Seiki4IR®

Manufacturing Execution System

www.seikisystems.co.uk

SeikiSOFTWARE

MDM — Manufacturing Data Management

APS — Advanced Planning & Scheduling

WIP — Work In Progress Tracking

DNC — Jobpack DNC - Paperless Manufacturing

MDA — Machine Data Acquisition

Managing the critical balance between operational efficiency and profitability whilst simultaneously trying to find ways to add value to satisfy the demands of increasingly connected and empowered customers - it's a common challenge for every manufacturer. In today's highly competitive environment, the key differentiator between organisations will be the ability to embrace and adopt technology that will support fast, confident decision making and help to accelerate the process.

For more than 25 years, our software has been aligning demand and capacity to generate an optimised production process, underpinned by the core drivers and enablers of operational efficiency: live, accurate and complete manufacturing activity and performance data. As a role-orientated, integrated solution Seiki delivers all the benefits of digital operations whilst minimising the disruption that can occur when introducing new technology into your business. And by starting your digital transformation with your manufacturing operations you'll be establishing a strong foundation to build upon.

To help drive user adoption the software fully supports the daily work activities, responsibilities and goals of your team. Through familiarity and a simplified experience, Seiki software can help change user behaviours and enforce best practices. It also creates a shared view between teams that will help to develop engagement and trust. Taking some of the effort out of the activities that contribute to operational excellence and achieving manufacturing performance targets will free your team up for creative thinking and value adding activities, which will enable you to engage on a deeper level with customers.

NEXT GENERATION SOLUTION

FOR A SMARTER FACTORY

# Connecting demand, people, data and machines

An integrated approach to your manufacturing systems can help transform the way your team works. Extending the agility and flexibility of the Seiki Scheduler to the point of execution, Seiki AIR reflects the latest optimised plan for each of your manufacturing resources - updating as it changes. It offers users a combined view of resource and production activities in a single multi-functional, information rich workspace. Empowering your team to make fast, informed decisions will free them to focus on value adding, problem solving, idea generation tasks - utilising their experience and skills more effectively.

Smart Manufacturing

Offering the greatest possible control, transparency and decision-making capability for production operations in real-time, the system helps to meet the growing demand for manufacturing intelligence, quality control and flexibility.

Connected Factory

Standardised machine connectivity and seamless integration with ERP/MRP systems means you can have a complete picture and live, dynamic connection between your top floor and shop floor. The resulting enriched data can be used for deeper insights into performance and optimal use of your critical resources.
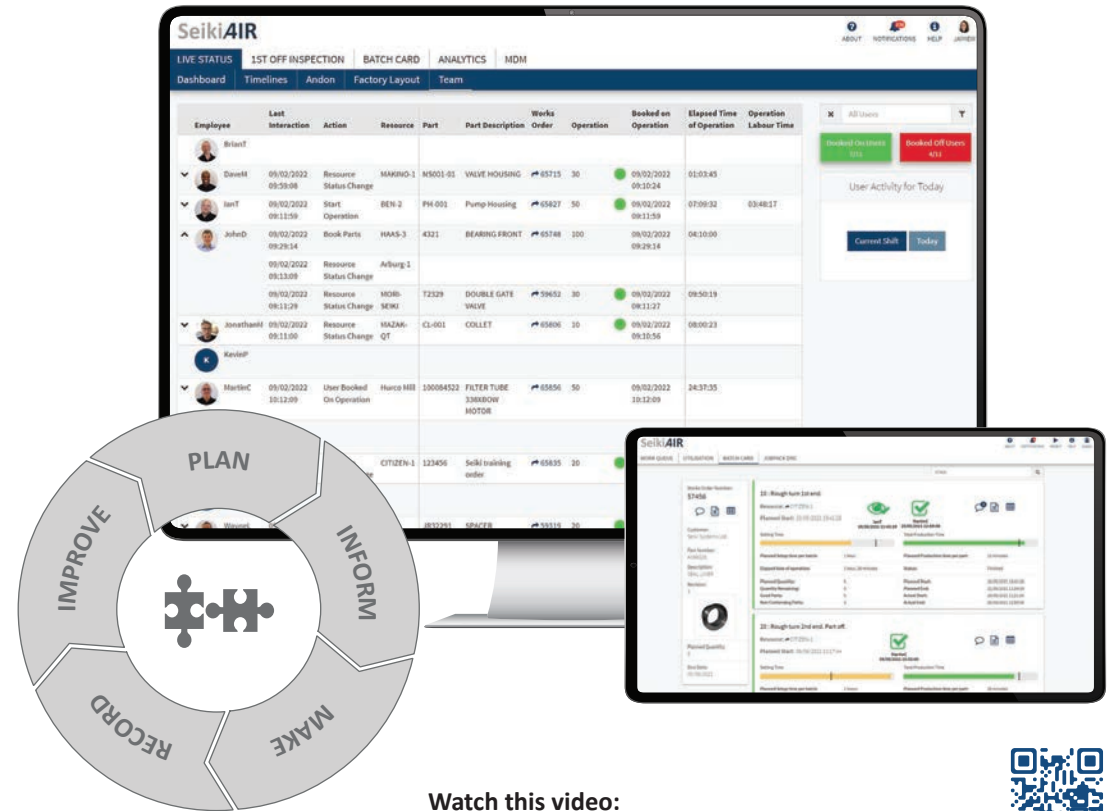
Watch this video:
Accelerate your path to data-driven manufacturing

