

HYDRA Dynamic Manufacturing Control

MES
Products

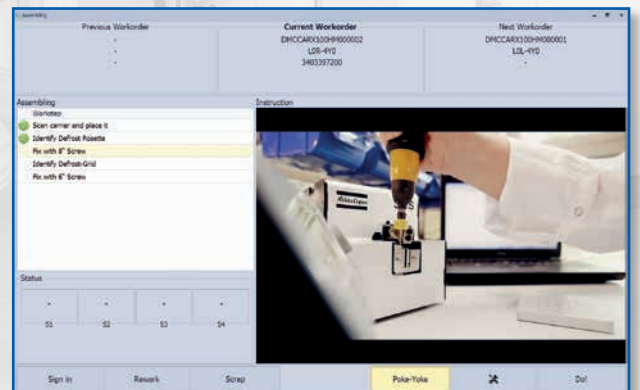
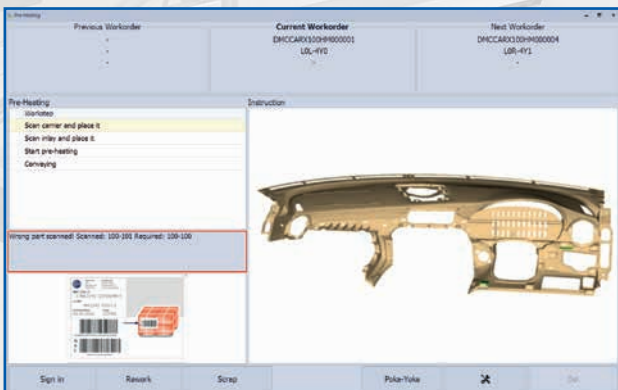
*Model, control and monitor your
multi-variant production processes!*



The logo for mpdv, featuring a stylized red and white 'H' symbol to the left of the lowercase letters 'mpdv' in a bold, blue, sans-serif font.

The MES Experts!

MOTIVATION





Master complex processes

The main characteristics of assembly processes for diverse products are a rapid operating cycle and a continuous flow of information. This includes working and inspection instructions and also control commands for tools and peripheral devices. So far, rigid control systems based on SPS technology supported each working step. Now, with product life cycles ever decreasing, processes require a high degree of flexibility for configuration that cannot be provided with such systems. Integrating assembly processes in a Manufacturing Execution System (MES) like HYDRA manages to do just this.

Dynamic Manufacturing Control (DMC) enables HYDRA users to model intricate and multi-levelled processes for the assembly line. As a result, the assembly line can be controlled flexibly. Simultaneously, the system creates a digital image of the production line and the final products.

