

digital-water.city



Leading urban water management to its digital future

*H2020 innovation action | 5 M€ funding
2019-2022*

Nico Caradot

Kompetenzzentrum Wasser Berlin

Objective

Develop and demonstrate **15 advanced digital solutions** to address water-related challenges



24 partners

KOMPETENZ ZENTRUM
Wasser Berlin



Utilities

R&D

Companies and SME



PARTNERS4URBANWATER
Langeveld | Liefing | Schilperoord | De Haan | Post



5 cities > EU challenges

#Copenhagen

Flooding and
environmental impacts

#Paris

2024 Olympic games

#Berlin

Protection of river quality and
drinking water sources

#Milan

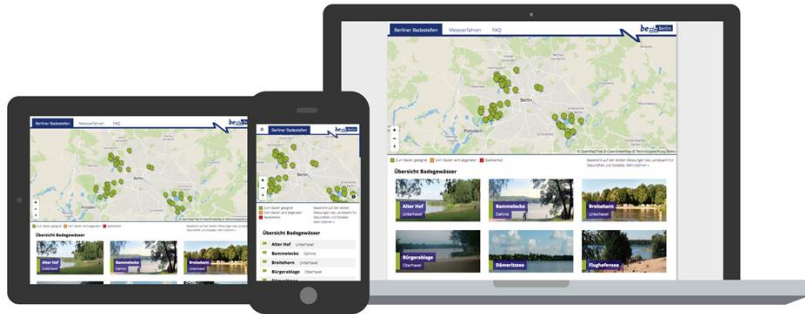
Safe water-reuse

#Sofia

ROI and operational costs

Bathing water

*Early warning system to forecast
bathing water quality and
communicate with the public*



Mockup: Technologiestiftung Berlin

*Real-time measurement of
bacterial contamination*



Drinking water

Predictive asset management of drinking water wells



A stylized illustration of a sewer system. At the top, a dark blue pipe network is shown against a blue background. A small electronic device with a screen displaying a line graph and a green indicator light is connected to the pipes, with three curved lines representing signal waves. Below this, a large dark blue pipe enters a brown, wavy area representing a reservoir or treatment tank. A thick, brown, turbulent flow of sewage is being discharged from the pipe into the tank. The bottom of the image shows a green ground surface with some small tufts of grass.

Sewer

- Innovative monitoring of sewer illicit connections*
- Low costs CSO monitoring technology with T sensor*
- Advanced 48h sewer flow forecast*

The background features a stylized illustration of a wastewater treatment plant. On the left, a dark blue vertical structure supports a control panel with a screen and buttons, with signal waves emanating from it. A thick dark blue pipe runs horizontally across the middle. On the right, there are two large, light blue cylindrical storage tanks. Below them is a light blue rectangular structure containing four circular tanks arranged in a 2x2 grid. The top-left circular tank is brown, while the other three are light blue. Each circular tank has a white vertical line and a small white circle in the center, representing a central agitator or sensor. The entire scene is set against a light green background with some stylized grass blades.

