Nexeed Production Performance Manager

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The Industry 4.0 software solution for systematic production improvements
Systematic production improvements

The systematic, sustainable optimization of production – this is the goal of the Nexeed Production Performance Manager. The software helps quality and maintenance management staff in decision-making and makes their everyday work easier. They are supported by individual modules with functions that are specific to certain areas, such as predictive maintenance or real-time process monitoring.
The Nexeed Production Performance Manager harmonizes production data from various sources. The software can extract customized information from this data and apply production knowledge automatically. The processed information is directly made available to the user and for specific purposes. Consequently, response times can be shortened, faults can be prevented, tasks can be clearly assigned and newly acquired information can be constantly accessed.

A software solution with a full service package

The user is at the center of this software solution and the corresponding services. Depending on their requirements, customers can opt for an individual use case consultation. Starter kits support with the introduction to the new software. Bosch can also help with the installation and operation (hosting), if desired. After installation, our experts offer staff training to enable every employee to start working with the new system quickly and without hassle.

The Nexeed Production Performance Manager operates as a stand-alone solution. Thanks to its open interfaces, it can also be combined with other solutions, such as an MES extension. Customers benefit from the steadily growing ecosystem and the open Industry 4.0 standard Production Performance Management Protocol (PPMP), offering fast and easy machine connectivity.

The Nexeed Production Performance Manager consists of a modular, scalable system that can be adapted to each specific customer application:

▶ **Condition monitoring**: ongoing status recording for maximum transparency
▶ **Live process data analysis**: minimizing production errors and process deviations
▶ **Predictive maintenance**: for maximum machine availability

The advantages of the Nexeed Production Performance Manager at a glance:

▶ Up to 15% higher machine availability through predictive maintenance
▶ 5-10% higher production performance by reducing scrap
▶ Full transparency: machine and process data available live at any time
▶ User-centered software: manufacturing employees can contribute their expertise without the need for special IT skills
▶ Maximum flexibility and safety for future applications thanks to modern software architecture, documented interfaces and open standard (PPMP)
Condition monitoring

Ongoing status recording for maximum transparency

Every Industry 4.0 initiative is based on a sound data foundation. Condition monitoring, meaning the permanent recording of machine states by measuring physical variables, forms the basis of the Nexeed Production Performance Manager. Production and machine data is collected and harmonized centrally and can be retrieved on any terminal. This makes it possible to both easily monitor and systematically optimize production.

The Nexeed Production Performance Manager displays measured values of machines and sensors as well as machine messages live and in chronological order. The current state of production can be determined, and short-term decisions can be taken quickly in the event of faults.

The user has access to analyses options to achieve a long-term efficiency increase, for example sorting fault messages by frequency. This makes it easy to see where failures or bottlenecks occur on a regular basis – an important information when it comes to overall production and resource planning.

Benefits at a glance:

- **Full transparency**
  Machine data and messages available any time and anywhere.

- **Less machine downtime**
  Rapid response to failures, analysis of common faults.

- **Reduced spending**
  Lower costs thanks to systematic production improvement.
Live process data analysis

Reducing production faults and process deviations to a minimum – for an error-free and highly efficient production

Process and quality engineers want a transparent, fault-free and continuous process that ensures products of impeccable quality. The focus of their attention is therefore on the process and the product, whereas the machines themselves are of secondary importance. Deviations and rejects should be reduced to a minimum to make production as efficient as possible. To this end, the Process Quality Module can be used to monitor and document process data in real time. The achieved transparency helps to keep an eye on quality at all times and thus improve the cost-effectiveness of production.

With its user-friendly view, the Process Quality Module displays the various parameters and tolerances so that any problems can easily be detected and remedied more quickly. Thanks to the patented analysis function, systematic faults and tendencies are detected earlier and their causes are isolated. This allows the process engineer to undertake appropriate measures before faults even occur.

The Process Quality Module is particularly suitable for quickly obtaining transparency of joining processes (e.g. screwing, pressing, welding, bonding, riveting) and coating processes (e.g. painting, galvanizing, powder coating).
Live evaluation and comparison of any process data using the Process Quality Module (shown: various bonding plants).

