



# Implementation of an innovative system of leaks detection on water supply network

SAINTE LIZAIGNE & SEURECA  VEOLIA

Environmental Solutions for Public & industrial  
services

# Addressing Physical Losses



Water Utilities are facing immense challenges

- KES7.8 billion is lost annually in Kenya due to non-revenue water
- Water utilities in Kenya are increasingly facing immense pressure to generate revenue to cover operational costs
- The largest source of non-revenue water (NRW) = physical losses  
→ dilapidated mains and service lines and intermittent supply leading to pressure variations in the distribution pipelines

Leak Diameter (mm)	Cubic Meter / Hour	Cubic Meter / Day	Cubic Meter / Year
6.0 bar			
2	0.3	7.2	2.592
4	1.1	26.5	9.539
6	2.4	57.6	20.736
8	4.2	101.1	36.392
3.0 bar			
2	0.2	4.6	1.659
4	0.7	17.3	6.221
6	1.6	38.9	13.997
8	2.9	69.1	24.883

# Proposed Solutions



## ⇒ Principles :

- Uses the house connection as a listening point on the network
  - Simple and easy way to cover the entire network
  - Hydrophone sensor in a service connection valve
  - Integrated system taking place on classic house connection (new or existing one)
- Capture sounds produced by water in any pipe, including plastic pipes

## ⇒ Objectives :

- Accurate and permanent monitoring to detect water leaks
- Leaks pre-location for a better organization of required interventions

