

A field report on the Role of Free and Open Source Geospatial Software at the University of Applied Sciences

University of Applied Sciences and Arts Northwestern Switzerland
School of Architecture, Civil Engineering and Geomatics
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Agenda

- Four-Fold Ministry
- History
- Education @ IGE
- See You Project
- Pros & Cons
- Outlook & Suggestions

Fourfold-ministry

- Education: Bachelor and Master programmes
- Projects
- Applied research and development
- Post-graduate education

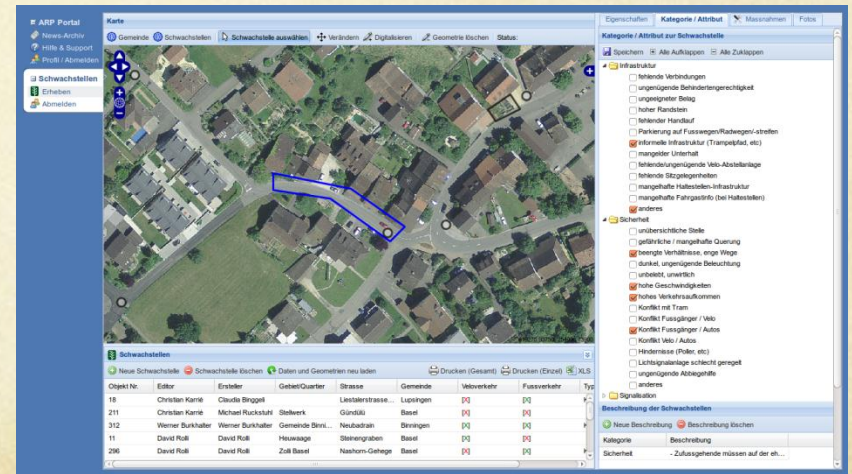
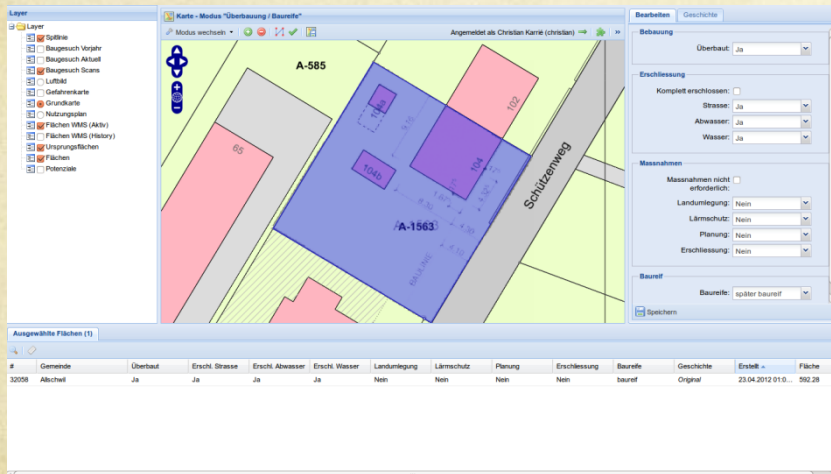
History

- Until 2005: GIS education mainly on proprietary GI-software
- 2005: First project on Free and Open Source Geospatial Software (FOSGS):
Web application for people with disabilities
(Bachelor's thesis)
 - UMN MapServer, PostgreSQL/PostGIS
- Since 2006: Work on a Swiss profile for OGC web map services
- 2007: Launch of OpenAddresses (free – but not open...)



History continued

- 2008: Survey on the use of FOSGS (interdisciplinary)
- 2010: Migration of OpenAddresses to MapFish
- 2010-2012: Two research projects with 'Bau- und Umweltdirektion Baselland'- FOSGS as 'must-use' criteria



History continued

- 2010-2012: Quality Checker for Swiss OWS profile (eCH-0056) on behalf of Swiss federal Organisation 'Coordination, Geo-Information and Services (COGIS)'

OWS Checker

Service URL:
Hint: Don't use trailing "/" here, just put the base URL i.e.: http://lidarserver.com/sandiego

Service Type:

Server Settings URL:

Service Restful-Only?:

Richtlinie	Ausgabe
Status	<ul style="list-style-type: none"> finished
ALLG-01	<ul style="list-style-type: none"> The service does not fulfill case sensitivity for parameters values http://wfs.geo.admin.ch/?version=1.0.0&request=GETCapabilities&service=wfs text/xml = text/xml Element Names in Original GetCapabilities (WFS_Capabilities) vs in Swap (WFS_Capabilities)
ALLG-02	<ul style="list-style-type: none"> Requests to your service do not depend on vendor specific parameters URL contains no Vendor Specific Parameters
ALLG-03	<ul style="list-style-type: none"> The service responded to requests, at least by means of an error message Anfrage erhalten text/xml
ALLG-04	<ul style="list-style-type: none"> The service uses UTF-08 as character set encoding for XML content Found Encoding: UTF-8 Found Encoding: UTF-8 Found Encoding: UTF-8
ALLG-05	<ul style="list-style-type: none"> OGC WFS 1.0.0 does not support OWS Common Detected WFS Version: 1.0.0 Server doesn't support OWS Common

- 2011-2012: See-You: (www.see-you.ch) secondary school research project




Education @ IGE

- **Bachelor's:**
mainly proprietary GI-Software (ArcGIS, Geomedia etc.)
FOSGS (QGIS) growing
- **Master's:**
Python, QGIS, PostgreSQL/PostGIS, OpenLayers

See You Project



- Map Your World Project since 2009 
- Problem: complex (infrastructure, time-wise)
- Strategic Initiative FHNW, School of Teacher Education:
Promote the interest of secondary school students in technical professions
- Limitation: 4 lessons!

See You Project



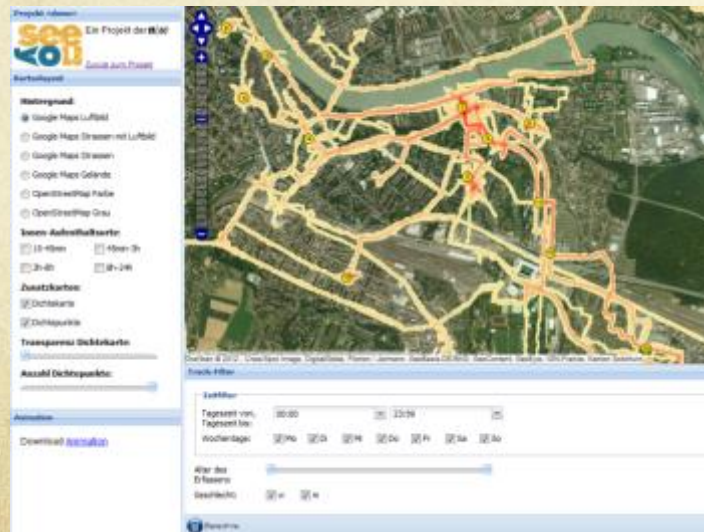
- Students record their daily routes (\approx 1 Week)
- GPS data is uploaded, stored and processed in a central database (PostgreSQL)
- Web application provides results as maps showing spatial-kinesthetic behavior and motion patterns:
 - Heatmap of GPS tracks
 - Hotspots
 - Indoorlocations

See You Project



Functionality web application:

- Computation of heatmap / hotspots etc.
- Filter options (time of day, day, age, gender)
- Movie / Animation of tracks (5' Interval)



See You Project



- Sub-tasks to do:
 - Find out about relations based on GPS tracks
 - Optimise GPS-Track's Geometries
 - Evaluation of other areas of application (urban planning, bike couriers, etc.)
- Sub-tasks were integrated into education programmes (Bachelor's and Master's)

Pros and Cons FOSGS (academic perspective)

○ Pro

- Accessibility
- Costs (no costs)
- License

○ Contra

- Documentation
- Support (occasional)
- Installation (occasional)
- Prerequisites (occasional)
- Language (English!)



Findings on FOSGS @IGE

- FOSGS catalyst for projects
- Strong FOSGS pros in academic environment
- FOSGS supports focussing on the task instead of on the tool (from a student's / teacher's perspective)
- Proprietary SW still necessary @IGE
 - most students prefer the advantages of proprietary SW
 - Proprietary SW vendors support IGE financially...
- With growing education level FOSGS becomes the preferred choice

Outlook & Suggestions

- Easier entrance level for students with «low-level skills»
- Educational material can be shared among teachers in academia (Tutorials, lecture notes, etc.)
- Strategically positions academia in the FOSGS environment:
 - Documentation
 - SW-testing
 - (development – PhD students (?))

Thank you!

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www.see-you.ch

www.map-your-world.ch

www.openaddresses.org