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MES Software Legato Sapient

DIGITAL MANUFACTURING: TRANSPARENCY DOWN TO THE SMALLEST DETAIL

In the age of digitalization, efficiency is not only a question of productivity, but also it is the adequate handling of various forms of disruption. Transparent manufacturing processes are the best preparation for change and at the same time reveal performance reserves that lie dormant in every manufacturing operation: By identifying and eliminating unplanned machine downtime more quickly, daily production can be increased by five to ten percent without any problems. With our MES solution Legato Sapient, you achieve end-to-end transparency in your manufacturing processes and generate a tangible business value, which is illustrated by numerous use cases:

- → **Reducing downtime** through real-time detection of machine stoppages
- → **Faster reaction & shorter solution time in maintenance management** through automatic alerting in case of malfunctions
- → **Targeted recall actions and fewer callbacks** through tracking & tracing
- → **Increased transparency and fast detection of deviations** through automatic calculation of key performance indicators
- → **Reduction of training and engineering efforts** through intuitive drag-and-drop operation and easy report generation via the flexible dashboard
- → **Avoidance of machine failures (crash)** through condition-based maintenance

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“Central Plant Monitoring” Use Case

Transparency all along the line

Every year, unplanned plant shutdowns lead to losses in the millions – whether through losses in availability, performance or quality.

With Legato Sapient, you can monitor your plants centrally and nip many problems in the bud. Legato Sapient collects and processes machine data in real time and prepares it graphically. It is not uncommon to connect a complete production plant with more than a thousand machine controlers. You can see the status of areas, lines, machines and even individual process devices visually for various output devices: control station, Andon, PC or mobile device.

In the event of errors, maintenance is automatically notified in near real time. This reduces downtime by up to 20 percent and increases machine availability, which in turn leads to an increase in production.

“Data Analysis / Reporting” Use Case

Solid information basis for CIP

Maintenance costs often explode because the actual causes of downtime are not eliminated and the downtime losses have to be made up for by overtime or by keeping additional reserve capacity on standby.

To help you sustainably address the root causes of downtime, Legato Sapient analyzes every process step in real time, systematically evaluates machine and manufacturing data, and aggregates it into meaningful metrics, such as OEE, plant availability, MTTR, or MTBF. TopX evaluations of machine downtimes and their causes reveal potential for improvement, which can then be successively addressed.

The causes of problems can be tracked and dealt with directly via the integrated action control system, in line with the continuous improvement process (CIP).

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"MES and HMI" Use Case

Connection between shop floor and management level

The majority of manufacturing companies still work with a very heterogeneous system landscape.

Common practice is the traditional separation between the MES (Manufacturing Execution System) and the HMI (Human Machine Interface), analogous to the classic automation pyramid. System breaks and a non-continuous flow of information are the order of the day, since important information from the HMI is only available locally, usually as fat client solutions – although it would also be necessary elsewhere. The only way to prevent a loss of information is to create visualizations, which in turn involves considerable additional effort. A further, significant cost factor in the outlined structure is the expensive and maintenance-intensive hardware and middleware of the terminals.

Legato Sapient with its web-based HMI module not only closes the gap between the control level and the HMI and thus ensures a seamless flow of information without losses as a "single point of truth", but also decisively reduces the costs for terminal hardware and middleware – common hardware with a web browser is sufficient.

"Tracking & Tracing of Components" Use Case

Targeted recalls

A product recall is the worst-case scenario for any company, resulting not only in enormous costs but also in damage to the company's image.

The legal requirements for product liability and product safety alone make a tracking & tracing system in production indispensable. However, around 60 percent of production companies only use tracking & tracing in a rudimentary way, with the full potential only possible in conjunction with MDE and BDE. The MES solution Legato Sapient enables seamless tracking & tracing of products including all product-relevant data throughout the entire production process. In this way, a complete image is created – a digital twin. The online data connection guarantees high data quality in conjunction with real-time monitoring of the actual situation. With the help of this information, a product can be „tracked down" and traced at any time.

In addition, there is complete documentation of which components have been used in a product. In terms of vertical data integration, data is exchanged across system boundaries (ERP, MES, store floor).

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"TPM and Maintenance Management" Use Case

More efficient use of your production facilities

Excel or paper-based coordination and documentation of maintenance activities is neither efficient nor process-safe.

The TÜV requirements regarding documentation and archiving can also be met in this way, but only with extremely high effort and a certain susceptibility to errors. The coordination of maintenance activities is based on manual processes and without any automation. In this way, demand-oriented maintenance can only be ensured with considerable effort. The consequence: a so-called over- or under-maintenance. In the case of over-maintenance, maintenance capacities are unnecessarily planned, expensive spare parts and operating materials are consumed and valuable production time is wasted. Under-maintenance leads to unplanned wear and tear and thus to unplanned production downtimes with time-consuming and expensive ad hoc repair work, which in turn destroys the entire production plan and causes massive costs. Legato Sapient creates digital "maintenance cards" in which the measures carried out are documented, archived and processed in compliance with TÜV standards.

Responsibilities and maintenance intervals are clearly defined. The system automatically calculates due dates based on both time and value using the prescribed, maintenance-relevant criteria, such as stroke counters. The bottom line is that the maintenance team is relieved and can concentrate on ensuring a trouble-free and efficient production process at optimum cost.

THE ADVANTAGES OF "MES LEGATO SAPIENT" AT A GLANCE

- Latest architecture technology – on premise or cloud ready
- Automatic generation of maintenance orders from time-, value- or fault-based maintenance plans
- Recognition of under- and over-maintenance by means of evaluation of the activities performed and their justifications
- Mobile usability of all functions based on HTML5 architecture
- KPI calculation and integration of other systems like SAP
- Support of the CIP

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