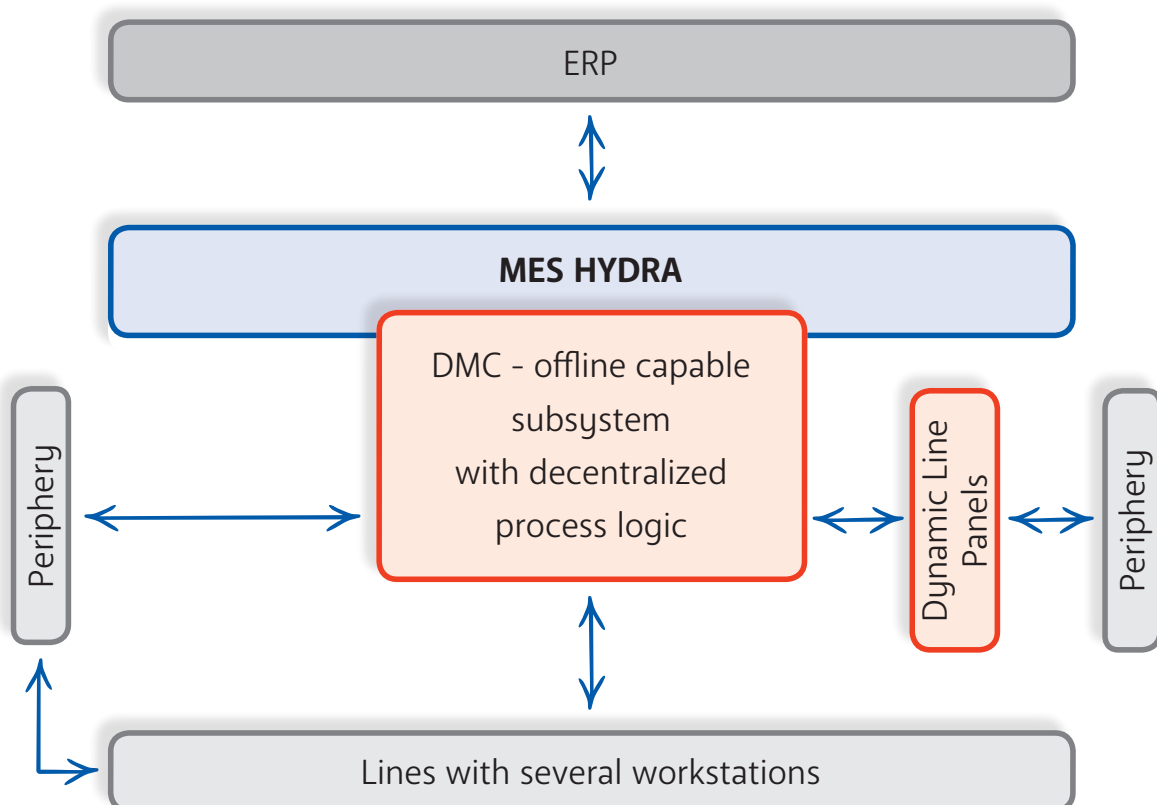


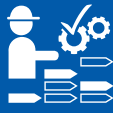
APPLICATION

Flexible process monitoring and control

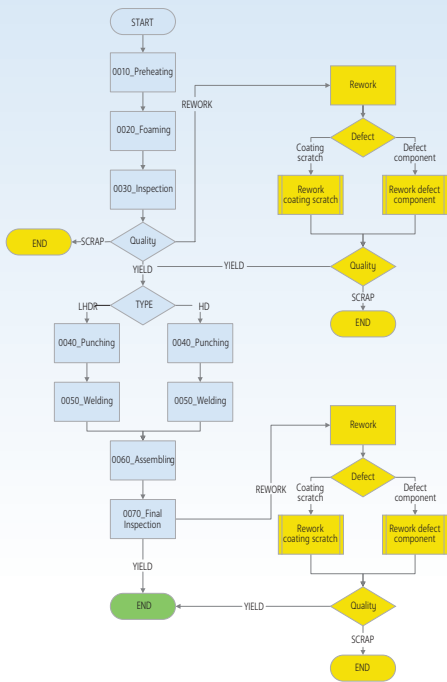
HYDRA DMC contains functions for modeling and, at the same time, functions to monitor and control complex processes and workflows like the ones used in assembly or sequence production:

- Control production lines with a number of workstations including Poka-Yoke functions
- Modeling of multi-leveled and ramified workflows for the assembly line
- Visualization of working instructions for the current working step
- Connection of periphery devices (e. g. pneumatic screwdrivers with online monitoring)
- Control of material picking systems (e. g. Pick-by-Light)
- Collection, visualization and documentation of real time data during processing
- Integrated quality inspection, material flow control and process interlocking
- Flexible process control including handling of rework
- Offline capability and seamless integration into the HYDRA infrastructure

