- Kalimera, before talking about water management for smart cities and collaborative open source developement, I must say that I am particulary attached to your beautiful country where I travelled so many times. My parents gave me the name of Alexandre because of my grand father who was an hellenist professor in Switzerland and wrote several books about Greece and mythology, but unfortunately he didn't teach me greek speaking. That's why I'm going to continue with Shaekspeare's language...

- So thank you very much for giving me the opportunity and honor of speaking here today, representing the small city of Pully, which overlooks the Leman lake side, near the cities of Lausanne and Geneva, with 18'000 inhabitants.

- **Water management for smart cities and collaborative open source development**

- In your opinion, in a city what is..:
  - one of the most expensive thing?
  - with a little indication, this thing is invisible

- These are the UNDERGROUND NETWORKS, such as the drinking water network, the waste water network, the electricity network or the fibre network.

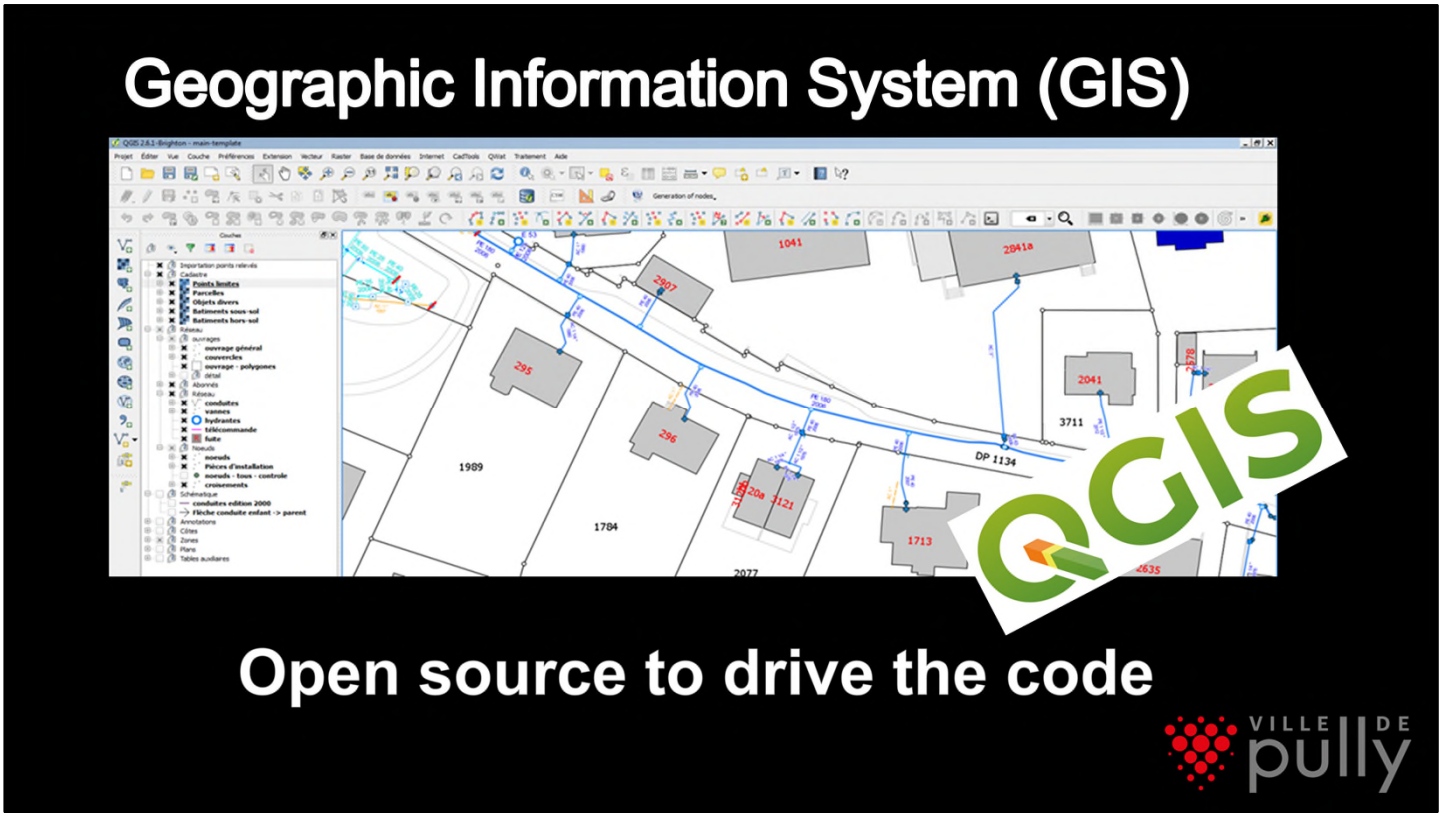
- For Pully, a city of 18'000 inhabitants, these infrastructures represent a value of 300 million Euros.

