MPS Production

Press management and optimization

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- **Full print product and production planning functionality**
- **Preset functions for all circumstances**
- **Version handling of pages and separations**
- **Online Production Viewer on smartphones and tablets**

MPS Production for optimized print quality and efficiency

Success for publishers and printing houses can only be achieved with suitable systems for the automation of the various processes. MPS Production provides unparalleled functionality for managing printing presses and for optimizing the print process itself. Furthermore it has an extensive range of interfaces for integrating the print process with other processes like plate-making and newsprint handling. Standard interfaces mean that MPS Production can be used not only with presses with ABB controls but also with press control systems from various other suppliers.

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Overview of the ABB production management systems for the entire newspaper production process
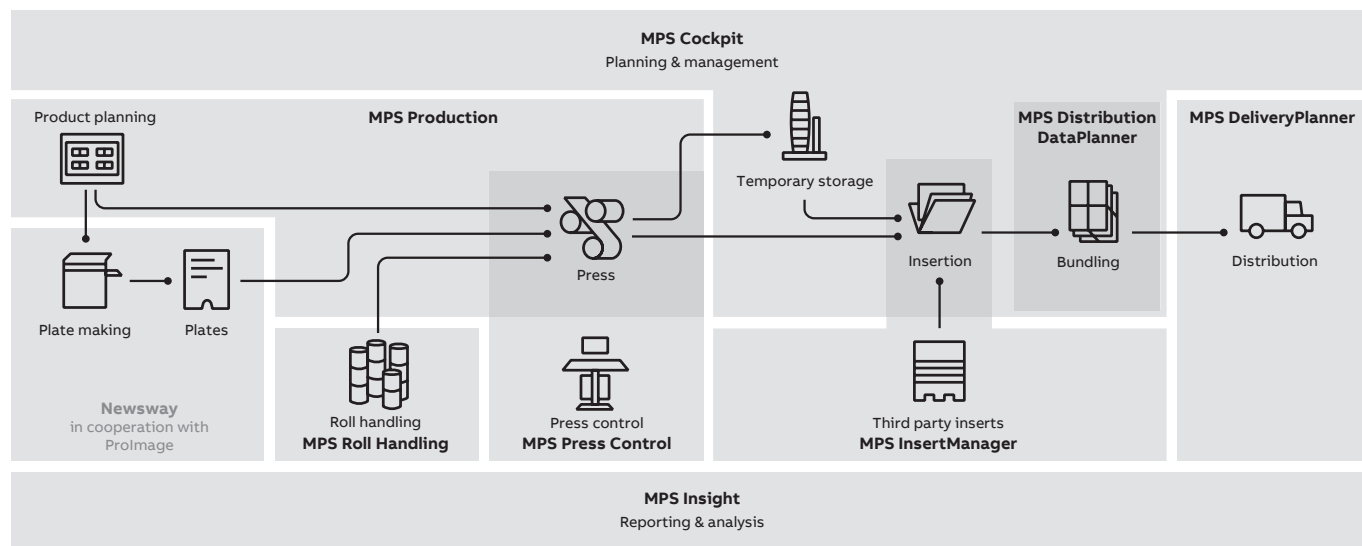
Overview

The functionality of MPS Production begins with the planning of the print product itself. The product specification can either be imported from an external system or created using MPS Production's graphical product planner.

MPS Production includes a virtual representation of the printing presses as installed at the relevant site. This means that the system is not only able to establish which products can be produced on these presses, but also what options are available for the print jobs themselves, what paper leads can be used and how the print jobs can be optimized. It also includes an imposition generator and graphical imposition editor.

The greatest benefits of MPS Production for print quality are realized in the area of presetting the press. The combination of proven paper-lead or imposition-specific values for registers/compensators and web tension, that have been read back from the press, together with ink and water presetting with detailed calibration and speed dependent curves means that MPS Production brings major reductions in make-ready time and start-up waste. Significant cost savings result.

The benefits go on much longer. During and after completion of the newspaper printing the report functions within MPS Production provide the manager with detailed information about the course of the print job, the materials used, changes made on the press etc. The data recorded during the print job can also be exported for detailed analysis in using additional tools such as MPS Inform, MPS Insight or the customer's own data warehouse solution.

