using OAuth authorization code flow.

The Cognito User Pool fans out to multiple federated identity providers to allow multiple options for signing in.





## Permissions and Privileges

- **Permission** - granular level access to entities
- **Privilege** - actions available for resources or entities e.g. submit a form, approve a request

## Roles and Groups

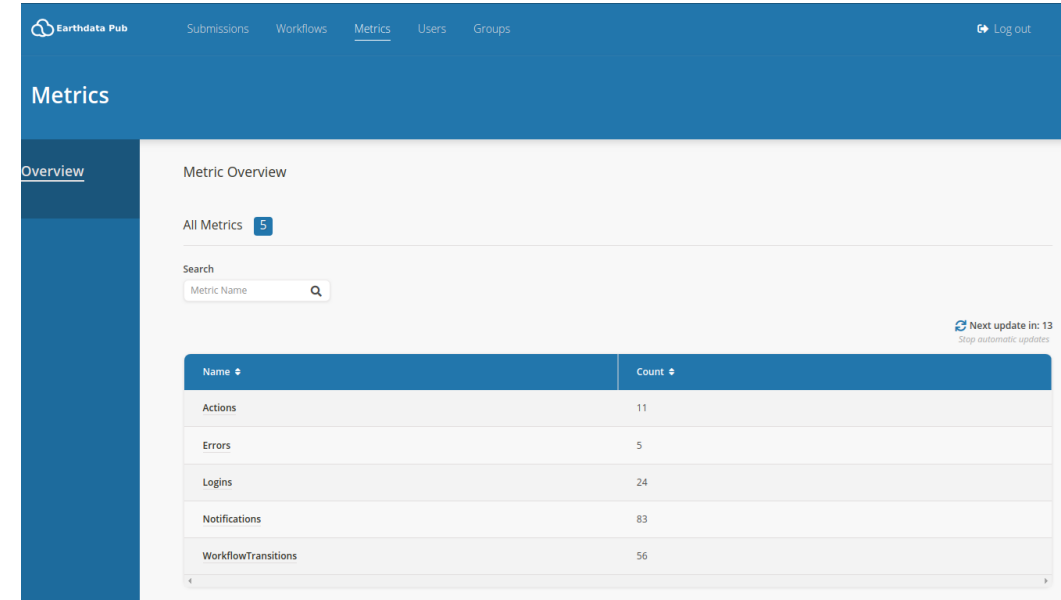
- **Role** - governs what privileges a user has
  - roles: Data Producer, DAAC Staff, Administrator, etc.
- **Group** - defines permissions within Earthdata Pub.
  - groups: each DAAC. Also Mission, Project, Level of Service
  - Groups are hierarchical.

A simple workflow with a questionnaire and an approval:

1. Form 1 filled out by a human
2. Request entity created that is associated with that user and moved to the initial State which has a questionnaire to obtain additional information
3. State is assigned to the 'approvers' group from the DAAC staff
4. Form for this State is to either approve or reject the information submitted
5. Form input published to an AWS SNS Topic exposed through the API Gateway
6. Email notifications sent and lambda invoked to promote the request to the next State
7. State assigned to the original request initiator
8. Form 2 completed and submitted by a human
9. If approved, the dataset published to CMR, if rejected the Request is demoted to the previous State for modification

- Earthdata Pub's framework concept allows for interchangeable modules. Modules are components that can form the basic building blocks of Earthdata Pub or extend its functionality. Earthdata Pub will facilitate data publication by providing new functionality to DAACs while allowing the use of existing tools.
- EDPub Modules
  - Cognito
    - Authentication
  - Kayako FBM
    - Custom messaging Solution
  - mEditor
    - Metadata editor
- Upcoming Modules
  - Metadata mapper
  - DOI registration
  - DAAC custom module

- Pretty workflow diagrams and graphical editing
- Metrics displayed to users from Cloud Metrics
- Data upload directly to the cloud not just sample data
- Incoming email capture, including attachments



The screenshot shows the 'Metrics Overview' page in the Earthdata Pub application. The page has a dark blue header with navigation links for Submissions, Workflows, Metrics (selected), Users, and Groups, and a 'Log out' button. Below the header, the 'Overview' section is active. It displays 'All Metrics' with a count of 5. A search bar is present with the placeholder text 'Metric Name'. A table lists the metrics with their respective counts. A notification indicates the next update in 13 minutes.

Name	Count
Actions	11
Errors	5
Logins	24
Notifications	83
WorkflowTransitions	56

# THANK YOU!

QUESTIONS?

