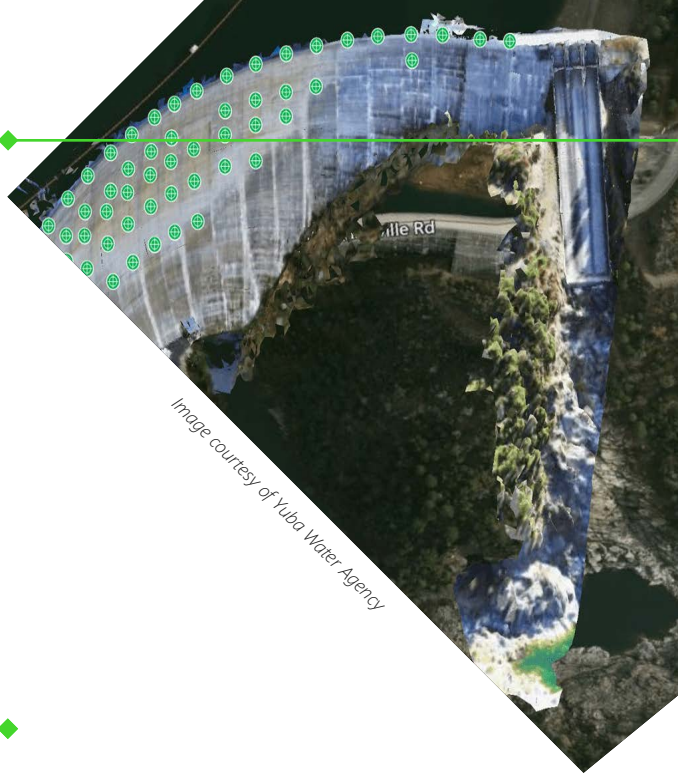
Bentley
Advancing Infrastructure

PRODUCT DATA SHEET



iTwin® IoT

Active Condition Monitoring for Natural and Built Environments

SECURE, RELIABLE CLOUD-BASED SOLUTION

iTwin IoT, Bentley's intelligent Internet of Things (IoT) product for infrastructure, is a scalable monitoring platform used for acquiring and analyzing data from sensors and monitoring devices within a digital twin. Secure and reliable, this cloud-based solution optimizes collecting and analyzing measurement and sensor data into a single, unified view of the condition and performance of both natural and built-in environments.

Providing actionable insights at their fingertips, your stakeholders and users can monitor risk and safety conditions in operations and construction, as well as gain visibility of their critical infrastructure assets. Users can also assess asset performance to boost operational efficiency and maximize the safety of workers, the public, and the environment.

iTwin IoT delivers cost-effective solutions where automated and continuous sensing technologies have historically been challenging or expensive to deploy—dam monitoring, bridge monitoring, tunnel monitoring, rail and road operations, civil construction, and mining operations—paving a path for organizations to drive innovation and change.

ITWIN IOT INTELLIGENT SOLUTIONS FOR INFRASTRUCTURE PROFESSIONALS

With iTwin IoT, users gain access to the application anywhere and anytime via an internet browser.

VISIBILITY AND ANALYSIS OF CURRENT AND HISTORICAL PERFORMANCE

iTwin IoT allows you to make decisions with confidence by having immersive and intuitive visualization of data. Visualization and analysis capabilities help you make sense of complex data for situational intelligence to solve problems.

DATA TRANSPARENCY AND ACTIVE CONDITION MONITORING

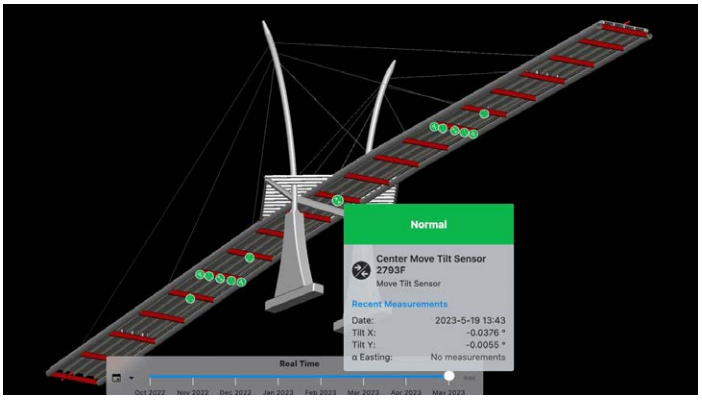
Connect to any sensor or IoT device, read any data type, monitor, calibrate, and validate incoming raw data with no vendor lock-in. iTwin IoT provides data in an open, integrated, and interoperable system.

