



FactoryOS

The human-centric MES

- ▶ Create a paperless production plant
- ▶ Take real-time control of operations
- ▶ Increase efficiency, quality and yield

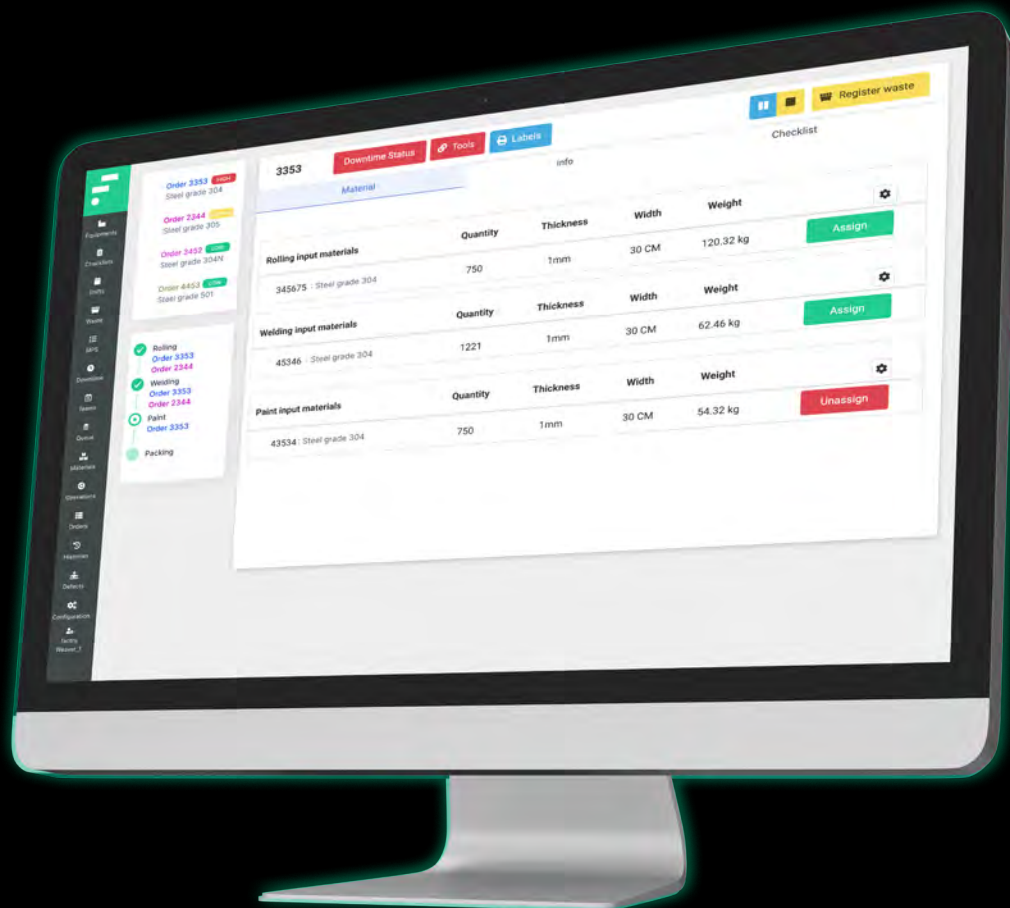


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Create a digital factory

In today's **process industry**, it's **digitise or die**. Due to rising costs, **optimising efficiency** is key to keep up with your competitors and hold your company's profits steady. Those that don't go **paperless** today, risk falling behind forever.

At the same time, we see manufacturers still running their operations on **paper**, through **static spreadsheets** and a plethora of **outdated IT systems**, making it impossible to reach their full potential and keep up with their competitors.

Enter a new playing field

For decades in a row, only the lucky few companies were able to afford the incredibly expensive MES solutions from traditional vendors, often costing millions of euros. SMEs with lesser pockets were doomed to keep on using pen and paper.

Today, the tables have radically turned. Thanks to **new technologies, modular solutions and open industry protocols**, paperless production is now within reach for any industrial company, with a **significant impact** on manufacturing operations.

Meet FactoryOS

Replace paper, static spreadsheets and manual data entry with real-time visibility of manufacturing operations.

Empower any employee or department with actionable data insights to improve efficiency, quality, and yield.

Beat the challenges of Analog production

From writing notes on paper to manual data entry and time-consuming reporting processes: the burdens of an Industry 3.0 workflow arise in any company department. We bet some of the following challenges will ring a bell.





Production

- ▶ You lack a clear overview of the current state of production orders
- ▶ Changeovers take ages, but you don't have accurate data available
- ▶ Aggregating production data is a painful ride, with sketchy results

Planning

- ▶ You're not sure if resources to produce are currently available
- ▶ Can't display progress, KPIs and delays for ongoing production
- ▶ Unable to identify hidden issues and bottlenecks in the process

Quality

- ▶ Inadequate traceability throughout the production process
- ▶ Manually generating quality reports is extremely time-consuming
- ▶ Waste and defects registration lack structure for analysis

Maintenance

- ▶ In case of machine failures, there is no real-time data available
- ▶ Lack of insights into process efficiency and availability
- ▶ Recurring defects and downtime, due to unresolved issues

IT

- ▶ A lack of integration between systems, software and tools
- ▶ A pool of outdated IT solutions that is time-consuming to maintain
- ▶ Customising the MES system to your needs is too expensive

Quality

- ▶ No accurate data to get insights on Overall Equipment Effectiveness
- ▶ Aggregating production data takes a huge amount of time
- ▶ Hard to prove profitability, efficiency and improvement projects, per month or quarter

Don't stay stuck in Industry 3.0

Don't let cumbersome processes hold your plant back from reaching its full potential. With a **modular MES solution** tailored to your needs, we help your manufacturing company **create a paperless plant**, optimise factory performance, OEE and profitability, and **become a leader in your vertical**.

