

Versioning

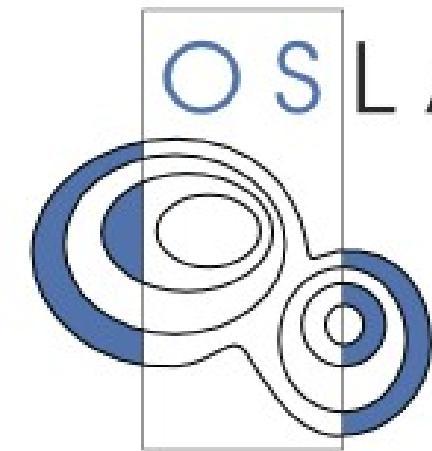
pour

PostgreSQL

& PostGIS

Vincent Picavet
Oslandia





SIG OpenSource depuis 2009

**Conseil, audit, développement, formation,
assistance, support...**

**Environnement, transport, eau, énergie,
smartcity, logistique, geomarketing...**

**PostGIS, QGIS, MapServer, Mapnik, Routing,
calculs, simulation...**

www.oslandia.com

CONTEXTE



Valcea County, Roumanie
300 000 hab

Projet Européen Rénovation des réseaux d'eau

Remise à niveau du SIG

29

stations de captation

19

stations d'épuration

1000km distribution

350km assainissement



**SIG bureautique
Modèle métier
Données centralisées**

**Levés terrain
Données hors-ligne
Gestion de scénarios = versioning**

**Couplage simulation
Rendus carte + web**

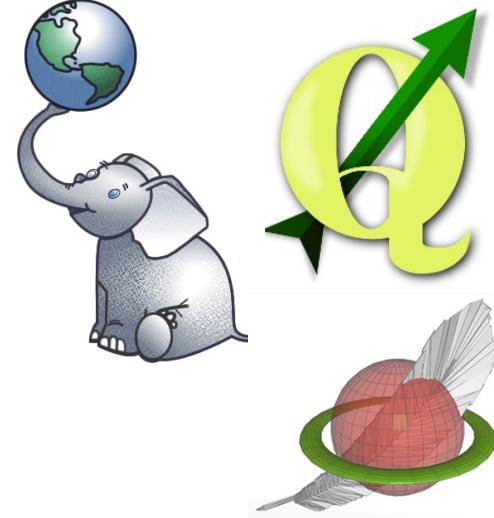
Matériel + logiciel + expertise

SIG



SIG Bureautique :

- QGIS
- Outils métier (plugins)

