

# **ESGF USER INTERFACE WORKING TEAM (ESGF-UIWT): PROGRESS UPDATE & FUTURE ROADMAP**

ESGF F2F Workshop,  
Monterey, CA, December 2015



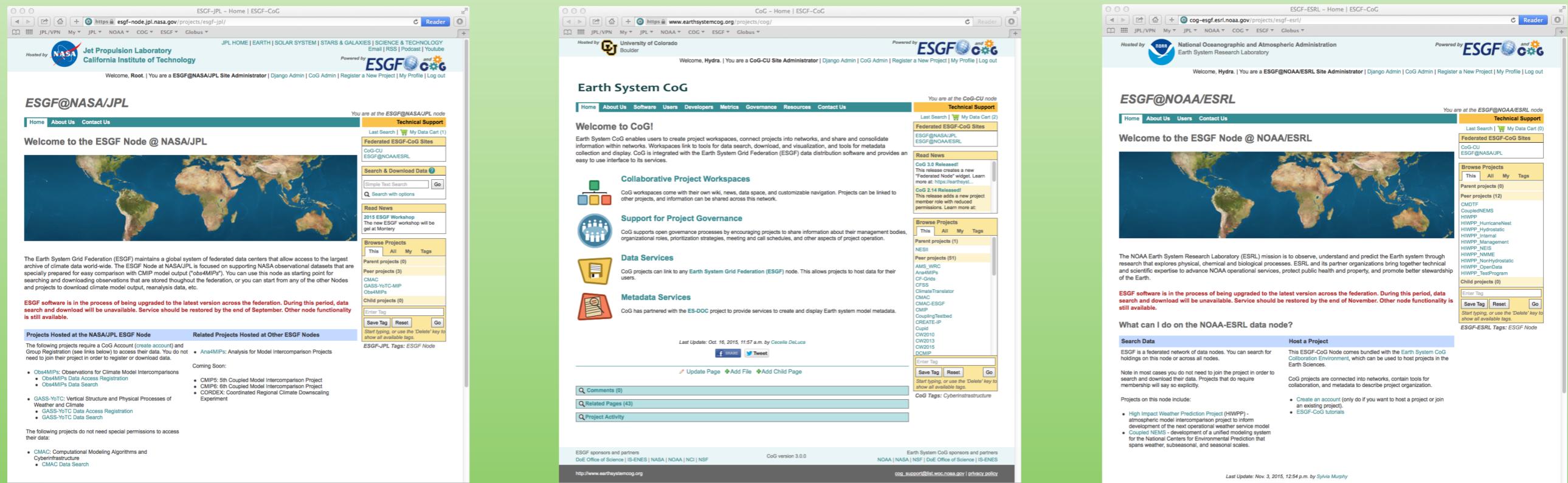
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# 2015 Progress Report

- Throughout 2015, the ESGF-UIWT has worked relentlessly towards the goal of making CoG the next generation ESGF User Interface
- The ESGF security crisis has somewhat “forced” a replacement that would have otherwise been slower and more controversial



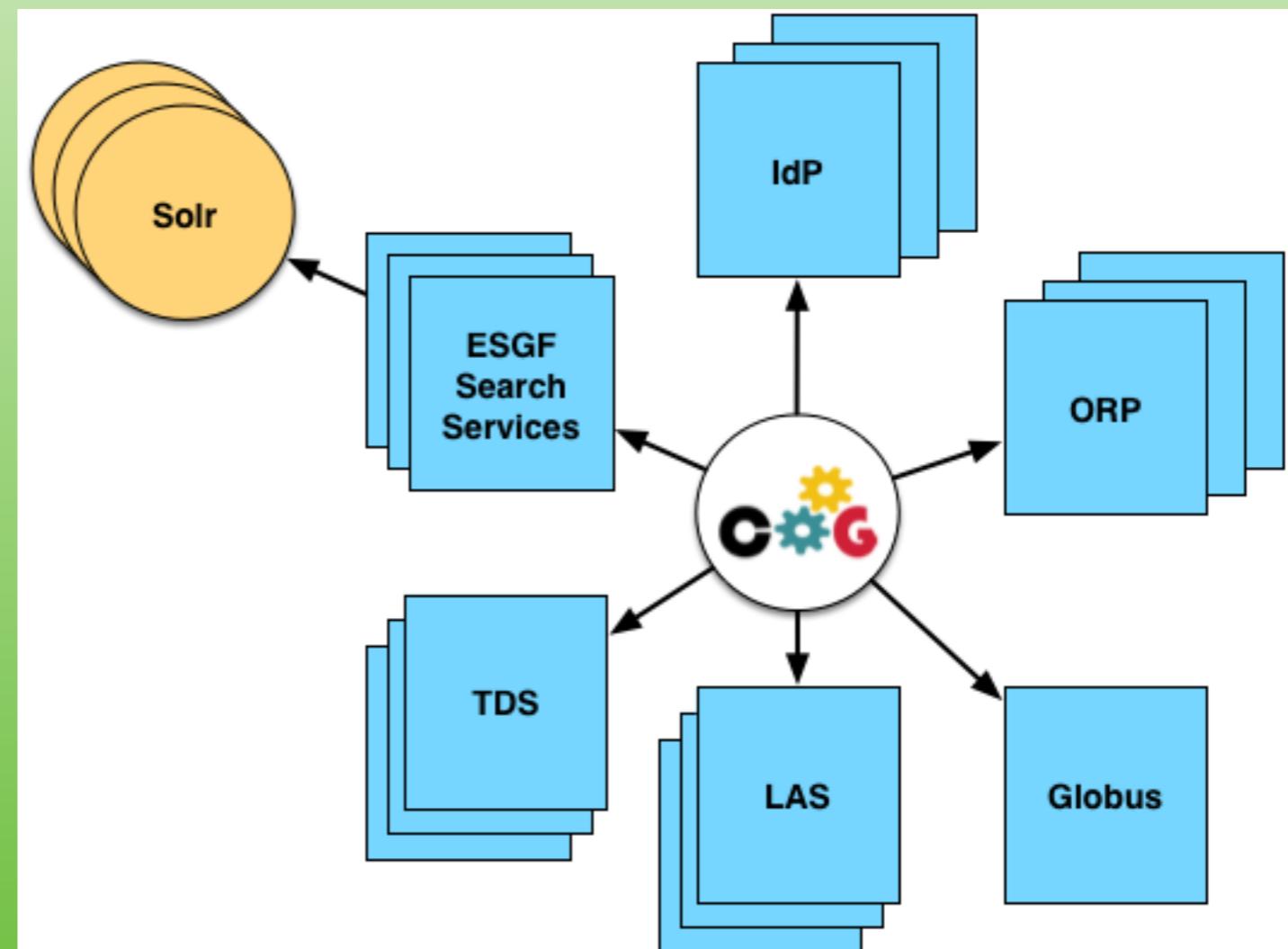
The figure displays three side-by-side screenshots of the Earth System CoG (CoG) user interface, showing different nodes of the federation:

- Left (NASA/JPL Node):** Hosted by NASA/JPL. The page shows a world map and various project sections like Collaborative Project Workspaces, Support for Project Governance, Data Services, and Metadata Services.
- Middle (University of Colorado Boulder Node):** Hosted by University of Colorado Boulder. This screenshot highlights the "Federated ESGF-CoG Sites" section, which lists other nodes such as ESGF@NASA/JPL and ESGF@NOAA/ESRL.
- Right (NOAA/ESRL Node):** Hosted by National Oceanographic and Atmospheric Administration (NOAA). It features a world map and a "Browse Projects" section listing various projects like CMIP5, CMIP6, and CORDEX.

- 2015: 16 CoG releases (major + patches)!
- See details at: <https://www.earthsystemcog.org/projects/cog/download/>

# 2015 Major Achievements

- Integration of CoG installation with ESGF installer
  - ▶ CoG and dependencies are now installed as part of ESGF 2.X software stack
  - ▶ CoG runs behind Apache httpd through mod\_wsgi
  - ▶ CoG provides an entry point for human users into the other ESGF services and engines such as Search, ORP, IdP, TDS, LAS, Globus, etc...
  - ▶ Note: the same esgf-cog script can be run standalone to upgrade CoG outside of ESGF release



# 2015 Major Achievements

- Improved and evolved the CoG federation model
  - ▶ Exchange of information among nodes (projects, users, tags)
  - ▶ Admin UI for selecting peer nodes and triggering synchronization of information
  - ▶ SSO via OpenID including sites that have ESGF-signed certificates
  - ▶ Support IdP selector on login page
  - ▶ UI to facilitate user registration with ESGF access control groups

**Federated ESGF-CoG Sites**

CoG-CU  
ESGF@NOAA/ESRL

**Browse Projects**

This    All    My    Tags

Ana4MIPs  
CFSS  
Climate-Indices  
Climate\_Informatics  
climatehealth  
ClimateTranslator  
climatewater  
CMAC  
CMDTF  
CMIP5QC  
CoG  
CoupledNEMS  
CouplingTestbed  
CREATE-IP  
Cupid  
CW2010  
CW2013  
CW2015  
DCMIP

Enter Tag

Save Tag    Reset    Go

Start typing, or use the 'Delete' key to show all available tags.

ESGF-JPL Tags: ESGF Node

## CoG Peers Configuration

Use the check-boxes below to enable displaying of projects from remote CoG peers.

CoG Peer Nodes		
Site name	Domain	Enable?
CoG-CU	www.earthsystemcog.org	<input checked="" type="checkbox"/>
ESGF@NOAA/ESRL	cog-esgf.esrl.noaa.gov	<input checked="" type="checkbox"/>
ESGF@DOE/LLNL	pcmdi9.llnl.gov	<input type="checkbox"/>

[Reset](#)    [Submit](#)

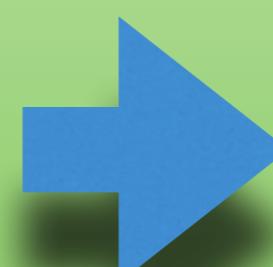
[Synchronize with Peer CoGs Now](#)

## CoG Peer Nodes Synchronization

Synchronization Report					
Site Name	Domain	Number of Projects	Number of Users	Report Document	Sync Status
CoG-CU	www.earthsystemcog.org	92	237	<a href="#">Shared Projects</a>	OK
ESGF@NASA/JPL	esgf-node.jpl.nasa.gov	1	26	<a href="#">Shared Projects</a>	OK
ESGF@NOAA/ESRL	cog-esgf.esrl.noaa.gov	17	846	<a href="#">Shared Projects</a>	OK
Total		110	1109		

# 2015 Major Achievements

- Improvement and upgrade of interface to ESGF Search Services
  - ▶ New admin features for customizing each project-level search
  - ▶ Improvements to search UI: bread crumbing, “last search”, selection of multiple options per facet, export of results as XML or JSON, display of Tech-Notes
  - ▶ Many usability improvements to Data Cart
  - ▶ Support for “local shard” (targeting local shard to find files to download)



Screenshot of the Obs4MIPs Data Search interface (https://www.earthsystemcog.org/search/obs4mips/). The page shows a search bar with 'Enter Text:' and a dropdown for 'results per page' set to 10. A 'Technical Support' button is highlighted in yellow. The main content area displays a list of datasets with details like name, version, data node, and file metadata links.

