MES-Cockpit

. . . so you have a 360° view of production.

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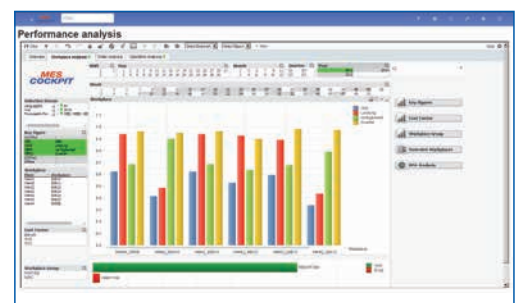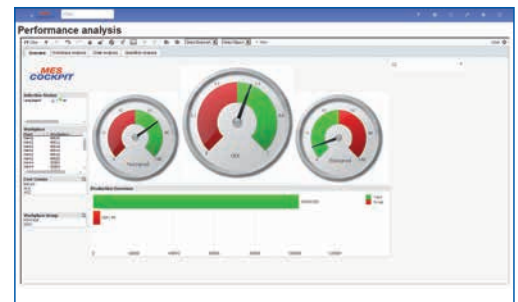
MES-Cockpit

Better Overview in Production with KPIs

On a plane, the best view is in the pilot's cockpit. It is similar with the MES-Cockpit. What the cockpit is for a pilot, KPIs are for your company. KPIs are a powerful tool to support the management level leading your company. The MES-Cockpit displays relevant KPIs individually and clearly arranged.

A precondition to using KPIs is collecting specific values. Finding out revenue or number of staff is easily done. This kind of information can be obtained by management from the accounting or HR department. Information from production is much harder to get. Transparency in production is the foundation needed in order to procure manufacturing KPIs. The Manufacturing Execution System (MES) HYDRA, for example, collects and manages manufacturing data which can be evaluated with MES-Cockpit. It is then possible to close the loop for production control.

Closed Loop of Production Management

Management defines targets to comply with requirements. These requirements are translated into definite measuring values and KPIs by production management or job scheduling. For example, to increase productivity in manufacturing, the system can be adjusted in various places. Set-up times per machine can be pulled up as a KPI. In order to do so, an actual value for the set-up time is collected in the manufacturing process. Data arriving from the MES are compressed and can be evaluated per machine, shift or day. Abnormalities identified are clearly visualized in the MES-Cockpit to define possible measures.

Reliable KPIs are available for a continuous improvement process. MES-Cockpit increases transparency in the manufacturing process and assists enormously in creating and using a highly productive closed loop control circuit.

KPIs in the Closed Loop Control Circuit of Production Control

Easy Access to all Relevant Information

MES-Cockpit has a flexible web client that can be called up without additional installations via an internet browser. Integration into existing or newly designed company platforms is thereby possible. Every user can individually design their own Cockpit depending on the required data or evaluations and store it if required again.

MES-Cockpit accesses imported data from various databases. This combined data enables the user to generate significant KPIs.
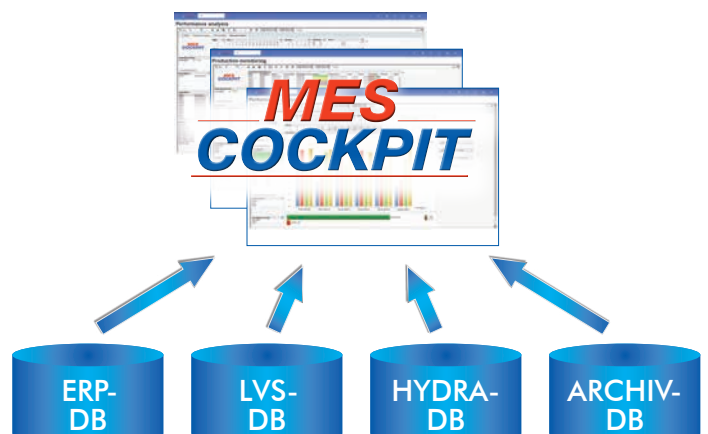
For example, data from MES HYDRA, a warehouse management system, an ERP system or an archived database can be combined and displayed together. Correlation of this data opens a comprehensive picture of production for the user. Therefore, a financial evaluation of scrap is possible by linking the quantities recorded and classified in HYDRA with the material data from the ERP system.

