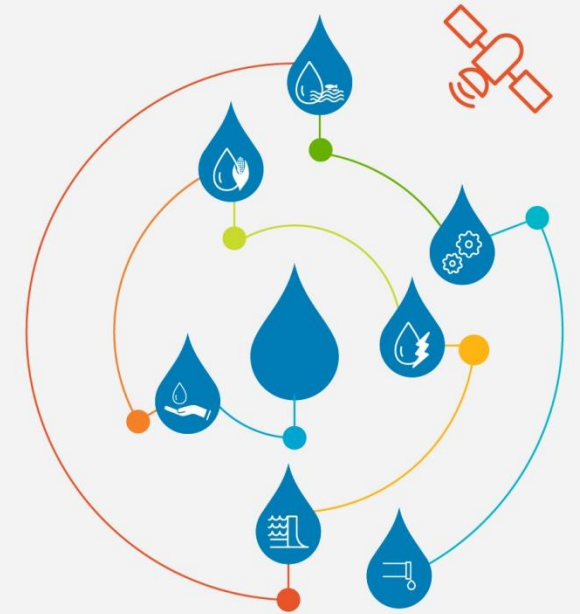


# High-Performing Utilities through GIS and Advanced Asset Management



Gilles BRUNSCHWIG

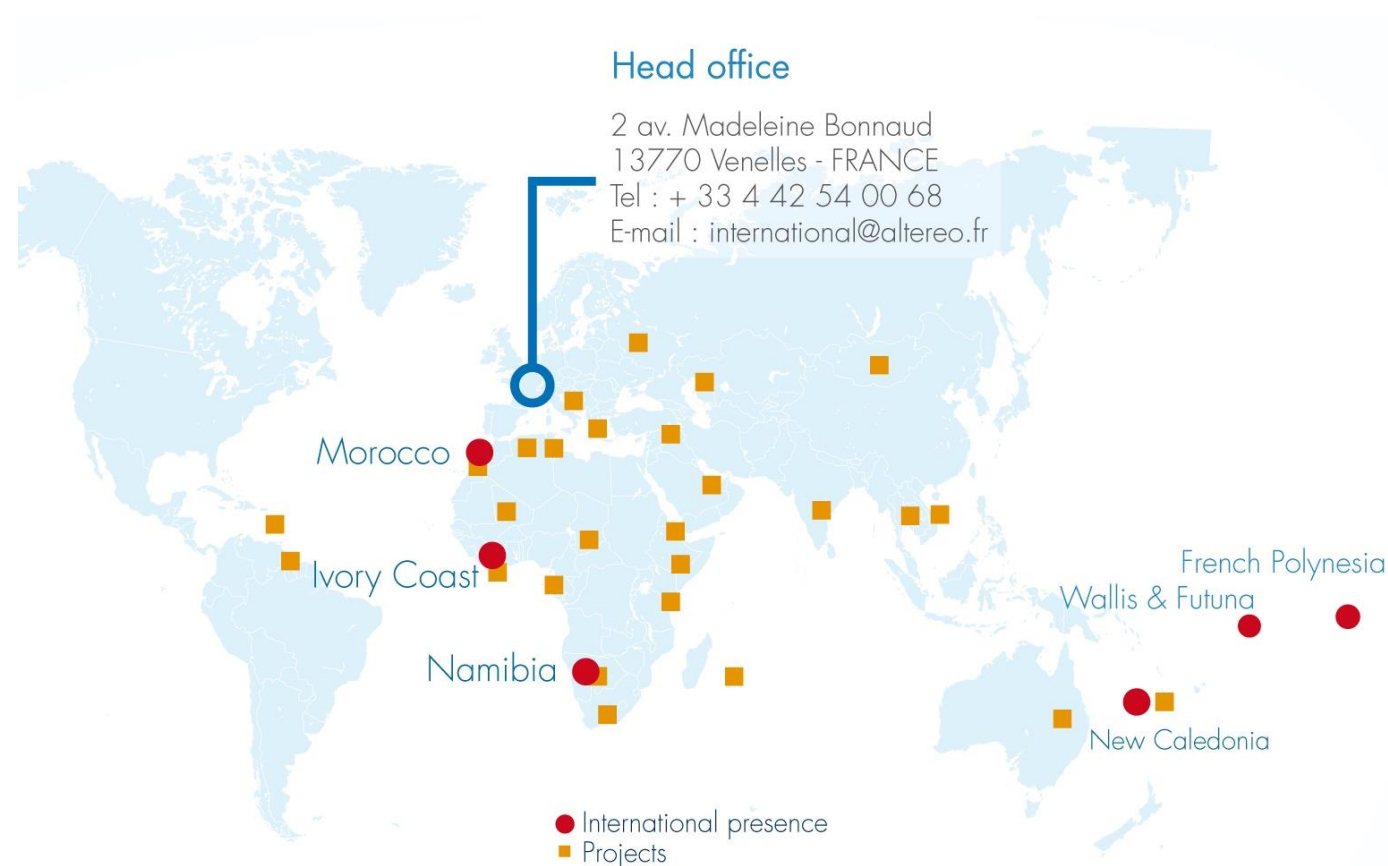
Altereo

03 October 2018

# Altereo, a leader in Water GIS and Asset Management

**30 years** of experience  
Projects in over **30 countries**

- Water network optimisation
- **NRW** management
- Innovative utility **GIS**
- Smart rehabilitation with **AI**



# The challenge for the years to come



Ageing infrastructure  
Increased leakage  
Degraded service