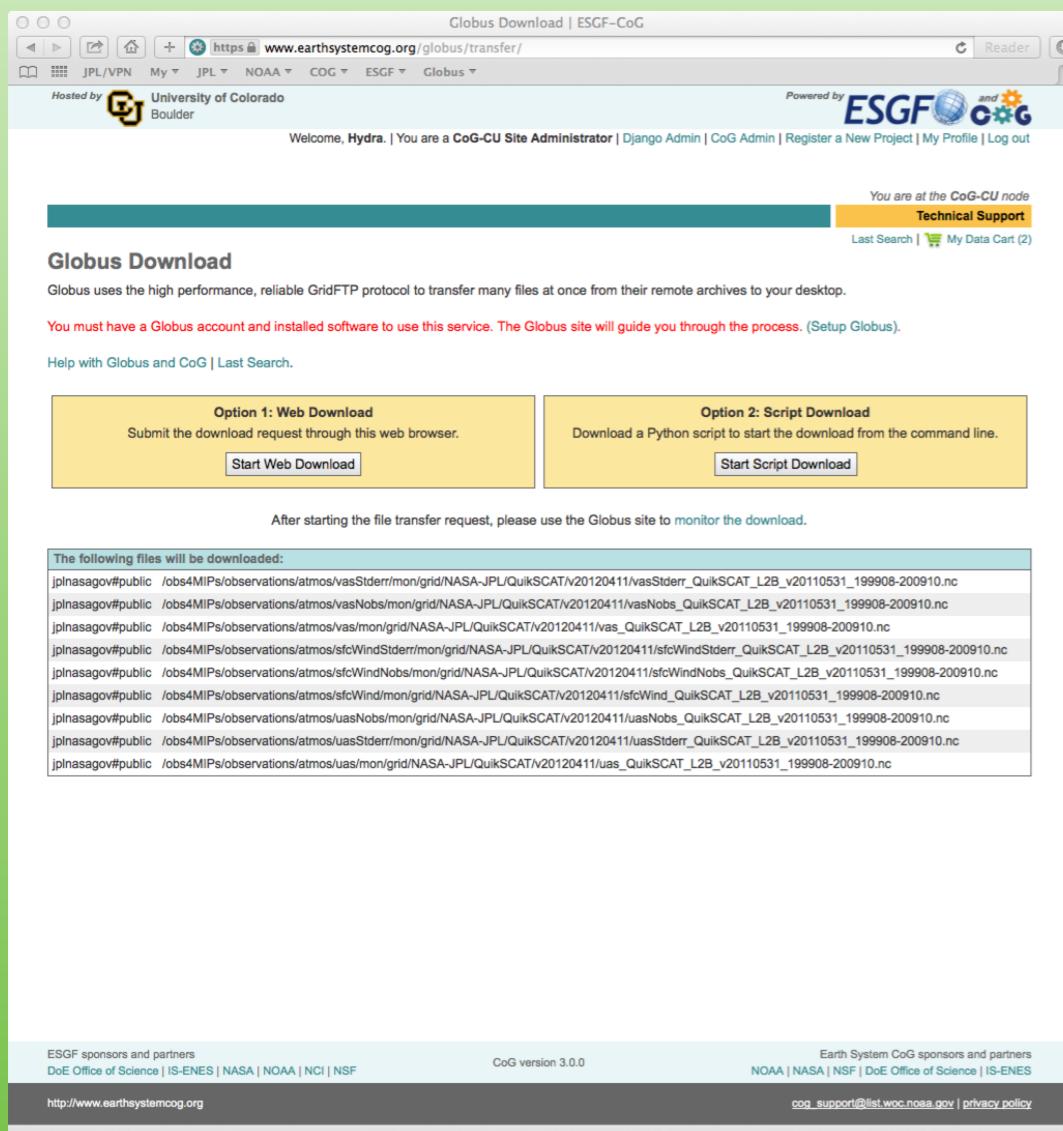
Dataset	Version	Data Node	File Metadata
obs4MIPs NASA-JPL QuikSCAT L2B Monthly Data	1	esgf-node.jpl.nasa.gov	[Show Metadata] [Show Files] [THREDDS Catalog] [WGET Script] [LAS Visualization] [Tech Note]
obs4MIPs NASA-GSFC MODIS L3 Monthly Data	1	esgf-node.jpl.nasa.gov	[Show Metadata] [Show Files] [THREDDS Catalog] [WGET Script] [LAS Visualization] [Tech Note] [Globus Download]
obs4MIPs NASA-JPL TES L3 Monthly Data	1	esgf-node.jpl.nasa.gov	[Show Metadata] [Show Files] [THREDDS Catalog] [WGET Script] [LAS Visualization] [Tech Note] [Globus Download]
obs4MIPs NASA-JPL AIRS L3 Monthly Data	1	esgf-node.jpl.nasa.gov	[Show Metadata] [Show Files] [THREDDS Catalog] [WGET Script] [LAS Visualization] [Tech Note]
obs4MIPs REMSS AMSRE L3 Monthly Data	1	esgf-node.jpl.nasa.gov	[Show Metadata] [Show Files] [THREDDS Catalog] [WGET Script] [LAS Visualization] [Tech Note]
obs4MIPs CNES AVISO L4 Monthly Data	1	esgf-node.jpl.nasa.gov	[Show Metadata] [Show Files] [THREDDS Catalog] [WGET Script] [LAS Visualization] [Tech Note]

