



The GEO Air Quality Community of Practice

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6th Annual Meeting of Task force on Hemispheric Transport of Air Pollutants (TF HTAP)
Brussels, June 15, 2010

1. Data as a Resource

If I give you my data, you will have it and use it but I can still keep it.

Unlike material resources, data are not 'used up' by usage.

In fact, data may get better with usage.



So, sharing does not deplete but actually multiplies the potential value of data

2. Driving Forces for the Flow of Data

**Any Single Problem Requires Many
Data Sets**

**A Single Data Set Will Serve Many
Communities**



These are PULL and PUSH driving forces for the flow of data

3. System of Systems (GEOSS)

Earth observations are generated and consumed by autonomous **systems** pursuing their own mandate.

The **GEO Information System** facilitates linking these systems into a **'system of systems'** based on the Internet as a model of connectivity



Impediments to the data flow - Interoperability

Jose Achache
GEO



The slide features the GEO logo and 'GEOSS Architecture' at the top. The main title is 'Interoperability Arrangements'. Below it is a quote: *"What few things must be the same so that everything else can be different?"* attributed to Eliot Christian. To the right of the quote is a drawing of drafting tools including a compass, a pencil, a ruler, and a protractor on a sheet of paper.

Andrew Dye:
http://www4.saforah.org/adyk/earss06/20060731_Plenary/index3.htm

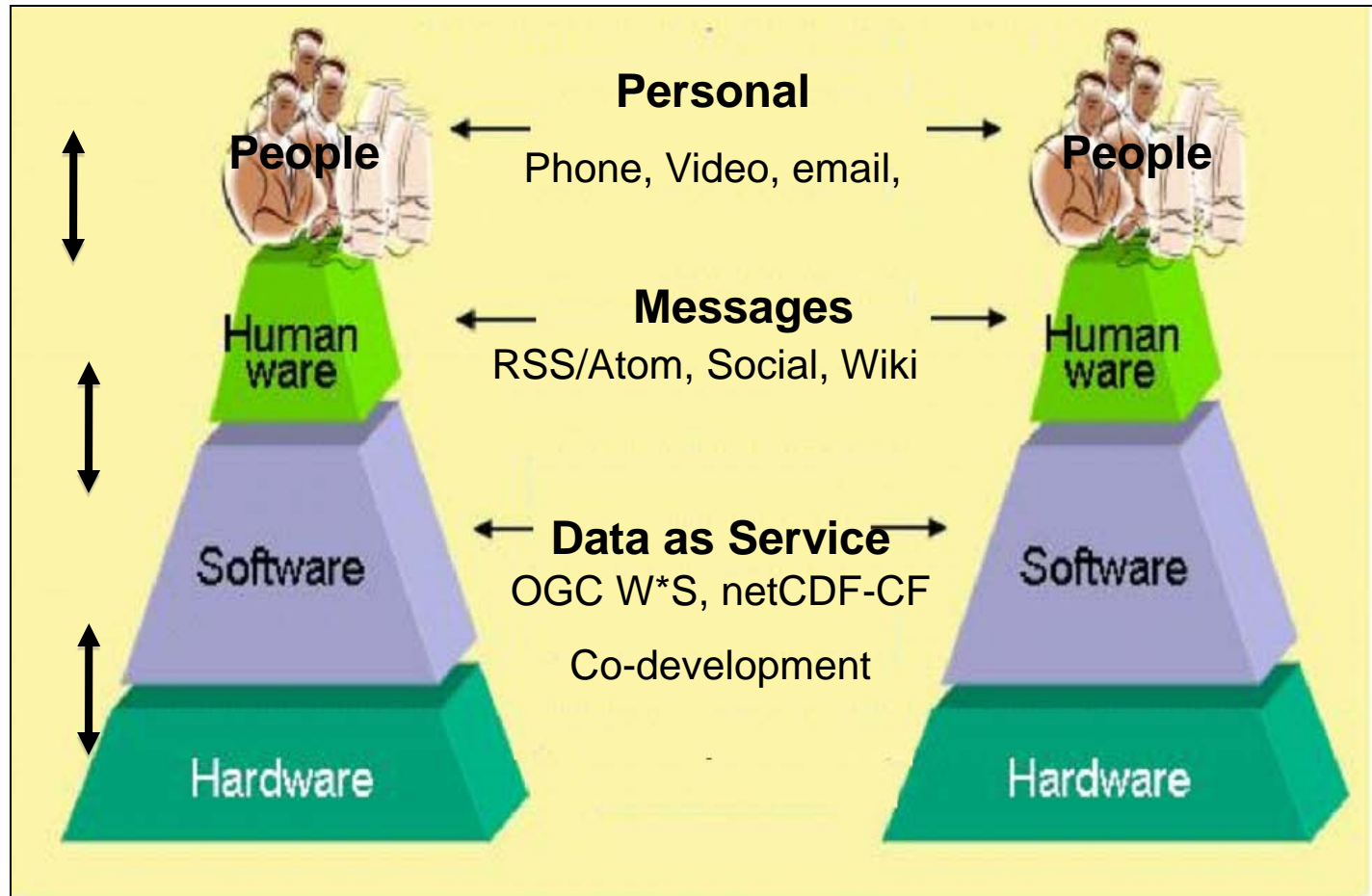
Interoperability for Connecting:

