



MAINTENANCE AND ASSET TECHNOLOGY (MAT)

THE STRATEGIC MAINTENANCE
SOLUTION FOR THE METALS INDUSTRY

MAINTENANCE AND ASSET TECHNOLOGY (MAT)

TAKE YOUR MAINTENANCE TO THE NEXT LEVEL

THE CHALLENGE

Given ever increasing cost pressure, plant maintenance teams often find themselves struggling to come up with new ways to improve efficiency in the management of resources, which can have huge implications for productivity – and the bottom line. In the dynamic, 24-seven environment of today's steel plant, every minute of downtime costs money. Primetals Technologies has risen to the challenge by transforming what used to be a major cost factor into a strategic advantage, while also increasing plant availability so that productivity can be steadily increased as a result. How? By eliminating antiquated, often unnecessary, and costly scheduling routines and implementing a philosophy built around a super-efficient, smart resource planning solution that is based on a strategic, dynamic, pro-active approach.

OUR SOLUTION

Maintenance and Asset Technology (MAT) provides an overall, holistic view of a steel plant's physical assets and infrastructure throughout the entire

lifecycle. Unlike standard ERP software, which lacks the necessary flexibility to enable maintenance staff to respond quickly enough in critical situations, or standard computerized maintenance management systems, which are not specific enough to the metals industry and which fail to integrate adequately with other systems, MAT from Primetals Technologies supports data-based decision-making, allowing staff to make decisions strategically and dynamically, rather than reactively. The aim of any steel plant is to increase efficiency, productivity, and profitability, while also raising the quality of steel grades – and MAT is the answer.

MAT is a fully digitalized asset management solution specifically designed for the metals industry and therefore integrates seamlessly with a steel plant's existing software systems. It leverages industry-specific data and expertise to enable maintenance teams to efficiently manage resources and streamline the maintenance process by always having instant access to an up-to-the-minute overview of a plant's equipment.



LEARN MORE
meta.ls/mat

For more detailed information about MAT, please scan the link above.

FEATURES

ASSET TRACKING

Instant access to component part histories

ADVANCED SCHEDULING

Assign work orders, manage human resources and equipment

RULE EDITOR

Offers rule-based suggestions for recurring scenarios

WORK ORDER TRACKING

Graphical support tool for tracking work order progress

KPI DASHBOARD

Automatic report generation supports data-driven decisions

PORTABILITY

Runs on tablets for on-site and offline use

SEAMLESS INTEGRATION

Connect to third party solutions with standard application interfaces

METALS KNOW-HOW

Maintenance know-how specifically tailored to the metals industry



FEATURES AND BENEFITS

FROM ASSET TRACKING TO BUSINESS REPORTING VIA DASHBOARDS - MAT HAS YOU COVERED



ASSET TRACKING

MAT provides instant access to component part maintenance history, allowing staff to ascertain how often a particular part has been repaired or replaced. Meanwhile data analytics help to make maintenance more predictable and planning more efficient, thereby reducing ownership costs and boosting productivity.



ADVANCED SCHEDULING

MAT's work order scheduling module allows work orders to be assigned to on-site and field technicians. Advanced visual scheduling makes use of visual tools for managing human resources and equipment, thereby increasing efficiency and minimizing downtime.



RULE EDITOR

The Rule Editor is a maintenance assistance tool that offers rule-based suggestions for recurring scenarios. Users can define the suggestions that should be given in any particular situation, which helps to standardize and therefore streamline processes.



WORK ORDER TRACKING

This graphical support tool is designed to track work orders as well as progress toward completion based on user-defined criteria. Work orders can be created at the click of a button and assigned to on-site or field technicians.

MAT centralizes all maintenance activities by seamlessly interfacing with multiple software systems such as Condition Monitoring Systems, Enterprise Resource Planning systems, automation systems/solutions, Data Mining platforms, and Primetals Technologies' "Digital Unity".



KPI DASHBOARD

Access a quick overview of your current maintenance performance with the integrated KPI dashboards. Data analytics help to make maintenance more predictable and planning more efficient, thereby reducing ownership costs and boosting productivity.



PORTABILITY

MAT runs on tablets for on-site and offline use. The mobile app allows service engineers to access work orders, log hours, and add notes offline and synchronize the data later when online. MAT is designed to provide instant access to all knowledge resources and built-in assistance features on the fly, making it a mobile companion you can rely on.



SEAMLESS INTEGRATION

MAT can interface with various third party software such as Enterprise Resource Planning (ERP) systems, automation systems, condition monitoring systems, or any other solution with standard application programming interfaces (APIs). Consequently, maintenance-relevant processes are streamlined and redundant tasks are reduced or eliminated entirely.



