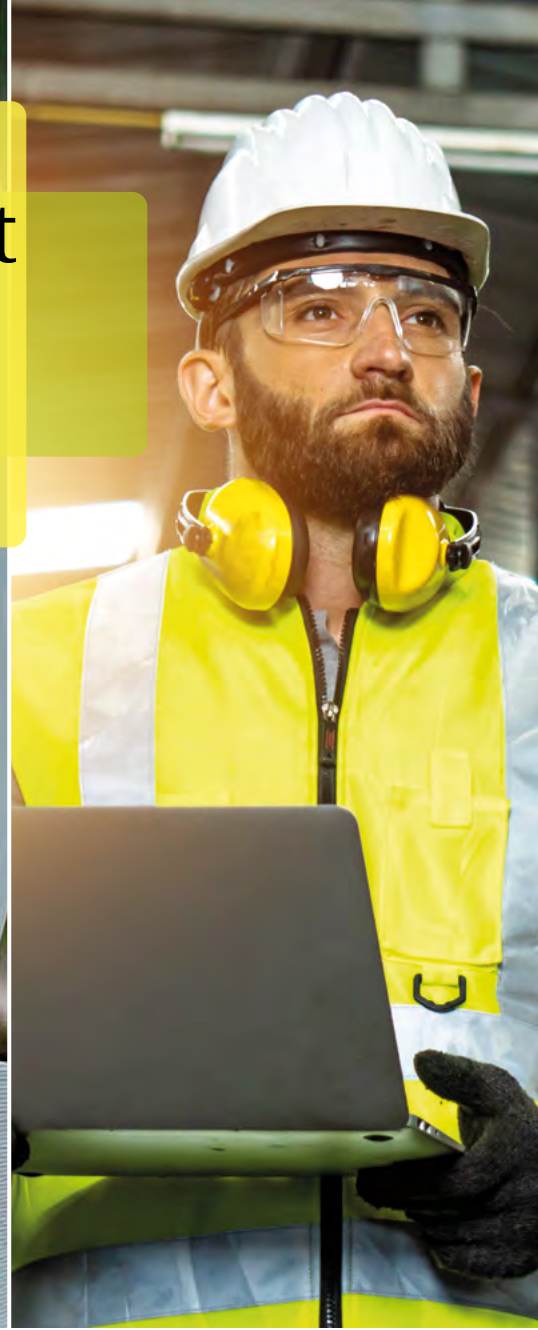


# Production Management Solutions Today for Generations to Come



PSI 

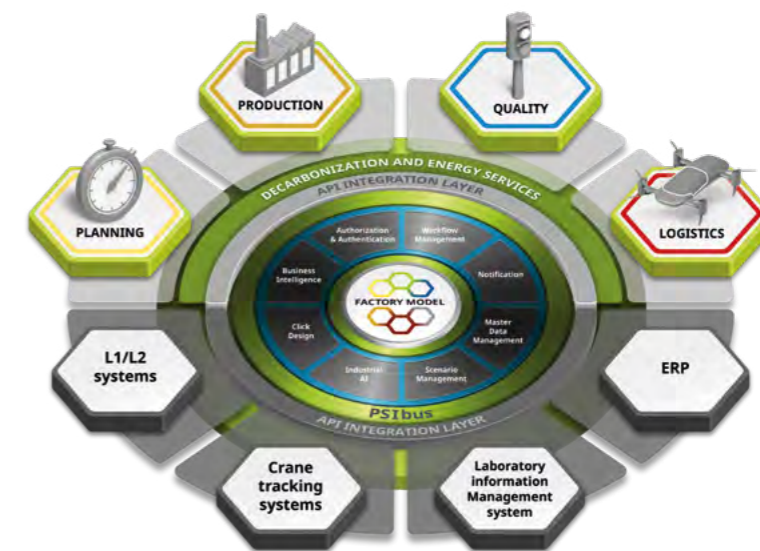
PSI - Software Excellence for Steel & Aluminum Producers

# Discover How Our Production Management Solutions Can Support Your Path to Digitalization and Decarbonization

Ensure your Competitive Edge

## Production Management Solutions for the Metals Industry

PSI is the leading provider of innovative production management software for the metals industry. We enable our customers to achieve horizontal and vertical integration of their business processes, while boosting productivity throughout the entire production chain. To support all processes such as planning, production, quality, and logistics, the PSImetals Service Platform offers sustainable and highly integrated solutions. It combines the latest industry developments in digitalization and decarbonization to provide the best management solutions for generations to come.

