



The Open Source water management project





- Engineer-driven tech company
- Open Source expert team





- Major PostGIS & QGIS developpers
- Custom QGIS plugin development & deployment service
- Consulting, training, dev, support



# Asset management

# Needs

- data model
- topology
- chained data entry
- network alignment
- links !

# Software ?

## Customisation

Assets managers have their own challenges and need to adapt their tools :

- specific values handling
- custom tables
- unique workflow

# Flexibility

Proprietary systems seek to fill everybody's needs.

They have generic answers ➡ users have to fit in



# Interoperability

- integration of CAD survey maps
- import/export standard formats
- compatibility with other GIS
- **no vendor lock-in**

# Exploitation

- network analysis (cut simulation)
- remote inspection
- intervention management
- route optimisation
- hydraulic modelling

# Open Source is Community

We believe that a community model is central to long-term success :

- GIS functionalities
- generic needs
- open source collaboration... is coming
- public money...

# State of the art

# EPANET and SWMM integration

The qgis-epanet and qgis-swmm QGIS plugins are designed to interface with the EPANET or SWMM and hydraulic simulation engines.

# QWAT

One of the best known Open Source solution dedicated to network management.

# Itzi

Itzi is used for flow modelling within GRASS

# HEC-RAS

- one-dimensional steady flow
- one and two-dimensional unsteady flow calculations
- sediment transport/mobile bed computations
- water temperature/water quality modeling



# In-house

The most used

# Misc

Cofinance of a common project is not a widespread practice yet.  
QGIS is improving quickly on **key features** used by network operators

But what about an open-source  
project for binding all of these  
needs ?

Giswater :)

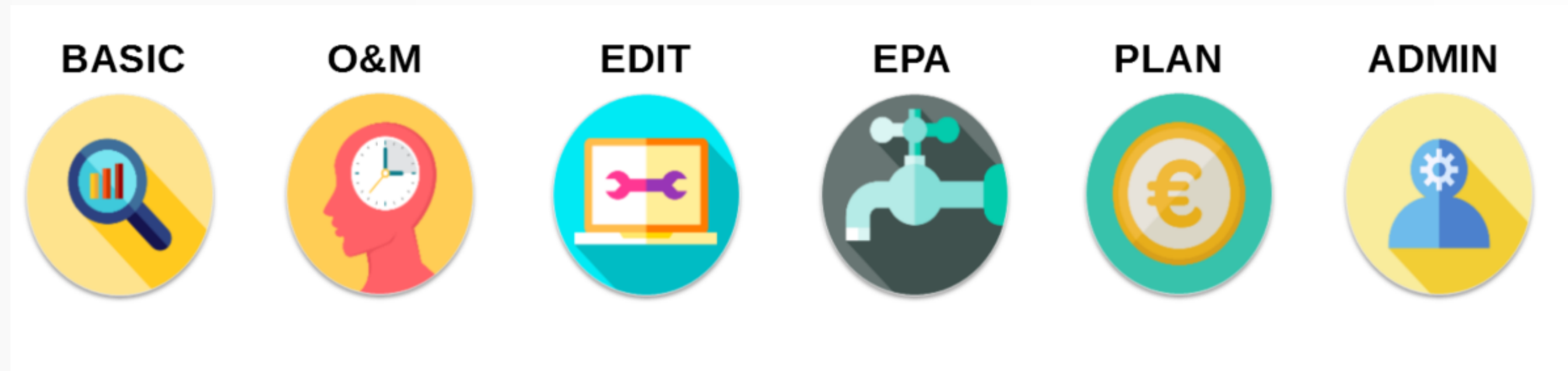
# Tech

- PostGIS + QGIS
- Customization
- Database-powered

# Main Capabilities

- <> networks
- arc / node edit tools
- operation functionalities
- integration water models

# Designed for corporate enviromnment



- Select / update control for each role
- Inventory tables row level control for each role



- Water utilities, consulting firms and freelands
- Collaborative projects
- Sharing knowledge