User interface

MPS Production has a highly graphical, user-friendly user interface that PC users will rapidly feel at home with.

The screen is generally divided into four sections. At the upper left is the tree structure for the selection publication, print product, print job or whatever is relevant. The central area is used for the inputting of parameters. On the upper right is a graphical representation which, depending on the current function, will show relevant information such as the product structure or the selected imposition.

The lower part of the screen is generally used to show the scheduling with the print jobs that can be shifted both in time and from press to press by drag&drop.

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Familiar, highly graphical, user-friendly user interface.

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An example of the user interface of MPS Production showing: Top left: the tree structure for selecting the order, edition, print product or print job etc. Middle: the area for the inputting of parameters. Top right: graphical display showing, in this example, the basic imposition on the press. Bottom: the scheduling of the print jobs.
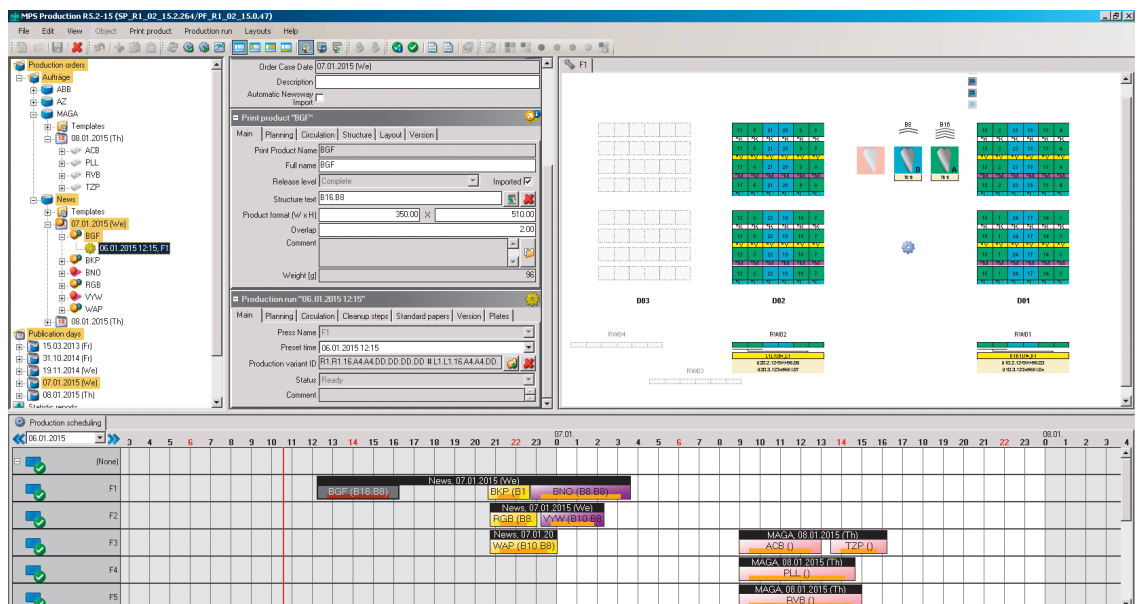
The functions and your benefits

Product planning

Although MPS Production can import product specifications from editorial systems, it also has full product planning functionality. MPS Production is therefore suitable for all sizes of printing plants, with or without integration.

MPS Production's product planner module gives a fully graphical representation of the imported or specified product. There are two ways the user can plan the product. Either the structure is selected first and the color content and interdependencies between the pages of the various products are defined later, or the user can start with a page list, define the color content and interdependencies first, and then select the structure later.

Both editorial and third-party products can be defined in the one system. Broadsheet, tabloid and mixed products are all supported. Panorama pages can be defined as long as the selected product structure allows this.

More complex products are also supported. These include spadea and half-cover products, shingling and variable product sizes.

Product sequences can be defined with global linked pages, local pages and pages where, for example, only the colors are shared. All these dependencies are shown clearly in the graphical user interface.