KPIs and Managing Target Values

Based on available data, formulas for standard or individual KPIs can be stored in MES-Cockpit. Time-related target values are defined to achieve set company goals. These are then available in various displays in the system in order to directly compare target/actual values. Trends can be established observing current developments of values. A superb process quality is given if anticipated target values have been met. If that is not the case, the process has to be checked and corrected to achieve some improvements.

Added Value through Independence

MES-Cockpit can basically be differentiated from a Manufacturing Execution System, such as HYDRA, by two features:

1. MES-Cockpit is only a tool for evaluations and reports, whereas an MES also records data and/or provides functions for production control.

2. An MES mostly only monitors one site but MES-Cockpit evaluates and integrates data of several sites and even from other systems.

Facilitating Long-Term Evaluations

MES-Cockpit enables data to be evaluated over multiple years, even though they are no longer included in the productive MES system as they have been exported or archived.

Controlling across all Sites

MES-Cockpit can also be used as a control tool in group structures and across several sites. Thus, a central database is set up where data of several company sites come together for company-wide analyses. Depending on all the central data, KPIs are measured and visualized according to a certain set of rules. This ensures an impartial comparison of several sites in a central location. Additionally, relevant results are supplied in detail for the various sites in order to implement required measures.
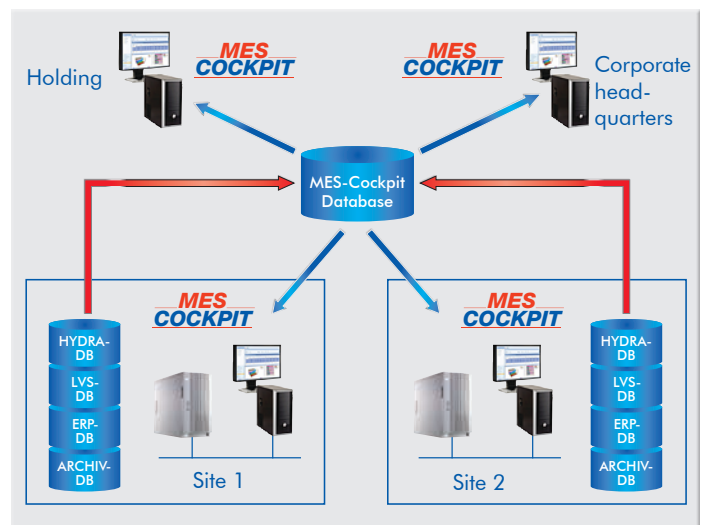
MES-Cockpit in Detail

Opening the MES-Cockpit, the user arrives at the start page where he can start the required application. MES-Cockpit offers three different fields of application tailored to the user's specific tasks and concept:

Shop Floor Information

The user may call up and view versatile real-time information. This includes the KPI monitor, an overview of workplaces and machines, a list of contacts and a messages listing indicating upcoming and pending maintenance activities.

Detailed status information is displayed separately for each (HYDRA) system. User authentication is mandatory.

Production Monitoring

Production Monitoring displays status information and KPIs across all instances:

- Workplace overview
- Operation overview
- Current KPIs: e.g. rate of capacity utilization, setup rate or scrap rate
- Downtime hit list (count and duration)
- Order overview
- Production overview