- Maintaining the value of this asset requires annual financing between 3 and 5 million Euros .

- In order to optimize these investments, the following questions arise for the network operators:

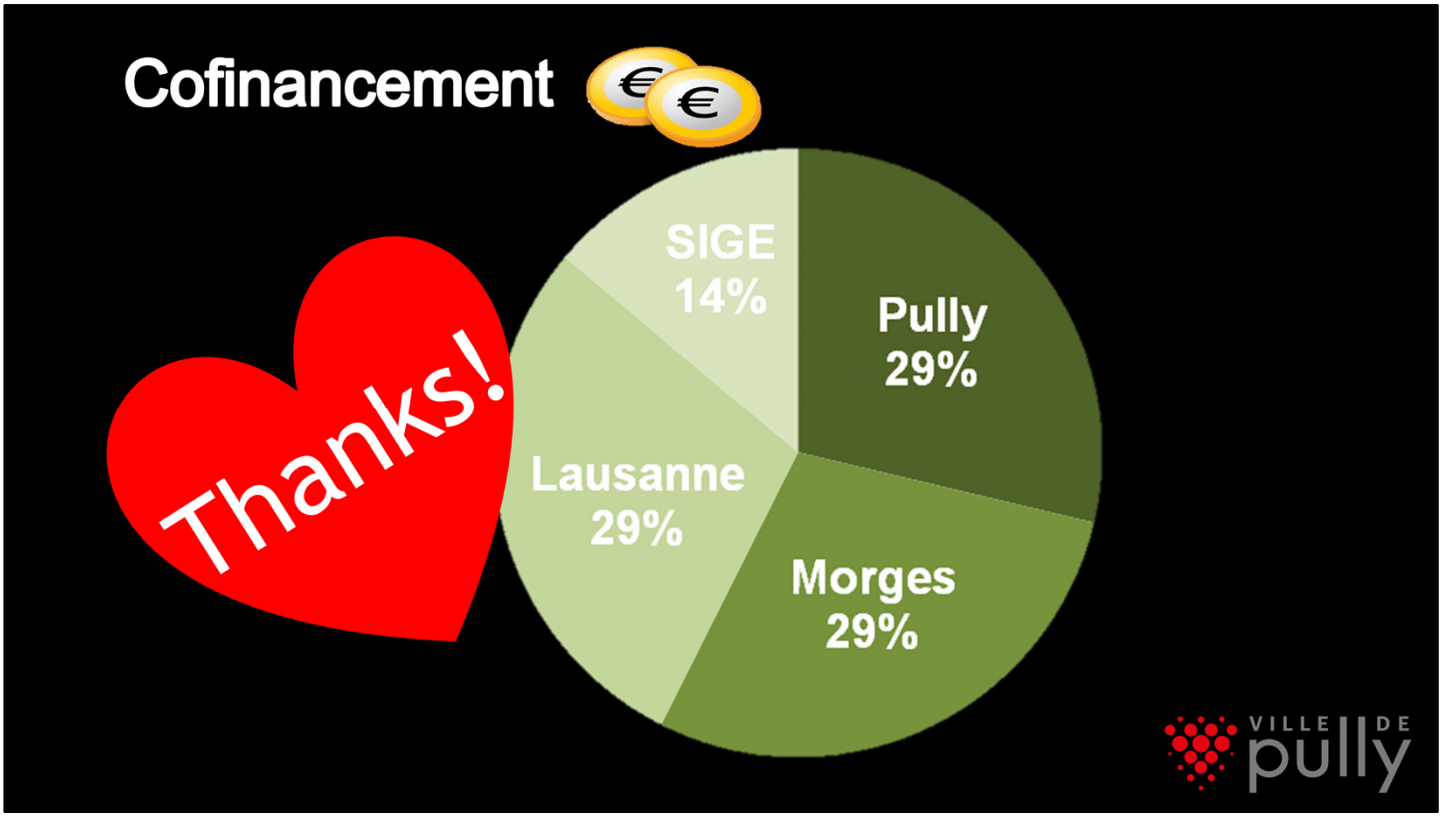
o Where are the pipelines located?
o What are their characteristics?
o When should we plan to replace them?
o What is the size of the future network?
o How can we best plan the construction sites?
o What is the value of my assets?
o Etc.

