

Your Output is My Input: Collaborative Portals

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With substantial conversation and context from ESIP Air Quality
Workgroup, GEOSS Air Quality Community of Practice, and others...

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"Comprehensive Inventories - Leveraging Technology and Resources"
Baltimore, MD
April 2009

Key Discussion Points

- Conversation is king; data gives us something to talk about; conversation adds value – how to foster conversation by sharing our data and information (our output) so that it can be useful to others as input
- Web portals can go beyond their traditional stand-alone roles to help foster the conversation and put it in the proper context
- Web technologies are allowing collaborative online communities to form around conversations and context – emissions could be a core community within broader air quality, climate and general environmental communities

Fostering Conversations

“Content isn’t king. ... Conversation is king. Content is just something to talk about.”

- [Cory Doctorow, Boing Boing Blog](#), speaking about websites

Does this relate to emissions inventories?

We often say, “Data is king.” or for some of us, “Metadata is King.”

Where is the conversation? What about context?

If we have **data** we’re told “make it web accessible in a standard format” and with respect to **metadata**, “create it and associate it with the data”

But standardized data and metadata is still not enough.

How do we put the data and metadata in the proper context to foster conversations? Do conversations foster a proper context?

Web 2.0 and Conversation

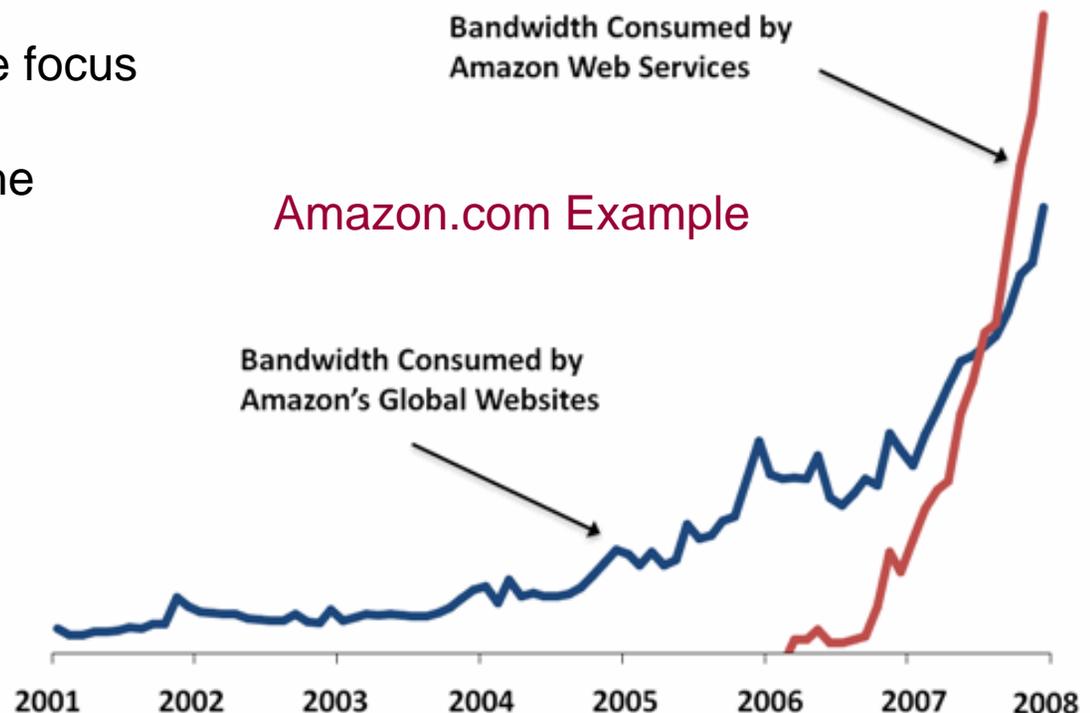
- Web 2.0 describes the rise of:
 - user-generated content;
 - conversing about user-generated content
 - on-line collaboration between users;
- Web 2.0 tools emphasize:
 - Blogging
 - Tagging
 - Commenting
 - Modifying
 - Augmenting
- “The Participatory Web” – it is easy to publish your own content and converse about others’ content
- User interaction with web has expanded from one-way information download to include user-driven information content – “Web 2.0”
- Within the science and engineering domains, this current phase of the web is referred to as **cyberinfrastructure**, **e-science**, and **service oriented science**.
 - new capabilities for sharing information, conducting research in a distributed environment, and achieving new insights that would have taken longer, or not occurred at all, in independent organizations.

