Perspectives from EPA GEO

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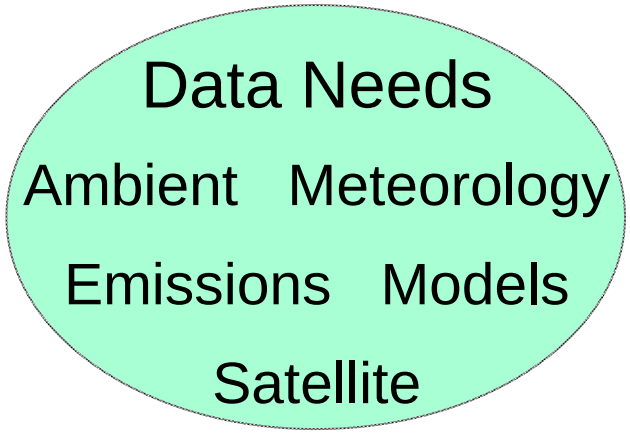
Introduction: AQ Scenario for AIP-2

The AQ scenario in the GEO AIP-2 Call for Participation lays out a broad, ambitious vision describing examples of how GEOSS will serve AQ decision-makers

- Spectrum of example decision-makers who depend on common upstream data
- Decisions need support from multiple types of data; no one type is adequate



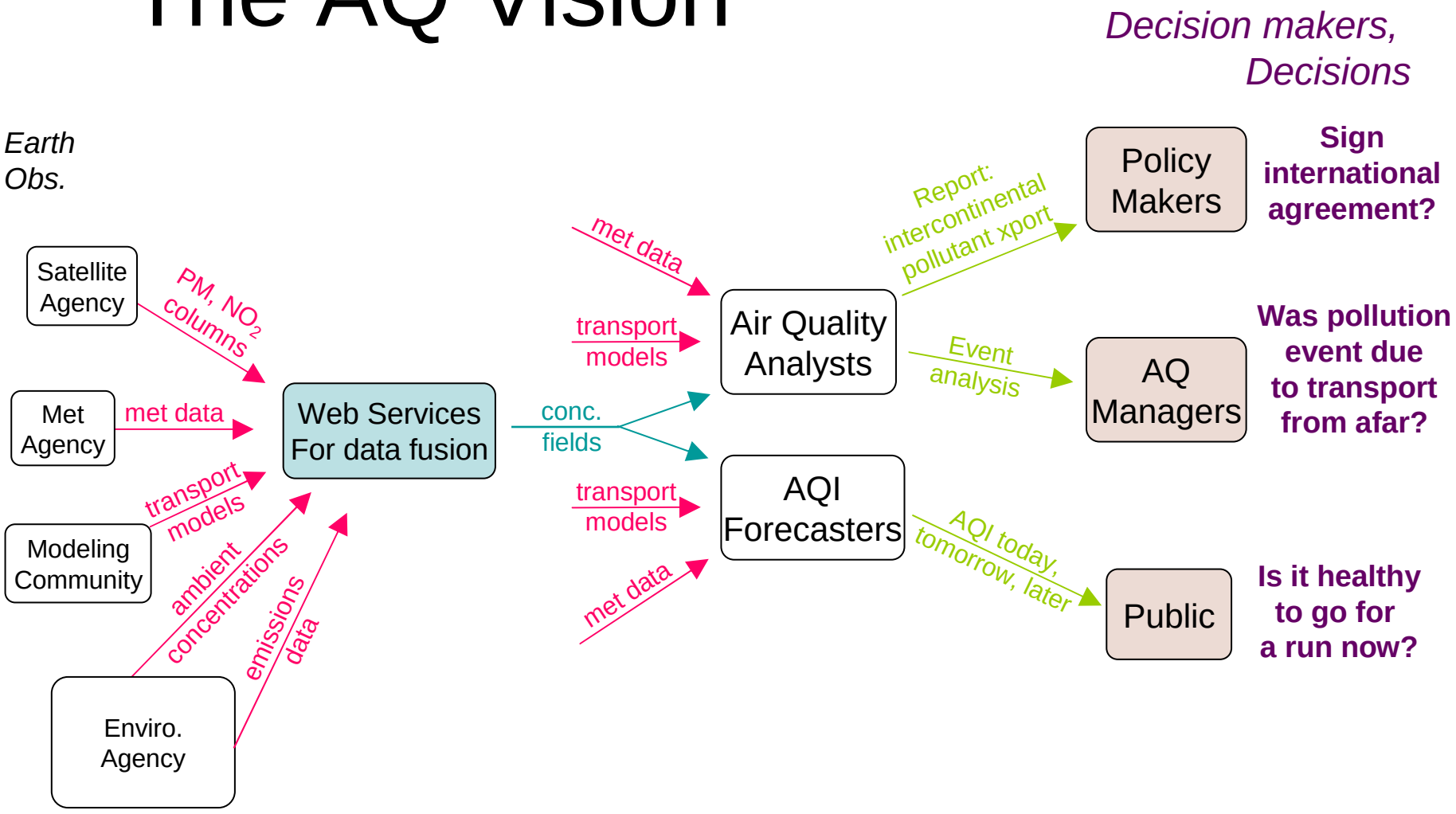
Decision Makers

Policy maker assessing intercontinental transport

AQ manager assessing an exceptional event

Public planning activities today and tomorrow

The AQ Vision



Pink: exists, hard to get, hard to use: *GEOSS (**GCI**) can help*

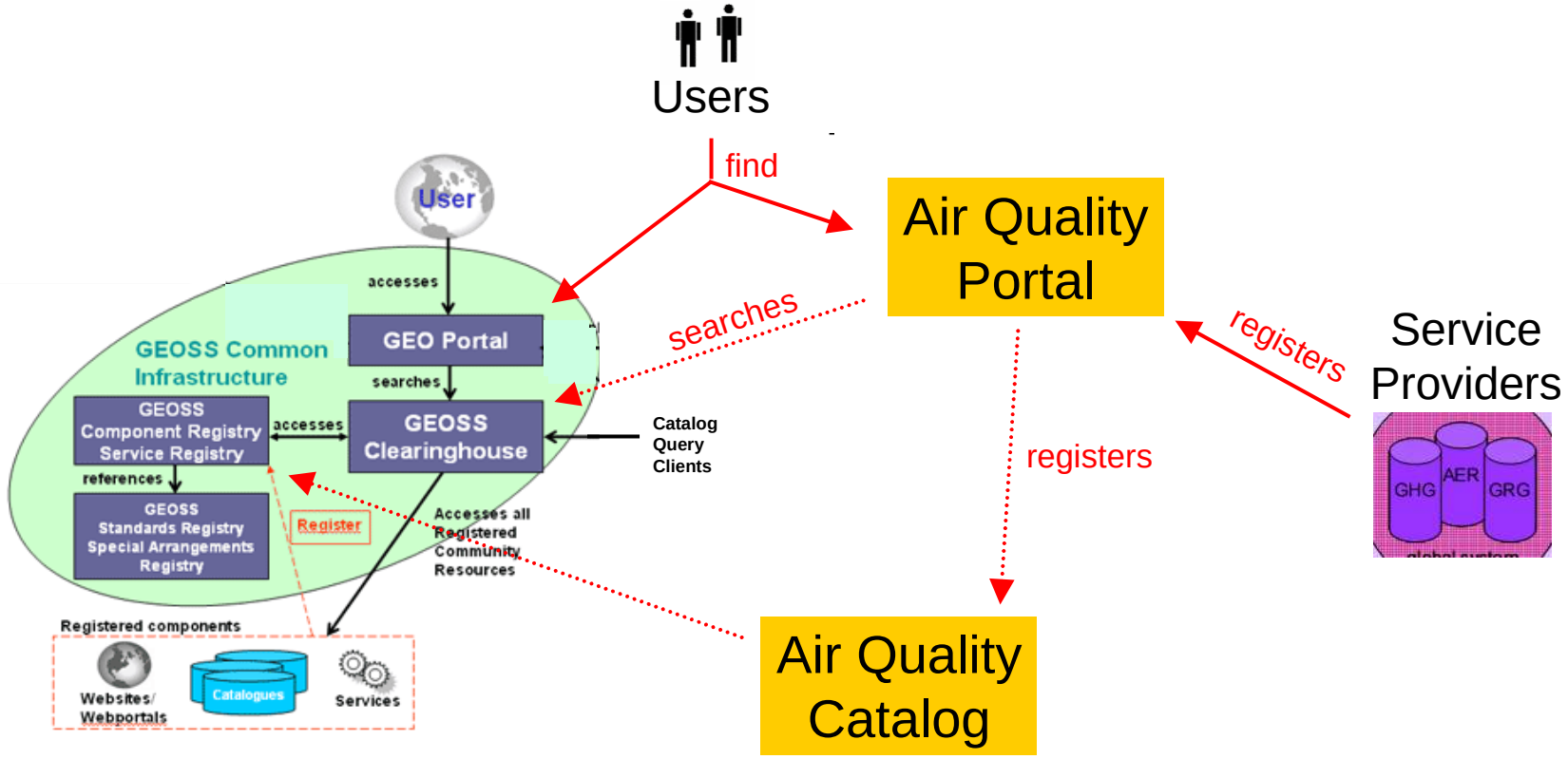
Blue: not currently operationally existent; *our goal for broad GEOSS*