TAKE CONTROL OF OPERATIONS

Become a data-driven company

A holistic view of production operations is key to enhance overall plant efficiency and yield, comply with client demands, and optimise the supply chain. This can only happen by getting rid of paper, and by combining data sources.

Therefore, our MES solution focuses on the **digitisation of the execution of production orders**, making your plant paperless, and providing people with easy access to insights to track and improve any aspect of operations.

INTEGRATE ANY DATA SOURCE

Within a unifying MES platform

There is no single solution to solve all your business and operational challenges. As a manufacturing company, you need a wide range of IT applications in order to plan and produce efficiently. **Interoperability** is therefore mandatory.

Free operators from data silos, paper checklists and manual data entry. Integrate unlimited data streams in a single, user-friendly interface, and track availability, orders, materials and energy usage, in real-time and historically.



FactoryOS

The MES platform built for the process industry



Tailored to your needs

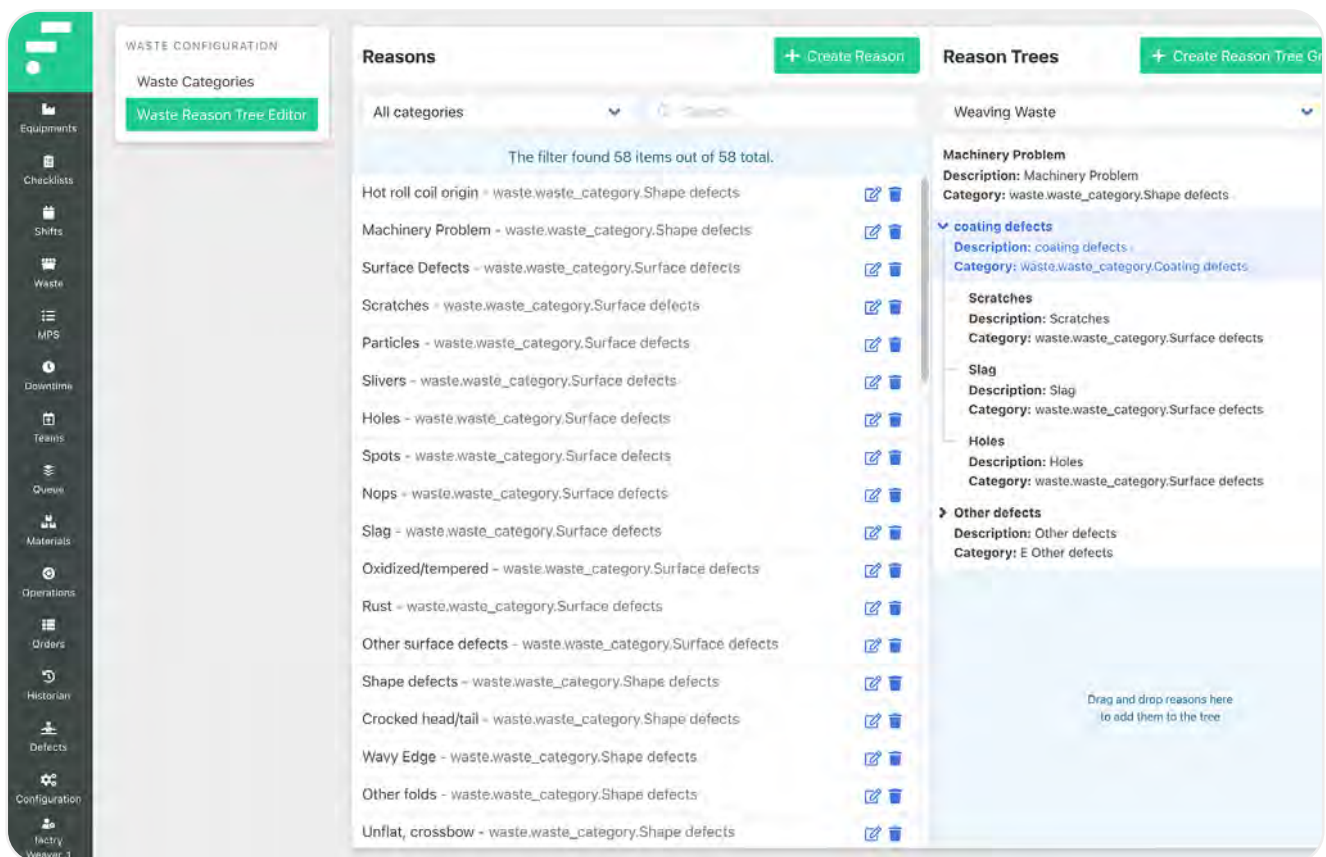
Built specifically for companies in **the process industry**, and **tailored to your exact needs**, our MES platform allows you to rapidly identify actionable data insights to improve plant performance, efficiency, yield and quality.

Expect a complete MES solution. By using open industry standards, for both the data model and communication protocols, we ensure that our system has all functionality required to service the entirety of process manufacturing.

