

Open Source SDI Technologies

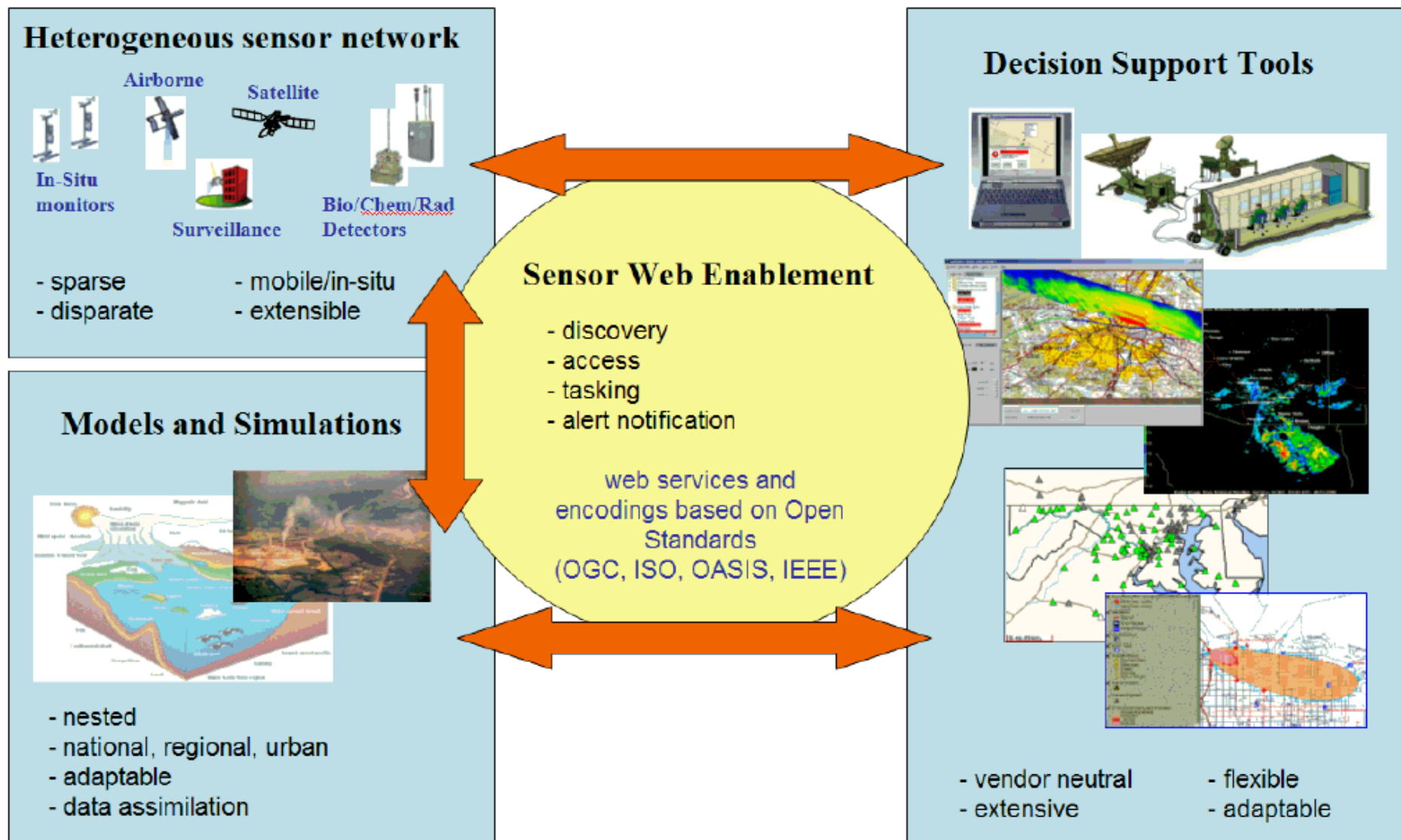
OGC's Sensor Web Enablement

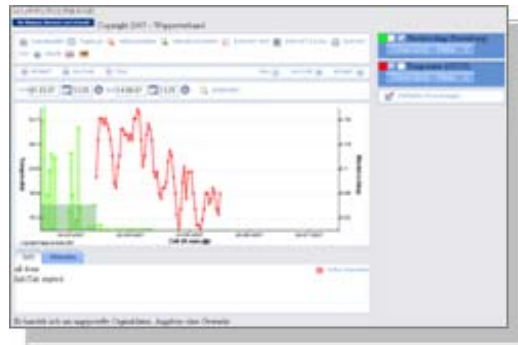
A world full of sensors



OGC Sensor Web Enablement

- Make all kind of sensors via the WWW:
 - discoverable
 - accessible
 - controllable
- Framework for a WWW-based sensor web
- Foundation for “plug-and-play” web-based sensor networks

