Artificial Intelligence + Water for a Sustainable Future

ADB's 2nd e-Marketplace for a Water-Secure and Resilient Asia and the Pacific

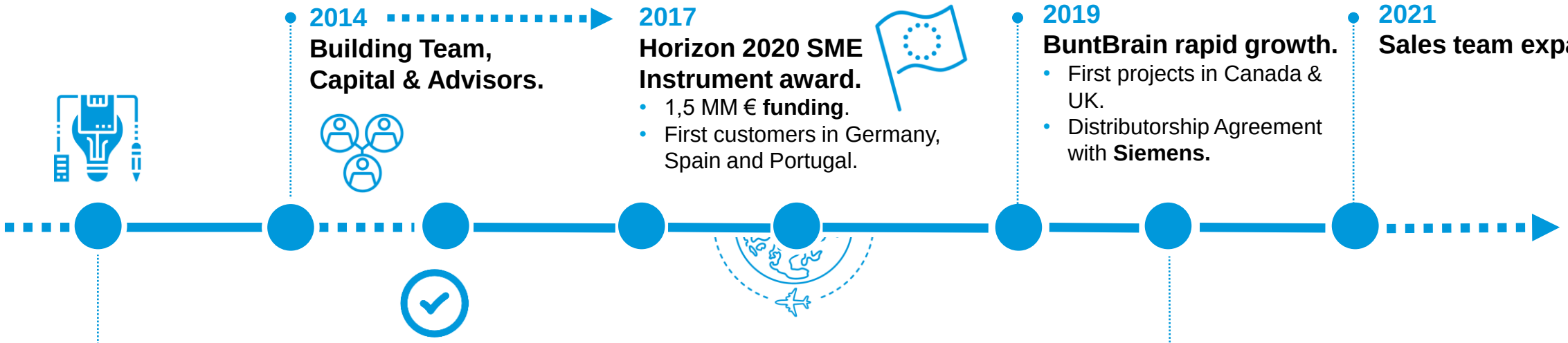
BuntPlanet
DreamingMinds

Table of Contents

1

BuntPlanet, The Company

BuntPlanet´s History



2013
BuntBrain product development.

2014
Building Team, Capital & Advisors.

2016
BuntBrain's first successful trials.
BuntBrain successfully **tested** in Germany and Spain.

2017
Horizon 2020 SME Instrument award.
- 1,5 MM € **funding**.
- First customers in Germany, Spain and Portugal.

2018
First customers in LatAm.
- 100 demos made **worldwide.**
- 159% BuntBrain revenues growth.
- First projects in Colombia, Chile, Bolivia and Costa Rica.

2019
BuntBrain rapid growth.
- First projects in Canada & UK.
- Distributorship Agreement with **Siemens.**

2020
New investors join.
Growth towards global **leadership.**

2021
Sales team expansion.

BuntPlanet, Disruptive Solutions to Avoid Non-Revenue Water and Anomalies in Water Distribution Networks

Physical Losses

Produced and transported but not consumed water.

Commercial Losses

Consumed but not registered water

Unique Combination of Technologies

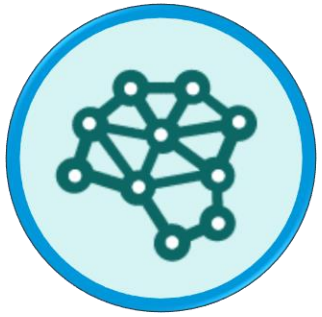
Artificial Intelligence

Virtual DMAs (sectors)

Hydraulic Simulation

Metrology Knowledge & Optimum Sensor Positioning

Digital Twin



Big Data

Awards Received

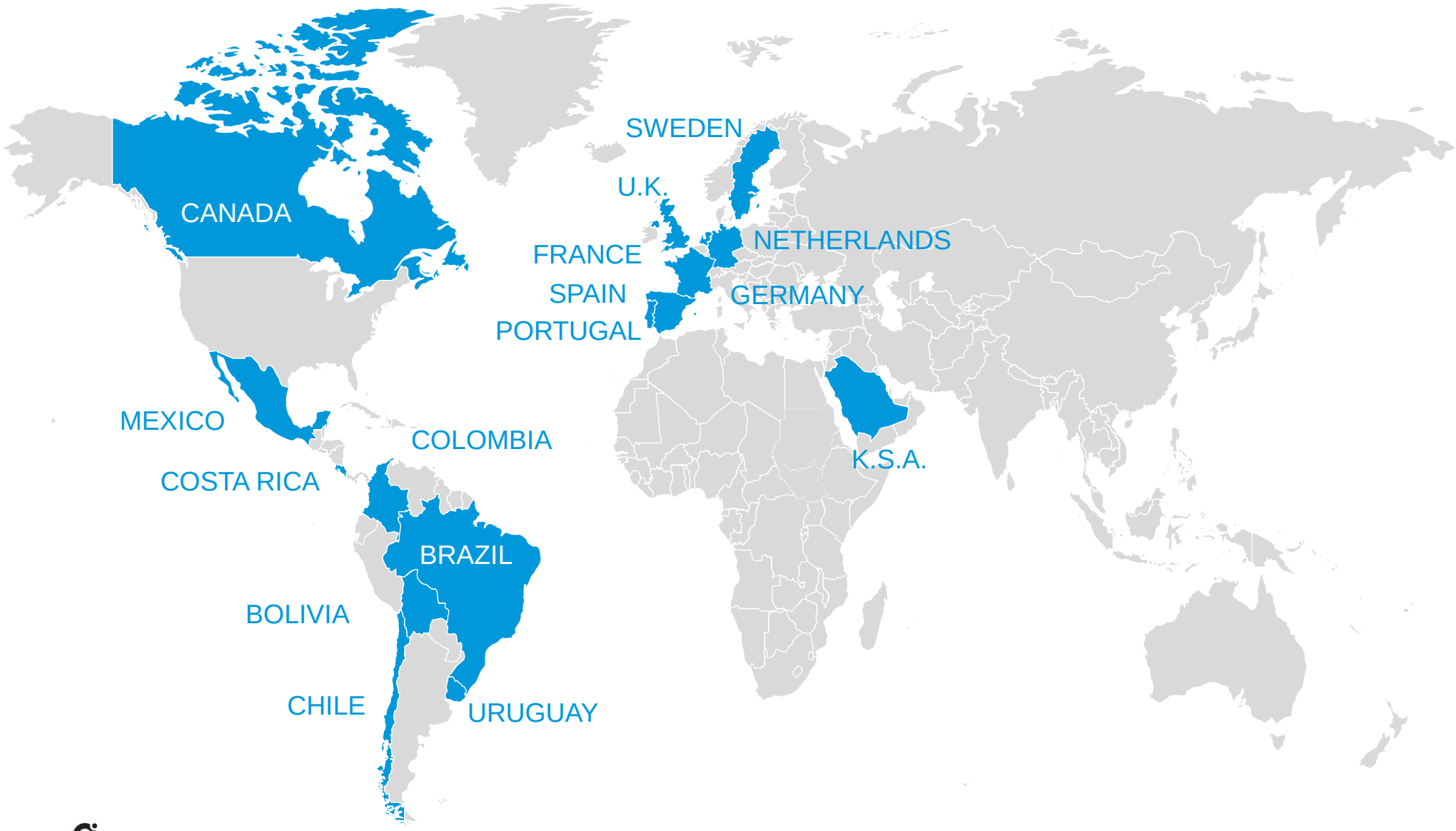
Co-funded by the European Union
SME Instrument Programme

IBM Business
Partner Award
2014
Beacon Finalist

donostia
weekINN

STARTUP
EUROPE

Countries where BuntBrain Has Been Implemented



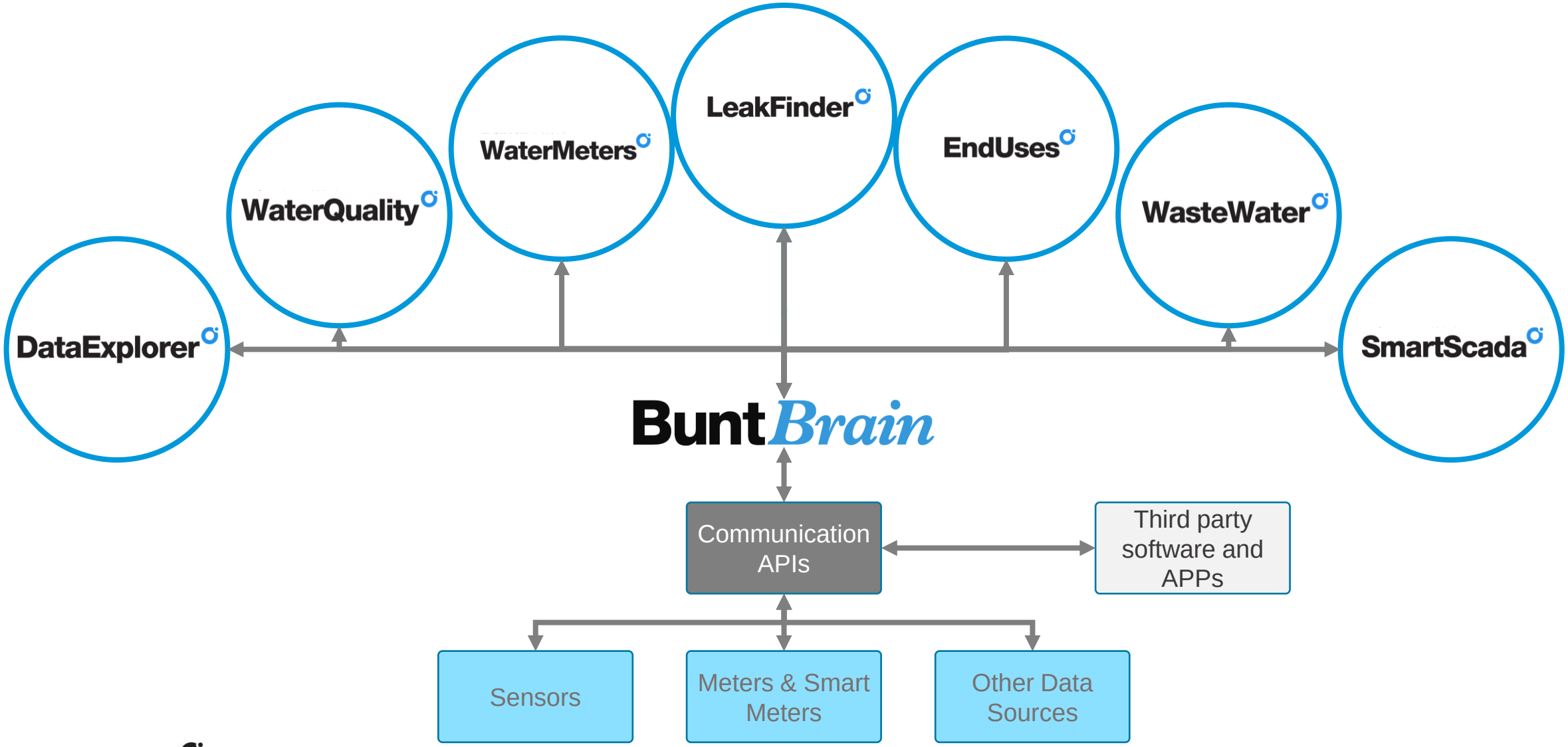
BuntPlanet
DreamingMinds

2

BuntBrain, the Platform

Artificial Intelligence + Water for a Sustainable Future

BuntBrain Ecosystem



Where to Host it?