Screenshot of the My DataCart interface (https://www.earthsystemcog.org/datacart/display/1/1). The page shows a list of selected datasets with their file metadata and download links. A 'Technical Support' button is highlighted in yellow.

Dataset	Version	Data Node	File Metadata
obs4MIPs NASA-JPL QuikSCAT L2B Monthly Data	1	esgf-node.jpl.nasa.gov	[Show Metadata] [Show Files] [THREDDS Catalog] [WGET Script] [LAS Visualization] [Tech Note]
obs4MIPs NASA-GSFC MODIS L3 Monthly Data	1	esgf-node.jpl.nasa.gov	[Show Metadata] [Show Files] [THREDDS Catalog] [WGET Script] [LAS Visualization] [Tech Note] [Globus Download]
obs4MIPs NASA-JPL TES L3 Monthly Data	1	esgf-node.jpl.nasa.gov	[Show Metadata] [Show Files] [THREDDS Catalog] [WGET Script] [LAS Visualization] [Tech Note] [Globus Download]
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obs4MIPs REMSS AMSRE L3 Monthly Data	1	esgf-node.jpl.nasa.gov	[Show Metadata] [Show Files] [THREDDS Catalog] [WGET Script] [LAS Visualization] [Tech Note]
obs4MIPs CNES AVISO L4 Monthly Data	1	esgf-node.jpl.nasa.gov	[Show Metadata] [Show Files] [THREDDS Catalog] [WGET Script] [LAS Visualization] [Tech Note]

# 2015 Major Achievements

- Integration with Globus online service for data download
  - ▶ Major improvement in usability, performance, portability (no more wget!)
  - ▶ For now, it works only for public data (no additional authorization required)
  - ▶ Thanks to: Lukasz, Rachana @ ANL, Brian Knosp, Robert Ferraro, Luca @ JPL



Globus Download | ESGF-CoG

Welcome, Hydra. | You are a CoG-CU Site Administrator | Django Admin | CoG Admin | Register a New Project | My Profile | Log out

Hosted by University of Colorado Boulder. Powered by ESGF and CoG

You are at the CoG-CU node. Technical Support. Last Search | My Data Cart (2)

**Globus Download**

Globus uses the high performance, reliable GridFTP protocol to transfer many files at once from their remote archives to your desktop.

You must have a Globus account and installed software to use this service. The Globus site will guide you through the process. (Setup Globus).

Help with Globus and CoG | Last Search.

**Option 1: Web Download**  
Submit the download request through this web browser.  
[Start Web Download](#)

**Option 2: Script Download**  
Download a Python script to start the download from the command line.  
[Start Script Download](#)

After starting the file transfer request, please use the Globus site to monitor the download.

The following files will be downloaded:

