



# **SCOREwater**

## **Smart City Observatories implement REsilient Water Management**

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# AGENDA

1. Project Info
2. Interoperability/Data Strategy
3. Outcomes
4. Conclusions

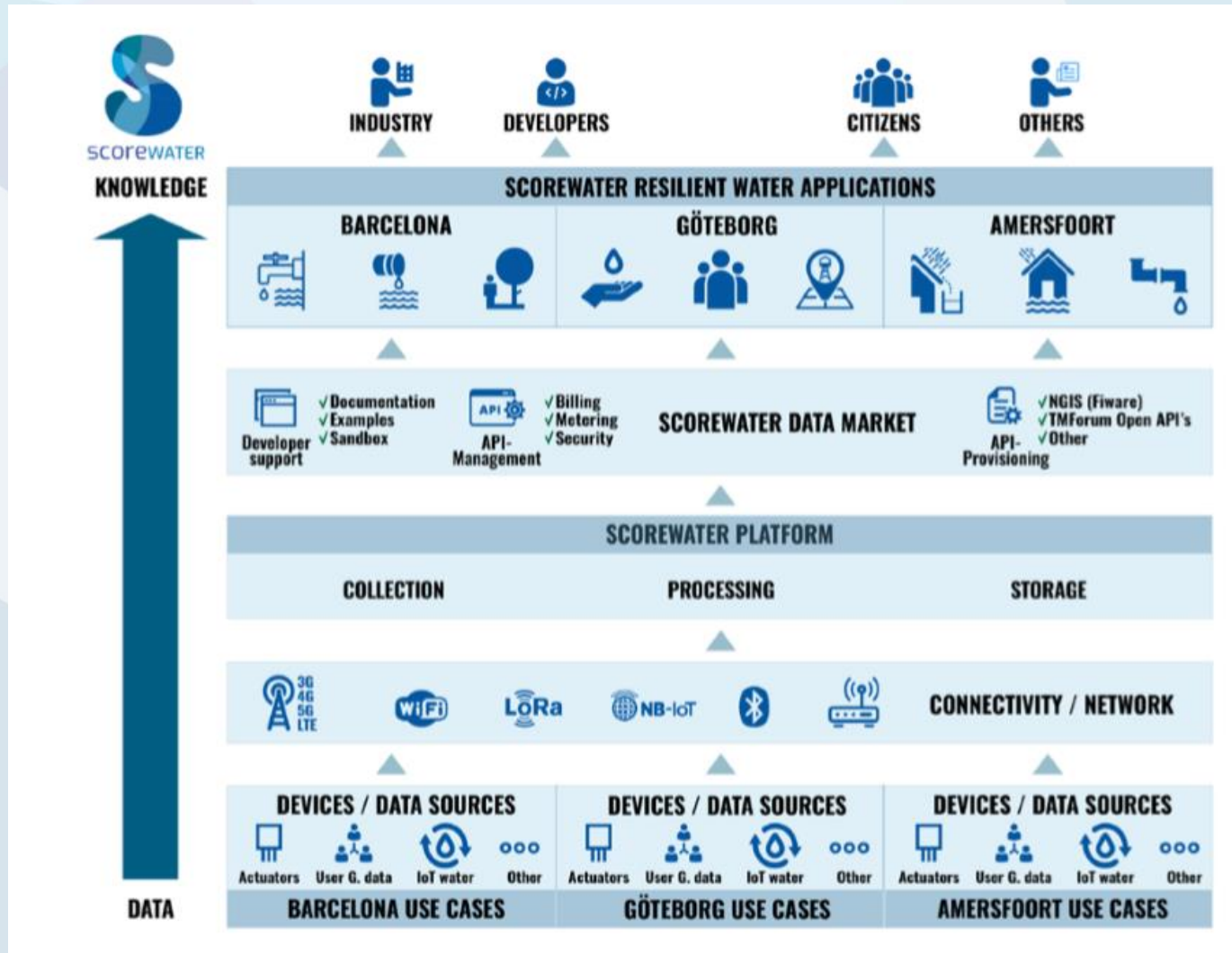


## Project Info

- Goal & Scope: SCOREwater focuses on enhancing the resilience of cities against climate change and urbanization by enabling a water smart society powered by digitalization.
- Barcelona: resilient sewer systems trough sewer mining
- Amersfoort: flood prevention and climate resilience
- Göteborg: water-safe infrastructure projects