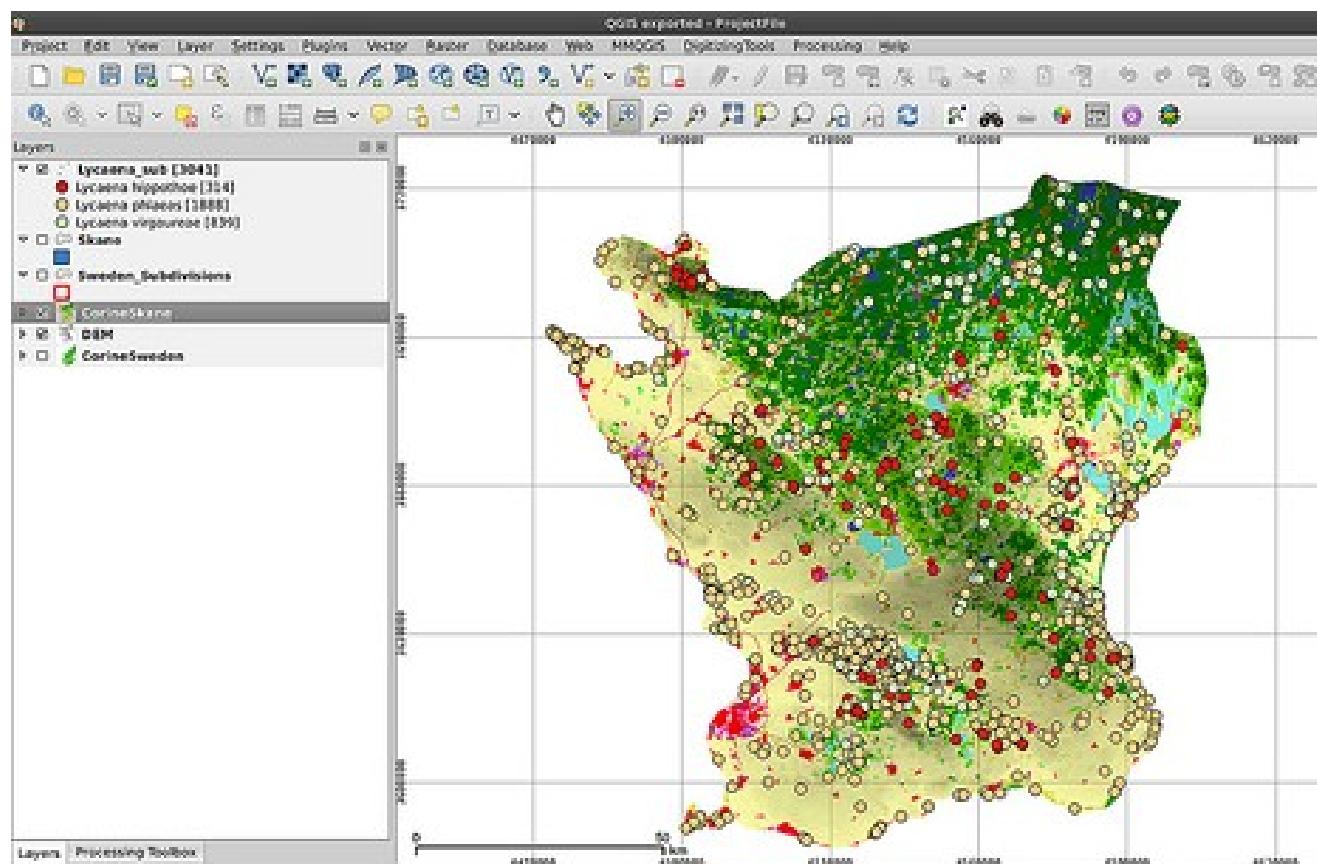


BdD :

- PostgreSQL 9.3+
- PostGIS

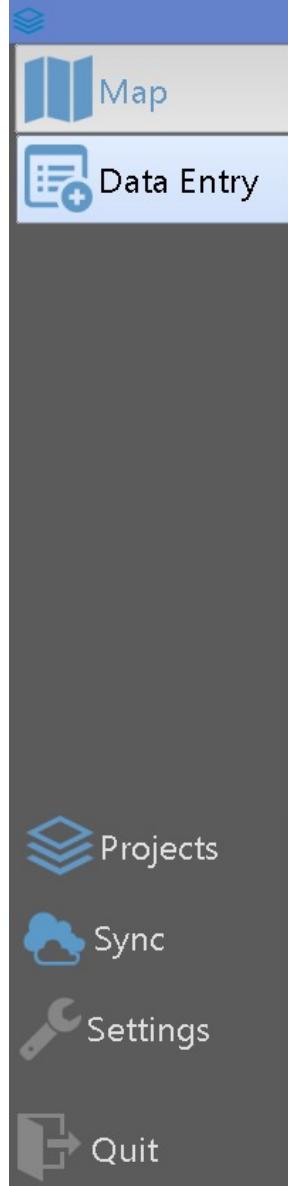
Embarqué :

- ROAM
- SpatiaLite





IntraMaps Roam: Mobile Data Collection



Aerial view showing a residential area with the following features:

- Streets: STR. VEGA, STR. STRAUBING
- Pipes: 250 PVC, C160, 300 PVC
- House numbers: Nr. 5, Nr. 6, Nr. 8, Nr. 12A, Nr. 14, Nr. 16, Nr. 16A, Nr. 7-9
- Marker symbols: CM (Circular with arrow), B (Square with arrow), and a green camera icon.