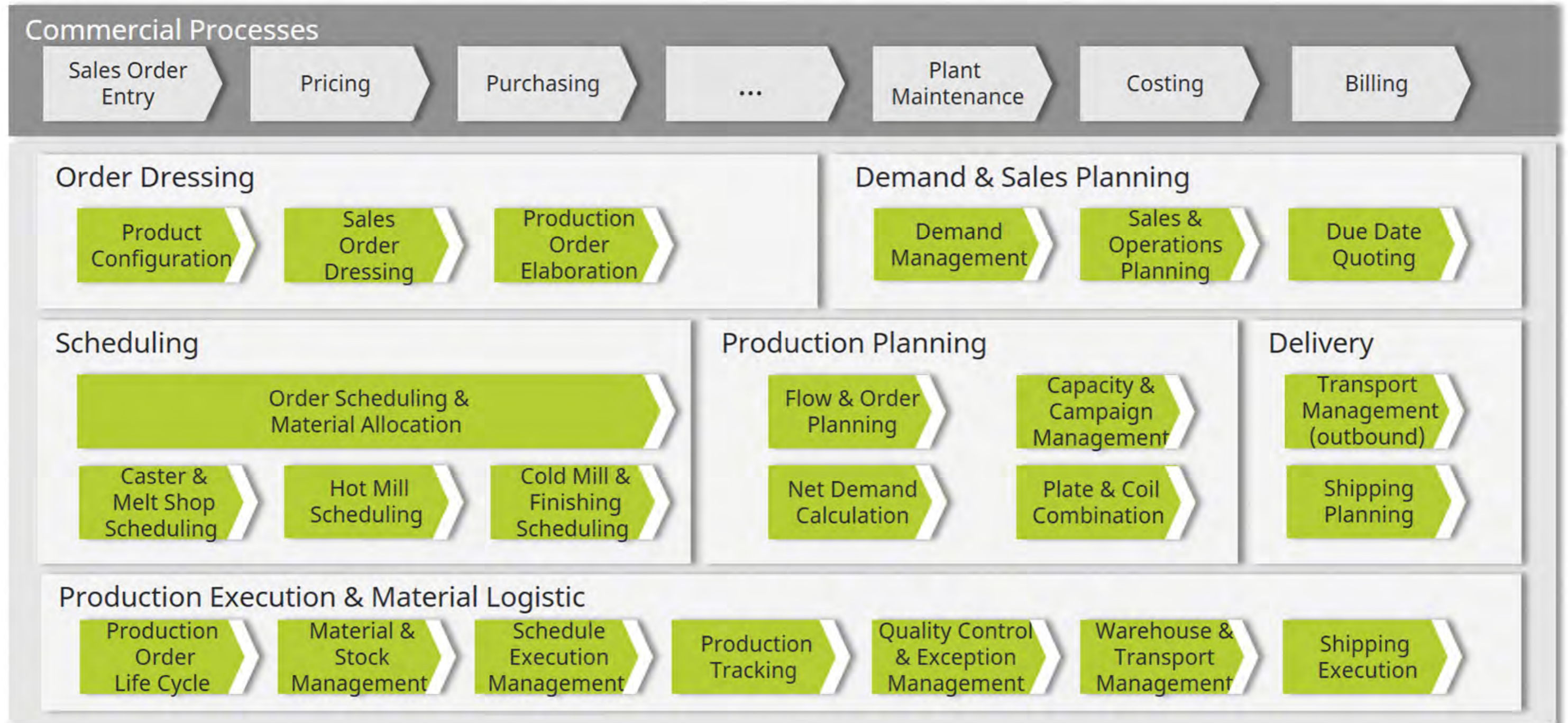


► PSImetals SERVICE PLATFORM: INTEGRATED MODULES & INTEGRATIVE SOLUTION

### PSImetals combines within one Service Platform:

- + Supply Chain Management
- + Advanced Planning & Scheduling
- + Manufacturing Execution System including Order Dressing and Quality Control

# PSImetals Software Offers Comprehensive Support for End-to-End Processes in the Metals Industry to Ensure a Competitive Edge