Treatment plant

*Real-time control of WWTP and
sewer retention capacities*

*Early Warning System for water
reuse*

Water reuse



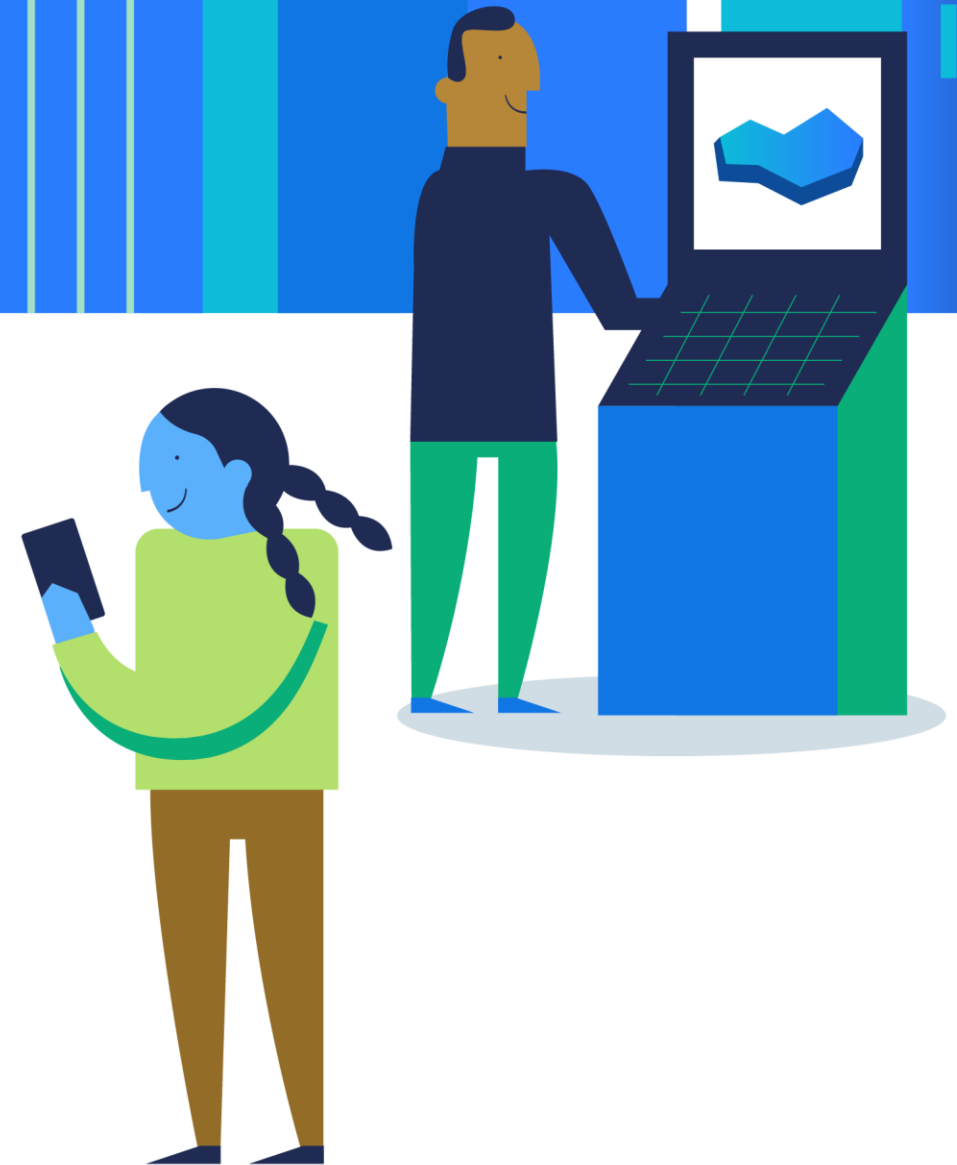
| *Remote monitoring of water stress*

| *Match making platform to support water allocation*



Public involvement

- | *Augmented Reality (AR) app to communicate groundwater issue with the public*
- | *Serious game to communicate the benefits of reuse in term of nexus*



Focus on two innovations

A light blue map of Europe serves as the background. Two locations are highlighted with red circles containing yellow dots: Paris in France and Milan in Italy.

