

The background of the advertisement is a dark, industrial scene at night, featuring a complex steel structure illuminated by yellow lights. Overlaid on this scene are various digital and technical elements, including glowing green circuit patterns, data tables, and abstract geometric shapes. The overall aesthetic is futuristic and high-tech.

MIDREX

Digitalization

WE DON'T FOLLOW
THE FUTURE OF STEEL
WE CREATE IT

Digital Intelligence for the Next Era of Ironmaking

Midrex Digitalization injects decades of MIDREX® Process expertise into advanced systems to enable smarter and faster decisions in the control room

This integration strengthens daily operation by improving control stability and reducing the likelihood of unplanned interruptions.

The Evolution of Direct Reduction

Digitalization integrates plant data, process models and embedded Midrex expertise into a unified performance framework.

Structured around four innovation pillars and delivered through our core solutions, **Midrex Digitalization** connects data from instruments, sensors and digital systems and turns it into actionable intelligence.

This intelligence supports smart plant control, automation and faster decision-making, on site and remotely.

The result is measurable performance improvement, including higher throughput, more stable quality, fewer unplanned outages and reduced energy use.

Four Innovation Pillars



**PLANT
IMPROVEMENT**



**PLANT
AUTOMATION**



**PLANT
OPTIMIZATION**



**PLANT
DIGITALIZATION**



Next-Generation Solutions

**OPERATOR TRAINING
SIMULATION (OTS)**



**REMOTE CONNECTIVITY
& REMOTE PROFESSIONAL
SERVICES (RPS)**



**DRIPAX & DRIPAX
EXPERT SYSTEM**

4

The Pillars of Innovation

The foundation of Midrex Digitalization

Midrex Digitalization is built on four tightly integrated innovation pillars. Together, they prepare the plant, embed proven process intelligence, unlock performance and support faster, better-informed decisions.



PLANT IMPROVEMENT

Prepare the plant for a digital future

Strengthens instruments, sensors and field devices so data is reliable, safety is enhanced and the plant is ready for advanced automation and optimization.

PLANT AUTOMATION

Embed proven MIDREX® process intelligence

Builds trusted Midrex logic into start-up, shutdown and control sequences, reducing operator workload while enabling safer, more consistent and repeatable operation.



PLANT OPTIMIZATION

Turn data into competitive performance

Uses advanced controls and analytics to reduce variability, prevent unplanned downtime and extract more value from assets, energy and materials.

PLANT DIGITALIZATION

Create a shared, real-time view of the plant

Connects people, data and decisions, through a shared, real-time view of plant performance. This enables faster diagnosis and response, on site and remotely.



Next-Generation Solutions



Optimizing Plant Performance Through Embedded Intelligence

Midrex Digitalization Solutions support safer operation, higher performance and long-term operational resilience. They work together to train teams, stabilize operation and continuously improve performance.

OPERATOR TRAINING SIMULATION (OTS)

A Digital Twin of your plant for safer & more efficient training.




REMOTE CONNECTIVITY & REMOTE PROFESSIONAL SERVICES (RPS)

A shared, secure view of live plant data enabling continuous performance oversight and faster support.



DRIPAX & DRIPAX EXPERT SYSTEM

Next-generation monitoring, advanced control and expert systems designed specifically for Midrex DR Plants.



Run closer to the ideal plant, every day.

Operator Training Simulation (OTS)

Immersive Digital Training for Operational Excellence

Operator Training Simulation uses a high-fidelity digital twin of the plant to create a realistic, risk-free environment where operators can build confidence and refine how they run the process.

Teams can experience normal, abnormal and emergency scenarios in a virtual setting that behaves like the real plant, without putting people, assets or production at risk.

This allows operators to build confidence and muscle memory before entering high-risk situations, providing a safe space to test procedures, explore scenarios and align teams without putting people, assets or production at risk.

SAFER OPERATIONS:

Operators can rehearse scenarios, failures, conditions and emergencies without exposure to risk.

