



D4.2 FIWARE4_Leakage Management

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May 2022



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant agreement No. 821036.



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Project Consortium



Executive Summary

The **Fiware4Water** project aims at linking the FIWARE smart solution platform to the water sector by demonstrating the deployment of smart applications for both water sector end-users (cities, water utilities, water authorities, citizens and consumers) and solution providers (private utilities, SMEs, developers). **Interoperability of systems** is a major theme of the **Fiware4Water** project aiming at exchanging data in a simple, standardised, reliable, efficient and cyber-secure way between the various actors of the water sector.

The main objective of WP4 is to evaluate the performance and demonstrate at large scale the technical feasibility of FIWARE as the flexible digital solution of choice in a variety of diverse, demanding, real world situations, covering a wide range of water challenges and contexts. These real-world contexts provided by four (4) large scale demo sites will act as living laboratories for the testing, validation and demonstration of the Smart Water Apps developed and the Smart Water Devices customised in WP3.

This deliverable is dedicated to the French Demo Case (DC2): the drinking water supply system of SICASIL (Syndicat Mixte des Communes Alimentées par les Canaux de la Siagne et du Loup, in English "the mixed water union of municipalities supplied by the Siagne and Loup channels"), located in the south of France, which covers the Cannes basin (the city of Cannes and 8 surrounding municipalities).

This deliverable focuses on the deployment and integration actions carried out in the framework of the French Demo Case. The actions associated with the other achievements of the French Demo Case are detailed in deliverables D2.2, D2.3, D3.2, D3.5 and D4.3 and briefly recalled in section III and Table III.1.

Four business issues (BI01 to BI04) drive the French Demo Case, detailed in sections II.1.2.1 to II.1.2.4:

- BI01: Forecast water resources availability
- BI02: Forecast water demand
- BI03: Detect water leaks
- BI04: Detect abnormal water quality events

Seven technical functionalities (TF01 to TF07) cover the work done, detailed in sections III.1 to III.7:

- TF01 Network Notebook
- TF02 Evolution of the AMR display
- TF03 Improvement of the communication between two systems (AQUADVANCED® Water Networks "Distribution" and the intervention system) using a geocoding service
- TF04 Generation of events from acoustic loggers
- TF05 Online integration
- TF06 Big Data models integration
- TF07 Workforce tool integration

Four main actions are associated with the **deployment and integration** of the French Demo Case:

- Integration of the technical functionalities TF01 to TF04 into AQUADVANCED® Water Networks "Distribution" (product software published by SUEZ Smart Solutions, used for the French Demo Case)
- Implementation of an online integration of the French Demo Case (technical functionality TF05)
- Implementation of a Big Data-oriented integration (technical functionality TF06)
- Integration of the Workforce tool (technical functionality TF07)

The EU-added value and policies recommendations are detailed in the Conclusion section.

Related Deliverables

D1.1 – "Requirements from Demo Cases" and D1.2 – "Requirements from end-users", which describes the requirements of the smart solutions developed in WP3.

D2.2 – "Extension of FIWARE ecosystem with Big Data and AI frameworks", which describes the technical developments and integration actions based on FIWARE components for Big Data and AI.

D2.3 – "Extension of FIWARE for supporting water management and quality monitoring use-cases", which describes the smart data models, communication protocols, and technical development of the components within the FIWARE4WATER architecture.

D3.2 – "FIWARE-Enabled applications for Water Distribution", which describes scientific modelling actions and results obtained for the French and British Demo Cases.

D3.5 – "FIWARE-Enabled Water Quality Sensors", which describes actions related to water quality measurement from multiparameter probes.

D4.3 – "FIWARE4_Water Quality Monitoring and Pollution Response", where some of the anomaly detection algorithms are tested under practical conditions.

Document Information

Programme	H2020 – SC0511-2018
Project Acronym	Fiware4Water
Project full name	FIWARE for the Next Generation Internet Services for the WATER sector
Deliverable	D4.2: FIWARE4_Leakage Management
Work Package	WP4: Demonstrating Fiware4Water in the Real (Water) World
Task	Task 4.2: FIWARE4_ Water Distribution System Management in France
Lead Beneficiary	SUEZ Smart Solutions (3S)
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Planned Delivery Date	31/04/22
Actual Delivery Date	10/05/22
Dissemination Level	Confidential, only for members of the consortium (including the Commission Services)

Revision history

Version	Date	Author(s)/Contributor(s)	Notes
V1.0	29/03/22	Stéphane DEVEUGHÈLE (3S)	Document creation
V1.1	09/04/22	Stéphane DEVEUGHÈLE (3S)	General context description
V1.2	14/04/22	Marc RIBALTA (EUT) and Danillo LANGE (EUT)	Eurecat contributions
V1.3	23/04/22	Stéphane DEVEUGHÈLE (3S) and Mélissa PAROT (3S)	3S contributions
V1.4	27/04/22	Brett SNIDER (UNEXE)	First document review
V1.5	05/05/22	Stéphane DEVEUGHÈLE (3S) and Marc RIBALTA (EUT)	Corrections and writing of the sections: Introduction, Conclusion and Perspectives
V1.6	09/05/22	Brett SNIDER (UNEXE)	Last document review
V1.7	10/05/22	Stéphane DEVEUGHÈLE (3S)	Last corrections and final document edition

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List of Acronyms/Glossary

Acronym	Description
AI	Artificial Intelligence
AMR	Automatic Meter Reading
API	Application Programming Interface
BI	Business Issue
BS	Business Stake
DC2	French Demo Case (Cannes)
DMA	District Metered Area
ETSI	European Telecommunications Standards Institute (www.etsi.org)
EUT	Technology Centre Eurecat (https://eurecat.org/en/)
GIS	Geographic Information System
LLI	Linear Loss Index (unit: m ³ /km/day)
ML	Machine Learning
NGI	Next Generation Internet The Next Generation Internet (NGI) initiative, launched by the European Commission in the autumn of 2016, aims to shape the future internet as an interoperable platform ecosystem that embodies the values that Europe holds dear: openness, inclusivity, transparency, privacy, cooperation, and protection of data.
NGSI-LD	Next Generation Service Interfaces – Linked Data (https://en.wikipedia.org/wiki/NGSI-LD)
SCADA	Supervisory Control and Data Acquisition
TF	Technical Functionality
TRL	Technology Readiness Level
TS	Technical Stake
WD	Water Domain
WP	Work Package
3S	SUEZ Smart Solutions, subsidiary of the worldwide SUEZ group (https://www.suezsmartsolutions.com/home)