#Paris

EWS for bathing water quality



#Milano

EWS for safe water reuse



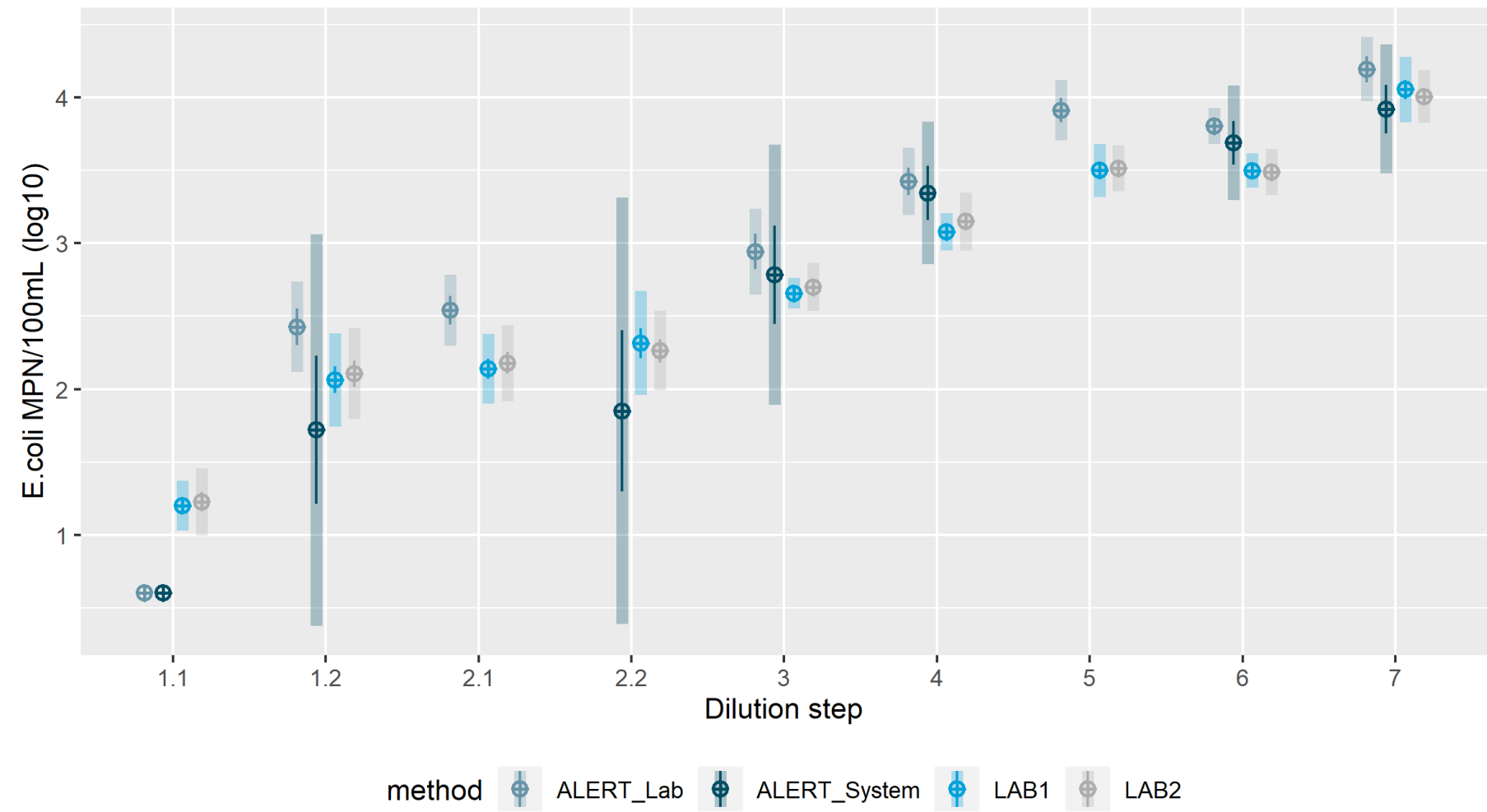
#Paris

Improve bathing water management in the river Seine
for the Olympic games of 2024



Comparison of laboratories and ALERT devices

Errorbars show 95% prediction intervals (shaded thick outer line) and 95% confidence interval (inner solid line)



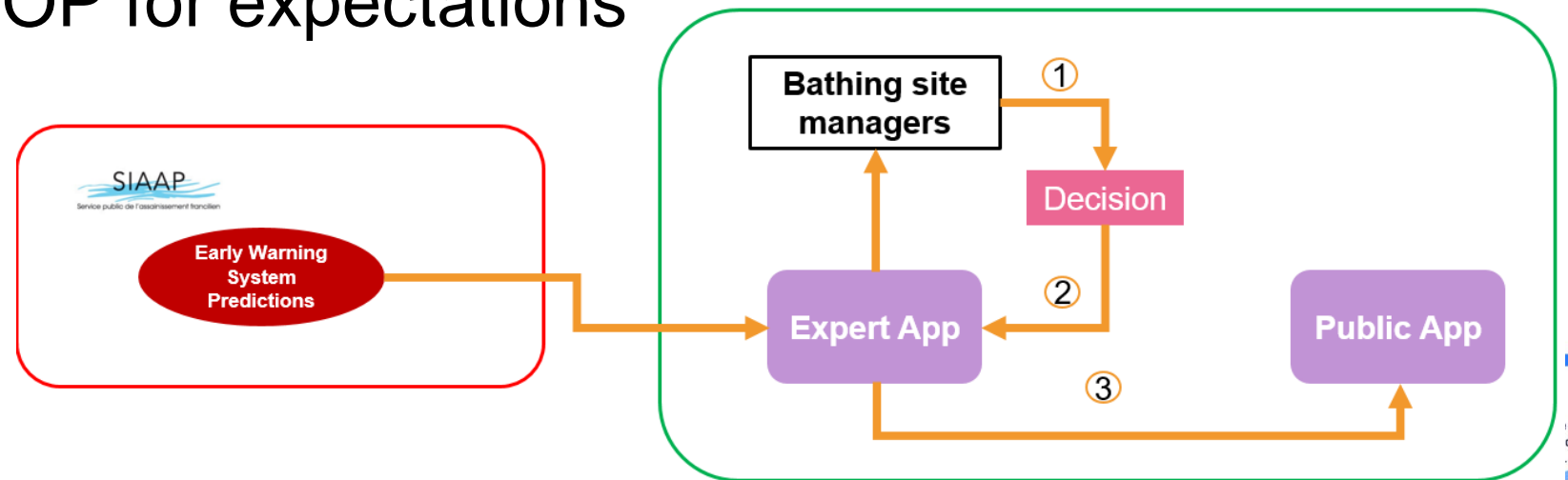
SENSORS FOR REAL-TIME IN SITU E.COLI AND ENTEROCOCCI MEASUREMENTS

Early warning system for bathing water quality

- The EWS is composed of a statistical and deterministic model of the rivers in Paris
- Developments are based on the FIWARE architecture
- Current activity: validation of the models performance + COP for expectations