Throughout the world, an average of  
**35% of drinking water is lost in leakage**

**50% in developing countries**

**48 billion m<sup>3</sup> per year**

Source: [World Bank](#)





# Tackling this issue, where to start?

1. Ensure knowledge of water assets with a **specialised GIS**
2. Organise **people & workflows** around the GIS to continuously build up valuable data
3. Achieve **smart rehabilitation** by processing GIS data to target most critical assets



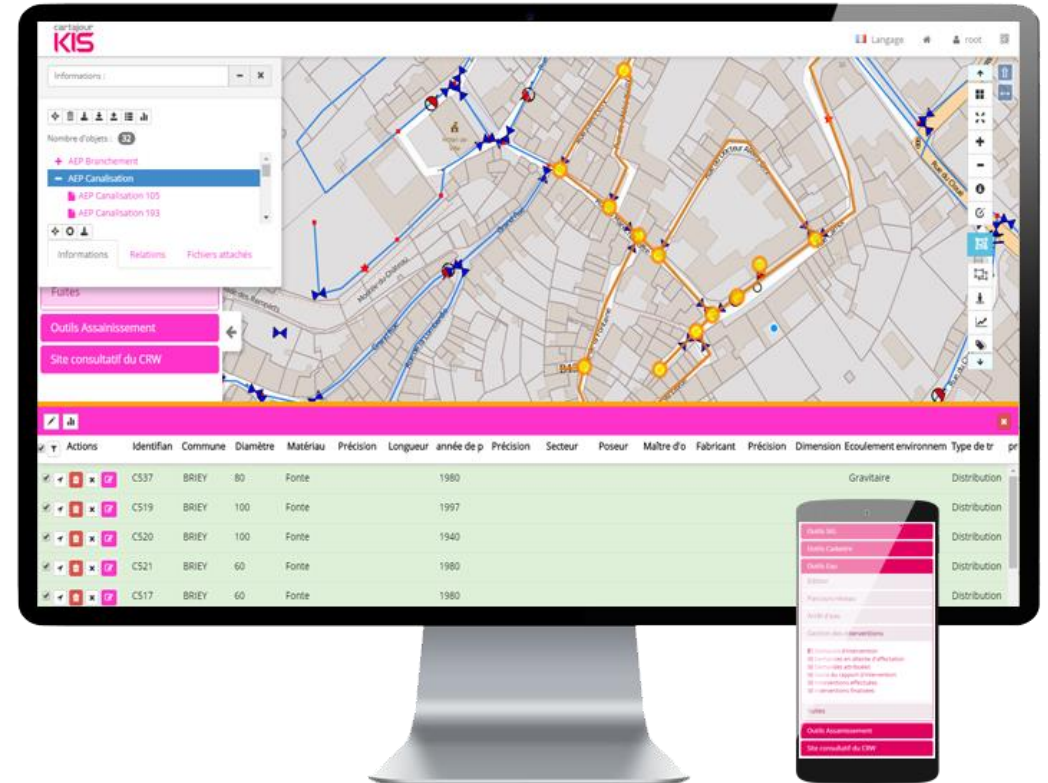
# Stage 1: Water utility Geographic Information System