Shop Floor Information: Workplaces / machines

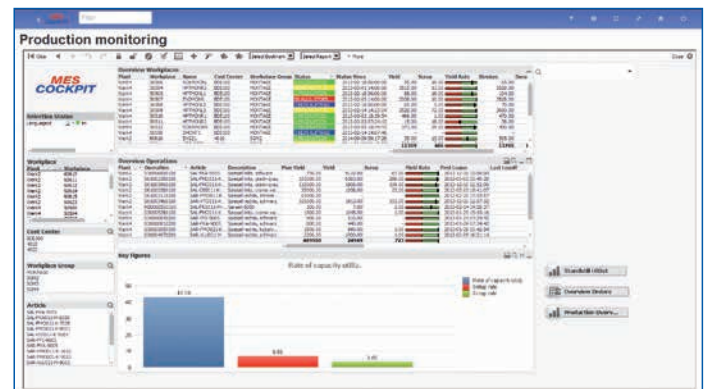*Production Monitoring: Order overview*
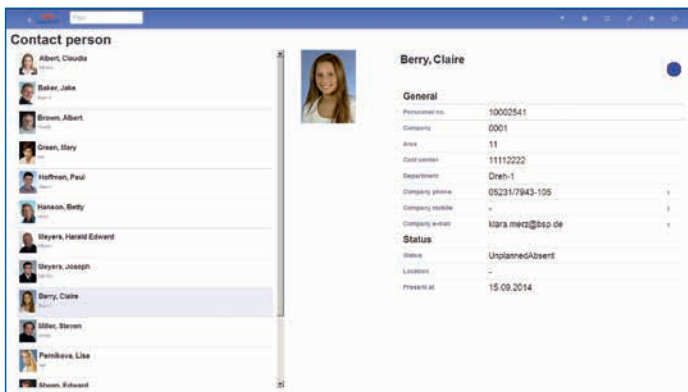
Shop Floor Information: Contacts

Production Monitoring: Downtime hit list

*Shop Floor Information: Messages listing for maintenance activities*

Production Monitoring: KPIs

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Performance Analysis

The Performance Analysis provides flexible evaluations about the data derived from the connected systems (across all instances). Subject to the objective of the evaluation, the following dashboards may be used.

The overview shows information of the current shift. Predefined KPIs are displayed for the selected workstations in a tachometer graph. In addition, the produced yield and scrap quantities are compared.
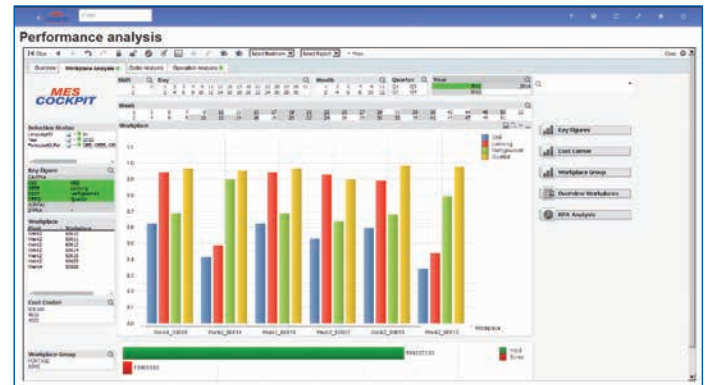

Performance Analysis: Workplaces including OEE
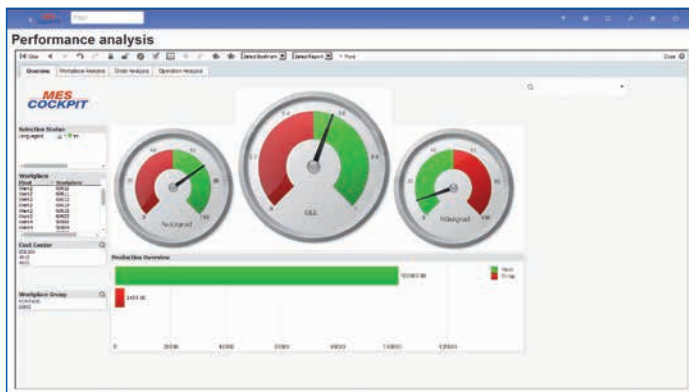
Performance Analysis: Overview with tachometer graph