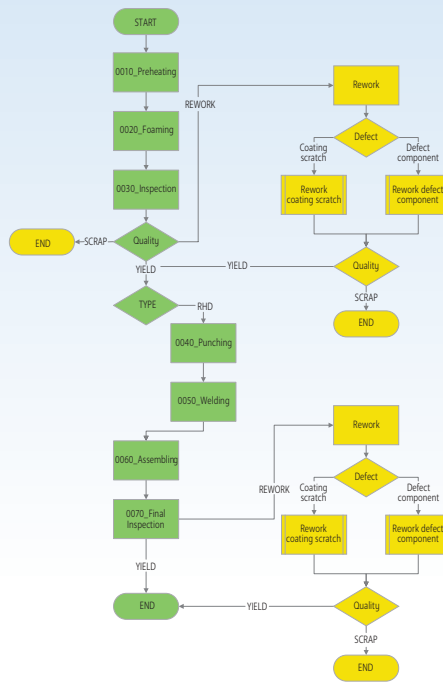




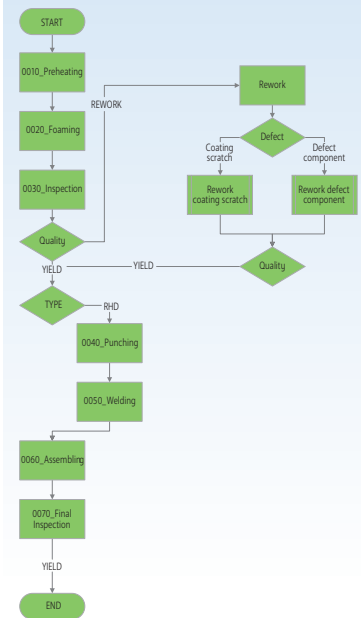
Modeling of the complete process



Plan for a specific part



Documentation of the actual process



Manage complexity

With HYDRA DMC complex production processes can be modeled simply and flexibly. The module offers a powerful engineering suite and wide-ranging options to configure the system:

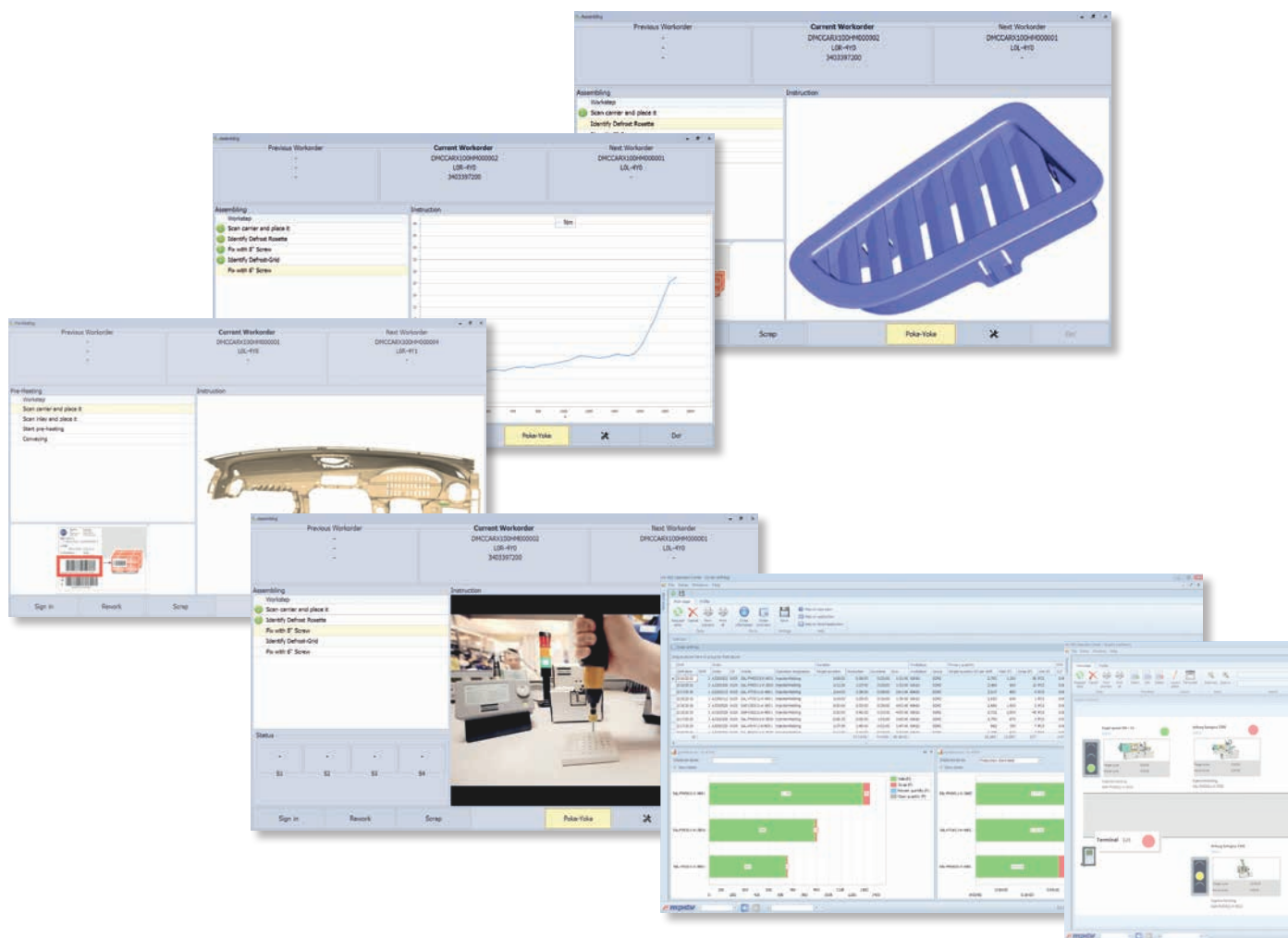
- Specification of workstations, corresponding working steps and connected peripheral devices
- Mapping of processes including working steps for all product variants
- Modeling of multi-leveled and ramified production processes
- Definition of quality inspection and rework loop as needed
- Individual configuration of ergonomic user interfaces at the workstation (Dynamic Line Panels)
- Easy connection of peripheral devices at the workstations
- Development environment for individual interfaces including template library

