Sensor Web Enablement
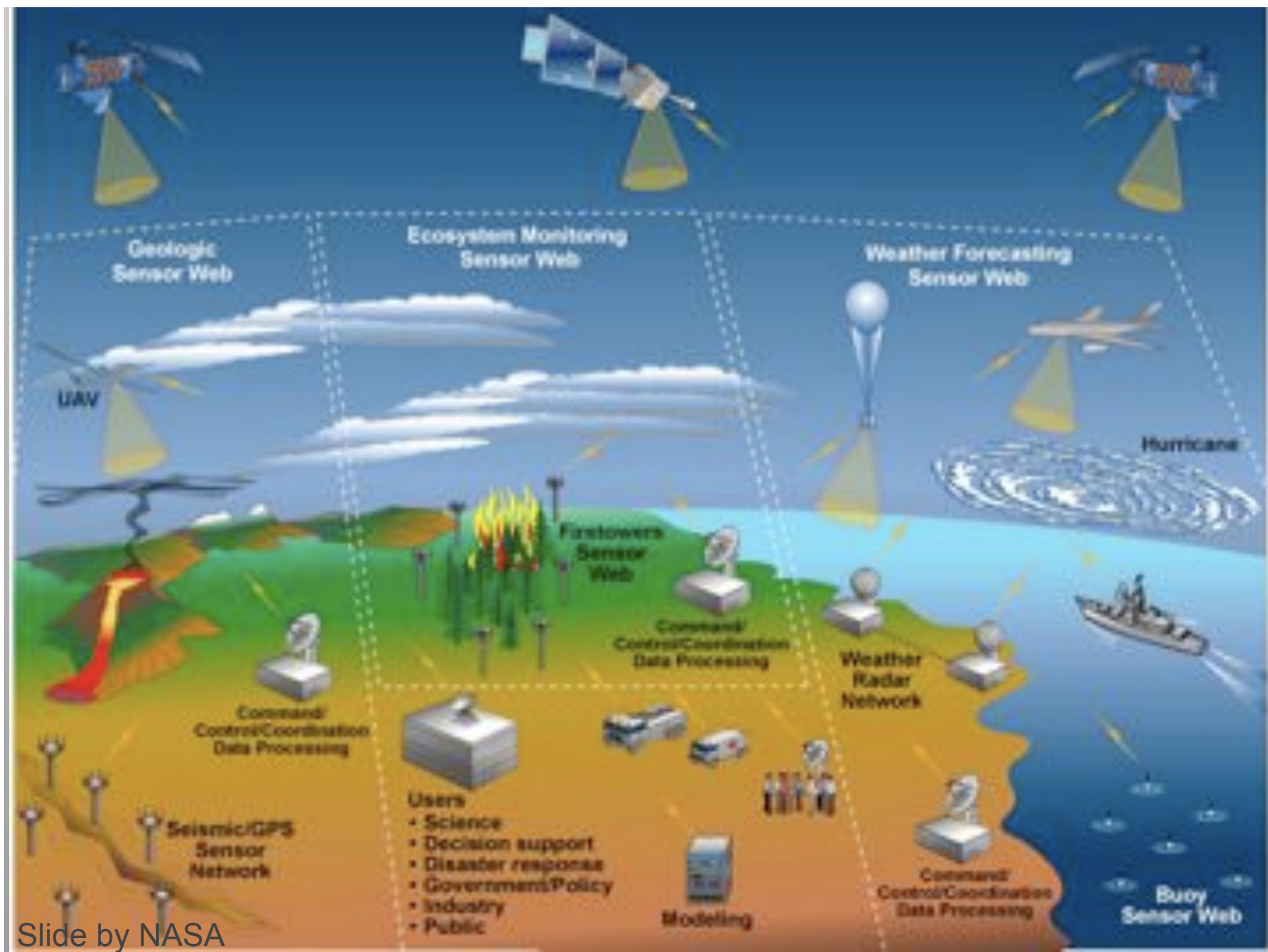
Ingo Simonis
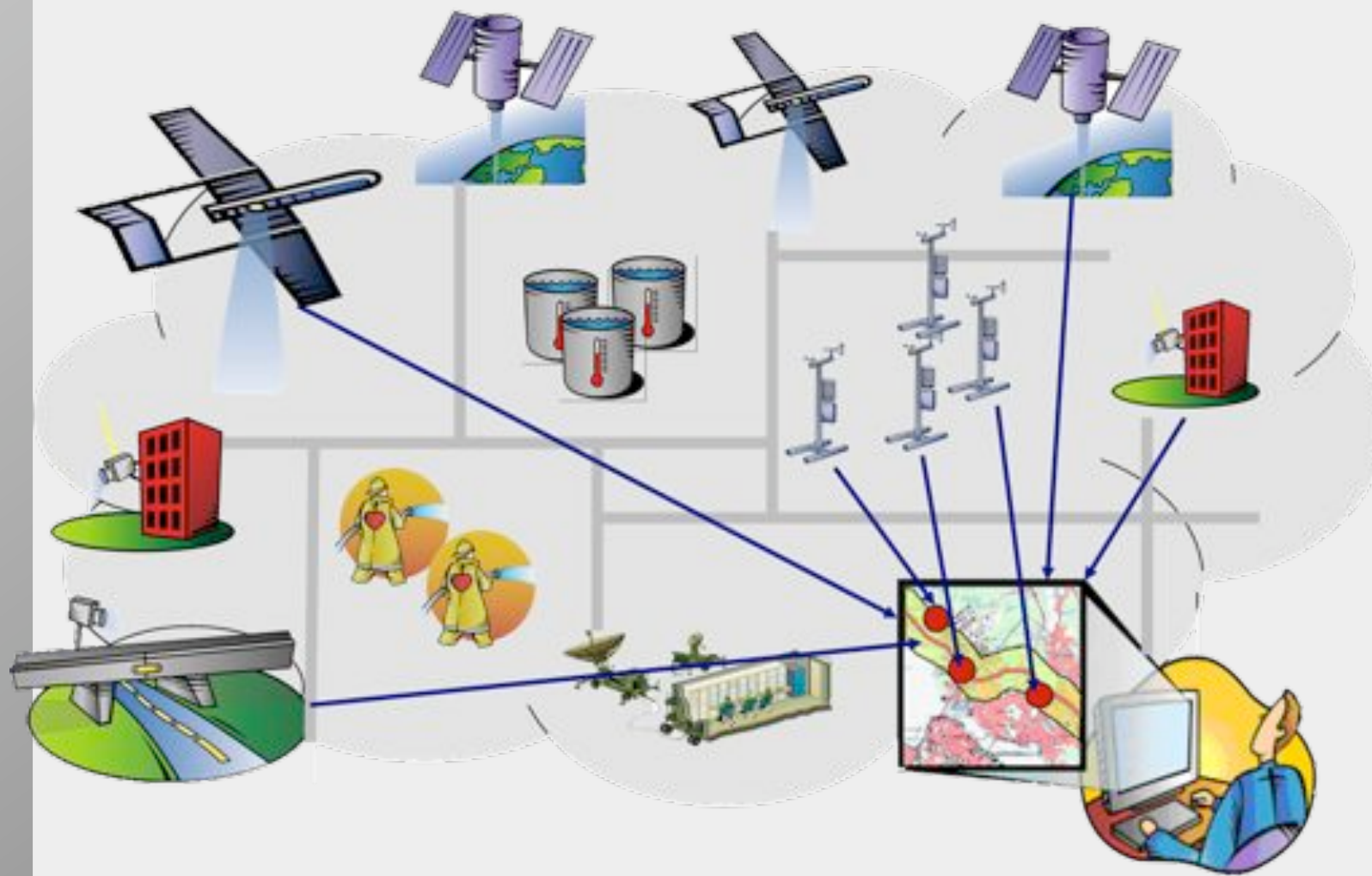
International Geospatial Services Institute

