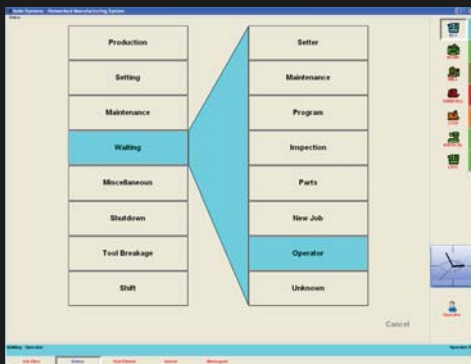




## What is Seiki Monitoring?

Seiki Monitoring is a complete resource monitoring solution designed to automatically or manually record resource status as derived from the machine's communication interface.



- Simple, reliable and accurate data collection of machine activities
- Eliminate manual paper based data collection
- Identify potential problems and take a proactive approach to maximising your throughput
- Share knowledge using remote live views of individual machine status and activity
- Graphical display of machine utilisation and lost productivity trends to support continuous improvement strategies
- Support unmanned operations with live status and alert warnings 24/7
- Get the most from your existing assets and base decisions for investment on real data

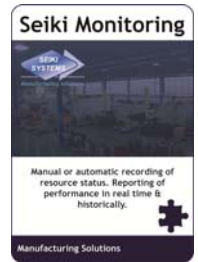
Seiki Systems Ltd  
Olivier House  
18 Marine Parade  
Brighton  
BN2 1TL



T: +44 (0)1273 680411  
F: +44 (0)1273 602564  
E: sales@seikisystems.co.uk  
W: www.seikisystems.co.uk

## Seiki Monitoring

Seiki Systems has over 20 years experience in the development and provision of real time manufacturing systems that provide live production management information and visibility to maintain a controlled and flexible approach to the manufacturing process.



### Managing Manufacturing Process Performance

Whilst traditional paper based methods can be used to collect and collate manufacturing data, they are often based on historical records and are likely to be inaccurate. Seiki Monitoring provides users with the ability to manually or automatically record the status of your manufacturing resources and report on machine performance, both in real time and historically. The collection of live and accurate data is a key element to achieving consistently high quality and efficiency. It enables you to quickly identify, evaluate and respond to important events whilst increasing equipment availability and reliability. It can also be used to protect your previous investments as well as inform future purchasing decisions.

### Status Selection for Data Collection

Automatic and manual collection of productive and non-productive events occurring on CNC and manual machine tools can be both captured and selected using Seiki Monitoring software. Each operation and status change can be derived automatically (e.g. cycle start or alarm condition) via digital signals received from the machine tool, providing continuous recording of production times. The machine operator is also able to manually enter operating conditions and status changes using a simple HMI, offering a selection of 64 user defined activities on the local shopfloor terminal, providing a record of the time and reasons for lost productivity.

All machine activities are recorded with a date and time stamp, as well as the duration of each event in a Log Book. The results can then be viewed as an event list or exported for evaluation and further analysis to identify reasons for inefficiency and lost productivity. The data can also be used to help reduce maintenance costs.

### Real Time Visibility

Having overall visibility of the production process facilitates the control and flexibility required to focus on being responsive to customer demands and adding value through the production process. The Seiki Factory View software can be configured to provide a dynamic real time view of the shop environment that is accessible from anywhere on the LAN/WAN.

Offering a number of viewing options, such as drawing, line diagram or photograph of the shopfloor as a background screen to create a realistic view of the shopfloor layout, Seiki Factory View enables you to quickly identify the live status of each individual monitored resource as it is updated on the terminal by the Operator.



Creating an immediate, visual and dynamic picture of the entire manufacturing process



Seiki Monitoring software is available as a stand alone solution or as an integral part of the Seiki NMS system. Packages include:-

- Seiki DNC
- Seiki Jobpack
- Seiki Monitoring
- Seiki SFDC

The modularity of Seiki software provides manufacturers with a flexible solution and progressive upgrade path.

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The simple colour coding of each individual resource icon indicates which of the core 8 monitoring status options is currently selected, e.g. in production, shut down or waiting. From this screen it is also possible to drill down into a cell or individual resource to view additional job information pertaining to the current job. Seiki Factory Status can extend this real time information availability, facilitating company wide communication to deliver essential manufacturing data directly to management or supervisory personnel anywhere in your organisation.

#### Resource Alarm Status Alert

In addition to viewing resource activity remotely, alarm status alerts can be configured to pass an alarm condition message to supervisory personnel via HTTP to external system such as MS Outlook, SMS, pager, etc. The main business benefit of an alert system is increased manufacturing uptime by facilitating an immediate response to any machine activities that can ultimately have a negative affect on your overall productivity. The system can support your 24/7 machining, providing confidence that unmanned operations are fully supervised.

#### Machine Utilisation Analysis

Seiki machine utilisation software acts upon a central data repository which hosts the collected data, generating reports comprising of relevant management information based on real time data collection, which can then be used to inform strategies to optimise machine uptime, throughput and ROI. Identifying the reasons for lost productivity can reduce costs and improve manufacturing efficiency.

The system provides detailed analysis of the productivity of each machine, together with non-productive reasons, displaying the results in pie chart, bar chart and text table format. The information includes accumulative % and total hours for each event that has occurred during the selected period and for those requiring a more detailed analysis, an event listing displays each works order in sequence and duration. Individual events or groups of events can also be displayed chronologically and analysed for trends in production to enable corrective action to be taken if required or for evidence of productivity improvements.

Giving internal stakeholders access to real time, actionable data direct from the shopfloor will enable them to make informed decisions and take action to resolve downtime issues that could be costing you money. This level of visibility can lead to measureable business improvements and support lean initiatives by reducing time spent searching for reasons for lost productivity and actively working to resolve/prevent the identified causes.

Note: The addition of optional modules Seiki DNC or Seiki Jobpack enables configured job folders for use by the Operator to be displayed so that the manufacturing data stored on the remote server (NC programs, drawings, tool lists, etc) can be directly accessed.



Creating an immediate, visual and dynamic picture of the entire manufacturing process