Green: not currently adequate; *what society needs from GEOSS*

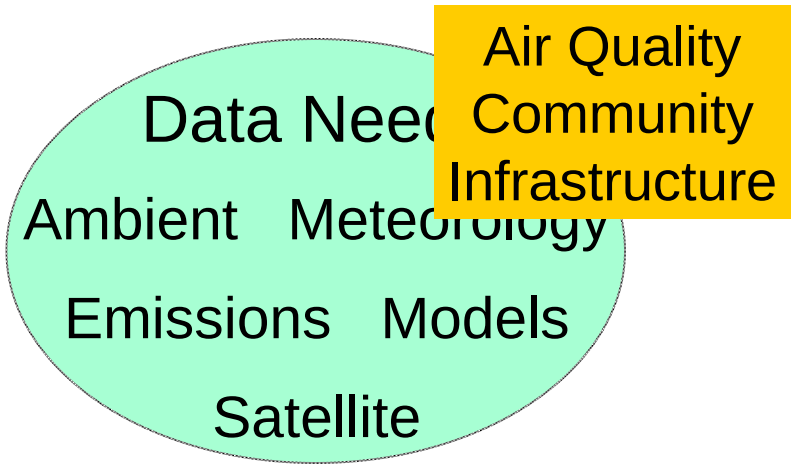
AIP Air Quality Output

AIP charge: produce 'persistent exemplars' to develop GEOSS

The AIP AQ work group is building an AQ community infrastructure to compliment the GCI



Where do we stand?



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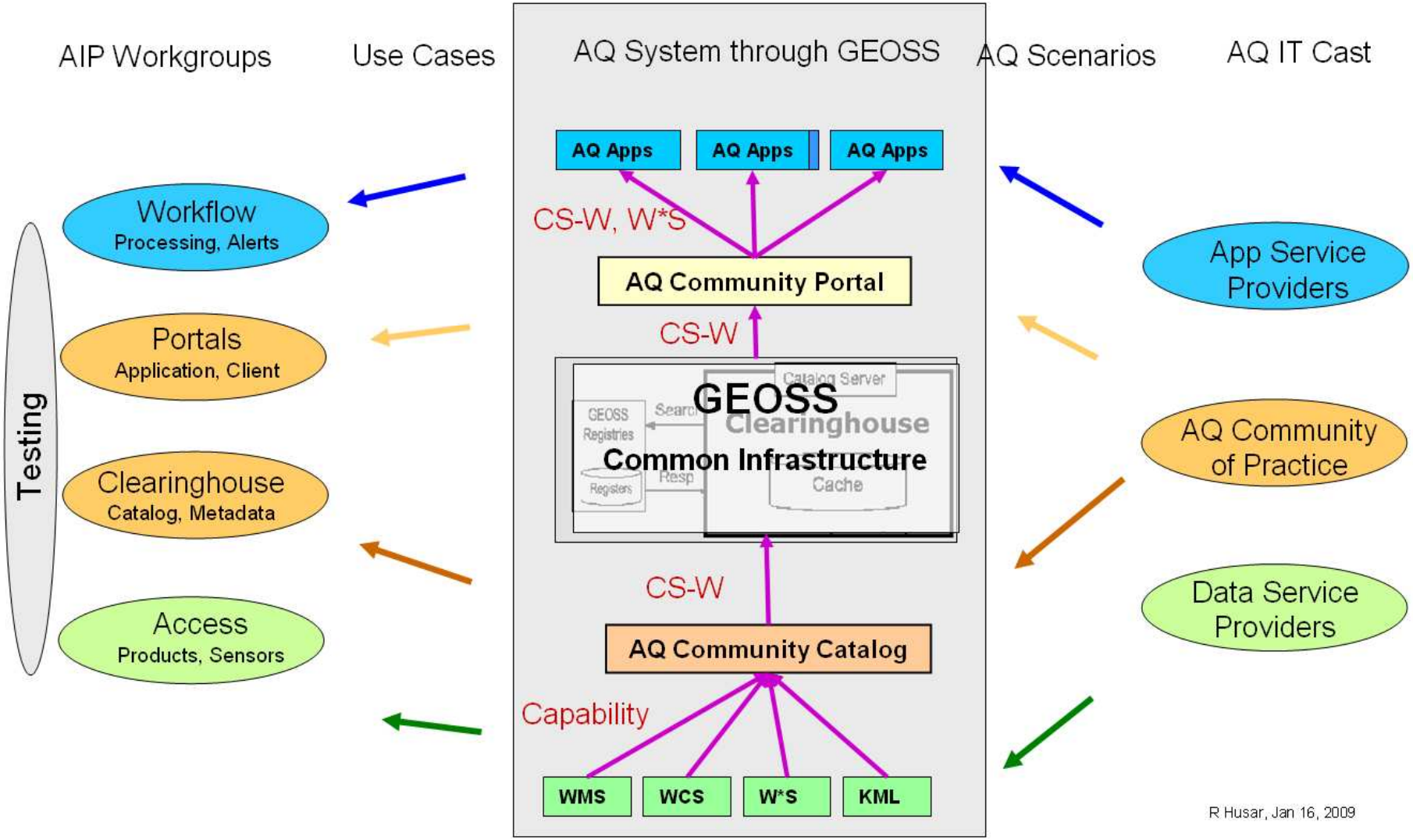
- *Clearly a large gap remains…*