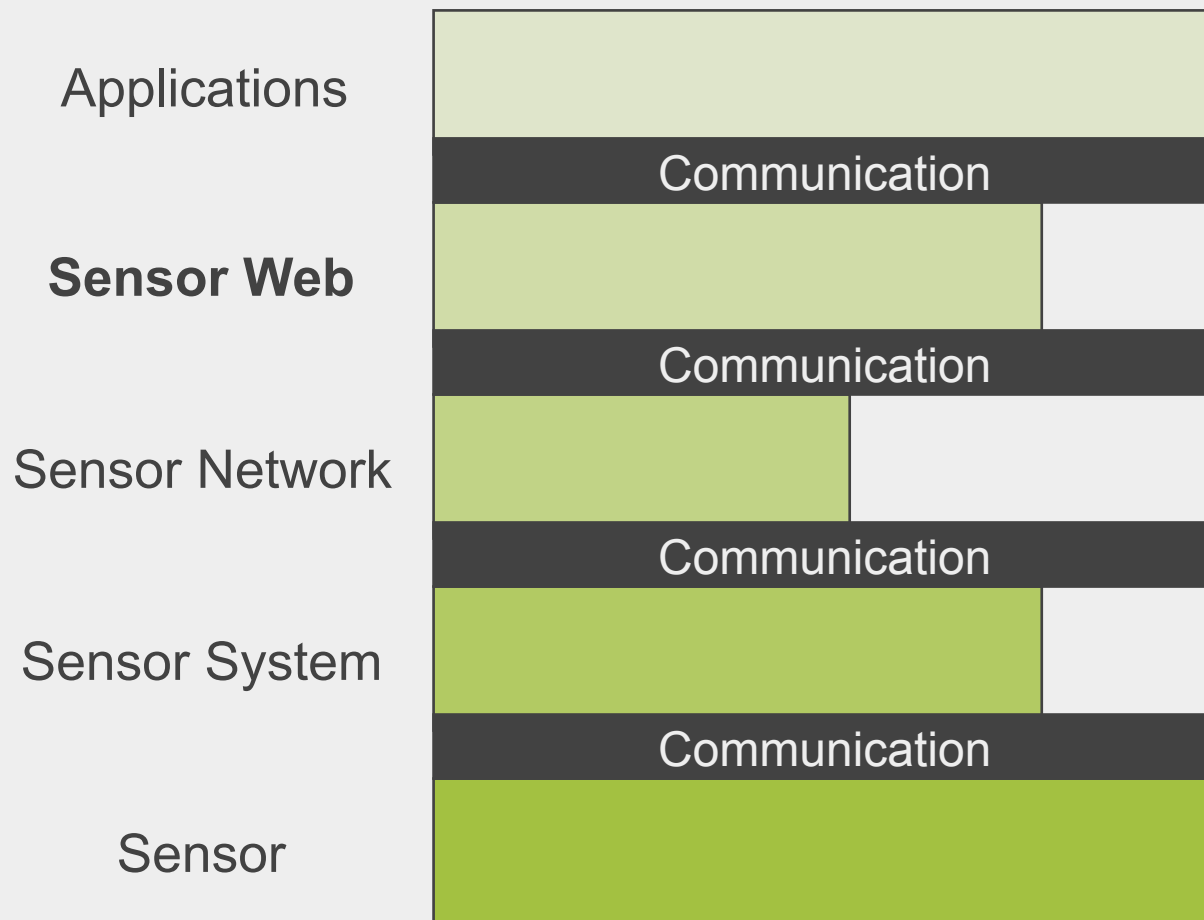"*The*" Sensor Web

ALTERNATIVE APPROACHES

Slide by NASA

Scientific View: Sensor Web

Applications

Communication