Machines & Machines

People & People

People & Machines

Interoperability Stack



Air quality: Many Observations, Many Applications

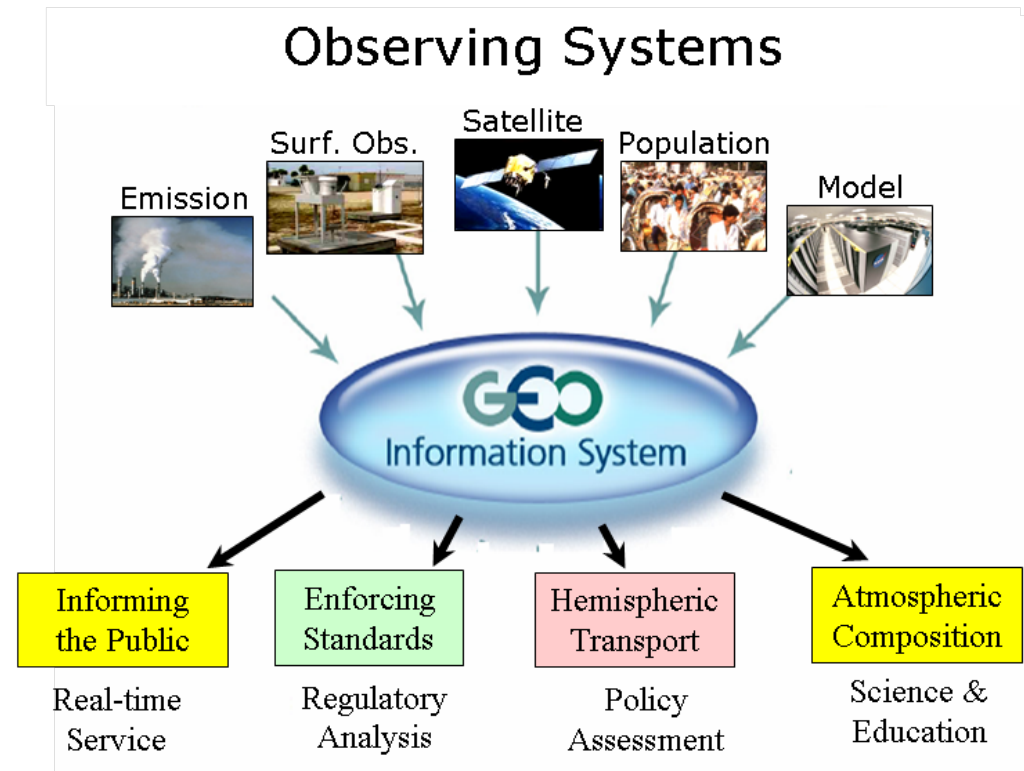
The GEO AQ CoP aims to

connect and **enable**

**air quality data providers
and users**

for

**effective air quality
science and management**



GEO AQ CoP Characteristics

- GEO AQ Cop is Not:
 - Not a project or program
 - Not funded by GEO
 - Not centralized