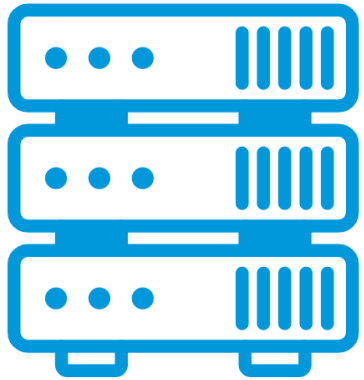
You will be able to choose your preferred option, always secured.

On Cloud

Hosted in Amazon Web Services in Frankfurt, Germany.

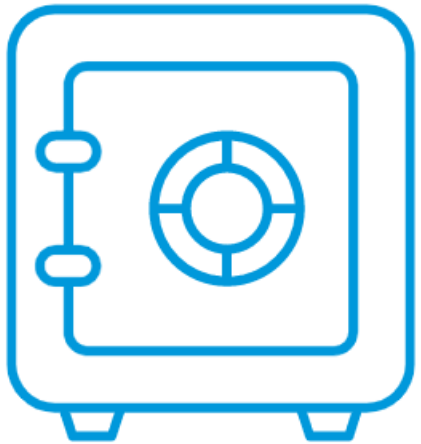
On Premise

Hosted in clients' own data centre.



Enhanced Cybersecurity

2 Factor Authentication Secured Access



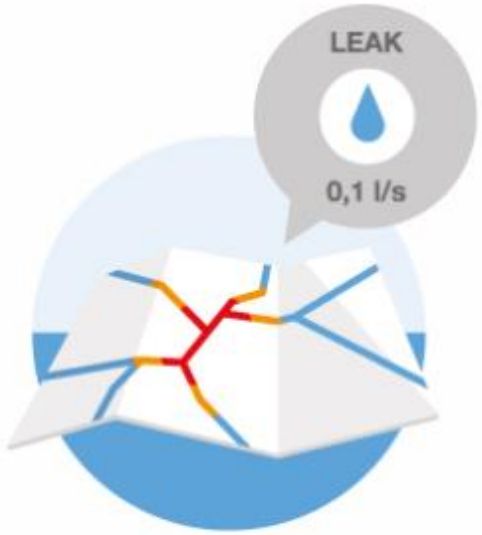
ISO27001

Safety of data and systems is critical for our clients and for ourselves.

Disruptive Solutions Based on Artificial Intelligence

Physical Losses

BuntBrain LeakFinder



Early detection and location of leaks and anomalies in the network

Commercial Losses

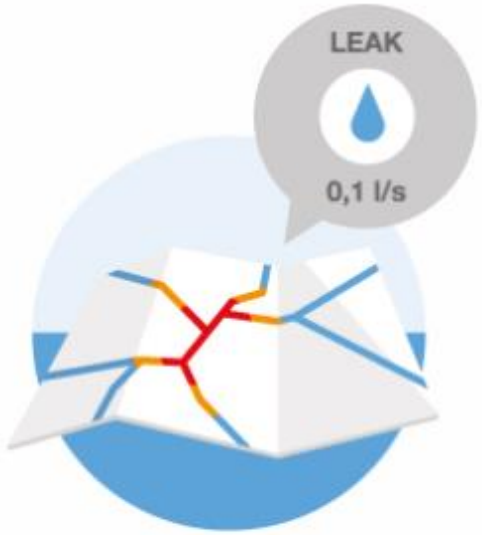
BuntBrain WaterMeters

Smart water meter data management

LeakFinder for Physical Losses

Physical Losses

BuntBrain LeakFinder



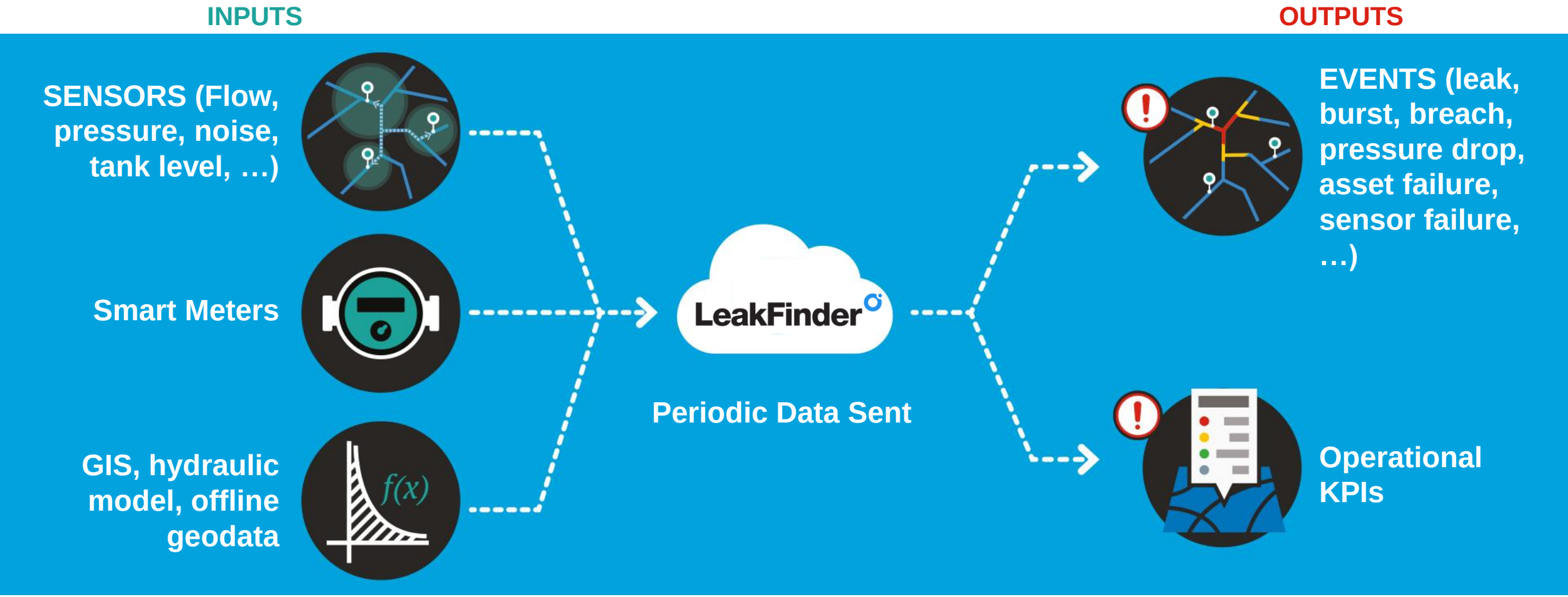
Early detection and location of leaks and anomalies in the network

Commercial Losses

BuntBrain WaterMeters

Smart water meter data management

How Does it work?

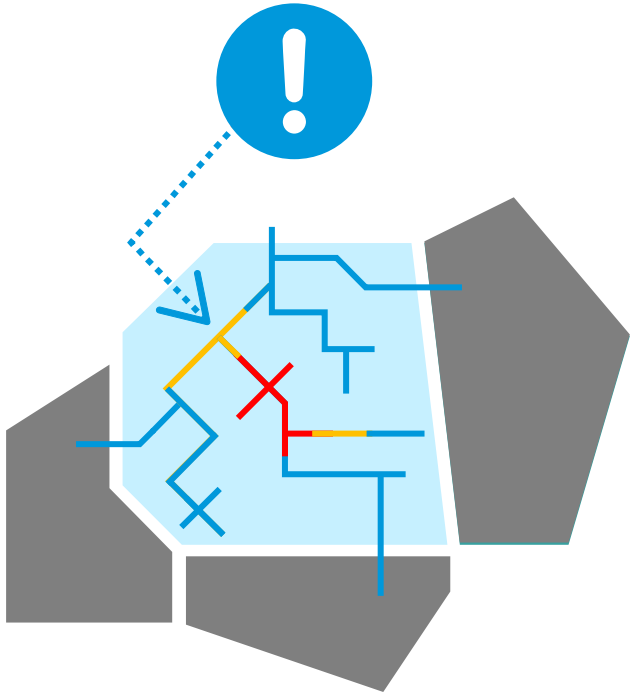


Leak Detection

DMA based pre-location

IA detects and pre-locates events at **DMA level**.

Virtual DMA based pre-location



IA detects and pre-locates events at **pipe level**.

Different Versions Adapted to Every Water Network Requirement

Standard DMA

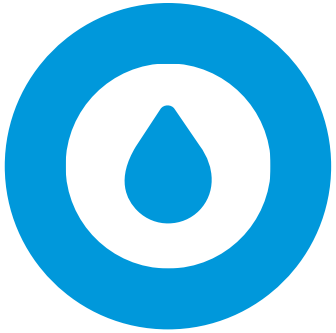
- Artificial Intelligence to identify and locate leaks
- **Simple** hydraulic model simulation
- Leaks pre-location at **DMA level**

Virtual DMA

- Artificial Intelligence to identify and locate leaks
- **Calibrated** hydraulic model simulation
- Leaks pre-location at **Pipe level**

Benefits

- It **reduces CAPEX** and **OPEX**.
- **High Return on Investment** and **short payback**
- **Reduction** of **water production costs**



- **Reduction** of **water consumption**
- **Early and remote leak detection** and **location**.
- **Avoids bursts**.