At a Glance

# PSImetals Supports all Processes of the Metals Industry



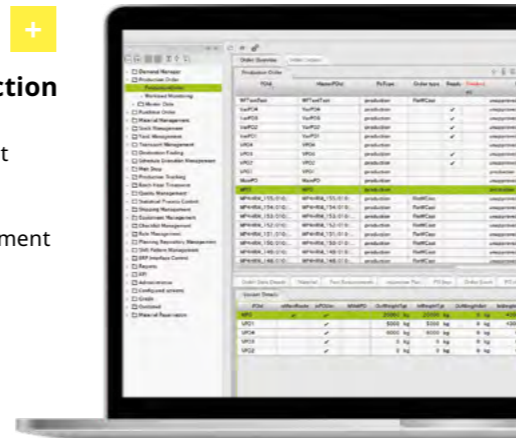
## PSImetals Planning

- + Demand & Sales Planning
- + Flow & Order Planning
- + Material Planning
- + Order & Line Scheduling
- + Analysis & Plan Assessment



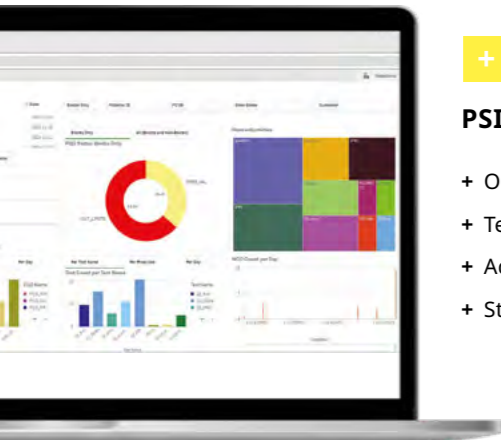
## PSImetals Production

- + Material & Yard Management
- + Production Order Lifecycle
- + Schedule Execution Management
- + Production Tracking



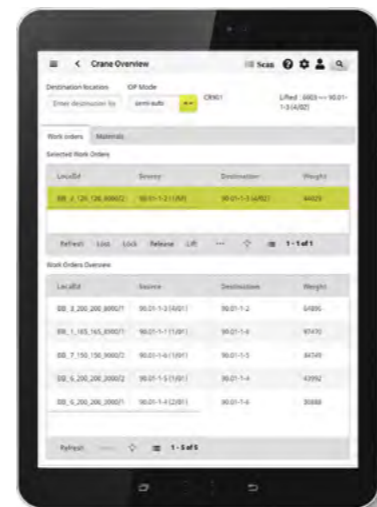
## PSImetals Quality

- + Order Dressing
- + Test Management and Quality Control
- + Advanced Quality Evaluation & Analytics
- + Statistical Process Control (SPC)



## PSImetals Logistics

- + Warehouse & Yard Management
- + Transport Order Management
- + Storage & Transport Optimization
- + Load Building & Execution



