Monitizer®
for green sand foundries
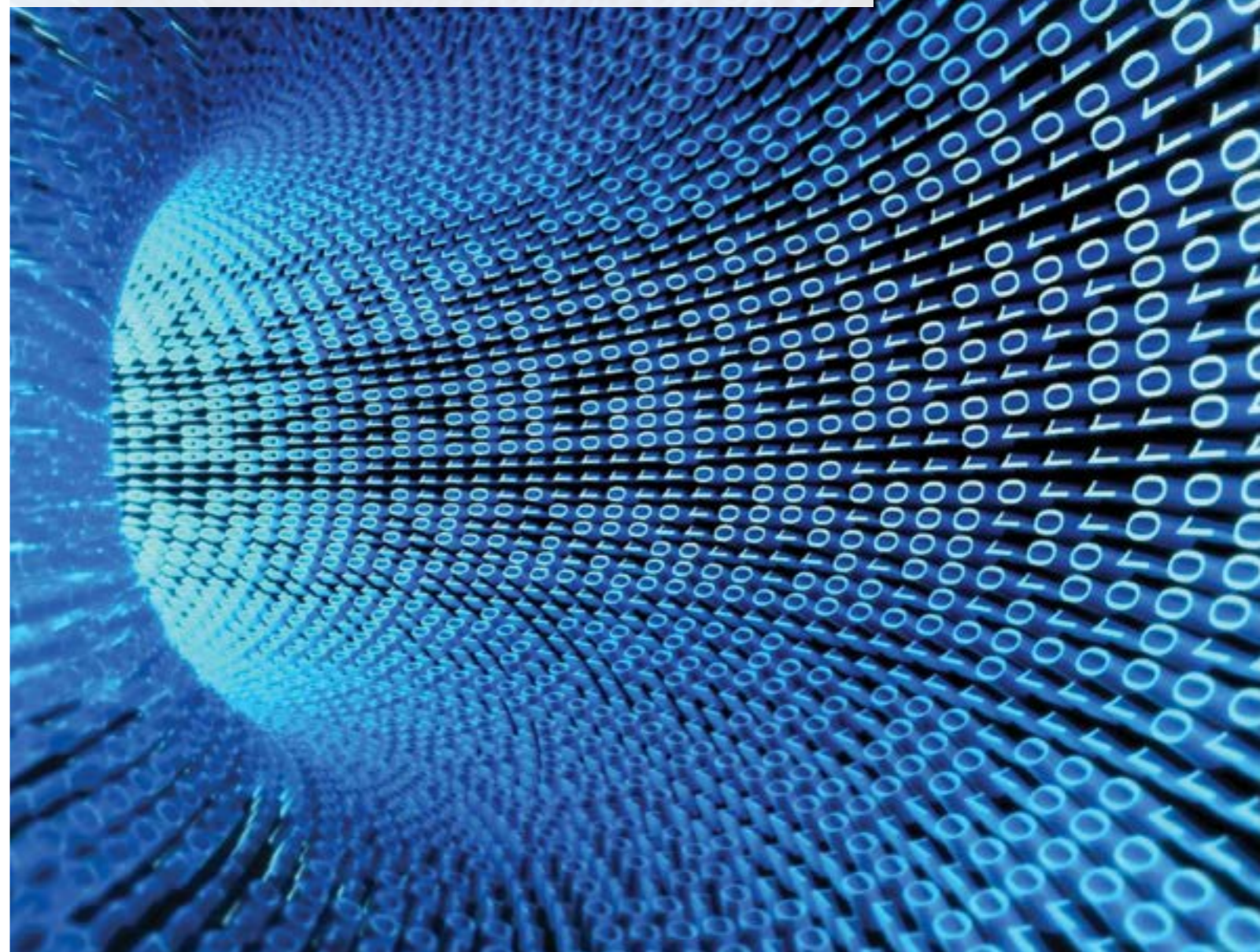
Turn data into value

DISA
A Norican Technology

DISA
A Norican Technology

www.disagroup.com

Pure digital foundry intelligence

Welcome to your digital foundry

Ambitious foundries are on a digital journey. The goal? Learning from their data to enhance operations and productivity.

DISA and Monitizer® support you every step of the way. With our flexible, scalable Industry 4.0 solution, you can unlock insights that strip out costs, defects and downtime from your process.

Monitizer's digital modules are based on decades of foundry expertise and proven to perform in the toughest environments. Backed by DISA's global support network, Monitizer helps you turn your data into value.

Go digital – at your own speed

As your digital journey evolves, Monitizer® grows along with you. You can extend its features quickly and easily to fit your needs

Start by collecting and monitoring machine data locally, then expand to a global view. Report and analyse, understand every part of your process and start improving. With Monitizer, you can make rapid, profitable digital progress.