Sensor Web

Communication

Sensor Network

Communication

Sensor System

Communication
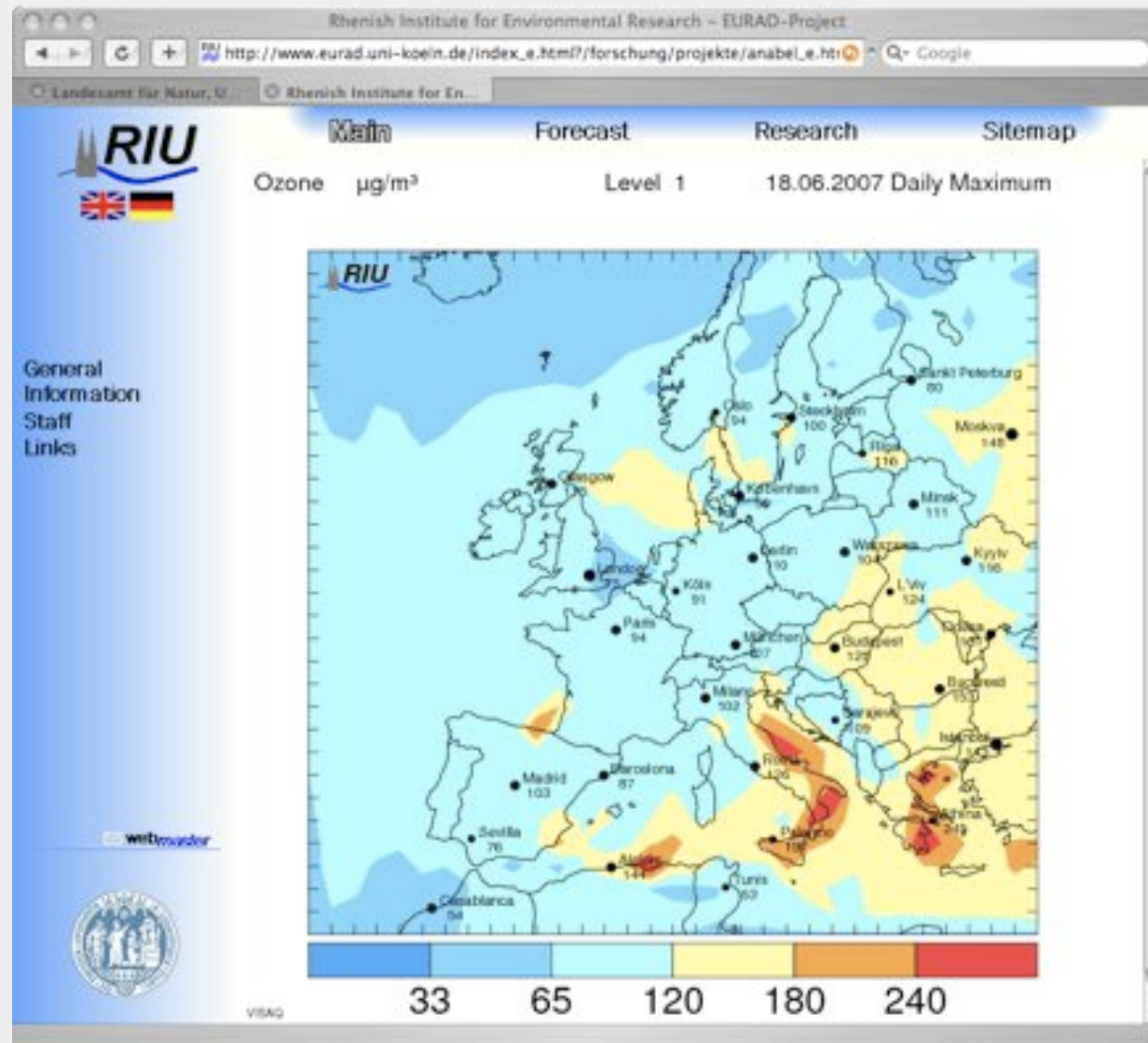
Sensor

Monolithic Approaches

