External Industry Semester

intermediary presentation

Dustin Demuth

52north
exploring horizons

25.01.2013

introduction to 52° North

R&D Network

- history & partners
  - founded in 2004 by ifgi and con terra GmbH as open source initiative
  - International Institute for Geo-Information Science and Earth Observation (ITC) joined in 2005
  - Environmental Systems Research Institute Inc (ESRI) joined in 2006
  - 2008 Austrian Institute of Technology (AIT) and Service Center for Information Technology (DLZ-IT) joined
  - 2009 Kisters AG
  - 2011 Dept. of Surveying and Geoinformatics (HS Bochum) and TU Dresden
- communities
- company

introduction to 52° North

R&D Network

- history & partners
- communities
  - A - SensorWeb: SensorWeb Research, such as SOS, SPS, etc..
  - B - Geoprocessing: standardized web-geoprocessing software
  - C - ILWIS: Develops Integrated Land and Water Information System
  - D - Security and GeoRM: access control and RM
  - E - Semantics: Semantic Enablement Layer
  - F - Geostatistics: analysis and visualization of spatio-temporal data
  - G - 3D: 3-dimensional geovisualization
  - H - Metadata Management: collecting, managing, retrieving metadata
- company

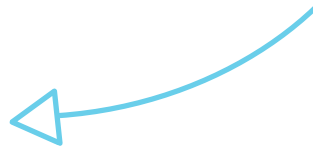
introduction to 52° North

R&D Network

- history & partners
- communities
- company
  - since September 2006
  - limited by shares (GmbH)
  - administrative office
  - service center & provider
  - manages IPR and licenses
  - software support, maintenance, consulting & development

shortfacts video recorded at intergeo 2012

outline



advisors

Prof. Kray @ ifgi

Dr. Bröring @ 52° North

timeframe

October 2012

March 2013

focus on

Open Hardware development, enhancement of the 52° North SenseBox

projects

Google Summer Of Code 2012 Wrap-Up

- Feature Service on Arduino
- OGC RESTful GeoServices 0.0.4 Draft
- Integrate sensor platforms into GIS
- Turn each platform into a GeoServer
- convert feasibility study into product

Background

52N was mentoring organization; four different topics, amongst those: *GIS Link to the Web of Things*, Student: Sidhant Hasija (India), Mentors: Arne Bröring, Dustin Demuth; feasibility study

projects

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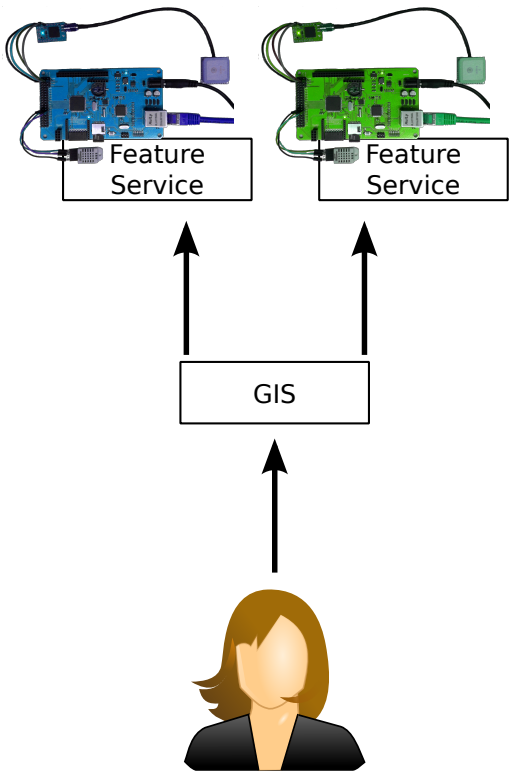

