

Architecture Renovation

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WGISS-37

- Handed to a third-party agency for the operation in 2 years
 - Less labor / operation-free on catalog management
 - Easy Maintenance

- Outsource the entire catalog
 - CEOS IDN
 - GI-cat

- Dataset Level Catalog
 - Create **DIFs** for the entire datasets and ingest to **IDN**
 - DIF contains :
 - “project=waterportal” (to be replaced with “tagging”)
 - OSDD URL for granule level search on the specific dataset
 - ECV (variable name) in Keyword
- Granule Level Catalog
 - Harvest to **GI-cat** (OSS)
 - Harvestable :
 - OPeNDAP/THREDDS
 - CSW
 - OpenSearch
 - ISO19115-2/19139
 - etc.



- **Case 1 (basic case)**

- Dataset Search
 - MWS (Metadata Web Service by IDN/GCMD)
- Granule Search
 - OpenSearch (CEOS Water Portal catalog)

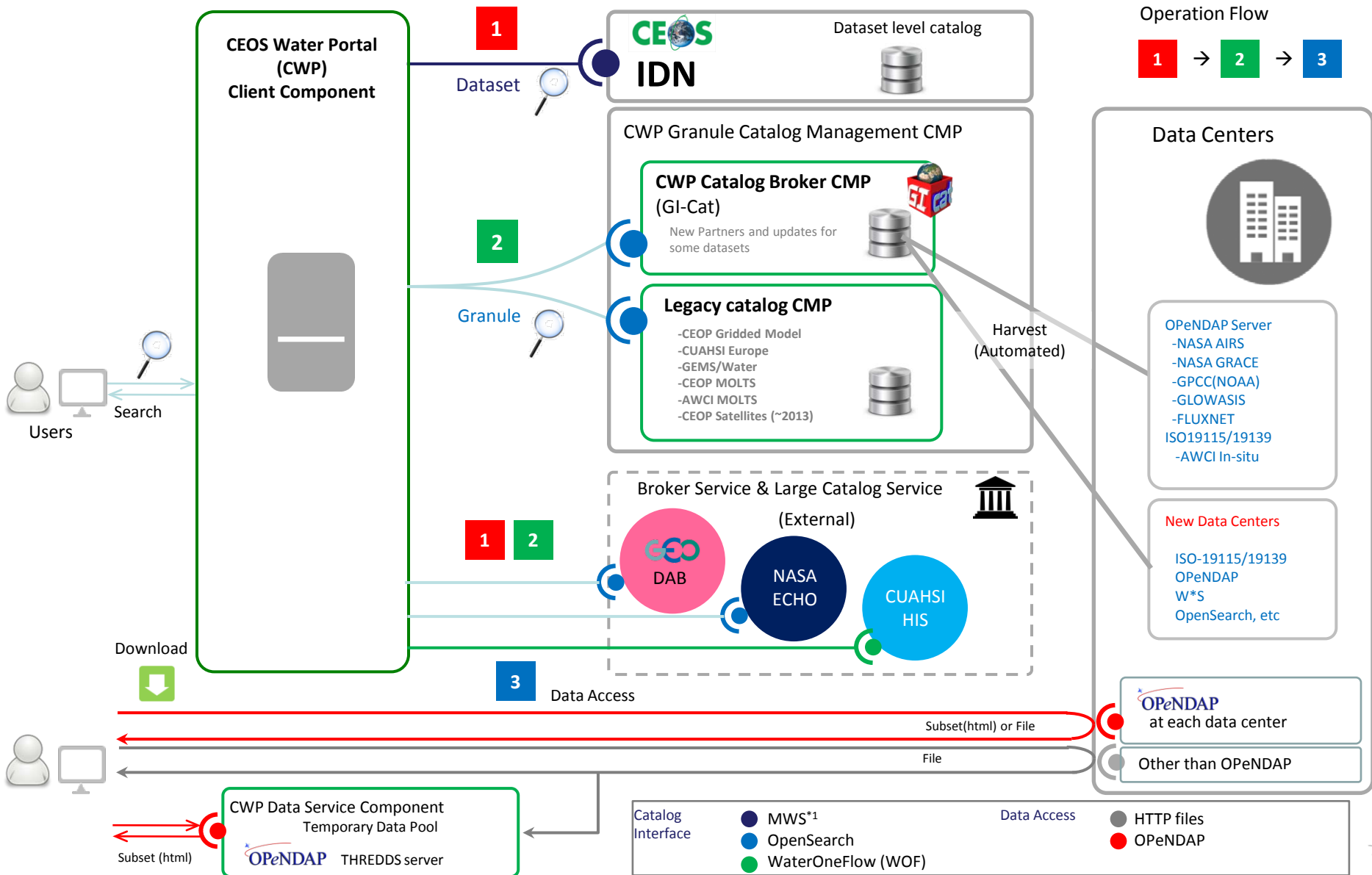


- **Case 2 (for external catalog brokers)**

- Dataset Search
 - OpenSearch (or else)
- Granule Search
 - OpenSearch (or else)