# Interoperability/Data Strategy



## Interoperability

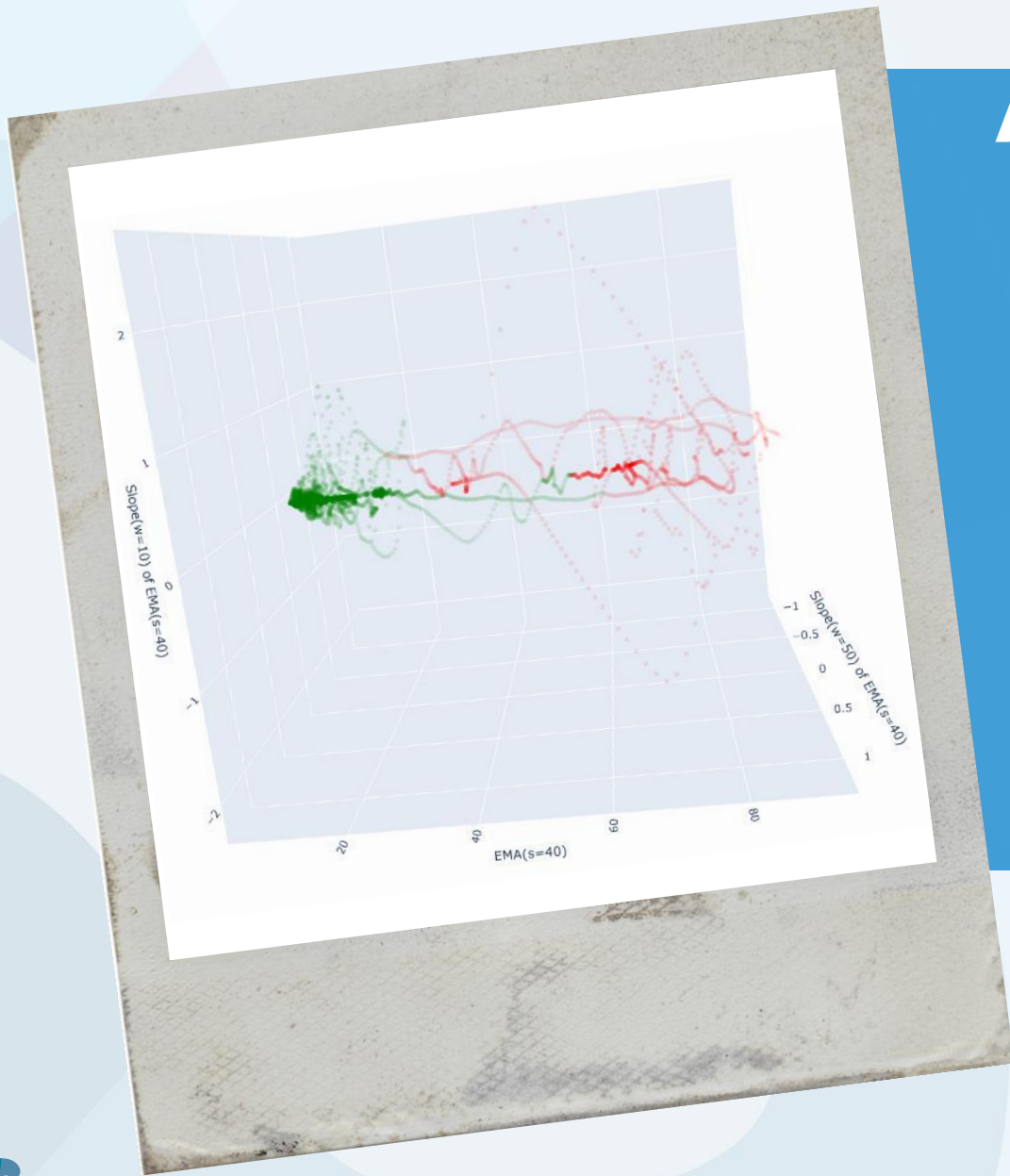
- Standardization and harmonization will be achieved by applying the API's and data models provided by FIWARE Foundation (NGSI-LD & JSON-LD)