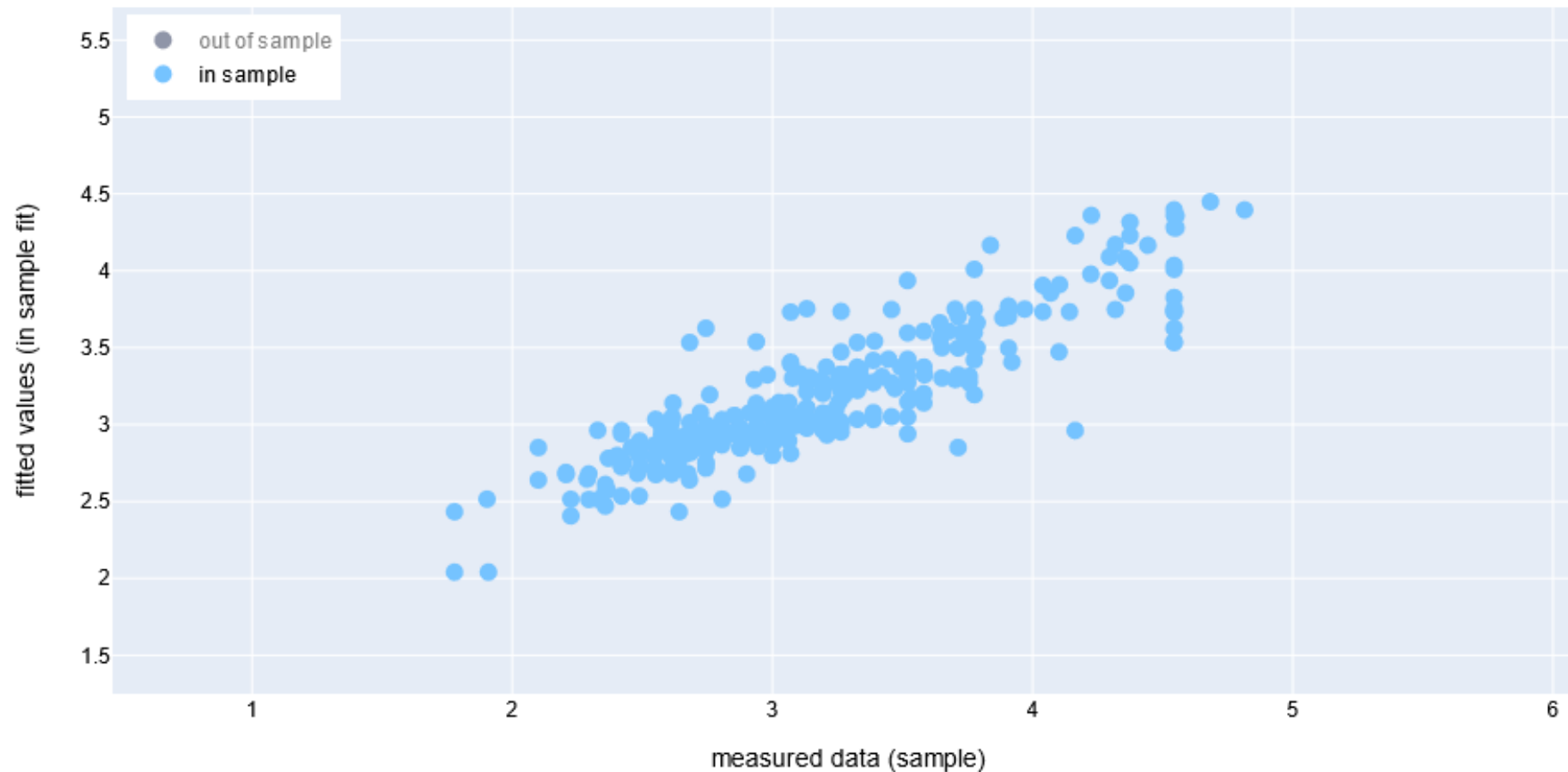


MACHINE-LEARNING BASED EARLY WARNING SYSTEM FOR BATHING WATER QUALITY



First model runs (24h-Random Forest)