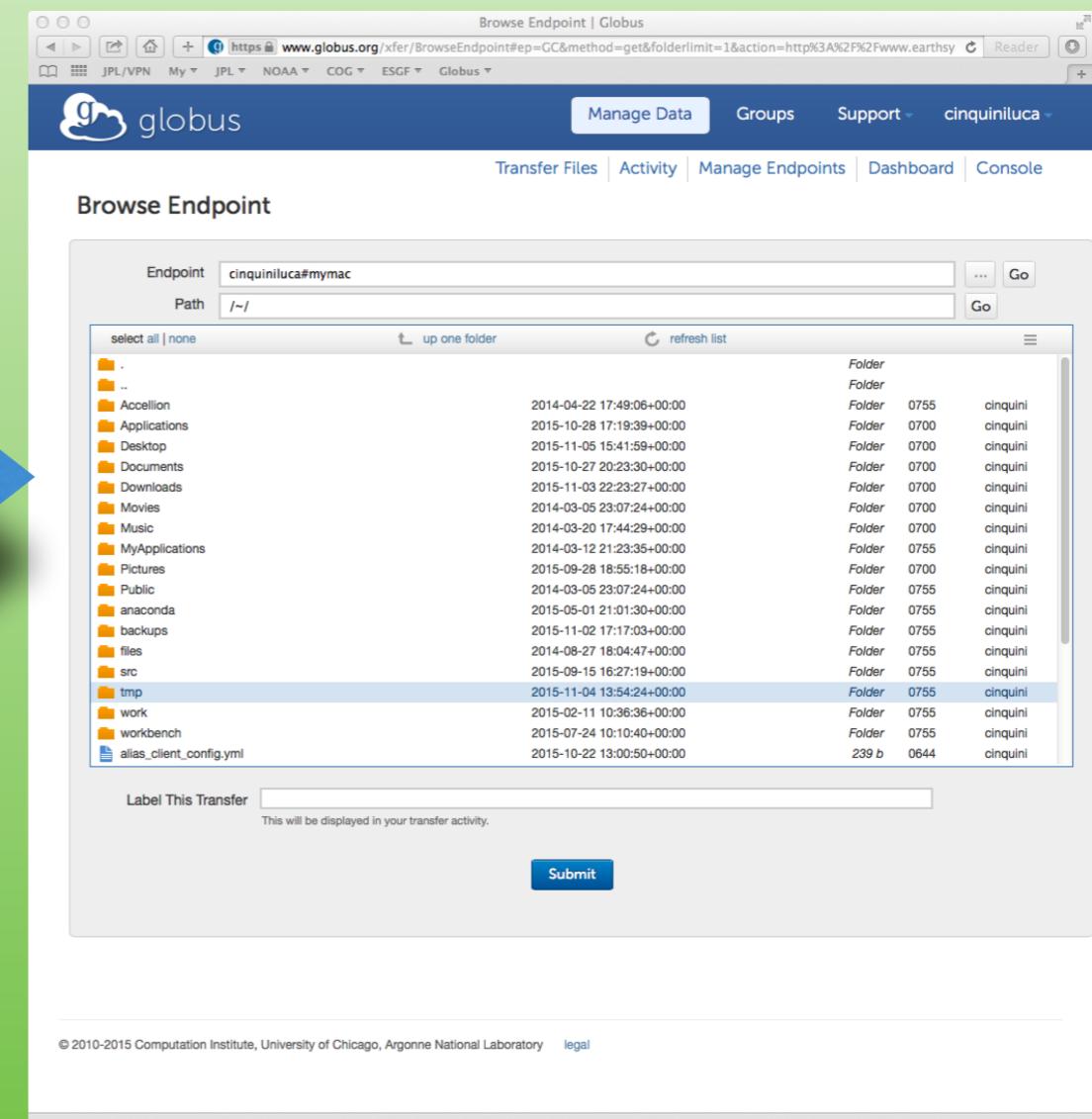
```
jplnasagov#public /obs4MIPs/observations/atmos/vasStderr/mon/grid/NASA-JPL/QuikSCAT/v20120411/vasStderr_QuikSCAT_L2B_v20110531_199908-200910.nc
jplnasagov#public /obs4MIPs/observations/atmos/vasNobs/mon/grid/NASA-JPL/QuikSCAT/v20120411/vasNobs_QuikSCAT_L2B_v20110531_199908-200910.nc
jplnasagov#public /obs4MIPs/observations/atmos/vas/mon/grid/NASA-JPL/QuikSCAT/v20120411/vas_QuikSCAT_L2B_v20110531_199908-200910.nc
jplnasagov#public /obs4MIPs/observations/atmos/sfcWindStderr/mon/grid/NASA-JPL/QuikSCAT/v20120411/sfcWindStderr_QuikSCAT_L2B_v20110531_199908-200910.nc
jplnasagov#public /obs4MIPs/observations/atmos/sfcWindNobs/mon/grid/NASA-JPL/QuikSCAT/v20120411/sfcWindNobs_QuikSCAT_L2B_v20110531_199908-200910.nc
jplnasagov#public /obs4MIPs/observations/atmos/sfcWind/mon/grid/NASA-JPL/QuikSCAT/v20120411/sfcWind_QuikSCAT_L2B_v20110531_199908-200910.nc
jplnasagov#public /obs4MIPs/observations/atmos/vasNobs/mon/grid/NASA-JPL/QuikSCAT/v20120411/vasNobs_QuikSCAT_L2B_v20110531_199908-200910.nc
jplnasagov#public /obs4MIPs/observations/atmos/vasStderr/mon/grid/NASA-JPL/QuikSCAT/v20120411/vasStderr_QuikSCAT_L2B_v20110531_199908-200910.nc
jplnasagov#public /obs4MIPs/observations/atmos/vas/mon/grid/NASA-JPL/QuikSCAT/v20120411/vas_QuikSCAT_L2B_v20110531_199908-200910.nc
```

ESGF sponsors and partners  
DoE Office of Science | IS-ENES | NASA | NOAA | NCI | NSF

CoG version 3.0.0

Earth System CoG sponsors and partners  
NOAA | NASA | NSF | DoE Office of Science | IS-ENES

<http://www.earthsystemcog.org> [cog\\_support@list.woc.noaa.gov](mailto:cog_support@list.woc.noaa.gov) | [privacy policy](#)



Browse Endpoint | Globus

Manage Data Groups Support cinquiniluca

Transfer Files Activity Manage Endpoints Dashboard Console

**Browse Endpoint**

Endpoint:  Go

Path:  Go

select all   none	up one folder	refresh list	Folder	Folder	cinquiniluca
.			Folder	0755	cinquiniluca
..			Folder	0700	cinquiniluca
Accellion			Folder	0700	cinquiniluca
Applications			Folder	0700	cinquiniluca
Desktop			Folder	0700	cinquiniluca
Documents			Folder	0700	cinquiniluca
Downloads			Folder	0700	cinquiniluca
Movies			Folder	0700	cinquiniluca
Music			Folder	0700	cinquiniluca
MyApplications			Folder	0755	cinquiniluca
Pictures			Folder	0700	cinquiniluca
Public			Folder	0755	cinquiniluca
anaconda			Folder	0755	cinquiniluca
backups			Folder	0755	cinquiniluca
files			Folder	0755	cinquiniluca
src			Folder	0755	cinquiniluca
tmp			Folder	0755	cinquiniluca
work			Folder	0755	cinquiniluca
workbench			Folder	0755	cinquiniluca
alias_client_config.yml			239 b	0644	cinquiniluca