Powerful building blocks

We split the digital foundry journey into four steps. You collect, visualise and analyse your data, and then intervene in the process to optimise it, applying what you've learned from the data.

Each step builds on the previous one, with the Monitizer platform helping you gain significant benefits at each step. Whether you are digital beginners or data experts, Monitizer® gives you the tools to make a real difference.

- Higher productivity and uptime
- Increased quality, lower scrap rates
- Greater automation, lower overall costs

Accelerate your digital journey

| Collect | Visualise | Analyse | Intervene |

Step 1: Collect

The digital foundry journey starts by collecting process data and feeding it to a central database. **Monitizer | CIM** gathers, stores and exchanges data from multiple DISA moulding lines while **Monitizer | DISCOVER** uses the NoriGate IIoT gateway to collect data from any foundry equipment anywhere in the world.

- Reduce manual labour: automated data collection and merging
- Eliminate silos: build a real-time digital view of all production, not just sub-processes
- Trustworthy information: reliable, time-stamped data

Step 2: Visualise

With Monitizer®, managers can view customised dashboards, charts and graphs that report on and visualise live and historic data – then use that insight to inform improvements and instant actions.

Monitizer | DISCOVER can collect, combine and display data from any machine – DISA or not – across multiple global sites.

- Instant insight: learn how to improve production, compare site performance
- Transparent production: monitor and improve equipment utilization
- Efficient troubleshooting: fix problems quickly, prevent stoppages and defects
- Instant notifications: monitor your equipment 24/7 and get instant notifications in case of alarms or emergencies

Step 3: Analyse

Compare real-time and historical data to pinpoint process bottlenecks or problems like poor quality or downtime, and find their root causes.

Monitizer | PRESCRIBE employs Artificial Intelligence (AI) to automate this analysis, optimising the whole process and delivering instant recommendations.

- Expert analysis every time
- Consider all parameters in all sub-processes, handle unlimited complexity

Step 4: Intervene

From the start, Monitizer® helps you learn from your data and take action to improve process performance. That might be a simple manual machine adjustment or a major change to materials.

Monitizer | PRESCRIBE guides your intervention with real-time recommendations that dynamically keep your process on track.

- Detailed instructions for adjusting and optimising your process
- Constant automatic optimisation as conditions change
- Run cells and even entire lines automatically

Monitizer | CIM – Connect your DISA equipment

The digital foundation for your foundry

Monitizer | CIM is an on-premise solution for foundry data collection, data visualisation and machine automation. Delivering a synchronised, reliable digital view of all your DISA equipment, this well-proven Industry 4.0 platform helps you increase uptime, reduce scrap and optimise production. Working in your local language, it is the perfect digital foundation for your foundry.

Get the basics right

Monitizer | CIM's BASIC package turn your digital plans into reality. BASIC forms the heart of your foundry's data-driven infrastructure.

- No more data silos: one trustworthy, time-stamped, on-premise database
- Recipe management: apply the correct settings for every pattern for stable and optimum production
- Easy reporting: extract, process and share important information
- Dashboards: monitor live production data via standard or user-customised screens
- File Hub: access and share vital documents
- Account control: set individual user permissions, access rights and rules

Take control of your foundry's performance

You can quickly extend Monitizer | CIM BASIC's functionality with a range of optional packages and machine interfaces.

Monitizer | CIM MOULDING

Identify the bottlenecks in your process with automated, detailed performance reports on moulding and pouring productivity and uptime.

- Remotely monitor operator panel information from DISA moulding machines
- Improve troubleshooting with a remote view of machine alarm history and its current state (DISAMATIC D3 only)

Monitizer | CIM CASTING

Monitor and analyse every casting you produce to optimise line performance and quality.

- Graphic overview of each mould on the cooling line, with colour-coded casting types
- View current and historical casting data for every mould produced and poured
- Compare mould pattern recipes with actual production parameters

"Monitizer | CIM enhances stable and simple operation of your DISA equipment by collecting and exchanging data in real time."

Kasper Madsen, Product Manager Digital Solutions, DISA Industries A/S

Monitizer | CIM SERVICE

With this daily task list, you can identify, schedule and carry out preventative maintenance – keeping your moulding machines operating in peak condition.

- Vital servicing made simple
- Tailor maintenance lists to suit your foundry and equipment
- Automatically trigger service tasks by number of moulds produced or total production time

Monitizer | CIM PERFORMANCE

Record and analyse uptime and productivity data for moulding machines and pouring units.

- Understand where to make changes to your process
- Increase casting output

Monitizer | CIM Machine Interfaces

Machine interfaces add digital communications to vital equipment. They enable remote control, data collection and, through machine-to-machine linking, sophisticated process automation and synchronisation. For example, automatic pouring control based on integration with DISA moulding machines.

