

The logo consists of a white rectangular box with wavy top and bottom edges. Inside the box, the text "IBM" is at the top, followed by "Call for" and "Code" on separate lines below it.

IBM
Call for
Code

FIWARE4WATER platform for water management

The Context: FIWARE4WATER

FIWARE4Water - Goals



TO ADDRESS

Increasing the maturity of the water sector on the integration and standardisation of ICT solutions



FOR

Water sector end-users (cities, water utilities and authorities, citizens and consumers) and solution provider (private utilities, SMEs, developers)



TO BENEFIT FROM

The innovative solutions that will be available through Fiware4Water Ecosystem, open and license free smart platform

**FIWARE is free,
for all, for ever**

- Curated framework of Open Source components
- Royalty-free Common Information Models
- Compelling Roadmap (Digital Twins, AI/ML,...)

FIWARE4Water - The Concept

HARVESTING
THE POWER OF FIWARE



Interoperability

Boosting interoperability, standardisation and cybersecure cross-domain data exchange seamlessly integrated with legacy systems.



Smart Apps & Devices

Leveraging distributed intelligence and low-level analytics: smart meters, advanced water quality sensors, AI, interactive interfaces.



Innovator Ecosystem

Linking water through FIWARE to the Smart City Ecosystem of more than 1.000 FIWARE innovators and high-tech SMEs accross domains.



F4W Digital Market

Kick-starting the F4W ecosystem, by organising competitive challenges, demonstrating its technical, social and global business potential.

Stakeholder-inclusive

Bringing together water sector's end-users (cities, utilities, authorities); solution providers (SMEs, developers); citizens and customers.



Whole water cycle

Four Demo Cases for water resource (GR), distribution (FR), treatment (NL), customers (UK) with a total population of 8.5 million inhabitants.



Global Outreach

Three Demo Networks of municipalities (#1), water authorities (#2), technology providers (#3) to demonstrate and engage with end-users



Strong Partnership

Building on a team of 4 high-tech SMEs, 4 advanced utilities and 7 applied Research CoExcellence incl. the FIWARE Foundation.



ACROSS THE WHOLE
WATER VALUE CHAIN

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FIWARE4WATER platform for water management

The Solution: clustering solution to identify different water behaviours

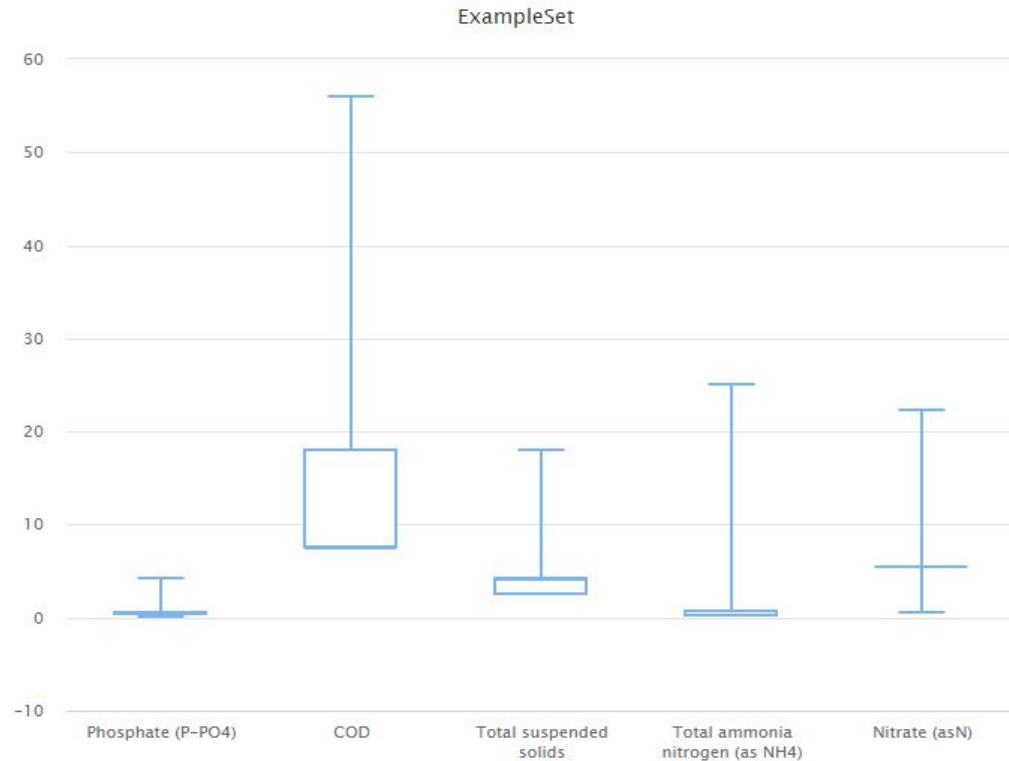
CLUSTERING WATER BEHAVIOURS

A clustering solution to identify different water behaviours based on the concentration (mg/l) of:

- Chemical oxygen demand (COD)
- Phosphate
- Total suspended solids
- Ammonia nitrogen
- Nitrate

CLUSTERING WATER BEHAVIOURS

Box plot to get a glimpse on the dispersion and help detect outliers.