Obtained Technical Results

- More than **50% water loss reduction in already optimized networks**.
- Identifies leaks at their initial state **(<0.3l/s**) before they cause further damage or losses.
- Detection and **management of thousands of events**.

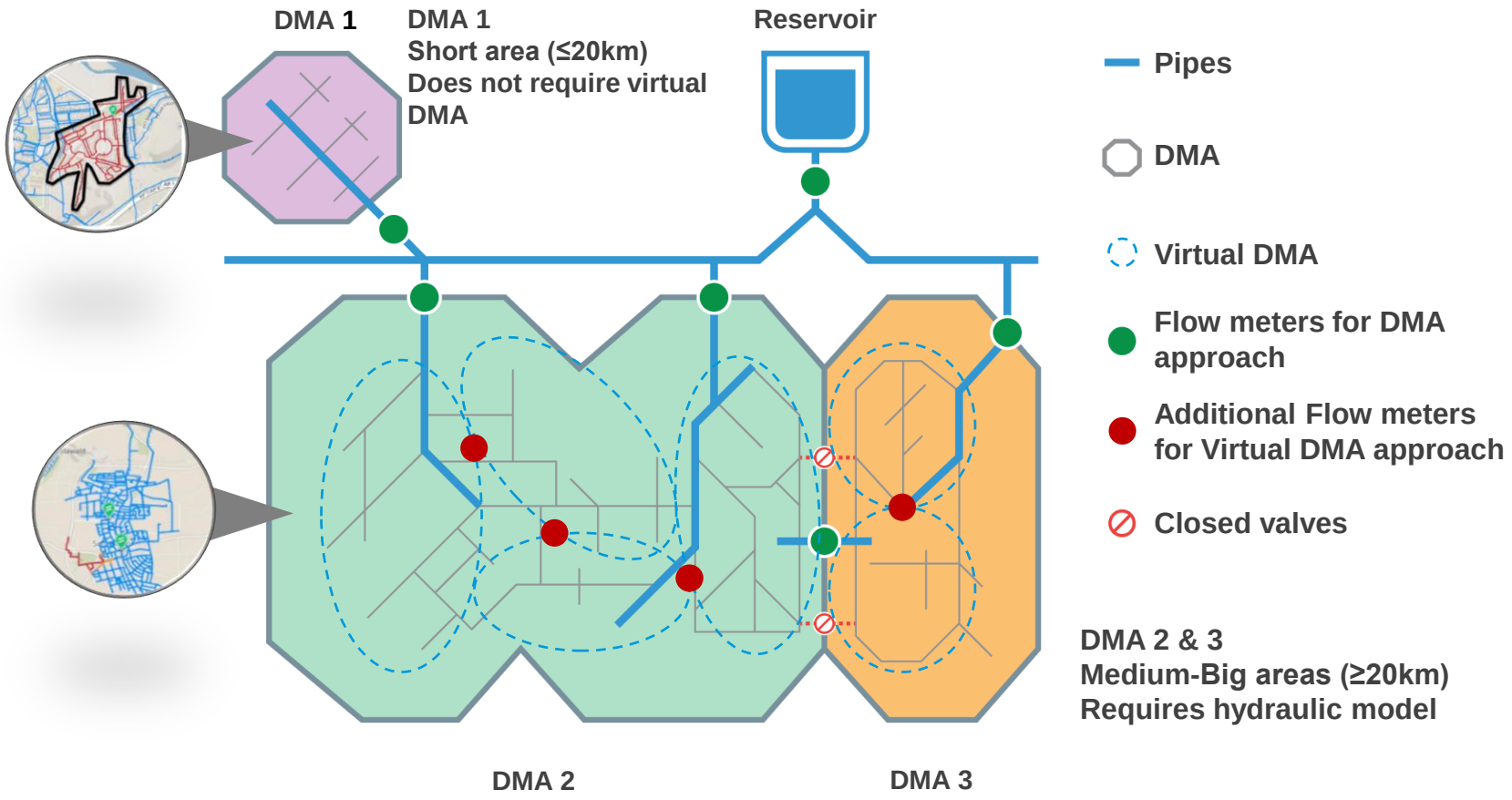
- Average **leak detection** and confirmation time **< 26 hours**.
- Average **leak location** time **< 5 hours** and within **<300m**.

A Disruptive Innovation

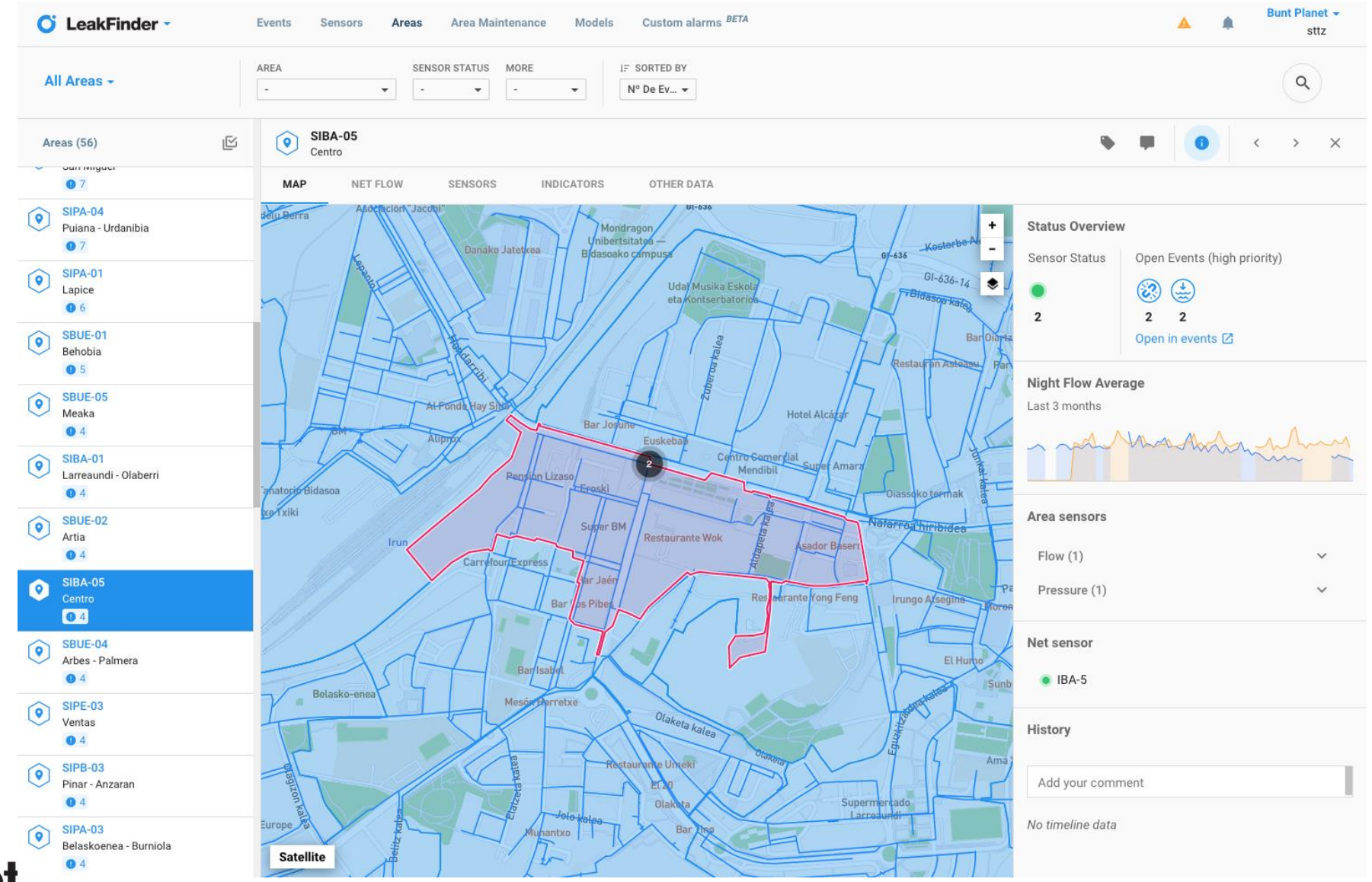
Features	Event Management Software	Noise Loggers Manufacturers	Satellite-based Leak Detection	Water Meters Manufacturers	BuntPlanet
Artificial Intelligence	✓	✗	✓	✗	✓
Large DMAs	✗	✓	✓	✗	✓
Any weather /noise condition	✓	✗	✗	✗	✓
Any pipe material	✓	✗	✓	✗	✓
Measurement error	✗	✗	✗	✓	✓
Neutrality	✓	✓	✓	✗	✓