Advantages

- Improve operational efficiency by understanding performance down to the individual events

- Reduce administration time and costs with paperless processing

- Improve communication, transfer knowledge and increase visibility

- Create and support repeatable processes

- Take control and unlock opportunities

Features

- Can be used on almost any device with a browser

- Flexible machine connectivity: Ethernet, digital I/O, MTConnect, OPC and other machine specific software protocols

- Bi-directional data transfer interface

- Single point-server based installation and software upgrades

- Supports self-hosted web server or Microsoft IIS

BUILD YOUR SOLUTION

A modular, scalable solution means that you can start with your most critical areas first and then expand the system as you start to address the smaller, often more chronic performance losses that can take longer to uncover and resolve. It's a process of continuous improvement - using the insights that the system delivers to determine your best next steps or to prove the efficiency of your process and support investment decisions.

Interactive Graphical Planning & Scheduling

The Seiki Scheduler is a highly visual manufacturing planning and scheduling solution. The graphical planning board enables you to see your live resource workload allocation across the shop floor. It provides a fast visual summary of the loading of all active orders along with essential production information associated to their individual operations, such as works order number, drawing number, quantity and due date.

By taking your true capacity into account from the moment you start to plan, the system delivers plans that help to strike an effective balance between the demands of meeting delivery dates and managing workflow efficiently and economically. As a decision support tool the Scheduler can help you identify and justify opportunities for increasing capacity by offering overtime, subcontracting work, splitting batches and avoiding bottlenecks.
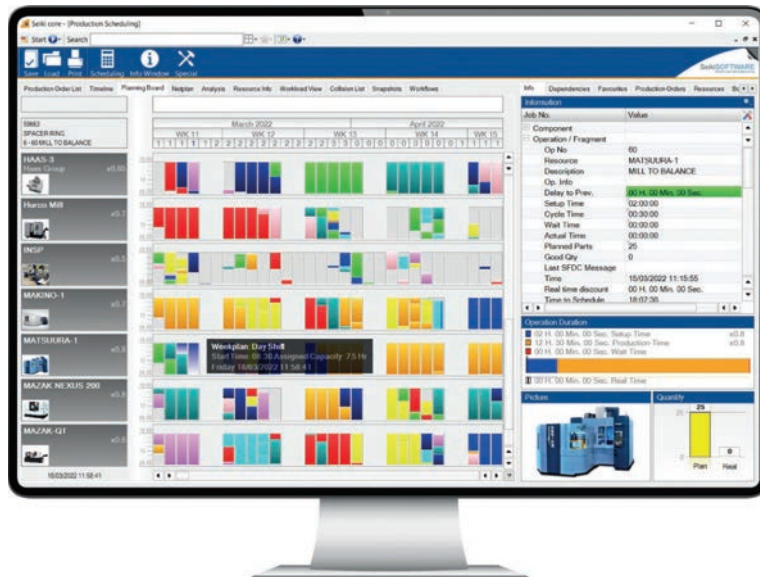
Features