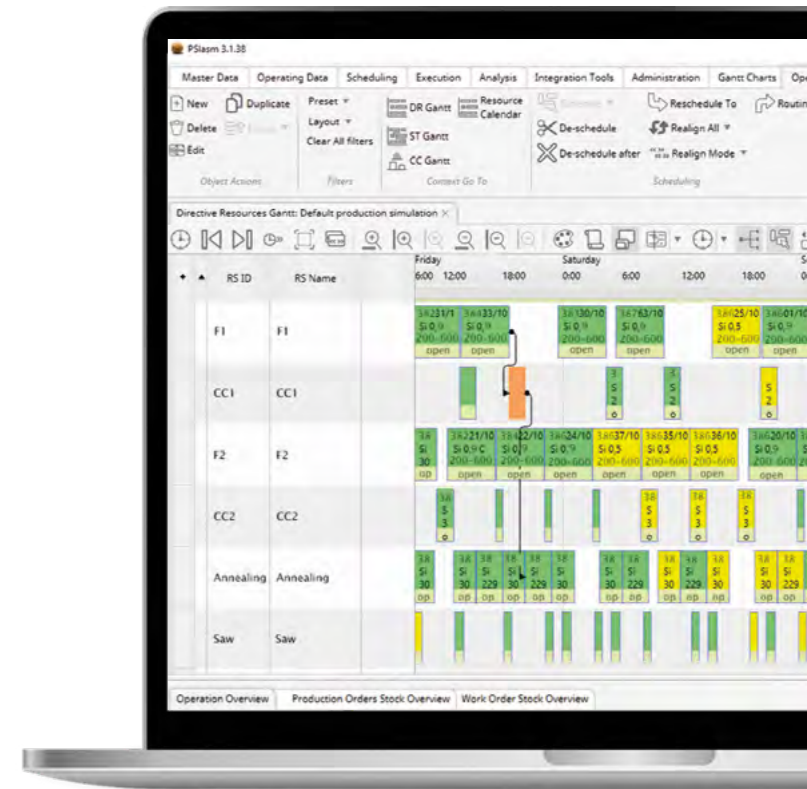
PSImetals Planning

# Adaptive Planning and Reactive Scheduling Across all Supply Chains

Good plans should align with business objectives, but most importantly, they should be actionable. From metal ore processing to shipping, PSImetals Planning uses specialized data and optimization models to generate real-time plans and schedules, integrate them into production, and optimize material flow and energy resources. It supports multiple demand fulfilment and inventory models, aligning stakeholders through scenario management and key performance indicator monitoring, which enhances decision-making and efficiency.

## Key facts & benefits of PSImetals Planning:

- + **Enhanced operational efficiency:** Reduced supply costs, better make-or-buy decisions, increased yield, optimized load balancing, and improved equipment throughput and quality through efficient scheduling
- + **Optimized inventory management:** Optimal work-in-progress (WIP) during downtimes, better stock rotation, improved replenishment, enhanced service levels, improved small order combinations and usage rate of WIP material
- + **Increased service efficiency:** Improved demand forecast management, due date reliability, urgent order tracking, raw material visibility, and capacity allocation priorities across planning layers
- + **Improved overall planning process:** Automated KPI-driven planning integrated across all stages, improves monitoring, allows fast simulations, and centralizes planning rules with scenario benchmarking and comparison reports



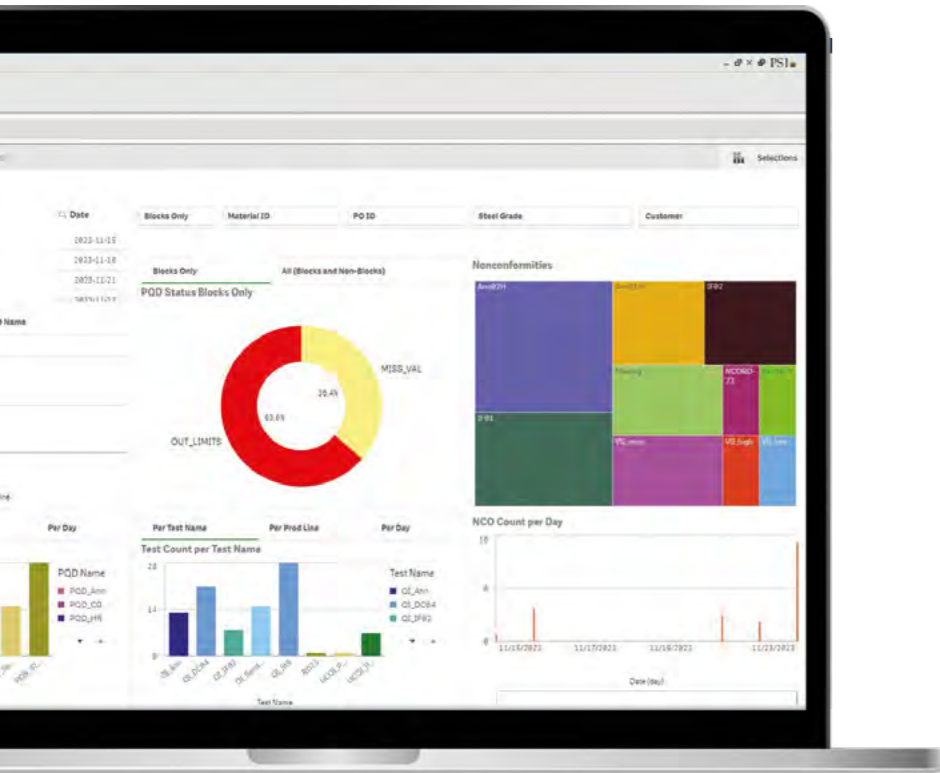
▶ PSImetals PLANNING: SMART PLANS FOR SUSTAINABLE METALS PRODUCTION

# Process Insights and Fast Reactions for Zero Downgrades

Quality impacts yield, sales, and market positioning, making it crucial in metals production. PSImetals Quality supports a zero-defect strategy through closed-loop quality control, ensuring process insights, quick responses, and transparent execution. Quality data is collected from different sources along the production route and evaluated based on product and process knowledge, enabling predictive quality control.

