

A water network in QGIS

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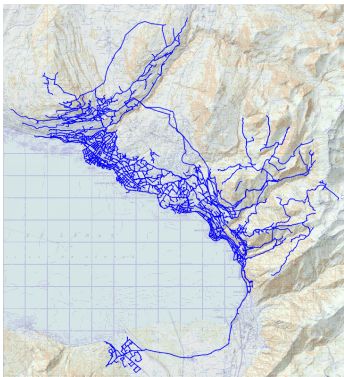
Service Intercommunal de Gestion

June, 18th 2014

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- 2 Why choosing QGIS?
- 3 Challenges
- 4 Feedback
- 5 Future

SIGE

- association of 10 districts incl. Vevey and Montreux
- responsible of water supply and waster water treatment
- about 70'000 inhabitants
- 600 km of pipes for water supply
- 3 drawers work on the field to survey the network



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Migrating

- Autocad / Topobase 2 not supported anymore
- Not fully satisfying solution
- Geographic information was not sufficiently promoted

Evaluation

- open-source vs proprietary software evaluation
- flexibility of the solution
- sufficient internal resources
- predilection of FOSS, stiffened by the deployment of Cartoriviera (GIS web portal based on GeoMapFish)
- technologic continuity for desktop - web - mobile solutions

Preview of the solution

- Postgres / PostGIS database
- QGIS for the desktop
- Cartoriviera (GeoMapFish) for the web portal
- mobile: QGIS android / Mapfish mobile / offline tile viewer

Principe

- generic home-made data model
- processing is performed uppermost on the data base
- enhancement of QGIS core for basic features
- plugin development for specific features

qWat

The screenshot displays the QGIS 2.0.1-DuFour - main interface. The main window shows a network diagram with nodes and pipes. The network is overlaid on a map with contour lines and street names like 'Avenue du Général Guisan'. The network consists of blue lines representing pipes and black dots representing nodes. Some nodes are labeled with IDs like PE 200, PE 175, PE 1595, PE 1596, PE 121, PE 122, PE 123, PE 124, PE 125, PE 126, PE 127, PE 128, PE 129, PE 130, PE 131, PE 132, PE 133, PE 134, PE 135, PE 136, PE 137, PE 138, PE 139, PE 140, PE 141, PE 142, PE 143, PE 144, PE 145, PE 146, PE 147, PE 148, PE 149, PE 150, PE 151, PE 152, PE 153, PE 154, PE 155, PE 156, PE 157, PE 158, PE 159, PE 160, PE 161, PE 162, PE 163, PE 164, PE 165, PE 166, PE 167, PE 168, PE 169, PE 170, PE 171, PE 172, PE 173, PE 174, PE 175, PE 176, PE 177, PE 178, PE 179, PE 180, PE 181, PE 182, PE 183, PE 184, PE 185, PE 186, PE 187, PE 188, PE 189, PE 190, PE 191, PE 192, PE 193, PE 194, PE 195, PE 196, PE 197, PE 198, PE 199, PE 200. The pipes are labeled with IDs like FAE 200, FAE 201, FAE 202, FAE 203, FAE 204, FAE 205, FAE 206, FAE 207, FAE 208, FAE 209, FAE 210, FAE 211, FAE 212, FAE 213, FAE 214, FAE 215, FAE 216, FAE 217, FAE 218, FAE 219, FAE 220, FAE 221, FAE 222, FAE 223, FAE 224, FAE 225, FAE 226, FAE 227, FAE 228, FAE 229, FAE 230, FAE 231, FAE 232, FAE 233, FAE 234, FAE 235, FAE 236, FAE 237, FAE 238, FAE 239, FAE 240, FAE 241, FAE 242, FAE 243, FAE 244, FAE 245, FAE 246, FAE 247, FAE 248, FAE 249, FAE 250, FAE 251, FAE 252, FAE 253, FAE 254, FAE 255, FAE 256, FAE 257, FAE 258, FAE 259, FAE 260, FAE 261, FAE 262, FAE 263, FAE 264, FAE 265, FAE 266, FAE 267, FAE 268, FAE 269, FAE 270, FAE 271, FAE 272, FAE 273, FAE 274, FAE 275, FAE 276, FAE 277, FAE 278, FAE 279, FAE 280, FAE 281, FAE 282, FAE 283, FAE 284, FAE 285, FAE 286, FAE 287, FAE 288, FAE 289, FAE 290, FAE 291, FAE 292, FAE 293, FAE 294, FAE 295, FAE 296, FAE 297, FAE 298, FAE 299, FAE 300. The status bar at the bottom shows the coordinate 553997.76, 146077.78, a scale of 1:151, and the EPSG:21781 projection.

The qWat dialog box is open, showing the 'Nodes' tab. The 'Apply to' dropdown is set to 'all nodes'. The 'Reset nodes type' section has a 'start' button and a progress bar at 0%. The 'Deleted nodes' section shows 0. The 'Detect erros' section has 'start' and 'stop' buttons. The 'Undefined type' section has a progress bar at 0% and a 'select' button. The 'Without pipe or valve' section has a progress bar at 0% and a 'select' button. The 'Too close' section has a progress bar at 0% and a 'select' button. The 'Without height' section has a progress bar at 0% and a 'select' button. The 'open form' checkbox is checked.

