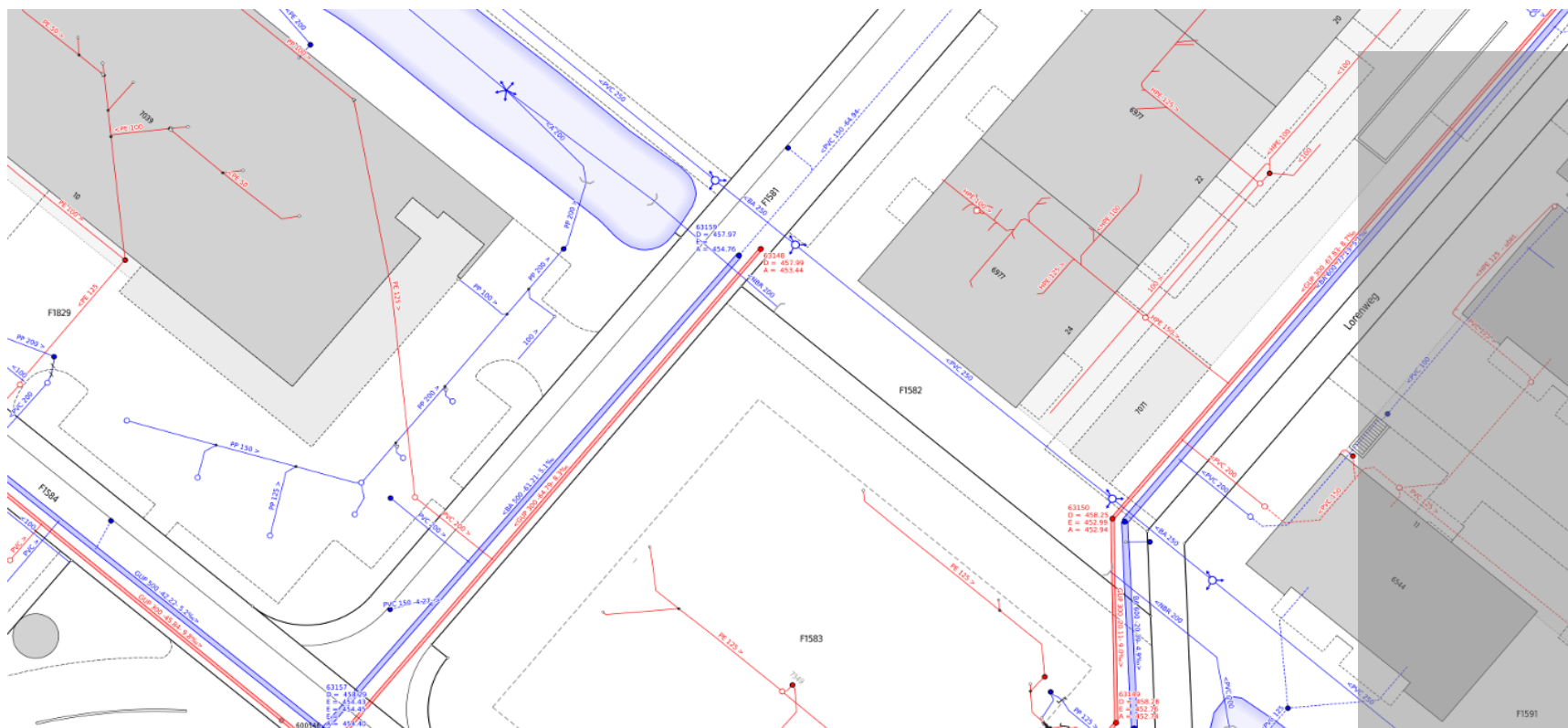# The QGEP Project

Application to document and analyze waster-water networks and the general sewage and storm water plan (GEP)

User Meeting Bern, 15.06.2016

Stefan Burckhardt (SJiB), Matthias Kuhn (Opengis.ch), Dennis Rouzaud (SIGE)

Why developing a new application?

