

Challenges
proposed by



**Aigües de
Barcelona**

BACKGROUND



Aigües de Barcelona is the public company responsible for supplying and distributing drinking water to Barcelona and surrounding municipalities in Spain. Founded to ensure reliable water access to the city's population, the company manages the entire water cycle, from treatment to distribution through an extensive network of pipes.

The company sources water primarily from the Llobregat and Ter rivers, as well as from underground aquifers. With a commitment to sustainability, Aigües de Barcelona continuously invests in modernizing its infrastructure and reducing water losses in the distribution network, which currently exceeds 2,500 kilometers of pipes throughout the metropolitan area.

AREAS OF INTEREST

ARTIFICIAL INTELLIGENCE

SUSTAINABILITY

DATA & ANALYTICS



CHALLENGE 1

TITLE

Smart Shadow and Tourist Density Detection System for Hydration and Information Points

DESCRIPTION

Develop an innovative technology or service that automatically identifies the most crowded tourist zones in Barcelona with insufficient shade coverage, enabling the strategic placement of public hydration points and portable tourist information offices.

This challenge aims to address the growing need for visitor safety and comfort in urban tourism hotspots by combining real-time data analytics, satellite imagery, and IoT sensors to map areas with high tourist concentration and direct sun exposure.

The system would utilize artificial intelligence to analyze mobility patterns from social media and mobile data, satellite thermal imaging to detect shadow availability, and temperature sensors to identify heat risk zones.



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CHALLENGE 1

DESCRIPTION

By implementing this solution, Barcelona can proactively deploy portable hydration stations and information kiosks in strategic locations where tourists are most vulnerable to heat-related issues, while simultaneously improving the overall visitor experience.

This initiative would not only prevent heat-related health emergencies but also optimize resource allocation, reduce operational costs, and demonstrate Barcelona's commitment to sustainable and inclusive urban tourism management.

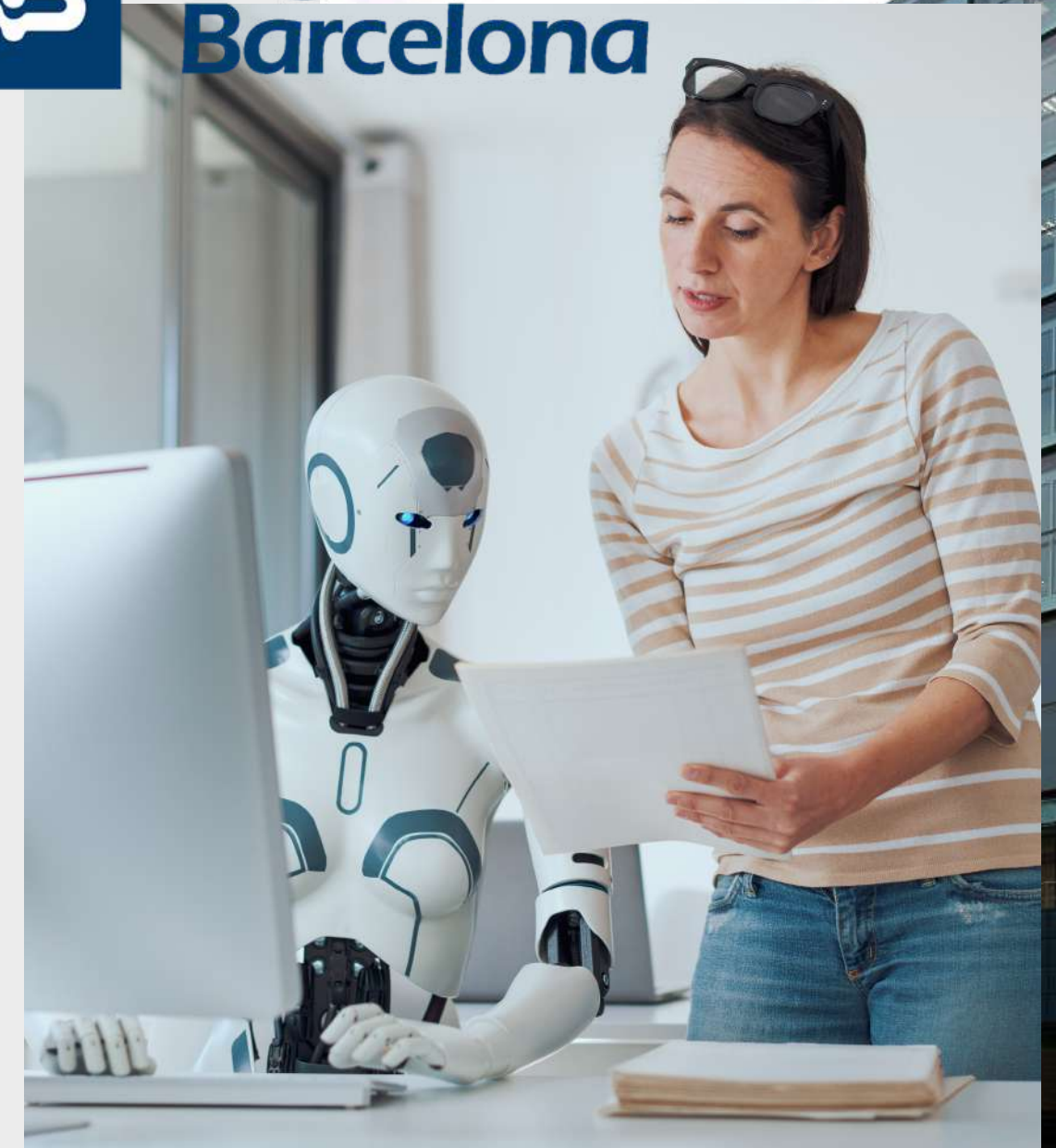
The technology would enable Aigües de Barcelona and municipal authorities to make data-driven decisions about infrastructure placement, ensuring that essential services reach tourists precisely where and when they need them most.