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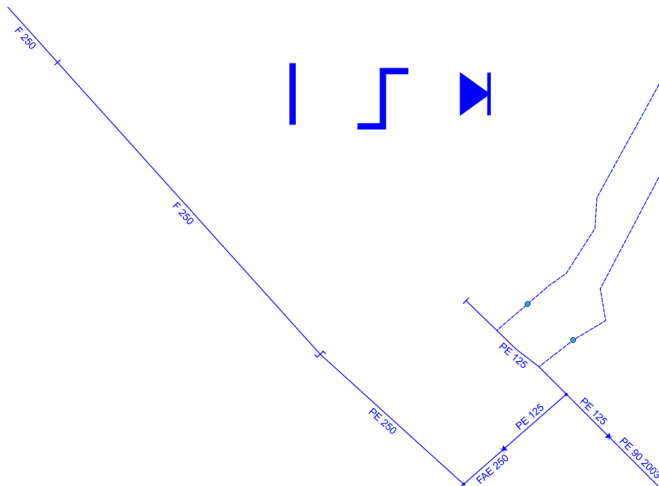
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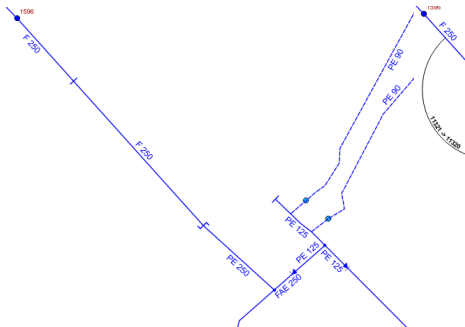
Node creation

- Nodes are automatically created
- Installation pieces are generated on demand



Network simplification

- pipe concatenation by filiation
- visibility of the objects depend on its function
- second geometry field



Labelling

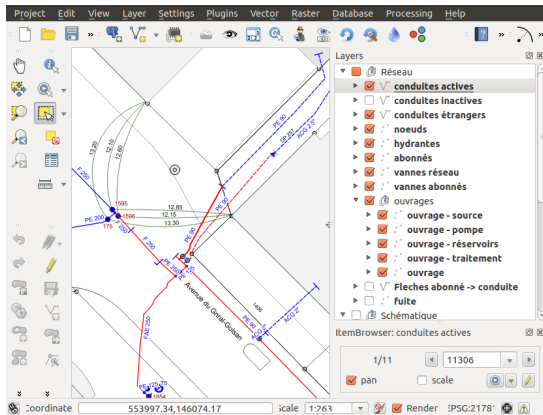
- Automatic labelling
- Acceptance of a poorer rendering at a defined scale (compared to manual labelling)
- Personalisation of display, on the layer and the feature levels.

CAD tools and dimensions

- CADinput and Intersect It plugins
- demo

Browsing a multiple selection

- Item Browser plugin
- dual view in QGIS



Versionning

- single table log
(Postgres 91
Plus Audit
Trigger)
- based on a
plugin
(Postgres 91
Plus Auditor)

Postgres 91 plus Auditor :: search history

Layer: conduites actives Feature: 11315 search

► Advanced search

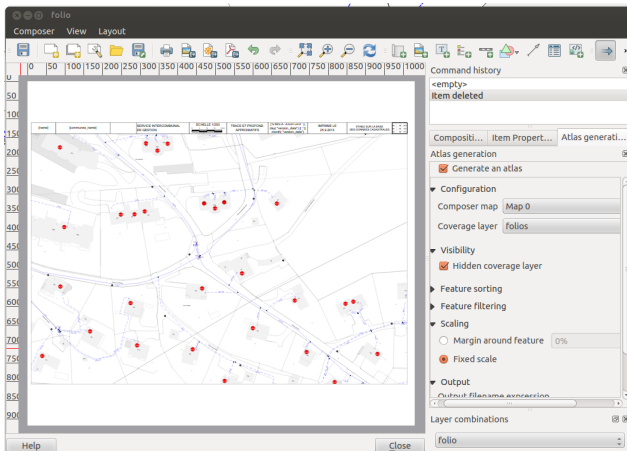
Date	User	Action	G	
Wed 25 Sep 2013 09:28	sigc	update	✓	id, id_p
Wed 25 Sep 2013 08:22	sigc	update	✓	id, id_p
Thu 22 Aug 2013 16:22	sigc	update	✓	id, id_p
Thu 22 Aug 2013 15:54	sigc	update	✓	id, id_p
Thu 22 Aug 2013 15:54	sigc	update	✓	id, id_p
Thu 22 Aug 2013 15:54	sigc	insert	✓	id, id_p

Field	Current	Wed 25 Sep 2013 09:28
id		11315
id_parent		11320
id_function		5
id_install_method		1
id_material		97
id_distributor		1
id_precision		2
id_protection	NULL	NULL
id_status		1
labelview		NULL
labelview_schema		NULL

Pan and show geometry Restore feature

Printing

- Atlas Composer



Autres

- DXF export with symbology for map extract
- 1:n relation and embed forms

On the way

- GPS points import
- unified search tool
- data export
- statistics and decision aiding tools

Open questions

- detailed plans
- mobile solution

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Migration

- Transition from CAD to SIG
- Workflow is easier, fully personalized solution
- Enhancements are still awaited

Costs

- Active development
- Sponsoring of QGIS core development
- Price equivalent to a commercial solution

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Opening

- Whole development is free and open-source
- Will to establish a community
- Implication of a company (Camptocamp)