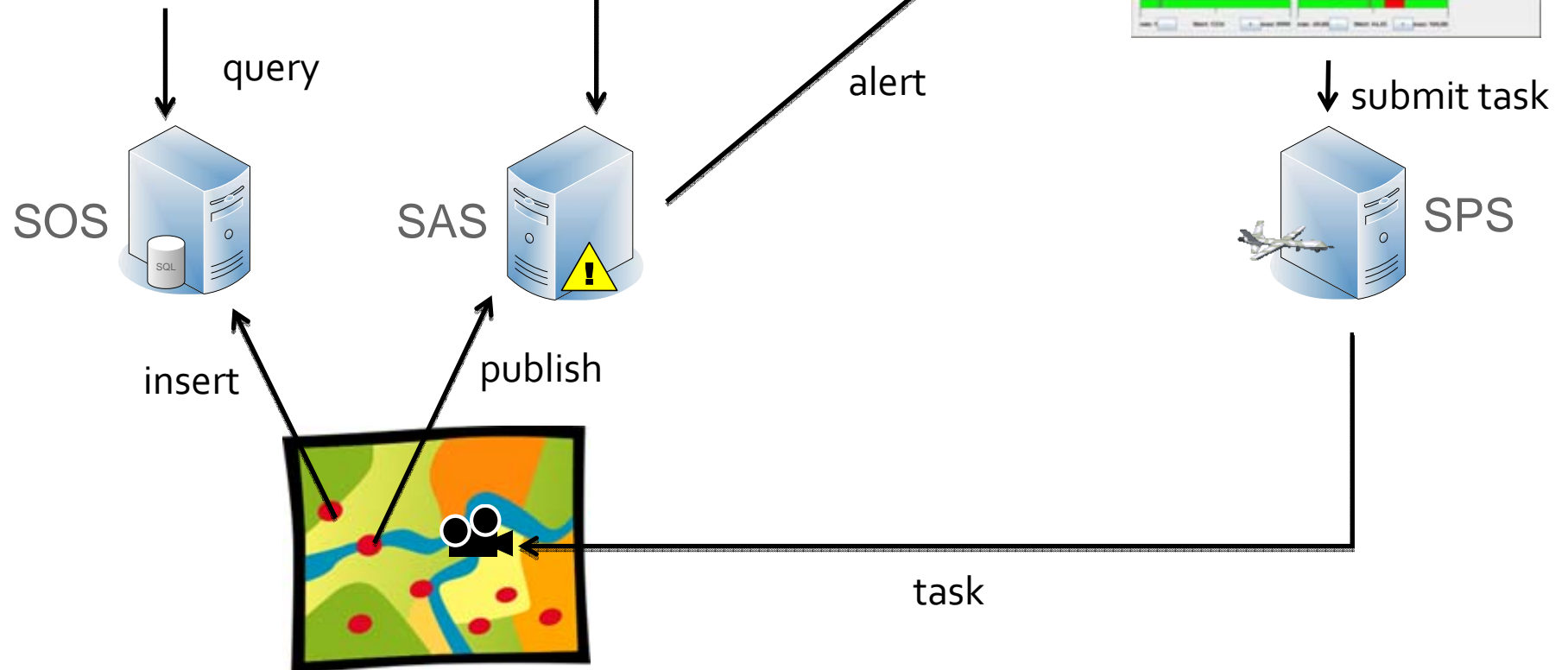




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Prof. bearbeiten



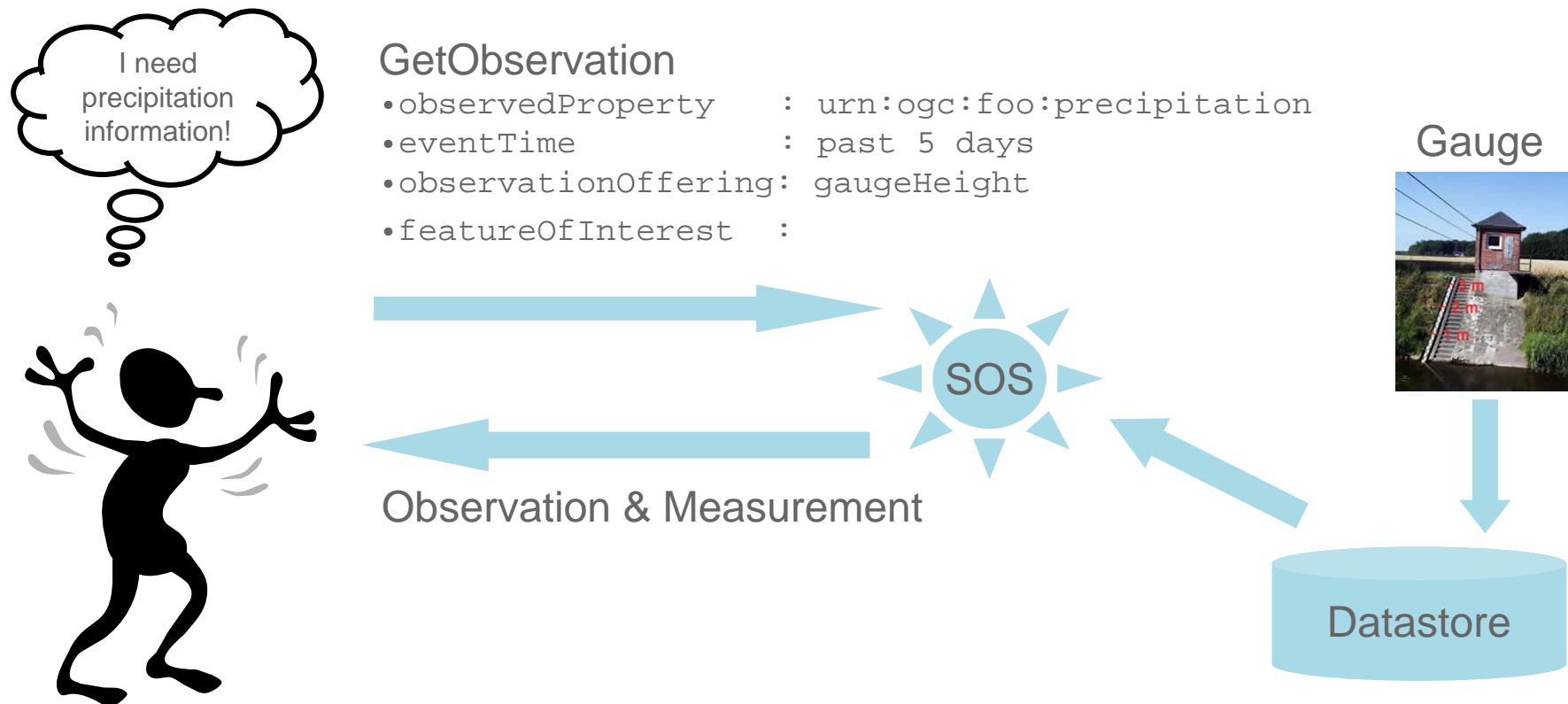
Sensor Observation Service

- Pull-based access to observations
- Consistent for all sensor systems
- Mediator between:
 - client \leftrightarrow data archive / simulation / real-time sensors

SOS

- Proprietary protocols & formats are hidden
- Leverages:
 - O&M – to encode requested sensor observations
 - SensorML – to encode sensor metadata
- Generic character supports:
 - Stationary & mobile
 - in-situ & remote

Sensor Observation Service



Sensor Alert Service

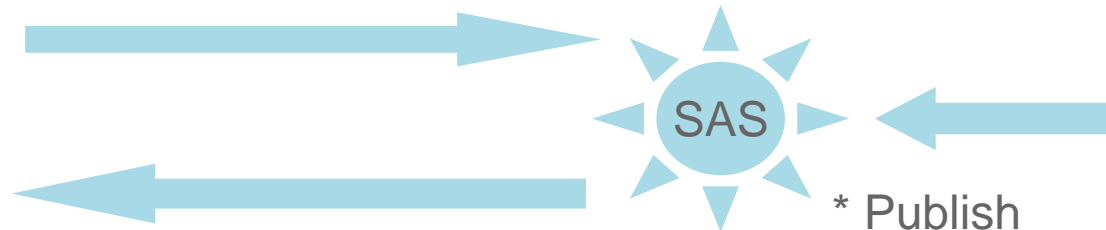
- OGC Best Practice (OGC 06-028r3)
- Enables push based communication
- Publish / Subscribe pattern
- Notification producer or broker
- Event Filtering
 - Spatial, temporal, value based

