IOOS Catalog

Presented by Luke Campbell and Micah Wengren

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Introduction

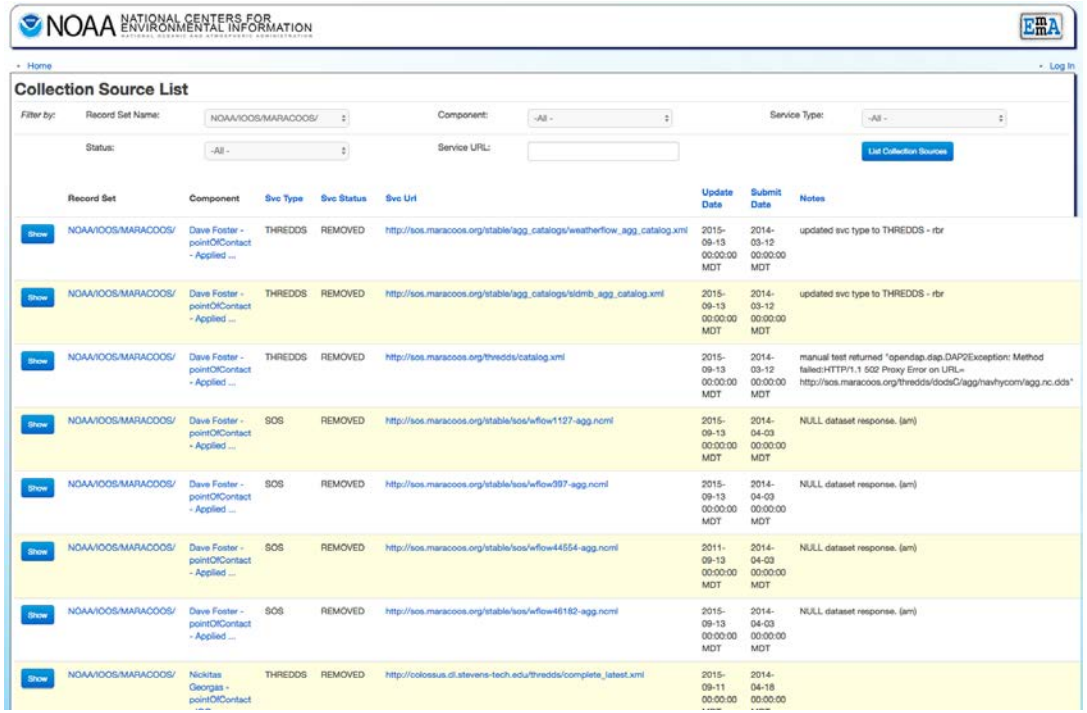
Micah Wengren

- Coming to IOOS from NOS' Office of Coast Survey Development Laboratory (NOAA nautical charting)
- Supported NOAA Data Catalog (data.noaa.gov) implementation
- FOSS4G GIS/Geodata management background
- Early NOAA work on weather/ocean observation and forecast portal, nowCOAST (nowcoast.noaa.gov)

Background

Previous catalog:

- NGDC Geoportal
- Github and Emails
- System Monitoring
  - catalog.ioos.us



Workflow

1. Data Provider sent an email or created an issue on github for a new data source.
2. Anna would get notified.
3. Rob or Anna would review the source for simple issues
4. Anna would create a harvest job for NGDC's harvesters to synchronize source
5. NGDC Geoportal would get updated.

Defining Goals for the Future

Defining Goals for Future

Identifying what didn't work for us:

Synchronization:

- Partners and RA's spent too much energy and resources attempting to synchronize datasets with the IOOS Catalog
- Data is fluid but the catalog is mostly static

Defining Goals for Future

Our Goals:

- Smooth Synchronization
- Low Effort Maintenance
- High Visibility
- Tools

Where we are

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What is it?