Designed for humans

No matter how advanced the software or technology you're working with, there will always be the need for a human touch. Our MES platform helps machine operators and modern digital technology work hand-in-hand, strengthening one another.

FactryOS empowers any role in your company with fluent access to process data, going from operators and managers to planners and engineers. From then on, any of these people can use that data to monitor, investigate and improve processes.

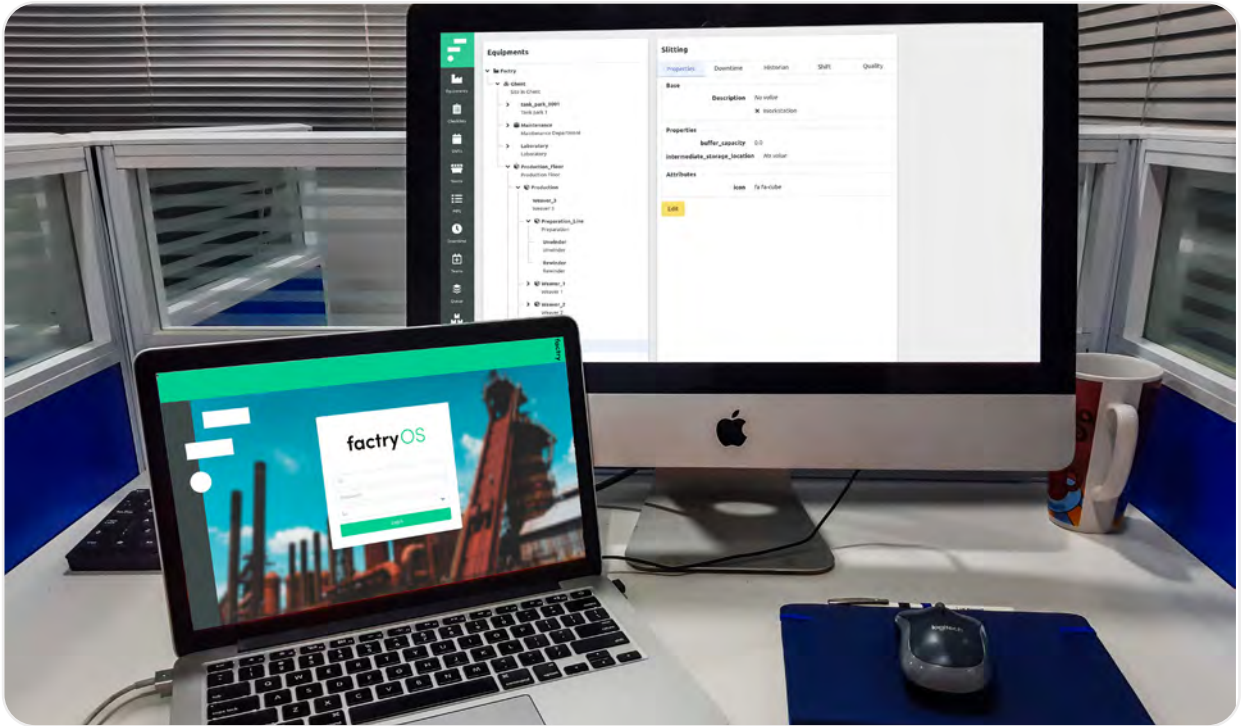


Find out more on [our website](#)



FactoryOS

At a glance



► Real-time data collection

Real-time visibility of machines & processes.

► Advanced MES functions

Take full control of production operations.

► Operator-centric interface

Designed and built with operators in mind.

► Tailored to your workflow

Don't pay for modules you won't ever use.

► Maximum configurability

Easily add collectors, machines or lines.

► Enterprise-wide scalability

Scale to multiple sites at an affordable cost.



A range of modular features

Leverage a modular MES platform with a rich suite of advanced functions, rigorously aligned with the ISA-95 standard for enterprise-control system integration.

Production Operations	Real-time Data Collection	Traceability & Genealogy	Production Tracking	BOM-based Checklists
	Recipe Management	Order Management	Resource Management	Downtime Detection
	Equipment Management	Raw Materials Management		
Visibility & Intelligence	Real-time Analytics	Role-based Dashboards	Production Reporting	Bring your own BI tool
Planning & Scheduling	Real-time Shift Calendar			
Quality Management	Digital work Instructions	Statistical Process Control	Waste Management	Defects Management



Find out more on [our website](#)

Implement Lean manufacturing

Establish a **smart manufacturing plant** with a **modern and integrated** MES solution that eradicates manual data collection, enables real-time process visibility and control, and guides the workflow of machine operators.

Say goodbye to paper processes, manual data aggregation and static reports. With a **future-proof platform** that connects OT with IT, we help you radically accelerate your journey to become a truly data-driven company.

