HYDRA
Machine Data

Transparency and efficiency in any type of machine park!
MOTIVATION
Efficient utilization of machines

In numerous projects we experienced the large, untapped potential in cost savings for machines as their average utilization is below 60 percent. With 10 to 15 percent, unplanned standstills have the lion share in wasting machine time. Machines can be used much more efficiently and their availability is much higher than you think – but you need to know the reasons for interruptions and standstills.

The HYDRA module Machine Data (MDE) can do the job for you. HYDRA MDE evaluates machine data in real time and visualizes these in meaningful charts. You can work out essential facts about your machines by using this module as a first step towards increasing efficiencies and availability of your machines and facilities.
Collect, evaluate and visualize data

The evaluations of machine data show your weak points in production and generate KPIs for controlling. In order to create the required transparency, collected data must be up-to-date and reliable. With HYDRA MDE you can cover the complete process from collection to visualization using just one system:

- Automatic transfer of machine data from machine controls (e.g. quantities, status and cycle times)
- Manual data collection using shop floor terminals or simple switches or buttons
- Compression of collected data to calculate KPIs according to VDMA 66412 (ISO 22400)
- Visualization of meaningful diagrams and pivot tables
- Clear shop floor monitor to display the machine park including current information
- Support of preventive and proactive machine maintenance
- Escalation management which can be flexibly configured, e.g. in case of interruptions
- Archiving of machine data for long-term evaluations
- Mobile MES applications to display and evaluate machine data
Control over any type of machine park

HYDRA MDE integrates all types of machines and equipment. It guarantees continuous data collection and also supplies other MES functions with essential basic data:

- Manual machine status collection of:
  - Setup
  - Startup
  - Production
  - Organizational standstills (lack of material or tool, waiting for maintenance)
  - Technical interruptions (tooling issues, electrical or mechanical failure)
- Automatic collection of quantities, linear meter or interfering signals via digital inputs and sensors
- Integration of existing subsystems (e.g. Arburg Control System) and shop floor tools for data collection
- Support of all standard protocols and interfaces to machines or SPS (e.g. OPC, UMCM, XML, FTP, Euromap 63, Weihenstephaner Standard)
- Specific assignment of maintenance staff using automatically generated and updated maintenance calendars – also for tools and other production utilities
- Supply of downtimes and quantities that correlate with orders, operations, tools, batches and production lots
Flexible configuration options

Today, any machine park contains different equipment and machines, which are often made by various manufacturers. This makes different configuration options increasingly essential – for the creation of master data and during running operation:

- Comprehensive machine master data
- Flexible definition of shift plans and factory calendars
- Individual specification of machine conditions and resource performance accounts (RPA)
- Rules for data collection and postings
- Specification of maintenance intervals
- Simple configuration of the machine overview
- Intuitive design of the shop floor monitor using drag and drop
Evaluations and diagrams

With HYDRA MDE you can monitor your machines in real time and react to interruptions immediately. Examples for evaluations, diagrams and reports are:

- Downtimes and fault classes
- Downtime course and usage recorder
- Machine history and time profiles
- Analysis and hit list of status reasons
- Evaluation of resource performance accounts (RPA)
- Evaluations of production lines with interlinked machines, aggregates and handling devices
- Graphical presentation of machine cycles and number of strokes
- Quantity and time-related performance reports
- KPI monitor for degree of utilization, Overall Equipment Effectiveness (OEE), Total Productivity Indicator (TPI) and other KPIs
- Shop floor monitor for office PCs and large screens in the production hall
Needs-based, tailor-made MES applications

Every MES solution is as individual as the company using it. An MES must be of a modular design and largely configurable in order to turn field-tested standard functions into tailor-made solutions.

Extensive requirements covering all business sectors and levels must be considered:
From user-friendly collection and information functions for operators to reliable statistics for the management.

The examples for HYDRA MDE applications illustrated in this brochure are a combination of standard MES products by MPDV. These products, characterizing a state-of-the-art MES, can be selected needs-based and integrated without interfaces:

- **Shop Floor Integration Services**: Interfaces to machines and production lines plus data collection and information functions for operators
- **MES Applications**: Powerful programs to process data and functions for data maintenance, detailed planning, monitoring and controlling
- **Smart MES Applications**: For usage on mobile devices and in web browsers
- **MES-Cockpit Applications**: Dashboards for general KPIs
- **Enterprise Integration Services**: Basic functions and interfaces to seamlessly integrate the MES into an existing IT landscape

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