Feature Overview

Complete catalog system with easy to use web interface and a powerful API

Strong integration with third-party CMS's like Drupal and WordPress

Data visualization and analytics

Workflow support lets departments or groups manage their own data publishing

Fine-grained access control

Integrated data storage and full data API

Federated structure: easily set up new instances with common search

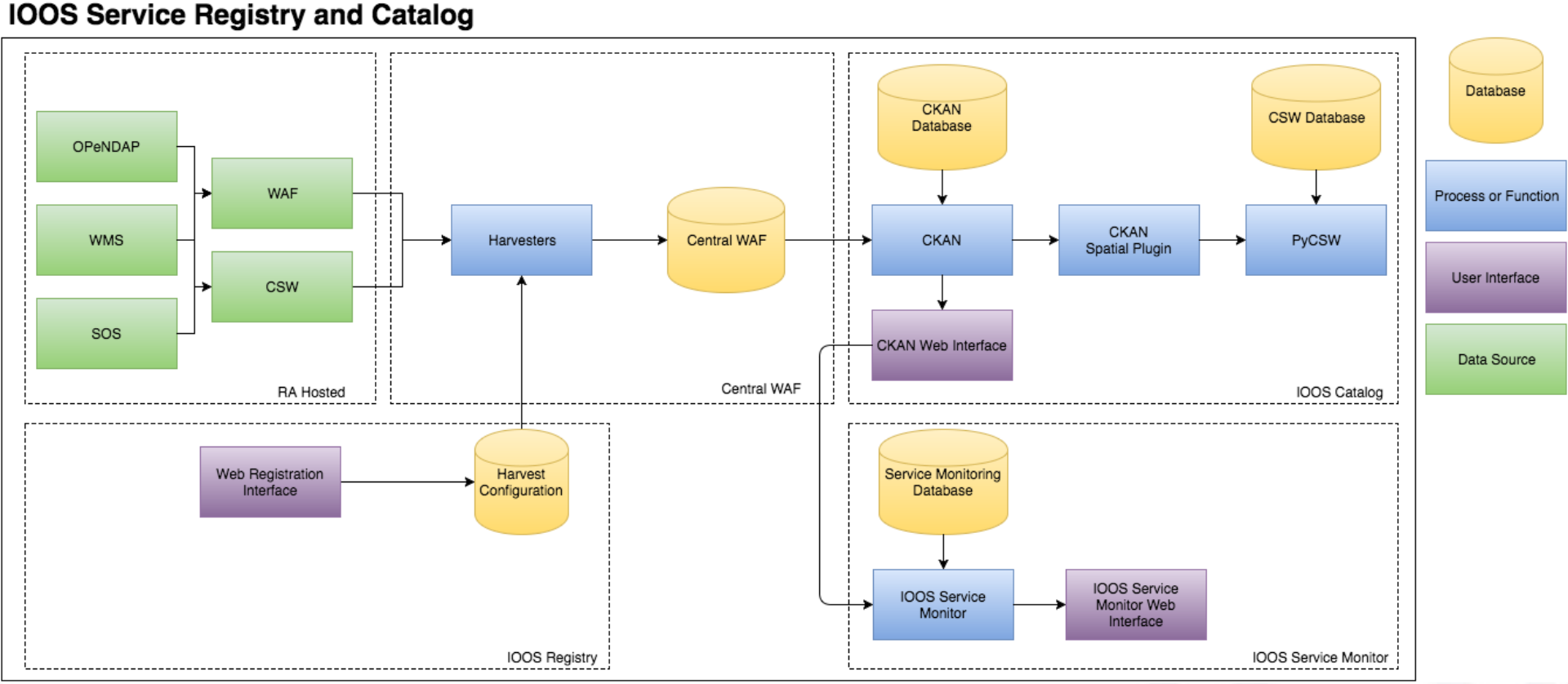
Why do we use it?

- Python based web development project
- Highly Extensible
- Wide community support
- Very active project

Why do we use it?