SENSOR DATA OUTSIDE SENSOR WEB
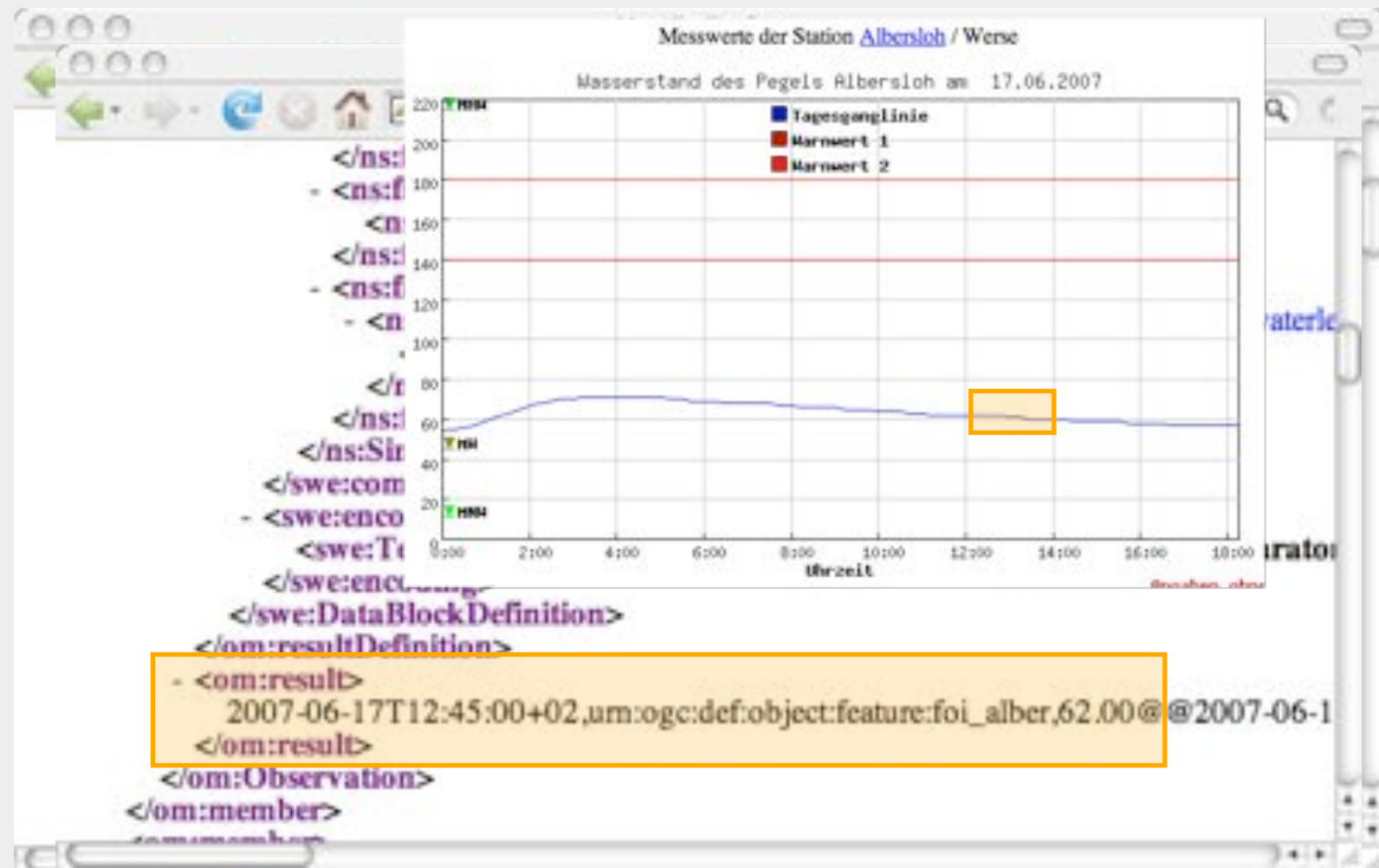
Sensor data - today
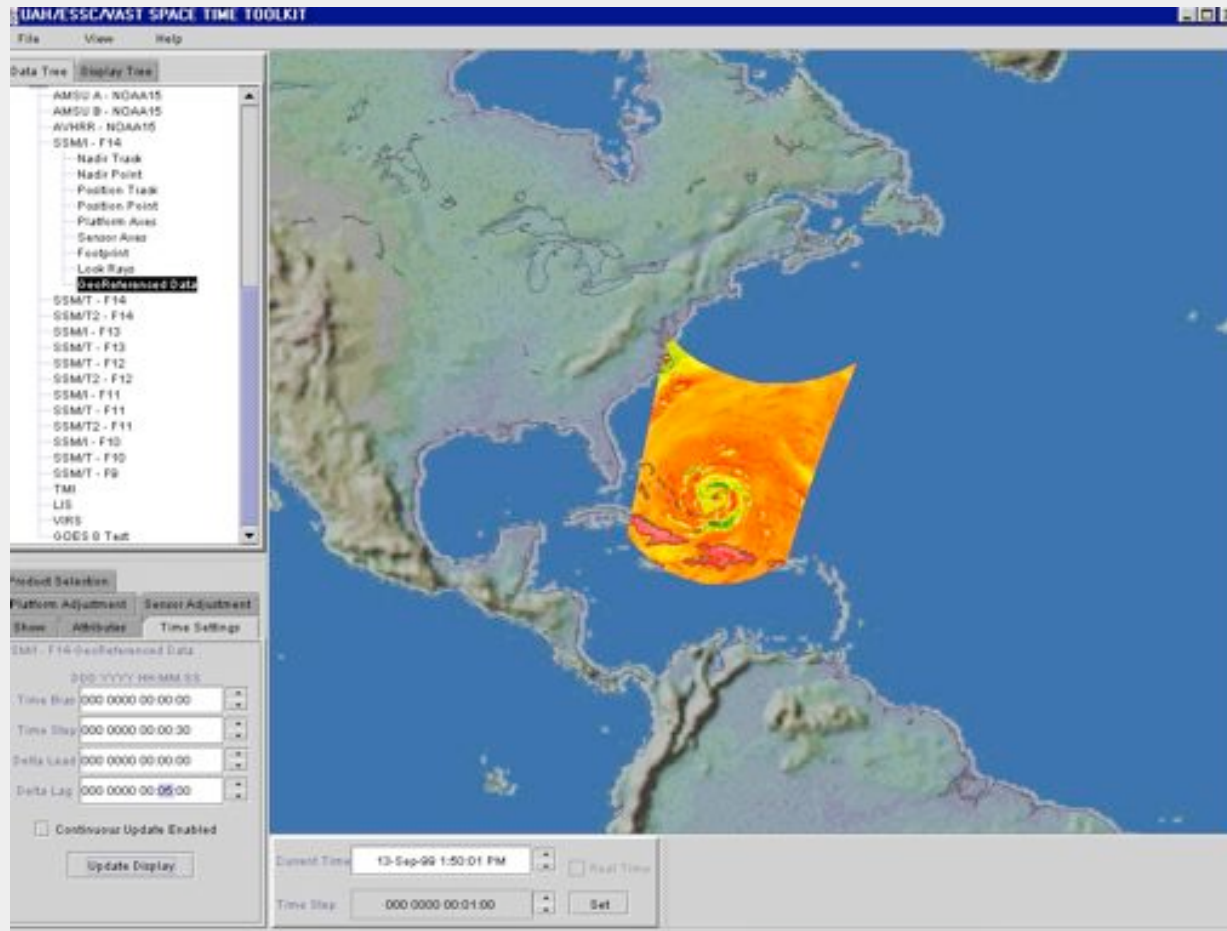
Sensor data - today