Introduction to Virtual DMAs supported by the Advanced Version

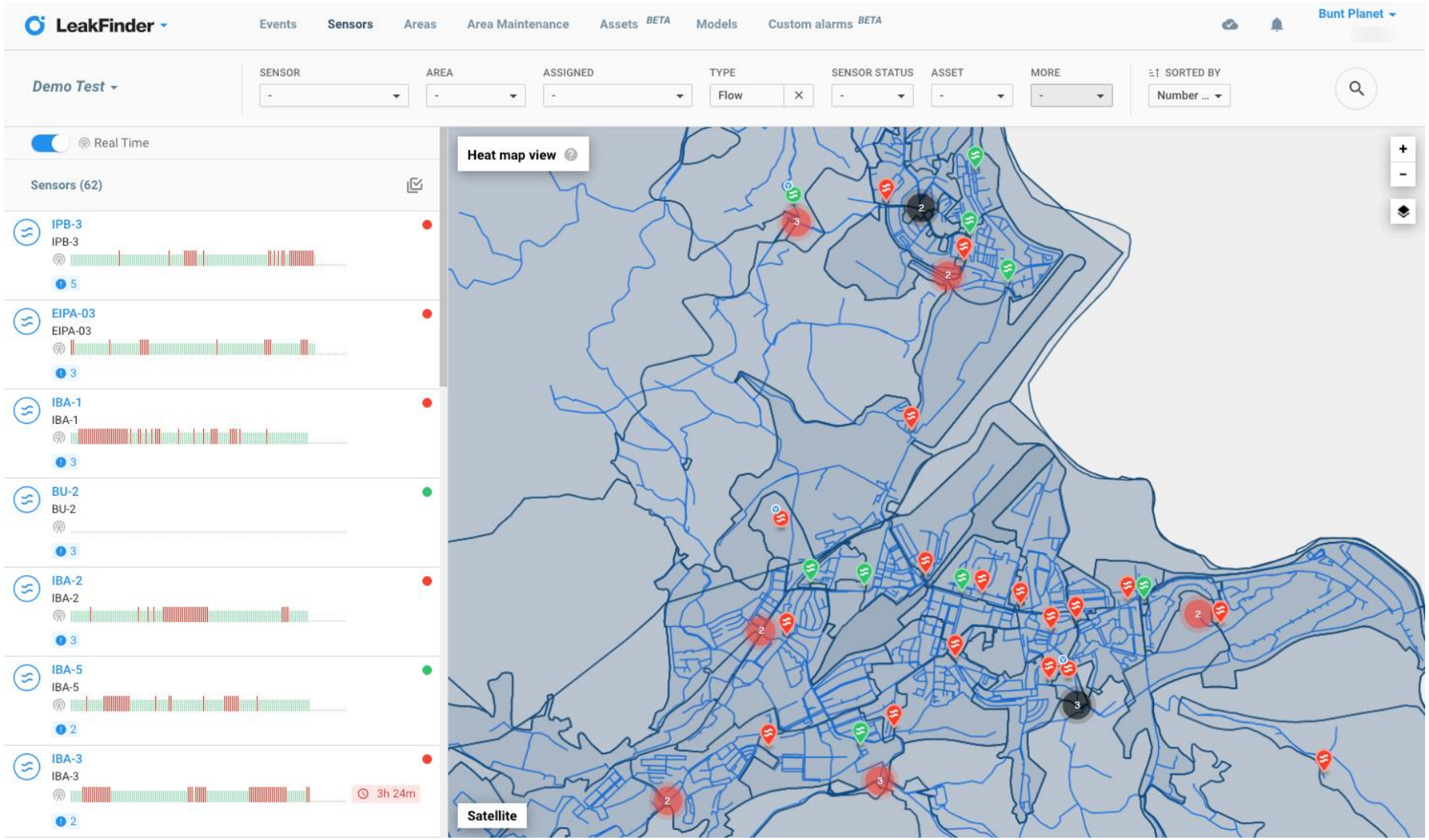
- Allows the detection and pre-location of small leaks in medium/**big DMAs**.
- Location accuracy of **<300m**.



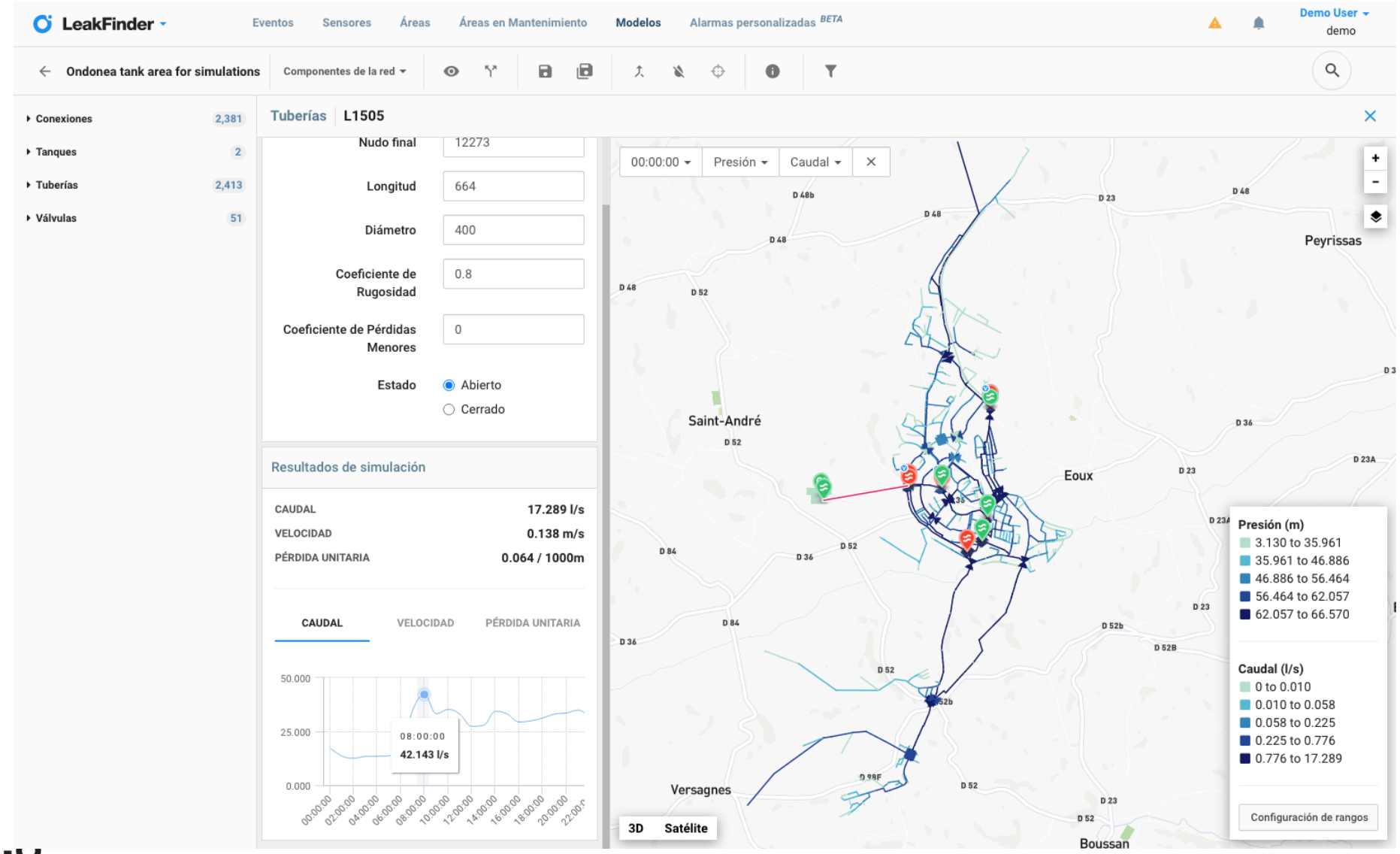
Real Time Monitoring of Areas (DMAs)



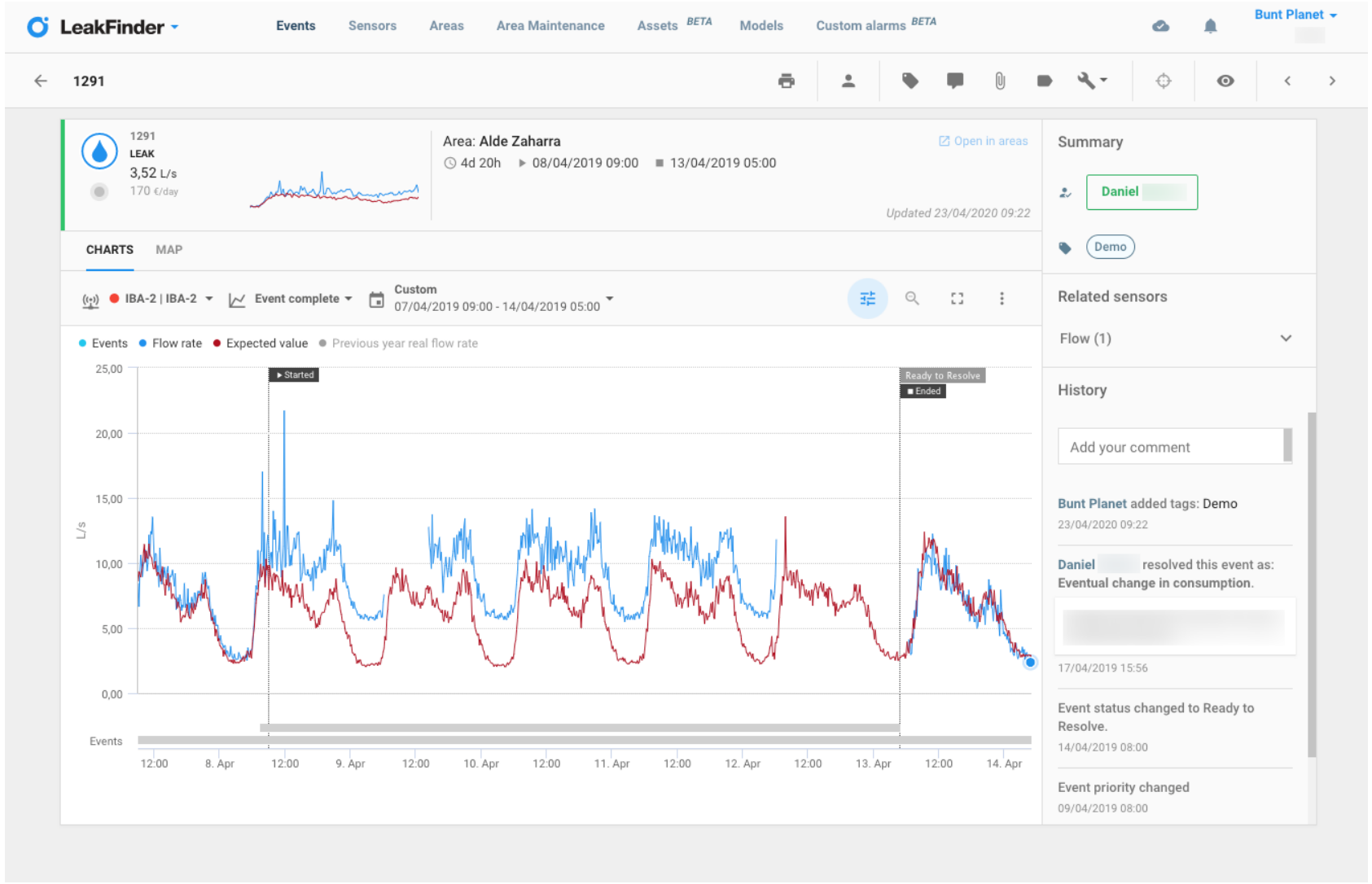
Real time monitoring



Integrated Hydraulic Model



Event detail



LeakFinder Features summary

1. Proved leak detection and location time reduction
2. Minimum investment for best results
3. Easy and fast to implement
4. High security standards
5. Increases accuracy over time
6. Available on cloud or on premise
7. Integration with third party software (Business Intelligence, Sales tools, GIS, Scada, Work orders management Systems, …)
8. Automatic event detection (leak, burst, anomaly, pressure drop, asset failure, ….) and management system
9. Hydraulic digital twin (automatic hydraulic model) calibration and simulation)
10. Minimize collateral infrastructure damages and costs
11. Suitable for any size of DMA, pipe material and environment conditions
12. Virtual DMA (detection and pre-location of small leaks in large DMAs)
13. Model allows “What if” scenarios
14. Avoids the increase of Minimum Night Flow levels
15. Real time analysis and Metainformation management (tags, comments, …)
16. Integrated Scada web.
17. Automatic data normalization and cleaning
18. Compatible with any sensor type and communication system
19. KPIs calculation for Areas, Assets, Events, Sensors
20. Customised dashboards
21. Smart metering integration
22. Predictions are used to fill the data gaps
23. Automatic configuration of new sensors
24. Pipe isolation proposal
25. User defined notifications/alarms and scheduling