- Get the software we want (direct influence on future development)
- Replace existing solution based on ArcView 3x (which isn't maintained anymore)
- Existing commercial solutions do not fully and correctly implement national data models (e.g. VSA-DSS model)
- Most commercial solutions only implement the core part of the waste-water network documentation and not the extensions
- Cost sharing between members
- Know-how pooling among members
- Sometimes faster development than commercial software

QGEP Goals

- Development of an application to document and analyze waste-water networks and the general sewage and storm water plan (GEP).
- Display and edition of the waste-water network
- Efficient import of GPS data
- Multilingual user interface
- Interfaces to external software
  - Mike Urban, SWMM
  - DXF export, Swiss INTERLIS 2 import/export (SIA 405 and VSA-DSS)
- Analysis functions
  - Network following
  - Profile generation
  - More to come in the future

Datamodell

- Based on SIA405 und [VSA-DSS Datenmodell](#) des Verbandes Schweizer Abwasser- und Gewässerschutzfachleute (VSA)
- Database in Englisch
- Translation to German und French
- Keys use StandardOID with prefix and counter for unique IDs :
- z.B.: "**ch11h8mw**MA010898"
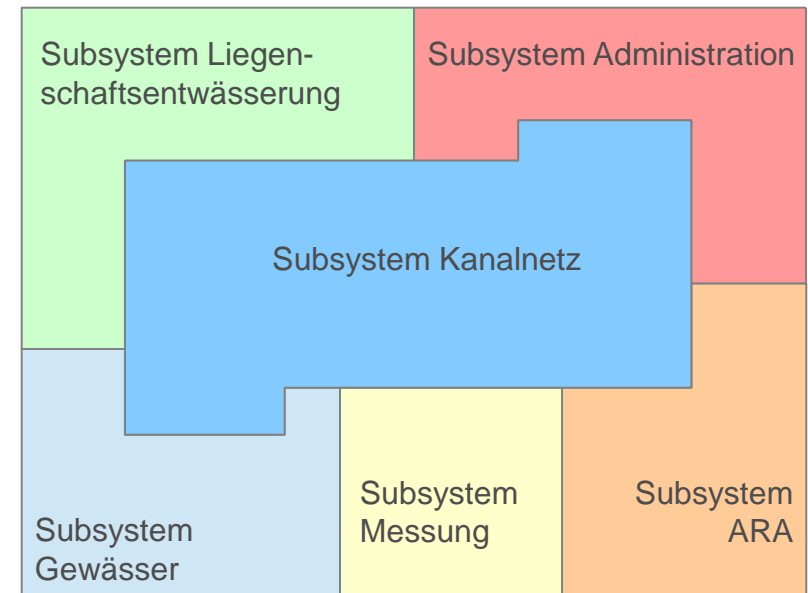
Source: VSA

Full data model: https://github.com/QGEP/datamodel

Technical framework

- Database: **PostgreSQL/Postgis**
- Desktop-GIS: **QGIS**
- Network following: NetworkX (Python)
- New generic functions in QGIS Core (C++)
- Python Plugins
- Qt GUI-Bibliothek (C++)
- Webkit with d3.js for visualization
  (eg. for profile functionality)
- Import/Export through GDAL/OGR and Processing and
- Ili2pg (Eisenhut Informatik), freeware
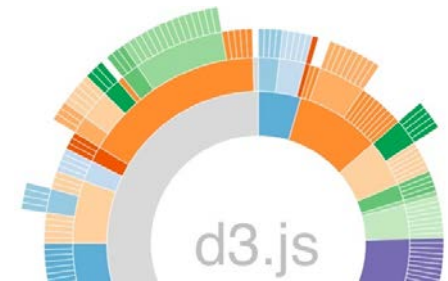
Financing

- Cost sharing (Crowd-funding among members)
- Established as sub-group of Swiss QGIS
- user group in 2014
- Local governments and companies are invited to join the efforts
- Annual fee of CHF 3'000.- to keep the development going
- Additional financing of some members at the beginning
- Approximate initial costs of the project: 250'000.- CHF
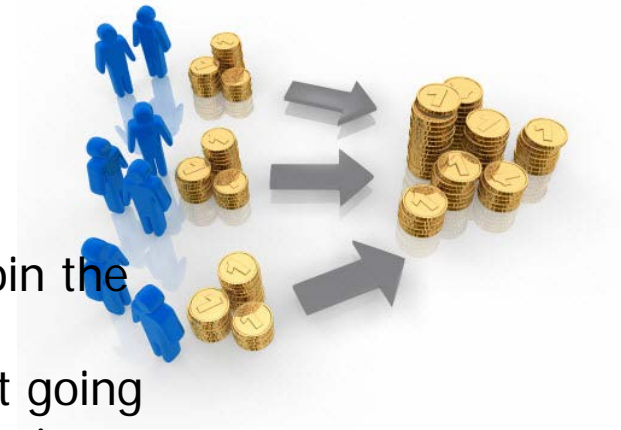
Financing: 150k CHF already invested