## Key facts & benefits of PSImetals Quality:

- + **Optimize operation:** PSImetals plans and instructs all necessary quality operations, from testing and sampling to material release and nonconformity management
- + **Monitor production:** PSImetals collects and structures all quality data to provide fast process insights along the entire production route
- + **Achieve quality goals:** PSImetals enables the translation of knowledge into sustainable actions



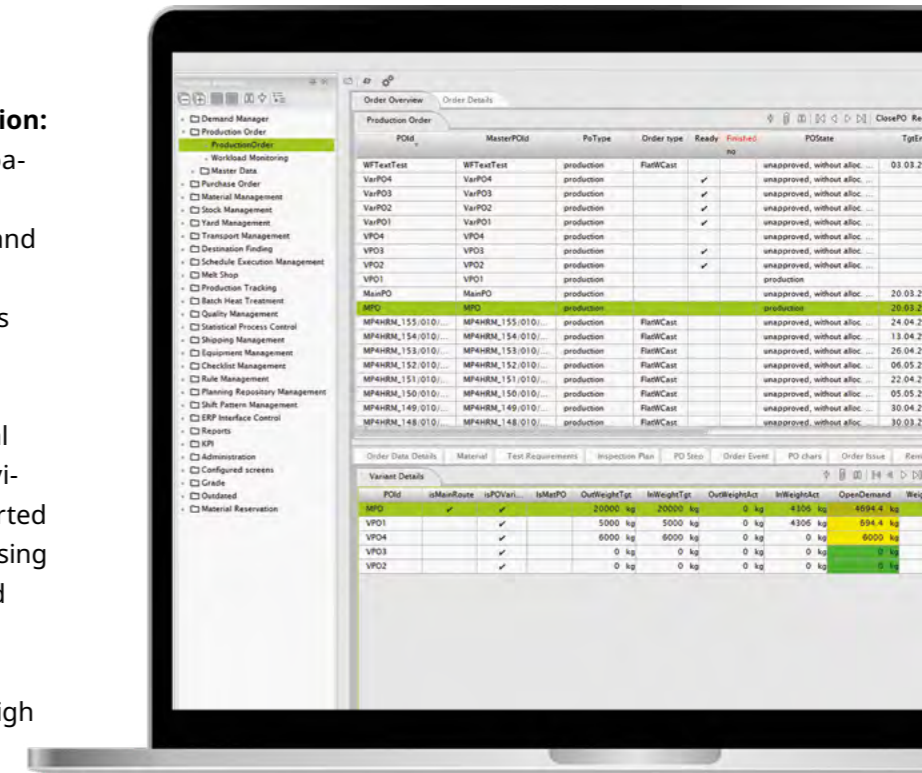
▶ PSImetals QUALITY: PLANNING, CONTROLLING AND ACHIEVING QUALITY GOALS

# Production Management From the Melt Shop to Market

PSImetals Production provides transparency across the entire process chain with consistent process status and history information. Specialized in the metals industry, it helps producers manage their production and business processes efficiently, and serves as a seamless and standardized integration from process control to Enterprise Resource Planning.

## Key facts & benefits of PSImetals Production:

- + **Seamless and standardized integration:** PSImetals Production provides transparency across the entire process chain, from melting operations to shipping, and integrates planning and production processes with standardized interfaces
- + **Single source of truth:** PSImetals Production ensures continuous material genealogy and production history, providing a basis for decision-making supported by process diagrams and dashboards using PSImetals Plant Monitor and Embedded Business Intelligence
- + **Highly configurable user interface:** High configurability and intuitive interfaces, optimized for daily tasks in metals production, with PSIweb framework for mobile applications