► **Collect data automatically**

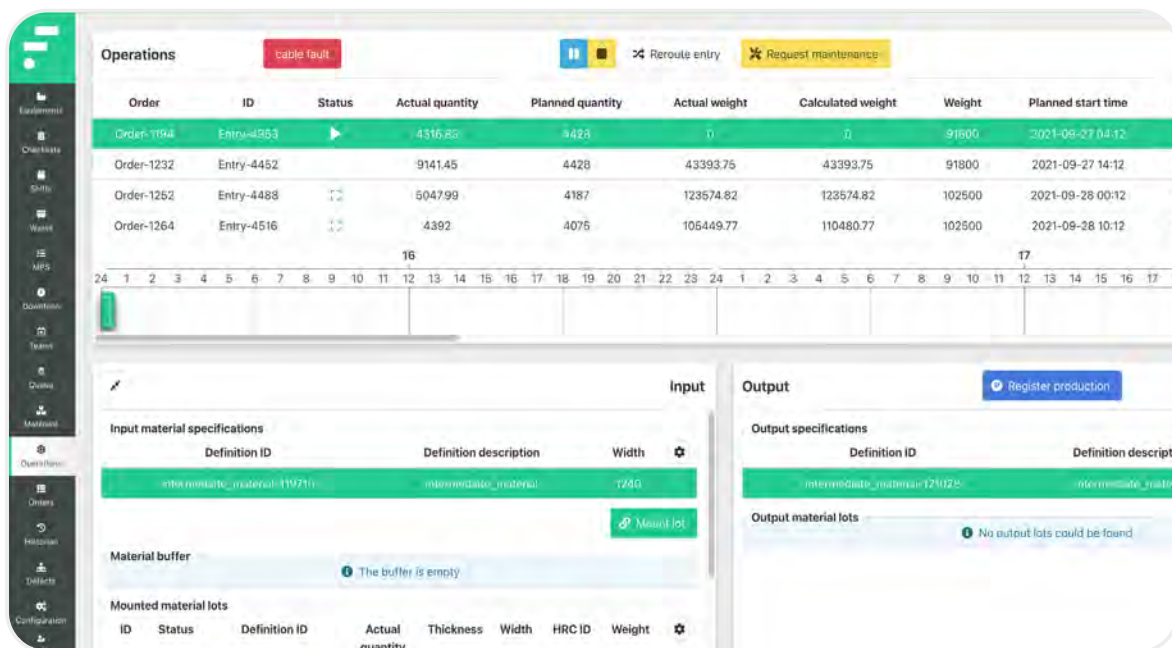
Don't waste time on manual data entry, copying scribbles or spending hours tracking down data in disconnected systems. Collect data from any source in real-time. Integrate unlimited data streams within a single IIoT platform.

► **Get real-time process control**

Track and analyse machine availability, orders, materials and energy usage in real-time. Use the MES to aggregate any type of production data, analyse the data, condense it into key figures, and visualise it in role-based dashboards.

► **Create one-click reports**

Get insights right when you need them, through one-click visual reports on plant performance, efficiency, or OEE. Create high-level reports in seconds. Streamline reporting over multiple production sites using the same KPIs.



► Uncover actionable insights

Leverage real-time and historical data to improve operational performance, OEE, yield and quality. Enable management to perform advanced calculations, and make more informed decisions based on accurate data.

► Identify and fix process issues

Find the root cause of production issues. Identify and analyse trends, patterns and bottlenecks. Use real-time and historical data to set up a continuous improvement program, and measure the impact of optimisation efforts.

► Integrate seamlessly with ERP

Synchronise with ERP, and use your own BI tool for deep business analysis. Get instant insights on profitability, efficiency, etc. in any timeframe. Find out which products or manufacturing lines are the most profitable to your business.



"For an MES to go truly paperless, it should do two things. First, everything possible on paper, should be possible digitally. This means incorporating the notion of work orders, material management, and production registration. Second, it should solve all previously identified pains, so it becomes beneficial to its users."

Yves Bourgeois - FactoryOS Product Director at Factory



Data-driven manufacturing

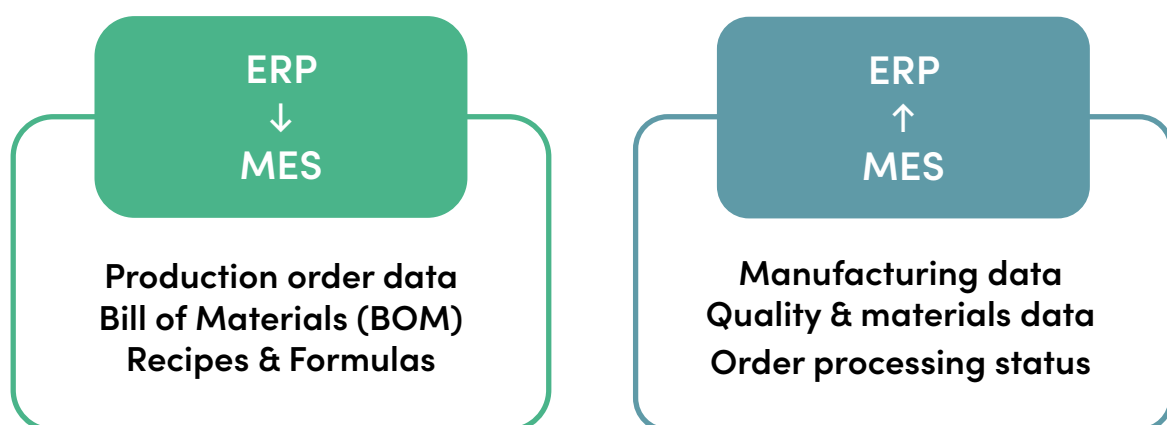
A key role for MES systems

The **Manufacturing Execution System (MES)** plays a **key role** in your transition to a data-driven manufacturing company, since it provides the data basis for the digital representation of your company's production processes.

SEAMLESS ERP-MES INTEGRATION

Horizontal and vertical data integration is the fundamental foundation for all Industry 4.0 scenarios. An MES platform allows you **to interface with** any equipment or system, integrate multiple plants, and collaborate dynamically with suppliers.