Web 2.0 Services Helping Conversations

“This is one of *the* key lessons of the 2.0 era: that the ultimate end-game generally boils down whoever has the deepest and most potent network effect, which are more pronounced when your data and software are being used from many other Web apps, instead of just your own. ”

“The Web services approach completely changes where the focus of product design is, from the human/machine interface to the machine/machine interface. ”

Source: Don Hincliffe’s Web 2.0 blog
(<http://web2.wsj2.com/>)



Source: Amazon Web Services Blog
(<http://aws.typepad.com/aws/2008/05/lots-of-bits.html>)

Using Portals to Collaborate

Wikipedia:

“A web portal presents information from diverse sources in a unified way.”

Traditionally portals pulled information from distributed sources into a central web location. Portals were stand-alone, usually not integrated or interoperable with other portals.

Some standards have evolved to address portal interoperability (JSR-286, Web Services for Remote Portlets)

Web 2.0 is providing complementary ways to connect portals, share content, put into context and broaden conversation

Emissions Related Community Activities

- **Networked Environmental Information Systems for Global Emissions Inventories (NEISGEI) Portal**
- **GEOSS Architecture Implementation Pilot**
- GEOSS Air Quality Community of Practice
- Hemispheric Transport of Air Pollution (HTAP) Assessments
- **Committee on Earth Observation Satellites Atmospheric Composition Constellation Portal**

NEISGEI Portal – www.neisgei.org

The screenshot shows the NEISGEI Portal interface with several sections and callout boxes:

- Recent Analyses:** A table listing analyses with columns for Title, Date, Tool, and Analyst. A callout box labeled "Summarizing Analyses" points to this section.
- Events:** A table listing events with columns for Title, Date, Location, and Tags. A callout box labeled "Summarizing External Analyses" points to this section.
- Other Analyses:** A table listing other analyses with columns for Title, Date, Tool, and Analyst. A callout box labeled "Summarizing External Analyses" points to this section.
- What's New:** A section with a "View all" link and an RSS icon. It lists recent news items like "CALPUFF_Oct23" and "18th International Emission Inventory Conference". A callout box labeled "What's New" points to this section.
- What's Active:** A section with a "View all" link and an RSS icon. It lists active items like "SCal Smoke Oct24_26" and "Southern Calif Testing CENRAP Models in GridComp". A callout box labeled "What's Active" points to this section.
- Tags A to Z:** A section listing various tags such as "Data(12)", "EIA(1)", "EPA(1)", etc. A callout box labeled "Tagging Portal Content" points to this section.
- Sign In:** A login form with fields for "Login" and "Password", and buttons for "Sign In" and "Create Account".
- News From Other Portals:** A section with a "View all" link and an RSS icon. It lists news from other sources like "GoogleNews: John K..." and "The opinions expressed...". A callout box labeled "RSS Aggregation" points to this section.
- Map:** A map of the United States with various markers. A callout box labeled "Delicious Database Access" points to the map.

Summarizing Analyses

What's New

RSS Aggregation

What's Active

Summarizing External Analyses

Tagging Portal Content

Delicious Database Access

Aggregating RSS Feeds

RSS Feeds



Filter RSS feeds for 'air emissions'



RSS



RSS

Displayed in NEISGEI

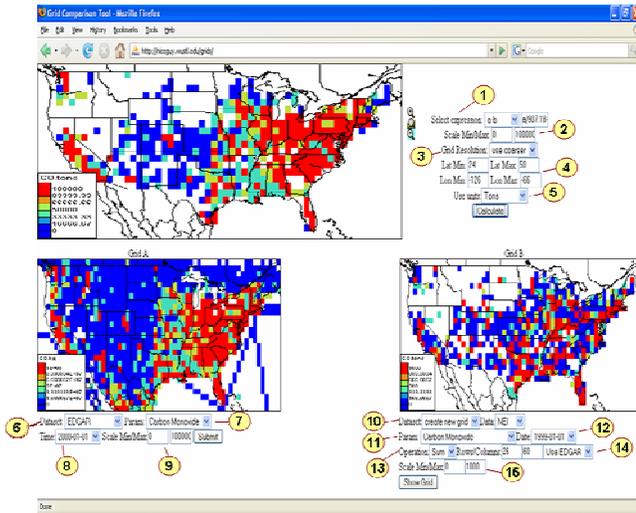
News From Other Portals

- GoogleNews: Astoria leaders want the plug pulled on plans on power plant – New York Daily News
- YahooNews: New York Receives Economic Recovery Funding From U.S. EPA To Reduce Diesel Emissions, Create Jobs (PollutionOnline)
- US Smog Blog: Heavy Smoke in the Gulf of Mexico, Dust off the Pacific Coast
- YahooNews: Stimulus Money Flows to Reduce Diesel Emissions, Prop Up Water Infrastructure (GreenBiz)
- GoogleNews: Oakland port moves ahead with emission reduction plan – portworld
- GoogleNews: Report: Air quality around dairy poses health risks – Minnesota Public Radio
- YahooNews: Air District Offering \$20 Million