Approach: Use existing projects

Pursue original scope and mandate of the projects

but

Expose sharable resources from projects

Participate in collaboration network

HTAP

- Stakeholders are **autonomous** organizations, scientists
- Participation is largely **voluntary**
- Information **integration is key to success**

HTAP & GEOSS Symbiosis

GEOSS is a good (system of systems) model for HTAP

HTAP is a suitable use case for the emerging GEOSS

HTAP Model Data Server Project:

Connecting FZ Juelich server to WashU DataFed client

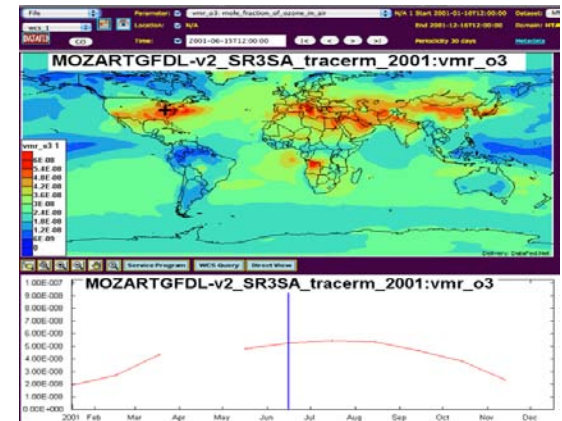
FZ Juelich server offers 1000+ HTAP model ‘datasets’

WCS–netCDF–CF Standard Protocol

FZ Juelich & WashU Co-develop connectivity software



DataFed client can access any HTAP model ‘datasets’ for browsing, comparison, statistical...processing