By linking production, machine, process and other data, the MES serves as a hub for data exchange between ERP and the automation level. The manufacturing process can thus be represented as a control loop between ERP and MES.



Within this control loop, the ERP system is fed with contextualised production data in a consistent way. **Integrating the data in your BI tool will allow you to make better business decisions based on accurate, real-time process data.**

ENABLE CONTINUOUS IMPROVEMENT

Enable **automatic production registration** and the **registration of quality problems** by interfacing with the automation layer through **Factry Historian**.

Due to the continuous data collection and increased visibility over the entire processing sequence of an order, the MES is also the basis for a **continuous improvement** process of operations, and **for measuring its exact results**.





What's unique about our MES platform

Tailored to your needs

While traditional MES systems are very complex, high-maintenance, and difficult to mould to your exact workflow, we offer a scalable solution that is highly flexible, easy to maintain, and tailored to your exact business needs.

No heavy CAPEX costs

By offering a Software-as-a-Service (SaaS) licensing model, and focusing on modularly designed software, we aim to move away from heavy up-front CAPEX, radically lowering the entry barrier for innovation.

Lightweight software

Enjoy worry-free system updates through a lightweight, browser-based application that runs on any device with an internet connection, and can be used on any mobile device connected to the corporate network.

Highly configurable

The MES allows for a high level of configuration, so that changes to the plant layout, for example by adding new production lines, and creating additional reasons for defects, waste and downtime can be autonomously controlled.

Operator-friendly interface

The success of new solutions goes as far as the adoption by its users. That is why we built the first truly-operator friendly MES platform, while also providing clear and transparent data insights for any other role in the company.





An MES that benefits any role in the company



1



2

- 1 **For IT Managers**
Get more peace of mind
- 2 **For Business Leaders**
Make informed decisions
- 3 **For Plant Managers**
Gain control of operations
- 4 **For Operators**
Eradicate human errors
- 5 **For Planners**
Gain visibility and control
- 6 **For R&D & Quality**
Say goodbye to manual data entry



3



4



5



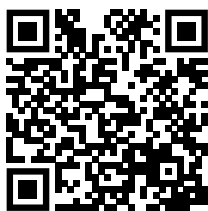
6

1

For IT managers



Establish digital transformation, without the hassle



[Book your demo](#)

GET PEACE OF MIND

Is a cascade of different IT solutions causing you a headache? Tired of manually updating hundreds of devices?

Enjoy a lot more peace of mind with a highly flexible and managed MES solution that interfaces with any industrial data source, integrates seamlessly with enterprise systems and factory automation, and runs on any device with an internet browser.



▶ **Interface with any source**

Break the walls between data silos. Built on industry standards, our MES platform allows for a unifying communication model, and guarantees global interoperability. Legacy systems can be easily connected to the IT landscape.

▶ **Lightweight & worry-free**

Focus on strategy, not IT maintenance. Lower your IT costs compared to running different systems. Sleep tight with a browser-based solution that is managed on-prem or in the cloud.

▶ **Built to security standards**

Provide deep visibility and intelligence of operations for any department through an MES that is built according to modern security best practices, that is separated from the production network, and allows for fine-grained user management.

▶ **No artificial data restrictions**

With an all-you-can-eat licensing model, including an unlimited number of ingested data, devices, machines, manufacturing steps, sensors, and users, FactoryOS takes away the artificial restrictions of traditional MES software.

▶ **Highly customisable system**

Enable your internal development team to create individual manufacturing solutions based on standard MES modules and easy-to-support IT standards such as SQL, MQTT, and OPC UA – all with extensive libraries available.

2

For Business Leaders



Spot patterns and make data-driven business decisions



[Book your demo](#)

IMPROVE THE BOTTOM LINE

Is your business still residing in Industry 3.0? Then you're probably losing profit due to suboptimal yields and avoidable waste or downtime.

Don't let inefficient processes hold your factory back from reaching its full potential. Optimise enterprise-wide processes with a flexible MES solution that is built to scale. Drive up real-time visibility of production and lower costs across the supply chain. Make better decisions based on data-driven insights.



► **Establish lean production**

Establish a lean production process with less costly waste and defects, and higher profits. Make your customers happy with shorter delivery times, and by responding more quickly to new demands, production order changes or quality issues.

► **Get one-click data insights**

Are you fed up with static reports that take hours to build? Create neatly structured reports on factory performance, efficiency, and OEE – all in a matter of clicks. Compare the performance of different production lines using the same KPIs.

► **Connect MES with ERP**

Seamlessly integrate MES with ERP, and feed your ERP with contextualised data in a consistent way. Use your BI tool for advanced business analysis. Get fine-grained insights on e.g. cost accounting, energy use, and profitability.

Instantly answer questions such as:

- Can I increase production without increasing capacity?
- Which products are the most profitable, or costly?
- Which lines have been down +10 times this month?
- Which production lines are under- or overperforming?
- How does OEE of different production lines compare?

► **Comply with regulatory rules**

Match the increased requirements for the documentation and traceability of processes or batches. Automatically log process parameters, recipes and formulas. Track and trace orders throughout the different production steps.

► **Scale cost-effectively to new sites**

Scale the MES cost-effectively over multiple production sites, and get a bird's eye view on enterprise-wide performance through a single dashboard. Share insights between sites. Speed up the implementation of new production lines.