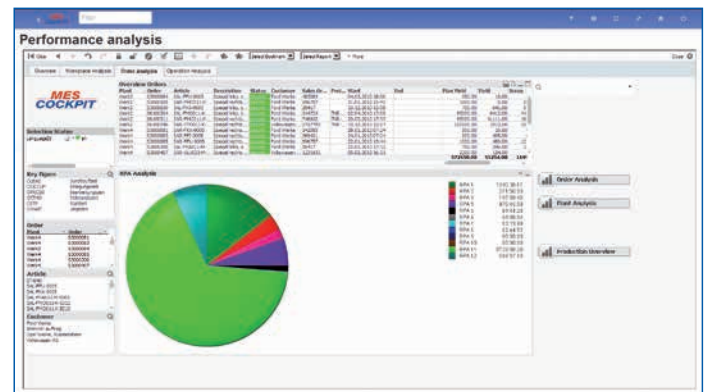*Performance Analysis: Evaluation of resource performance accounts*

KPIs and information on the following objects can be evaluated in evaluation dashboards:
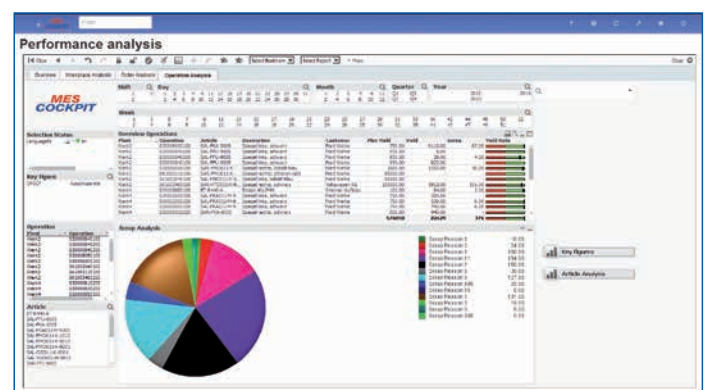
- Machines and the current shift
- Orders
- Operations

The user may configure the basic KPIs and the set of rules for computation.

Performance Analysis: Scrap statistic

Exact dimensions can be selected by drill down (e.g. year, month, week, shift date and shift). Besides the calculated KPIs, defined target values may also be displayed and evaluated.

Central Management and Configuration

MES-Cockpit provides a central client to manage the KPIs, authorizations, responsibility areas and target values. Consequently, information and user rights may be specifically managed and distributed.

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Your Benefits at a Glance

MES-Cockpit provides a 360° view of production. The Drill Down principles enables you to determine the level of detail – from an overview down to individual machines, products and orders. Crucial benefits are:

- Web-based applications: available everywhere and at any time without requiring additional installations.
- Individualized displays depending on the user's requirements
- Access to imported data of various available databases
- Pre-defined standard KPIs
- Company-specific set up through individual creation of KPIs
- Graphical visualization of data
- Comparisons between sites and facilities as well as overall evaluations and reports

Cooperation: MES-Cockpit and HYDRA

MES-Cockpit is as an overall evaluation tool for KPI systems and is compatible with numerous databases and data acquisition systems. Also, there are further advantages if it is combined with the MES solution HYDRA by MPDV. Data collected and evaluated by HYDRA can be selected in MES-Cockpit without an interface, then compressed and ultimately displayed.

MPDV: The MES Experts

MPDV Mikrolab GmbH is one of the leading solution providers of Manufacturing Execution Systems (MES). We have been developing MES solutions for more than 35 years. These solutions are based on innovative software products that we complement with our services which include consulting, project management, implementation, customizing, software modifications, training and support.

Worldwide we are represented at eleven sites in Germany, France, Switzerland, Singapore, China and the USA. More than 880 production companies use our MES solutions. They come from a variety of industry sectors ranging from small and medium-sized businesses to major global enterprises.

MPDV is a pioneer in the propagation of the MES philosophy and is committed to organizations such as VDI (The Association of German Engineers), VDMA (German Engineering Federation) and the umbrella organization of MES and MESA.