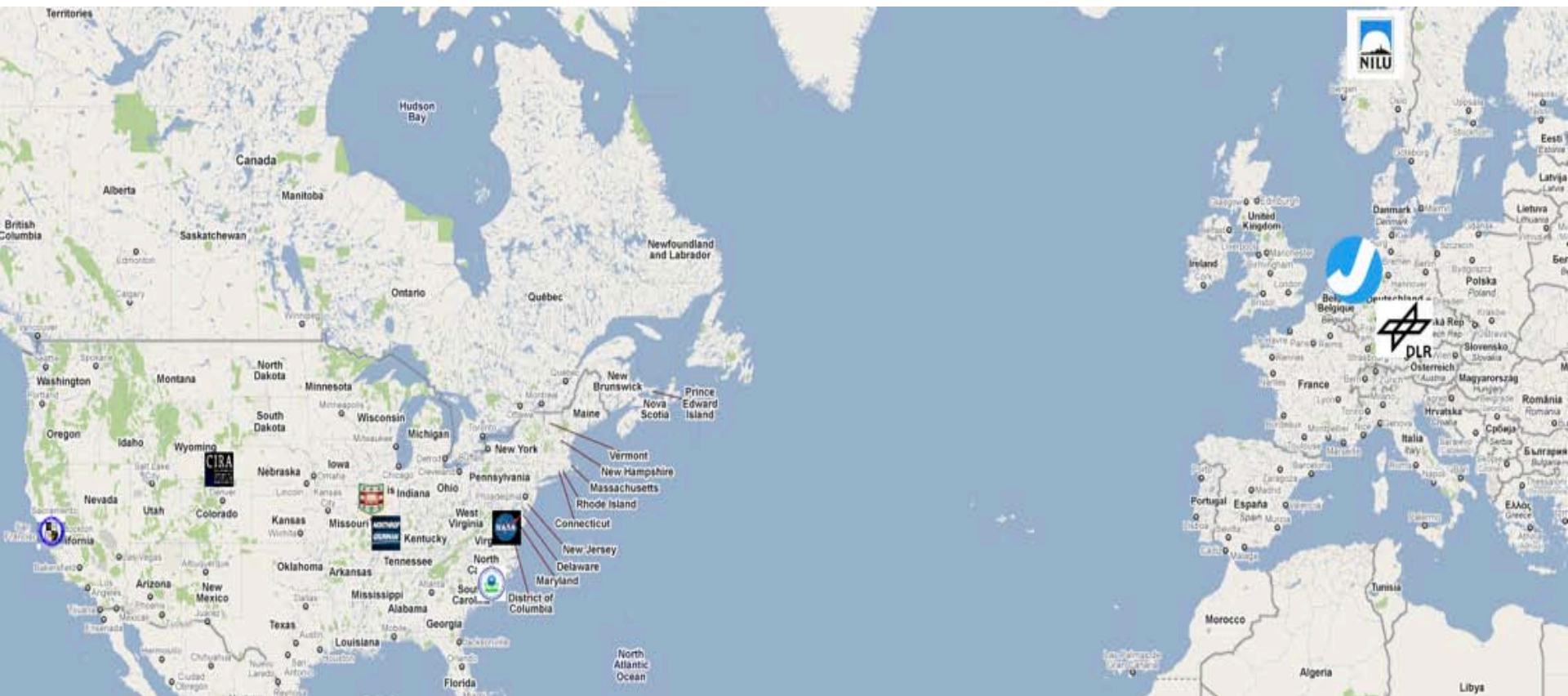


**YOUR client software can also access any HTAP model ‘datasets’
Perform your types of analyses**

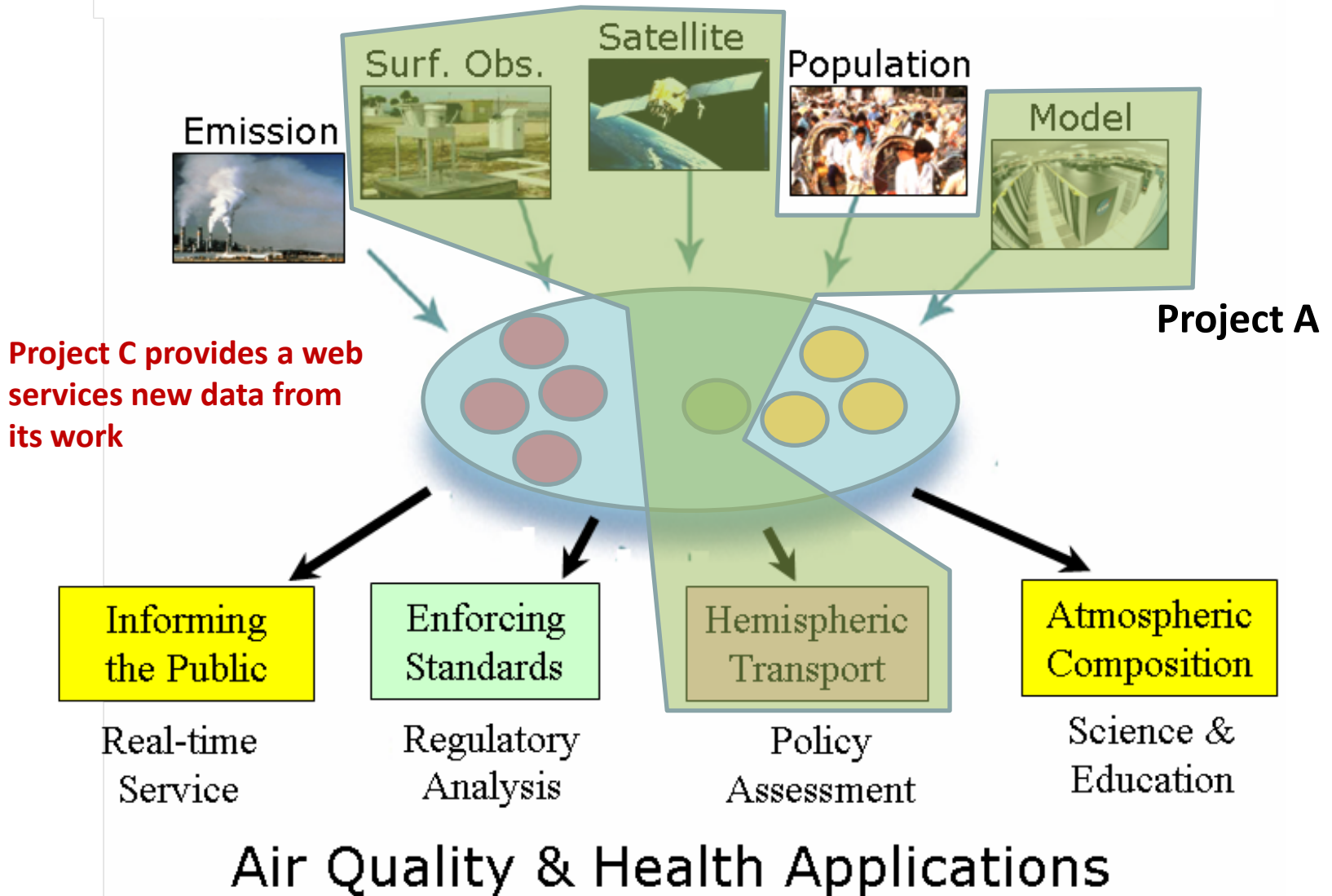
The data the tools and the methods are shared to the Community through the AQ CoP