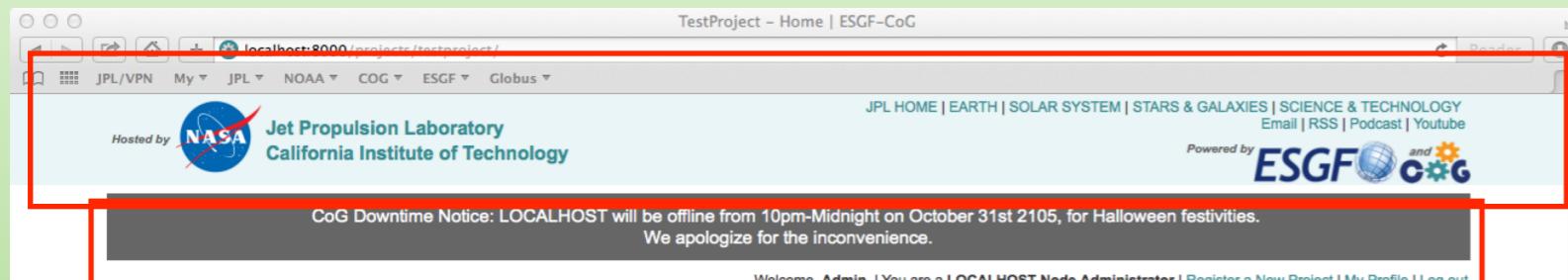
Label This Transfer   
This will be displayed in your transfer activity.

Submit

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# 2015 Major Achievements

- Support for Node specific customization
  - ▶ Leverages Django's template loading mechanism
  - ▶ Includes header, footer, notification banner, data access licenses



TestProject – Home | ESGF-CoG

Hosted by NASA Jet Propulsion Laboratory California Institute of Technology

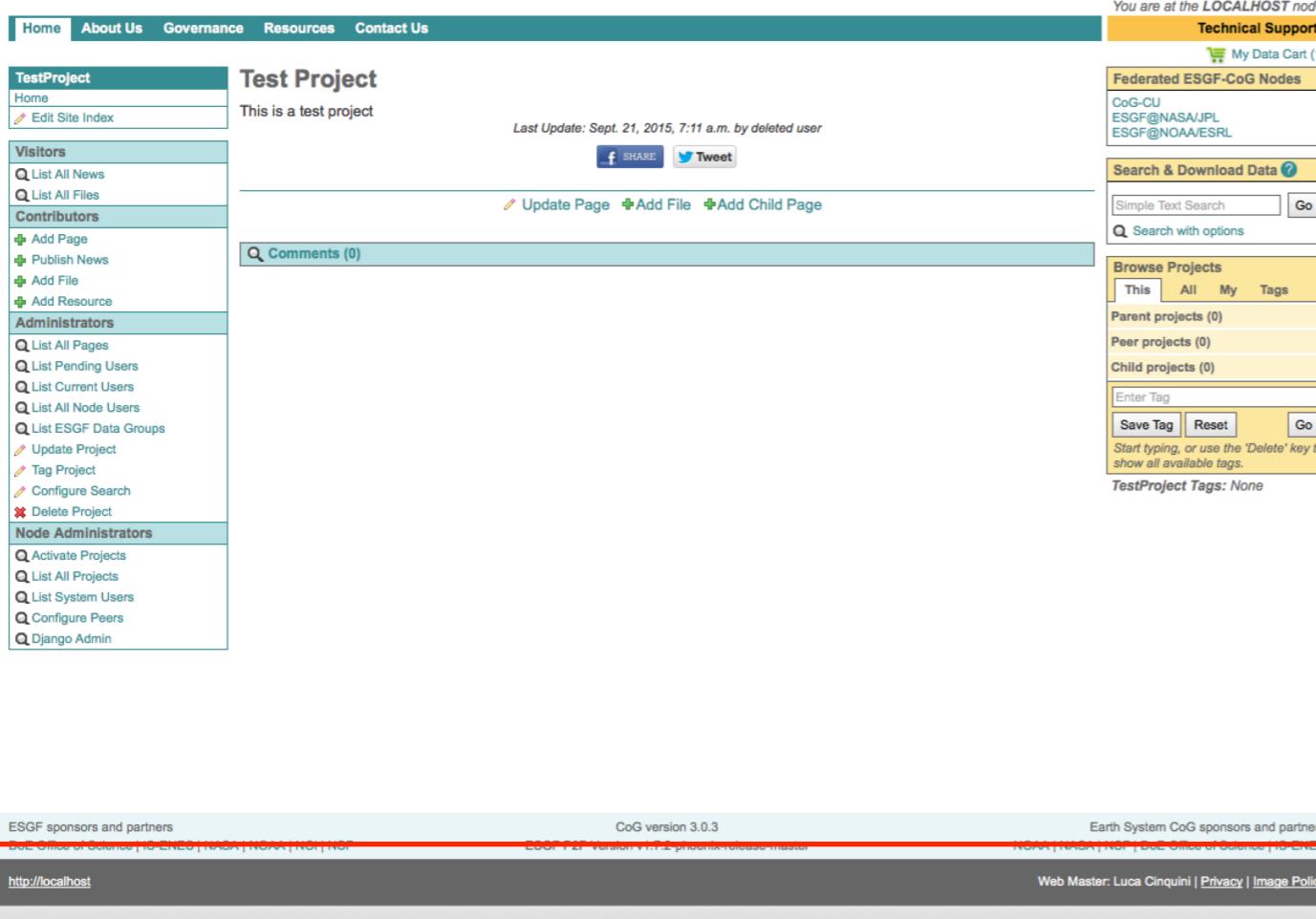
JPL HOME | EARTH | SOLAR SYSTEM | STARS & GALAXIES | SCIENCE & TECHNOLOGY  
Email | RSS | Podcast | Youtube