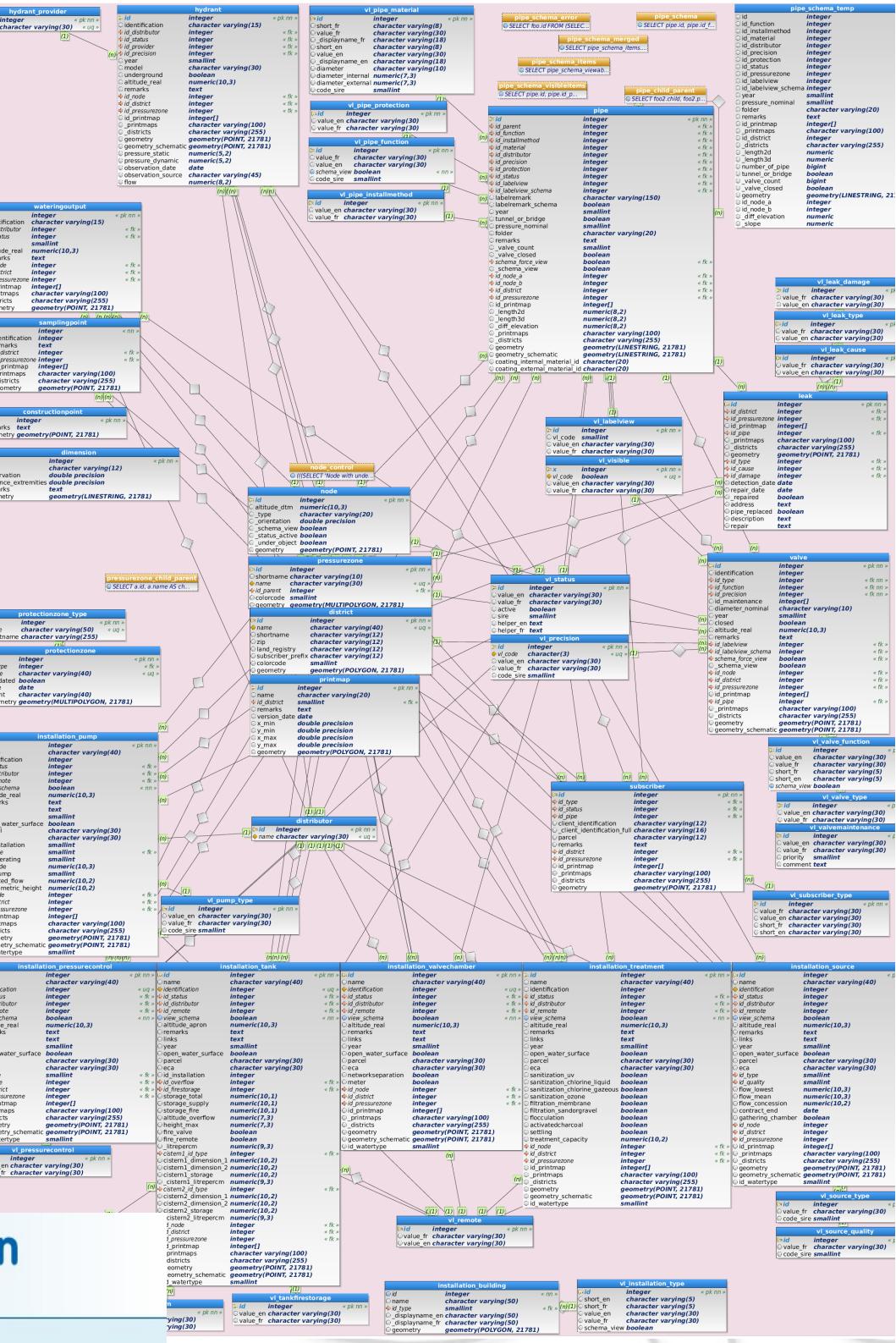
Project: Canalizare Valcea User: Tableta.04