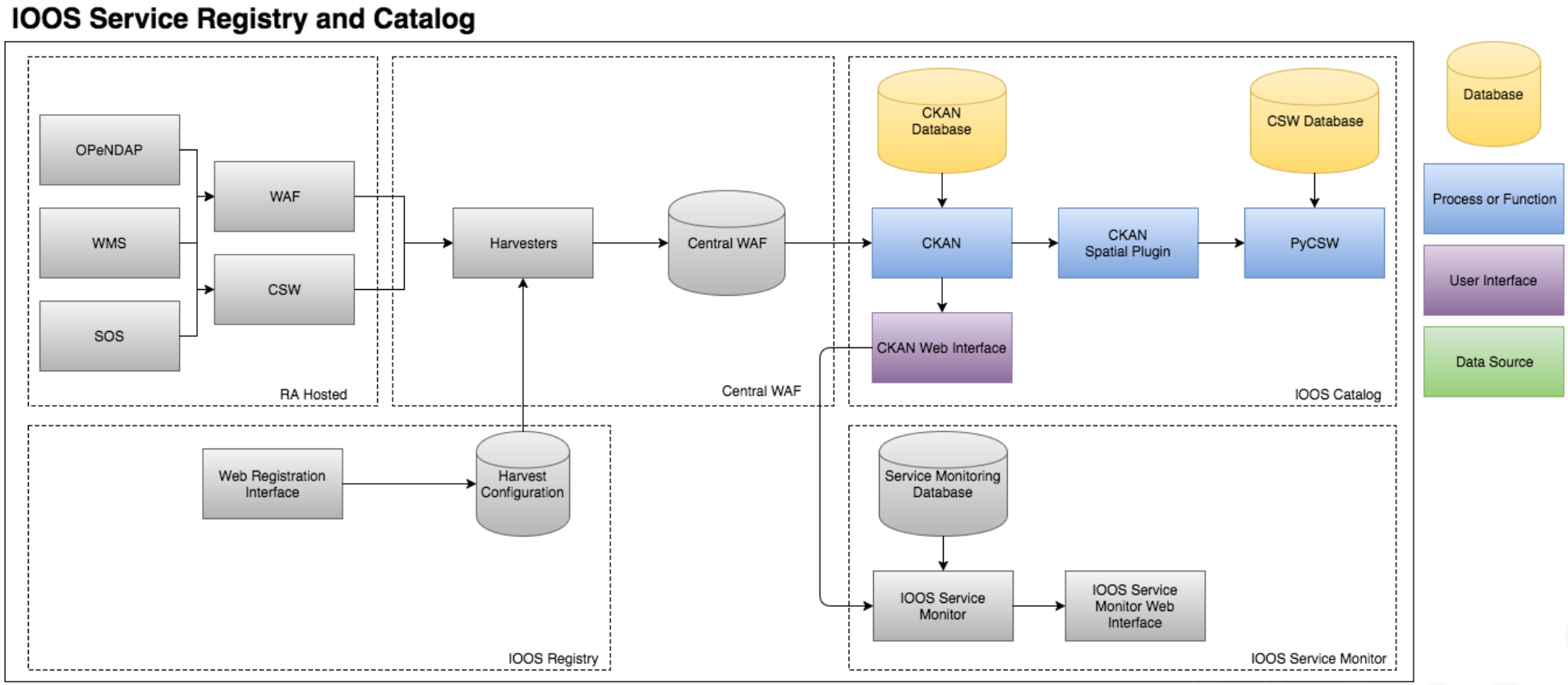
- PyCSW
- Spatial Awareness
- API

How it works


IOOS Service Registry and Catalog
OPeNDAP
WMS
SOS
WAF
CSW
RA Hosted
Harvesters
Central WAF
Central WAF
CKAN Database
CKAN
CKAN Web Interface
CKAN Spatial Plugin
CSW Database
PyCSW
IOOS Catalog
Web Registration Interface
Harvest Configuration
IOOS Registry
Service Monitoring Database
IOOS Service Monitor
IOOS Service Monitor Web Interface
IOOS Service Monitor
Database
Process or Function
User Interface
Data Source

