INTELLIGENT CANAL SYSTEMS

CanalAi

CANAL AUTOMATION SOFTWARE

Introduction

CanalAi™ is ICS's custom complete canal control software that automatically controls the water delivery network to efficiently deliver irrigation water the irrigators. By analysing real operational data from a SCADA application ICS's unique approach develops accurate numerical hydraulic models than are used to precisely control the water delivery.

Benefits

- **Precise delivery of water** to irrigators – deliver the correct volume at the correct time
- **High delivery efficiency** – minimise wastage and automatically detect spills.
- **24/7 operation** – deliver water any time
- **Ongoing hydraulic model development** – CanalAi™'s hydraulic models detect and adapt to changes in the canal such as silting or weed growth
- **Reduced dependence on human input**
- **Provides advanced analysis** of canal performance to detect opportunities for improvement
- **Industry standard interfaces** – integrate into 3rd party SCADA, software and automatic gates

Requirements

CanalAi™ is a standalone software package that is designed to compliment other canal irrigation software packages. Before CanalAi™ can be implemented the following requirements must be satisfied:

- Automatic water control gates with ability to remotely move to a set position.
- Regulators should have flow measurement with accuracy ±5%
- Remote control software (e.g. SCADA) with standard database e.g SQL
- 15 minute historical operational data including gate positions, water levels and flow rates

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CanalAi

How Does It Work?

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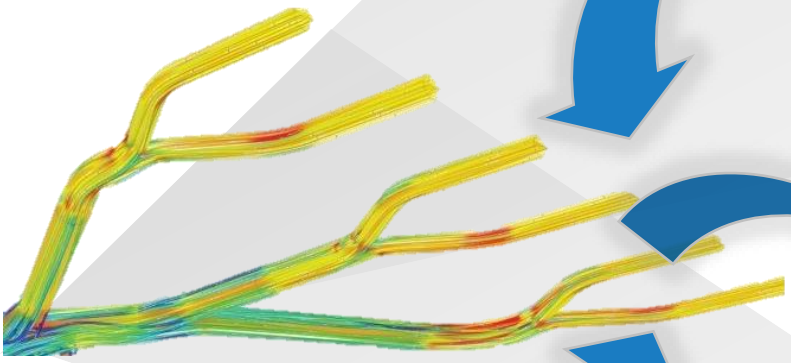
1

Automatic gates are connected to a SCADA package for remote monitoring and control, generating real channel performance data.

2

The historical data is analysed using ICS revolutionary approach to produce accurate hydraulic models that precisely determine the hydraulic performance of the canal system.



3

The ICS CanalAi™ software uses the numerical models to calculate precise gate positions that optimise the water delivery. The calculated gate positions are sent to the automatic gates to adjust the water flow.

4

Live canal data from the automatic gates and the future irrigator water demand is continually fed into the CanalAi™ models to calculate new gate positions. By continuing this live feedback mechanism changes in the canal hydraulics such as silting or weed growth can be detected, ensuring the CanalAi™ controller continues to deliver optimal water delivery regardless of site conditions.

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