Other Analyses

View all				RSS
Title	Date	Tool	Analyst	
Heavy Smoke in the Gulf of Mexico, Dust off the Pacific Coast	4/14/09	Smog Blog	Erica Zell	
International: Ash plume from the Galapagos	4/13/09	Smog Blog	Jill Engel-Cox	
Smoking in the Caribbean affecting coastal cities	4/12/09	Smog Blog	Ray Hoff	
Smoke in Midwest continues and smoke throughout the Caribbean	4/11/09	Smog Blog	Ray Hoff	
International: A look at Europe finds haze in its eastern region	4/11/09	Smog Blog	Jill Engel-Cox	

Saving and Sharing Analyses



Save Analysis
Application Settings
to Portal

Recent Analyses

View all				RSS
Title	Date	Tool	Analyst	
CMAQ_EPA_C...	3/11/08	Grid	SFalke	
Testing CE...	3/7/08	Grid	Anonymous	
RETRO_NEI ...	2/22/08	Emis	SFalke	
EDGAR_NEI ...	2/22/08	Emis	SFalke	
Emission C...	2/12/08	Emis	Anonymous	
SCaSmoke_...	2/11/08	Grid	SFalke	
SCaL_Smoke...	2/5/08	Grid	Anonymous	

Application, settings,
and comments are
available for others to
view and comment

Recent Analyses

[Return to Full Page](#)

EDGAR_NEI SO2 Comparison

Posted By SFalke, On 2/22/08 12:00 AM

Total 2002 NEI (Point+Area+Mobile) aggregated to EDGAR and difference calculated with 2000 EDGAR. NEI is higher in some areas, particularly in Appalachians, but EDGAR is higher in most regions.

Tool Emission Comparison
 Dataset A EDGAR_SO2
 Dataset B NEI_TotalSO2
 Time A January 1, 2000
 Time B January 1, 2002
 Expression a-b
 Scale A 0.0 - 2.0e+7
 Scale B 0.0 - 1.0e+4
 Scale C -5.0e+2 - 5.0e+2

1031 Views, 0 Comments

iGoogle Gadget (Portal to Portal Sharing)

This screenshot shows a desktop application with several panels. On the left, there are 'Recent Analyses' and 'Other Analyses' sections, each containing a table with columns for Title, Date, Tool, and Analyst. The 'Recent Analyses' table includes entries like 'CMAQ EPA_C', 'Testing CI', 'RETRO_NEI', 'ESCAR_NEI', 'ESCAP_C', 'SCA_Smoke', and 'SCA_Smoke'. The 'Other Analyses' table includes 'Heavy Smoke in the Gulf of Mexico', 'International Ash plume from the Galapagos', 'Smoking in the Caribbean affecting coastal cities', 'Smoke in Midwest causes and smokes throughout the Caribbean', and 'International A link at Eastern Red Sea in the eastern region'. In the center, there is a map of the Gulf of Mexico area with a red arrow pointing to a specific location. On the right, there is a 'What's New' section with a 'Sign In' button and a list of news items. Below the map, there are 'Tags A to Z' and a 'Blog mentioning an emissions in the past 30 days' section.