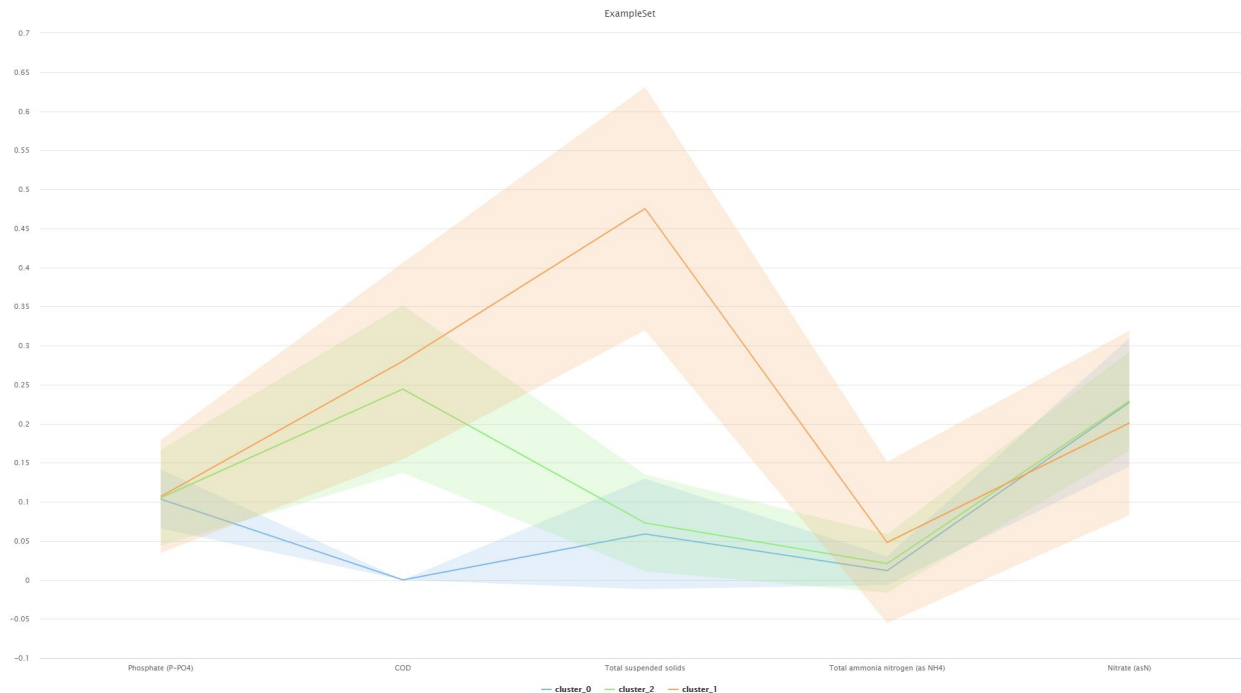
CLUSTERING WATER BEHAVIOURS

Silhouette coefficient computations to look for the right number of clusters.

Clustering.k	Average silhouette width of the whole dataset ↓
2	0.867
3	0.825
4	0.486
5	0.383
10	0.376
7	0.365
8	0.365
6	0.351
9	0.349

CLUSTERING WATER BEHAVIOURS

Deviation plot to visualize the clustering results.



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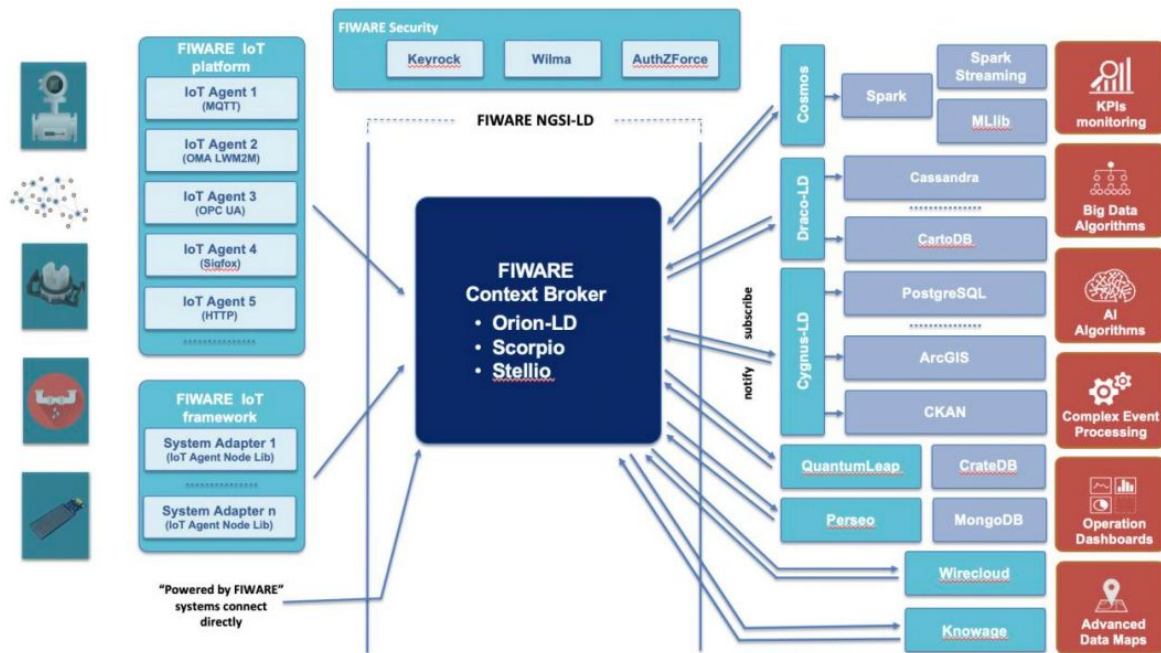
FIWARE4WATER platform for water management

