
ABB Ability™ Manufacturing Operations Management

Process and Production Intelligence



Bring your data into decision-making and into the future.

Automation systems and industrial plants are growing increasingly complex, with a more flexible production in larger plants. More insights into plant performance is needed – with less and less people to do the job.

On top of that data storage and transactions needs to be reliable, cyber secure, and with high capacity.

The question is: How can industrial plants meet these requirements and operate at an optimal level – by turning large amounts of industrial data into knowledge and action?

The answer is ABB Ability Manufacturing Operations Management – Process and Production Intelligence. A modern and intelligent hub for technology, ICT, people, and opportunities.

Ability to change is a requirement for any industry. As players on the global market, companies are facing fast changes to their business conditions, and adaptability based on registered data is a keyword for any ambitious business. Industrial developments as a result of Industry 4.0 and The Internet of Things (IoT) will create even more data that needs to be analyzed and interpreted.

Raw data is useless, unless it is turned into knowledge. Data needs to be analyzed and applied ambitiously and innovatively – to the benefit of decision-makers, the individual industry, and the whole network.

This is why we, at ABB, are going all the way and have developed a cyber secure solution that supports effective decision making and plant operations. We call it ABB Ability Manufacturing Operations Management (MOM).

MOM Process and Production Intelligence Software is all about combining plant operations data from control systems, ERP, and other data sources into actionable information. Information that provides the right insights for decision-makers to plan, optimize and continuously improve plant operations, in order to stay competitive in a rapidly changing environment.





Making reality less complex.

So clever. So simple.

Over the past decades, industrial automation has evolved to become driven by big data, thanks to technological innovation and advancements.

ABB Ability Manufacturing Operations Management (MOM) reflects the trend and helps you meet these requirements. MOM Process and Production Intelligence software collects, stores and analyzes your relevant data, always giving you the best foundation for making decisions with a minimal risk of error.

In the industry today but even more significantly in the future, software-based systems suited for industrial software, such as Manufacturing Operations Management Software, will play a large role. The foundation is the Common Services platform that includes the following 5 key capabilities:

- **Connectivity:** to connect to control systems and disparate data sources
- **Data Storage:** high capacity process historian tailored for secure long time storage of process data and event
- **Common Services:** to ensure a consistent integration environment across all applications
- **User Experience:** Empowers decision-makers with the right data at the right time. Easy accessed through the Launchpad.
- **Reporting:** supports the users with the reports they need

Thanks to this intelligent information infrastructure MOM definitely ensures that decisions-makers can make the right decisions at the right time. In addition, the software can be expanded by adding specific applications, targeting your industry and suitable for your requirements.

Here are some of the reasons why MOM will play a large role in the industry of the future.

Gather and analyze your data

As decision-maker, one of your most important responsibilities is to make the right decisions based on the optimal information available. Manufacturing Operations Management provides all the knowledge your need – fast and effective.

Managed complexity

The incoming data masses will be stored, combined, and translated into meaningful information, based on the intelligent information infrastructure. MOM meets demands for the highest levels of quality, precision and accuracy in output, by supplying information that can be trusted to provide the best operational decisions for your plant.

Control system independent

The very reliable, high capacity and cyber secure platform enables integration of any data according to open industry standards. MOM will allow industries to collaborate across systems and networks in the production process and to react faster to changing market requirements.

Easy to expand

The Common Services platform also hosts different industrial productivity software applications. This enables MOM Software users to adopt and expand fast and easy, by adding new relevant industrial software applications, as requirements from different operational excellence programs or changes in business objectives.

**Cost effective software life cycles**

With a life cycle separated from the control systems Common Services and applications offer a very cost effective IT/OT integration. Industrial productivity software applications can be added whenever needed. The underlying control systems life cycle does not impact this agility to add new software products and solutions as new requirements occur. With these separated software life cycle layers ABB Ability Manufacturing Operations Management Software offers low total cost of ownership.