3

For Plant Managers



**Gain full control
of manufacturing
operations**



[Book your demo](#)

REAL-TIME DATA VISIBILITY

Replace data silos with a unifying MES platform tailored to your needs. Combine systems from different vendors and sources, and leverage the data from these systems to create more efficient and profitable processes.

By combining modular features and configuring them to your needs, FactoryOS helps you create a paperless and more efficient production floor, with better communication between employees, departments, and suppliers.



► **Eradicate manual data entry**

Eliminate manual data entry and human mistakes by automatically collecting real-time process data during the production process. Get accurate data insights to improve machine uptime, production yield, and operator efficiency.

► **Gain process visibility and control**

Gain maximum visibility and control of manufacturing operations, and analyse production data in real time. Implement a lean production process with higher product quality, less unplanned downtime and waste, and shorter cycle times.

Instantly answer questions such as:

- What is the overall yield of this week's operations?
- How do teams or shifts compare to each other?
- Which product generates the most waste during production?
- Why is a machine currently down?
- What is the process efficiency when comparing product A with B?

► **Revolutionise reporting**

Gather production data from any relevant source in a unifying MES platform, combine the data to get real-time reports on plant performance, yield and availability. Calculate OEE per site, equipment type, machine or shifts.

► **Tailored to your exact needs**

Don't pay for functions you don't use. With FactoryOS, we offer you a complete and integrated MES solution tailored to your unique requirements, rigorously aligned with the ISA-95 standard for enterprise control system integration.

► **Enable better collaboration**

Through integrations with other systems, such as ERP, planning software, or lab equipment, the MES platform short-circuits different communications between departments that currently occur through phone, email or paper.

► **Enable continuous improvement**

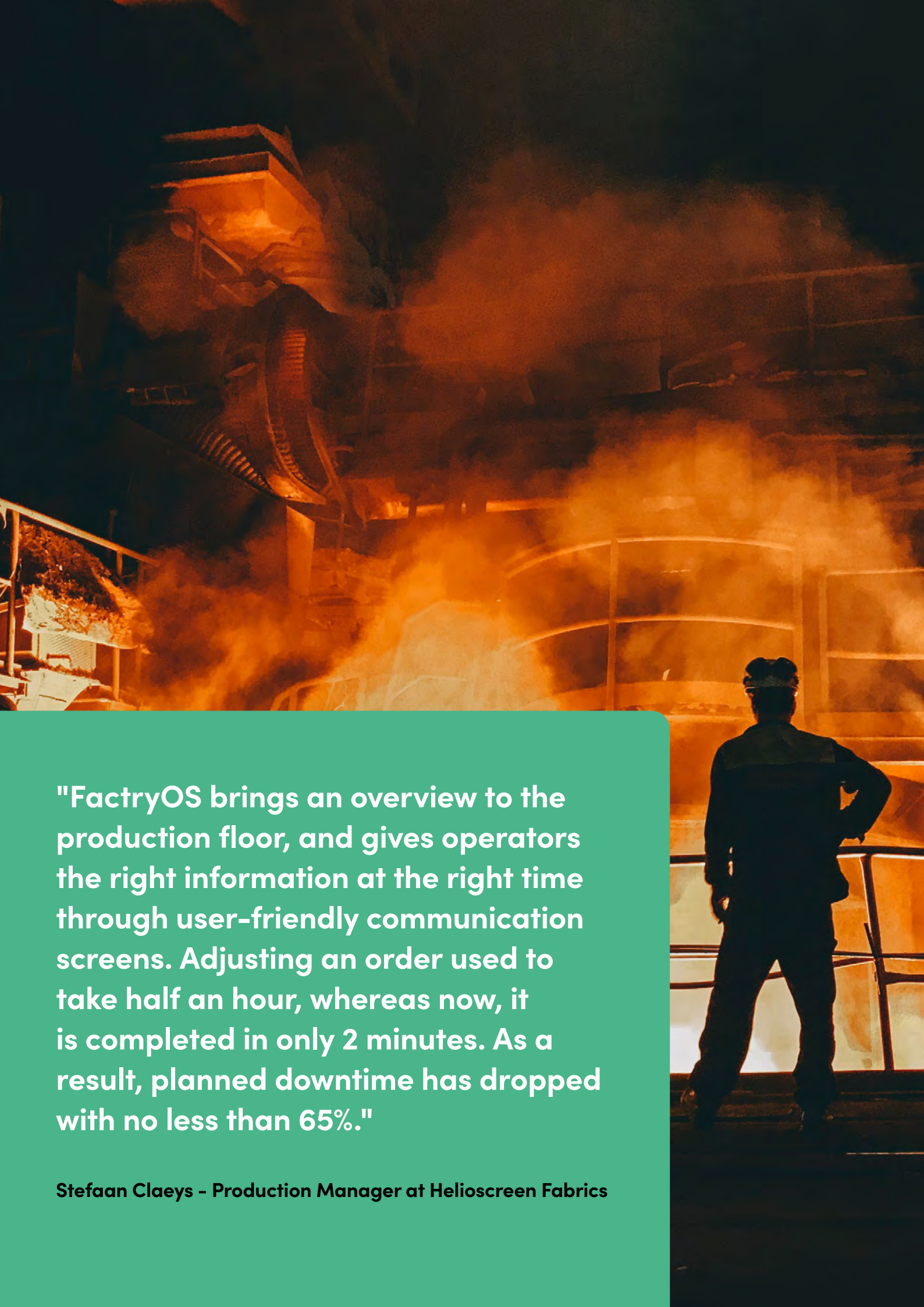
Track availability, orders, materials use, waste and energy consumption throughout the production progression. Analyse the data in real-time to identify potential process improvements, and measure the results of your efforts.