- Create a realistic model of available capacity administer workplaces, define standard maximum and minimum hourly rates, individual work place efficiency and shift patterns

- Built-in scheduling rules take the time, complexity and errors out of planning. Each scheduling rule may contain more than one factor

- Forward sequential loading of all operations

- Account for unexpected events that can cause reductions in capacity such as machine breakdowns

- Generate 'what-if' production plan scenarios using the simple drag and drop feature

- See the live ripple effects of any operations not starting on time

- Quickly assess the impact of changes with colour coded analysis

Advantages

- Balance revenues, customer satisfaction and operational performance

- Identify untapped production capacity and reduce outsourcing

- Take the time, complexity and error out of planning

- Supports reduced inventory and stock. It also helps improve on-time delivery performance

- Enrich your ERP system with detailed manufacturing process information

FINITE CAPACITY

PLANNING

Live Works Order & Operation Progress Tracking

Extending visibility and control of your works orders beyond your ERP and APS systems to the shop floor via prioritised, interactive work queues is the key to fast, frictionless order processing.

With the growing challenges of global competition, increasing material costs and lead times, exacting quality standards and critical deadlines to be met, being able to drill down into the detail of each operation is a significant advantage. By connecting multiple departments with shared insight, it can help you to minimise risk, make informed delivery promises and achieve the agility needed to stay responsive to customer and industry demands.
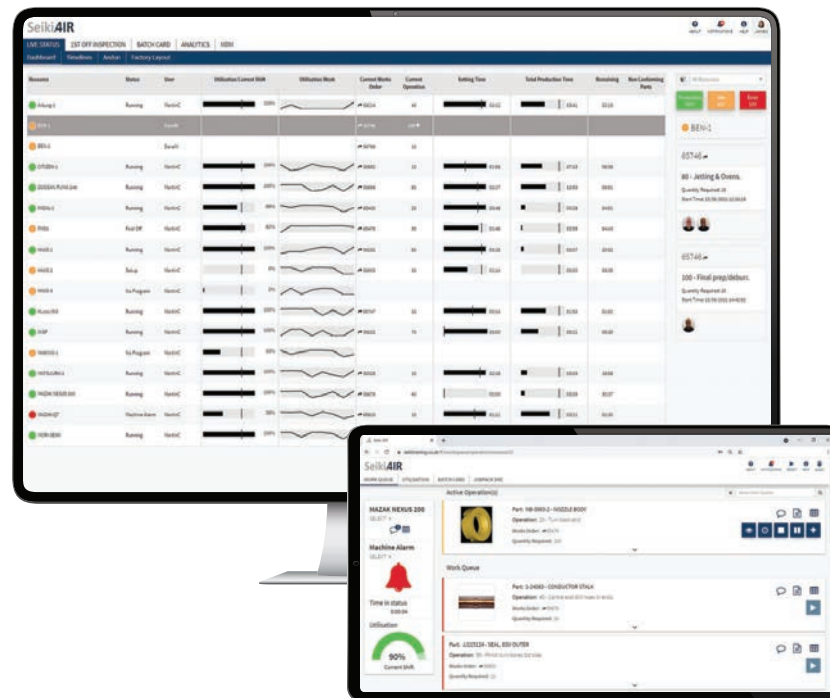
Features

- Works out-of-the-box with the Seiki Scheduler or your existing ERP/APS system via a configurable interface

- Operator confirms the start and completion of each operation to dynamically update the status in your ERP/APS system

- Enter part counts and scrap reasons

- Start multiple operations on a single resource

- Send and record First Off Inspections

- Users can attach files, add comments and view notifications of non-conformances to help control quality levels