Defined products are always checked against MPS Production's virtual press model, so the system only permits the specification of products that can actually be produced on the press.

Production planning

Once a product has been defined, its production can be planned. Relevant production parameters are set in the attribute part of the user interface. This includes selection of the production variant to be used for the print job.

If the user wishes, the system will select the production variants for a production sequence automatically to ensure that as many web leads as possible are reused. This reduces the make-ready time between print jobs.

The print jobs are shown automatically in the schedule part of the user interface. Production times and the allocated press can be changed by a simple drag & drop of the relevant bar.

Plate management

MPS Production knows exactly how many plates are required and where on the press they belong. This data is shared with plate management systems, thereby allowing a complete automation of the platemaking. In addition, the relevant data can be supplied to optional plate displays mounted on the press itself.

Forced panorama production is fully supported.

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Sheet-oriented representation of print products
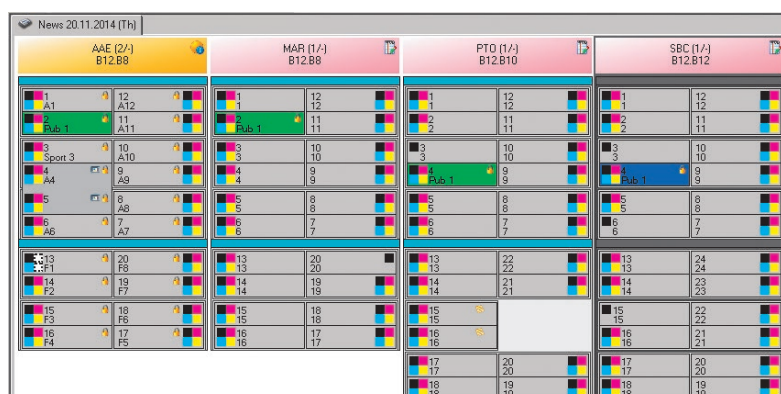
Fully automatic imposition generator

If no predefined imposition is available or if those defined do not meet the requirements of the user, then new production variants that correspond to the current product can be generated at the touch of a button. The number of impositions generated can be restricted by selecting individual reelstands or by specifying certain web widths.

Each production variant can be displayed graphically in the press overview.

Graphical imposition editor

The graphic imposition editor makes it much easier to create and modify basic impositions. The user can select webs, ribbons and bundles for the basic imposition via a graphic user interface and define the relevant web widths and turns. Therefore profound knowledge of naming conventions and paper lead drawings is no longer required.

The graphical imposition editor also allows the color allocations of the printing couples to be changed by drag&drop.

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Graphical imposition
editor
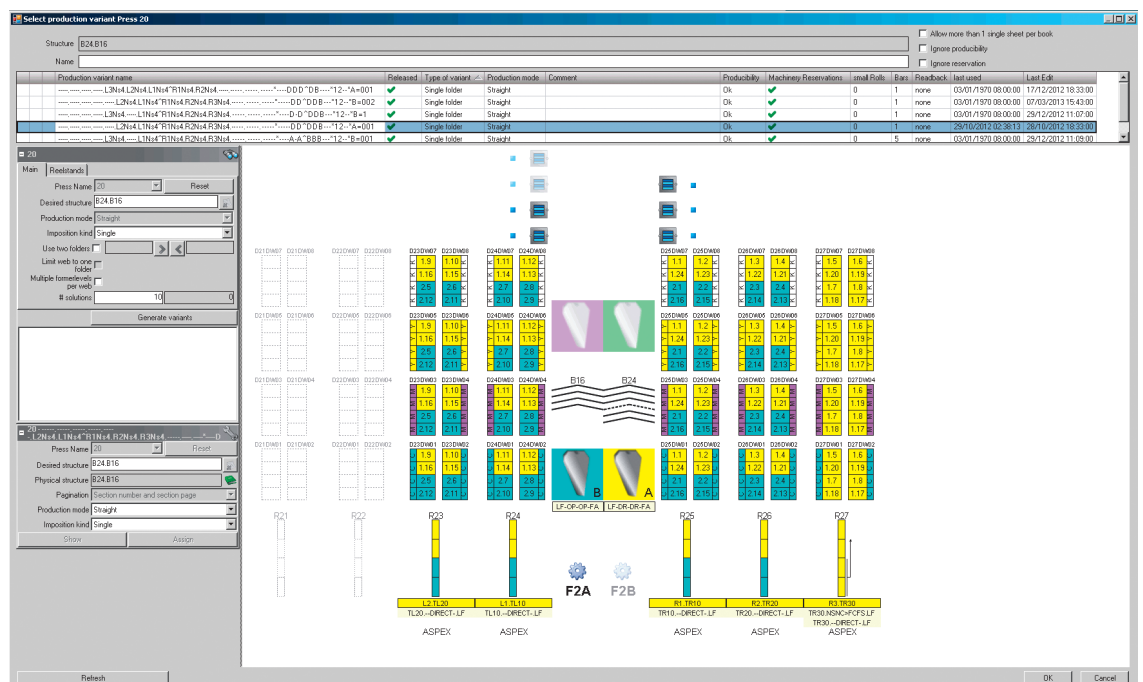
Ink, water and paper management
This is where MPS Production has a profound effect on the print quality. The system caters for all available inking and dampening systems. With 16 classes of ink for each of up to 10 different inker types, the system offers unrivalled flexibility and precision for ink presetting. It is therefore possible to assign different inker curves to different printing couples.