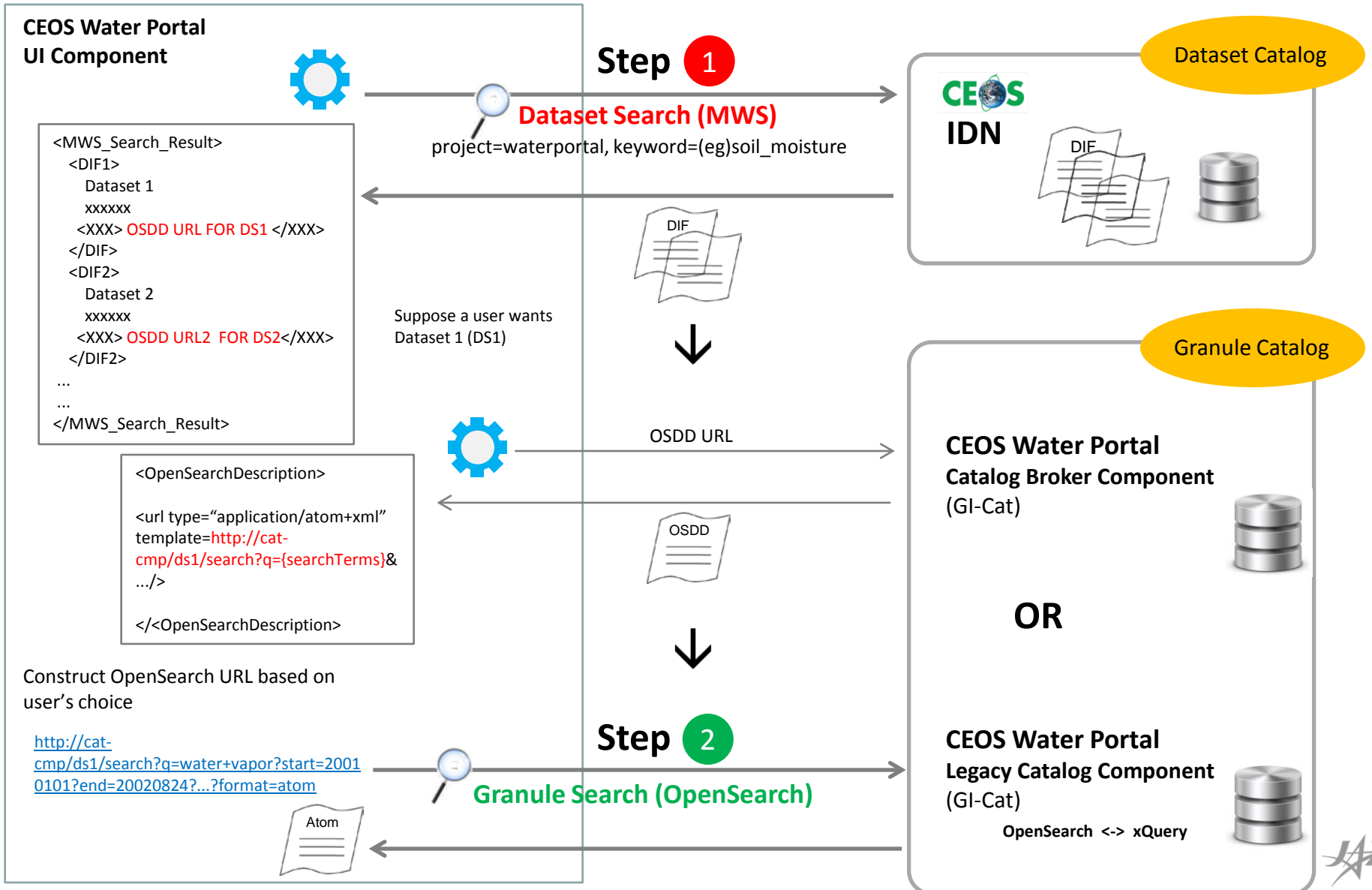


System Architecture



*1 MWS: Metadata Web Service, GCMD unique web service for metadata search (responses are DIF format).

2 step search : IDN MWS to OpenSearch





- Less operation labor
- Less work in adding new data partners
- Better search support for users
 - Free keyword, GCMD keyword, ECV (Essential Climate Variable)