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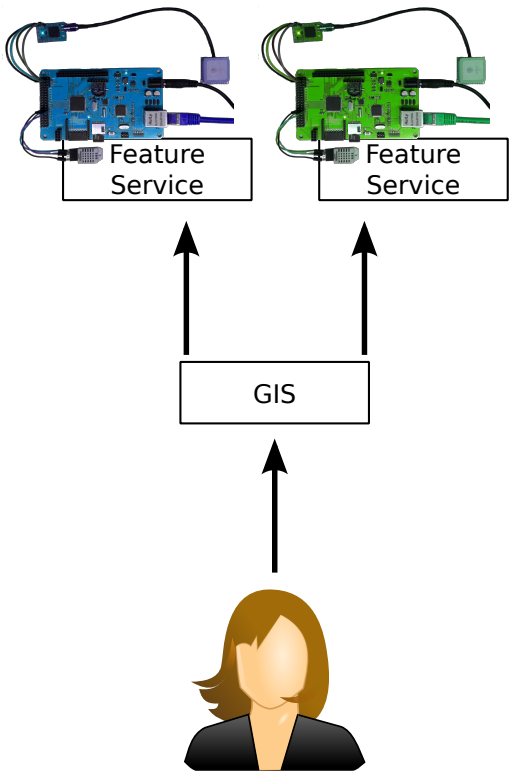

Scientific Output

Submitted abstract for Geoinformatik 2013 in Heidelberg,
Short-Paper for AGILE 2013 in Leuven is in progress

projects

52° North AirQuality SenseBox

- build own application based upon the AQE-Sensor Shield
- push readings into SOS instead of cosm
- wireless, autonomous sensors
- location-aware
- use *mesh* instead of *pair* setup
- convert raw data into data w/ significance

Background

AQE Workshop; ifgi retrieved 20 beta devices from AQE initiative. Those are far away from perfect; problems are calibration, wireless functionality,

projects

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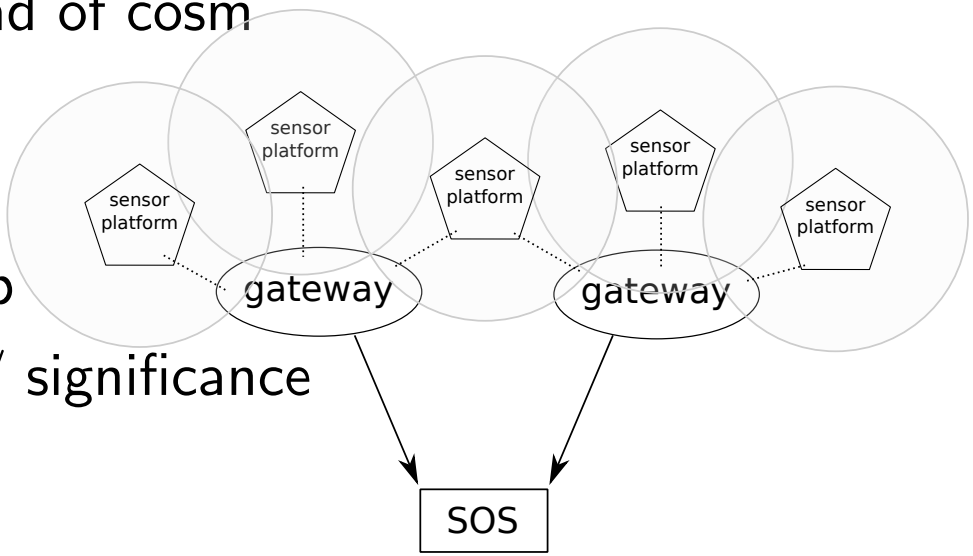