Functions are provided for defining the various sorts of paper used and the associated correction factors for ink and water supply.

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01 Screenshot showing an ink coverage curve, with:
top left: selection of inker type and ink class,
middle: coordinates of curve,
right: press overview showing inker and dampener types,
bottom: the coverage curve itself

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02 Comparison of curves for all ink screws of a printing couple

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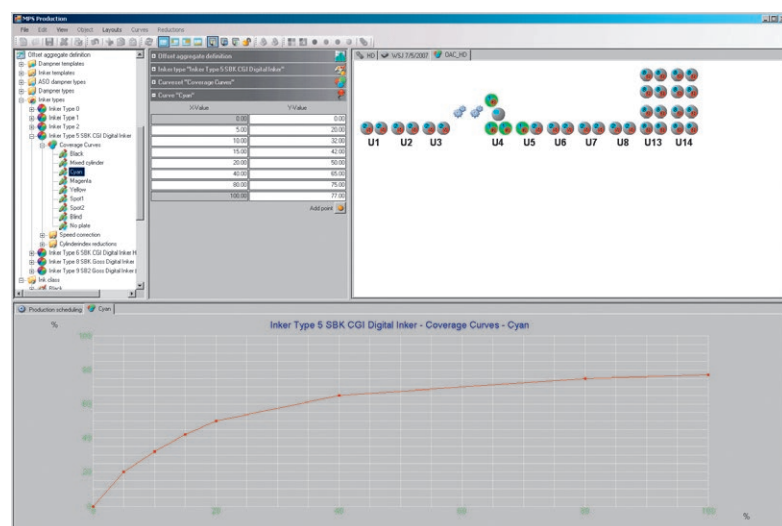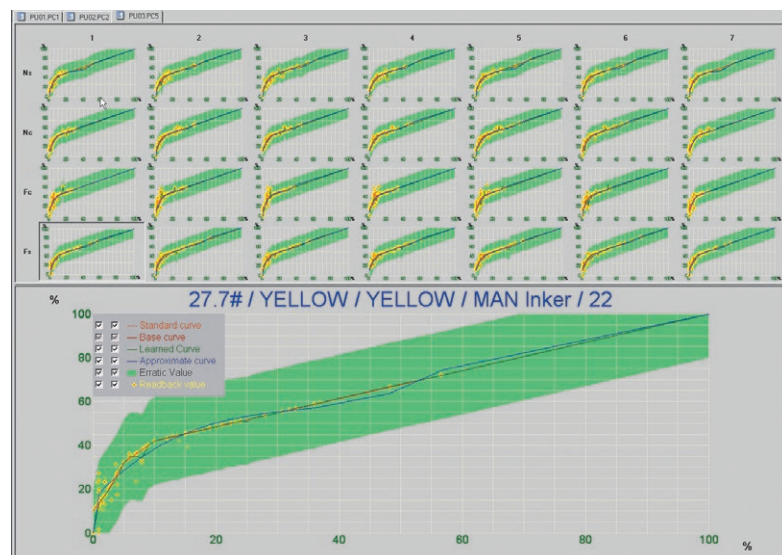
Extensive ink and water management functions and calibration curves mean Improved print quality, less start-up waste and lower costs.