Meet industry standards

The industry is continuously facing new standards and regulations and needs to adapt to these changes fast, in order to stay competitive. ABB MOM Process and Production Intelligence provides the advanced data analytics needed to achieve the necessary insights into the operations. In addition, MOM Software includes a comprehensive set of industrial productivity software

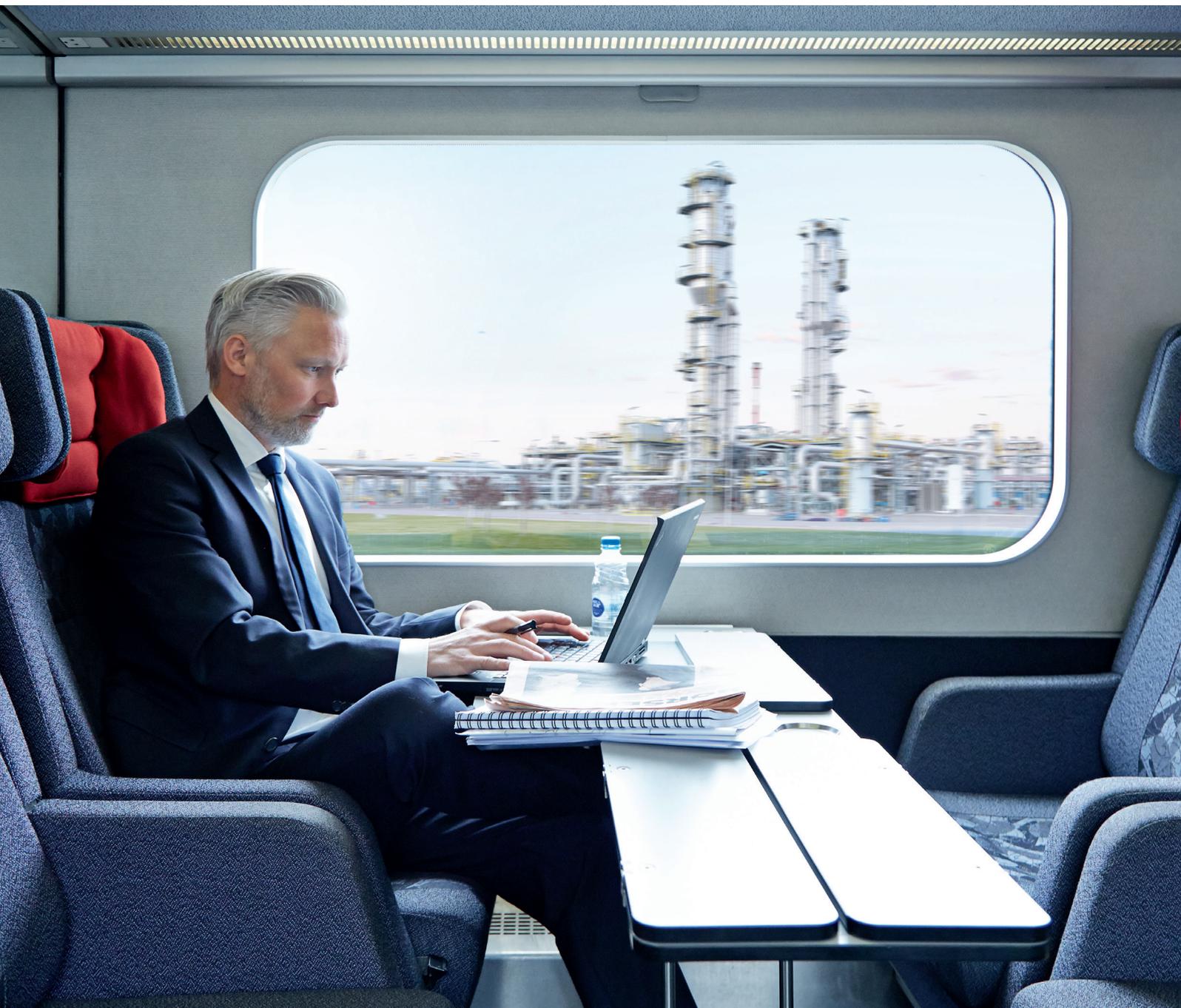
applications which address and support compliance to new standards such as ISO 50001 for Energy Management, ISA-18.2 for Alarm Management and alarm systems performance, or ISO 55000 for Enterprise Asset Management.