Model fit of Random Forest model

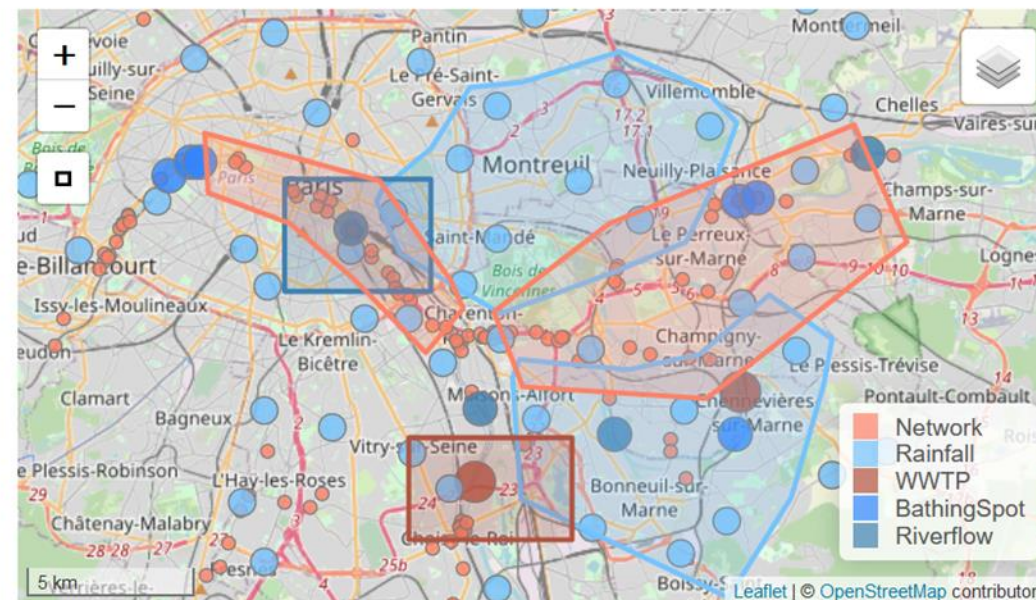
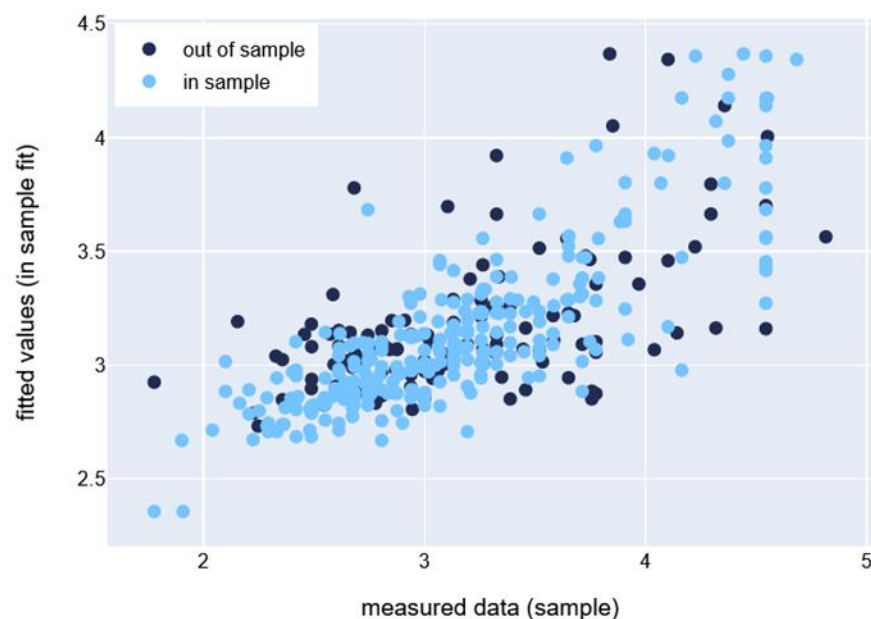


First software architecture

Pont D'lana Rg

☒ Use this model for making predictions

Model fit of Random Forest model



Focus on two innovations

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#Paris

EWS for bathing water quality



#Milano

EWS for safe water reuse



DWC in few words

- Leverage the **potential of data and digital technologies**
- **Boost the water management** in 5 EU cities
- **Promote the value** of the digital solutions for the tech providers
- Achieve a **new step in the integration** of digital solutions in EU, in particular regarding cybersecurity, interoperability and governance

nicolas.caradot@kompetenz-wasser.de



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