The ink zone values originating from a scanner or RIP, adjusted according to the defined curves, ensure that optimum preset values are used for press start-up. The speed correction curves ensure that print quality is maintained during production and operator interventions are minimized.

Automated inker curves
This option has been introduced for the benefit of those users that would like to have the possibility for an automatic updating of the ink curves based on the values used by the printers.

The function can be divided into three phases:
1. All the ink screws are monitored during each print job and all changes made by the operator are registered.
2. At the end of each print job the average value for each ink screw is calculated and stored in a database along with the corresponding ink density, ink type and paper type.
3. When enough data has been collected, the user can decide to update the ink curves based on the deviations recorded. The new correction curves can then be used for subsequent presets.

An important aspect is that the user decides whether the curves should be updated and whether the updated curves should be used. The user therefore does not lose control over this important aspect of print quality.
The system provides a graphical overview of all the inker curves for a printing couple. The curves can therefore be compared with each other and anomalies identified.

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Presetting

Short set-up times and minimized start-up waste are ensured by the wide selection of preset functions for all circumstances:

- Preset next production: the normal case covering all relevant registers/compensators, web tension, ink and water settings.
- Production sequence preset: when consecutive products with similar impositions are printed. Only the changed elements need to be preset.
- Update preset: when one or more plates have been changed and the ink and water values for these new plates need to be preset.
- Interrupted production preset: for a print job that was interrupted and restarted later.
- Imposition preset: as a backup in the event of a failure on the press.

The preset uses compensator and web tension values from previous print jobs using either the same production variant, imposition, web-ribbon-bundle combination or individual webs, ribbons and bundles, depending on what is available. Good values can be read back at any time and stored in the same hierarchy for future use.

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Your benefits
- Preset functions for all circumstances – reducing make-ready time, start-up waste and costs.
- Version handling of pages and separations ensures correct preset values and soft-proof images at all times.

Version management

MPS Production's detailed print product and page content version management enables a precise control of the presetting. The user can always see which version is currently on the press and where there are newer versions available. This is essential when using highly integrated presses with image-based controls, automatic plate loaders and soft-proof systems.
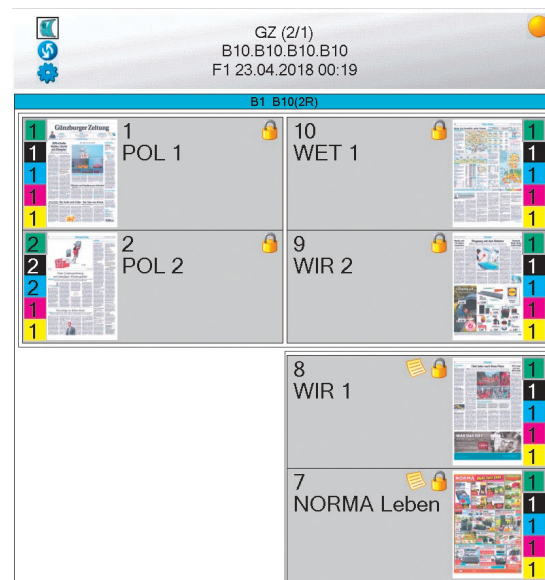
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Display showing page previews with page and separation version numbers

Overviews of ready and active print jobs

MPS Production provides an overview of all ready and active print jobs. The scope of the list of ready jobs can be reduced by the use of filters. Many of the fields in the displays can be edited, e.g. circulation values and timings.