**It has to be simple!**

The benefits of a web based GIS:

- No IT infrastructure burden
- Browser access
- Mobile access
- Customisable without coding

Case study : Phnom Penh PPWSA



# Stage 2: People and workflows around the GIS



- Awareness & training
- Forms & workflows
- Knowledge build-up



Ensuring flow of data **from the field to the system**



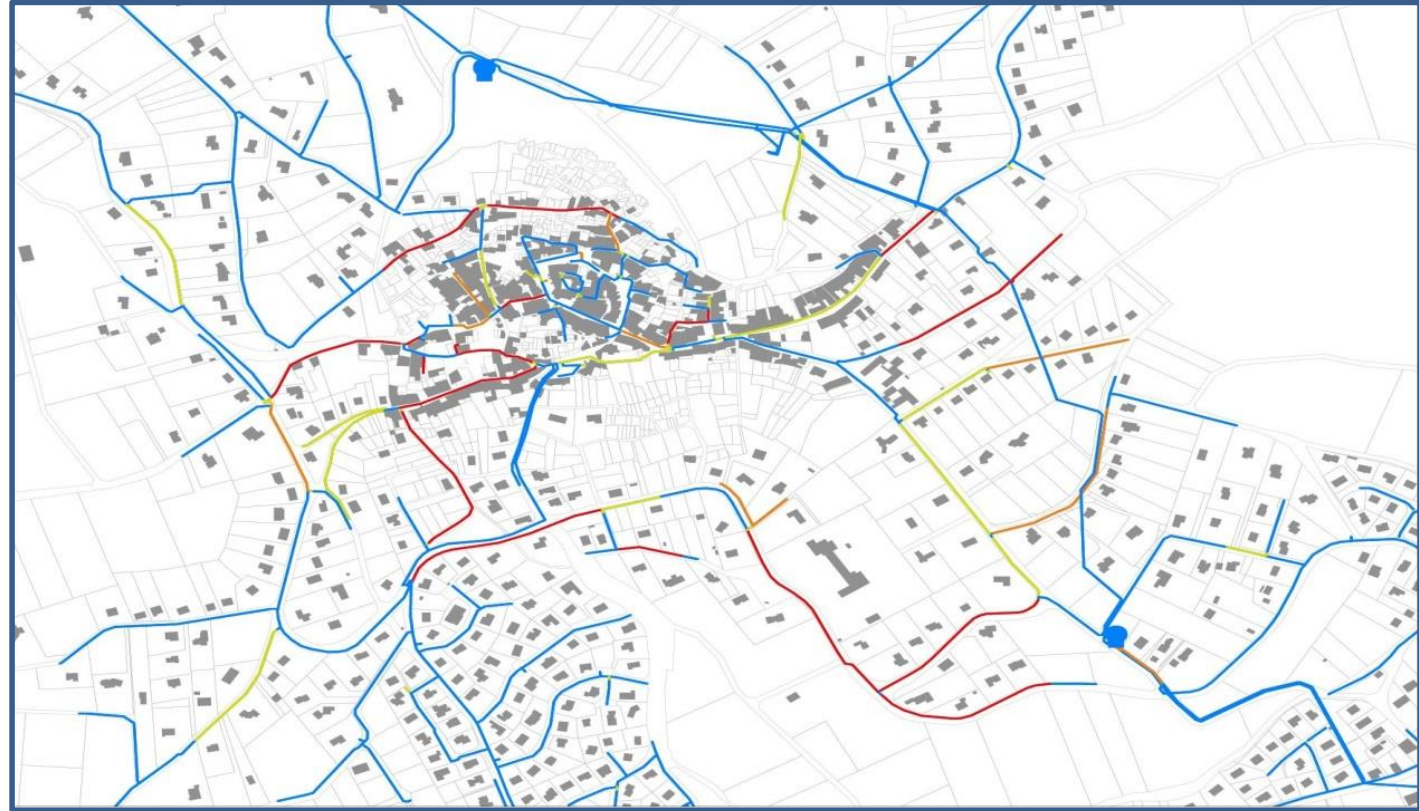


# Stage 3: Smart rehabilitation of water networks



Processing GIS data :

- Failure prediction
- Risk assessment
- Targeted replacement



To invest the **right amount**, at the **right place**, at the **right time**.