INTEGRATION

Integration into the IT landscape

In contrast to most production processes, assembly processes require significantly more information and, above all, in much faster intervals. The synchronization of information is of great importance in order to ensure smooth processes. For this purpose, HYDRA DMC offers flexible interfaces to relevant IT systems and the production process itself:

- Transfer of serial numbers (e. g. call-offs)
- Transfer of option codes to manage variants in HYDRA DMC
- Support of individual interfaces and data formats
- Transfer of information on parts produced relating to goods-receipt
- Transfer of consumption data relating to input components
- Connection of periphery, e. g. Atlas Copco screwdriver
- Connection of material picking systems, e. g. Pick-by-Light





Dynamic guidance for operators

HYDRA DMC provides configurable dialogs in the shop floor (Dynamic Line Panels) and evaluations in the HYDRA Office Client (MOC):

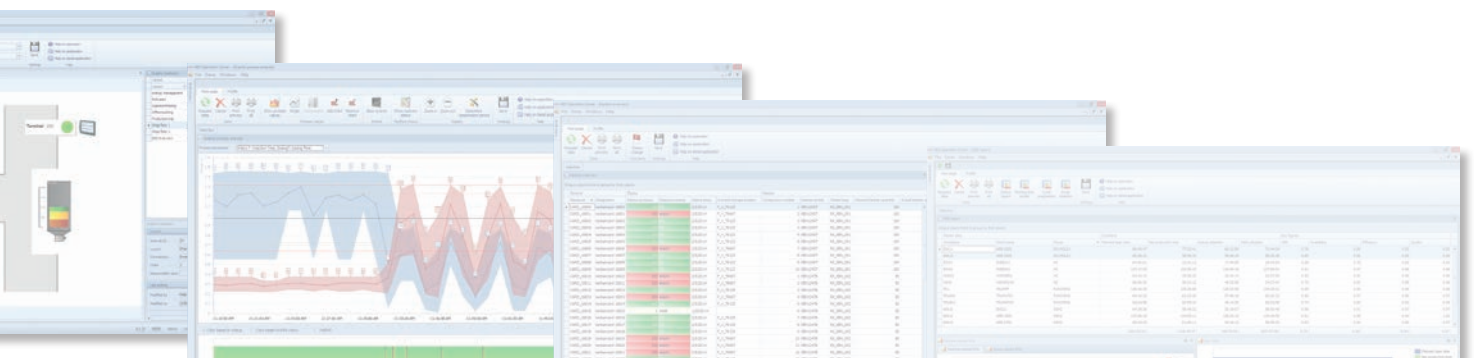
Dialogs in the Dynamic Line Panel:

- Display of required working steps and components on each workstation
- Display of relevant information for each working step like product image, assembly instructions and components to be used
- Graphic display of recorded process data
- Classification of serial numbers with reasons, e. g. using visual failure recording
- Identification of personnel at the workstation
- Transparent display of part status like Poka-Yoke

Applications in the HYDRA Office Client:

- Graphic visualization of stations and lines including malfunctions
- Overview of assembly line stations including display of status and currently produced parts
- Part-related display of quality status relating to run times and stations, or process values and Poka-Yoke status
- Sequence monitor including overview of part status with completed and open working steps including quality and process status
- Andon board displaying progress and KPIs

TRANSPARENCY





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 DMC 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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