The Platform: Open source architecture

FIWARE4Water Platform Reference Architecture

The **FIWARE4Water Platform** targets the integration of any legacy and existing water management system into a large-scale standard platform based on FIWARE Technology.

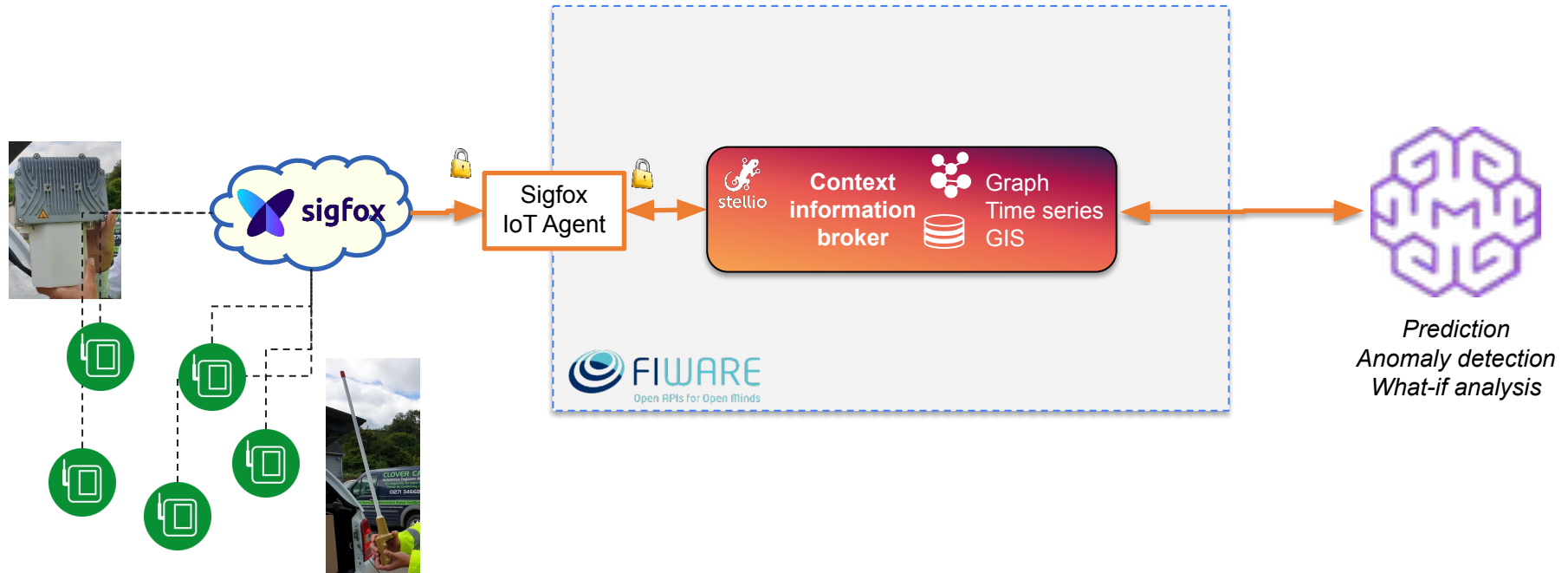
The goal is to allow all water sector applications to run on a homogeneous infrastructure, utilizing standard data exchange models to represent the context information and using standard APIs to access and share the information.



FIWARE4Water Platform - Open Data Models

- Water management applications are facing problems due to the lack of standardization.
- The use of standard data models can mitigate or even resolve these problems. [Smart Data Models](#) provides open and agile standardization.
- FIWARE4Water has selected the ETSI NGSI-LD API to access and manage the context information and the use of the FIWARE Smart Data Models aligned with ETSI ISG CIM and ETSI SAREF for representing of the context information.

Integrated platform with IBM Watson ML



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Thank you!