Interoperable Infrastructures
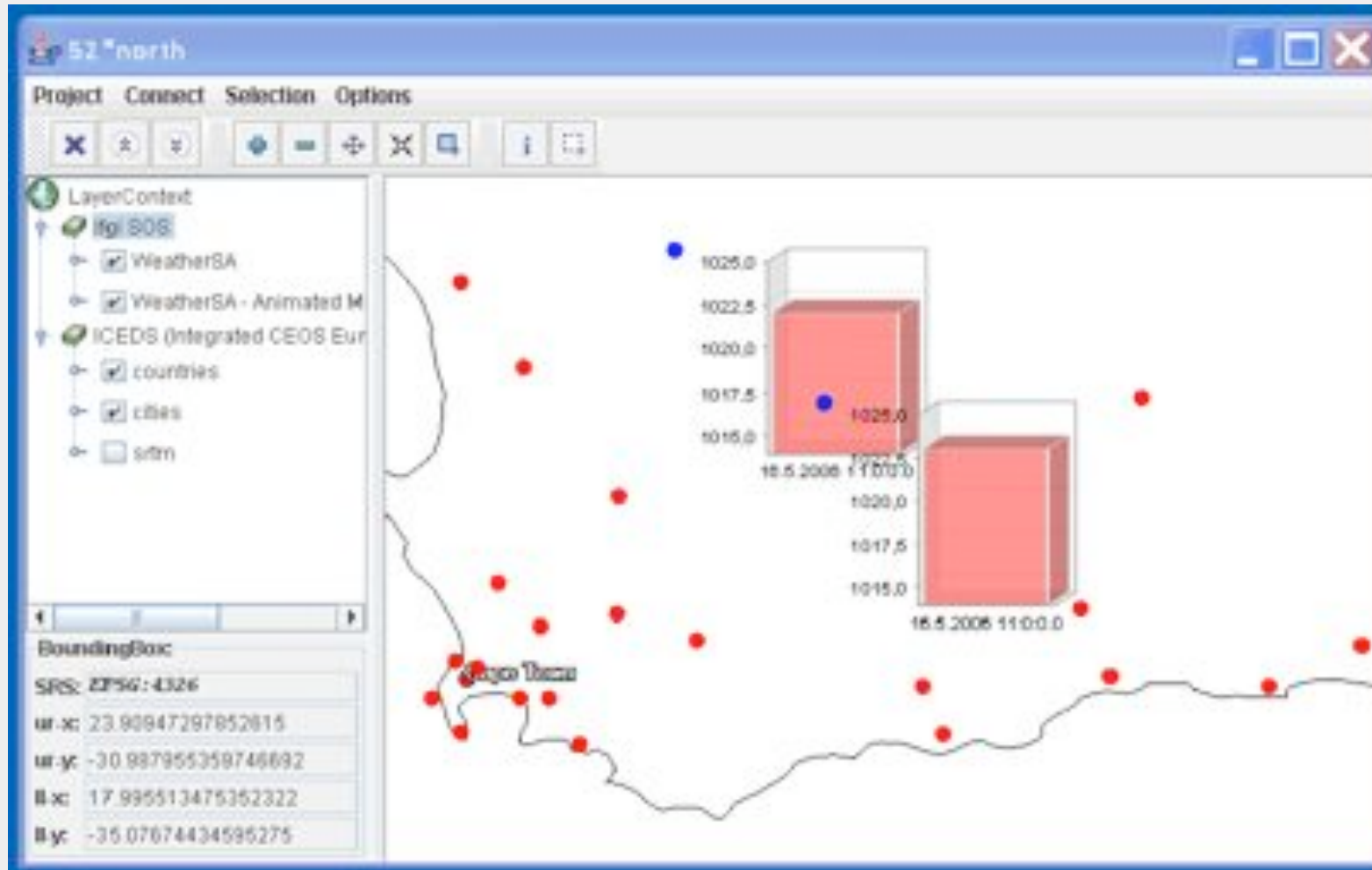
SENSOR WEB

