Earth Science Information Partners

Facilitator and advisor for the Earth science information community

Promote efficient flow of Earth Science data from collection to end-use

Partners
• NASA
• NOAA
• EPA
• USGS
• DOE
• NSF
• Industry
• Others??
ESIP History

- **1998** - ESIP Formed by NASA in Response to a NRC Recommendation for “Community Involvement” in EOSDIS.

- **2003** - Evolved Plan to Become a Broad-Based Inter-Disciplinary Collaborative Forum (Cyberinfrastructure) for the Earth Science Information Community.

- **2004** - NOAA/NESDIS Becomes Second Strategic Partner.

- **2007** - EPA becomes Third Strategic Partner.

- **2003-2007** - Membership Grows from 24 to 103 Entities.
Collaboration & Interoperability

- **Provide Neutral Turf** where Major Earth Observing Agencies Can Work Together with Other Community Interests to Advance Key National Objectives

- **Provide a Broad-Based Community-of-Practice** where Strategic Partners can Seek Advice, Generate New Collaborations and Cultivate New End-Users.

- **Provide a Forum** in which Inter-Agency, Inter-Disciplinary, Interoperability Problems can be Addressed and Resolved.

- **Provide an Earth Information Exchange** where the Products and Services of all ESIP Members can be Easily Found and Acquired.
ESIP Air Quality Cluster

The objective of the ESIP Air Quality Cluster is to connect air quality data consumers with the providers of those data by:

- bringing people and ideas together on how to deliver ES data to AQ researchers, managers and other users
- facilitate and demonstrate the information flow of from data providers to air quality consumers

AQ Cluster brings together groups and builds links among them in order to achieve an effective use of data in decision-making that could not be achieved by any organization acting on its own.

AQ Cluster aids in reuse of data, processing tools and other services so that projects, programs and agencies avoid the burden of developing those capabilities or establishing connections to them.
ESIP, GEOSS Interoperability Experiments, Demos

GEOSS Workshops with GWS Demonstrations

The Workshop Series: “The User and the GEOSS Architecture”

<table>
<thead>
<tr>
<th>When</th>
<th>Where</th>
<th>Conference</th>
<th>OGC Lead</th>
<th>Demo Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 2005</td>
<td>Seoul, Korea</td>
<td>IGARSS05</td>
<td>GMU</td>
<td>Tsunami recovery</td>
</tr>
<tr>
<td>October 2005</td>
<td>South Africa</td>
<td>AfricaGIS</td>
<td>CSIR</td>
<td>Wildfire response</td>
</tr>
<tr>
<td>May 2006</td>
<td>Beijing, China</td>
<td>FIEOS</td>
<td>U. Nottingham</td>
<td>Wind Energy</td>
</tr>
<tr>
<td>July 2006</td>
<td>Corsica, France</td>
<td>ISEIM</td>
<td>U. Nottingham</td>
<td>Wind Energy</td>
</tr>
<tr>
<td>July 2006</td>
<td>Denver, US</td>
<td>IGARSS06</td>
<td>GMU &amp; Wash Univ.</td>
<td>Air Quality</td>
</tr>
<tr>
<td>Sept 2006</td>
<td>Goa, India</td>
<td>ISPRS Comm IV</td>
<td>UCL</td>
<td>Disease spread</td>
</tr>
<tr>
<td>November 2006</td>
<td>Santiago, Chile</td>
<td>GSDI-9</td>
<td>CIESIN</td>
<td>Poverty Reduction</td>
</tr>
<tr>
<td>April 2007</td>
<td>Hawaii, USA</td>
<td>IEEE System of Systems (SoS)</td>
<td>CSIRO</td>
<td>SoS for GEOSS</td>
</tr>
<tr>
<td>June 2007</td>
<td>San Jose, Costa Rica</td>
<td>ISRSE</td>
<td>Univ of New Mexico</td>
<td>Sustainable Agriculture</td>
</tr>
<tr>
<td>July 2007</td>
<td>Barcelona, Spain</td>
<td>IGARSS07</td>
<td>Washington Univ.</td>
<td>Biodiversity in Mediterranean</td>
</tr>
</tbody>
</table>
The Air Quality Web Landscape (not comprehensive)