# Service connections, the disregarded assets

**Did you know?**

80% of failures are on service connections

They amount for **50%** of leakage volume !!!

**Yet, connections are rarely taken into account.**

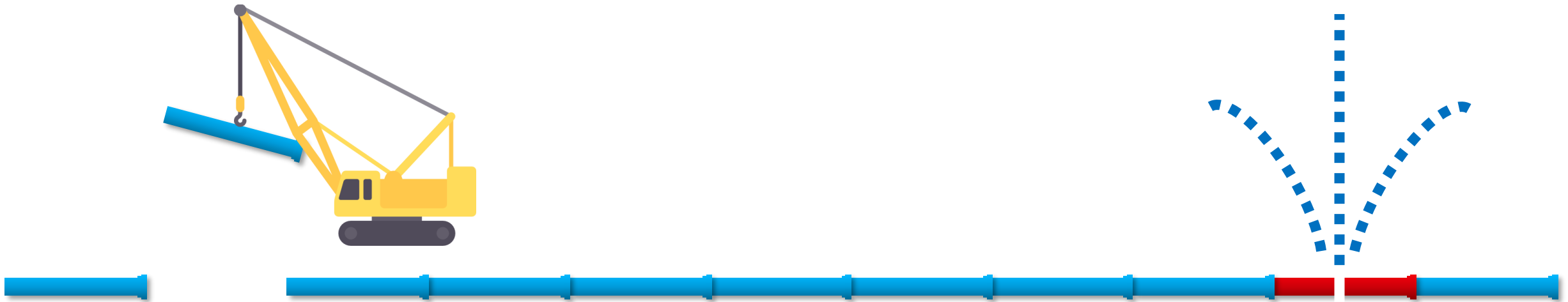




# Traditional network replacement

**Investing inefficiently** on one side ...

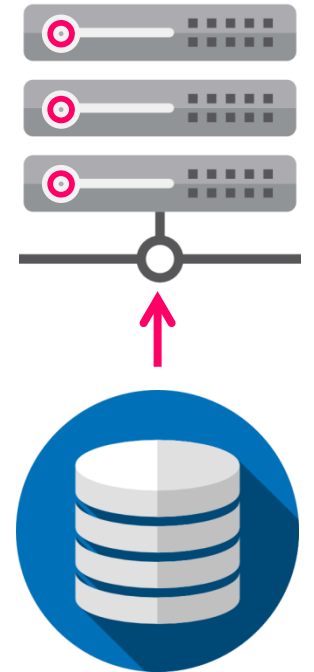
... and still **be impacted** by severe incidents on the other side