This screenshot shows the iGoogle homepage in a Mozilla Firefox browser. The browser address bar shows 'http://www.google.com/'. The iGoogle logo is prominently displayed in the center. Below the logo, there is a search bar with the text 'Google Search' and 'I'm Feeling Lucky'. To the right of the search bar, there are links for 'Advanced Search', 'Search Preferences', and 'Language Tools'. Below the search bar, there is a navigation menu with links for 'Home', 'Quotes of the Day', 'Dictionary.com', 'Weather', 'Stock Market', 'Wired Top Stories', 'Slashdot', 'Techdirt', 'CNET News.com', 'NYT > Home Page', 'washingtonpost...', 'BBC News | N...', 'NASA Earth Ob...', 'T-200', 'The Wall Street ...', 'Doppler Radar a...'. On the left side, there is a 'Home' gadget with a list of links. In the center, there is a 'NEISGEI Feeds' gadget with tabs for 'What's New', 'What's Active', 'Events', and 'Recent Analyses'. The 'What's New' tab is selected, showing a list of news items: 'New entries to The NEISGEI Portal', 'CMAQ EPA_CENRAP Diff', 'Testing CENRAP', and 'RETRO_NEI Nox Comparison'. Below the news items, there is a 'Hyperlinks' gadget with a list of links: 'ESIP AQ Cluster', 'DataFed', 'DataFed wiki', 'NEISGEI', 'Delicious neisgei', and 'Pandora'. On the right side, there is a 'Google Reader (173)' gadget with a list of links: 'Links for 2009-04-09 (del.icio.us)', 'Finding Pages from Browser History', 'Why Chrysler Chose A123 Batteries', 'Monitoring Muscle', 'Apple hits back, takes Pre's ad space', 'Forum Contest! Here it is! Win a Palm Pre!', 'Mixing Real and Virtual Controls', 'Presented By: Intel@Xeon@Processor 5500 Series', 'A Hybrid Nano-Energy Harvester', and 'Can a Blood Test Warn of Brain Injury?'. Below the Google Reader gadget, there is a 'Google Calendar Viewer' gadget showing a calendar for the month of March. At the bottom, there is a 'Sticky Note' gadget with the text 'Click in the sticky note to edit it.'

Tagging Content for Findability and Association

Tags

Tags A to Z:

Data(12) EIA(1) EPA(1) Media Coverage(2) Portals(8) Presentations(5) Projects(3) Reports and Papers(7) aerosols(1) air quality(5) atmospheric sciences(1) blog(3) community(2) conference(2) cyberinfrastructure(10) data analysis(1) eGrid(1) emissions inventories(1) event(1) geia(1) map viewer(2) modeling(1) nsf(3) organizations(5) sensor web(1) tools(16) wiki(2) workflows(2) workshops(1)

Tags are keywords used to describe an online resource

tools

Emissions Data Browser

-CEC 2002 North American Power Plant Emissions Data visualized in maps and t

EDGAR Spatial Viewer

-A web map viewer application built using ESRI ArcIMS that provides map views of greenhouse gas emissions and population density.

GEIA/ACCENT Emissions Visual Comparison

-Application for visualizing emissions maps side-by-side for comparison among species, emission inventory, and region.

emissions invent

Google Maps Emissions Browser

-A tool that combines the widely used GoogleMaps interface with interoperable data access through Dat...

Google Maps Fire/Smoke Browser

-A mashup application for browsing fire related data. Note: Some...

GRASS web services

-George Mason University has built WSDL/SOAP interfaces to some of the GRASS GIS functions. Thes...

NOAA NESDIS Emission Map Viewer

-The map offers visualizations and reporting tools for seven criteria pollutants (nitrogen oxides, sul...

SMOKE

-The Sparse Matrix Operator Kernel Emissions (SMOKE) Modeling System regrids emissions inventories to...

DataFed Spatial-Temporal Viewer

-DataFed (

air quality cyberinfrastructure map

Emissions Comparison Tool

ESA FireAtlas

-European Space Agency Iona Web Map Server for ATSR and AATSR fire location data.

HTAP Model Comparison Tool

-Calculate differences, ratios, etc. between two HTAP model runs.

Delicious as a NEISGEI Database

The screenshot shows the NEISGEI website with several sections:

- Recent Analyses:** A table listing analyses with columns for Title, Date, Tool, and Analyst. Examples include 'EMAGL EPA_C', 'Testing CA', 'RETRO_ND', 'EDGAR_ND', 'Emission C', 'SCASmoke', and 'SCA_Smoke'.
- Events:** A table listing events with columns for Title, Date, Location, and Tags. An example is 'J.R.B. International Emission Inventory Conference'.
- Other Analyses:** A table listing other analyses with columns for Title, Date, Tool, and Analyst. Examples include 'Heavy Smoke in the Gulf of Mexico', 'International Ash plume from the Colabaeng', 'Smoking in the Caribbean affecting coastal cities', 'Smoke in Midwest obscures and smokes throughout the Caribbean', and 'International A bank at Europe finds haze in its eastern region'.
- What's New:** A section with a 'View all' link and a list of recent news items, including 'CALPUFT_Oct23', 'CALPUFT_Oct22', 'CALPUFT_Oct21', and 'J.R.B. International Emission Inventory Conference'.
- What's Active:** A section with a 'View all' link and a list of active items, including 'Scat_Smoke_Oct24_2D', 'Scat_Smoke_Oct26_24_Dist', and 'Difference in time between an aggregated 2002 ND Point Area and Mobile emissions at the grid resolution of RETRO (to 2000)'.
- Tags:** A section titled 'Tags A to Z' listing various tags such as 'Data(1)', 'EPA(1)', 'Media Coverage(2)', 'PointArea(8)', 'Process(1)', 'Project(2)', 'Report(1)', and 'Paper(2)'.
- Map:** A map titled 'View full screen map' showing a geographical area with several red location markers.