► **Highly configurable system**

Configure the system yourself, instead of spending resources on custom development. Add collectors, machines, or production lines in no time. Create custom dashboards. Integrate with any data source through open protocols.



Find out more on **our website**



"FactryOS brings an overview to the production floor, and gives operators the right information at the right time through user-friendly communication screens. Adjusting an order used to take half an hour, whereas now, it is completed in only 2 minutes. As a result, planned downtime has dropped with no less than 65%."

Stefaan Claeys - Production Manager at Helioscreen Fabrics

4

For Operators



**Eradicate costly
downtime, defects
and waste**



[Book your demo](#)

AN ERROR-FREE WORKFLOW

The success of any MES solution stands and falls with its acceptance among employees on the floor. That is why we focus on creating a user experience that matches the usability of the mobile devices they use on a daily basis.

Through an interface tailored to the specifics of their workflow, machine operators are guided in their daily tasks. Process data is automatically collected, going from yield to waste and materials usage, eradicating human errors.



▶ **Operator-friendly interface**

A user-friendly and multilingual operator interface is key to our MES solution. All modules are brought together in a single application for operators, where they are able to perform any action required at any line, in their own language.

▶ **Automated data collection**

Free machine operators from retrieving process data from a myriad of disconnected systems. Eliminate mistakes and poor data quality, analyse production stops, and increase the efficiency of the entire production process.

▶ **Defect & waste reporting**

A corrective workflow in case of quality anomalies improves the working experience of operators, as it eliminates the necessity to remember different waste and defect codes. Checklists are neatly structured and kept concise.

▶ **BOM-based work instructions**

The operator is guided to perform all manufacturing process steps in the correct sequence, at the right time, and using the correct resources and materials in accordance to the requirement specification of each customer.

▶ **Role-based dashboards**

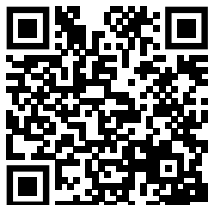
Important production parameters are presented to operators through role-based dashboards or tablets. The data allows them to compare runs, avoid lingering issues, or intervene more quickly in case they happen.

5

For Production Planners



**Plan, change and
analyse orders
in real-time**



[Book your demo](#)

GAIN VISIBILITY & CONTROL

It's hard to keep up with planned delivery times when you lack real-time insights into the progress of work orders, changeover delays, and downtime. FactoryOS enables you to track materials and products from start to finish.

Gain complete visibility and control of the production planning process, and eliminate the burden of manual data entry. Inform clients on expected delivery dates based on accurate planning data, and improve customer satisfaction.



► **Improve operator communication**

Miscommunication of production changes can lead to costly waste and scrap. Planners can be sure that any change to the production planning is directly available to operators on the floor, including up-to-date work order details.

► **No more manual data processing**

300 or 800 metres of used material makes a big difference. Don't waste time making sense of scribbles or manually copying lab results. With FactryOS, process data is collected in real time and centralised in a single platform.

► **Manage the supply chain in real time**

When production is planned on paper, production order statuses only become clear after the facts. FactryOS helps you to manage the supply chain in real time, and easily connects with your suppliers to improve WIP levels and inventory.

► **Schedule the perfect sequence**

Manually changing the sequence of orders can be very time-consuming, and usually involves burning calories. Manage and control orders digitally through a single interface. Easily plan trial runs mixed with actual production orders.

► **Plan production from anywhere**

Being able to steer production remotely has been especially useful during the COVID-19 pandemic. Work from anywhere with complete access to operational and planning data, whether it is on a laptop, smartphone or tablet.

► **Site-wide production visibility**

Relevant planning data is displayed on role-based operator screens, making the operator's tasks more predictable. An overview of all work orders in progress can be displayed through TV screens throughout the facility.

6

For R&D & Quality Engineers



**Don't waste
another minute on
manual data entry**



Book your demo

GAIN VISIBILITY & CONTROL

As an R&D or Quality Engineer, you need to keep close track of lab results, defects and yield figures. Yet, aggregating and combining several sources of information (recipe used, raw material supplier, etc.) is often a painstaking task.

With FactoryOS, engineers can easily distil all the data they need from the MES platform, going from historian automation data, to article and supplier information from ERP, and test results through the integration with lab equipment.



► **Improve the quality of data**

Manually registered production data is often unreliable, and sometimes not usable for yield reports. Stop spending hours on making corrections and doing guesswork. With FactoryOS, quality data is automatically collected in real-time.

► **Create standardised reports**

Once defined and created, structured reports are ready at the click of a button, eliminating bothersome and time consuming manual aggregation. These can be used for weekly meetings, or simply to follow up production daily.

► **Find the root cause of issues**

Collect production data from thousands of sensors every second, such as temperatures, pressures, speeds, and material usage. Investigate quality issues in detail, even of produced batches that happened months ago.

► **A single source of the truth**

When investigating quality issues, there is no single source of the truth in which the quality of each production order can be found. The MES system automatically synchronises data from e.g. the lab to R&D and vice versa.

