Mainstreaming Sensor Web Enablement Technologies Through Collaboration
Overview

- Sensor Web Enablement
- Mainstreaming Sensor Web Enablement
- 52° North
- Cooperation within the 52° North SWE Community
- Conclusion
Sensor Web Enablement
Sensor Web Enablement

- Digital Earth
  - Virtual multi-resolution three-dimensional representation of the Earth on the Internet
  - Spatially referenced
  - Find and navigate through space and time
    - Historical data
    - Real-time
    - Predictions
Sensor Web Enablement

- One element for realizing the Digital Earth vision
- Make all kinds of sensors via the WWW
  - Discoverable
  - Accessible
  - Controllable
- Framework for a WWW-based sensor web
- Foundation for “plug-and-play” web-based sensor networks
Sensor Web Enablement

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Sensor Web Enablement

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Mainstreaming Sensor Web Enablement

- SWE architecture has reached a mature and solid status
- Currently it provides a powerful set of functionality addressing professional expert users
- Mainstreaming SWE → Sensor Web for experts and end users alike
Mainstreaming Sensor Web Enablement

- Easy integration of sensor data into the Sensor Web
- Client applications that are easy to use
- Provide guidance how to use the SWE technology
- Linking SWE to mainstream trends (e.g. social networks like Facebook)
Mainstreaming Sensor Web Enablement

- Significant efforts needed for achieving the aim of mainstreaming the Sensor Web Enablement technologies
- Cooperation between multiple parties is important
- Platform for facilitating the cooperation is necessary - \(\rightarrow\) 52° North
- On the next slides: Introduction into 52° North
52° North - Vision

52°North – Innovation through cooperation:
A competence network for a better world
52° North

- Innovation node within global open source network
- Collaboration platform for research-oriented open source software development

Objectives:
- Advance the development of cutting edge open source technology in Geoinformatics
- Advance the bi-lateral transfer of knowledge between research and practice
- Transform the innovations into practical technological solutions
52° North - Mission

- Business and organizational model to foster GI Innovations through cooperation of science, GI-industry and professionals
  - Optimizing the value adding process “Innovation”
  - Appropriate technologies for developing areas
  - Self-sustaining business
  - Win-win situation for all
52° North - Cooperation

- Founded by
  - Institute for Geoinformatics (Muenster, Germany)
  - Con terra GmbH (Muenster, Germany)
  - ITC (Enschede, The Netherlands)
  - ESRI Inc. (Redlands, CA)

- Emerging cooperation with other institutes
  - Austrian Research Centres (Austria), Federal Waterways Engineering and Research Institute (Germany), Germany Aerospace Centre (Germany), CSIR (South Africa) etc.

- Cooperation of research institutes and enterprises
- Open for any innovation oriented organization
52° North – Non-Profit Organization

- Legal status of a German company limited by shares to provide
  - Legal Maintainability
  - Limitation of Liability
  - Encapsulated Back Office
  - Trustworthy Identity
- No optimization of the economic profit for the shareholders
- Revenues must be re-invested according to the initiative’s articles of association
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4 communities established fruitful software development and specification activities

**Sensor Web Enablement**
- Implementations for all OGC SWE specifications
- Contribution to OGC specification activities

**ILWIS**
- Remote sensing and GIS software
- ITC group migrated ILWIS to 52° North
52° North - Communities

- Security and Geo Rights Management (GeoRM)
  - Solutions for controlling the access to geospatial data/services

- Processing
  - Implementation of OGC’s Web Processing Service Specification
  - Activity started at ITC
  - Contribution OGC specification work
Cooperation within the 52° North SWE Community
The 52° North SWE Community

- Good example for a cooperation between
  - Science
    - University of Münster
    - Austrian Research Centres
  - Professionals
    - Federal Waterways Engineering and Research Institute
    - Wupperverband
  - GI-Industry
    - con terra
The 52° North SWE Community

- Cooperation for
  - Developing new ideas
  - Writing proposals for research projects
  - Conducting research projects
  - Disseminating and exploiting the results
The 52° North SWE Community

- Example
  - Important aspect for mainstreaming SWE → facilitate the integration of sensors into the SWE architecture
  - 52° North as a common platform for
    - Exchanging about the research idea “Sensor-Bus”
    - Bringing together partners who are interested in advancing this aspect of SWE
    - Coordinating the proposal submission process
    - Organizing the work during the project
    - Publishing the results to the public
Benefits

- Science
  - New projects
  - Contacts to users who practically apply SWE

- Professionals
  - Direct contact to developers of state of the art SWE implementations
  - Support for political decisions

- GI-Industry
  - Access to research results as well as experiences gained by pre-competitive developments
  - Evaluation of new trends and developments
Benefits

- Diversity of partners from different backgrounds
- Bringing together research, GI industry and users
- Network between partners ensures that new ideas are quickly implemented and tested
Conclusion
Conclusion

- Sensor Web Enablement
- Next step: Mainstreaming SWE
- 52° North as a collaborative platform
- Cooperation through 52° North for reaching a goal like mainstreaming SWE
Thank you for your attention

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