**Benefits at a glance:**

**Continuous process transparency**
Greater transparency through user-friendly provision of all process data.

**Increase in efficiency**
Easy access to the required data on all terminals – with no legwork or delays.

**Fewer rejects**
Cost savings thanks to consistently high product quality with a minimal error rate.
Predictive maintenance

Maximizing machine availability

For maintenance technicians, work used to start with the report of a machine failure. In today’s connected factory, predictive maintenance makes sure that failures don’t occur in the first place. With the Nexeed Production Performance Manager, the technician has a powerful and easy-to-use tool at his fingertips that he can use to detect and remedy possible machine downtimes at an early stage. For example, the system warns the maintenance technician if a motor is about to overheat or if parts of a system show signs of wear.

The Nexeed Production Performance Manager monitors defined parameters in the production process and immediately sends a notification when warning limits are exceeded or process-threatening trends become apparent. Maintenance technicians can use the Data Processing Module to select the underlying rules from a catalog and configure them individually. The generated notifications can be forwarded directly to the person in charge. In conjunction with the Ticket Management Module, this happens automatically according to an optimized servicing schedule that sorts tickets by urgency and assigns them according to both qualification and responsibility. As a package, these two modules provide advanced predictive maintenance that is easy to configure and reduces machine downtimes.

Benefits at a glance:

- **Easy monitoring of machines**
  Configure rule and action recommendations quickly and easily.

- **Maintenance as needed**
  Non interval-controlled, flexible maintenance and servicing.

- **Reduced downtime**
  Reduced machine downtime for an efficient production.
A flexible Industry 4.0 tool for today, tomorrow and the future

The factory of today must be controlled with a focus on the future. The task of the Industry 4.0 coordinator is to set the course for future challenges, for example by choosing open, versatile and upgradeable software. The Nexeed Production Performance Manager is an Industry 4.0 tool that can already be used universally within production today. With its open interfaces, a very high level of connectivity and its modular expandability, the software will continue to provide full flexibility in the future.

The connectivity of software, sensors, machines and entire production lines is crucial for a long-term efficiency increase. In particular, the easy connection of new Industry 4.0 products makes production adaptable and agile.

The Production Performance Management Protocol, Bosch’s open-source machine language, and the open documented interfaces make it possible to implement own solutions as well as third-party solutions into the existing IT ecosystem with minimal effort. Staff is more involved in the entire process and can use the Nexeed Production Performance Manager independently to implement new use cases – even without IT expertise. This way, everyone’s knowledge and experience can be used to increase production efficiency. The software is not a closed system, but is constantly evolving thanks to regular updates and module expansions – and thus rapidly adapts to current requirements.

Technical overview of the Nexeed Production Performance Manager
Optimum performance with the OEE module by infoteam Software AG

In order to meet the demands of the market for quality, speed and adherence to schedules while simultaneously increasing cost efficiency, there is no way around optimizing OEE (Overall Equipment Effectiveness).

With the optional OEE module from infoteam Software AG, the Nexeed Production Performance Manager has a highly flexible, powerful and directly integrated tool for the calculation and long-term analysis of OEE. Based on individually adjustable parameters and schedule configurations (e.g. shift times, maintenance times), the module determines and visualizes the live OEE.

In this way, deviations from the normal state can be reacted immediately. The recorded, historical OEE characteristic values are also available for long-term analyses.

Benefits at a glance:

- Increase plant availability
- Increase the performance of manufacturing processes
- Improve product quality
About infoteam Software AG

With more than 200 employees at locations in Germany, Switzerland and China, infoteam Software AG develops individual software for customers in the fields of industrial automation and machine building, among others. Elementary scope of services are solutions for Smart Factory, Industry 4.0 and Internet of Things (IoT). This contains next to digitalisation and cloud services e.g. production control and analysis of data in real-time, data analytics, predictive maintenance as well as human machine interfaces following usability state of the art. As Bosch partner we offer you the full support for use of Nexeed Production Performance Manager. This includes requirement analysis, installation, commissioning, maintenance, training, support, development and integration of import adapters, gateway integration as well as data aggregation and database connection. In addition, we support you to individualise reports and analyses e.g. in Tableau as well as to integrate your MES.