Powered by ESGF and CoG

CoG Downtime Notice: LOCALHOST will be offline from 10pm-Midnight on October 31st 2105, for Halloween festivities.  
We apologize for the inconvenience.

Welcome, Admin. | You are a LOCALHOST Node Administrator | Register a New Project | My Profile | Log out

## Test Project



Test Project

This is a test project

Last Update: Sept. 21, 2015, 7:11 a.m. by deleted user

SHARE Tweet

Update Page Add File Add Child Page

Comments (0)

You are at the LOCALHOST node

Technical Support

My Data Cart (1)

Federated ESGF-CoG Nodes

CoG-CU  
ESGF@NASA/JPL  
ESGF@NOAA/ESRL

Search & Download Data

Simple Text Search Go

Search with options

Browse Projects

This All My Tags

Parent projects (0)

Peer projects (0)

Child projects (0)

Enter Tag Save Tag Reset Go

Start typing, or use the 'Delete' key to show all available tags.

TestProject Tags: None

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CoG version 3.0.3

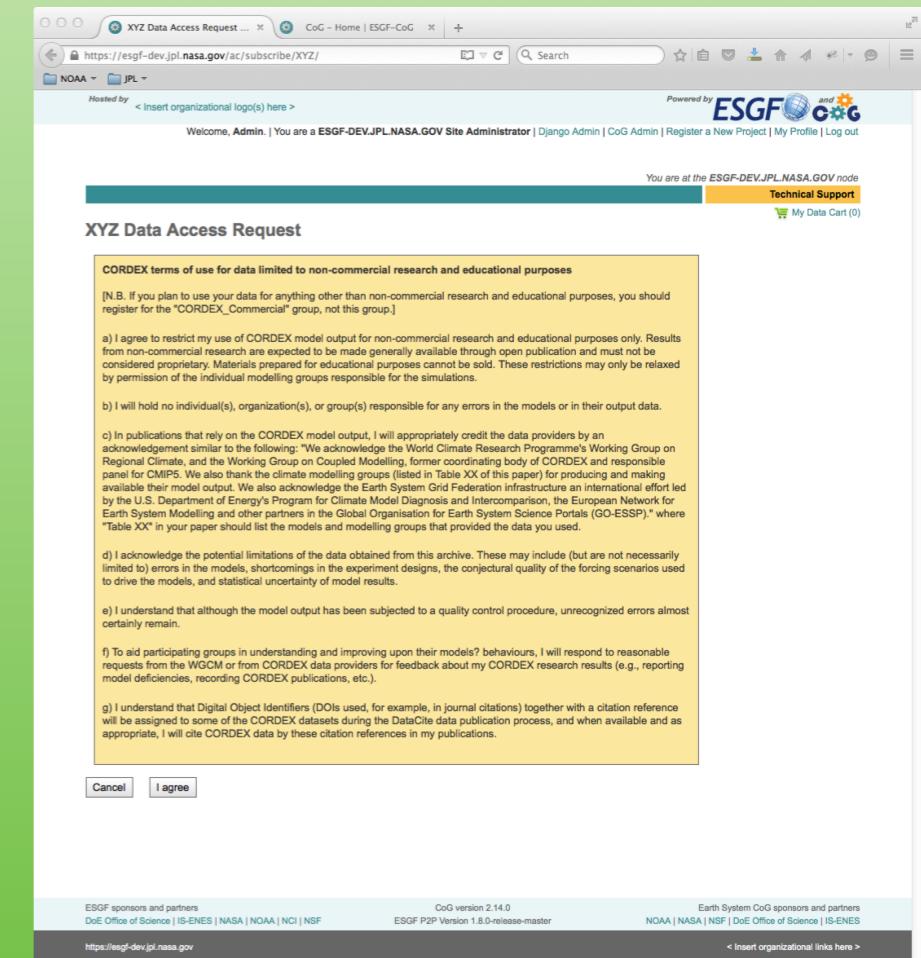
ESGF P2P Version 1.1.2-phoenix-release-master

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Web Master: Luca Cinquini | Privacy | Image Policy

http://localhost



XYZ Data Access Request ... CoG – Home | ESGF-CoG

Hosted by < Insert organizational logo(s) here >

Welcome, Admin. | You are a ESGF-DEV.JPL.NASA.GOV Site Administrator | Django Admin | CoG Admin | Register a New Project | Log out

You are at the ESGF-DEV.JPL.NASA.GOV node

Technical Support

My Data Cart (0)

XYZ Data Access Request

CORDEX terms of use for data limited to non-commercial research and educational purposes

[N.B. If you plan to use your data for anything other than non-commercial research and educational purposes, you should register for the "CORDEX\_Commercial" group, not this group.]