Map Center: 451909.701333, 400848.282672

Modèle de données

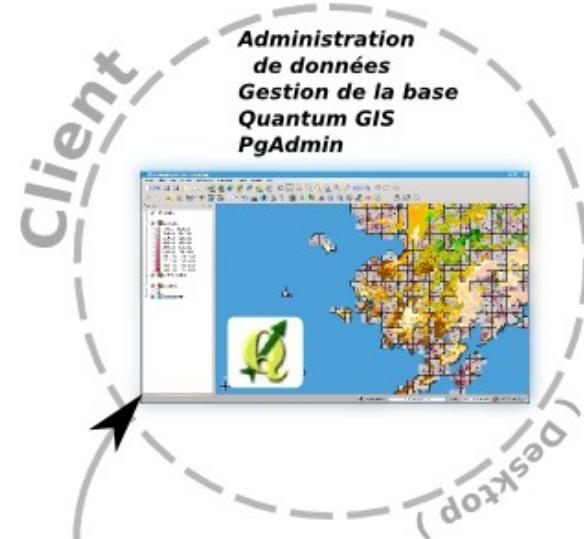
- Distribution
 - Assainissement

**Noeuds, pompes, valves,
fuites, tuyaux, stations,
zones de pression,
réservoirs...**



PC

QGIS



ROAM



Synchronisation
Versionnement

VERSIONNEMENT

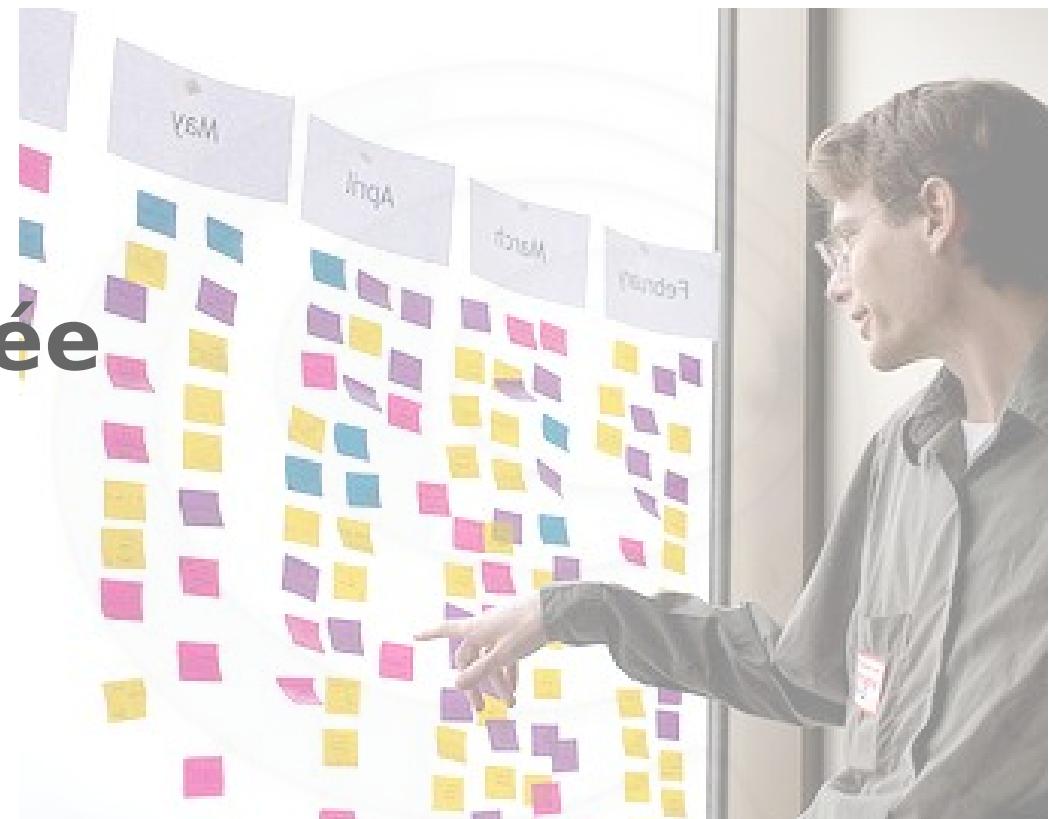


Contraintes fortes du projet :

- historisation
- travail déconnecté
- création de scénarios

- Gestion des géométries
- Ergonomie

=> versionnement
de donnée





mapping and visualization
Editing and data compilation
Geoprocessing
Geoprocessing tool reference
Geodatabases and ArcSDE
An overview of the Geodatabase
Architecture of a geodatabase
Designing a geodatabase
Building a geodatabase
Data management workflows
Getting started with edit
Working with non-versioned data
Working with versioned data
Understanding versioning
Version scenarios
Registering and unregistering versions
Creating versions and managing version scenarios
Displaying versions
An overview of the versioning process
Saving edits to a version
Reconciling a version
Reviewing conflicts
Resolving conflicts in a version
Posting changes
Automating reconcile
Compressing the data
Managing Distributed Data
Archiving data
Geodatabase data storage and administration
Administering ArcSDE geodatabases
Administering File and Personal geodatabases
Working with geodatabases using ArcCatalog
Data management with ArcCatalog
Data support in ArcGIS
Extensions
Geocoding and address manager
Linear referencing
Network analysis
Mobile GIS
Interoperability and standards support
Customizing and developing with ArcGIS
Guide to data that comes with ArcGIS
Licensing and desktop administration