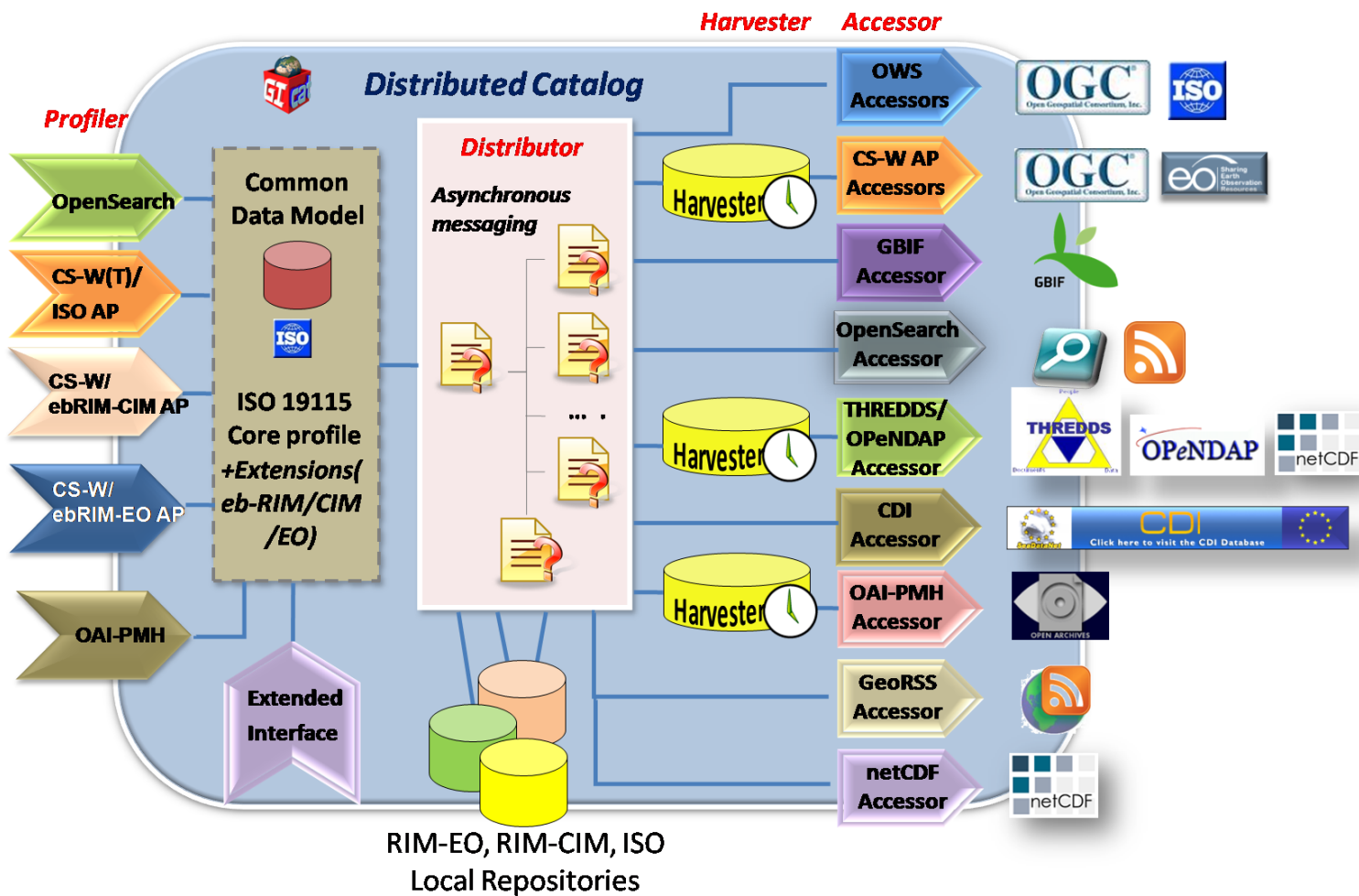


- Catalog/Data granularity
 - Variable -> File




Feasible ? Performance ? ...

- Tested with sample DIFs
- IDN MWS (Metadata Web Service)
 - Catalog Web Service provided by IDN (HTTP GET)
 - Search parameters used
 - GCMD Science Keyword
 - ECV Keyword (Ancillary Keyword in DIF)
 - Free Keyword
 - Time
 - Geographical Area
 - Project (= ceoswaterportal)
- Issue
 - Search with bbox not working (to be discussed with IDN team)
- Fast Search Response
- Works well !