- Follow the overall process and view progress of operations live and historically via the digital batch record to help increase quality and consistency

Advantages

- Capture the time attributed to works orders supporting more accurate job costing

- Empower your shop floor to make a direct contribution to on-time delivery performance

- Co-ordinate activities to ensure equipment and people are available when required for operations to be started on time

- Ensure all changes to priorities, workloads or specifications are communicated quickly and known to all

Manufacturing Data Management & DNC

Providing shop floor users with contextual manufacturing and production information in the form of digital Jobpacks for each operation, mitigates the risks and costs associated with using incorrect file versions.

Seiki AIR Jobpack DNC enables you to administer production data and documentation related to parts and operations. Once approved or updated, records are instantly available to authorised users. Providing all the information required to complete an operation on a single screen, accessible directly from the work queue, supports better decision making, minimises the need for unnecessary checks and increases operational efficiency.
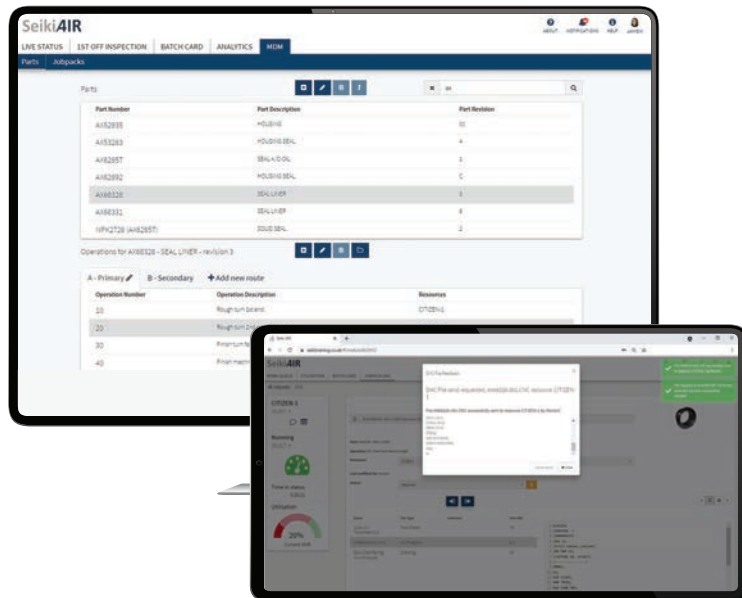
Features

- Industry standard machine connectivity and communication protocols

- Robust and reliable NC program transfer to/from machines

- User permissions and roles control who can use, modify or transfer files

- File version control, revision history and audit trails

- Create and maintain part records

- Organise and centralise manufacturing information and documentation such as drawings, images, toolsheets and operating procedures

- Automatic file status verification

- Compile, compare and edit NC programs

Advantages

- Makes the transition from paper-based easier

- Reduce administration overhead and communication latency

- Reduce non-conformance issues through shared knowledge, detailed information and greater transparency

- Delivers structured storage and controlled access, which underpins internal quality control procedures and supports regulatory compliance

STORE, DISPLAY & TRANSFER

Live Resource Data Collection & Feedback

When you've got production targets to meet and the challenge of keeping costs under control, it's essential to have a true and accurate picture of your manufacturing resource activity. Manually collected machine status data requires time and resource to collate and, as a consequence, is likely to be out of date as soon as it's captured.