How it works

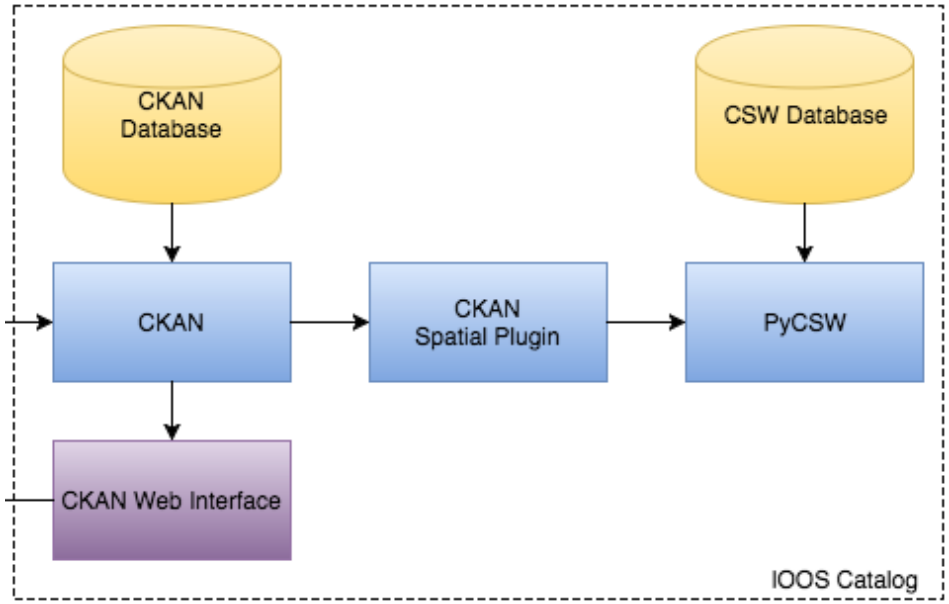
IOOS Catalog



How it works

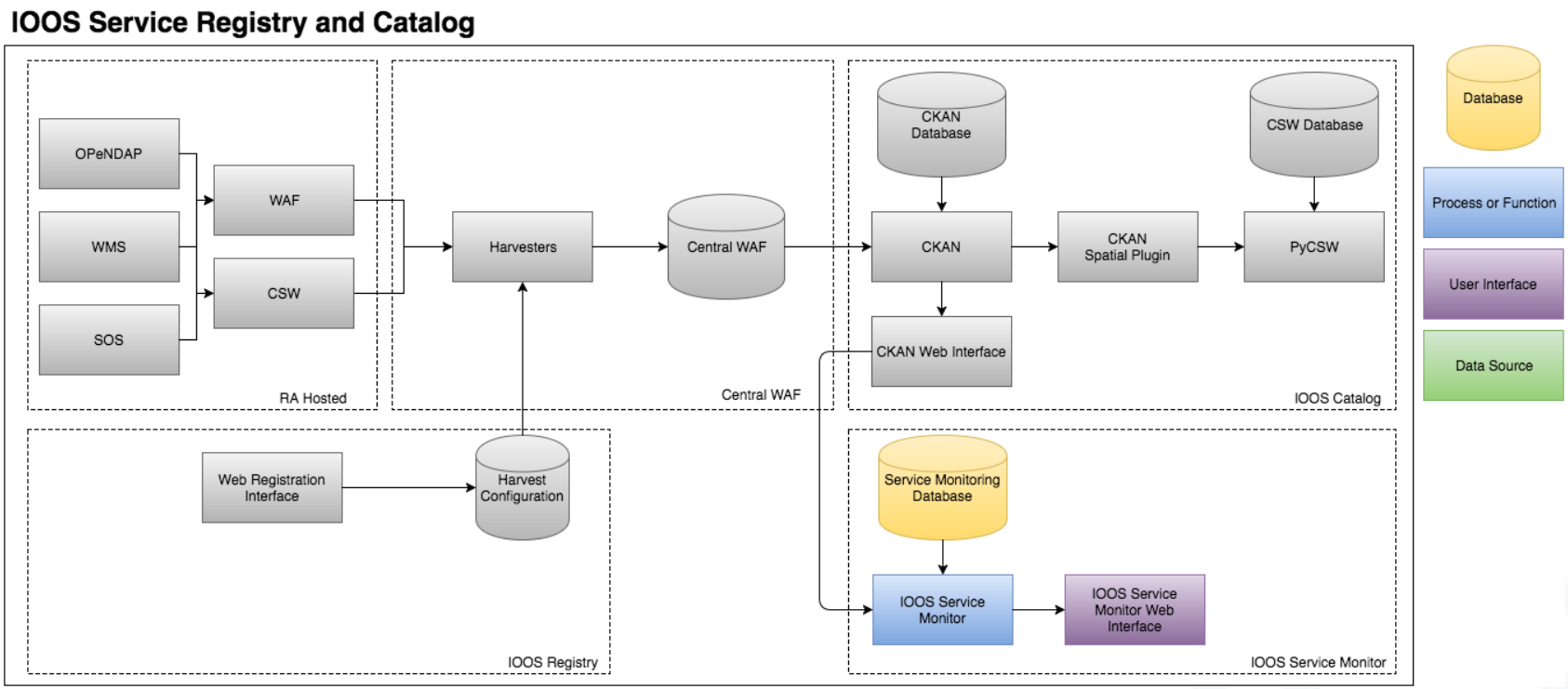
IOOS Catalog

- Stores ISO records
- Allows for searching of metadata
- Exposes CSW
- Web Interface for users to find data within IOOS



How it works

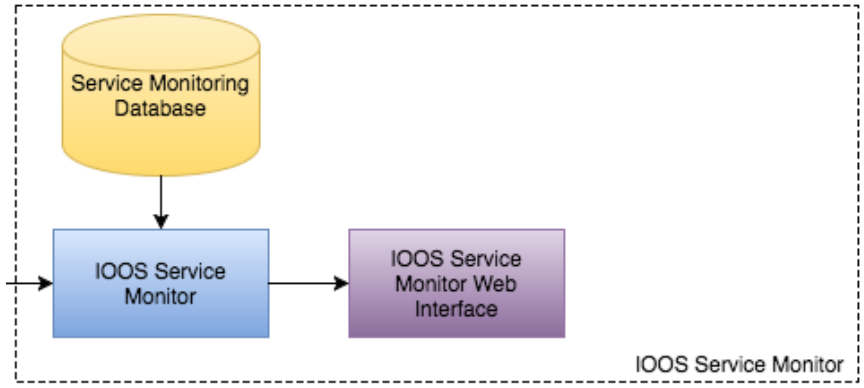
IOOS Service Monitor



How it works

IOOS Service Monitor

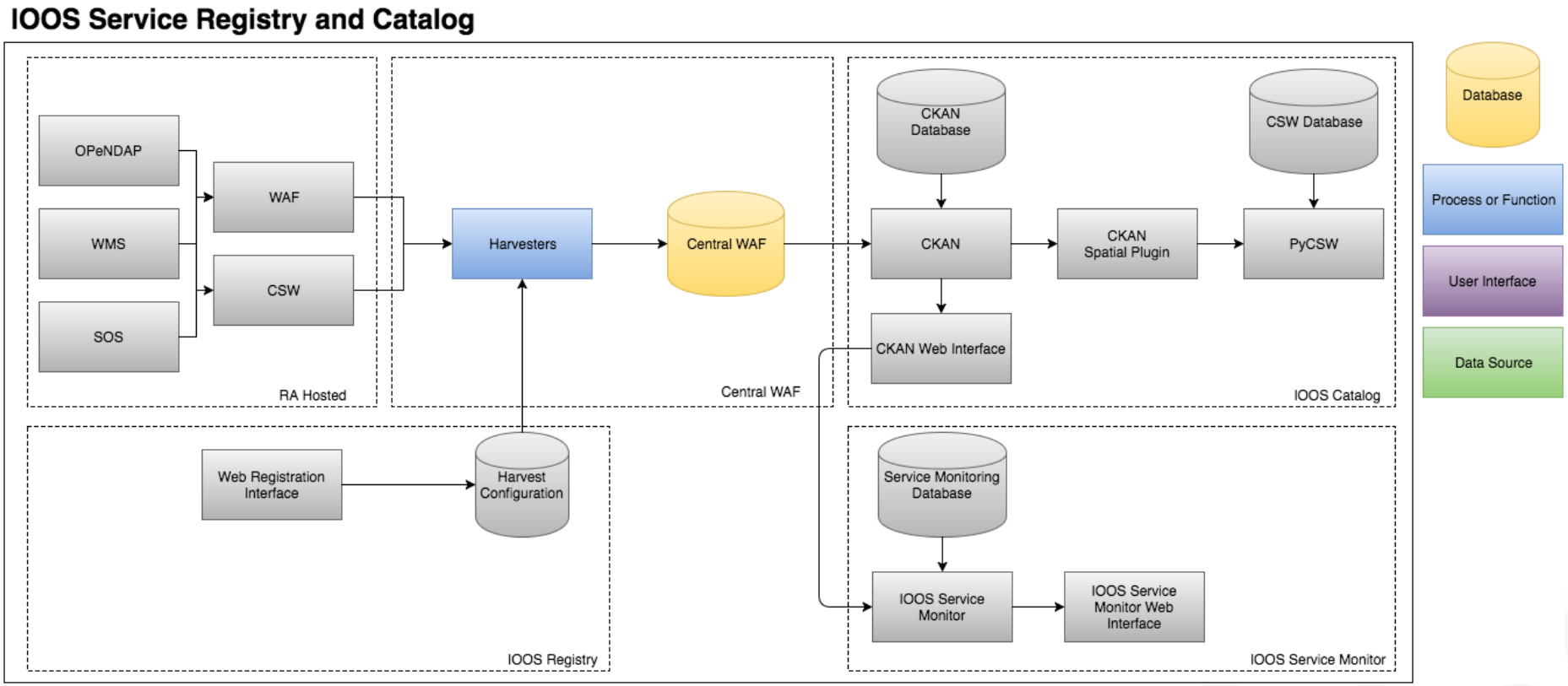
- Internal Tool
- Checks service availability and uptime
- Future: metadata compliance checking



