French National Grand Prize for Engineering 2019
Territories et innovation category

ARTIFICIAL INTELLIGENCE

FOR **RESPONSIBLE** WATER NETWORK ASSET MANAGEMENT

Optimises leak survey and **detection**

Prioritises replacement of **mains** and **service connections**

Enhances the **efficiency** of your network replacement **budget**

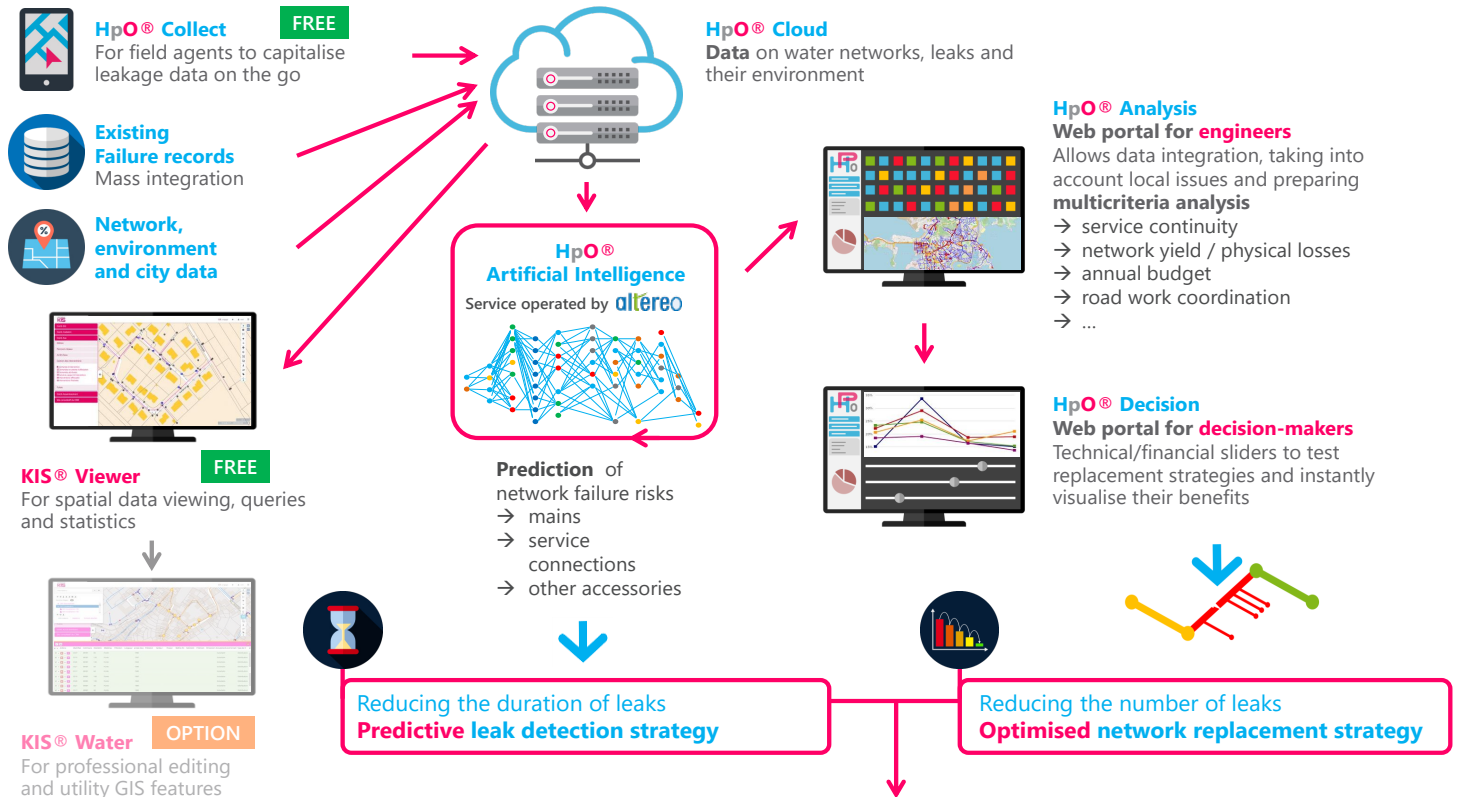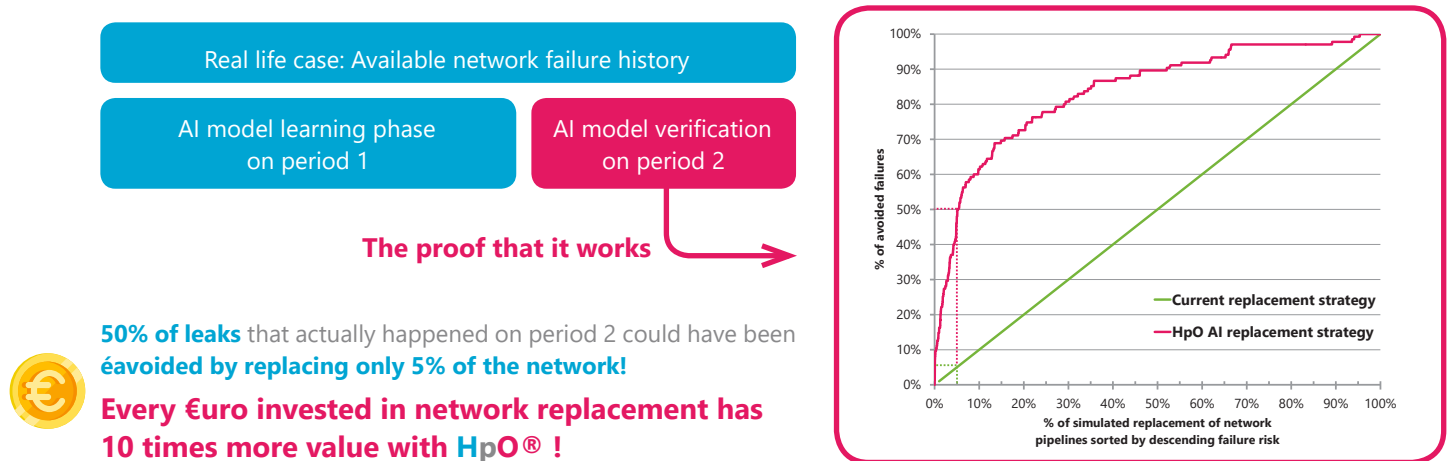**Multiplies** the number of **avoided leaks** in the future