**NASA Programs/Projects**
- REASoN (Friedl, Moe)
  - WRAP (Ambrosia, Sullivan)
  - EDAC (Morain, Benedict, Hudspeth)
  - LAITS (Di, Yang)
  - AQ Web Infrastructure (Husar, Falke)
- ACCESS (Lindsay, Maiden)
  - Giovanni (GSFC – Kempler)
- DECISIONS (Friedl)
  - 3D AQS (Hoffman, Engel-Cox)
  - RS for BlueskyRAINS (Sullivan, Raffuse)
  - Aura in AQ Forecasting (McHenry)
- AIST (Moe)
  - SAMITS (Falke)
  - Sensor Web Architecture & Demo (Mandl)
- DAACS
- Geoscience Interoperability Office (Bambacus, Cole)

**EPA Programs/Projects**
- AMI (Young, Keating)
- GEO (Young, Washburn, Lyon, Foley)
- AirNOW (Wayland, Dickerson)
- AirQuest
- OAQPS (Scheffe, Frank, Dimmick, Solomon, Pace)
- IDEA (w/ NASA,NOAA) (Szykman)
- HTAP (Keating)
- Remote Sensing Gateway (Paulson, Walter)
- Environmental Science Connector (Kapuscinski)

**NOAA Programs/Projects**
- Air Quality Forecasting (NESDIS)
- NGDC (Haberman, Kozimor)
- Hazard Mapping System (Ruminski)

**Forest Service Programs/Projects**
- Bluesky (Larkin, Goodrick)

**Mediators**
- DataFed (Husar)
- Unidata (Domenico, Ramamurthy)
- CDE (Ambrosia, Sullivan)
- Giovanni (Kempler, Leptoukh)
- LAITS (Di)
- RSG (Paulson)
- NEISGEI (Falke)

**Portals / Catalogs**
- Earth Information Exchange (ESIP)
- Earth Observation Portal (GEO)
- Geospatial One Stop
- Earth Science Gateway (NASA)
- Environmental Science Connector (EPA)
- Global Change Master Directory (GCMD)
- ECHO (NASA)
- LEAD (NSF)

**Interoperability Efforts**
- GALEON
- NASA GIO – DAACS
- ESIP
- OGC GSN (demos)
- OGC OWS testbeds
- GEOSS

**State**
- Aura in AQ Forecasting (Lamb, Vaughan)
- RPOs

**International**
- KMNI
July 19: AQ Focused Sessions

- AQ Interoperability Demos
  - open to demonstrations supporting or interested in supporting interoperability efforts

- Applying Service-Oriented Architecture Concepts to USGEO Near-Term Opportunities
  - help the Air Quality and Drought communities identify, design, (and perhaps build???) tools needed in both communities.

- AQ Cluster
  - Future plans and activities for coordinating the air quality cluster support to interoperability activities
R. Scheffe, EPA:

**Apparent divergences?**

*Organizations have different missions*

- **USDA**
  - Protect/optimize Ag and forest resources

- **NPS**
  - Protect ecosystems, AQ WQ

- **NASA**
  - Explore fundamental Earth System Properties

- **EPA**
  - Protect human health & envi.
  - Improve air, water, ecosystem

- **NOAA**
  - To understand and predict changes in the Earth’s environment and …

- **CDC**
  - To promote health and quality of life ….
Stars aligned?

Confluence ...

Alignment

Observation technologies
{e.g., satellites}

Collaboration (culture)
empire building?

Computational power

Budgets, ↑ agency collaboration
resource/program accountability

Accountability, ↓ regulatory assessments {e.g., NAS, CASAC}

Information technologies
{e.g., data sharing protocols}

Science, talent
{embodied in AQ models and young geniuses}