maint partner

INTELLIGENT CARE.

MP INtelligence® — Advanced Machine Learning for Industrial Processes

Industry 4.0, Artificial Intelligence and Machine Learning are one of the biggest buzzwords today. To stay ahead of the curve, companies are investing into proof-of-concepts and trials to learn and steer their strategy. There is lot of innovation and good intent, but most of these projects fail to deliver any value to the business. So, how should you get started ensuring a strong return-on-investment?

MP INtelligence is an advanced Machine Learning based offering that enables you to deliver concrete value from your existing operational data. By for example minimizing stoppages and avoiding downtime, you will be able to show significant value to the business, build momentum and expand as you learn more about how to leverage AI/ML to your business.

MP INtelligence is an advanced anomaly detection solution that identifies potential issues in industrial processes. It applies Machine Learning algorithms to operational signal data guided by input and feedback from Maintpartner and customer Operation and Maintenance (O&M) specialists.

With MP INtelligence you will be able to use your current operational data to:
- Minimize stoppages and downtime due to unexpected breakdowns
- Optimize production by identifying underperformance
- Maximize asset and machinery lifetime

This approach of combining expert insight with leading-edge Machine Learning algorithms, delivers superior insights that deliver real business value. Combined benefits can reach millions of euros annually.

WORKS FOR YOUR INDUSTRY

MP INtelligence is used today across various industries including energy (CHP, nuclear, waste, hydro), pharmaceuticals, metal, chemical, aviation, and paper and pulp. The unique Machine Learning algorithms are tuned by O&M specialists to specific

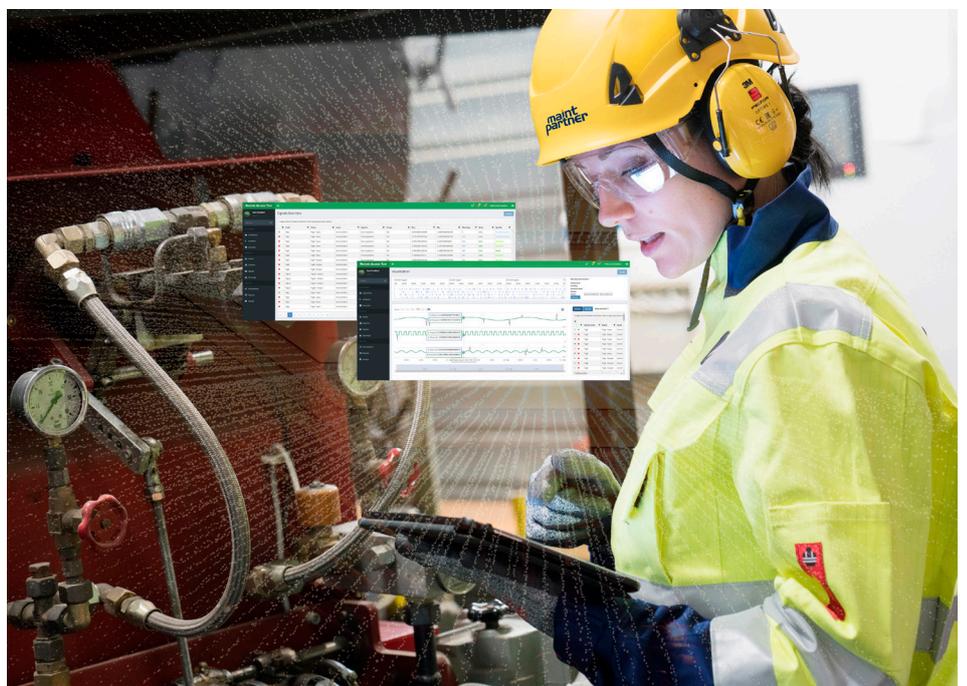customer situations, making the solution applicable to any industry.

DETECTS ISSUES WHEN THEY HAPPEN FOR THE FIRST TIME

MP INtelligence's ability to discover anomalies in any process at a very early stage, enables timely response to identified issues. It also enables you to capture problems when they happen for the first time. Ability to detect new, unseen patterns is extremely valuable in complex environments where building reliable predictive models is not feasible.

SERVICE TAILORED FOR INDUSTRIAL ENVIRONMENTS

MP INtelligence supports the work of O&M personnel, providing valuable process insight for both short-term actions and long-term optimization and planning. It does not require constant monitoring and fits well into the key personnel's daily work schedule and routines.

MP INtelligence includes a web-based, intuitive user interface to view and categorize warnings, and view detailed signal data related to the incidents. Notifications can be also delivered to mobile devices.

MP INtelligence service includes back office monitoring by Maintpartner Control Tower and regular calls/meetings to jointly review and improve algorithms and overall service. This is an essential part of the service to ensure continuous improvement, tangible results and customer satisfaction.