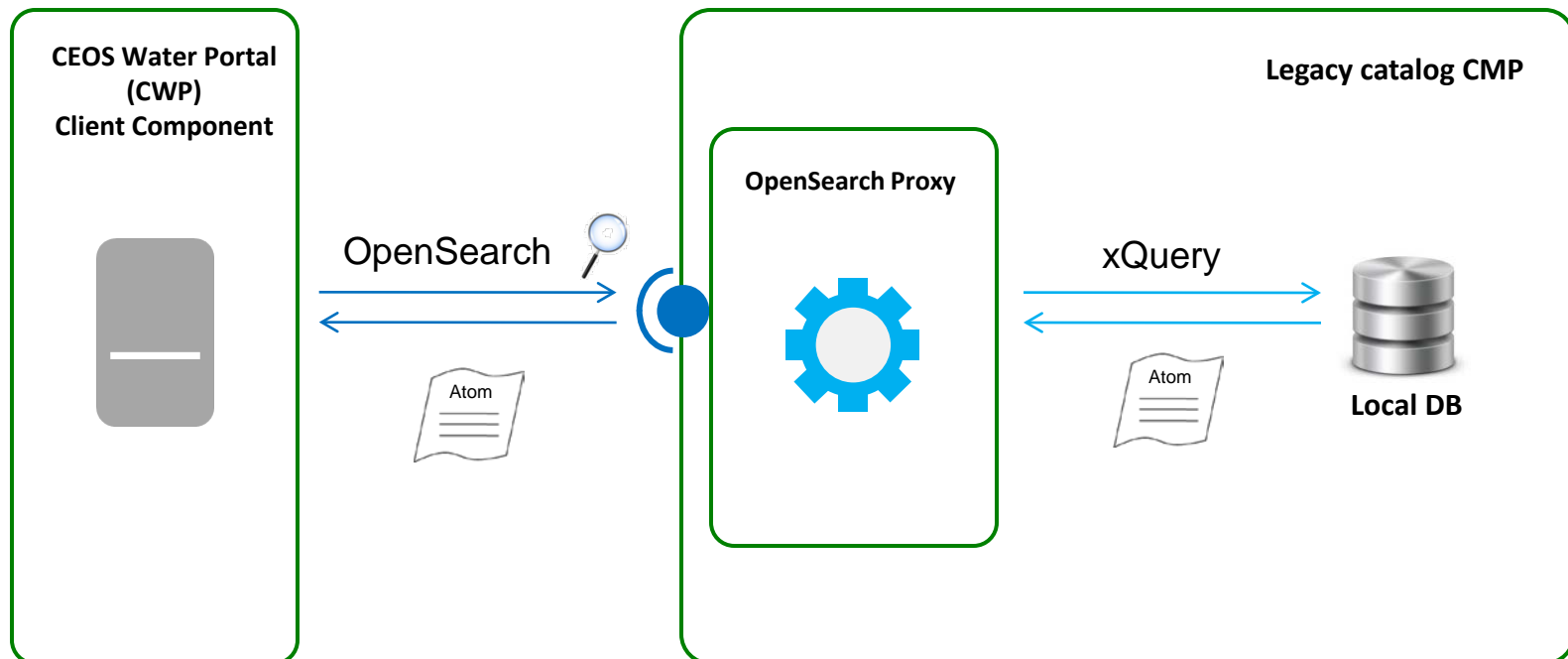


source: <http://essi-lab.eu/do/view/GIcat/GIcatDocumentation>

Data Source	Server Locations	Server type	GI-cat Harvestable ?
CEOP Satellite	University of Tokyo	Hyrax	YES
CEOP Model (MOLTS)	MPI (Germany)	THREDDS	YES
CEOP Model(Gridded)	MPI (Germany)	Jblob	NO
CEOP In-situ	NCAR (USA)	http link	NO
AWCI Model(MOLTS)	MPI (Germany)	THREDDS	YES
AWCI In-situ	University of Tokyo	Hyrax	YES
NASA OPeNDAP (AIRS)	NASA (GSFC)	Hyrax	YES
NOAA (GPCC)	NOAA (USA)	THREDDS	YES
NASA OPeNDAP (GRACE)	NASA/JPL(PO.DACC)	THREDDS	YES
FLUXNET	NASA (ORNL DAAC)	THREDDS	YES
GEMS/Water	GEMS/Water (CANADA)	WFS	NO
GLOWASIS	Deltares (Netherland)	THREDDS	YES

- Issues 
 - Unsupported data source
 - CEOP Gridded Model Output, GEMS/Water, etc.
 - Database robustness
 - Harvest error with 100,000+ files per single source
 - CEOP Satellite, CEOP Model Output Time Series
 - Time/Area search doesn't work with non-ncISO OPeNDAP/THREDDS servers

- Workarounds for unsupported data sources and those with large # of data
 - Keep local database and add OpenSearch interface



- Workarounds for data sources with missing Time/Area search capability
 - Use filename (tentative)
 - (Need to solicit support of nclSO to existing/candidate data partners)

Water Portal Client Prototype

Search Dataset Granule

Category/Keywords (required)

Category

GCMD ECV

- AGRICULTURE
- ATMOSPHERE
- BIOLOGICAL CLASSIFICATION
- BIOSPHERE
- CLIMATE INDICATORS