www.altereo.fr/hpo

The service

Expert engineering from Altereo coupled with HpO® tools YOU drive!

HpO® Collect FREE
For field agents to capitalise leakage data on the go

Existing Failure records
Mass integration

Network, environment and city data

KIS® Viewer FREE
For spatial data viewing, queries and statistics

KIS® Water OPTION
For professional editing and utility GIS features

HpO® Cloud
Data on water networks, leaks and their environment

HpO® Artificial Intelligence
Service operated by **altereo**

Prediction of network failure risks
→ mains
→ service connections
→ other accessories

HpO® Analysis
Web portal for engineers
Allows data integration, taking into account local issues and preparing **multicriteria analysis**
→ service continuity
→ network yield / physical losses
→ annual budget
→ road work coordination
→ ...

HpO® Decision
Web portal for decision-makers
Technical/financial sliders to test replacement strategies and instantly visualise their benefits

Reducing the duration of leaks
Predictive leak detection strategy

Reducing the number of leaks
Optimised network replacement strategy

Number of avoided leaks multiplied on mains-service connections-accessories

Real life case: Available network failure history

AI model learning phase on period 1

AI model verification on period 2

The proof that it works

50% of leaks that actually happened on period 2 could have been **éavoided by replacing only 5% of the network!**

Every €uro invested in network replacement has 10 times more value with HpO® !

Graph axes:
- Y-axis: % of avoided failures (0% to 100%)
- X-axis: % of simulated replacement of network pipelines sorted by descending failure risk (0% to 100%)
- Legend: Current replacement strategy; HpO AI replacement strategy

Nouméa New Caledonia

Altereo has been a pioneer and leader in water infrastructure asset management for 30 years

References of experts systems / optmised network replacement plans

| Nha Trang Vietnam | Chartres Métropole France | Orléans Métropole France | Tours Métropole France | Limoges Métropole France | Nouméa New Caledonia | R&D with our AI Paris Greater Area |