WaterMeters for Commercial Losses

Physical Losses

BuntBrain LeakFinder

Early detection and location of leaks and anomalies in the network

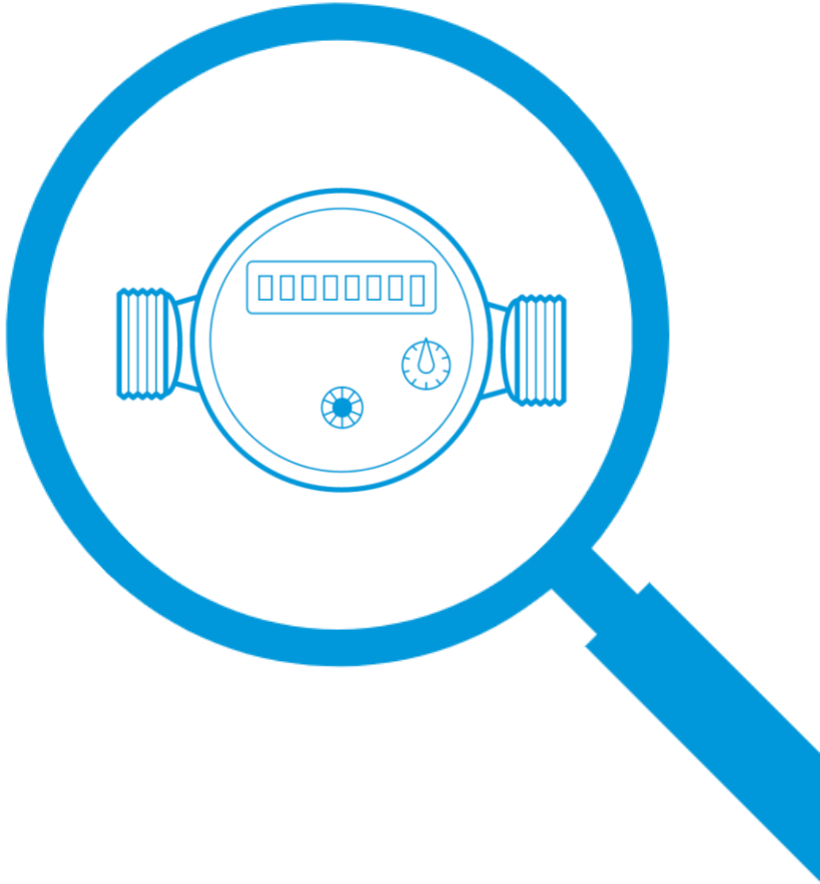
Commercial Losses

BuntBrain WaterMeters

Smart water meter data management

What Is it and How Does it work?

- BuntBrain **WaterMeters** is web-based software to **reduce commercial losses** in the water supply network.
- Applies big data, metrology and machine learning, to identify **which meters should be checked and/or replaced** based on their performance and return on investment, not their age.
- Monitors **under-metering** constantly by calculating current water meter measurement error against optimal meter error based on error degradation patterns for each water meter.



How Does it work?

Benefits

Financial Savings

- **Increase revenues and reduce commercial losses** by charging more accurately to the customers.
- Generates **financial savings** by optimizing meter replacement plan through its end of life and performance calculation.
- **Tariffs modelling**

Auditing & Transitioning Tool

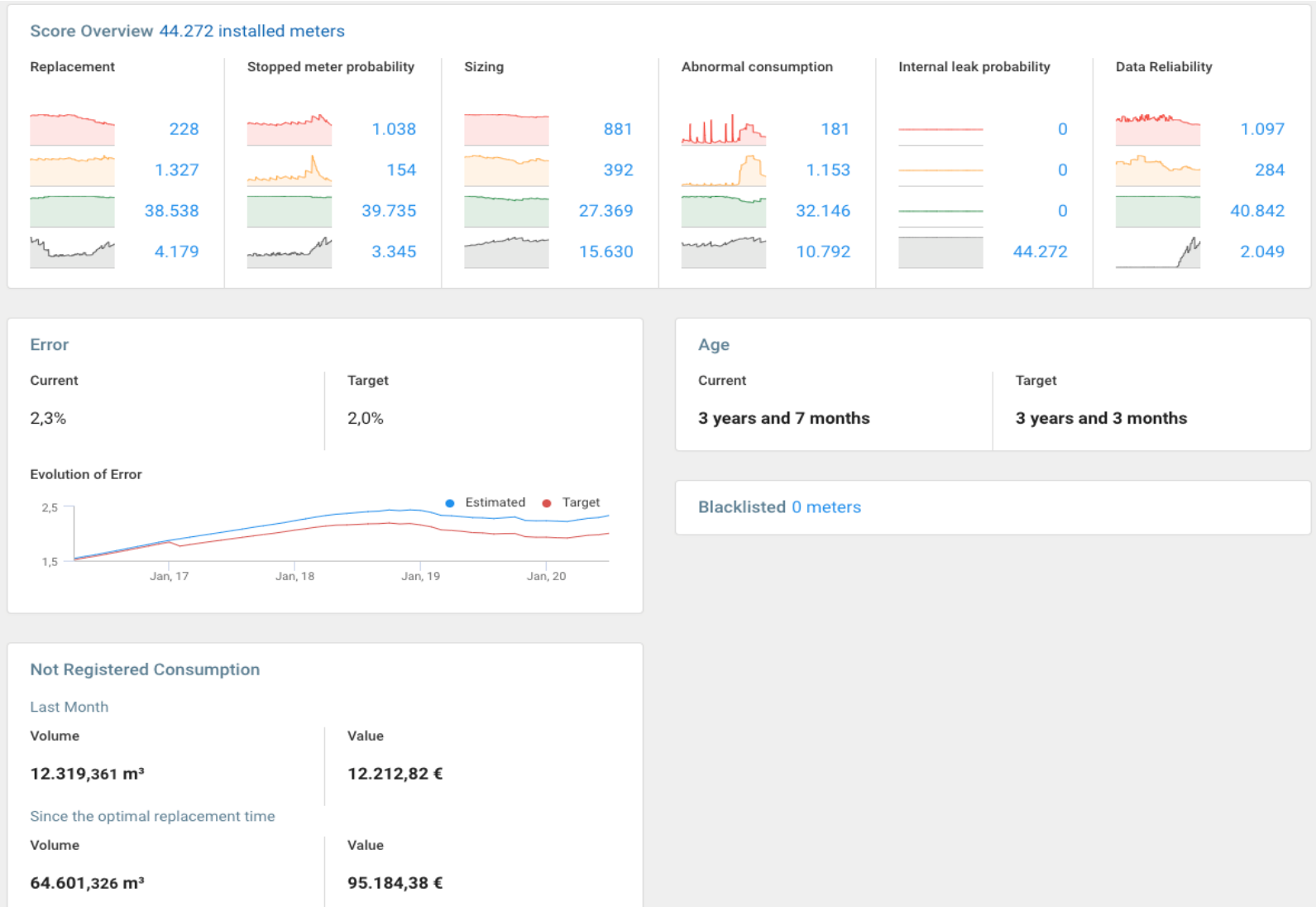
- **Fraud detection** by identifying water theft. (If combined with LeakFinder software)
- Facilitates **transit to a smart metering network** as it prioritises meters replacement.
- Serves as **independent analysis** to audit meters´ status.