## Data Strategy

- Combine heterogeneous data from various sources harmonizing and standardizing the metadata and data
- Provide a data-market with capabilities of discovering and subscription
- Generate knowledge and high-quality data taking advantage of data-driven models
- Provide the linking between providers of data and models, and stakeholders (Hackathon)

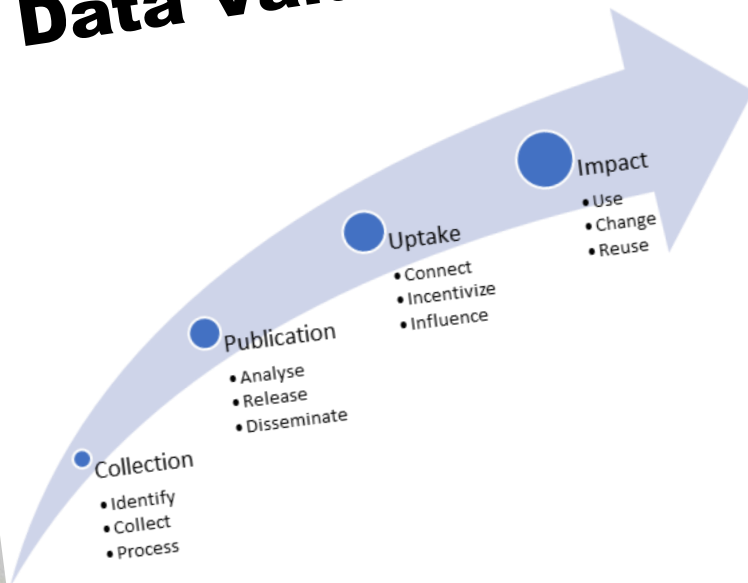
## AI/Data Outcomes

- Supporting urban resilient strategies:
  - predict sedimentation level on sewage system;
  - early warning for water pollution events on construction;
  - early warning for water pollution events on sewage;
- Data quality assurance:
  - anomaly detection in urban wastewater flow patterns;
  - anomaly detection in local urban temperature patterns; and
  - drift detection on water quality sensors;





# Data Value Chain



## Conclusions

- Open-source platform (FIWARE) provides tools to design water data-markets integrating heterogeneous sensors and addressing data sharing needs.
  - boosting digitalization of the water sector;
  - deployment of flexible and scalable data management and smart water services; and
  - encourage water research and water data exploitation by sharing validated water data.
- Multiples technology enablers (IoT, Big-Data, AI) combined to standardize, orchestrate and boost the value of the water information.
- Water data quality assurance based on AI and Data Science techniques.



## Conclusions

- The power of digital tools (sensors and artificial intelligence) allow to:
  - advance towards predictive maintenance of sewer systems;
  - enhance urban flash flood management;
  - minimize the impact of construction pollution events on water recipients; and
  - data quality assurance;
- Sewage system is an essential data source to understand the cities and citizens:
  - pharmaceutical consumption and waste management practices (discharge of oils, greases and wet wipes);
  - non-adequate habits (antibiotic resistance propagation through sewers, sewer sediments accumulation and bad odours)

# THANKS!

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SCOREWATER



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