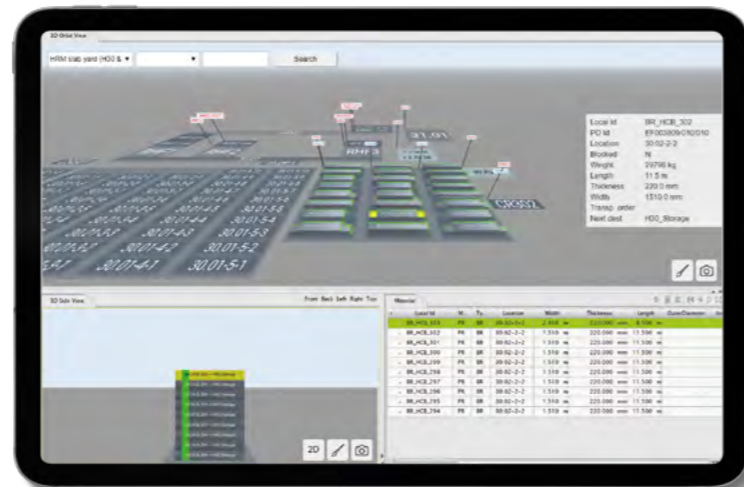
▶ PSImetals PRODUCTION: MANAGE AND TRACK YOUR METALS PRODUCTION

# Transparency, Efficiency and Automation for Metals Producers

PSImetals Logistics optimizes product stocks, utilizes warehouse capacities and optimizes internal transports across production facilities. It decides on optimal transport use, reducing costs and increasing throughput. Whether manual or automated, it manages various warehouse and transport processes for slabs, tubes, plates, coils and more, with state-of-the-art efficiency.

## Key facts & benefits of PSImetals Logistics:

- Specific for the metals industry:** With 40+ years of experience in metals logistics, our system offers solutions for warehouses, yards, and transport needs like stacking plates, slabs, coils and more
- Standalone or fully integrated:** Considering schedules, production and quality data to find the best material location, which minimizes movement and prioritize transports
- Technology:** Standard interfaces for location tracking systems (e.g. Radar Systems, GPS). Full access of all services by mobile device Apps with PSIweb.
- 2D or 3D visualization:** Our software offers high configuration and intuitive user interfaces with 2D and 3D visualization, optimized for daily tasks in steel and aluminum production



▶ PSImetals LOGISTICS: OPTIMIZE WAREHOUSE AND TRANSPORT MANAGEMENT

# Service Platform - Discover New Possibilities of Digitalization

PSI is the leading provider of innovative production management software solutions for the metals industry, combining supply chain management, advanced planning & scheduling and a manufacturing execution system within one PSImetals Service Platform. PSImetals Service Platform is based on the PSI Java Framework and forms a foundation for the architectural approach of Self-Contained Systems. To support all processes such as planning, production, quality, and logistics, it allows highly integrated solutions not only from PSI applications, but also third party services.

## Key facts & benefits of PSImetals Service Platform:

- Strategy & mission:** Increase the competitiveness of metals producers by optimizing their production processes
- Best solution for core business processes:** Production, Planning, Quality and Logistics
- Leadership & support:** Global and Local
- Niche:** Metals Specific



# Maximize Your Production Data Value With the Power of AI

PSImetals offers features powered by PSIqualicision AI for the ongoing transformation of metals production towards decarbonization and smart energy management. An example is the Online Heat Scheduler which optimizes production in hybrid (electric arc furnace + basic oxygen furnace) steel plants by combining real-time monitoring and control with KPI-driven optimization. In the area of quality, PSImetals empowers the use of various AI technologies like Machine Learning and PSI Deep Qualicision in order to perform online predictive and prescriptive quality control. Nonconformities in finished products are predicted at an early production stage, and downstream, material-specific prescriptions are proposed in order to minimize the risk of rework and downgrade.

## Predictive and Prescriptive Models

- + Detect and react to defects in advance
- + Improve quality of final products
- + Self-tune quality control processes