► **Analyse waste & defects**

Because operators can report wastes and defects in a simple and structured way, it becomes possible for the Quality and R&D departments to consult a clear overview of all the different defects reported, as they were reported.

► **Auto-apply machine parameter sets**


Through integrations with other systems, such as ERP, planning software, or lab equipment, the MES platform short-circuits different communications between departments that currently occur through phone, email or paper.

► **Identify potential process improvements**

Track availability, orders, materials use, waste and energy consumption throughout the production progression. Analyse the data in real-time to identify potential process improvements, and measure the results of your efforts.



Find out more on **our website**



"I'm really happy with the MES solution Factry has delivered to us, and would definitely recommend it to other companies. It has brought us nothing but valuable data insights. Apart from real-time visibility in production operations, detailed OEE calculations are now finally possible, including per individual machine or type."

Andy Vanderpoorten - Supply Chain Manager at Copaco



System Requirements for FactoryOS server

Operating System	Linux, preferably Ubuntu LTS
CPU	4 cores
RAM	16 GB
SSD	120 GB



More Factory software

Factory Historian



factory.io/historian

Event Module



[factory.io/historian/
event-module](https://factory.io/historian/event-module)

Factory OEE



factory.io/oeo

About Factry

Empowering people with data insights



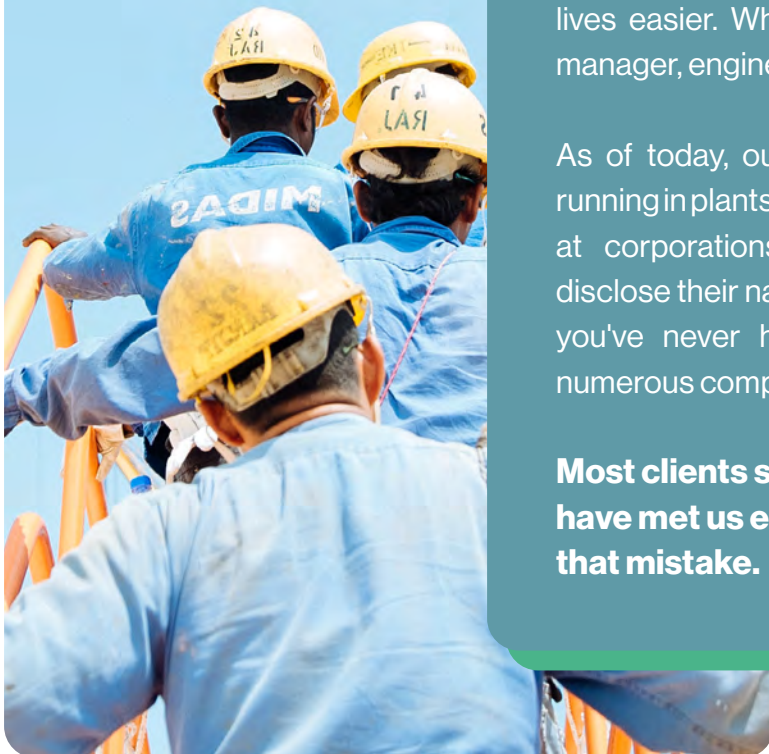
factry

Factry is a Belgian software company. Our mission is to radically simplify learning from industrial data, enabling companies to streamline their processes and improve their bottom line. To do this, we build user-focused IIoT solutions that deliver insight and oversight.

Our solutions don't just collect data and steer processes, but are built for the people that are responsible for them, with the goal of making their lives easier. Whether it is the plant manager, engineer, operator or CFO.

As of today, our IIoT solutions are running in plants around 5 continents, at corporations so big we can't disclose their names, SMEs so niche you've never heard of them, and numerous companies in between.

Most clients say they should have met us earlier. Don't make that mistake.





	Monday Jan 16	Tuesday Jan 17	Wednesday Jan 18	Thursday Jan 19
Inspection	Normal early shift Afternoon shift normal	Normal early shift Afternoon shift normal	Normal early shift Afternoon shift normal	Normal early shift Afternoon shift normal
Preparation_Line	Normal early shift Afternoon shift normal	Normal early shift Afternoon shift normal	Normal early shift Afternoon shift normal	Normal early shift Afternoon shift normal
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Reasons	Reason Trees
All categories	test_waste_reason_tree
The filter found 58 items out of 58 total.	
Hot oil coal origin - waste_waste_category Shape defects	waste_waste_reason_A Description: Surface Defects Category: waste_waste_category Surface defects
Machinery Problem - waste_waste_category Shape defects	waste_waste_reason_A4 Description: Spots Category: waste_waste_category Surface defects
Surface Defects - waste_waste_category Surface defects	
Scratches - waste_waste_category Surface defects	
Particles - waste_waste_category Surface defects	
Slivers - waste_waste_category Surface defects	
Holes - waste_waste_category Surface defects	
Spots - waste_waste_category Surface defects	
Maps - waste_waste_category Surface defects	
Slag - waste_waste_category Surface defects	
Overheat/tempered - waste_waste_category Surface defects	
Rust - waste_waste_category Surface defects	
Other surface defects - waste_waste_category Surface defects	
Shape defects - waste_waste_category Shape defects	
Crooked headtail - waste_waste_category Shape defects	
Wavy Edge - waste_waste_category Shape defects	
Other body - waste_waste_category Shape defects	
Unflat, unsmooth - waste_waste_category Shape defects	



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