Sensor Data: Sensor Web

Sensor Data: Sensor Web II
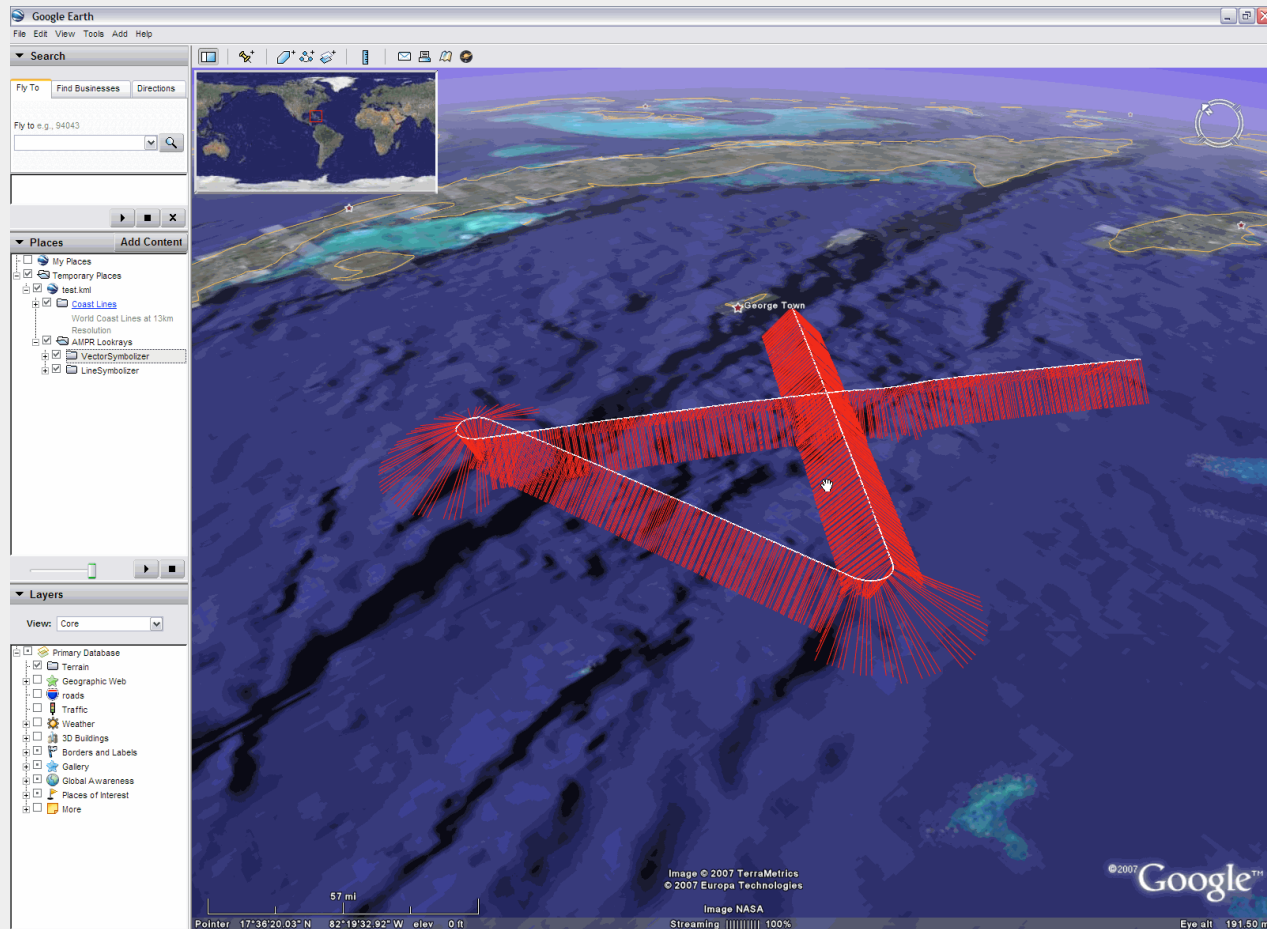
- Works with various clients, even main stream

Works with various clients

Sensor Data: Sensor Web III

- Works with various clients, **even main stream**

Sensor Web

REQUIREMENTS

Sensor Web Desires

- Quickly discover sensors and sensor data (secure or public) that can meet my needs – location, observables, quality, ability to task

- Obtain sensor information in a standard encoding that is understandable by me and my software

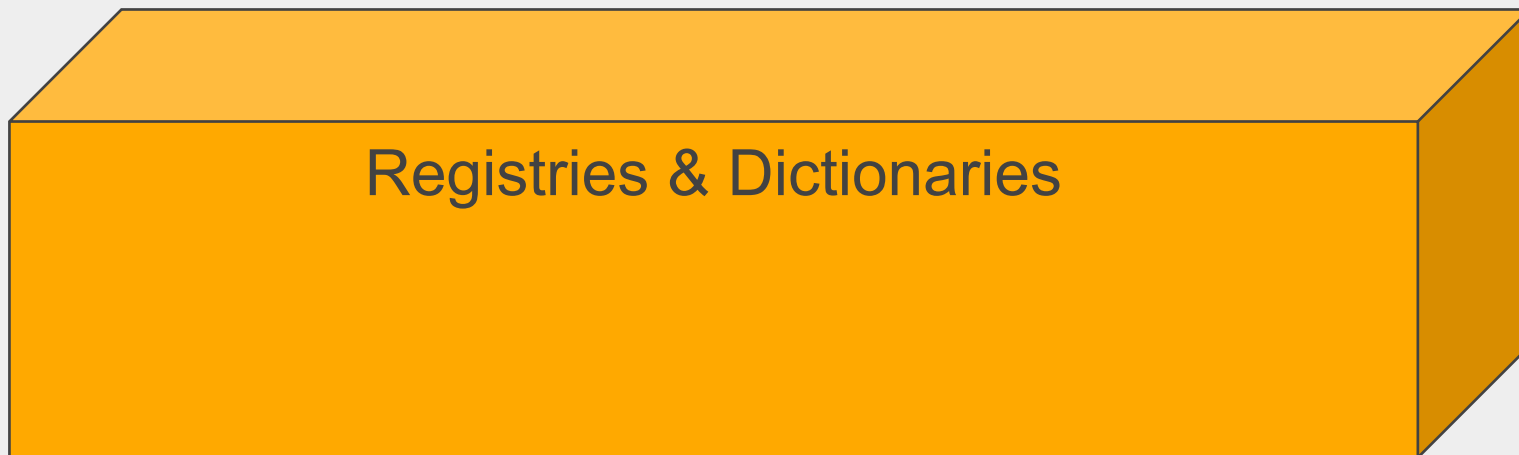- Readily access sensor observations in a common manner, and in a form specific to my needs