▶ PSImetals WITH INTEGRATED QUALICISION AI

## PSImetals Online Heat Scheduler

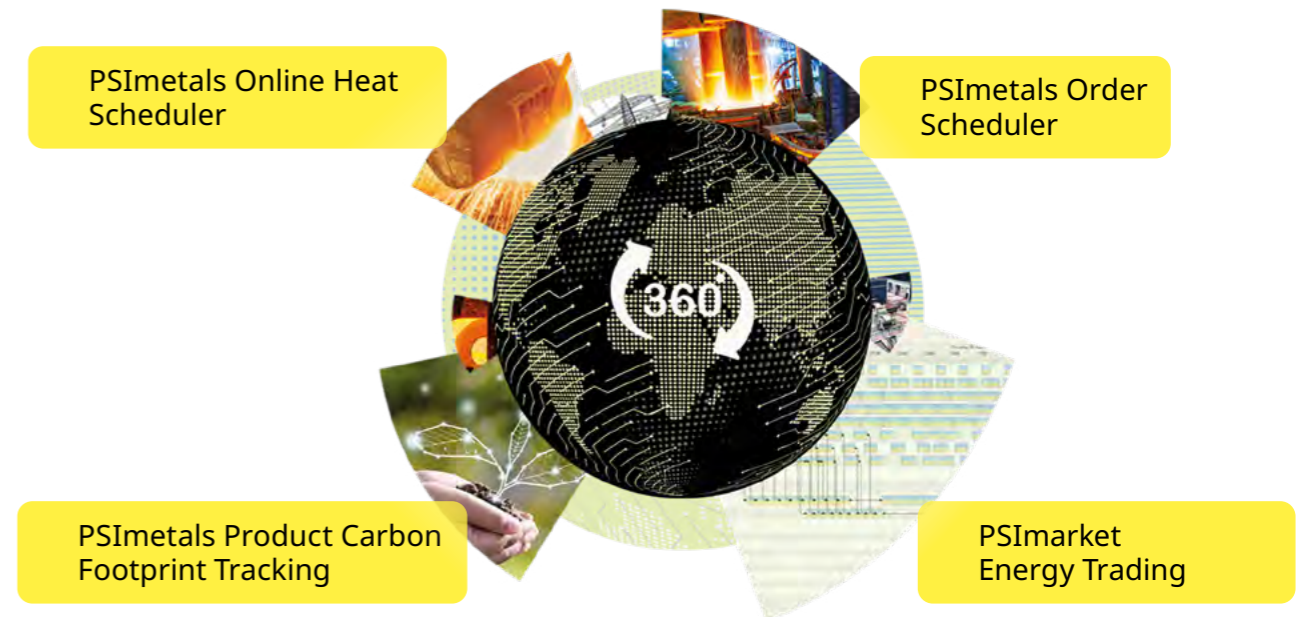
- + Offers transparent graphical overview of heat schedule, hot metal, DRI and energy demand
- + Aligns schedules and routes depending on energy, resource availability and flow
- + Manages scenarios to analyze and compare schedules with different KPI settings



▶ PSImetals OHS: KPI DRIVEN OPTIMIZATION

# PSI Supports Digital Transformation to Green Production Management

The complexity of metals production makes it challenging to optimize production, save energy and comply with CO<sub>2</sub> regulations. Currently, metals production is undergoing transformation towards green metals production. Hence, transformation to net-zero production needs to go hand-in-hand with process digitalization and innovative software for efficient production management of planning, scheduling and execution of processes.



▶ DISCOVER OUR PRODUCT PORTFOLIO FOR SUSTAINABLE PRODUCTION MANAGEMENT

- + PSImetals optimizes and balances process flows and resource usage
- + PSImetals uses efficiency KPIs as optimization targets
- + PSImetals enhances cost effectiveness which increasingly implies sustainability
- + PSImetals supports various requirements with a flexible infrastructure that can run services in any environment as needed
- + Following the concept of edge computing, services can be shifted between environments

## Step on Your Decarbonization Journey

### + Production Scheduling and Energy Forecast

PSImetals Online Heat Scheduler and Casthouse Scheduler are for upstream production, while Order Scheduler and Line Scheduler are for downstream production and enable users to efficiently optimize production schedules with integrated energy consumption forecast that holistically consider all aspects of time, quality, energy constraints and cost minimization.

### PSImetals Production Execution +

PSImetals Production Execution records the energy consumptions individually and links them to production orders, processes and products.

### + PSI Energy Trading Solution

PSImetals Energy Demand Forecasting provides the input for the PSImarket Energy Trading system which can be integrated on one system platform to combine optimized Production Management and Energy Consumption with Energy Trading.

### PSImetals Product Carbon Footprint Tracking +

With PSImetals, metals producers can calculate and track exact CO<sub>2</sub> emissions based on actual consumptions for each production step and material piece. This provides the data basis for reporting, analysis and improvement of involved processes and their emissions.

## Production Management Solutions Today for Generations to Come

### Why PSI?

- + Best-in-class optimization
- + Full functionality
- + Long-life innovative technology
- + High availability systems
- + Scalable real-time systems
- + Integrated and complete systems

We Are Your Solution Partner for Digitalization and Decarbonization in Production





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Let's get in touch!



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