Seiki AIR Monitoring helps build greater integrity in the measurement of your manufacturing equipment performance, so you can confidently analyse, evaluate and proactively minimise critical productivity losses to improve availability and work throughput - your ROI.
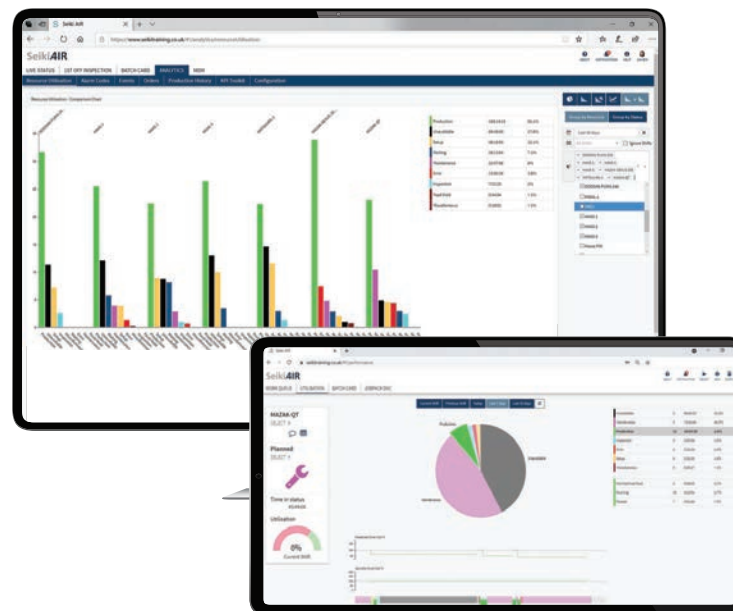
Features

- Automatic and/or manual data collection

- Customisable ten by infinity monitoring status grid

- Operator can track individual resource performance, add comments, view and search audit trails

- System prompts encourage complete and accurate data entry from every user

- Machine status logged against each works order and operation

- Track live progress against planned setup and production time

- Smart states use logic to determine the monitoring status the resource will automatically transition into

- Capture time associated to First Off Inspections

Advantages

- Real time visibility of all events occurring on your machines/resources

- Connect all machine types, including manual resources and legacy equipment for a complete view

- Uncover even the smallest, previously hidden or unaccounted for productivity losses and their causes

- No more guesswork with live visibility of what's happening on your shop floor 24/7

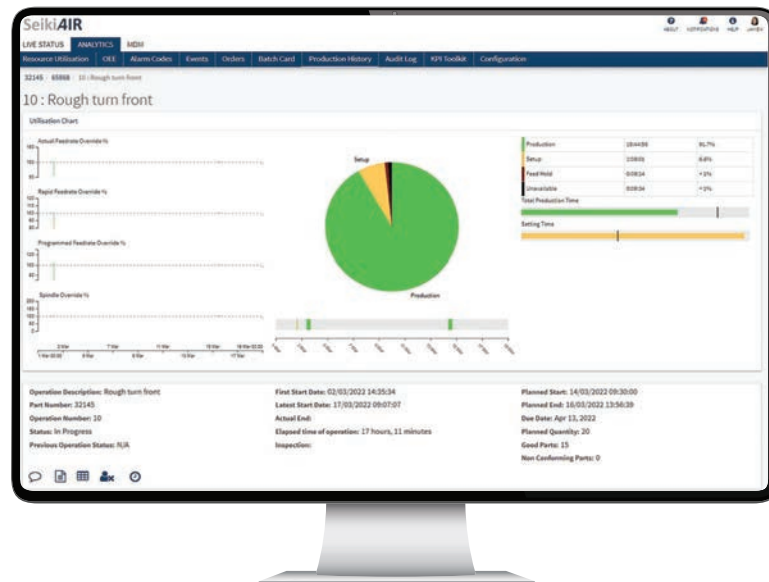**MACHINE DATA**

ACQUISITION

MDM

APS

WIP

DNC

MDA

Batch Card Records & Production History

The system stores a detailed record of each works order, enabling users to retrieve and report on its live status and historical performance. Being able to trace the production status and history of parts down to the individual operation helps to support continuous improvement efforts, identify ways to reduce production costs and increase response time so you can quickly and confidently communicate your best solution to customers.

The power of an integrated solution is most evident with this 360° view of each works order. With the confidence that you're analysing performance against a fully optimised plan, supported by direct input by process owners at every stage, and reinforced by system verification and control features, your manufacturing organisation can work smarter, faster and better.