Interfaces are available for:

- pouring unit
- casting sorting
- cooling drum
- in-mould cooling time
- vibration conveyer

Monitizer | CIM Enhancement

Enhancement modules add powerful extra functions that solve real foundry problems.

- Store the optimum parameters for each pattern directly from the operator panel.
- Ensure machines always run with optimum parameters

Existing CIM user? It pays to upgrade

We can help you quickly convert legacy CIM modules to Monitizer | CIM's next-generation Industry 4.0 platform.

Upgrade to enjoy advances like:

- new browser-based user interface with multiple language support
- advanced customised dashboards for easy data visualisation
- new robust and modern hardware
- new operating system (Windows 10) with enhanced built-in security, performance and stability
- compatibility with the Monitizer | GLOBAL cloud solution

Monitizer│DISCOVER - Full process transparency

A complete view of your operations

Monitizer│DISCOVER gathers, stores and visualises data from any machine or sensor in your foundry. This Industry 4.0 cloud solution brings all your foundry data together for a real-time digital picture of worldwide operations.

Access your foundry data from anywhere, any time. Compare different sites' performance and spot where to make improvements. Monitor current production and be alerted to emerging problems – then intervene to solve them.

- Software-as-a-Service cloud application for rapid deployment, lower initial investment
- Rock-solid security and resilience
- Scalable, economical cloud storage and processing power
- No IT infrastructure maintenance
- Customise access for each user

Collect and process data

DISA's NoriGate IIoT gateway collects, timestamps and encrypts machine and sensor data before sending it to the central NoricanHub cloud database. There it is standardised and processed, ready for visualisation and analysis.

- Process data to calculate specific KPIs
- Easy data export and reporting

Visualise information, receive alerts

Via a simple, browser-based interface, Monitizer│DISCOVER displays reliable historical and live process information. Remote site supervision becomes possible, allowing early intervention to prevent stoppages or low quality.

- Create personalised dashboards
- Rapid, accurate root cause investigation
- Receive alerts and notifications if process is out of tolerance
- Alerts sent to relevant personnel via email or mobile app

A super-secure cloud platform

Relied on by most modern businesses, public cloud hosting offers far stronger cybersecurity than most in-house systems. Security breaches are exceptionally rare.

DISA and hosting partner Amazon Web Services specify:

- end-to-end, multi-layer data encryption
- one-way data flow from machine sensor to cloud database – tested and approved by Germany's TÜV
- custom high-security servers, software and network equipment
- impregnable physical security at data centres
- extensive enterprise security certifications, with regular audits

For foundries that want to fully profit from Industry 4.0, the high performance public cloud is the smart – and safe – choice.

Monitizer│PRESCRIBE - Optimise your whole foundry

Full line optimisation

Manual analysis can't cope with the complex process interactions across an entire casting process, especially in real time. Artificial Intelligence (AI) conquers that complexity.

Monitizer│PRESCRIBE harnesses the power of AI and cloud computing to optimise your entire foundry process. Production-proven in a green sand foundry environment, it combines DISA's deep foundry knowledge with expertise from our exclusive industrial AI partner, DataProphet.

This AI-as-a-service tool is quick and simple to deploy, with rapid time to value. Monitizer│PRESCRIBE is a huge step forward in the digital journey, delivering precise real-time control of your line that significantly reduces scrap and increases profit.

Profitable, zero-defect manufacturing...

Monitizer│PRESCRIBE automated analysis links quality results to process parameters, learning the optimal machine and material settings for every part of your process – and every casting. This Industry 4.0 Expert Execution System uses that knowledge to suggest the correct machine settings for every situation – before defects occur. With your production history at its fingertips, Monitizer│PRESCRIBE absorbs the wisdom of your best engineers to become the most reliable expert in your foundry.

- Stable, high quality, high speed production with predictable capacity
- Rank the parameters that most influence defects
- Operators receive real-time setting recommendations and process information that keep quality on track
- Pinpoint the complex root causes at the heart of most process problems
- Minimum defects, scrap rates and downtime

...with low risk and rapid results

Monitizer│PRESCRIBE delivers real results from process optimization extremely rapidly. It's true digital transformation, paving the way for your foundry to operate autonomously in future. Because it's a service, there is:

- simple access, straightforward deployment
- no new hardware
- no need to employ data scientists
- successful previous implementations to learn from
- results within weeks – not months or years

All you need to begin? Your data.

"Our AI technology has helped a foundry in South Africa cut defect rates in grey iron engine block castings by 50% in the first month. For the first time ever, they achieved zero external defects on all shipped castings and now save over $100k every month."

Frans Cronje, CEO, DataProphet