Delicious bookmarks are retrieved based on tags that match query parameters (space, time, keyword, ...)

NEISGEI posts are automatically recorded as delicious bookmarks, with tags including 'NEISGEI', time, location, keywords and information source

<http://delicious.com/NEISGEI>

The screenshot shows a web browser displaying the 'NEISGEI's Bookmarks' page on the Delicious website. The page includes:

- Navigation:** Home, Bookmarks, People, Tags.
- Search:** A search bar with the text 'Search these bookmarks' and a 'Search' button.
- Bookmarks List:** A list of bookmarks with columns for date, title, and source. Examples include:
 - 12 APR 09: GoogleNews: Washington Enters Fray On Aviation Cap-And-Trade Debate - Aviation Week
 - 12 APR 09: GoogleNews: US Takes a Gamble With Test of Carbon Caps on Car Makers - Wall Street Journal
 - 12 APR 09: US Smog Blog: Smoking in the Caribbean affecting coastal cities
 - 11 APR 09: YahooNews: Wyo gets recovery funds for cleaner school bus emissions (Casper Star-Tribune)
 - GoogleNews: Talks aimed at reducing emissions criticized - The Columbian
 - GoogleNews: Talks aimed at reducing emissions criticized - The Columbian
 - GoogleNews: EPA signals shift in state clean air case - al.com
- Tags:** A section titled 'Top 18 Tags' listing various tags and their counts. Examples include 'NEISGEI' (1477), 'GoogleNews' (876), 'YahooNews' (513), 'news-articles' (481), 'emissions' (389), 'air-emissions' (353), 'greenhouse-gas-emis...' (198), 'air-quality' (167), 'environmental-prote...' (139), and 'air-pollution' (117).

Group on Earth Observations (GEO) & Global Earth Observation System of Systems (GEOSS)

The Group on Earth Observations (**GEO**) is a partnership that includes 78 governments and 52 international organizations.

The vision of GEO is to create a Global Earth Observation System of Systems (**GEOSS**) to realize coordinated, comprehensive and sustained Earth observations and information among countries.

<http://www.earthobservations.org/>



A ten year GEOSS plan (2005-2015) defines the vision, purpose, and scope of the system, as well as nine expected “Societal Benefit Areas” in disasters, health, energy, climate, water, weather, ecosystems, agriculture and biodiversity. **This emerging infrastructure aims to interconnect a diverse and growing array of sensors and information systems to monitor, forecast and assess changes in our global environment to support experts, policy makers, and decision makers.**

GEOSS Architecture Implementation Pilot (AIP)

Creating an information architecture based on web standards that allows various analysts and decision makers to access and use GEOSS information and to share their information with GEOSS