PACKED WITH METALS INDUSTRY-SPECIFIC MAINTENANCE KNOW-HOW

MAT delivers maintenance know-how specifically tailored to the needs of the metals industry. It supports all relevant maintenance activities, from choosing the right strategy, to defining maintenance intervals or providing instructions on how to perform certain service tasks. MAT is so much more than a software solution, it is built on decades of experience in designing and maintaining machinery for the metals industry.

SERVICE YOU CAN COUNT ON SPECIFICALLY TAILORED TO YOUR NEEDS

SOFTWARE AS A SERVICE

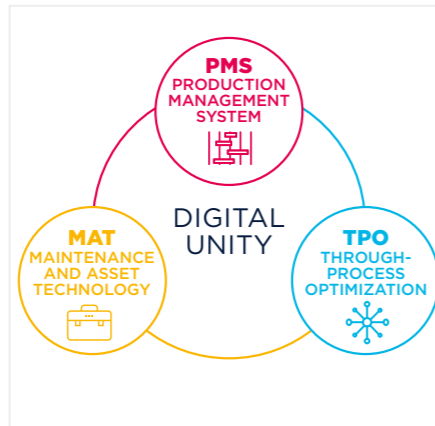
MAT is available as a Software-as-a-Service solution, which means you don't have to worry about the installation of complex software or connectivity, because Primetals Technologies handles all of that for you. Primetals Technologies is responsible for system hosting, administration, regular updates, security, and archiving, which keeps costs low and convenience high. Alternatively, optional on-premise installations of MAT are available. A mobile version is also available for tablets.

MODULAR SYSTEM

MAT comprises four smart modular packages: Predictive Maintenance, Planning & Shutdown Optimizer, Reporting & Business Intelligence, and Strategic Asset Management. While highly customizable, MAT also comes pre-configured and packed with all the essential features, from criticality assessments and maintenance strategies for specific equipment, to procedures, documentation, and checklists for responding to specific alarms.

LIFECYCLE PARTNER

Primetals Technologies accompanies you throughout the entire implementation process and beyond. We are there for you from the earliest stages of a MAT project, from initial consulting, all the way through to integration, configuration, and training. Primetals Technologies is not just a supplier, we are a lifecycle partner.



MAT is a metals industry-specific solution designed to streamline the maintenance process and allow staff to focus on adding value to key areas. It is a bespoke solution that goes way beyond any conventional, standard condition monitoring systems (CMS) and Enterprise Asset Management (EAM) systems.

DIGITAL UNITY

The Digital Unity is a digitalization-driven concept created by Primetals Technologies and is based on the integration of data from three key processes: production, quality, and maintenance. It comprises three digital software services — Production Management System, Through-Process Optimization, and Maintenance Asset Technology. MAT is a cornerstone of the Digital Unity.



LEARN MORE
meta.ls/digital-unity

MAT COMPRISES FOUR SMART MODULAR PACKAGES:

- Predictive Maintenance
- Planning & Shutdown Optimizer
- Reporting & Business Intelligence
- Strategic Asset Management

While highly customizable, MAT also comes pre-configured and packed with all the essential features, from criticality assessments and maintenance strategies for specific equipment, to procedures, documentation, and checklists for responding to specific alarms.