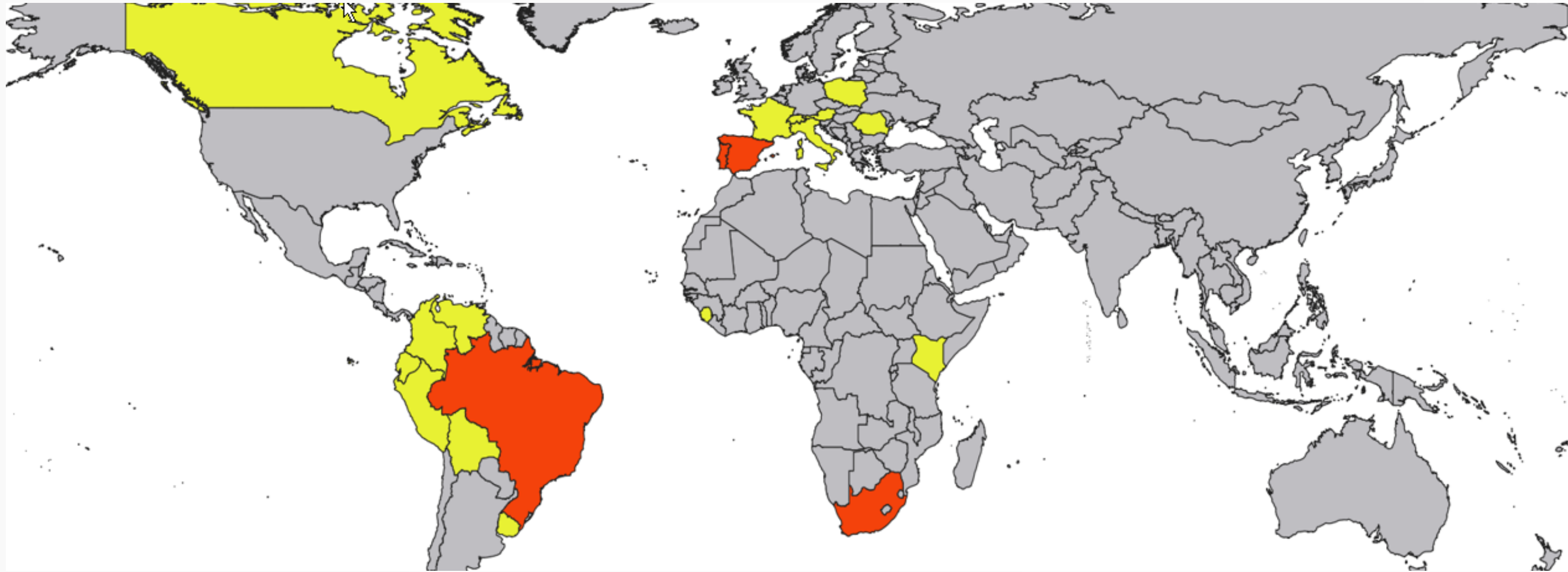


2014



# Visión & mission

To help water utilities using digital technologies to transform operations and systems sharing knowledge



- Catalunya, Pais Vasco & Navarra
- Portugal, Brazil, South Africa, Costa Rica
- plus than 8 milion served people
- What else?

# Code

## In a Nutshell, Giswater Database model...

- ... has had 7,550 commits made by 25 contributors representing 221,012 lines of code
- ... is mostly written in SQL with a very well-commented source code
- ... has a well established, mature codebase maintained by a large development team with stable Y-O-Y commits
- ... took an estimated 58 years of effort (COCOMO model) starting with its first commit in November, 2013 ending with its most recent commit about 21 hours ago

## In a Nutshell, Giswater QGIS plugin...

- ... has had 6,709 commits made by 34 contributors representing 99,188 lines of code
- ... is mostly written in TypeScript with a very low number of source code comments
- ... has a well established, mature codebase maintained by a large development team with stable Y-O-Y commits
- ... took an estimated 25 years of effort (COCOMO model) starting with its first commit in January, 2016 ending with its most recent commit 3 days ago

[https://www.openhub.net/p/giswater\\_dbmodel/](https://www.openhub.net/p/giswater_dbmodel/)

[https://www.openhub.net/p/giswater\\_qgis\\_plugin/](https://www.openhub.net/p/giswater_qgis_plugin/)

# Work in progress...

## Projects

<https://cutt.ly/wEQMuDd> (1D/2D UD coupled model)

## Webinars

<https://cutt.ly/sEyu0qv> (EN-14/10)

<https://bit.ly/3o4wNH5> (ES-21/10)

## Workshops

<https://cutt.ly/DEyu4Yz> (EN-28/10)

<https://bit.ly/3EKp5b1> (ES-04/11)