



Pipeline Pumping Optimization Application

Datasheet

IntelliSense.io's Pipeline Pumping Optimization application integrates with existing data historian systems, performing real time data analysis to deliver optimization schedules and track their impact on the pipeline operation. Typically used by operators, process engineers and decision makers.

The Problems Faced by Pipeline Pumping

On site water is pumped into a succession of tanks using long high throughput pipelines, this presents certain challenges:

- Energy costs are very high
- Switching pumps on and off contributes to pump wear, which incurs additional significant costs
- Unexpected pump breakdowns lead to higher maintenance costs and require maintenance personnel to intervene
- If pumping is not balanced across pumps, some will wear faster than others, which makes planned maintenance scheduling more difficult.

The Pipeline Optimization Application ensures that the right decision is made at the right time even when operators are busy with other issues.

The IntelliSense.io Solution

IntelliSense.io's Pipeline Pumping Optimization Application, powered by the IntelliSense brains.app platform, has been built for purpose to:

1. **Give an optimized schedule** for the next several hours of operation
2. **Optimize at the entire pipeline level** as opposite to existing Cascade Control Logic which looks at the upstream tank levels individually

3. Provide the best possible specific power for stable demand
4. Proactively seek the strategy with the minimal possible number of pump switches
5. Adapt quickly to unexpected change and offer a new strategy

The operator screen presents the recommended pump schedule to the operator. It is composed of three main sections:

- a. Matrix for the tracking of pumps and recommended actions in the top left corner
- b. Graph of past, current and predicted (several hours in advance) tank levels in the top right corner
- c. Matrix to toggle status of pumps at the bottom



The Value Gained from Optimization

The IntelliSense Pipeline Pumping Optimization Application will:

- **Assure continued transport of the demand water volume** at the minimum possible energy consumption and free up operator time.
- **Increase pump life expectancy** by reducing the number of pumps switches ON/OFF and operating the pumps in line with best practices.
- **Improve safety** by reducing the risk of tanks being overfilled or emptying, reducing operational risks.
- **Mitigate environmental risk** by avoiding spillages caused by overfilled tanks.

8% less energy usage per year and a 50% reduction in pump switches achieved by the Pipeline Pumping Optimization Application at a Chilean Copper Mine

Mine to Market: Value Chain Optimization

Powered and connected together by the brains.app platform, the Pipeline Pumping Optimization Application is one of a suite of real-time decision-making applications that uses Artificial Intelligence (AI) to optimize each process; from mine-to-market.

Our Material flow model connects these applications together to drive even greater efficiency gains.

 **Book a demo**
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