Performance Enhancement

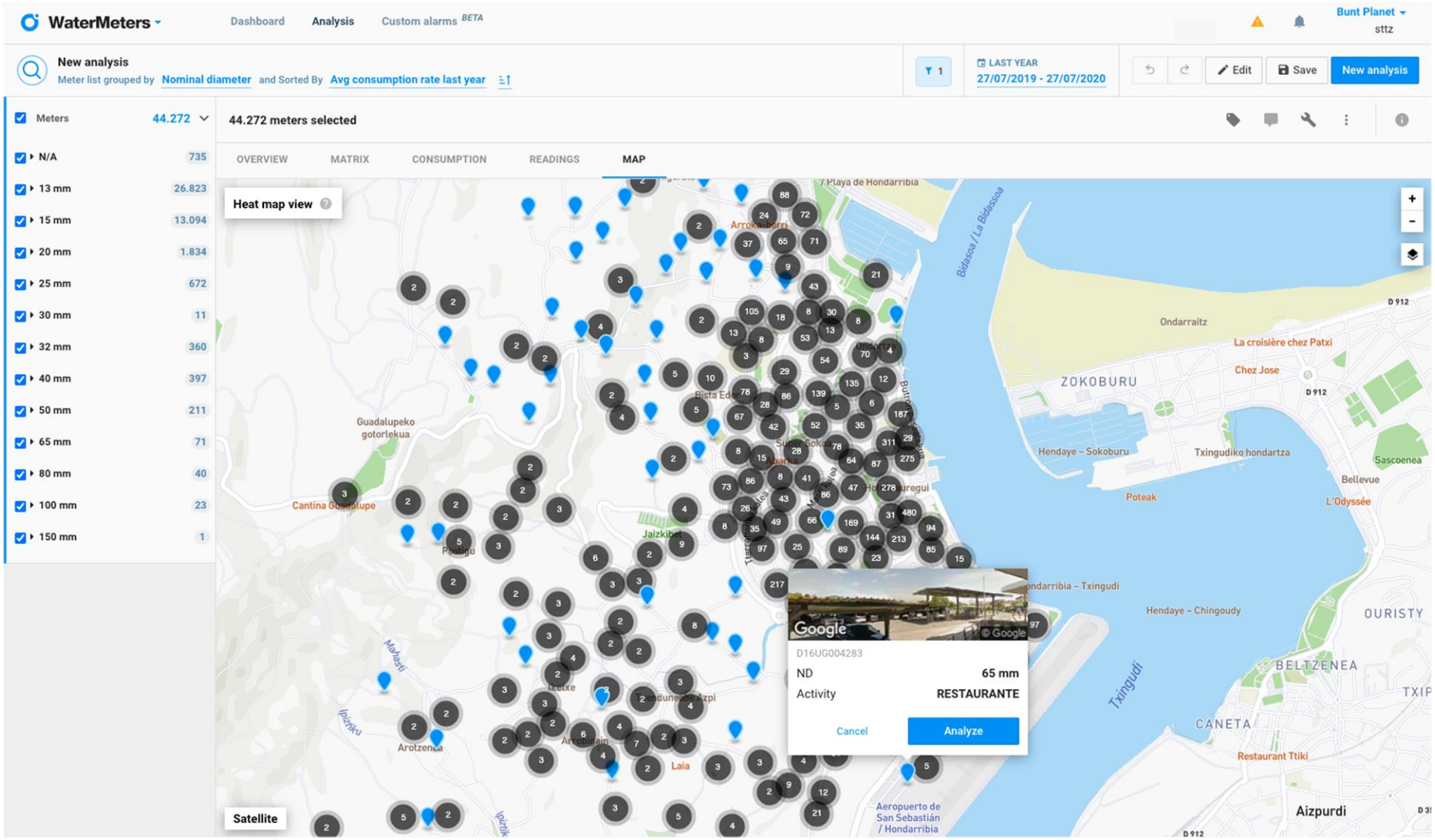
- Meter **data integration** (MDM & MDA functionality), including smart meters.
- **Automatic water balance** calculation.
- Simple report: **constant meters´ performance monitoring and improvement** through indicators.
- Water **demand analysis**.
- Meters' performance **comparison**.
- Generates **periodic reports** to the management team.
- Replicability of the analyses.