ANALYTICS: ORDERS

View a weekly visual summary of the progress of each works order. Focus your team's attention on critical priority jobs and identify risks to achieving targets early.
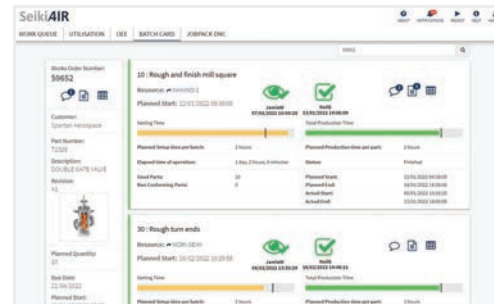
BATCH CARD

View the full routing information and follow the production process of each works order in real time. Identify bottlenecks and understand the full sequence of events to manufacture the part.

SMARTER, FASTER

BETTER

Performance Reporting & Analysis

You need to control costs, get more value from your machines and ensure capital investments return revenue quickly, it's therefore essential to collect detailed information about all productive and non-productive events occurring on your shop floor.

Seiki AIR analysis and reporting tools provide an easy method of accessing, viewing and summarising your performance data. It allows users to quickly generate reports comprising relevant management information based on real time data collection. Together, your WIP booking and machine monitoring data deliver the critical factors required to calculate OEE.
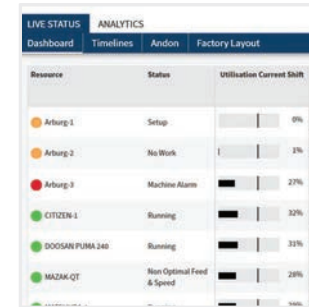
## TURN DATA INTO
SHARED KNOWLEDGE

LIVE STATUS: TIMELINE

Visualise machine and production events chronologically on a single timeline. Pan and zoom to drill into specific time periods and individual event details.

LIVE STATUS: DASHBOARD

Bullet charts for each monitored resource provide fast visual indicators of performance along with additional contextual active works order information.
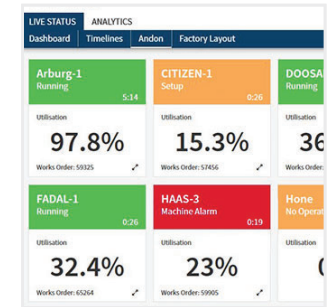
LIVE STATUS: ANDON

React immediately to downtime by bringing attention to problems as they occur via a simple display of the current status of your monitored resources.

DATA ANALYSIS TOOLS

There are many ways of viewing and analysing data in Seiki AIR - interactive performance charts and graphs that are embedded in the application; a KPI Toolkit that contains a number of standard reports and with a report generator license users can build their own reports; your experienced IT teams will be able to query the system's database views. The benefit of our reporting tool is the ability to deliver any bespoke reports that you require quickly and cost effectively. You will also benefit from any new standard reports via our software updates.

Advantages

- Populate and analyse all your efficiency performance factors with one solution

- Respond confidently to dynamic conditions, particularly in high variation, high complexity and low volume scenarios

- Common visualisation and reporting for an unlimited number of concurrent users

- Share data as .csv, .xlsx, .dat, .doc, HTML and PDF

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Your Industry 4.0
Smart Factory Solution

The 'Factory of the Future' is no longer a distant ideal. It's a very real, achievable vision that's available to all companies that are ready to embrace the technologies behind Industry 4.0. Now is the best time to refresh your manufacturing enterprise and take the complexity out of your path to a smarter factory with a single, affordable operations management solution that supports all your critical production activities.

Our philosophy is to help companies take a lean approach to their manufacturing system by offering all the out-of-the-box core functionality and support needed from a single-source. You can start your digital transformation journey with any of our modules. This approach allows you to take manageable steps towards achievable targets and use the manufacturing intelligence gained to inform your next strategic objectives. It's an approach that has been proven by our customers at all stages in their growth lifecycle and across industry sectors.

For some companies, taking a more holistic approach from the outset is more appropriate. It allows them to benefit from the seamless, interoperability of our modules by monitoring and managing the complete works order lifecycle. Whatever approach you take, we'll provide a complete service that includes planning, installation, implementation, training and after sales support.