sos.maracoos.org			Services Available: 854/854		
MARACOOS	DAP	HRECOS Aggregated Station HRTVBM Data	Harvest Successful	8 hours ago	19/20
MARACOOS	DAP	HRECOS Aggregated Station HRWSTPTH Data	Harvest Successful	8 hours ago	19/20
MARACOOS	DAP	HRECOS Aggregated Station HRPMNTM Data	Harvest Successful	8 hours ago	19/20
MARACOOS	DAP	HRECOS Aggregated Station HRPMNTH Data	Harvest Successful	8 hours ago	19/20
MARACOOS	DAP	HRECOS Aggregated Station HRPIER84 Data	Harvest Successful	8 hours ago	19/20

How it works

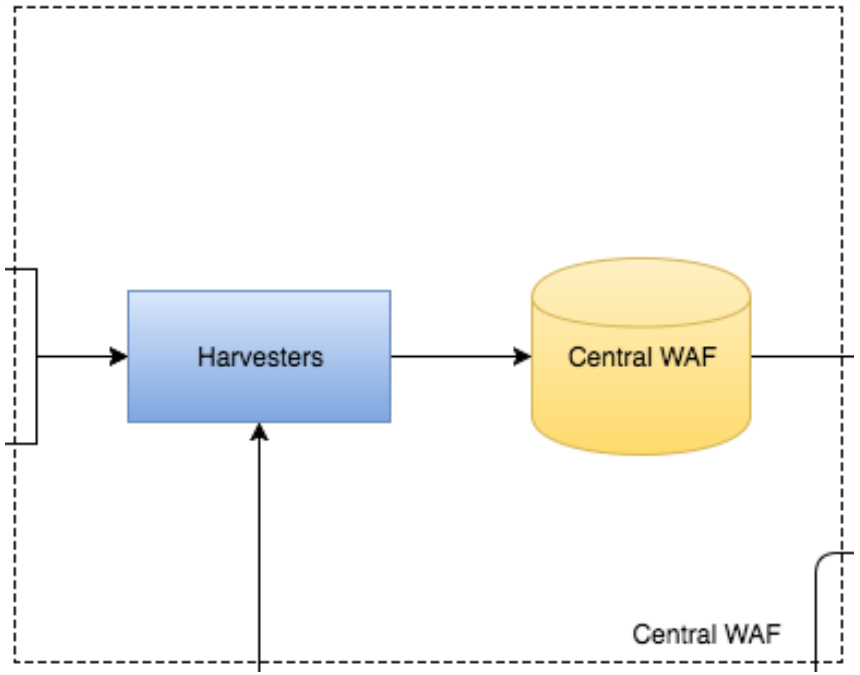
Central WAF



How it works

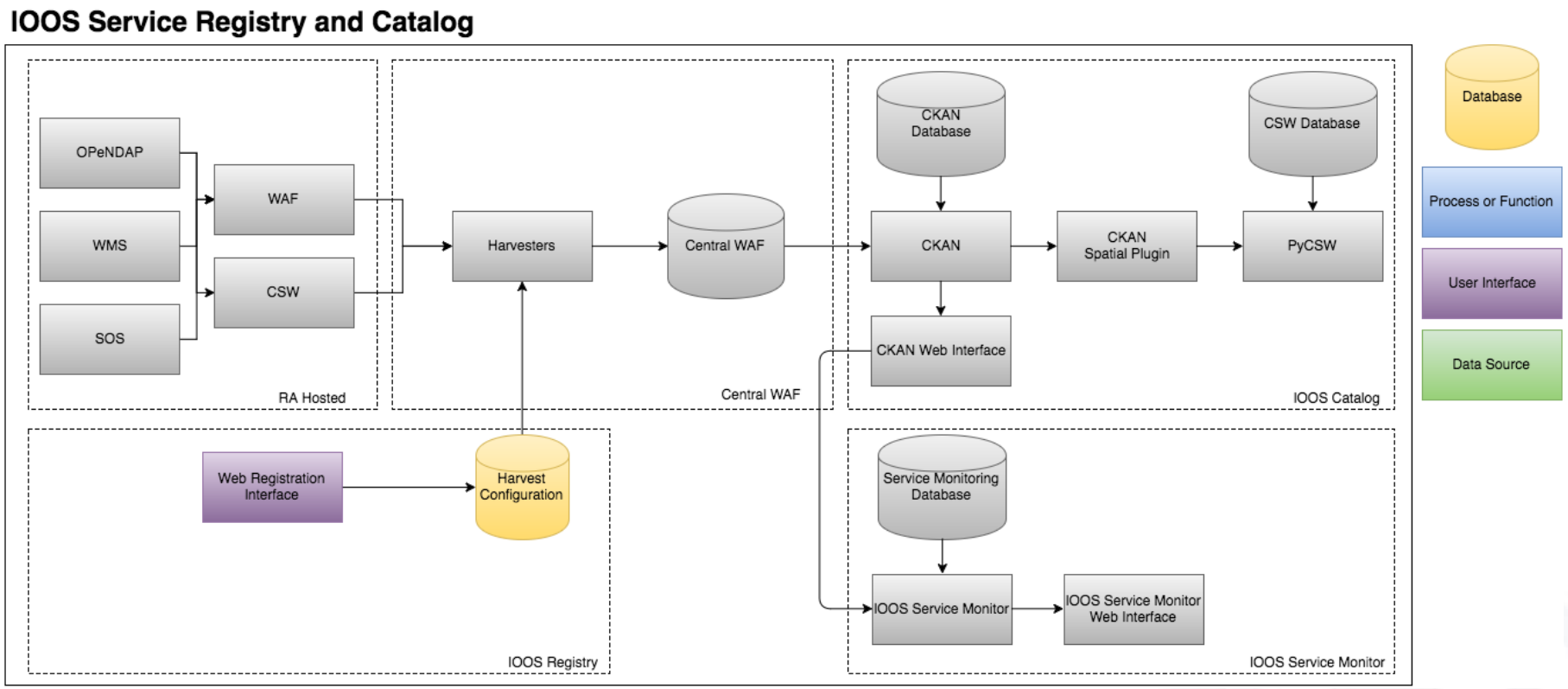
Central WAF

- Stores ALL ISO records for IOOS
- Synchronized through harvesters
- Configurable
- Future: Hierarchical



How it works

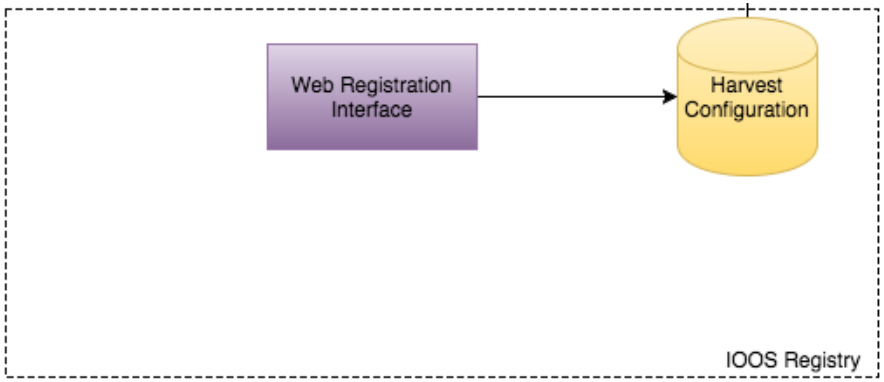
IOOS Registry



How it works

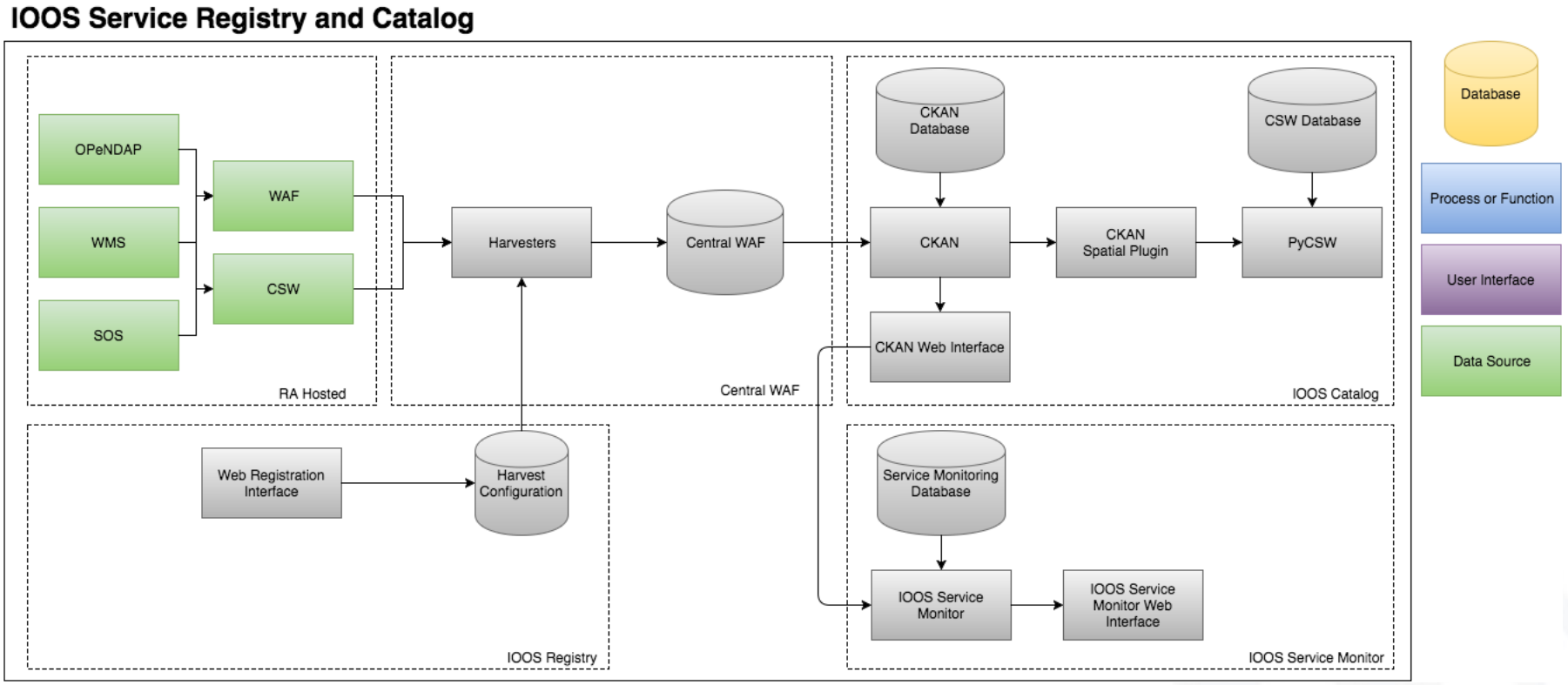
IOOS Registry (Future)