So, participants of this project automatically become members of AQ CoP

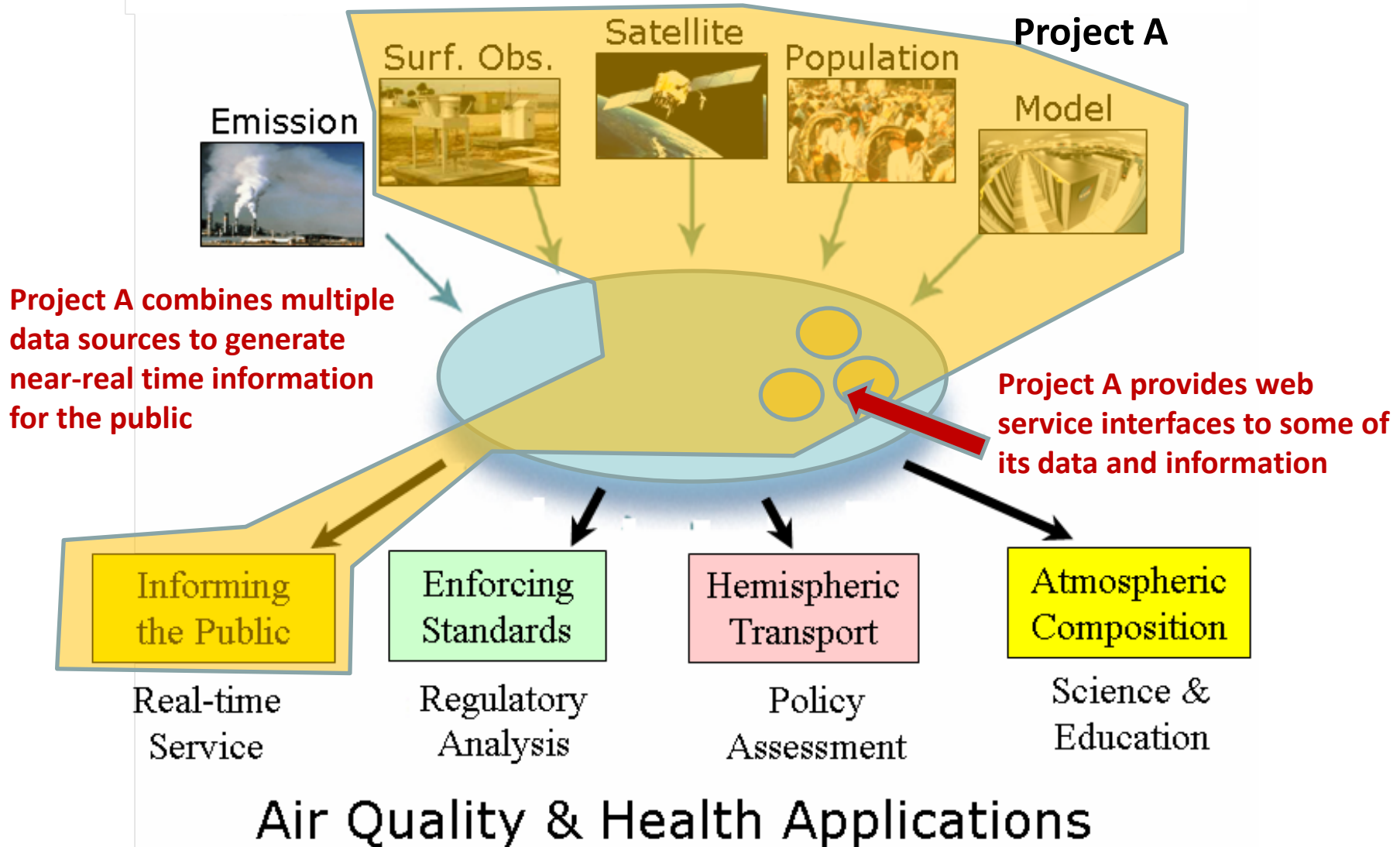
Emerging HTAP Data Network



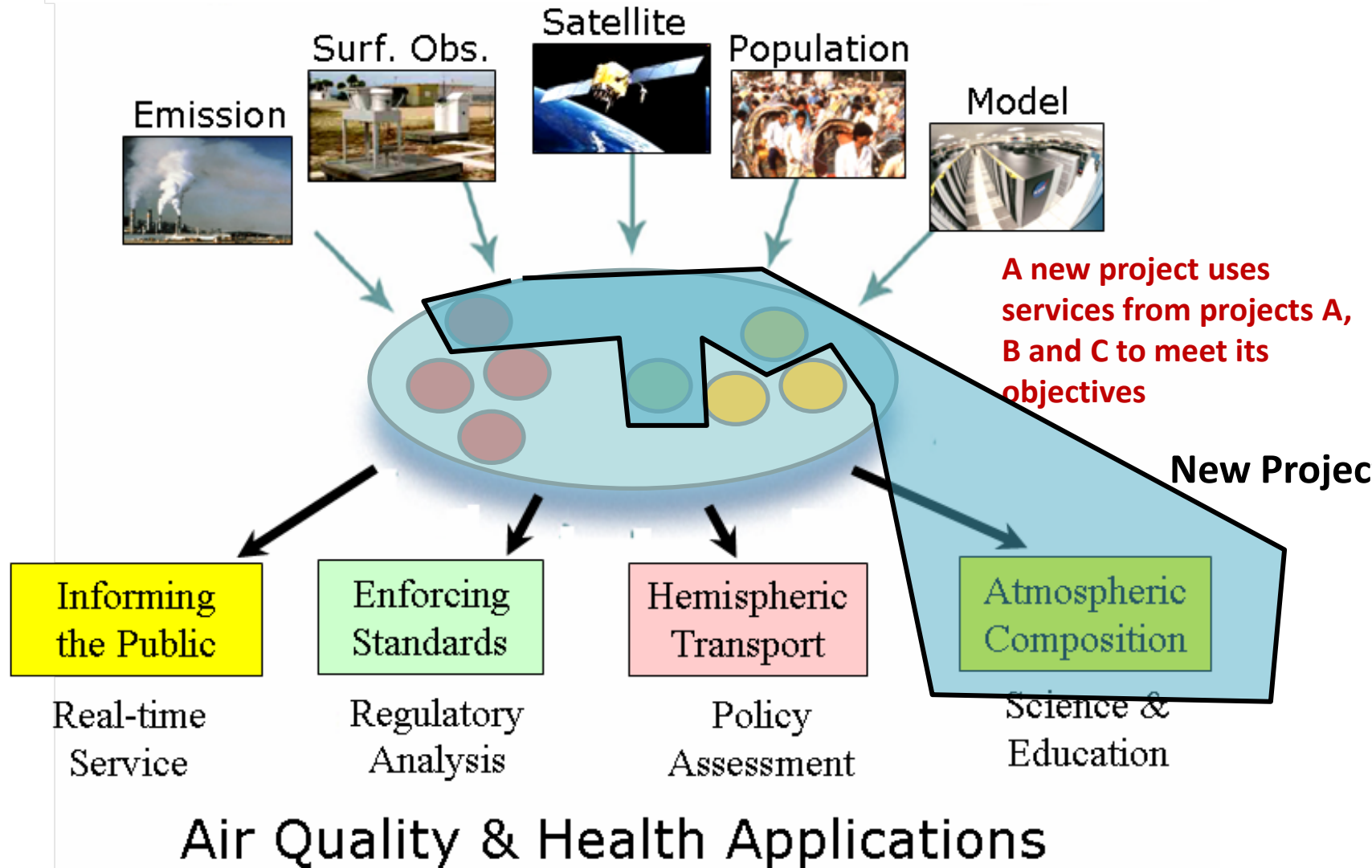