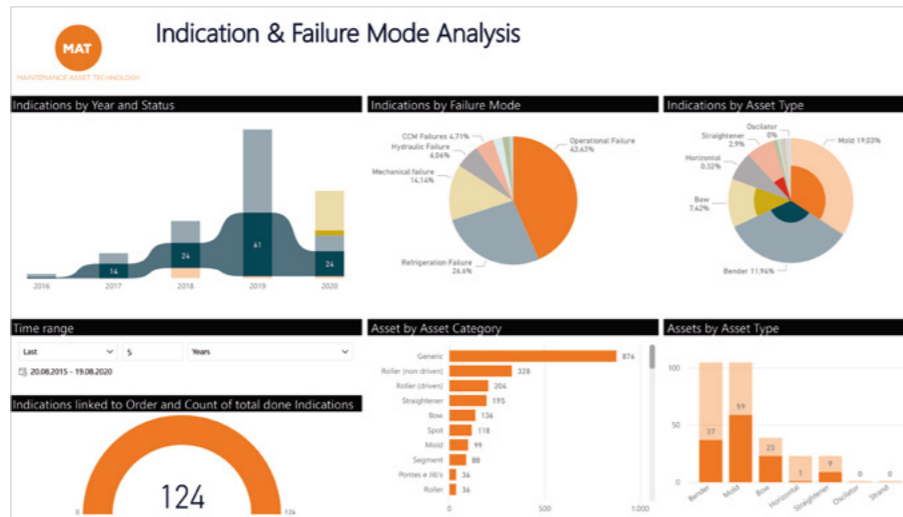
NEXT-LEVEL MAINTENANCE

FIND THE RIGHT MAINTENANCE STRATEGY FOR YOUR ASSETS USING ACTIONABLE INFORMATION PROVIDED BY MAT

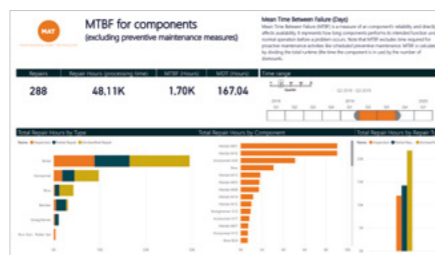
KPI DASHBOARDS

One of the most powerful tools available, MAT's reporting and dashboard features enable you to transform your data into meaningful insights and make data-driven decisions by analyzing historical costs and trends. MAT empowers organizations to create and modify reports (or select from a set of pre-loaded reports), and output them as text, PDFs, charts, or graphs.

MAT's robust and configurable reporting feature gives you the power to assemble the data you have been collecting within MAT and transform it into reports that are meaningful to you and others in your organization. With the MAT dashboard, you can eliminate the time-consuming manual compilation of reports.



Indication & Failure Mode Analysis



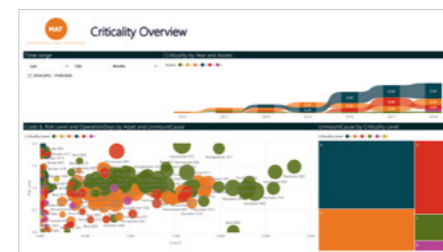
Mean Time Between Failure for components



Component Performance Overview



Asset Indication Overview



Criticality Overview

FROM REACTIVE TO RELIABILITY-CENTERED MAINTENANCE WITH MAT

Maintenance Strategy	Reactive Maintenance	Preventive Maintenance	Condition-based Maintenance	Reliability-Centered Maintenance with MAT
Approach	Repair or exchange after failure occurs	Scheduled, periodical service	Analysis of condition monitoring data to predict time of breakdown. Exchange or repair before failure	Identification of optimum maintenance strategies for each individual asset through dynamic data analysis. Inclusion of data from other processes like production. Dynamic evaluation of asset priority based on criticality analysis.
Application	Non-critical assets	When equipment condition or criticality is unknown	Critical equipment	Holistic approach for complete maintenance organization, incorporates all previous maintenance strategies.
Goals	Max. utilization at low cost of maintenance	Maintain condition of equipment	Avoid costly reactive repairs and consequential damages. Plannable maintenance activities and shutdowns	Increase overall equipment reliability and availability. Predictive analysis of situation and provision of actionable information.
Challenge	Potential consequential costs of failure for damages	Effect of activities and condition of equipment unknown	Not everything predictable, no interconnection with other processes	High maturity of maintenance organization required. Time and investment required.

* Some features are only available with MAT Asset Performance Management (APM)

The choice of the right maintenance strategy depends on many different factors — not all of which are necessarily asset-related. The size of the team, available resources, skills of people, and the overall maturity of the maintenance organization are important factors. Beyond the organizational issues, for obvious reasons the assets themselves will determine the right maintenance strategy.

Economic factors and equipment criticality, i.e. the risk of failure and the impact of this failure on the entire operation of the plant, also play a major role in the selection of the right strategy. Overall, there is no one single best strategy. It is all about managing resources and minimizing the risk of failure — and reliability-centric maintenance with MAT, coupled with other measures, is the perfect solution.