- CRYOSPHERE
- HUMAN DIMENSIONS
- LAND SURFACE
- OCEANS
- PALEOCLIMATE
- SOLID EARTH
- SPECTRAL/ENGINEERING
- SUN-EARTH INTERACTIONS
- TERRESTRIAL HYDROSPHERE

Free Keyword

Enter Keyword(s)

Spatial (optional)

North 53.33
 West 99.49 East 156.45
 South 15.28

clear

Temporal (optional)

Search Reset



Satellite Data

- Reference Site
- Monsoon Region
- NASA AIRS
- NASA GRACE
- GLOWASIS

In-situ Data

- AWCI
- CEOP
- CUAHSI
- FLUNXET
- GEMS/Water
- GPCC

Model Output Data

- AWCI (Time Series)
- CEOP (Time Series)
- CEOP (Grid Data)
- GLOWASIS

Detail Info

LBA-ECO ND-07 Microbial Biomass in Cerrado Soils, Brasilia, Brazil

Summary

ABSTRACT: This data set reports the microbial biomass in soil samples collected from the Cerrado, a woodlands-savannah area, in Brasilia, Brazil. Microbial biomass was determined as the total concentration of phospholipid fatty acids (PLFAs). Soil samples (0-5 cm) were collected from June, 2000 to June, 2001 in two native areas of Cerrado that were subjected to a range of fire regimes. Two plots were protected from fire since 1973, another two plots were subjected to prescribed fires every two years since 1990, and a fifth plot was in a 20 year-old active pasture (Bracharia brizantha). The analyses were conducted to determine the effects of fire regimes and changes in vegetation cover on the microbial communities of Cerrado soils. There is one comma-separated ASCII data file with this data set.