- For this, we have a digital decision-making tool: ...



... THE GEOGRAPHIC INFORMATION SYSTEM (GIS)

- And now I'm going to tell you a little story that has been a milestone for us in our GIS approach:
- In 2002, we acquired a new GIS software that worked to our satisfaction.
- A few years later, an international company bought this GIS software and made major changes to it.
- When we wanted to make a simple update, it was no longer possible without a complete migration of our GIS, which corresponds to a very important financial and human effort.
- We then became aware of our lack of power over decisions concerning the computer code of our GIS software.
- With the agreement of the Project Steering Committee, we decided to regain control over the computer code by developing our own professionnal modules to manage water, based on OPEN SOURCE technologies with QGIS as basic GIS software.



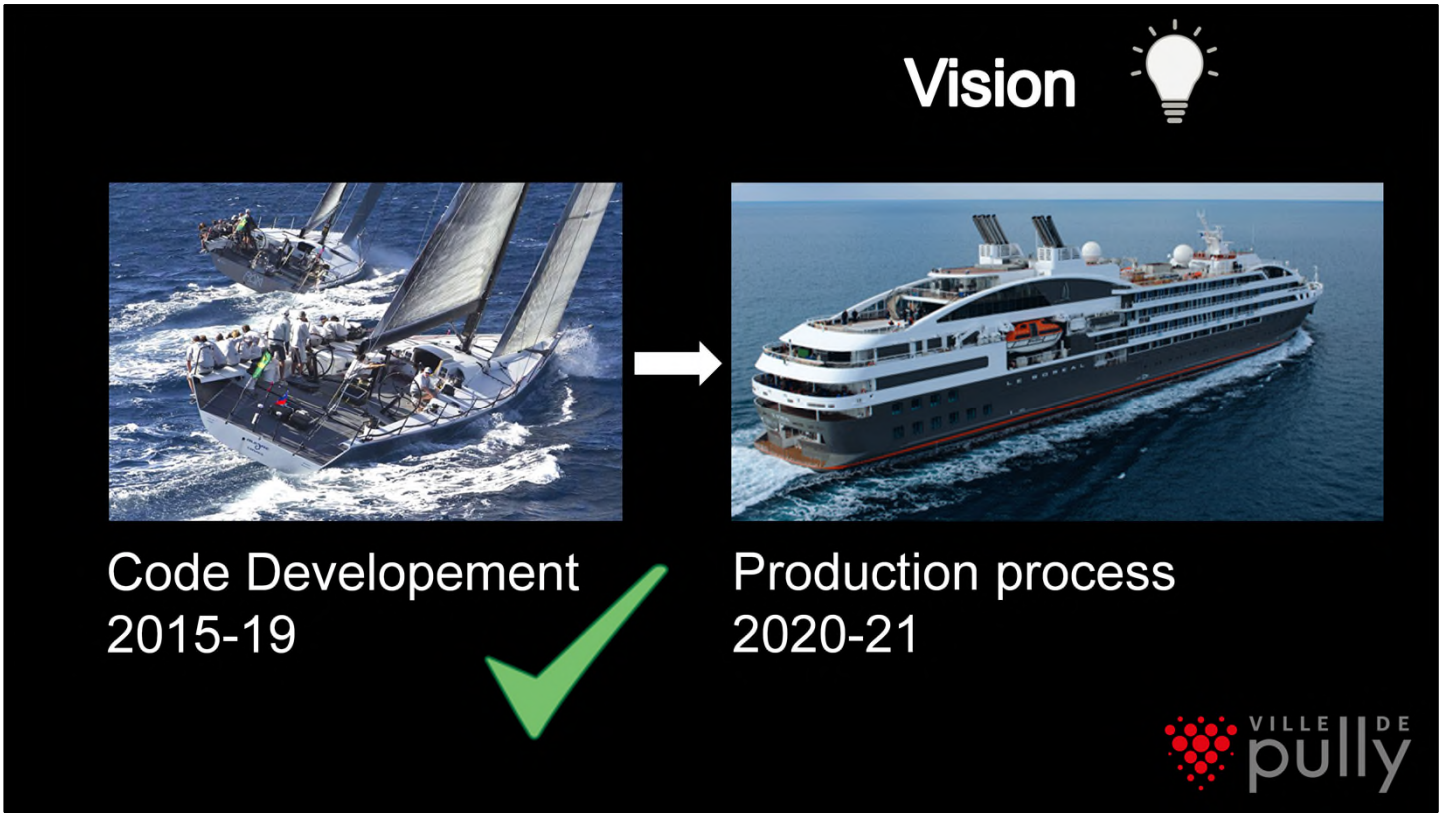
- Pully's small size means that there are insufficient resources to carry out these developments alone. This forced us to look for partners.
- This is how the cities of Lausanne, Montreux, Vevey, Morges and Pully have come together to pool their intelligence, work forces and finances.
- The diversity of our organizations (political vision, corporate culture, administrative issues, size, etc.) also forces us to constantly question ourselves and thus develop generic solutions, in other words, solutions that can be used by all organizations.