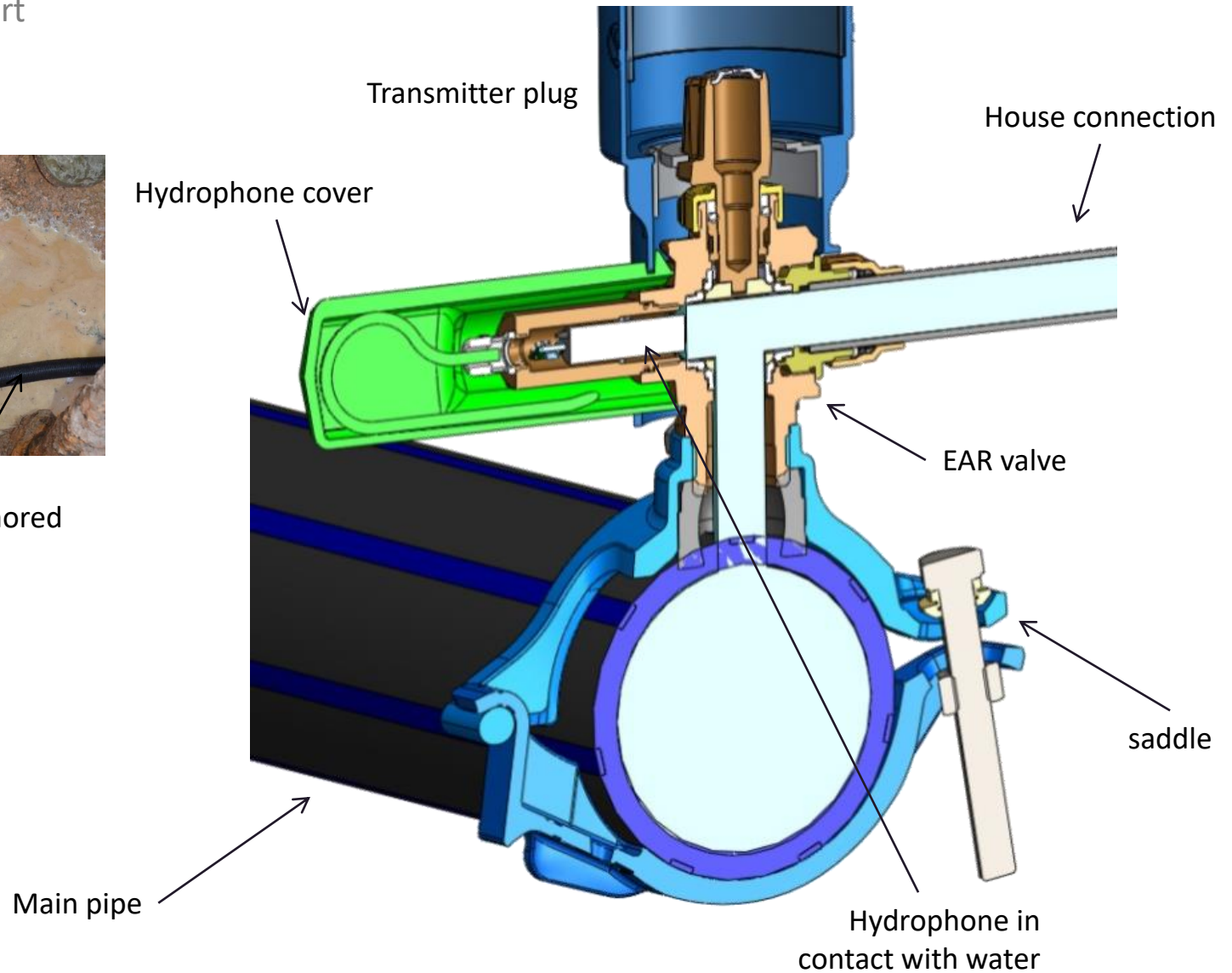


## Product composition

⇒ Sensor part



Hydrophone armored  
cable





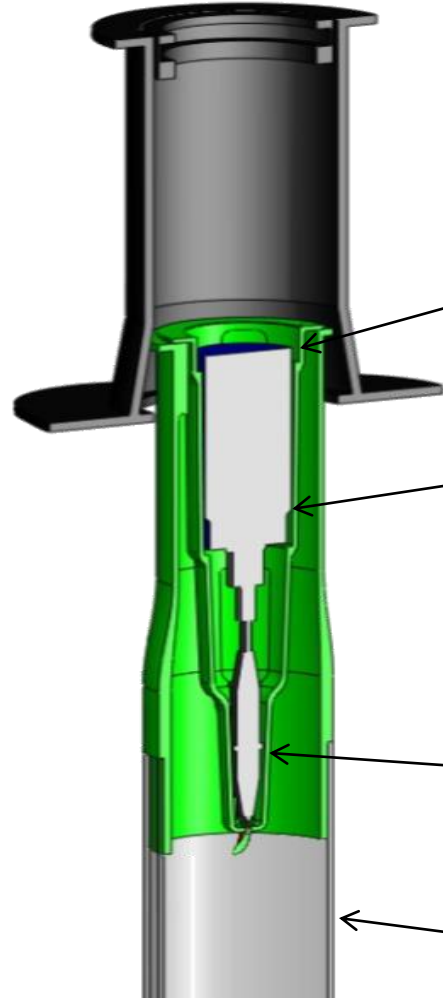
## Product composition

⇒ Transmitter in surface box



Command valve  
accessed through  
surface box

Armored cable from  
sensor to transmitter



Removable transmitter  
support

EAR transmitter

Transmitter  
connection

Standard access  
tube





# Monitoring management

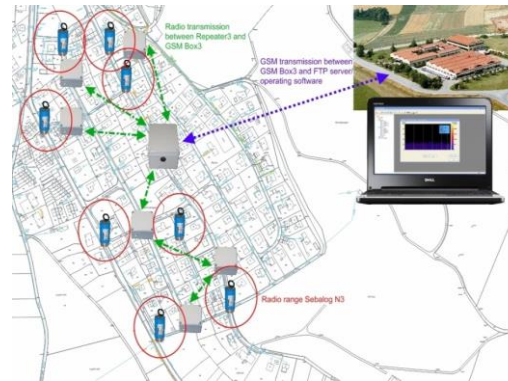
## ⇒ PATROL mode

- Patrol with COMMANDER (CDR-3) or laptop equipped with Log RI+
  - Programmation of the loggers on site
  - Direct measurement and results



## ⇒ NETWORK mode

- GSM data transmission via GT3
  - Transmission of the datas on a client server
- Special radio data transmission
  - Transmission of the datas on a client server or on SebaCLOUD



# What is Seureca / Sainte Lizaigne looking for ?

- ❑ Interests from Water Utilities to implement the system and extending the pilot study we are going to start in Kisumu
- ❑ Investors to finance this type of equipments
- ❑ Proving the benefits of using this technology compared to the usual ones in Kenya



# Asante Sana !

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## EAR principles and objectives