- CHF 50'000 invested into **QGIS core** to make it suitable for large projects like qWat and QGEP (SIGE, Uster, Morges, Vevey, QGIS user group, etc.)
- CHF 20'000 invested into **data model work** (SQL generation for PostgreSQL, translations, ER model documentation, etc.)
- CHF 35'000 invested directly in **QGEP** development through QGEP membership fees (forms, Python Scripts, scripts for translation, etc.)
- CHF 25'000 invested indirectly through regular **project management** meetings by project members
- CHF 20'000 invested in Uster internship of Matthias Kuhn around **QGEP** (network following, profile function)
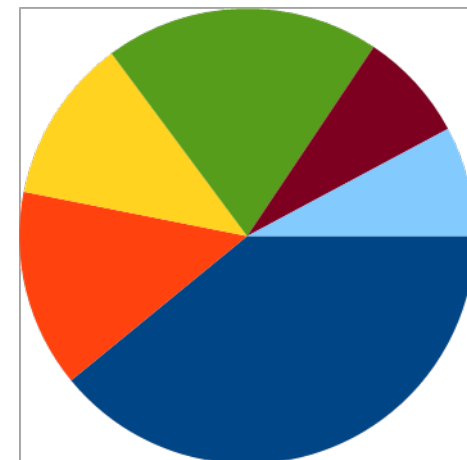
- QGIS core
- Data model
- QGEP directly
- Project meetings/coordination
- Uster internship around QGEP
- Testing framework

Project implementation

- **Migrations and pilot projects** in Arbon (TG) and SIGE (Vevey) now other communities planned in 2016 (Morges, Pully)

- If you are interested in the project we can visit your organization for an **onsite demo of our tool** and discuss your organizations requirements and migration issues

Project status, already finished

- Data model (English) – based on VSA-DSS 2014
- Generation of Postgis Views, Rules, Triggers and functions (mostly finished, with ongoing improvements)
- Symbolization and labelling rules and DB triggers
- QGIS project with localization in English, German, French and Italian (already usable for pilot projects, ongoing improvements)
- Editing functionality in QGIS (with Python plugin and Postgis rules/functions)
- Network following (up- and downstream)
- Interactive profile generation
- Many improvements in QGIS core during the project

- To do: update homepage ;-)

Network following and profile view

- Network following
  - upstream
  - downstream
  - between 2 nodes
- Interactive profile view
- Linked between profile and map
- Attribute display in Tooltips
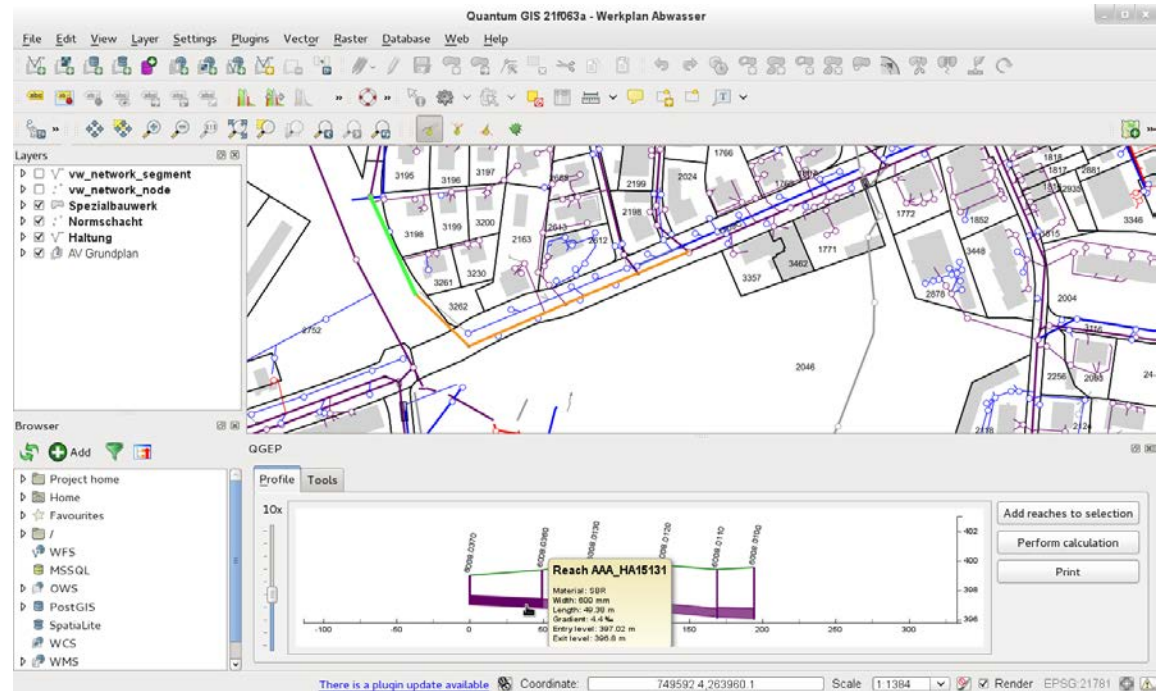
Challenge: multi-language support and multi-user environment