MAINTENANCE DIGITALIZATION ASSESSMENT

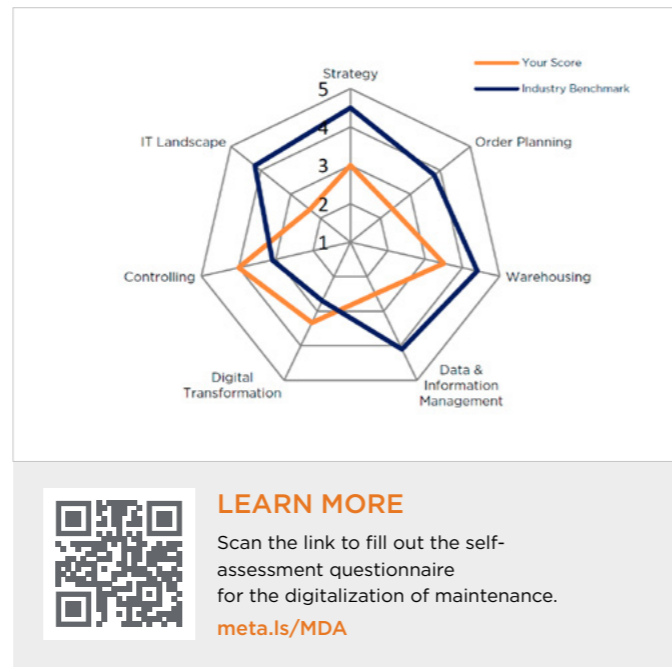
TAKE A QUICK ONLINE ASSESSMENT AND CHECK HOW READY YOU ARE FOR NEXT-LEVEL MAINTENANCE

FREE BASIC CHECK

For a free basic check of your readiness for digitalization, just answer a few simple questions. Get in touch with a Primetals Technologies expert to learn more about your individual potential for maintenance improvement.

This short initial questionnaire — which should take up no more than 20 minutes of your time — is free of charge, and is designed to give you an insight into the current status of your software, process, and IT environment. Based on the results, we can identify areas for improvement and make recommendations tailored to your specific situation.

This online self-assessment has been put together specifically for the internal maintenance divisions of steel plants as well as external workshops to whom maintenance is outsourced. It is the precursor to a more extensive assessment that can be requested later as part of a wider digitalization effort. Upon completion of the self-assessment, you will be contacted by the Primetals Technologies service team. All of your answers and the results will be kept strictly confidential.



ROAD TO MAT

SWITCH TO THE FAST LANE AND GET TANGIBLE RESULTS, WITH RAPID PROTOTYPING AND AGILE PROJECT MANAGEMENT

AGILE PROJECT MANAGEMENT

With MAT we rely on an agile project philosophy, which means we prefer to start with several smaller iterations of the project (sprints), rather than with one full-fledged large project. This agile approach has the advantage that the overall complexity of the project is lowered, while at the same time the project team is able to react faster and more easily to ever changing requirements.

A typical project starts with a fact-finding mission, where business processes and the organizational set-up are determined. Next, in the scoping phase, the requirements for MAT are jointly defined before, finally, the MAT project itself is implemented.

PROOF OF CONCEPT PROJECTS

Together with one of the leading universities in the field of metallurgy, Primetals Technologies has developed the Maintenance Digitalization Assessment (MDA). The MDA

is based on state-of-the-art scientific methods and aims to determine the level of maturity as well as gaps for the digitalization of maintenance processes. Using the results of the MDA, steel plant operators are able to identify gaps and potential with regard to maintenance digitalization.

Based on the results of the MDA, it is possible to develop a functional prototype before implementing an actual MAT project. The advantage is that the project yields results quickly and requires less effort and investment.

LIFECYCLE SERVICE PARTNER

Even after project completion, Primetals Technologies is always ready to assist you. Depending on your requirements, different service level options are available, from basic ticket support and updates to more comprehensive packages that include regular training for new employees and remote consulting.

ROAD TO MAT →



Primetals Technologies Austria GmbH

A joint venture of Mitsubishi Heavy Industries and partners

Turmstrasse 44
4031 Linz
Austria

primetals.com

Brochure No.: T12-3-N719-L9-P-V1-EN

Printed in Austria

© 2020 Primetals Technologies Ltd. All rights reserved

The information (including, e.g., figures and numbers) provided in this document contains merely general descriptions or characteristics of performance based on estimates and assumptions which have not been verified.

It is no representation, does not constitute and/or evidence a contract or an offer to enter into a contract to any extent and is not binding upon the parties. Any obligation to provide and/or demonstrate respective characteristics shall only exist if expressly agreed in the terms of the contract.

These estimates and assumptions have to be analyzed on a case-to-case basis and might change as a result of further product development.

Primetals Technologies excludes any liability whatsoever under or in connection with any provided information, estimates and assumptions. The provided information, estimates and assumptions shall be without prejudice to any possible future offer and/or contract.

Any use of information provided by Primetals Technologies to the recipient shall be subject to applicable confidentiality obligations and for the own convenience of and of the sole risk of the recipient.

Primetals is a trademark of Primetals Technologies Ltd.