

Observatorio GOTA: Digitizing water management for better decision-making



GOBIERNO
DE ESPAÑA

MINISTERIO
PARA LA TRANSICIÓN ECOLÓGICA
Y EL RETO DEMOGRÁFICO

Client profile

The General Directorate for Water in Spain is the body of the Ministry for Ecological Transition and Demographic Challenges (MITECO) responsible for overseeing the management of water resources and infrastructure under its authority. It also coordinates the exchange of information between river-basin authorities.

NTT DATA designed and developed Spain's first technology platform for hydrological and water-use information.

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NTT DATA contributed its technology capabilities and specialized expertise to develop a new standard for data-driven management. This project lays the foundation for a new generation of public platforms capable of turning distributed data into faster, more sustainable and more resilient decisions.”

Daniel Beltrán Ferruz,
Manager, Public Sector, NTT DATA

4,000+

sensors
monitored

9

river-basin
authorities

70%+

allocated water
volume integrated

In Spain, water management is a significant and ongoing challenge. Addressing the impact of climate change, more frequent extreme weather events and growing pressure on water resources increasingly requires anticipating scenarios, coordinating responses and making decisions based on reliable information.

Against this backdrop, Spain's Ministry for Ecological Transition and Demographic Challenges (MITECO) launched the Observatorio GOTA (Gestión Operativa y Transparente del Agua, or Operational and Transparent Water Management) project. It aims to replace fragmented approaches to managing and accessing information with an integrated, accessible and data-driven model.

To support this transformation, NTT DATA developed the first platform designed to bring together hydrological and water-use information from multiple sources. The new digital environment improves access to knowledge and provides a more dynamic, connected view of water data to support decision-making.



Business need

Bringing fragmented water data together

When the project started, hydrological, meteorological and water-use information was kept by multiple organizations and stored on various platforms. This made it difficult for the public to gain an integrated, up-to-date overview of water resources.

For MITECO, the main challenge was reducing the time between when field sensors capture data and when that data is available to river-basin authorities.

This required a platform that could integrate and standardize information from different sources and make it available in near-real time, supporting faster decision-making when responding to events such as droughts and floods.

Solution

Creating a single view of water management

NTT DATA worked with MITECO to develop the Observatorio GOTA, a digital platform designed to integrate and harmonize data from multiple sources to provide a single view of water management in Spain.

The solution integrates real-time data from multiple Spanish and European sources, including nine river-basin authorities, Spain's State Meteorological Agency (AEMET), and observation and forecasting services such as Copernicus and the European Flood Awareness System (EFAS).

The platform is organized into several functional areas. Users can access hydrological information, monitor water use and consult the digital hydrological bulletin, improving transparency in water resource management. The platform also includes analytics and visualization tools that make it easier to interpret trends, compare scenarios and access specific geographical information.

NTT DATA designed and deployed the cloud platform supporting the solution on Amazon Web Services. The cloud platform uses a microservices-based architecture running in containers, and specialized technologies for managing relational, geospatial and temporal data. This approach provides a secure, scalable and resilient foundation that can support the integration of additional sources of information.

Outcomes

Supporting faster, data-driven water management

With the solution developed by NTT DATA, Spain is moving toward a new model of water management based on integrated information available in near-real time.

The platform provides access to key water-system data from more than 4,000 sensors across Spain's interregional river-basin districts. As the platform evolves, it will integrate information from up to 18 official sources.

Key benefits include:

- Improved access to and use of data
- Greater capacity to analyze the water system as a whole
- Better anticipation of risk scenarios through predictive models and specialized European services
- Greater transparency and information traceability, supporting a more direct relationship between government bodies, users and the public
- Sharing best practices from users who have been awarded the Transparent Water Management Seal

The General Directorate for Water has expressed its satisfaction with the project, stating that “the water management observatory in Spain represents a significant step forward in the digitization of the water sector by providing an integrated platform that makes it easier to access, analyze and use hydrometeorological information on water use.”

The Observatorio GOTA was recognized in the Sustainability category of the 2026 NTT DATA Group Awards in Tokyo. The award highlighted the project's impact in consolidating environmental and territorial data sources into a single interactive portal.

The project's success is built on a combination of NTT DATA's knowledge of water-cycle engineering and our digitalization and data management capabilities, which made it possible to design a solution tailored to the Ministry's needs and focused on improving real-time information management.



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