BuntPlanet
DreamingMinds

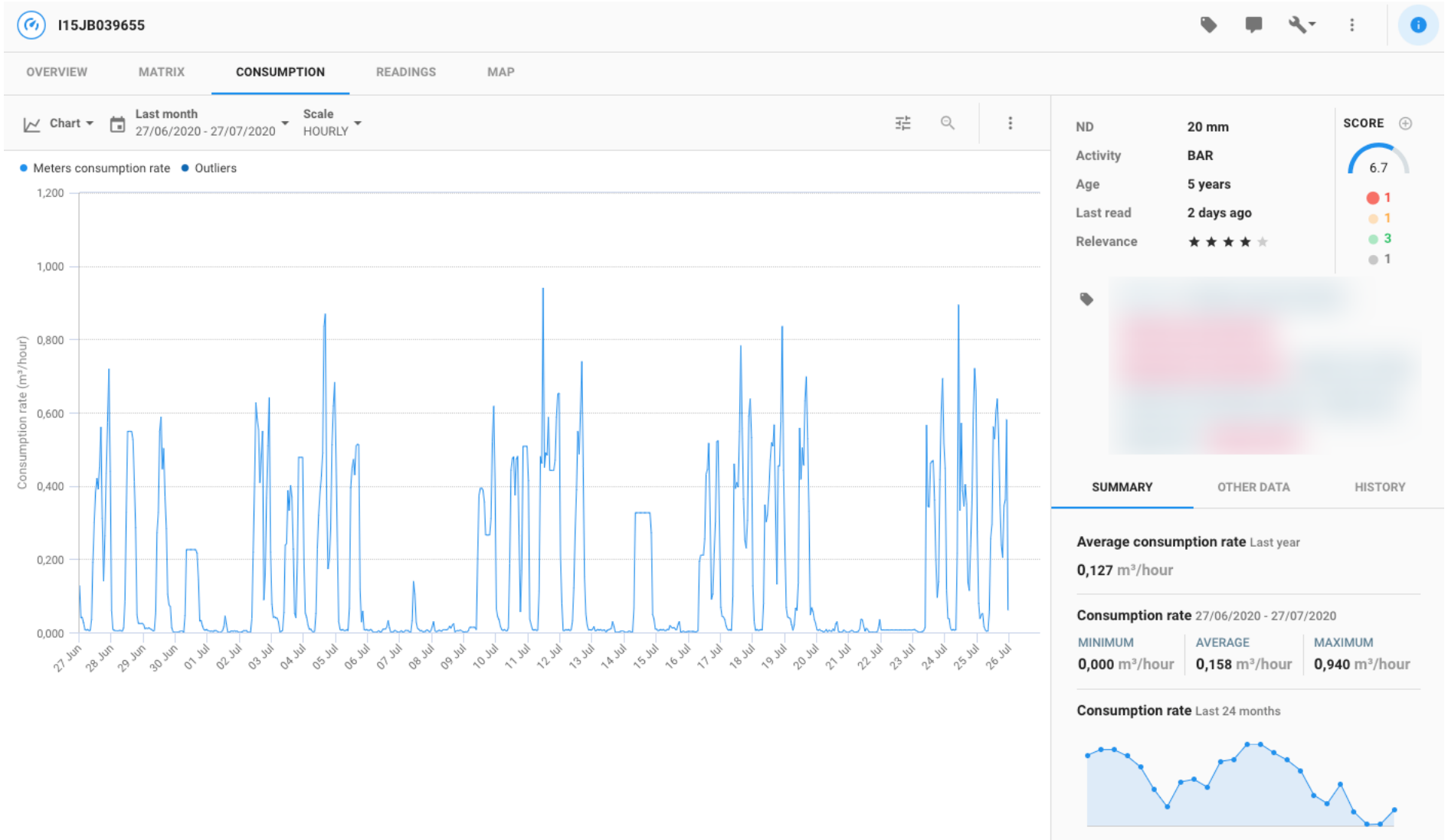
Main Dashboard



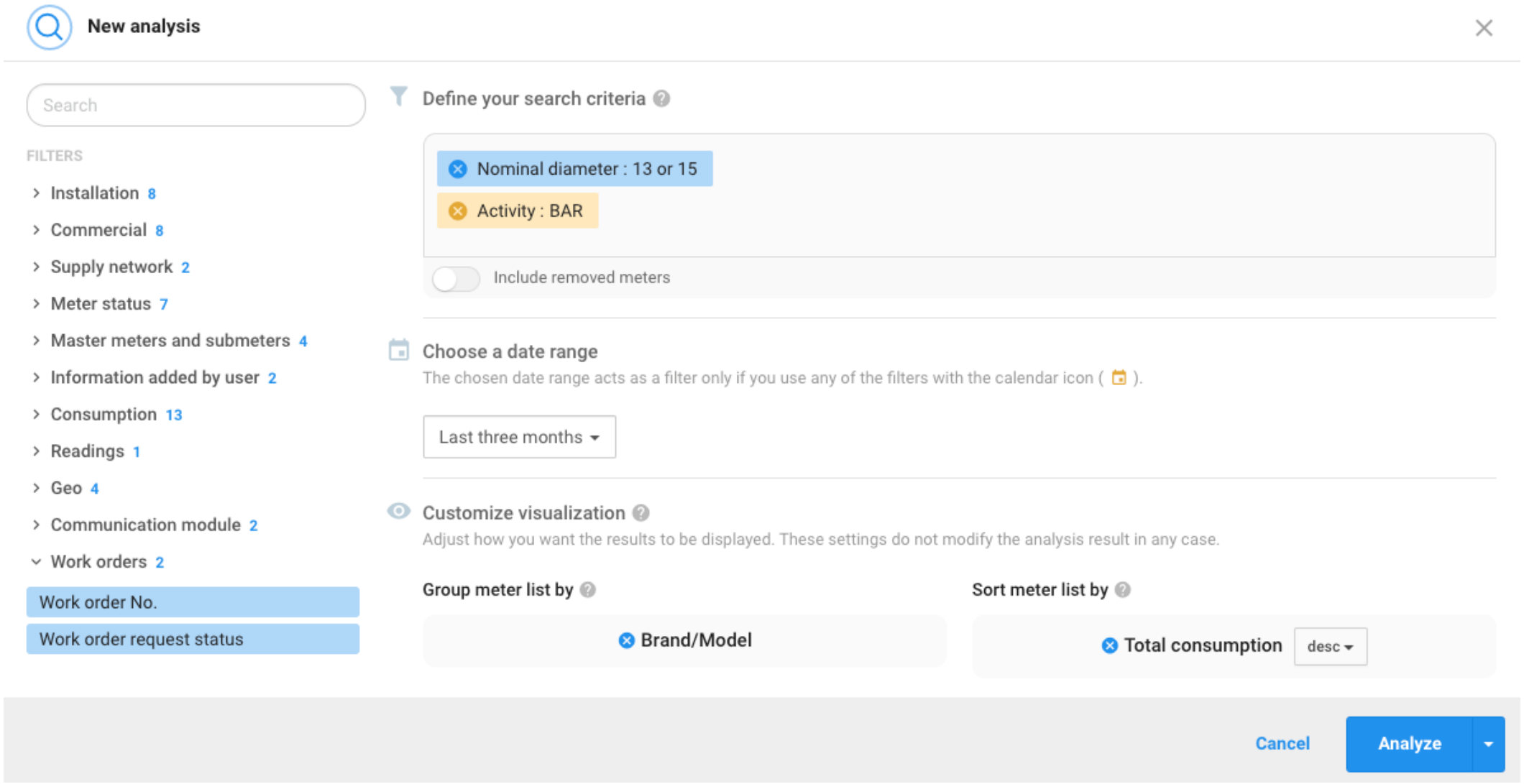
Meters Overview



Meter Detail



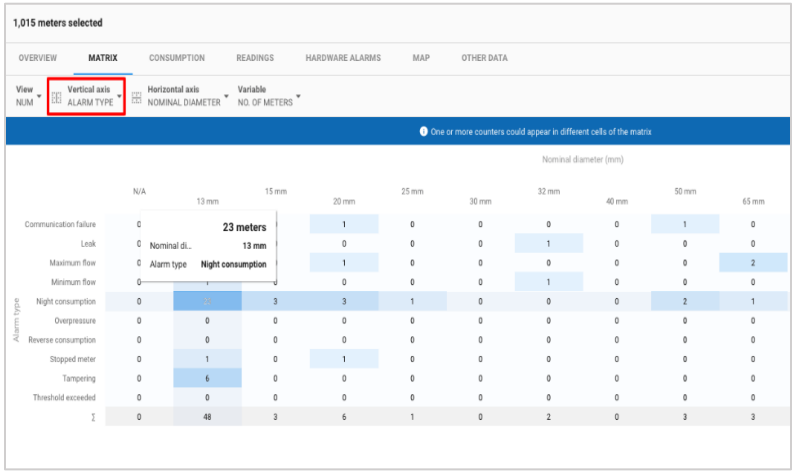
Drag & Drop Analysis Creation



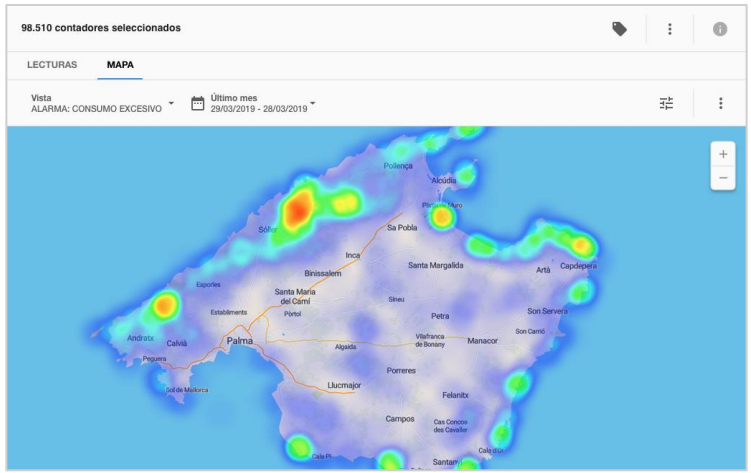
Configurable Data Display

Data can be displayed in different manners: meter list; data matrix; map view; heat map; consumption view; ...

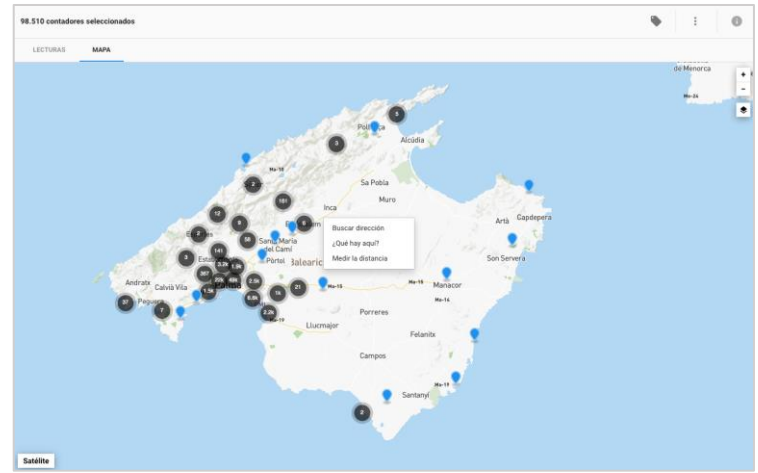
Matrix Display



Heat Map Display



Map Display

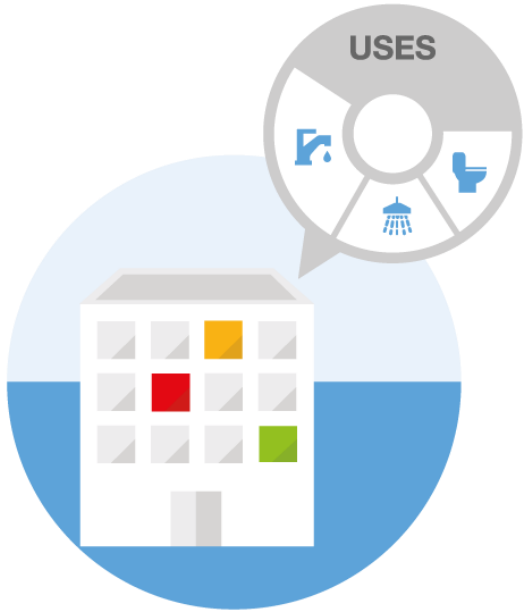


WaterMeters Features summary

1. Reduces commercial losses.
2. Optimises meter replacement plan according to their performance.
3. Detects fraud. (In combination with LeakFinder and Smart Metering)
4. Integration with third party software (Business Intelligence, Sales tools, Work orders System, …).
5. Integration with any water meter manufacturer and communication system.
6. Strong state-of-the-art security.
7. Available on cloud or on premise.
8. Automatic data normalization and cleaning.
9. Customised dashboards with KPIs monitoring (Score, Replacement, Sizing, Abnormal consumption, Internal leak, Stopped, …)
10. Drag & Drop analysis creation tool.
11. User defined notifications/alarms and scheduling.
12. Meter information enhancements (tags, comments, …).
13. Advanced analytics:
    a) Calculation of water meters measurement error
    b) Calculation of economically profitable error
    c) Monitor difference between master meter and submeters
    d) Different data views (meter list; data matrix; map view; heat map; consumption view; ...)
    e) Early detection of anomalies

Disruptive Solutions Based on Artificial Intelligence

Bunt*Brain*
EndUses



Identify the end uses of water consumption

Introduction to EndUses

What is it?

Is an extraordinary tool to analyse the final uses of water by breaking down its consumption into its essential components (washing machine, dishwasher, tap, cistern, shower, etc.).

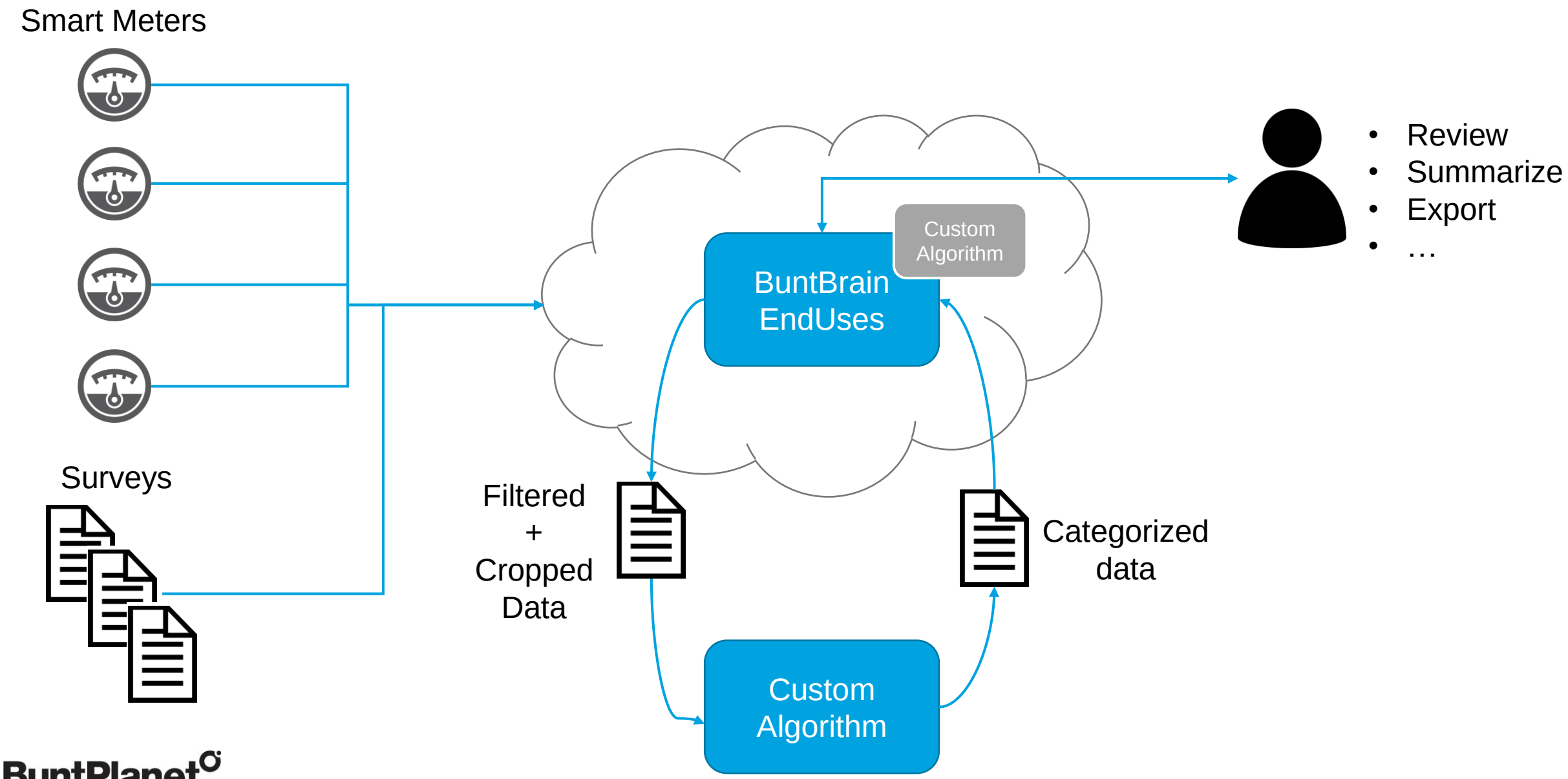
Who is interested in such tool?

Governments, public entities and water utilities that aim to assess the way citizens consume water.