- Task sensors, when possible, to meet my specific needs

- Subscribe to and receive alerts when a sensor measures a particular phenomenon
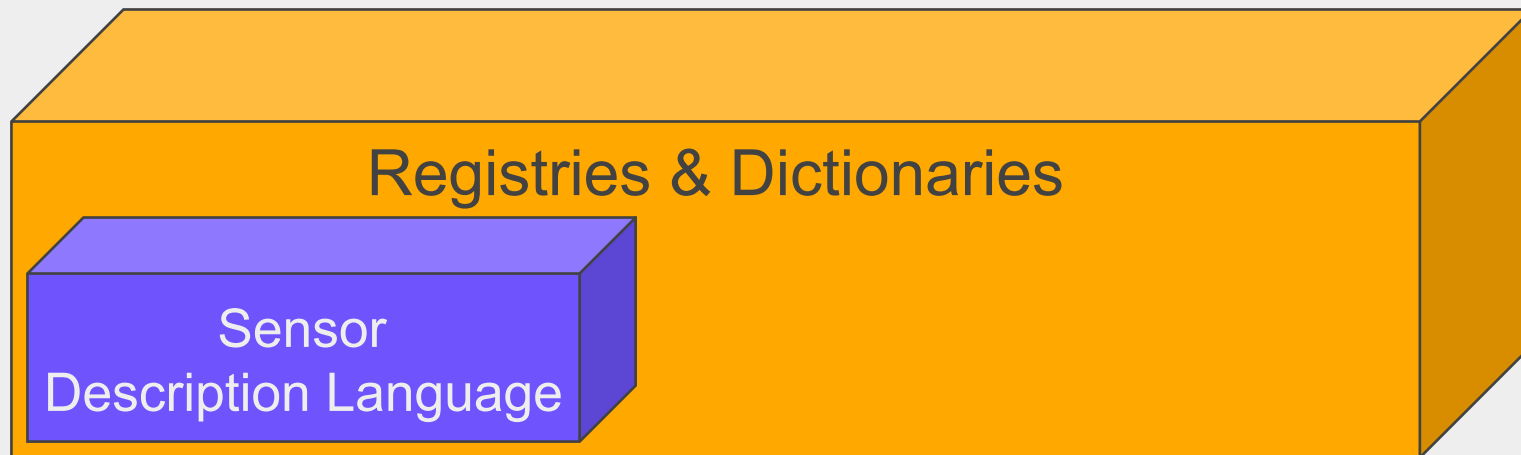
Sensor Web

BUILDING BLOCKS

- Quickly discover sensors and sensor data (secure or public) that can meet my needs – location, observables, quality, ability to task
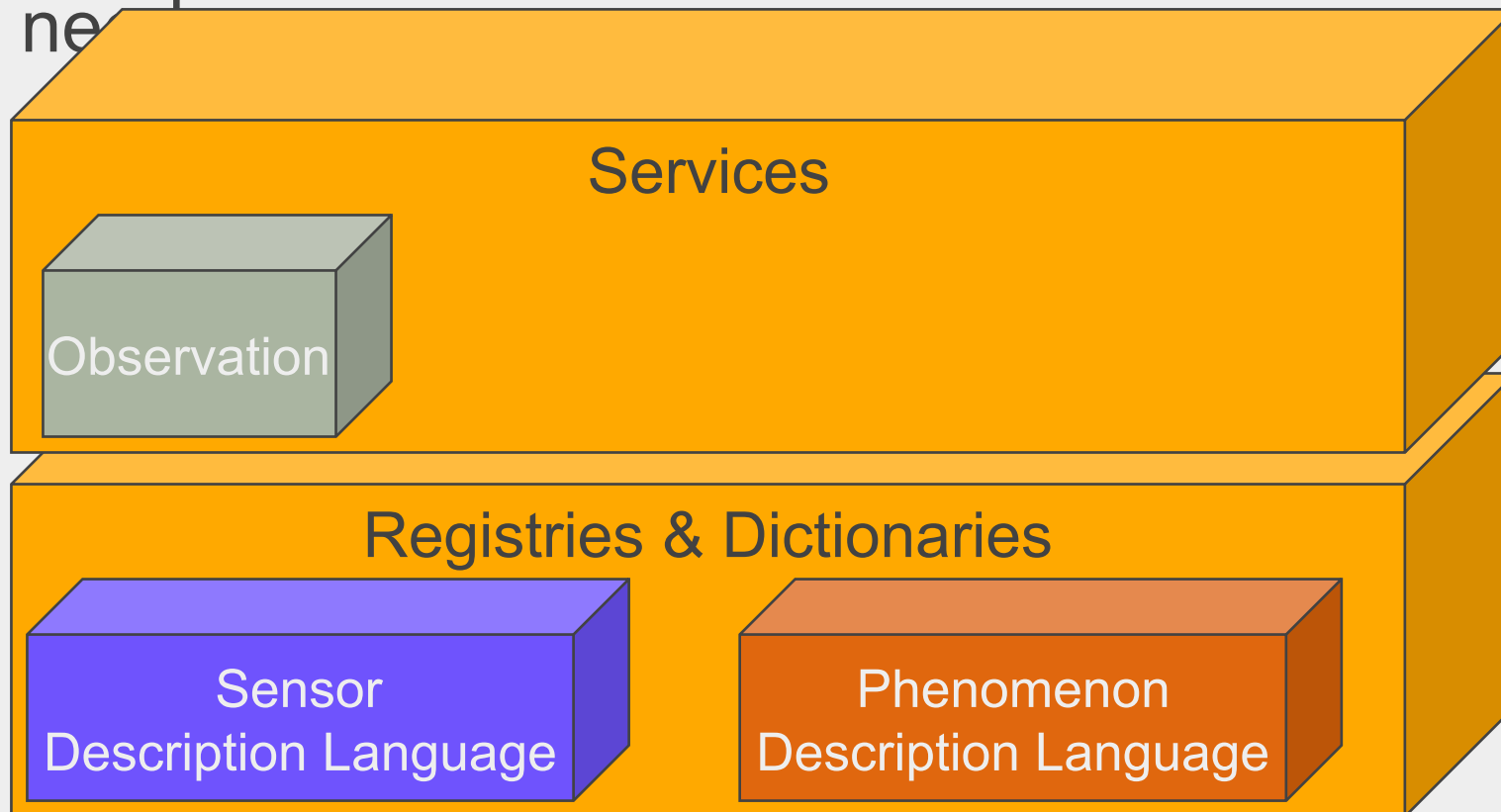
Registries & Dictionaries