# Artificial intelligence fed by a mutualised database

350,000 pipelines  
25,000 failures  
over 30 years

Anonymous data

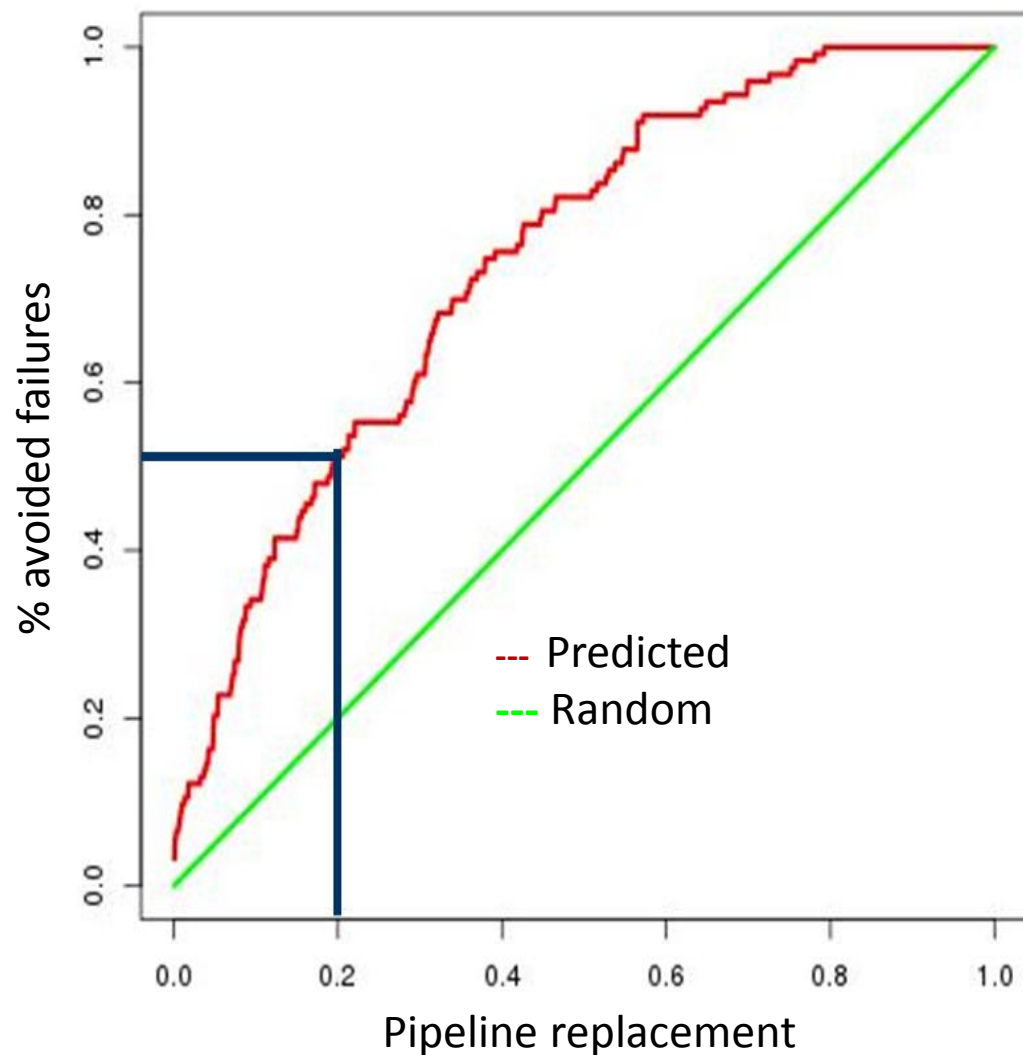


No more predefined rules

The system learns from the data and self-improves



# Boosting efficiency of network replacement



- **HPO**: an award winning project
- Targets critical **mains and connections**
- Operational and coherent investment planning
- **Even for data-poor utilities**





# Case studies



## KHAWASSCO, Vietnam

Setting up Water GIS and service

Applying predictive Asset Management  
(*SIROCO, previous technology*)