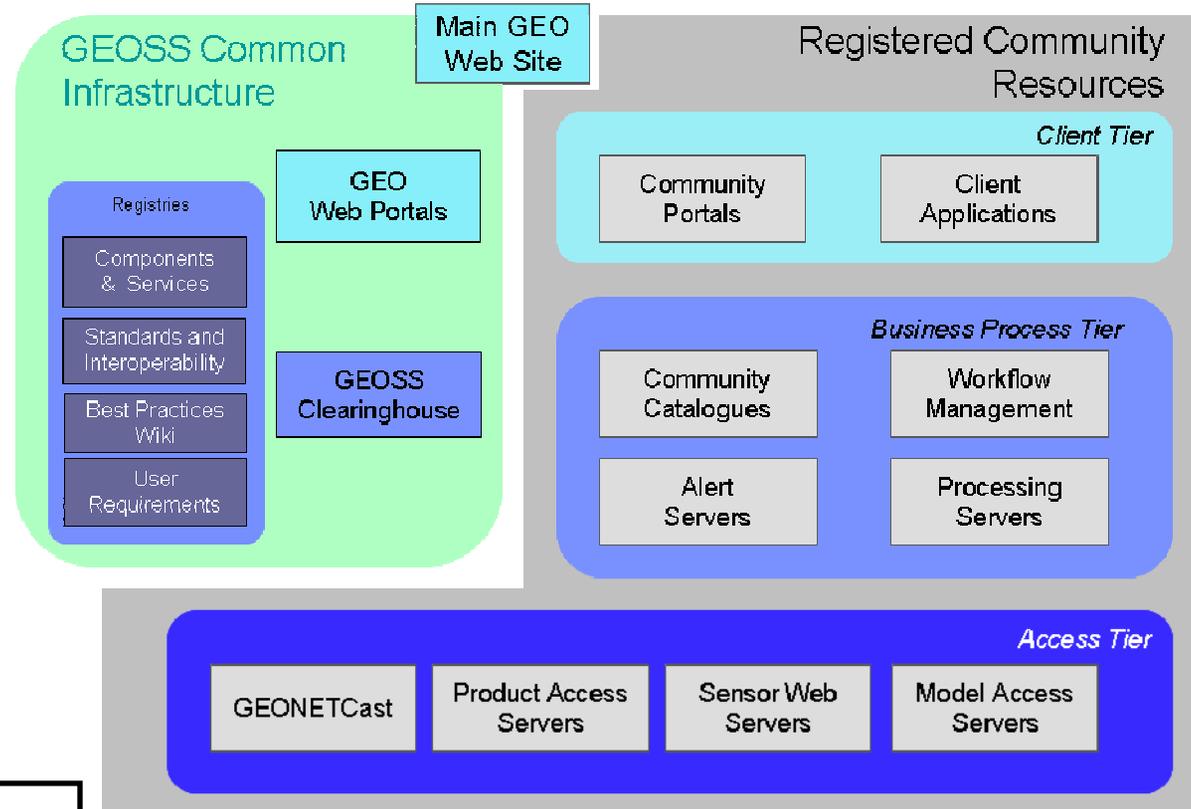
Societal Benefit Area Working Groups

Air Quality and Health

Disaster Response

Biodiversity and Climate Change

Renewable Energy

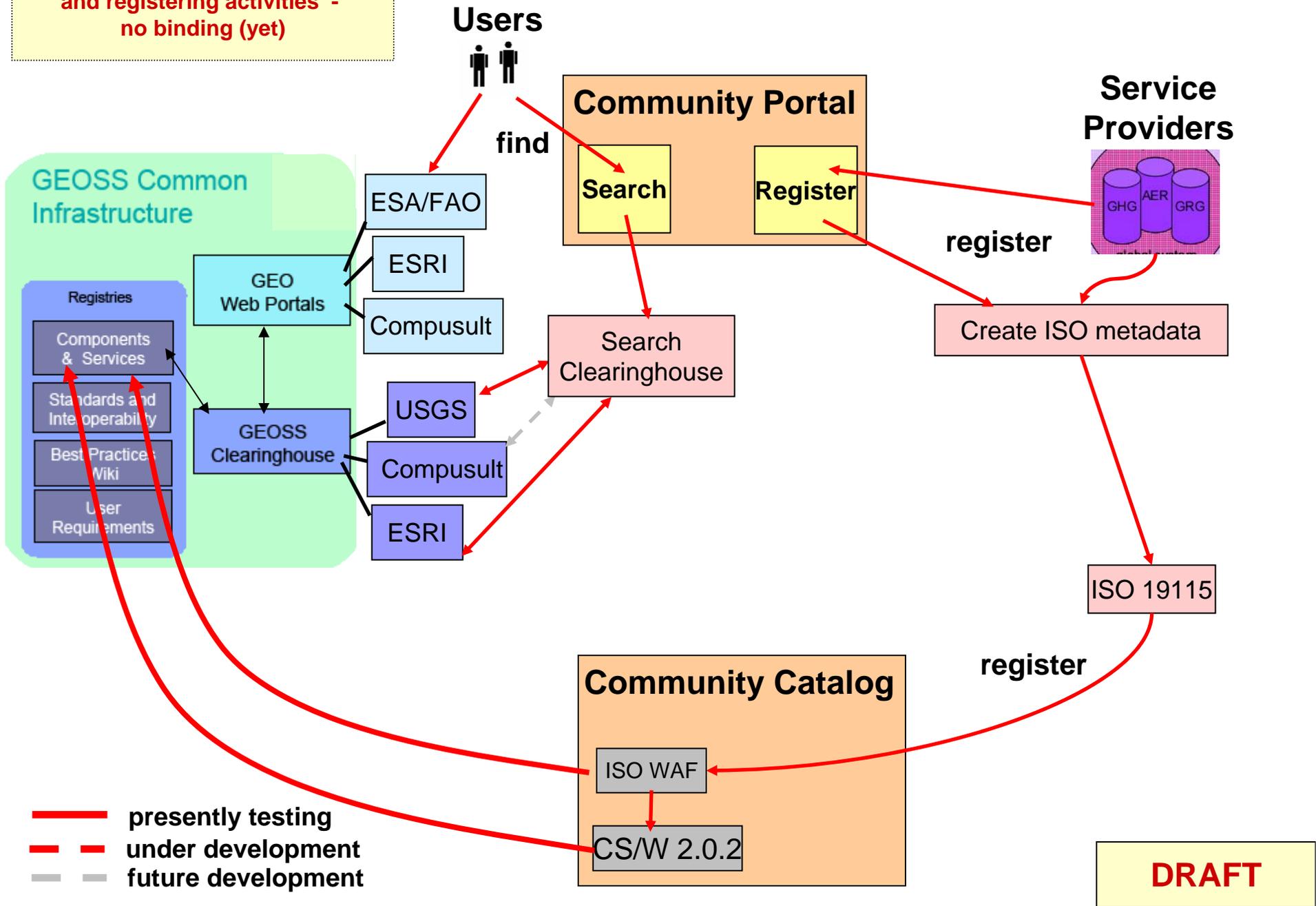


AIP Phase 2 Participants

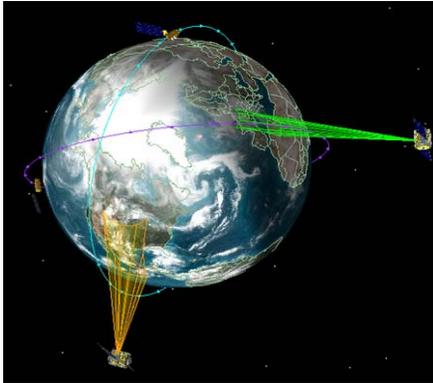
- | | | | | | |
|-----------------------|---------------|-------------------|------------------|---------------------------------|-------------------------------------|
| •ACRF | •EuroCryoClim | •IP3 | •EPA AirNow | •NOAA/NASA GOES-R and GMU CSISS | •Noblis |
| •BKG | •GEO-Ukraine | •ISPRA | •ERDAS Titan | •NOAA IOOS | •Northrop Grumman |
| •Caribbean Flood Team | •GEO Grid | •JAXA | •ESA | •NOAA NCDC | •Spot Image |
| •CIESIN | •ICAN | •Mines Paris Tech | •ESIP AQ Cluster | •NOAA SNAAP | •SURA/NIMSAT/GoMOOS |