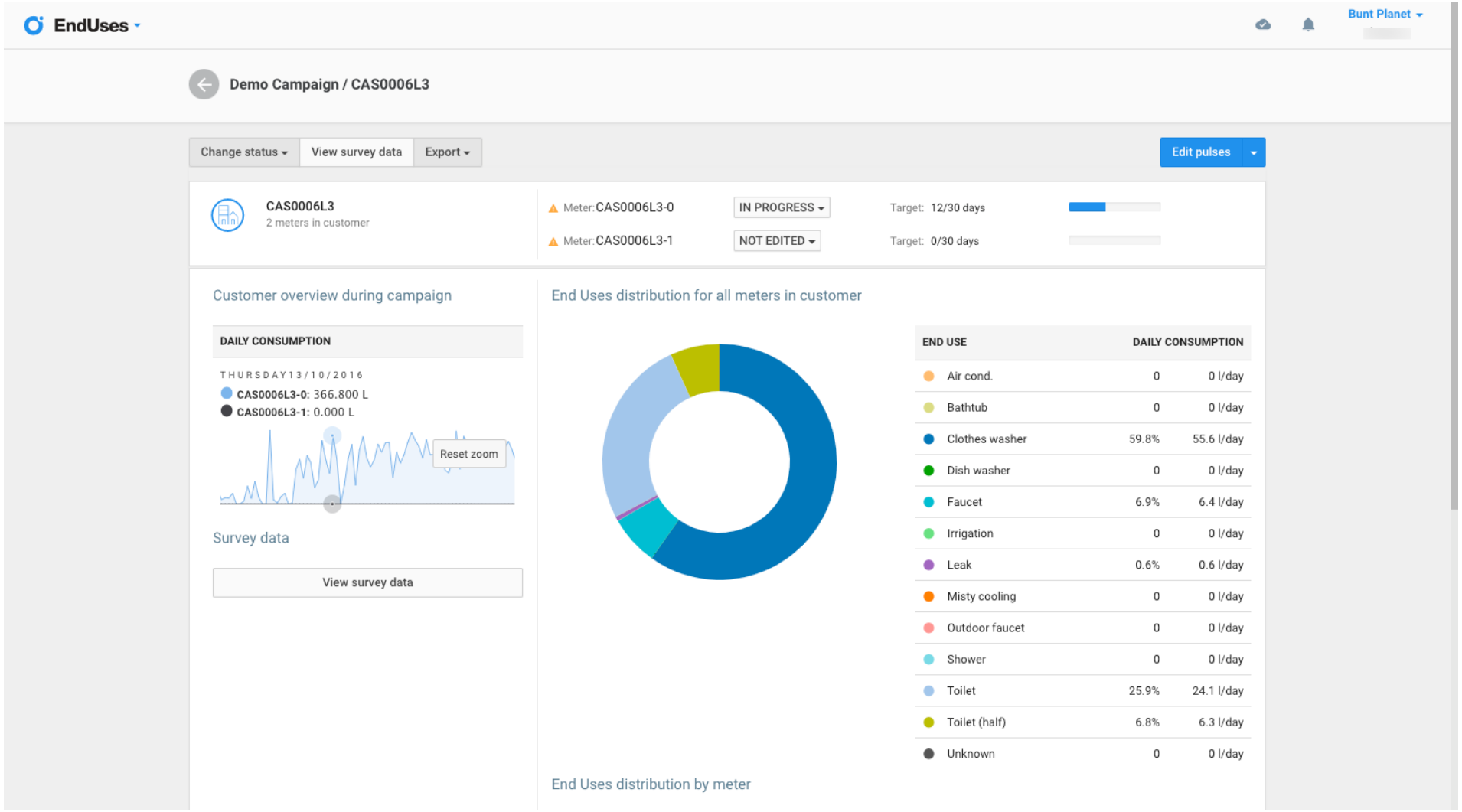
Why? Benefits:

- Increases knowledge about water usage in a catchment area.
- Measures consumption efficiency in catchment area to determine potential savings.
- Assists in demand description and forecasting.
- Analyses effectiveness of specific water saving strategies, communications and instruments.
- Supports long-term actions planning to prevent water stress situations.

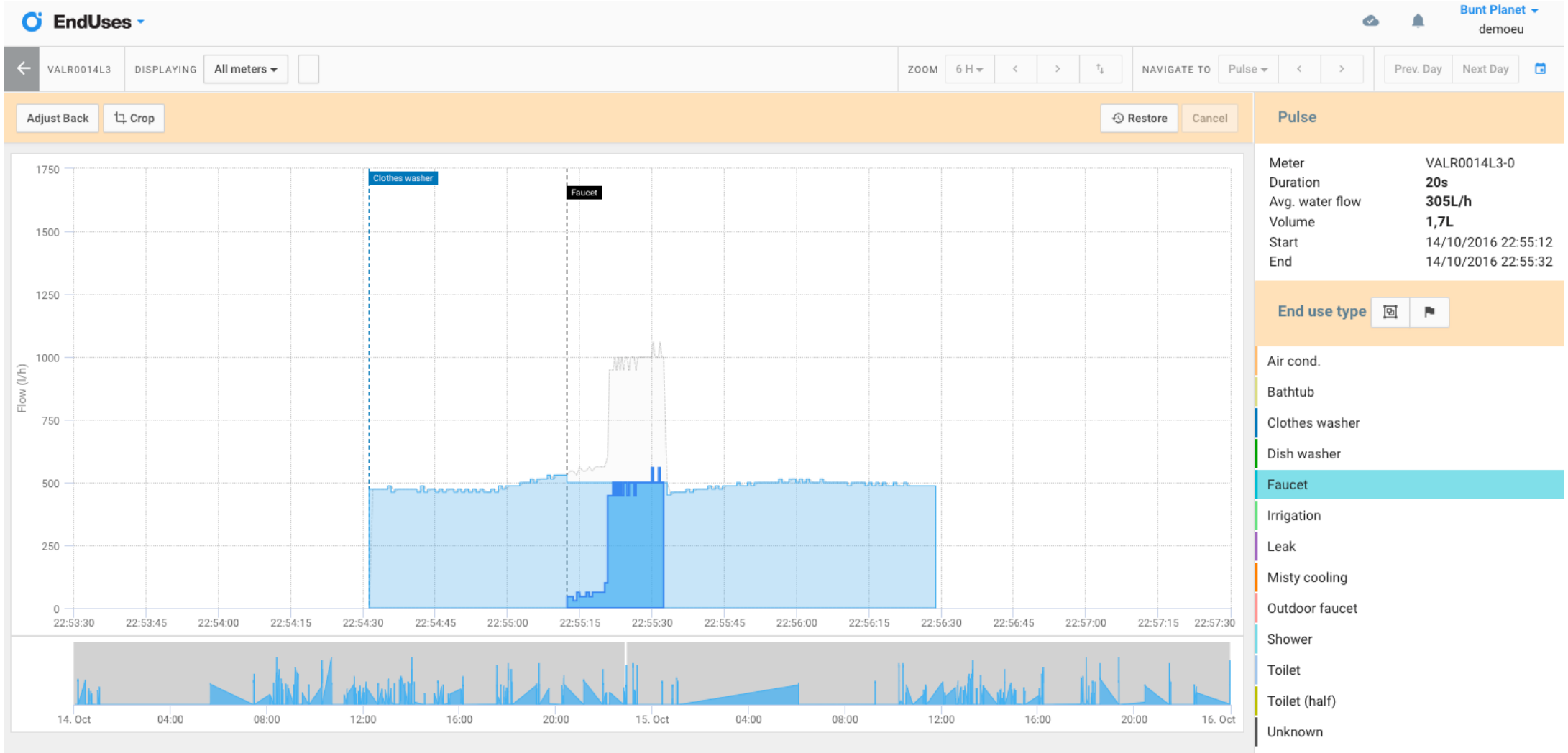
EndUses Open Architecture



EndUses Consumer Overview



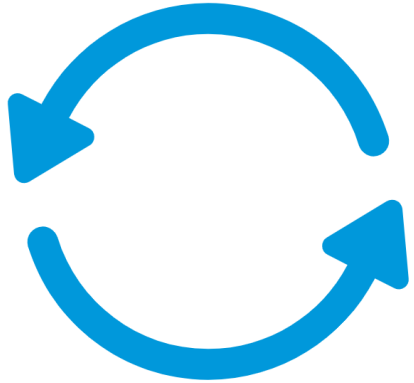
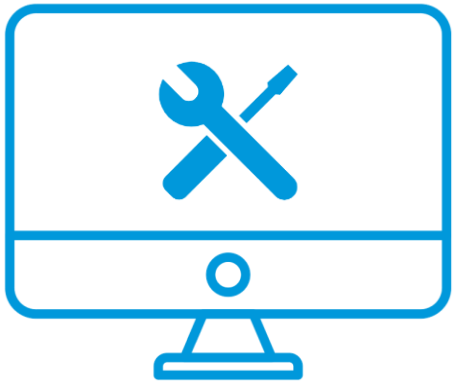
EndUses Consumption Details



EndUses Features Summary

- Automatic data normalization, cleaning and categorization.
- Open architecture: customised algorithms.
- Configuration of measurement campaigns.
- Support for multiple meters/signals per customer.
- Integration of survey data (characteristic of end-user and point of consumption)
- Summary of water usage per customer or aggregated by selected users.
- Histogram of consumption pattern.
- Integration with third party software.
- Available on cloud or on premise.

Software as a Service (SAAS) Business Model

1 +  + 

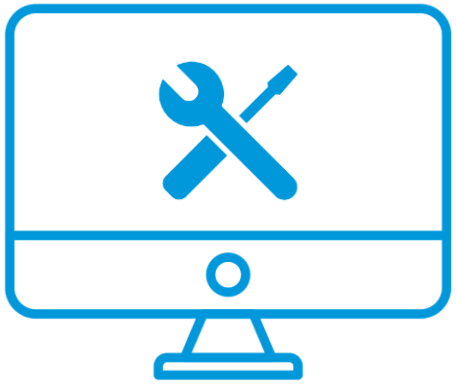
TIME
INSTALLATION FEE

RECURRING
ANNUAL FEE

SERVICES
(OPTIONAL)

Our Services

- Hydraulic models generation and calibration.
- A.I. based sensor positioning optimization.
- Smart metering implementation planning and water meter replacement optimization.
- Metering tests comparison and analysis.
- Fraud detection.
- Water balance reporting.
- Consumption forecasting.
- Tariff recommendations.
- Customised software for companies.



Thank you

Borja Arzac

Key Account Manager

borja.arzac@buntplanet.com

BuntPlanet
DreamingMinds

Zuatzu Kalea 9, Europa Building 3° floor, 20018 Donostia/San Sebastián, Spain
M +34 943 223 031 **E** info@buntplanet.com