Customized knowledge

ABB Ability Manufacturing Operations Management enables you to individualize even the smallest details while retaining optimum productivity. You and your colleagues can track and plug specific data and knowledge, based on your individual needs. Different users have different needs and ways of exploring data. The intelligent software from ABB supports decision-makers who need interactive access to KPI displays, reports, documentation etc. on their desktop computers or mobile devices. A second type of users are the data analysts who typically configure reports, analyze data and calculate the required KPIs or perform other types of data mining based on the data stored in the MOM system.

Go further with decision tools that are just as flexible as you are.

The industrial development is unstoppable in today's agile and competitive business environment. And so are you.



With MOM Process and Production Intelligence you have access to knowledge without having to care about time, place or curious glances. ABB is committed to high performance and cyber security – even on the go.

Flexibility is important to modern working life. The calendar reveals that the working environment never has been so change-able. In the office one day, on a business trip the next, participating in a meeting with a global development partner the third. Fortunately you do no longer need to make any compromise on decision-making, on quality nor on safety, just because you're on the go.

Made for movement

MOM Process and Production Intelligence reflects reality and is made for movement. So even though it opens for vast amounts of product information in high speed across systems and servers, you can access data on any device using either Windows, web or mobile clients.

No matter where you are, the perfect starting point is always the MOM interactive dashboard – the face of MOM on your device. The customized dashboard presents clearly your requested information, and the device-independent software solution ensures that you can share it all with your colleagues whenever and wherever you want to.

Made for you to work

Flexibility is also to be able to jump in and out between applications, programs, quality reports, trend analysis and KPIs.

ABB Ability Manufacturing Operations Management is designed to cope with a changing work environment where one minute does not know what the next will bring. The goal has been to develop a decision-tool that is with you all the way – whether you work in one or the other system in one or the other program.

Made to secure your company's future

All businesses have intelligence worth protecting. In fact, your company's future will be determined by your know-how, ideas and operations – and on your ability to protect them.

As a leading provider of control systems and software solutions, ABB can deliver cyber secure customer focused solutions that enhances asset productivity and efficiency. MOM Process and Production Intelligence Software is compliant with industry standards and best practices for remote data access and can coexist with leading security solutions on the market. This allows users to deploy MOM Software within existing cyber security practices.

The built-in ABB proprietary protocol for collecting data from critical real-time control system networks through firewalls to the MOM main server which typically resides on a plant network in an IT/office network environment. The same ABB proprietary protocol is used whenever data are sent over the network. This ensures reliable secure data transfer also on the IT/office network.

Expand and be more agile with Process and Production Intelligence Applications.

The industry is moving into a new era. Here people and intelligent units are in focus; industry, technology and ICT, working in networks with you and your colleagues.

At ABB, we are excited and proud of moving to the next level along with the industry through ABB Ability Manufacturing Operations Management (MOM).

In addition to being an anchor for the intelligent information infrastructure, MOM is also an interactive platform that hosts different software applications. This enables you and other MOM Software users to expand and be more agile by adding new relevant industrial software applications, as requirements from different operational excellence programs or business objectives change.

Process and Production Intelligence Applications are being developed by ABB and are continually being expanded with applications added by partners even from other sectors or industries. In that way, MOM Applications will not only unite the industry in the future, but also expand it. The applications tool can be divided into three categories: MOM Common Services, Process Intelligence and Production Intelligence Applications.

MOM Common Services

MOM Services is the starting point as a services platform hosting common functionality across all applications. MOM Common Services enable easy expansion with Process and Production Intelligence applications when new needs occur.

Process Intelligence Applications

The tools you need to explore and analyze typical process data such as time series data and events.

Dashboard

The Dashboard Application ensures that users can build relevant Dashboards, regardless of which MOM application or data source that owns the data.