SAS



Subscribe

- Location: gml:point
- ResultFilter:isGreaterThan 200



Alert

- Waterlevel = 210

* Publish

- Waterlevel = 190
- Waterlevel** = 210
- Waterlevel = 200



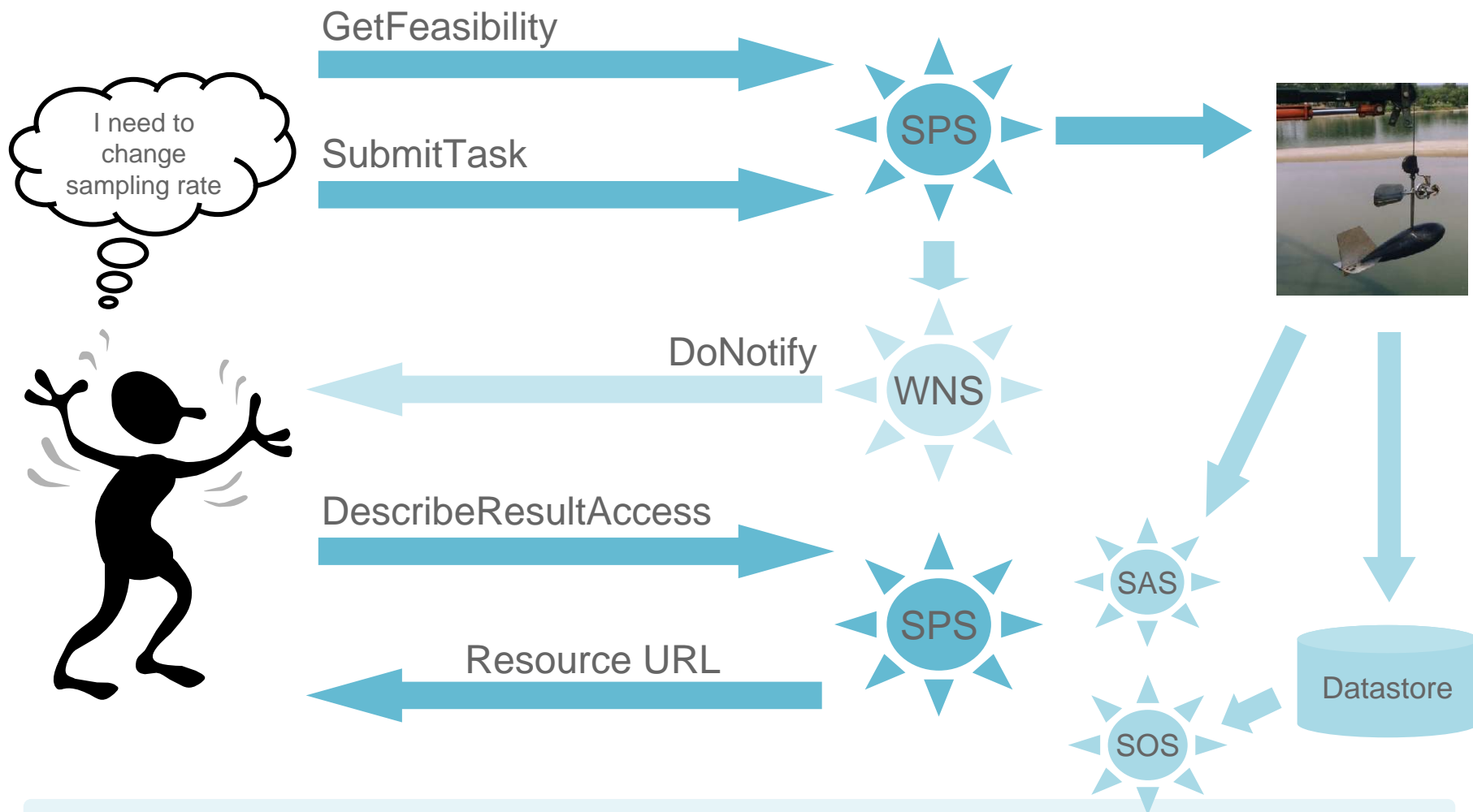
SAS - Follow-Up

- Sensor Event Service (SES)
- OGC Discussion Paper (OGC 08-133)
- Enhanced filter capabilities and **CEP** support
 - XPath, OGC Filter Encoding, Event Pattern Markup Language
 - Topic based filtering
- Using SOAP via HTTP
- Uses OASIS' WS-Notification

Sensor Planning Service

- Tasking of sensors via WWW
- Define, control, update & cancel tasks
- Data is provided via link

SPS





52°North

Initiative for Geospatial Open Source Software

What is 52°North?

- Collaboration platform for *research-oriented* open source software development
- Non-profit
- Objectives:
 - Advance bi-lateral transfer of knowledge between research and practice
 - Transform the innovations into practical technological solutions

Who is 52°North?

- Members
 - Institute for Geoinformatics (Muenster, Germany)
 - Con terra (Muenster, Germany)
 - ITC (Enschede, The Netherlands)
 - ESRI Inc. (Redlands, CA)
 - Austrian Research Centres (Austria)
 - Federal Waterways Engineering and Research Institute (Germany)
- Cooperation with research institutes and enterprises
 - CSIR (South Africa)
 - German Aerospace Centre (Germany)
 - CSIRO (Australia)
 - ...
- Open for any innovation oriented organization

52°North Communities

- Sensor Web Enablement
 - <http://52north.org/swe>
- ILWIS
 - <http://52north.org/ilwis>
- Security and Geo Rights Management (GeoRM)
 - <http://52north.org/security>
- Processing
 - <http://52north.org/processing>
- Semantics
 - <http://52north.org/semantics>

52°North Licensing

- All software available under GNU GPL V2
- Commercial license option available

Thank You!

Questions, Comments, Ideas ...?

SOS - 52°North Implementation