Equalizer

MPS Production provides sites with multiple printing presses with an equalizer function. This means that print jobs running in parallel on several presses are balanced such that all jobs finish simultaneously on reaching the required total print run. If one press is stopped, either manually or by a disturbance, then the remaining print run for this press is redistributed amongst the remaining presses. ABB's postpress interface means that this can also be steered from the mailroom, resulting in better coordination and quicker completion of the print jobs.

Production monitoring and forecasting

As well as the schedule for the planned print jobs, MPS Production also shows the actual production times for running and completed jobs. These are shown as a separate bar along the time axis. Delays can therefore be identified immediately.

In the event of a production delay a forecast is prepared for the subsequent print jobs. This is also shown graphically on the schedule. The user therefore has optimum support to react to delays and to change the planning.

The system automatically takes account of units that are under maintenance or become defective.

Print quality data collection

This is a logging function that creates a chronological record of all the values used in the course of a print job. The data are stored in a database for subsequent analysis and the generation of reports.

This function is sold as an option as it requires specific engineering work both within and outside MPS Production.

Operator intervention log

This optional function records not only the preset values of all adjustable elements on the press but it also records all changes made by the operators at the press control console. The recorded values are then consolidated at the end of the print job into a report which shows the initial (i.e. preset) value, the final value, the minimum and maximum values and the number of changes made to each of the controlled elements. This includes all individual ink screws.

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Your benefits
- Print run equalization function for balancing print jobs on multiple presses.
- Full production planning functionality that takes account of press units under maintenance.

Online Production Viewer

The Online Production Viewer module of MPS Production provides a production overview on smartphones, tablets or PCs, so the production director can see what is going on in his plant wherever he or she is.

Print job queue display
The print job queue display is configurable. It typically shows the previous two print jobs on a press section, the running print job and the next planned job. The data includes product name and structure, schedule info (on time, delayed etc.), circulation and so on.

Active print job display
The active print job display shows the graph of the press speed over the job, the planned and actual production times and a lot of other key data. There is also a more detailed view with all stop messages and alarms.

Press progress display
The press progress display gives a graphical overview of the progress of the current print jobs on all press sections.

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01 Online Production Viewer – details of current print job

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02 Print job queue on a mobile phone

Report function
Finally, there is the report function which shows reports that are also available on the main MPS Production system, i.e. the production manager gets a preview of the reports and data that he will see when he or she is back in the office.
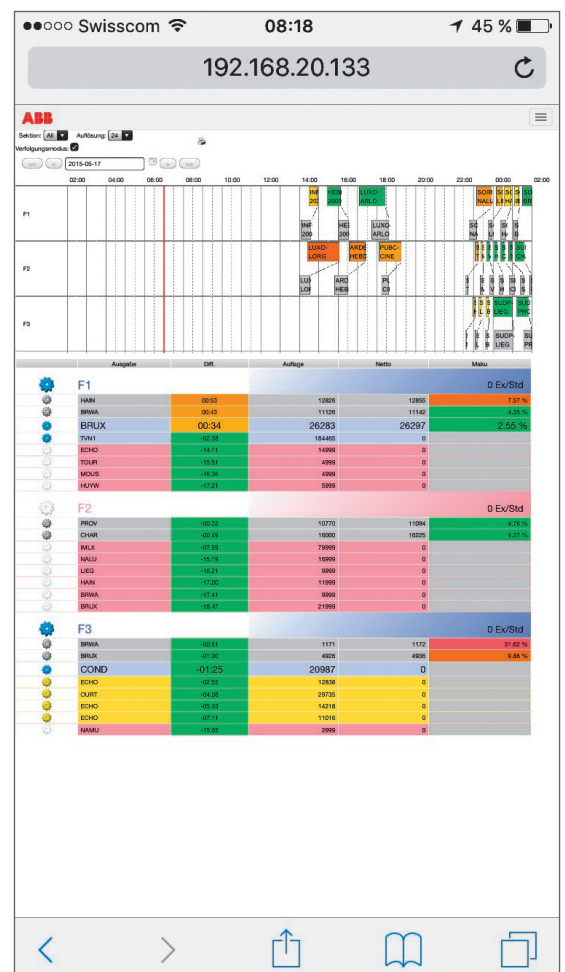
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Online Production Viewer on smartphones and tablets gives access to key production data regardless of location.
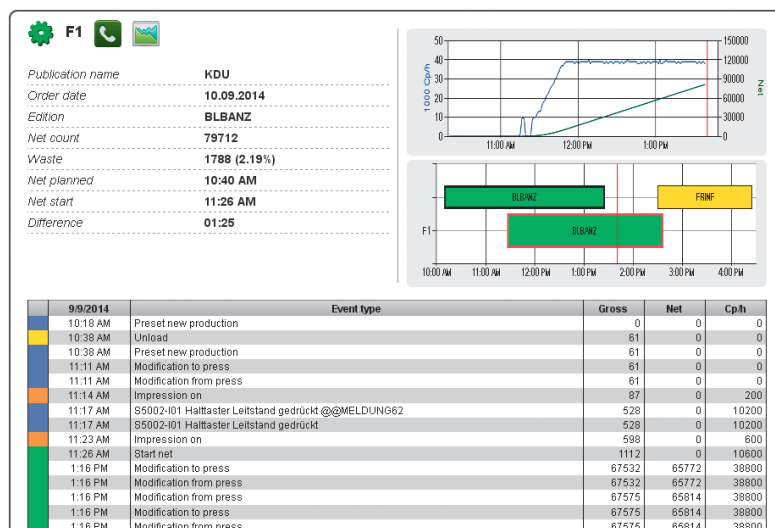
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Flexibility for today and tomorrow