Open source developer network

Switzerland
France
Czech Republic
Romania
Russia
Australia

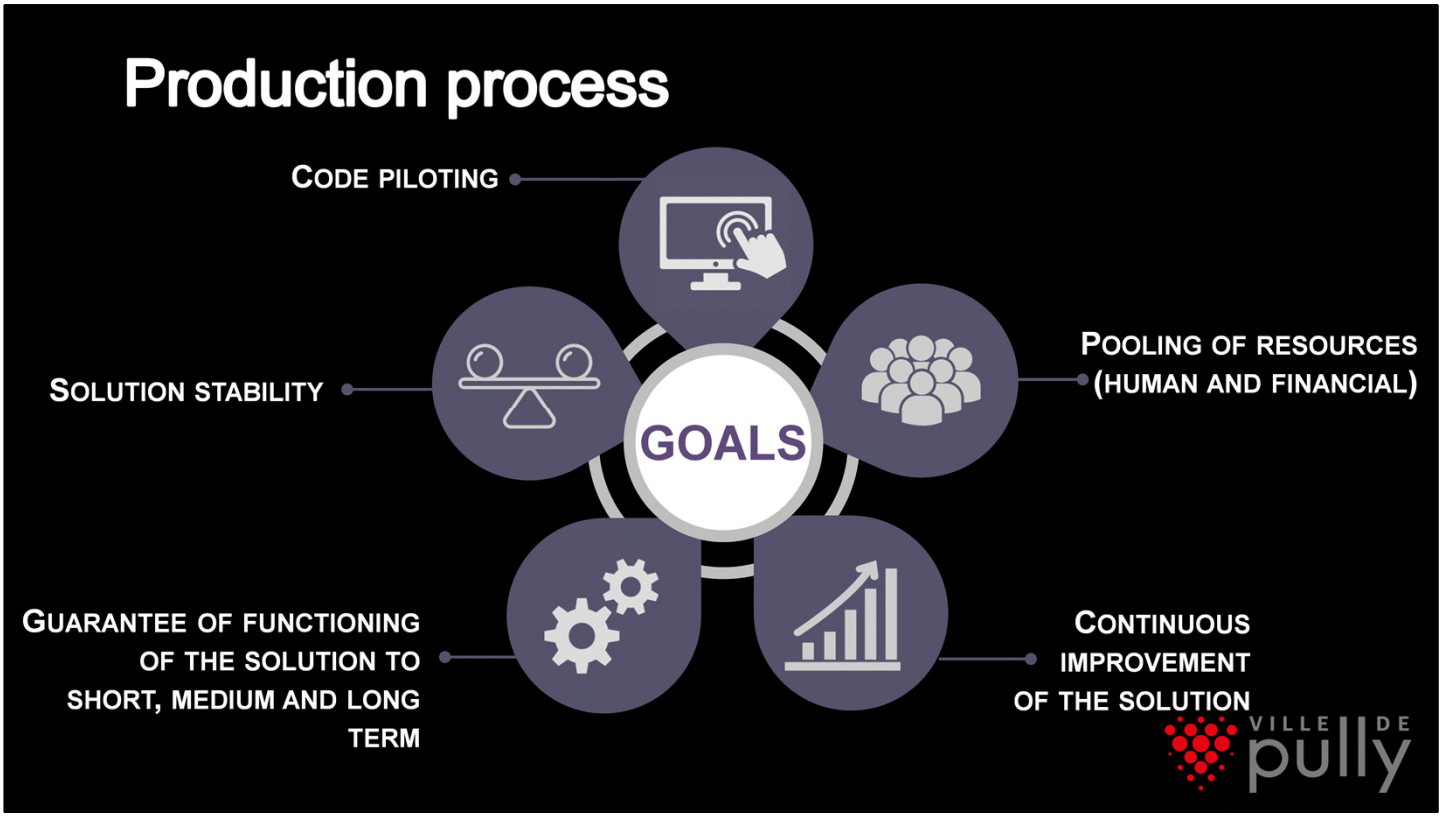
VILLE DE pully

- In order not to depend on a single software publisher, we have networked IT developers worldwide: Switzerland, France, Czech Republic, Romania, Russia and Australia
- In 2016, we put the drinking water management module into production.
- Then in 2019, we put the waste water management module into production



- After 4 years of code development in a project dynamic (which is illustrated by those race boats)

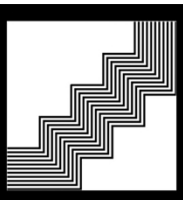
- … we have launched beginning 2020 a phase to develop the production process (which is illustrated by this cruise boat)



- The goals of this production process are:

o Code piloting (the most important)
o Pooling of resources (human and financial)
o Solution stability
o Continuous improvement of the solution
o Guarantee of functioning to short, medium and long term

Next steps



- RENEW THE ACTUAL WEBSITE: WWW.QWAT.ORG
