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Product data sheet

OpenFlows™ WaterSight®

Real-time insights and capital planning for water supply and distribution systems

OpenFlows WaterSight, the water infrastructure digital twin application, brings SCADA, GIS, hydraulic modeling, client information, and historical failure data into a connected data environment to deliver cost-effective, real-time operation strategies. A scalable environment provides your entire utility with access to critical system and individual asset performance, along with risk information, which enhances operations, maintenance, and capital planning decisions. The application alerts you to nonperforming assets or anomalous network conditions, and provides efficient analysis of present, historic, and forecasted performance for all assets to better support the evaluation of the expected benefits and consequences of operational and maintenance actions. Additionally, OpenFlows WaterSight allows you to perform multiple what-if, risk, and planning scenarios with the goal of improving service levels and performance while minimizing risk.

Actionable insights for the entire utility

Whether you are an operator, asset manager, engineer, or a network modeler, you need to work in an environment that integrates federated data spread across multiple systems with the power of real-time analysis. OpenFlows WaterSight connects all data sources and creates a continuous, consistent digital representation of your operated assets. The solution's secure, browser-based portal provides an easy framework to visualize and communicate with stakeholders from any device.

Proactive network management: Monitor various parameters at any point in the system and visualize current data and predictions for each asset in the context of historical trends. Reduce awareness times for potential anomalies and consequently reduce costs and improve service levels.

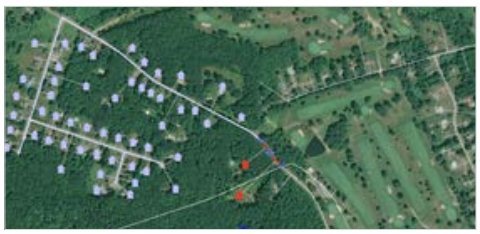
Identify where your water is going and at what cost: The application provides geolocation of leaks and bursts. Perform water audit calculationsper zone and evolution over time. Prioritize zones according to real losses and apparent losses, minimum night flows, and other KPIs.

Early warning and emergency management: Real-time anomaly detection system triggers alerts that can indicate leaks or bursts with indications of potential volume lost. Simulate the impact of anomalous events such as breaks, pump shutdowns, valve closers, fires, or big consumptions throughout the network. Assess and better manage system storage capacity to minimize service interruptions. Simulate water quality, including chlorine decay or water age.

Improve energy efficiency: Understand pumps that are operating inefficiently and those with higher inefficiency costs. Reduce energy consumption.

Shorten time-consuming tasks: Leverage a connected data environment that provides a cloud-provisioned open framework for collaboration and asset information management throughout the lifecycle of water infrastructure. Streamline workflows and save time on traditional time-consuming tasks.

Integrating water system data with SCADA provides real-time modeling.



Simulate events such as pipe breaks, fires, or pump failures.

System requirements

Minimum: 720 × 480 resolution Windows 8.1 or higher, Internet connection
Recommended: 1920 × 1080 resolution, Windows 10
Browser compatibility: Current version of Google Chrome, Mozilla Firefox, or Microsoft Edge

OpenFlows WaterSight capabilities at-a-glance

Network monitoring

- Real-time monitoring of flow, pressure, level, and other measured variables
- Define zones flow as a combination of inflows, outflows, and storage sensors
- Integration with AMI/smart meter systems to assess and analyze the influence of large customers
- Graphical, thematic, and map view of measured data
- Navigate time-series history
- Trend charts showing measurement points overlaid upon expected behavior and patterns
- Demand patterns and forecasts automatically calculated using advanced analytics and AI
- User-defined tags allows grouping of sensors and zones
- Incorporate your weather stations or directly connect with Bentley Weather Services
- Side-by-side comparison of trend charts for multiple sensors
- Minimum nightly flow monitoring
- Fills data gaps
- Comparison of multiple measurements in the same graph
- Tabular data of measurements with view and export options.

Capital planning

- Define the aspects that can drive the likelihood and consequence of failure (LOF and COF)
- Create queries across multiple datasets, including logic-based decision tree interface
- Calculate risk by combining LOF and COF in a risk matrix
- Create and compare different risk scenarios
- Graphical and map display of the assets based on risk grades (low, medium, and high)
- Compare different action plans
- Combine risk with asset performance to drive capital planning decisions.

Real-time simulation

- Automated run of the hydraulic model using real-time boundary conditions from SCADA
- Graphical, thematic display of modeling results for hydraulic grade line (HGL), pressure, flow, velocity, water quality (chlorine, water age, other constituents), and other parameters
- Easily compare modeled and measured data to assess the accuracy of the model
- Provide real-time model results assessment with a forecast of up to 7 days
- View a trend chart of current and projected results
- Automatic calculation and adjustment of demand patterns
- 3D visualization
- Display any GIS data
- Hydraulic model for offline analysis
- Integration with AMI/smart meter consumption data.

Pump performance and energy management

- Evaluate individual pump and/or total pump station performance
- Determine best operation point, energy efficiency, and energy cost
- Assess variable speed pumps performance
- Compare pump operations over historical time periods.

Tanks assessment

- View trends in tank operation
- Receive low- and high-level alerts
- Calculate turnover time and mix performance ratio.

Customer meter analytics

- Customer meter statistics by different clusters (consumption type, diameter, brand, age, average consumption)
- Large customer analysis
- Supporting identification of aged, oversized, and undersized meters
- Identification of anomalous decreases in consumption.

Water audit

- Compute water balance audit based on production and billing data
- Audit computation customizable by time frame and zone
- Different methods available to calculate real and apparent losses and cost calculations
- Graphical comparisons of water balance for multiple zones
- See water balance components evolution along time for any zone
- Automatically calculate key performance indicators, minimum night flow per connection, and ratio between minimum and average flow
- Compare background leakage between different zones.

Event management and emergency response

- Smart alerts for sensors or zones based on user-defined rules
- Notifications through email
- Calculate volume lost and loss duration for each event
- Events management—update status, category, and edit comments
- Highlight events in the sensor or zone graphs
- Add manual events
- Define and analyze impacts of events throughout the network such as pipe breaks, fires, pump shutdowns, and valve operations.

Easy administration

- Set alert rules for anomalous conditions
- Incorporate new sensors, pumps, tanks, or zones into the system
- Client billing and numerical model upload option
- Upload GIS data and hydraulic models
- Customizable general settings
- Manage users and access to cloud application
- Refresh/modify links to external data
- User-customizable reports with Power BI
- Customizable definition of thematic displays for all users.

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