KEY WORDS

AI · data



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CHALLENGE 2

TITLE

How can we connect Aigües de Barcelona's assets with citizens in a way that generates tangible value for everyday urban life?

DESCRIPTION

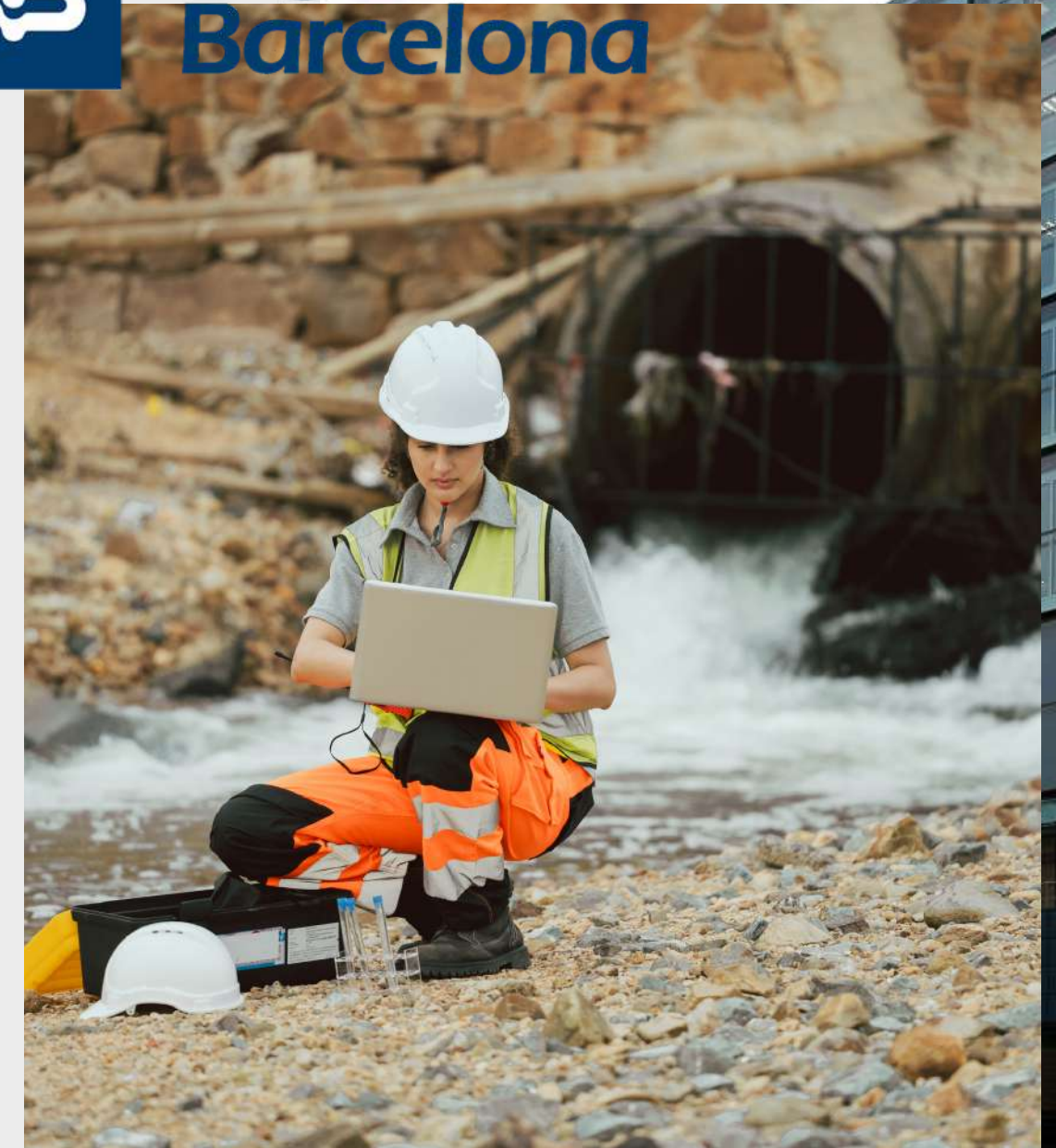
These assets, understood in a broad sense, include physical infrastructure (networks, plants, reservoirs), data, digital systems and technical knowledge. We are looking for ideas, technologies and solutions that make these assets visible, accessible and meaningful to people, turning water into a driver of innovation and well-being in the city.

Innovation can come from many angles:

- Digital tools and artificial intelligence that visualise or optimise water use in the city.
- Circular-economy initiatives that give new life to water resources or by-products.
- Smart technologies or interactive experiences that make water infrastructure part of the city's identity.
- Collaborative models that connect water management with mobility, energy or social inclusion.



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CHALLENGE 2

OBJECTIVES

The objective is to turn science and technology into visible change in the city, so that citizens feel how innovation in water management directly improves their daily lives.

Drawing on data, digital intelligence and the infrastructure of the urban water cycle, our aim is to create solutions that close the gap between complex systems and human experience.

The objective is to create new forms of social, environmental and economic value, strengthening the connection between Aigües de Barcelona and the people it serves, and making water a visible, shared and celebrated element of urban life.

KEY WORDS

Water data · water-cycle management · urban innovation · sustainable cities · circular economy · social value · data-driven management · community well-being · urban resilience · water infrastructure



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