Replace Attribute With Pre-Reconcile Version

Replace Attribute With Conflict Version

Replace Attribute With Common Ancestor Version

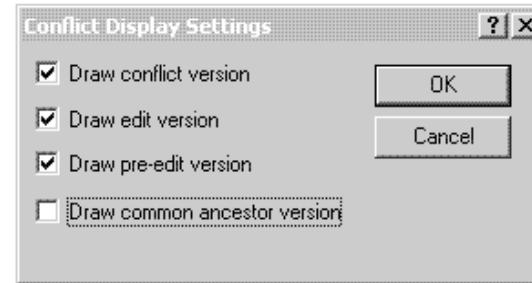
Zoom To Pre-Reconcile Version

Zoom To Conflict Version

Zoom To Common Ancestor Version

Display...

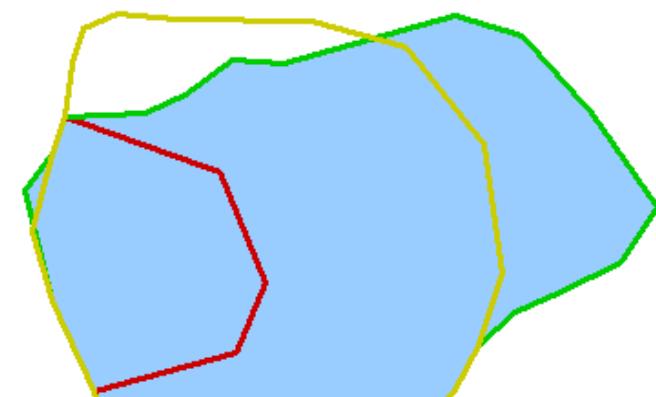
This will open the Conflict Display Settings dialog box. Click



After you click OK, on the map:

- The conflict (target) version's representation displays red.
- The edit session's representation displays green.
- The pre-edit version's representation displays yellow.
- The common ancestor version's representation displays blue.

For the Conflict Display Settings checked above, the following map shows the results:



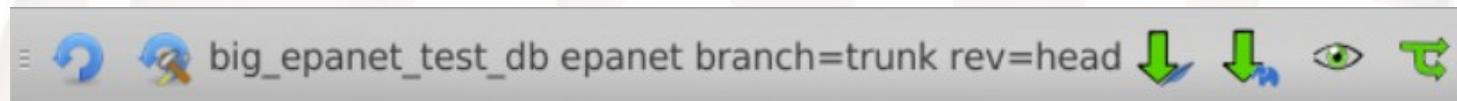
Les specs...

Implémentation

- PostgreSQL + PostGIS + SpatiaLite
+ Python + QGIS
- Concepts versionnement de code :
 - commits
 - branches
- Interface
 - gestion
 - résolution de conflits

Composants

- **Module Python**
 - Ensemble de mécanismes BdD
 - API
 - Initialisation, checkout, commit...
- **Interface graphique**
 - Plugin QGIS Python



Principes

- Versionnement d'un schéma entier
- Table des révisions ('*revisions*')
- Historisation
 - Marquage validité
 - Update = delete + insert



Modèle en base

- **Modification du schéma d'origine**
 - PK historisée
 - révisions
 - relations parent / enfant
 - colonnes pour les branches
- **Vues pour les révisions**
 - version courante
 - une version en particulier