Virtualization

We recommend system virtualization. Previously virtualization was made prohibitively expensive by the Oracle license model, but MPS Production is now based on the PostgreSQL database, which provides all the functionality required by MPS Production without the punitive license costs.

ABB uses the Microsoft Hyper-V virtualization solution to decouple the MPS Production application from the hardware and operating system of the VM host, but other virtual environments can be used if the customer already has a solution in use. The virtualization leads to the following advantages for the end-user:

Independence from the hardware and operating system life cycles

Virtualization means that the application can be moved to a new platform very simply, thereby freeing users from the challenges imposed by the hardware and operating system life cycles.

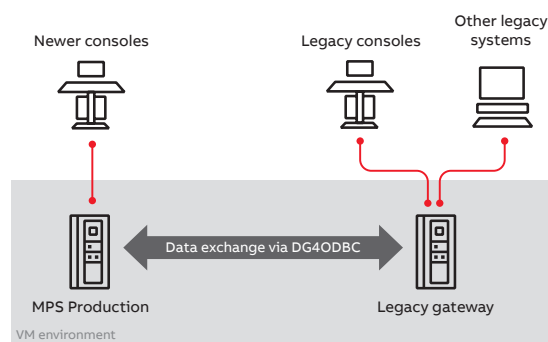### Simplification and reduced risk during updates

Virtualization allows an additional copy of the application to be deployed in parallel with the original version. As a result, the new application can be tested thoroughly on the target hardware and, when the tests have been completed successfully, a simple switch between the two versions is made.

Availability

Virtualization ensures that the data can be stored redundantly, thereby providing a robust hot-backup solution that is even more robust than a conventional cluster solution.

Legacy Gateway

We provide the Legacy Gateway so that Oracle-based interfaces to older systems are still supported despite MPS Production moving to the PostgreSQL database.

Newer consoles   Legacy consoles   Other legacy systems

Data exchange via DG4ODBC

MPS Production   Legacy gateway

VM environment

The evolution of MPS Production

ABB has a policy of ensuring upwards compatibility of its products, and MPS Production is a classic example of this. The first predecessor of MPS Production was introduced as far back as 1977, when it was the world's first computer system for newspaper production planning and press presetting. The system has subsequently gone through many phases of evolution, keeping up with the development of new hardware, operating systems, programming languages, and, of course, the changing needs of an industry at the cutting edge of technology.

Several hundred systems have been supplied in this long history. Upgrades, either software alone or both hardware and software, were always made available so that customers could move up to new generations while protecting their existing investments and retaining their valuable data – a continuous upgrade path lasting over 40 years.

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