| •CNES and ERDAS | •ICT4EO | •NASA World Wind | •ESRI | | •USGS |
| •Compusult | •INCOSE | •NASA Giovanni | •ESRI Canada | | •VIEWS |
| | | | | | •Washington University in St. Louis |

Note: diagram only depicts finding and registering activities - no binding (yet)

Evolving AQ Community Infrastructure



Atmospheric Composition Constellation Portal

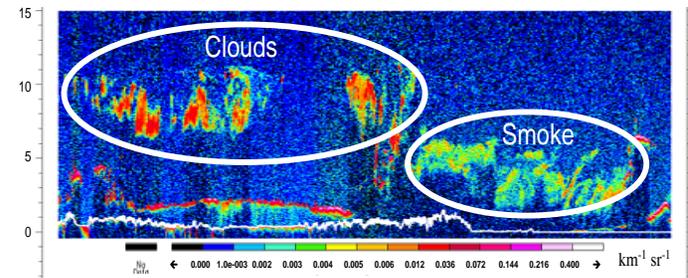
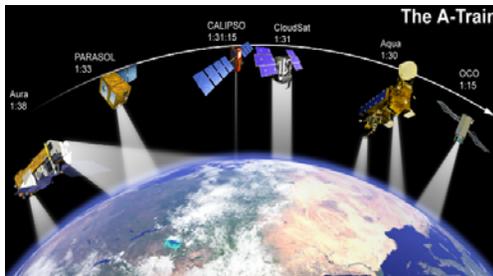


Goals:

Provide access, tools, and contextual guidance to scientists and value-adding organizations in using **remotely sensed atmospheric composition** data, information, and services. The ACC Portal will help to foster interoperability and application of atmospheric composition data, information and services worldwide.

