Site Management Solution

RUBICON™

Remote operation provides Orellana with much greater control over their water resources

Situation

Much of Orellana Irrigation Community's water distribution infrastructure was antiquated, including dilapidated secondary and tertiary distribution canals, manual regulating gates and a lack of accurate flow measurement at offtakes. This resulted is large water losses as water was distributed through the canal network to individual farms. The Community found itself under increasing pressure to manage its water more efficiently from the Guadiana Hydrographic Federation, the organisation that owns and manages Orellana's main supply canal.

Canal operators had to be at offtakes to manually make gate adjustments once the Confederation released the water requested, often at short notice. This required a lot of driving, and the operators found it difficult to ensure that farmers received a steady supply of water without wasting any

For the Community's Technical Director, Adolfo Nieto Morcillo, improving the control of water was an important objective.

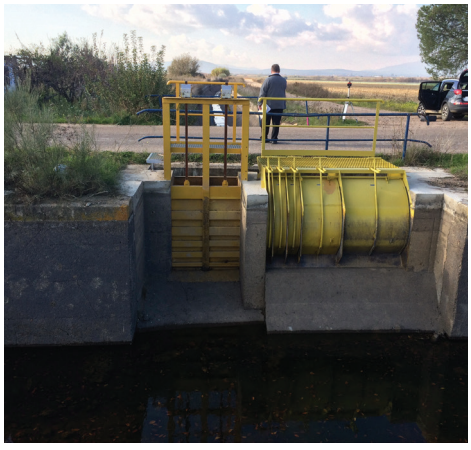
"The ultimate goal is to have a little more control over water use and the consumption, because the Confederation always insists that we use up too much water and we have to be more water efficient," Nieto Morcillo said.

In order to improve control, efficiency and reduce losses, the Community embarked on a government-funded modernisation program which involved replacing canals in poor repair and introducing technology to remotely measure and control the flow of water at the canal offtakes.

Solution

Orellana replaced 27 of their canal offtake gates with automated Rubicon gates – 26 FlumeGates® and a SlipMeter®, together with a server at their Don Benito headquarters running Rubicon's Confluent management software. Each gate has a 3G modem which enables it to communicate with the server and canal operators' smartphones.

> "It has made work easier for us by saving time, because the supervisors don't have to travel as much as before, and also because with the automated gates we have a steady flow."
>
> Adolfo Nieto Morcillo,
> Orellana Technical Director



Before

After

Spain

Don Benito, Extremadura

Customer profile

The Comunidad de Regantes del Canal de Orellana (Orellana Irrigation Community) is located in Extremadura, in the west of Spain. It has 5,000 water rights holders predominantly growing corn, rice and tomatoes. Orellana's supply area covers 40,000 hectares, with water distributed exclusively using gravity. The Community draws its water from the Orellana Canal, a 113 km long primary canal which is operated by Confederación Hidrográfica del Guadiana, the local basin management organisation.

Solution components

Software

Hardware

- FlumeGate x 26
- SlipMeter x 1

Results

The gates feature integrated flow and water level measurement and can be remotely programmed to pass a set flow rate or automatically maintain upstream or downstream canal water levels. This provides operators with much greater control, enabling them to manage water more efficiently. The whole operation is centrally supervised from the office, and field operators can monitor and adjust gates from their phones, so they don't need to be on-site.

Operators can supervise and control gates from the office

Additionally, with accurate measurement, Orellana is able to keep a precise record of consumption by each area and crop type, which gives them an insight into water efficiency across the district from season to season.

Fernando Mena López, who manages one of the operational areas said the new system has transformed their operations.

"I used to use the duckbill weirs to regulate, to try and maintain a steady canal water level. Now the automated gates do that job for me. Regardless of whether canal water levels are high or low, the gate will open and close to deliver the required flow rate. Now there is no need for anyone to travel. When the Hydrographic Confederation tells me that our water has been released, I use my phone to adjust the automated gate, wherever I am.

"It would be interesting to have many more automated gates. It would save us a lot of work, we would have much better control of the water, much better. In fact, I have recommended them to someone nearby!"

A FlumeGate managing one of the offtakes

> **"Before, everything was done manually. The canal operator or the supervisor would travel to each gate and open and close them manually according to the water needed. Now, at the 27 sites where we have the automated gates, they don't have to go there, they can do it directly from their mobile phone or it can be done through SCADA at the office."**
>
> Adolfo Nieto Morcillo, Orellana Technical Director

Watch the Orellana video here:
https://youtu.be/8rxfybVDy2w

About Rubicon Water

Rubicon Water delivers advanced technology that optimises gravity-fed irrigation, providing unprecedented levels of operational efficiency and control, increasing water availability and improving farmers' lives.

Founded in 1995, Rubicon has more than 30,000 gates and meter installed in TCC® systems in 15 countries.

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