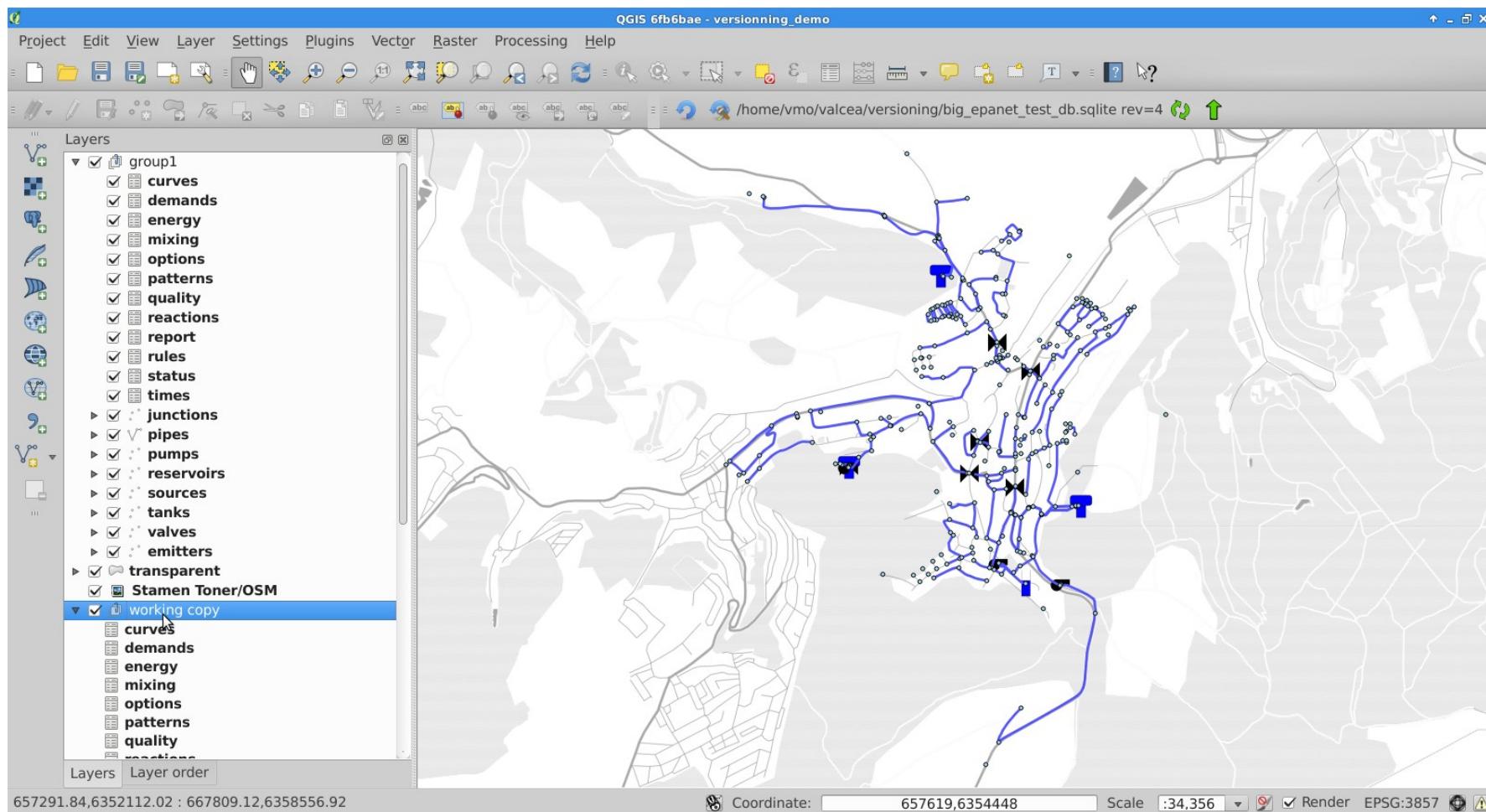