OPERATIONAL AND MAINTENANCE DECISION INTELLIGENCE

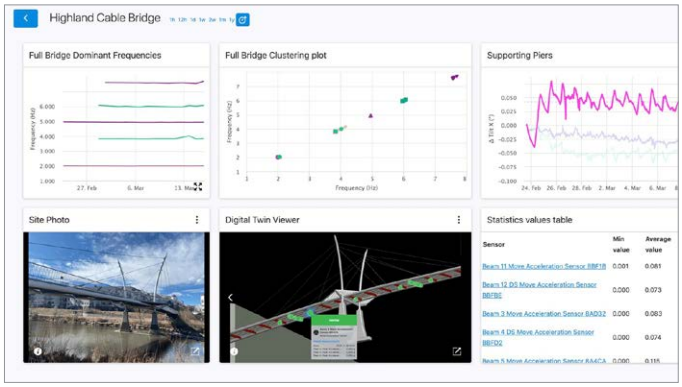
Keep all stakeholders informed with granular access controls, real-time reporting, and custom alarms. iTwin IoT further enhances the querying and analysis capabilities for actionable insights, improved collaboration, operational intelligence, and fast, accurate decision support.

RISK REDUCTION AND INCREASE IN SAFETY

iTwin IoT helps you modernize operations and improve productivity with automated, continuous asset monitoring to reduce risk of asset failure. Perform risk analysis, risk prioritization, and risk mitigation with iTwin IoT's risk management process, ensuring public safety and reducing environmental impact.



Connect any instrumentation system, IoT connectivity device, or smart sensor. Calibrate, validate, and process any data type. Image courtesy of Stantec.



Collaborate and inform with customizable dashboards, real-time notifications, custom alarms, and reporting. Personalize as needed. Image courtesy of Stantec.

iTwin IoT At-a-glance

DATA ACQUISITION AND MANAGEMENT

- Use sensor-agnostic design for API integration of any IoT device or sensor
- Add new devices and sensors to the platform, and configure sensors with an intuitive user interface
- Deliver real-time data to quickly make informed decisions
- Import manually collected data to compile it all in one place
- Use FTP to automate file data ingestion
- Store raw data, in conjunction with sensor configuration in application, to adjust and calculate the engineering data
- Use revision management to save different sensor configurations for different periods of time
- Utilize a suite of sensor definitions to curate sensor configurations and unlock unique algorithms

TIME-SERIES DATA ANALYSIS

- Utilize time series charts with trending, annotation, and analytic capabilities
- Use custom dashboarding to bring all project data together in one view
- Develop X/Y and scatter plots
- Create custom data tables for analyzing data quickly
- Use saved views of all visualization features to quickly return to important information
- Overlay sensor markers onto image files to create a cross-sectional view
- Create and log events related to sensor data
- Place sensors on 2D maps, import data layers, display sensor data on maps, and utilize advanced sensor data display options to provide spatial context to collected data

DIGITAL TWIN VISUALIZATION

- Capture data from multidiscipline engineering design applications
- Display map layers from ArcGIS, WMS, and WMTS servers on 3D terrain
- View a reality mesh of an asset from photogrammetry
- Visualize the as-designed 3D geometric models of an asset in a vast number of CAD formats
- Utilize 4D navigation to display historical versions of the models and IoT
- Visualize the as-built 3D reality mesh captured with drones
- Visualize 3D point cloud captured with laser scanners
- Display IoT sensors on true 3D locations
- Display deformation vectors from position sensors in 3D
- Display sensor observations and alerts in the form of 3D heatmap
- Capture display settings into saved views and share with team members
- Draw users' attention to elements with active alerts with focused view modes
- Support remote sensing data

ALERTING

- Configure data alerts to monitor sensor data in case of exceedance of safety thresholds
- Create status alerts to indicate the health of the sensor network
- Use correlation alerts for defining alert thresholds dynamically in the form of linear and quadratic relationships between two sensor metrics
- Configure which users receive alert notifications for each individual alert
- Receive alert notifications over email, mobile push notifications, or in-app notifications

REPORTING

- Use the report function to compile information and data and schedule document distribution to stakeholders
- Notify users of alerts and distribute reports via email to provide information without logging into the application
- Input events to provide stakeholders with additional information, such as sensor maintenance or reasons for data threshold exceedance

ISSUE RESOLUTION

- Create issues related to changes or assets in the model, as well as alert events
- Assign issues to a role or a user
- Add comments, attachments, images, and mark-ups to issues
- Review and track issues using a customizable dashboard
- Track and update all issues collaboratively and remotely

MOBILE APP

- Commission sensor networks using only your phone
- Instantly access your data from any sensor, anywhere
- Use manual sensor data collection on site with the mobile app on iPhone and Android

ADMINISTRATION

- Control colleague's role within project to align with their responsibilities and team needs
- Control user access to configured graphs, alerts, and other profiles
- Assign and manage issues to ensure clear delegation of responsibilities and track progress

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FIND OUT MORE AT BENTLEY.COM

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