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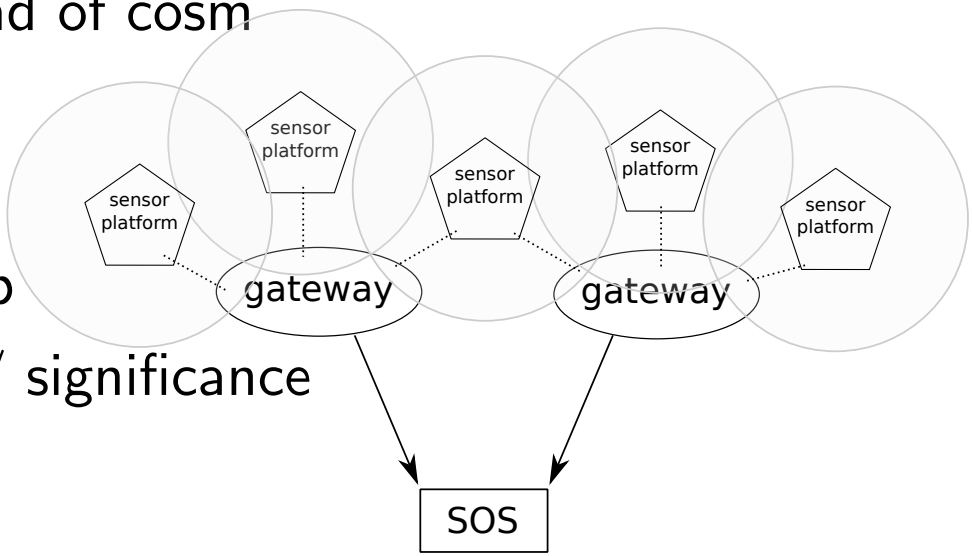

Scientific Output

Submitted abstract for EGU 2013 in Vienna

achievements

SenseBox pushing into SOS @ intergeo 2012

First beta for OGC RESTful GeoServices API's Feature Service, running on a 16 MHz microprocessor!

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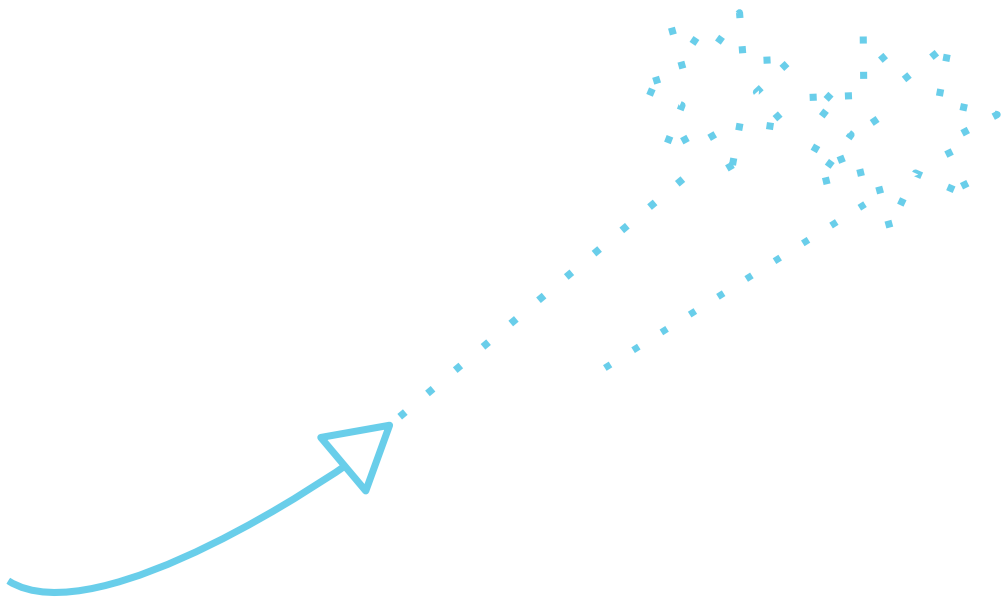

lessons learned

interesting

- improved c / c++ skills
- expanded knowledge
  - wireless sensor networks
  - hardware design
  - communication protocols

noteworthy

- important to connect with (potential) customers on trade-fairs
- also in open-source development the license matters

nice to know

- some asian hardware manufacturers have a "it's not a bug, it's an undocumented feature" mentality
- documentation really helps. "It's in the code" is insufficient.
- propose improvements to products. The producer is interested in those.

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Thank you

appendix

images

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details on 52° North

information was taken from `www.52north.org`

online

this presentation can be downloaded from `www.dustindemuth.de`