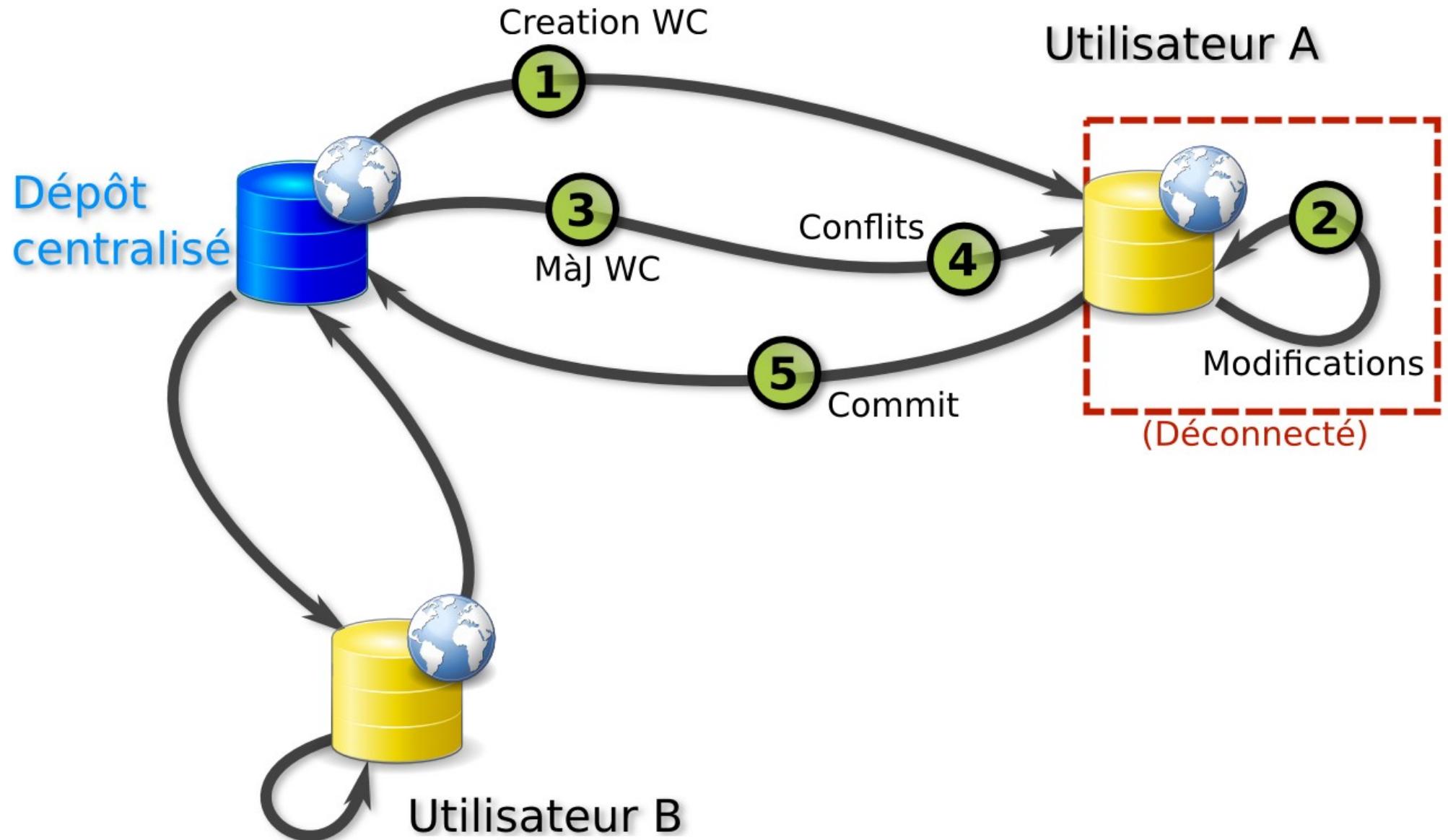
WORKFLOW



Copie de travail (WC)