Observing Systems



Observing Systems



Observing Systems



Other AQ CoP Activities

AQ CoP Participation in GEO Tasks

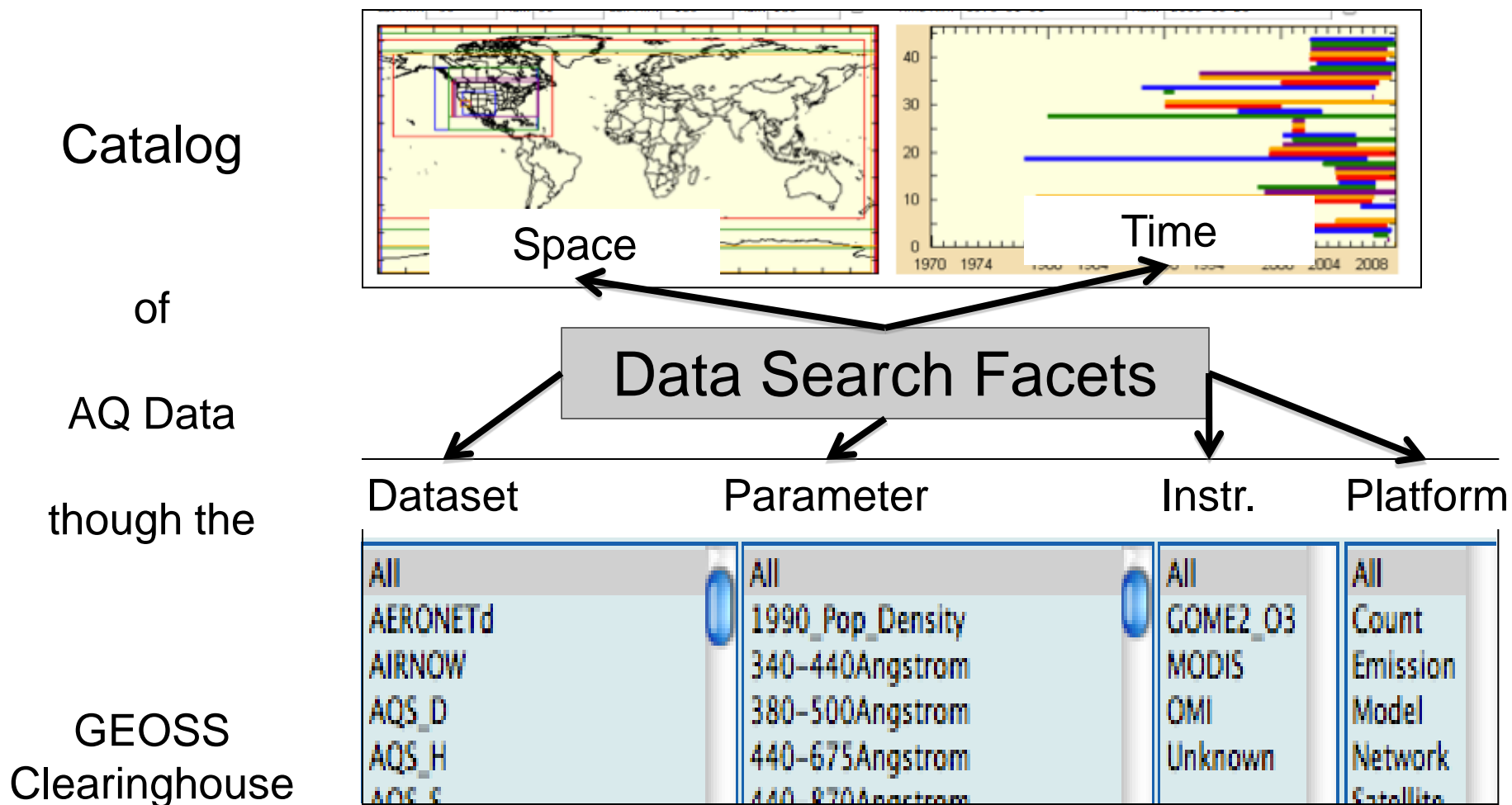
- US-09-01b: Development of **Communities of Practice**
- US-09-01a: Identifying **User Requirements for Earth Obs.**
- AR-09-01b: GEO **Architecture Implementation Pilot (AIP)**
- DA-09-02d: Atmospheric **Model Evaluation Network**
-