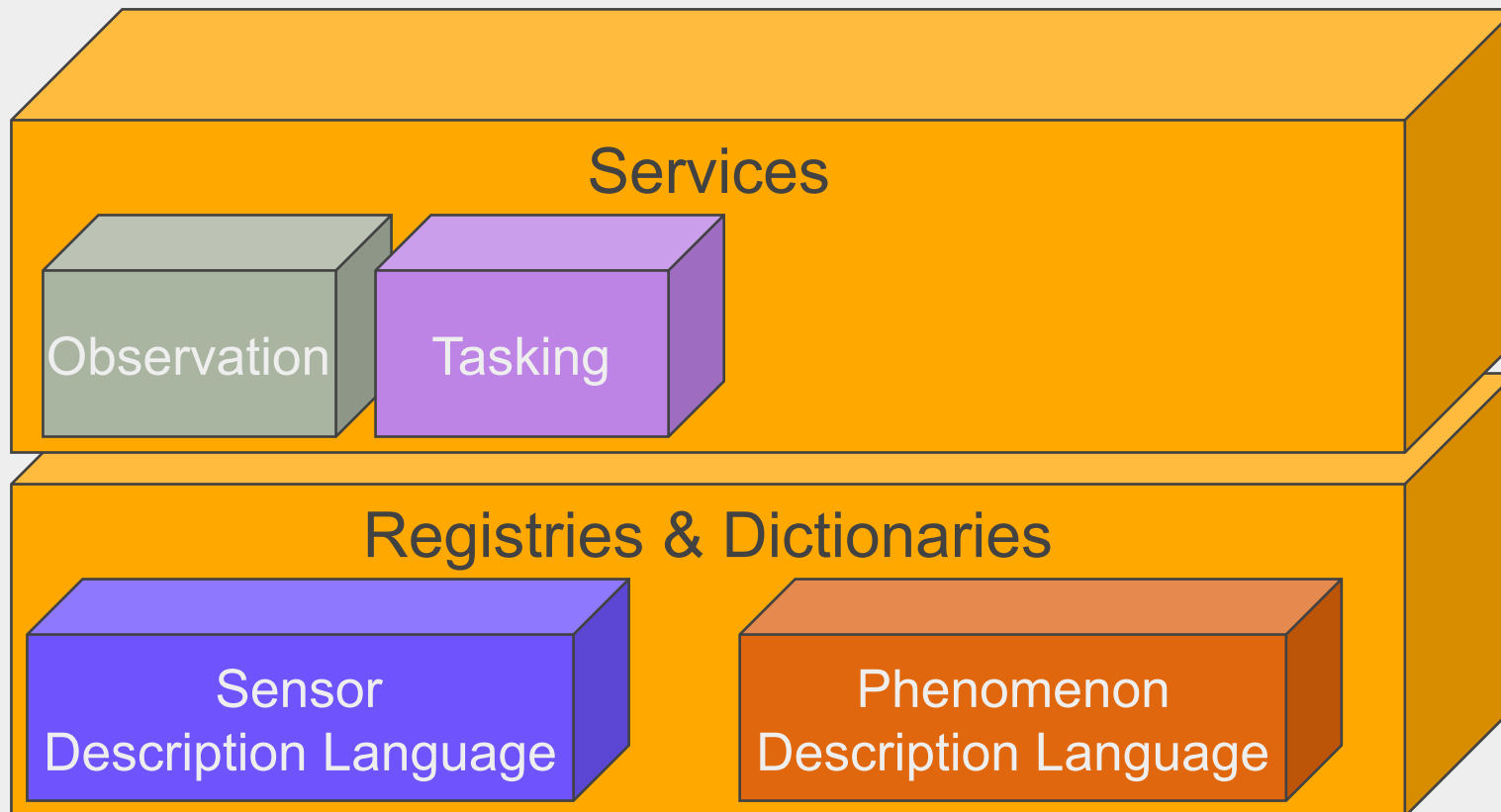- Obtain sensor information in a standard encoding that is understandable by me and my software

Registries & Dictionaries

Sensor
Description Language

- Readily access sensor observations in a common manner, and in a form specific to my needs

Services

Observation

Registries & Dictionaries

Sensor
Description Language

Phenomenon
Description Language

- Task sensors, when possible, to meet my specific needs

Services

Observation

Tasking

Registries & Dictionaries

Sensor
Description Language

Phenomenon
Description Language

Building Blocks: Sensor Web

Services

Observation   Tasking   Alerting   Analysis

Registries & Dictionaries

Sensor
Description Language

Phenomenon
Description Language

Building Blocks: OGC SWE

Missing Bits & Pieces & Lessons Learned

- No OGC chaining standards for workflow automation

- OGC being slow on SOAP

- Interoperability at semantic level rudimentary

- Preparation of existing data stores costly