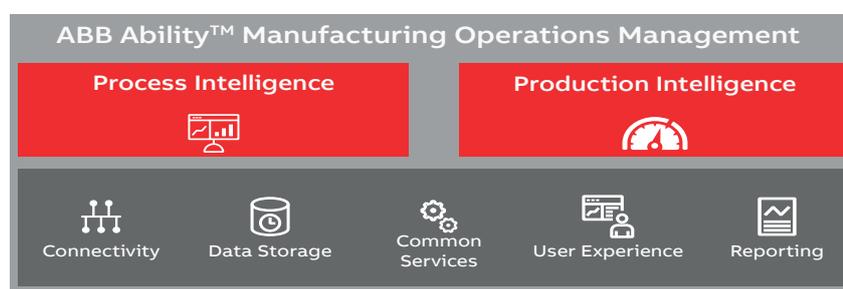
Users simply create as many Dashboards as they need to give the complete picture of their operations and business objectives. The Dashboards are easy to organize together with all other MOM Applications. This allows users to have easy access to their relevant Dashboards and enables fast switching to other MOM Applications for more detailed analysis in different contexts.

Excel Analyze

The Excel Analyze Application simply puts MOM Services data into Microsoft® Excel®. The Excel Analyze Application provides tailor-made Microsoft Excel functions to fast and easy access process and production data in a well-known spreadsheet format. This allows users to take full advantage of the Microsoft Excel calculations and analysis capabilities.

Trends & Events

The Trend And Events Application provides the entry level of process information and analysis with trend displays and event list views. The full-fledged trend display also includes center lining deviation. The event views include standard features such as search, filter and sort but also basic event analysis such as most frequent alarms and alarm frequency over time.





Production Intelligence Applications

The tools you need to analyze data in a production context.

Batch View

The Batch View Application is the tool of choice for process engineers to search, browse and find batch production data generated by 800xA Batch Management. The application combine all batch production data such as parameters, events, and trend associations into one single interface powered by the flexible search engine and easy navigation within the familiar Procedure Function Charts (PFC).

Batch Investigate

The Batch Investigate Application takes the Batch View Application, extends it and turns it into a query tool where user can build advanced queries for any batch data. This makes Batch Investigate the perfect tool for effective investigation of deviations and exceptions.

Batch Compare

The Batch Compare Application provides flexible configurable batch comparisons. Batch Compare leverages View and Investigate applications and users can combine views, advanced queries and

batch comparisons to perform in depth batch analysis.

Statistical Process Control (SPC)

The SPC application provides quality methods to supervise if a process is in state of control and whether it can produce units within given tolerances. The SPC application enables the user to define and monitor control cards. Control cards consist of up to three user configurable control charts performing the actual SPC calculations and visualization.

Overall Equipment Efficiency (OEE)

The OEE application showcase current and historical availability, performance and quality parameters and their contribution in the overall equipment effectiveness. Hierarchy, equipment and downtime definitions support efficient engineering. The OEE app includes web based analysis capabilities to enable operational decisions.

Be part of the power.

Knowledge is important for every company. So why not share it? MOM Software Development Kit (SDK) for applications development is dedicated to all people with influence in the industry who strive for smart solutions contributed by Industrial Productivity Applications.

MOM Services and the tool kit to develop software applications (MOM Software Development Kit) as well as the ready-made features and functions is at the heart of Manufacturing Operations Management. These tools ensure that partners in the industry can build their domain expertise applications, easy and cost effective. Day by day this tool kit provides new software solutions, applications and new short cuts, since the infrastructure is made for sharing. Instead of focusing on keeping it all in its own territory, from now on, the industry is sharing new applications and tools, thereby optimizing the resources and minimizing the risk and costs.

– Together we are stronger

This is the main idea – what benefits one industry is likely to benefit the next

– Easy to get started

A Windows developer understands the concepts and are up to speed in just a few hours

– Reduced development costs

Fast and easy development thanks to the built-in standard features of the MOM Services framework

– Reduces maintenance/life cycle costs

Because of the standardized framework and different built-in software deployment tools – a part of MOM Services

– One common User Experience (UX) across all software applications

One of the four models in MOM Services, User Experience, ensures users can benefit from one common modern UX across all applications.

MOM SOFTWARE DEVELOPMENT KIT (SDK)

- Installation of C# templates projects installed into Visual Studio
- Developers Quick Guides as well as detailed interface descriptions and guidelines on how to best utilize the MOM Services framework
- Offline applications test bench tool for fast and easy applications testing
- Applications packager and installer tool. Application installation kits are deployed once on the MOM Server using the standard server configuration tool.



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