a) I agree to restrict my use of CORDEX model output for non-commercial research and educational purposes only. Results from non-commercial research are expected to be made generally available through open publication and must not be considered proprietary. Materials prepared for educational purposes cannot be sold. These restrictions may only be relaxed by permission of the individual modelling groups responsible for the simulations.

b) I will hold no individual(s), organization(s), or group(s) responsible for any errors in the models or in their output data.

c) In publications that rely on the CORDEX model output, I will appropriately credit the data providers by an acknowledgement similar to the following: "We acknowledge the World Climate Research Programme's Working Group on Regional Climate, and the Working Group on Coupled Modelling, former coordinating body of CORDEX and responsible panel for CMIP5. We also thank the climate modelling groups (listed in Table XX of this paper) for producing and making available their model output. We also acknowledge the Earth System Grid Federation infrastructure an international effort led by the U.S. Department of Energy's Program for Climate Model Diagnosis and Intercomparison, the European Network for Earth System Modelling and other partners in the Global Organisation for Earth System Science Portals (GO-ESSP)." where "Table XX" in your paper should list the models and modelling groups that provided the data you used.

d) I acknowledge the potential limitations of the data obtained from this archive. These may include (but are not necessarily limited to) errors in the models, shortcomings in the experiment designs, the conjectural quality of the forcing scenarios used to drive the models, and statistical uncertainty of model results.

e) I understand that although the model output has been subjected to a quality control procedure, unrecognized errors almost certainly remain.

f) To aid participating groups in understanding and improving upon their models' behaviours, I will respond to reasonable requests from the WCRP or from CORDEX data providers for feedback about my CORDEX research results (e.g., reporting model deficiencies, recording CORDEX publications, etc.).

g) I understand that Digital Object Identifiers (DOIs used, for example, in journal citations) together with a citation reference will be assigned to some of the CORDEX datasets during the DataCite data publication process, and when available and as appropriate, I will cite CORDEX data by these citation references in my publications.

Cancel I agree

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CoG version 2.14.0

ESGF P2P Version 1.8.0-release-master

Earth System CoG sponsors and partners

NOAA | NASA | NSP | DoE Office of Science | IS-ENES

< Insert organizational links here >

https://esgf-dev.jpl.nasa.gov

# 2015 Major Achievements

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- Infrastructure
  - ▶ Several fixes to comply with JPL monthly security scans
  - ▶ Upgrade to latest version of Django
  - ▶ Switched the database migration process to use Django migrations
  - ▶ Several improvements in web site design, style, CSS, layout, etc.
  - ▶ Use of captcha to limit spam registrations
  - ▶ Major work with agency sponsors to define format for logos in common header and footer
  - ▶ Extensive effort on authoring and maintaining up-to-date documentation (hosted on CoG)

# 2016 Future Roadmap

- In 2016, the top priority will be to support the deployment of CoG through ESGF:
  - ▶ Support to ESGF node administrators and users
  - ▶ Bug and security fixes as needed
- Secondly, CoG work will prioritize requirements from WIP/CMIP6 panel:
  - ▶ Display of quality flag, PIDs, citations, errata, ...
  - ▶ Integration with ES-DOC metadata services
- Additionally, the team will work with its governance structure to gather requirements, prioritize and implement future development. Possible tasks include:
  - ▶ Support for Globus download of restricted data
  - ▶ Support for delegation of credentials via OAuth
  - ▶ Improvements to registration into ESGF access control groups
  - ▶ Integration with other Python-based ESGF applications:
    - ACME Ingestion (aka Publication) Services
    - ESGF WPS Computing Services
  - ▶ Support for multiple Virtual Organizations within the CoG federation model

## Resources Needed to Meet Goals

Generally speaking, CoG development is a well established and efficient process, but we could use some help in the following areas:

- Consider holding a monthly telco of ESGF/CoG node administrators to gather/prioritize requirements and demo new capabilities
  - ▶ These people would constitute the new “CoG Users Review Group” described in the CoG governance structure
- We must establish a support structure for ESGF/CoG users
  - ▶ Where to send emails and who to answer them
  - ▶ Where to post FAQs
  - ▶ Must interface with existing ESGF User Support Working Team and delegate as much as possible
- We must develop a model for integrating other Python/Django applications without disrupting the main CoG code base
  - ▶ Example: ACME Ingestion services

## CoG Governance

CoG has an existing governance structure that pre-dates ESGF:

- Steering Committee (SC) - meets twice/year
  - ▶ Includes project sponsors and addresses programmatic matters
  - ▶ Jay Hilo (DOE), Tsendgar Lee (NASA), Annarita Mariotti (NOAA), Sylvie Joussaume (IS-ENES)
- Executive Committee (EC) - meets twice/year
  - ▶ Responsible for overall direction of the project
  - ▶ Dean Williams (DOE), Robert Ferraro (NASA), Cecelia DeLuca (NOAA), Stephen Pascoe (IS-ENES), Luca Cinquini (NASA/NOAA)
- User Review Group (URG) - meets approximately monthly
  - ▶ Participates in demonstrations, provides feedback on requirements, design and usability (captured in tickets)
  - ▶ Must revisit membership based on ESGF adoption
- CoG Core Team - meets weekly
  - ▶ Responsible for design, implementation, user support and metrics collection
  - ▶ Cecelia DeLuca, Sylvia Murphy, Luca Cinquini