FASTER, SMOOTHER START-UP AND SHUTDOWN:

Teams practice full start-up and shutdown sequences, so when it happens for real, they already know the steps to take.

BETTER HANDLING OF RARE BUT CRITICAL EVENTS:

Abnormal scenarios that might only happen once every few years can be simulated repeatedly, ensuring operators are ready when they do occur.

PREDICTIVE MAINTENANCE AWARENESS:

Trainees can see how small changes in trends indicate emerging problems, supporting a predictive mindset in day-to-day operations.

LOWER TRAINING COST AND DISRUPTION:

New hires and cross-trained staff can be brought up to speed without taking the real plant offline or tying up production resources.



“The power of Digitalization allows us to apply Midrex’s deep process expertise with greater focus and impact, driving higher performance across Midrex Plants.”

KC WOODY
PRESIDENT & CEO,
MIDREX TECHNOLOGIES, INC.

Remote Connectivity & Remote Professional Services (RPS)

A shared, real-time operational view for faster insight and rapid action

Remote Connectivity and RPS give Midrex and our partners a shared, real-time view of the plant. Midrex experts can monitor, support and guide without needing to be on site, using secure connectivity, advanced sensors and data feeds. Rather than waiting for issues to become critical, RPS enables continuous oversight of performance and equipment health. This helps teams act earlier, not after an upset.

CONTINUOUS INSIGHT INTO PLANT HEALTH:

Real-time data on temperature, pressure, flows, vibrations and more provides an always-on picture of how the plant is running.

PREDICTIVE MAINTENANCE SUPPORT:

Midrex and plant teams can spot early warning signs and schedule maintenance before failures cause unplanned downtime.

IMPROVED SAFETY:

Remote detection of abnormal conditions triggers quicker responses and reduces the need for emergency field checks.

FASTER PROBLEM RESOLUTION:

Experts can connect remotely, review live and historical data, and help local teams diagnose and resolve issues without travel delays.

REDUCED SITE VISITS AND ASSOCIATED COSTS:

Many interventions that used to require an on-site visit can now be handled remotely, saving time and cost while still improving reliability.



DRIpax & DRIpax Expert System

A predictive control system to support or automate your decision-making

DRIpax monitoring and control system is designed to identify emerging conditions in real time and guide corrective action before performance is impacted.

The **DRIpax advanced control and expert system** layer is built specifically for Midrex DR Plants. It uses plant data, process models and embedded Midrex expertise to help the control system run closer to optimal conditions, safely, efficiently and consistently.

Instead of operators manually tuning based on experience alone, DRIpax supports or automates decisions, while keeping operators informed and in control. It stabilizes the process, reduces variability and helps balance throughput, energy use and quality.



HIGHER AND MORE STABLE PERFORMANCE:

Advanced control strategies reduce swings in key process variables, supporting higher throughput.

INCREASED RELIABILITY:

Better control means fewer trips and upsets, less stress on equipment and more predictable operation over time.

LOWER OPERATING COST:

Optimized use of energy and consumables reduces specific consumption and waste, improving overall cost per tonne.

DATA-DRIVEN DECISIONS IN THE CONTROL ROOM:

Operators see recommendations and insights based on real-time data and proven Midrex logic, strengthening decisions on every shift.

PLATFORM FOR FUTURE AI AND ANALYTICS:

As analytics and AI capabilities evolve, DRIpax provides a structured way to integrate new optimization logic into existing plant control.

The background of the advertisement is a night-time photograph of a large industrial facility, likely a steel mill, with its complex metal structures and walkways illuminated by warm yellow lights. Overlaid on this image are various digital and technical elements: glowing green lines and grids, a central graphic of a microchip with circuit traces, and several semi-transparent panels containing code or data. The overall aesthetic is one of high-tech industrial automation.

MIDREX

www.midrex.com

See more.

Act faster.

Operate smarter.