

# BridgeWatch<sup>®</sup>

Intelligent bridge monitoring with Strainstall's Smart Asset Management (SAM)<sup>™</sup> software



Working in partnership with



## BridgeWatch® enables you to monitor, evaluate and manage a cost effective maintenance programme for your assets

Fully integrated into the life management of your structure, BridgeWatch® provides the ultimate solution for convenient and reliable structural health monitoring (SHM). The advanced analytical processing capabilities of the BridgeWatch® system have revolutionised the way SHM is used as a preventative maintenance tool, optimising asset management.

The system's software capabilities includes real-time data handling with online analytical processing tools from which users can run queries, perform analysis and produce reports, including health indices for risk based maintenance planning.

### Structural health monitoring hardware

The data acquisition system for BridgeWatch® is designed to be a modular network of data acquisition units (DAU), sub-units and third party systems. Each DAU receives multiple inputs from a variety of sophisticated sensors including strain gauges, accelerometers, temperature and displacement transducers, distributed across the deck and on the towers and piles of the bridges structure.

The data processing and control system consists of a number of hardware servers which collect, control and store the data received from the DAU's across the bridge. The web application server, displays the structural performance of the bridge to allow real-time monitoring of key or pre-defined parameters, whilst the post-processing application server will perform post-processing and analysis of the collected data.

### Structural health monitoring software

Incorporating Strainstall's Smart Asset Management (SAM)™ system, the customisable BridgeWatch® user interface operates and manages all the data generated, using a modular and scalable open framework architecture.

The software capabilities of your BridgeWatch® system include real-time processed information, systematic storage and retrieval of data and information and manipulation of multi-platform analysis. It also includes the provision of multi-dimensional views of data through the utilisation of a relational database management system, equipped with online analytical processing tools from which users can run queries, perform analysis and produce reports.

The complete flexible system enables a wide mix of sensors to communicate with the server in order to integrate data from any source and respond to the server configuration, for a completely dynamic two way communication.



## The Smart Asset Management (SAM)<sup>TM</sup> system enables you to maximise productivity and significantly reduce costs through the whole life management of your asset.

SAM<sup>TM</sup> provides the ultimate solution for the move between raw data and insight driven actions - allowing you to acquire, analyse and act on intelligence, quickly and with confidence.

Designed with a focus on speed to action management, Strainstall's smart asset management software is the latest data analytics system, which continuously calculates and streams dynamic information about your asset, in real-time.

### Benefits of Strainstall's Smart Asset Management<sup>TM</sup> system:

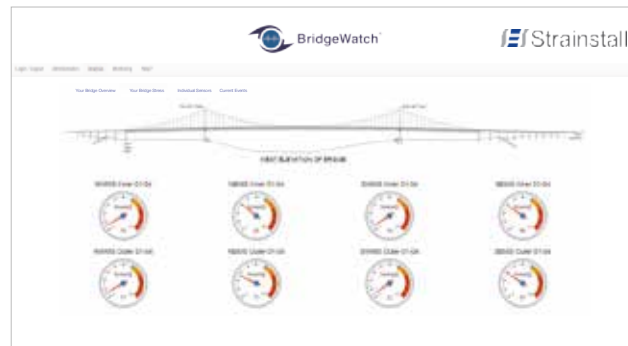
- Quality data provides the opportunity to predict failure
- Gives confidence to plan preventative maintenance
- Allows faster reactions to maintenance needs
- Optimisation of repair and maintenance strategies
- Reduces failures / increases safety / reduces costs / minimises downtime

The system can be configured for any asset-management related activity, at any stage in the lifetime of an asset. From initial design and site testing, through construction, operation and maintenance, to life extension and decommissioning; data is produced, stored and continuously analysed.

SAM<sup>TM</sup> provides the ideal platform for the cost-effective management of data throughout the whole life cycle of your asset or project.



## SAM™ main displays are exclusively configured for every asset to meet your specific requirements



The software and reports can be branded for your project needs, and is available securely over the internet via PCs and other mobile devices.

The user displays can be based on maps, plans, drawings, sketches, photographs and 2D or 3D graphics, with animations representing the real-time movements.

### Overview

- Web-based access to data - anywhere
- Automated data collection and management
- Manual data input and management
- Sophisticated data processing and reporting in real-time
- Real-time alerts and alarms

### Servers, data management and storage

- Servers can be on-site or cloud based
- Automated routines for checking validity of data
- Seamless integration of operational data store with the optional systems data warehouse
- Key system performance benefits
- Ability to create long-term data reports

### Analysis

- Data processing modules provide suite of algorithms for calculation of commonly required parameters and correlation of data
- Easy to add further complex algorithms using simple scripting
- Processing scripts can be applied to data, creating real-time plots of derived parameters

### Manual data input

- Manually read sensor data
- Manual survey data (total station, level)
- Photographs and inspection records

### Sensors and data acquisition equipment

- Compatible with all Strainstall monitoring systems, regardless of application, data acquisition system or sensor mix
- Compatible with 3<sup>rd</sup> party monitoring systems
- Seamless integration with GNSS, ATS, WIM and corrosion monitoring

### User interface and displays

- Customised web-based user interface
- Secure log in to clients' own project pages
- Fast navigation through user-friendly interface
- Displays configured to suit individual projects - maps, plans, 2D / 3D graphs, drawings etc
- Data sorted by location, sensors and events

### Reporting

- Customised notification and alarm events
- Enables flagging of abnormal events and custom report generation
- Automatic custom report compilation from multiple information sources
- Dynamic interactive self-container reports
- Download full data sets

### Additional functionality under development

- Can provide further asset management capability
- BIM integration
- Inspection and maintenance scheduling

# Contact us

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