- Web interface for data providers to set up harvesting
- Receive notifications for errors and harvesting issues
- Metadata Checker



How it works

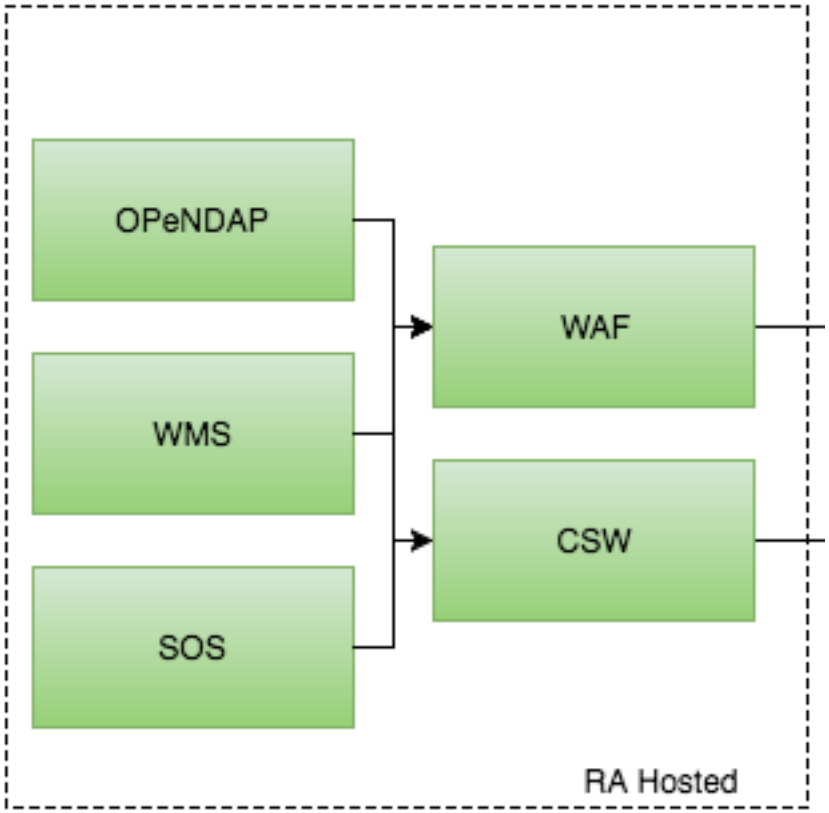
RA Hosted



How it works

RA and Partner Hosted WAF

- Expose datasets and services through a WAF
- Simple to create, simple to manage, simple to harvest
- CSW for the more advanced solutions



How it works

Harvesting Process Now:

- Manual curation of ISO records in central WAF at http://data.ioos.us/waf/
- CKAN harvesting of all records in WAF
- Changes to WAF are done by hand

Where we're heading

The short term

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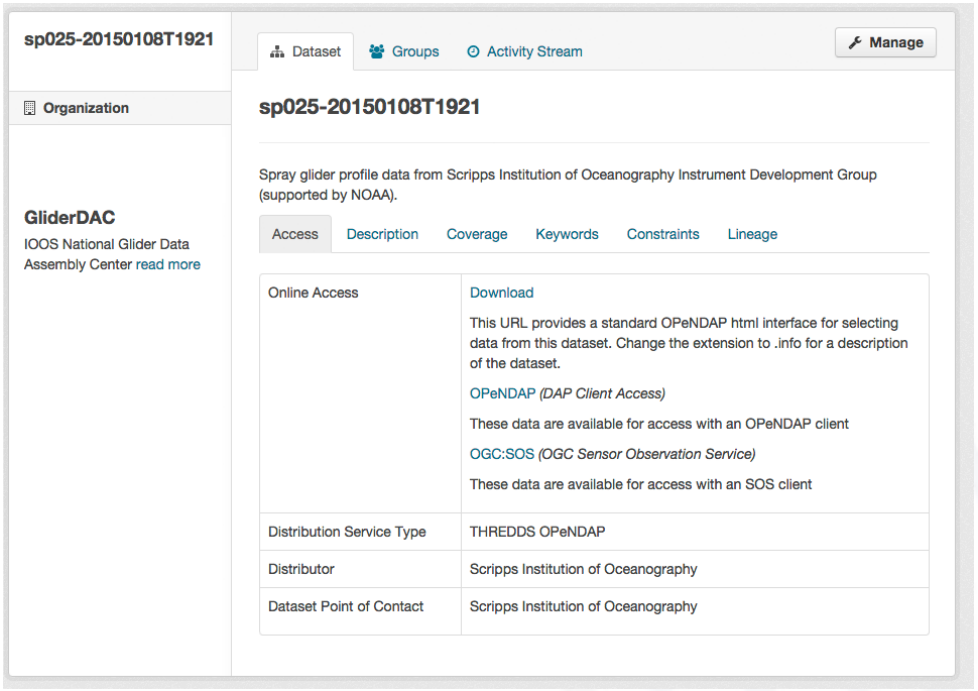
Where we're heading