- ADD THE WASTE WATER MODULE
- RENAME THE SOLUTION AND THE MODULES
- GRAPHIC LINE
- DOCUMENTATION
- 5 LANGUAGES (ENGLISH, FRENCH, GERMAN, ITALIAN AND ROMANIAN)
- PROCESSES
- GITHUB
- BUSINESS MODEL
- HELPDESK
- CONVENTION
- USERS MEETINGS
- NATIONAL ORGANISATION

VILLE DE pully

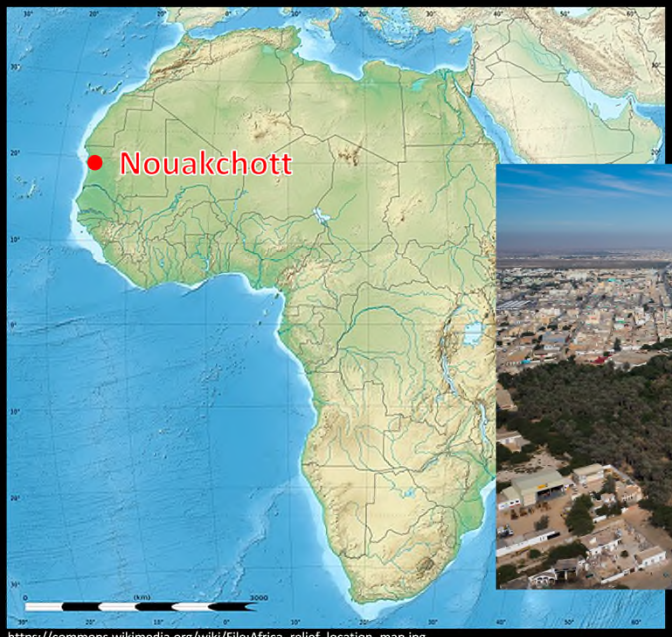
- Concretely, next steps to achieve the production process are:

o Renew the actual website
o Add the waste water module
o Rename the solution and modules
o Design a graphic line
o Documentation in 5 languages
o Process description (asking new functionnalities, helpdesk)
o Access to Github
o Business model
o Convention
o Users meeting
o National organisation

- In this way, we hope to set up an agile organisation for the piloting of the code, which can also be a demonstrator of the know-how of the Swiss administrations, particularly in their role as a driving force for the development and concrete integration of digital technologies at the service of the citizen, the environment and the economy.