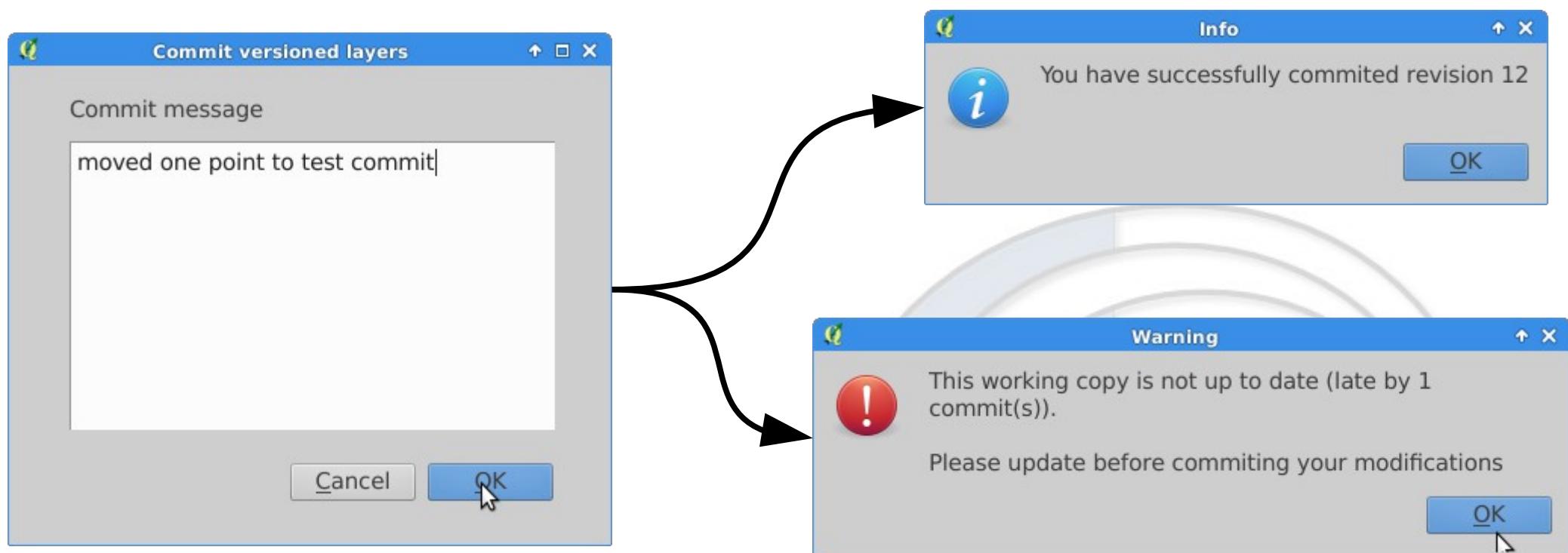
- déconnectée (SpatiaLite) → Tablette
 - uniquement les lignes actives
 - sous-ensemble de données (bbox...)
- en base
 - stockage des différences uniquement





Commit

- sur WC à jour
- insertion des éléments dans les tables
- métadonnées de révision



Warning

Unresolved conflicts for layer(s) junctions.

Please resolve conflicts by opening the conflict layer attribute table and deleting either 'mine' or 'theirs' before continuing.

Please note that the attribute table is not refreshed on save (known bug), once you have deleted the unwanted change in the conflict layer, close and reopen the attribute table to check it's empty.

OK

Résolution de conflits

A screenshot of the QGIS application interface. At the top, a warning dialog box is open with the title "Warning" and the message "Unresolved conflicts for layer(s) junctions." It contains two paragraphs of text and an "OK" button. Below the dialog, the main QGIS window shows a map of a network with various nodes (blue dots) and pipes (green lines). A red arrow points from the top right towards the map area. On the left, the "Layers" panel is visible, showing a tree structure with checked items like "junctions conflicts", "group1", "working copy", "curves", "demands", "energy", "mixing", "options", "patterns", "quality", "reactions", "report", "rules", "status", "times", "junctions", "pipes", "pumps", and "reservoirs". At the bottom, an attribute table for the "junctions_conflicts" layer is displayed, showing two rows of data. The first row has "conflict_id" 329, "origin" "mine", and "action" "modified". The second row has "conflict_id" 329, "origin" "theirs", and "action" "modified". The "origin" column is circled in red. The table also includes columns for OGC_FID, id noeud, altitude, emande bas, irbe modulat, unk_rev_beg, runk_rev_end, trunk_parent, trunk_child, branch_rev_b, branch_rev_e, branch_pare, and branch_pare.

conflict_id	origin	action	OGC_FID	id noeud	altitude	emande bas	irbe modulat	unk_rev_beg	runk_rev_end	trunk_parent	trunk_child	branch_rev_b	branch_rev_e	branch_pare	branch_pare
0	329	mine	modified	331	N18b2	315.67	0.081346...	DOM_AUD...	12	NULL	329	NULL	NULL	NULL	NULL
1	329	theirs	modified	330	N18b2	315.67	0.081346...	DOM_AUD...	11	NULL	329	NULL	NULL	NULL	NULL

FUTUR



Futur

- Tests
 - Cas d'utilisation concrets
 - Robustesse et cas limites
- Ergonomie
 - Interface
 - API
- Évolution des concepts
 - Logical decoding ?
 - Décentralisation ?



Questions ?

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Merci à

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Tudor Barascu

GIS Office of Apavil