Data Center ORNL_DAAC

Short Name doi:10.3334/ORNLDAAC/1017

Version 1

SpatialExtent -15.9326 -47.6506 -15.5833 -47.7

Close

Search Dataset Granule

GCMD	
entry_title	detail
GLOWASIS Satellite Soil Moisture data	detail
Daily Surface Soil Moisture of GLOWASIS project	detail
CEOP Model Output Location Time Series (MOLTS) Aimiik site data set	detail
AWCI Model Output Location Time Series (MOLTS) Bilaspu site data set	detail

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NASA ECHO	
Title	detail
1 LBA-ECO ND-07 Microbial Biomass in Cerrado Soils, Brasilia, Brazil	detail
2 BOREAS TE-20 Soils Data over the NSA-MSA and Tower Sites in Raster Format	detail
3 BOREAS TE-20 Soils Data over the NSA-MSA and Tower Sites in Vector Format	detail
4 SAFARI 2000 Vegetation and Soils, 1-Deg (Wilson and Henderson-Sellers)	detail
5 LBA-ECO ND-07 Nitric Oxide Flux from Cerrado Soils, Brasilia, Brazil: 2004	detail
6 LBA-ECO ND-07 Carbon and Nitrogen in Cerrado Plants and Soils, Brasilia: 199 detail	
7 LBA-ECO ND-02 Cation Leaching from Forest and Pasture Soils, Para, Brazil	detail
8 A Global Database of Gas Fluxes from Soils after Rewetting or Thawing, Versio detail	
9 LBA Regional Vegetation and Soils, 1-Degree (Wilson and Henderson-Sellers)	detail
10 BOREAS Regional Soils Data in Raster Format and AEAC Projection	detail

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Search Dataset Granule

Granule Search	Updated
ASCIAT_AMBIEN_L4_SSM_V0_1_2010011310000000_vol_SSM.nc	2010-03-03 09:02
ASCIAT_AMBIEN_L4_SSM_V0_1_2010011300000000_vol_SSM.nc	2010-03-03 09:02
ASCIAT_AMBIEN_L4_SSM_V0_1_2010011200000000_vol_SSM.nc	2010-03-03 09:02
ASCIAT_AMBIEN_L4_SSM_V0_1_2010011100000000_vol_SSM.nc	2010-03-03 09:02
ASCIAT_AMBIEN_L4_SSM_V0_1_2010011000000000_vol_SSM.nc	2010-03-03 09:02
ASCIAT_AMBIEN_L4_SSM_V0_1_2010010900000000_vol_SSM.nc	2010-03-03 09:02
ASCIAT_AMBIEN_L4_SSM_V0_1_2010010800000000_vol_SSM.nc	2010-03-03 09:02
ASCIAT_AMBIEN_L4_SSM_V0_1_2010010700000000_vol_SSM.nc	2010-03-03 09:02
ASCIAT_AMBIEN_L4_SSM_V0_1_2010010600000000_vol_SSM.nc	2010-03-03 09:02
ASCIAT_AMBIEN_L4_SSM_V0_1_2010010500000000_vol_SSM.nc	2010-03-03 09:02
ASCIAT_AMBIEN_L4_SSM_V0_1_2010010400000000_vol_SSM.nc	2010-03-03 09:02
ASCIAT_AMBIEN_L4_SSM_V0_1_2010010300000000_vol_SSM.nc	2010-03-03 09:02
ASCIAT_AMBIEN_L4_SSM_V0_1_2010010200000000_vol_SSM.nc	2010-03-03 09:02
ASCIAT_AMBIEN_L4_SSM_V0_1_2010010100000000_vol_SSM.nc	2010-03-03 09:02

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- Will transition to the new architecture



- Transition this year (2014)
 - UI/UX adjustment
- IDN
 - 2,244 DIFs being ingested
 - Consider metadata tagging instead of “project=waterportal” in DIF
 - Replace MWS with OpenSearch for dataset Search
 - Possible to constrain search with a tag in IDN OpenSearch ?

- Q&A