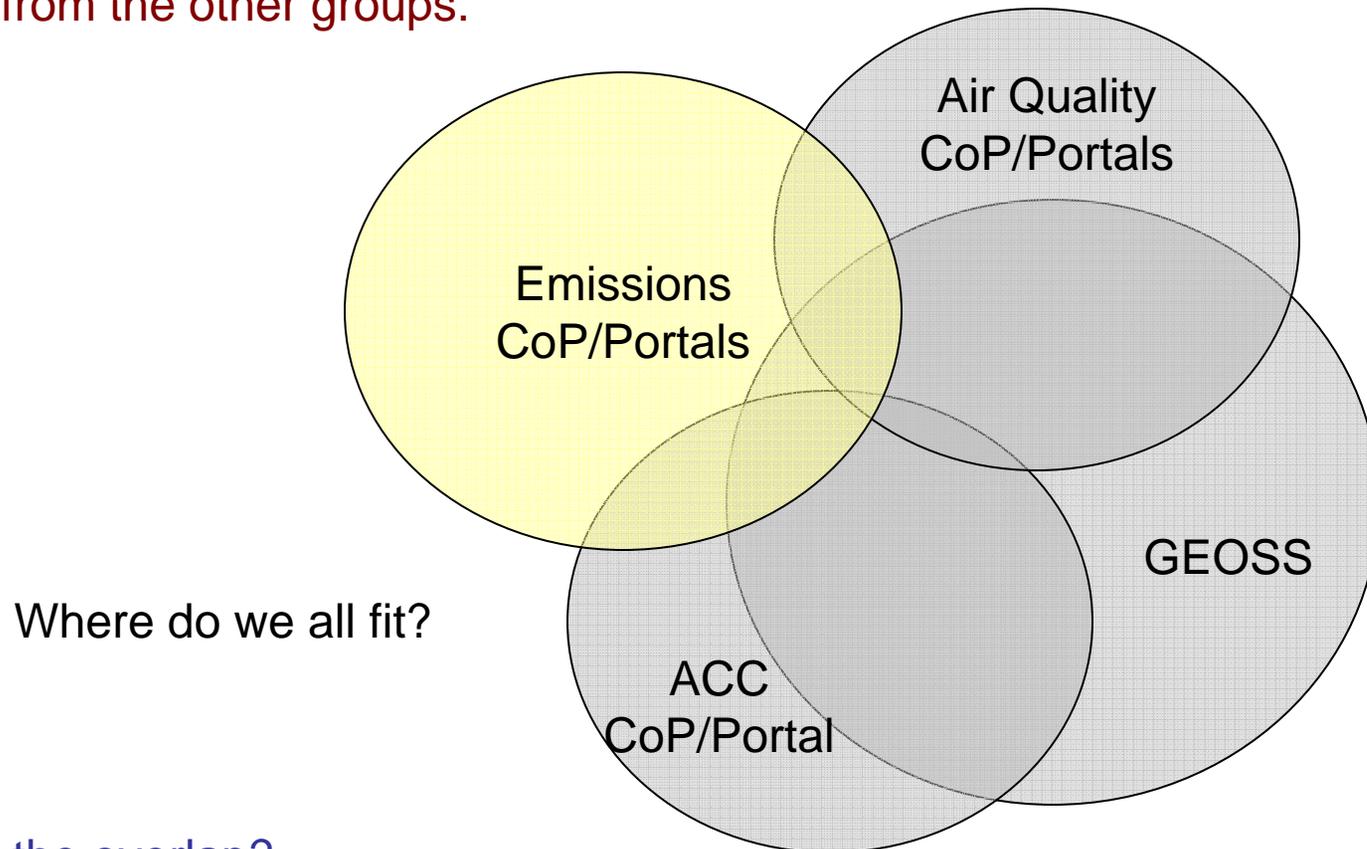
The Committee on Earth Observation Satellites (CEOS) is considering the development of an Atmospheric Constellation Composition Portal

The World Data Center for Remote Sensing of the Atmosphere (WDC-RSAT) is being considered as the focal point for the portal.



An Emissions Inventory Community of Practice?

Overlap represents the shared components but each group has areas of specialty that is distinct from the other groups.



Interested in the overlap?

Please participate in GEOSS Architecture Implementation Pilot / Community of Practice

<https://sites.google.com/site/geosspilot2/air-quality-and-health-working-group>