Meeting & Coordination Activities, 2009-10

- May 2009: Session on AQ and GEOSS, ISRSE, Stresa, Italy (Husar)
- Jul 2009: AQ Community Infrastructure, ESIP, Santa Barbara, CA, US (McCabe)
- Nov 2009: AQ Side Meeting at GEO-VI Plenary, Wash. DC, US (McCabe, Keating)
- May 2010: GEO Decision Support Concept Proposal (Falke)
- June 2010: AQ Participation in the GEOSS AIP 2,3. (Falke, Robinson)
- Monthly: Telecons, Wiki workspace (Falke, Robinson)

AR-09-01b: GEO Architecture Implementation Pilot (AIP)

Testing and Using the GEOSS Common Infrastructure (GCI)



Sharing is facilitated by the GEOSS Common Infrastructure

GEO AQ-CoP

Main interaction through the open, participatory website:



**Air Quality
Community of Practice**



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Air Quality Projects

- [HTAP -- Task Force on Hemispheric Transport of Air Pollution](#)
While local and regional emissions sources are the main cause of air pollution problems worldwide, many air pollutants are transported on a hemispheric or global scale,...
- [ACP -- Atmospheric Composition Portal](#)
The AC Portal is being developed to provide access, tools, and contextual guidance to scientists and value-adding organizations in using remotely sensed atmospheric composition...

Recent News

- [2010-06-15: HTAP Brussels Meeting](#)
- [ESIP Winter Meeting 2011](#)

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GEO AQ CoP Active Participants

Technologists:

Michael Decker, FZ Julich; Oleg Goussev (DLR); Kari Hoijarvi, WUSTL;
Erin Robinson, WUSTL.. and others.

Facilitators:

Stefan Falke, NGC; Dave McCabe, EPA/CAC); Frank Lindsey, NASA;
Rudy Husar, WUSTL; Martin Shulz, FZ Juelich .. and others.

Agency Executives:

Gary Foley, EPA; Terry Keating, EPA; Lawrence Friedl, NASA .. and
others.

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