- Providers Responsibilities
  - Create and publish a WAF
  - Hosting a CSW
- IOOS Catalog Responsibilities
  - Automated Harvesting from RA provided WAFs
  - Better metadata controls
    - Improving CKAN-Spatial for our ISO records

Where we're heading

- Pursue parallel development with NOAA Catalog, open source on github
- Better representation of our data within CKAN



Where we're heading

- Service Monitoring from CKAN sources

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To the future and beyond

Longer term solutions

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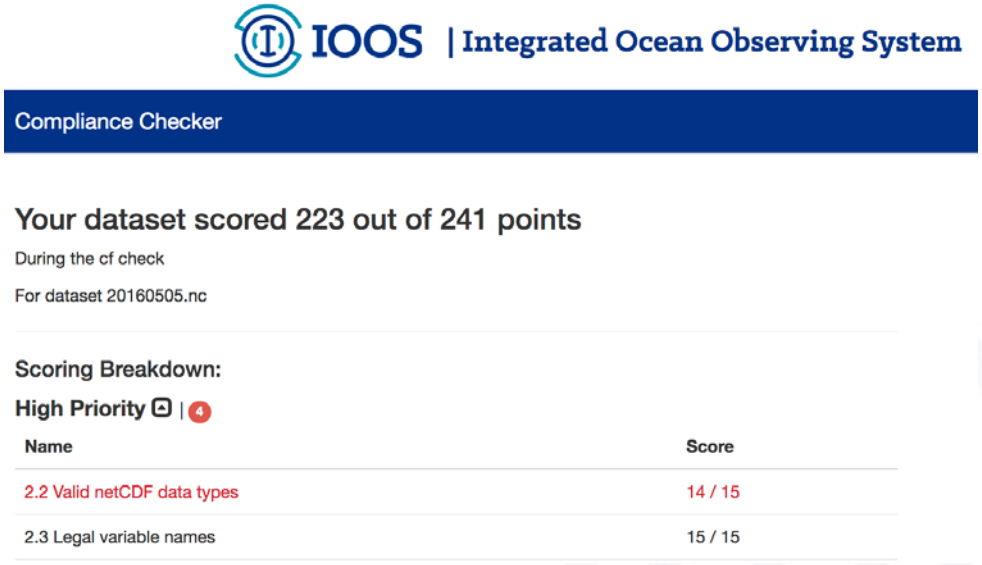
To the future and beyond

Registry tools

- Web tool for managing registered endpoints
- Harvest notifications
- Automated compliance checking



To the future and beyond

Catalog Integrations

great lakes observing system | Data Portal

Catalog | Map

toledo

Showing 1 to 4 of 4 entries

Category

- All
- Buoy & Station Obs.
- Climatology
- HABS
- Models
- Satellite
- Water Temperature
- Water Quality
- Nutrients
- Hydrologic

Date Range

- All
- +/- 2 Days
- Past 7 Days
- Past 30 Days
- Past 12 Months
- Next 48 Hours
- Specific Dates

Toledo Low Service Pump Station (tollsps)
Data from Toledo low service pump station for inclusion in GLOS Harmful Algal Bloom Viewer.
External links

City of Tol
Data from Tol
External li

Toledo Wa
GLOS in-situ b
Public Utilities
intake crib loc
External li

Little Ceda
Researchers a
environmental
habitat, econo
Board of Rege
External li

feedback

IOOS Environmental Sensor Map

Settings

Legend

Real-time sensors

Currently streaming: Water Temperature (°F)

Last update: May 31 2:30:21 PM EDT

Filter stations

Sensors: All sensors

Platforms: All platforms

Source menu

Source categories: All source categories

Service providers: All service providers

34804 stations / 34773 stations in view

Canada

North Pacific Ocean

North Atlantic Ocean

South Pacific

South Atlantic

Mexico

Cuba

Venezuela

Colombia

Ecuador

Perú

Brasil

Bolivia

Paraguay

Uruguay

Suriname

Cabo Verde

Liberia

Sierra Leone

Côte d'Ivoire

Solomon Islands

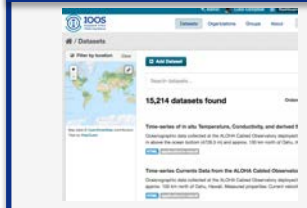
Sensor streaming statistical overview for on screen stations

Water Temperature 1,971,316 measurements at 2,579 stations

To the future and beyond

The Big Picture

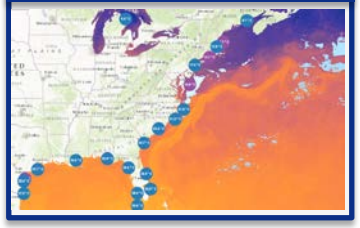
Discovery



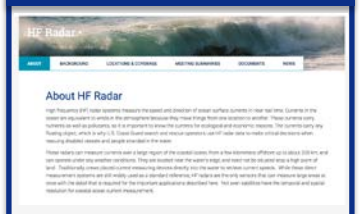
Sharing

Analysis

Visualization

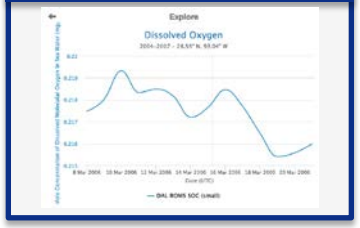


Research



Storytelling

Science



Communication

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Walkthrough and Questions