- A requirement in Switzerland
- Many places that need translation:
  - Forms
  - Value lists
  - Layer tree
  - Labels
  - Print templates
  - Plugin
- Many of them require different approaches
  - Different sources for translation:
  - database and manual $\rightarrow$ ts files
  - *.qlf layer files with dependencies loaded and translated on-the-fly

Idea: Development of Project Generator (Matthias Kuhn)

Forms Localizations

Documentation und Translation with Transifex

QGEP auf github

INTERLIS Schnittstelle mit ili2pg

INTERLIS Schnittstelle mit ili2pg

ili Modelldatei

import

qgep

export

xtf Datei
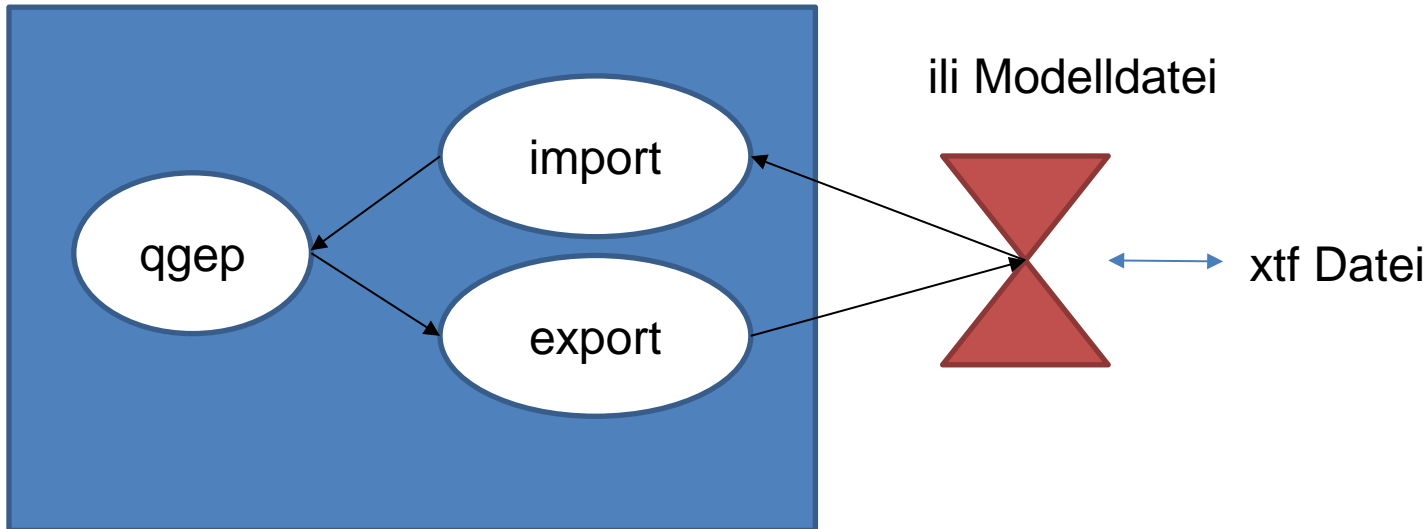
use the VSA-Data-Checker to get a «good» xtf

Thank you for your attention!

see:

http://www.qgis.ch/fr/projets/qgep-module-eaux-usees?set_language=fr
(QGEP projet information)

https://github.com/QGEP/QGEP/
(github project page with issue list, tasks and protocols of development meetings)

http://www.qgis.org/
(QGIS project)

http://www.postgis.net/
(Postgis project)

http://dss.vsa.ch
(DSS data model of the VSA)

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