GIS diagnostic for Nouakchott (Mauritania)

solidarit'eau



https://commons.wikimedia.org/wiki/File:Africa_relief_location_map.jpg

https://commons.wikimedia.org/wiki/File:Nouakchott.jpg

In february, we were invited by the city of Nouakchott in Mauritania to realize a GIS diagnostic about water management, and to analyse the way to implement our open source software solutions

More information on this project can be found at smart.pully.ch

Thank for your attention

Alexandre Bosshard
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City of Pully

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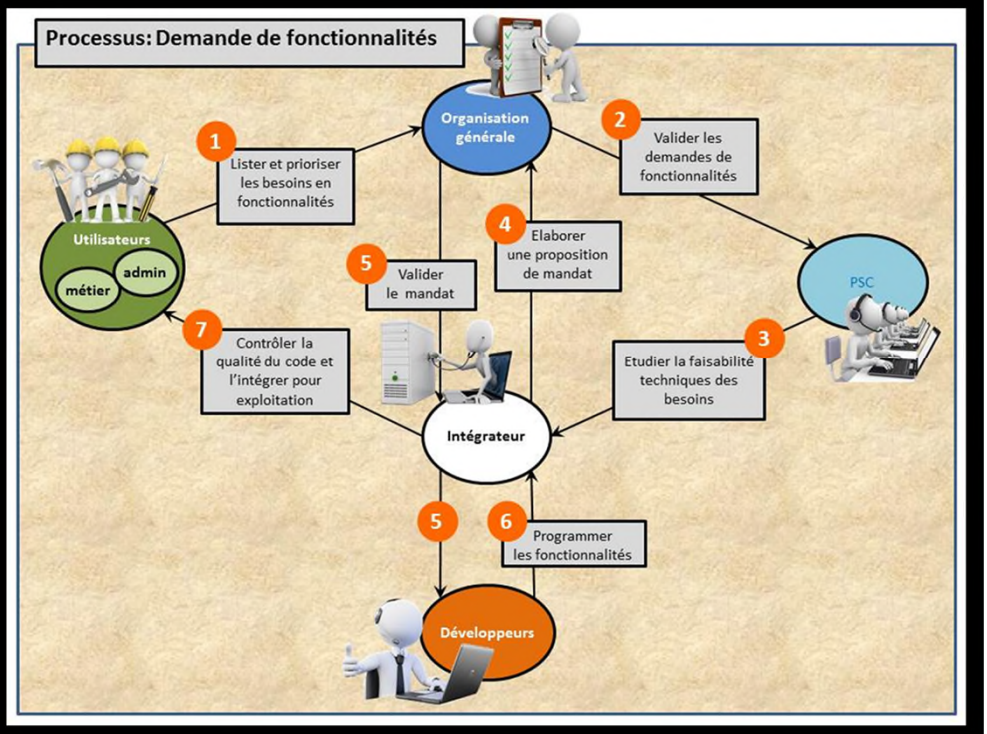
So I hope, I've managed to highlight the experience of a group of cites focused to develop their own professional softwares, and I look forward to sharing innovative ideas with you and perhaps, with the help of open source code, collaborate on this project in the future. For example, to traduce the documentation in greek language ☺. Efkaristo poly.

Appendice


Processus: Demande de fonctionnalités
Organisation générale
1
Lister et prioriser les besoins en fonctionnalités
2
Valider les demandes de fonctionnalités
Utilisateurs
admin
métier
4
Elaborer une proposition de mandat
5
Valider le mandat
PSC
7
Contrôler la qualité du code et l'intégrer pour exploitation
3
Etudier la faisabilité techniques des besoins
Intégrateur
5
6
Programmer les fonctionnalités
Développeurs