Targeted rehabilitation plan

**altereo**



## Noumea, New Caledonia

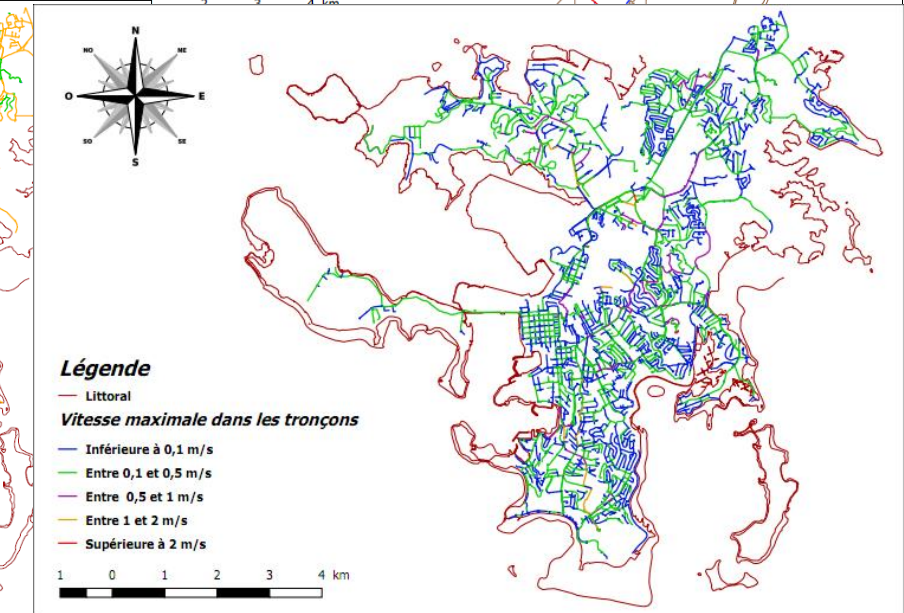
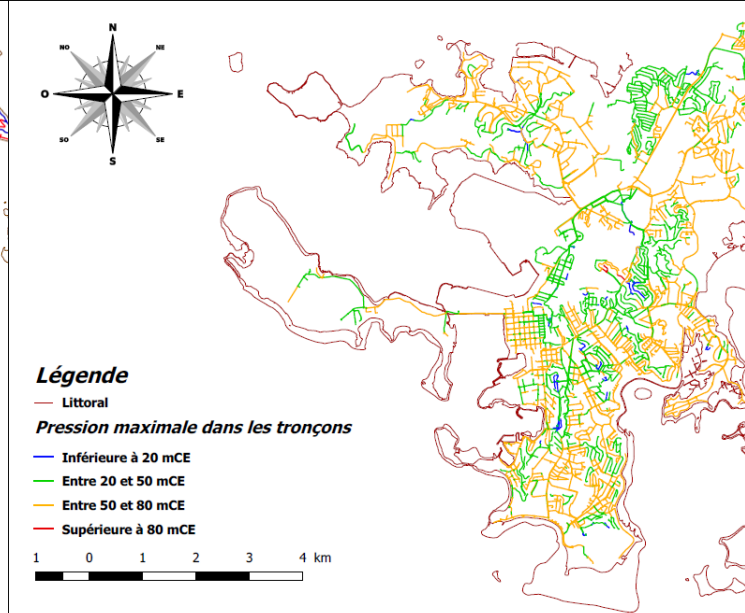
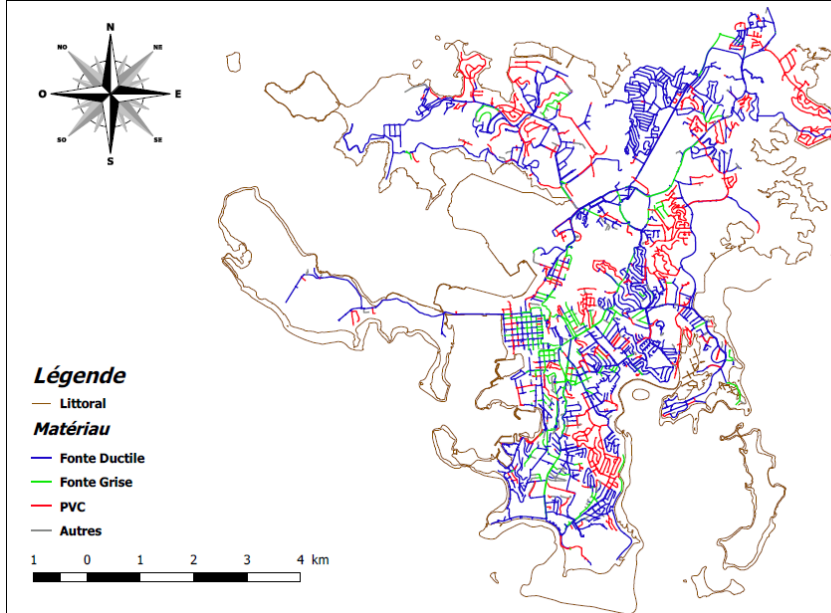
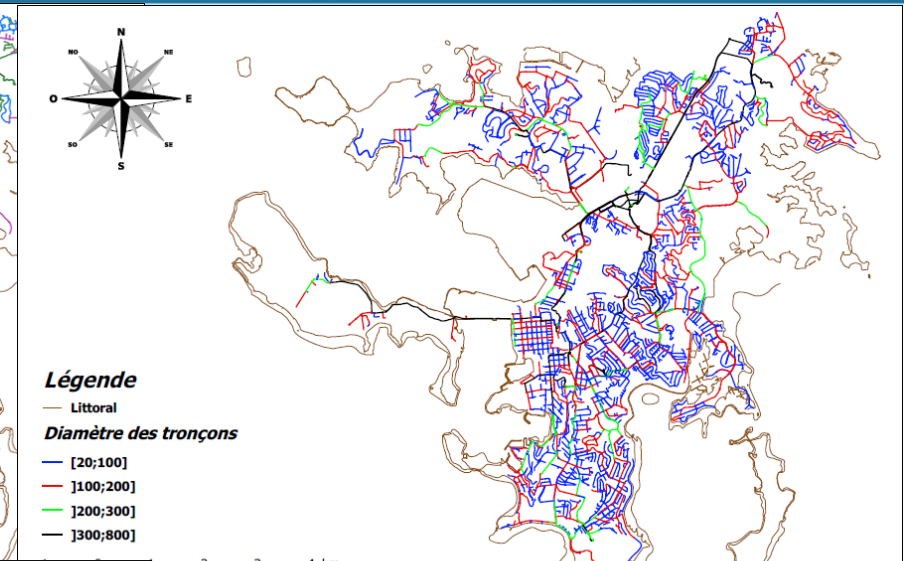
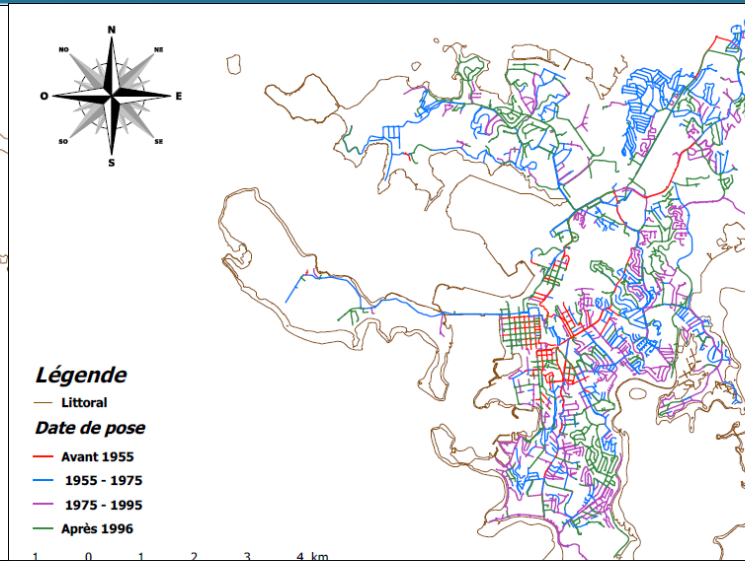
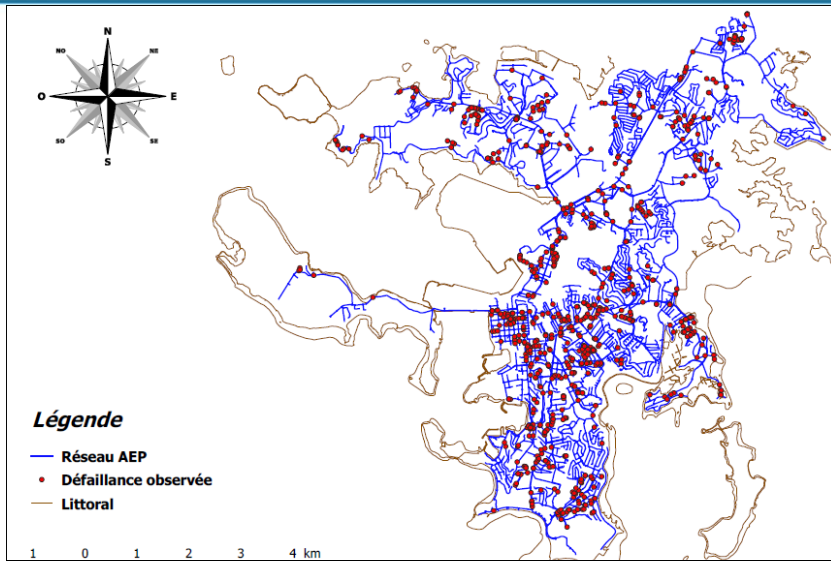
Applying predictive Asset Management  
(*HpO, new AI technology*)

Targeted rehabilitation plan

Optimised functioning of assets



# Nouméa Case Study



# Benefits for stakeholders

## **Sustainability** through **innovation**

- **AI** used for advanced **Asset Management**

A **wise & responsible** policy

- A tangible step towards **solving water scarcity**

**Multiply efficiency** of network replacement by **2.5**

