



## CONDITION MONITORING SYSTEM

### INTEGRATIVE MONITORING FOR MECHANICS, AUTOMATION AND PROCESSES

The key to successfully improving the efficiency of a manufacturing facility or its individual equipment is the collection, analysis, and interpretation of all relevant data. A fully integrative condition monitoring system (CMS) - in conjunction with a competent lifecycle service - helps to visualize the plant's condition and serves as the basis for predictive and focused maintenance activities.

The resulting avoidance of unplanned downtimes and equipment damage leads to an increase in the overall productivity of the facility, while also keeping product quality and operation at a high level.

#### **YOUR CHALLENGE**

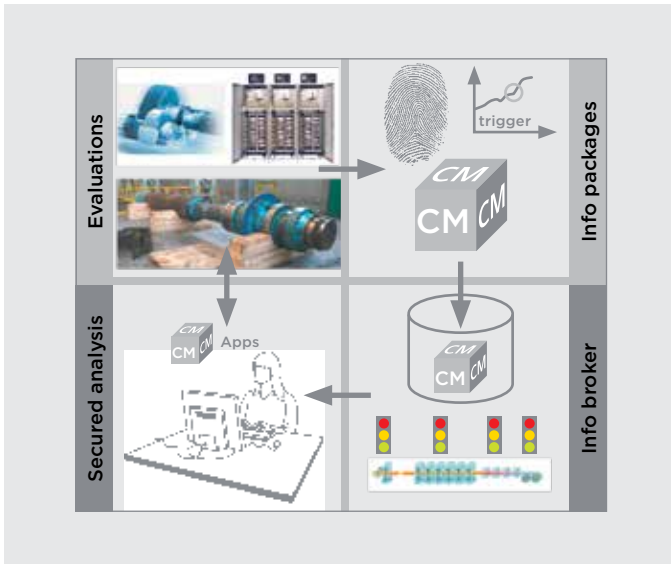
In the metals industry, monitoring the condition of machines, automation and processes is crucial for preventing unplanned downtimes and unintentional impacts on product quality. To derive the necessary information, a huge amount of data has to be analyzed - data that needs to be gathered from a variety of systems throughout the entire plant without having to generate the information twice. Existing information must also be incorporated.

As is inevitable that the plant and its processes change over the years, the information system must be adaptable to the ongoing needs of the plant without influencing the operative automation system. For maintenance and quality reasons, new condition monitoring information and analyzing packages should be easy to install.

#### **OUR SOLUTION**

Primetals Technologies offers an innovative condition monitoring system that integrates information from several automation levels in order to provide the best description of the condition of functions, equipment, and even complete plants. This system is designed for the metals industry and combines the specific expertise of a process turnkey supplier and the technological skills of leading automation solutions provider in this industry.

The Condition Monitoring System from Primetals Technologies uses machine-to-machine communication that connects condition monitoring information automatically. An information broker concentrates the required data from each individual source to centrally display the condition of your plant.



Integrative Condition Monitoring System (CMS)



Examples of condition monitoring "info packages"

### CONDITION MONITORING INFORMATION BROKER

The condition monitoring information broker is the interface from maintenance or operations to the condition monitoring information. It gathers data from evaluations (evaluation packages) across all automation levels. In addition to the standard colored alarm messages, the information contains additional details, called "info packages", which provide more data on any detected abnormalities to the production and maintenance teams. This supports a quick assessment of the situation without the involvement of specialists. Through individualized views and report classifications, the information broker's output can be adjusted to the needs of different user groups.

### FUTURE-ORIENTED AND FLEXIBLE MONITORING SYSTEM

Unlike an online automation system whose first priority is to control the plant in the defined operation mode, the actual and the reference condition of the plant or its individual parts may change during their lifetime. This makes flexibility an important requirement for a condition monitoring system so that it can easily be adapted to new situations – or extended with additional evaluation packages. With the build-in machine-to-machine communication all new packages log on automatically and transfer all necessary information. Our solution is built on standard libraries extended by functions specifically designed for the metals industry. This modular approach enables future functionalities to be easily integrated in our new or existing CMS solutions. The Condition Monitoring System from Primetals Technologies is completely separated from the automation system. The plant maintenance organization is able to work with the system, adapt and enlarge it at any time without affecting the plant's operation. It is an ideal access point for remote services without connection to or interaction with other systems in the plant (for example: online automation).

### ADVANTAGES OF CONDITION MONITORING SYSTEM FROM PRIMETALS TECHNOLOGIES

- **Increased plant efficiency** – by reducing the number of unplanned downtimes
- **Flexible monitoring system** – based on a modular, scalable, and integrative design
- **Additional analyzing functions** – designed for the metals industry
- **More focused maintenance and operation** – thanks to qualified messages
- **High quality data collection** – condition monitoring as a source for data streaming tools
- **Virtualization** – the condition monitoring system runs even on local industrial PCs and on virtual machines

### CONNECTIVITY

Siemens automation systems (SIMATIC, SIMOTION) work together seamlessly using direct communication features. This gives access to a broad product spectrum and facilitates a time-synchronous data collection from several PLCs. Adding standard interfaces and hardware modules also enables our solution to integrate other control systems and their signals for condition monitoring purposes.

**Primetals Technologies Germany GmbH**  
A joint venture of Mitsubishi Heavy Industries and partners

Bunsenstr. 43 | 91058 Erlangen | Germany  
[primetals.com](http://primetals.com)

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