GROUP ON EARTH OBSERVATIONS

AQ Workgroup (Human) Linkages in AIP-2



R Husar, Jan 16, 2009

AQ Community of Practice & The Gap

GEO envisions Communities of Practice as important links between GEO organizations, practitioners who collect and analyze observations, and end users.

- Building upon the GCI: as GEOSS grows from

  Better Access and Discovery of EO ----> Decision Support

  GEOSS will require **more community engagement:**

  – Building and maintaining the core Community Infrastructure (AIP-2)
  – Defining needed data, information, and tools needed to serve users and make them available and usable within GEOSS
  – Develop the conventions and best practices for developing GEOSS

  This work is best handled by a Community of Practice

- Communication among the many relevant initiatives and activities working on aspects of AQ decision support

Challenges and Obstacles

- Limited resources
- Constraining procurement processes
- Need to balance investments
  - Fundamental Infrastructure vs.
  - Demonstrations of Decision Support for High Priority Issues
- GEOSS is a common property resource

Future approach of EPA GEO: Developing an Air Quality Cyberinfrastructure "Consortium"

- Need a team capable of linking and extending the existing elements of the air quality information system to create a stable cyberinfrastructure (hardware, software, standards, organizations, …).
- Expertise needed in
  - air quality forecasting and public information
  - air quality assessment or "re-analysis"
  - air quality model evaluation and intercomparison
  - emissions inventory development and evaluation
  - fire and smoke management
  - cyberinfrastructure development

Some Possible Tasks for the Consortium

- **Air Quality Information System Wiki**
  - Identify functions, strengths, weaknesses of, and relationships between existing air quality information systems
  - Develop consensus guidelines
- **Air Quality Data Network Development**
  - Establish a community data and service catalogue specific for air quality information, establish exchange standards for creating connections between existing elements of the air quality information system of systems, and implement such connections.
- **Air Quality Assessment Tools**
  - Processing, visualization, and analytical tools for air quality assessment, or "re-analysis," in which multiple types of observations and/or model estimates (drawn from across the air quality data network described above) are integrated to best describe the state of the atmosphere at a given point and time.
- **Air Quality Model Evaluation Tools**
  - Tools that will enable modelers to compare regional and global model outputs in standard formats to a variety of types of observational data (drawn from across the air quality data network) and to perform standard tests and diagnostics.
- **Emissions Information and Tools**
  - Building upon NEISGEI, EMF, and related systems.
- **Outreach and Coordination**
  - Organize meetings and other outreach efforts to educate and communicate with the broader air quality management and research community

GEO-VI Plenary, Washington DC
17-18 November 2009

The AQ Community is committed to demonstrate ***significant tangible results*** at a side event at the 2009 Plenary.

Possible Contributors

- ESIP AQ Cluster
- AIP AQ Community Infrastructure
- AIRNow International
- WMO Dust Forecasting Project
- AMEN/HTAP Data Network
- European MACC Project
- SERVIR-AIR
- CEOS Atmospheric Composition Constellation
- Others?

*How can the AQ CoP / ESIP **lead** this effort?*