Find out more:
Our tips on implementing a manufacturing execution system

Advantages

- As most information is now processed and stored digitally, it's important to make sure your system remains compatible with and accessible by other systems and technologies

- Outdated software and hardware is more expensive to maintain than newer versions, which have typically reduced or eliminated the problems users faced with previous versions

- As software and technology evolves it becomes more streamlined, intuitive and easier to use – all the ingredients for improved user productivity

- Giving your team access to the latest tools and technologies signals your investment in and commitment to improvement and success, which can lead to an increased employee sense of security and buy-in

- As our next generation digital manufacturing platform, Seiki AIR will provide a solid foundation for your manufacturing operations well into the fourth industrial age

GET STARTED

With the pace of change, intensity of competition and the challenge of satisfying increasingly empowered customers, taking a "wait and see" approach is no longer a viable option.

The first step is to talk to us, so we can start to understand the challenges your team is facing and the change drivers within your business. We can then work together to define a solution that meets your specific requirements, project timescales and budget.

Infrastructure and Architecture

Seiki AIR is a browser-based solution, which means that it can be used on almost any device with a browser, and all the necessary computing power is centred around your server, resulting in lighter IT infrastructure demands at point of use.

Security

With cyber security an increasing concern among manufacturers, Seiki AIR offers a safe and secure working environment. We ensure each release of our software has the latest security protocols and patches, and that reliable authentication procedures are in place to prevent unauthorised access.

Software Updates

Seiki AIR offers a single point, server based installation making ongoing updates so much easier. With our regular release schedule, you can access and experience new and improved features through the year.

IMPLEMENTATION ADVICE

Implementing any manufacturing system requires planning, alignment and balancing the demands of multiple stakeholders, which can feel like a challenge.

We've been working with customers to implement and successfully adopt our solutions for over 25 years. No matter what stage in their growth lifecycle or industry sector, there are a few lessons we've learned in this time and would offer as tips and best practice advice:

- It is key to properly engage with and gain the buy-in of shop floor users. This will build acceptance of the system and ensure the data you collect is accurate

- Having a dedicated system owner and appropriate procedures in place to maximise the benefits the system can offer, are fundamental pre-requisites. Business Improvement, Continuous Improvement and Six Sigma initiatives are typical of such processes

- Allow system owners and key stakeholders time to understand and analyse the data and insights gained to be able to identify problems and recommend solutions or improvement initiatives

- Delivering an early success story and "quick win" by implementing a process change or small investment identified by using the KPI data reported can be very helpful, albeit may not be possible in every case

We're here to help make the start of your digital transformation journey as easy as possible. Our experienced team will guide you through the implementation process, starting with a project kick off meeting with your Seiki account manager and lead engineer. The resulting Statement of Work/Project Plan will provide full visibility of critical milestones for all parties.
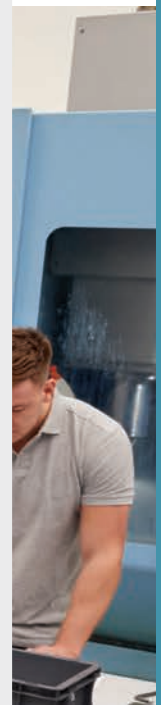
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Planning & Scheduling

Performance Analysis

Shop Floor Data Collection

Machine Monitoring

Jobpack DNC

Industrial PCs

360° View of your Manufacturing Operations

Business System / ERP / Master Data

Integrated Manufacturing System

About Seiki Systems

Seiki has been specialising in digital manufacturing solutions since 1992. Today our portfolio comprises of a suite of integrated software modules that deliver a live, visual and dynamic picture of the production process. Our production control and manufacturing execution solutions maximise the productivity of production equipment and plant resources by monitoring and managing the complete works order lifecycle.

We provide a complete service that includes planning, installation, implementation, customisation, training and after sales support. Our aim is to work with you as your strategic Industry 4.0 (4IR) operational manufacturing management solution partner to secure your return on investment and support your business as it grows.

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