HOW IT WORKS

MP INtelligence utilizes available signal data as the starting point. New data sources can be easily added later as understanding of the process increases. As part of the end-to-end service, Maintpartner helps you to transmit relevant data to the cloud and add new sensors or other digital instrumentation later on.

The advanced self-learning algorithms find correlations between large numbers of signals and learn system-level behavior. The ability to handle thousands of signals separates MP INtelligence from condition-based monitoring (CBM) systems that focus on individual parameters. MP INtelligence also supports advanced long-term trend monitoring to capture slow changes that might indicate deterioration of the equipment or any other disturbance on process performance.

After the initial learning cycle, MP INtelligence identifies abnormal signal patterns in the real-time signal data and generates warnings for O&M specialists. When corrective maintenance and failure data is combined with signal data, algorithms can recognize patterns that are early indications of an upcoming failure – even if they happen for the first time.

MP INtelligence combines machine and human learning in a unique end-to-end concept. Technology behind MP INtelligence has been developed for over 20 years for industrial environments and has been proven by Maintpartner across processes in different industries. The most important
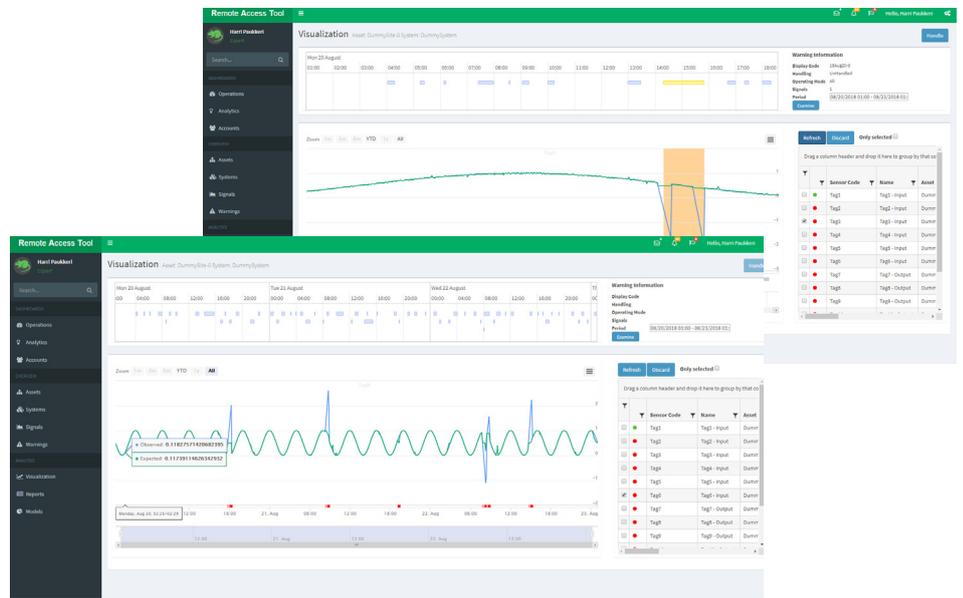

Figure 1: MP INtelligence User Interface

learning during the past years has been how to combine human and machine intelligence to deliver real results.

DEPLOY IN WEEKS

Our delivery model has been tested and proven in the field. Starting with existing, available data and expanding with new data points later, enables rapid deployment and strong return on investment.

HOW TO GET STARTED: CONTACT US AT

digital.solutions@maintpartner.com

to learn how MP INtelligence can work for your business, or visit www.maintpartner.com/digital to learn more about customers and solutions.
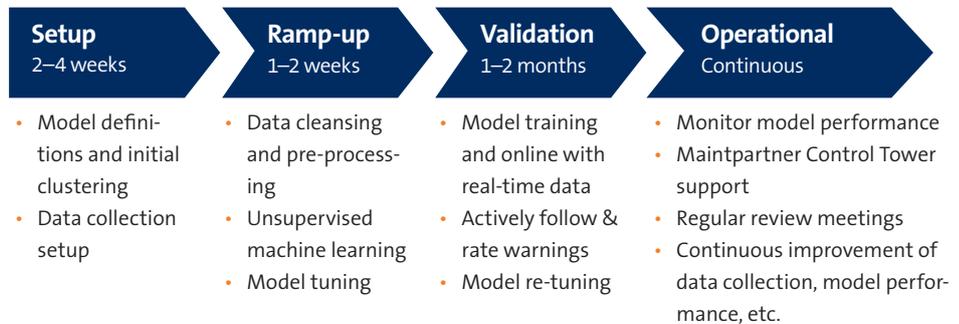

Setup 2–4 weeks	Ramp-up 1–2 weeks	Validation 1–2 months	Operational Continuous
• Model definitions and initial clustering • Data collection setup	• Data cleansing and pre-processing • Unsupervised machine learning • Model tuning	• Model training and online with real-time data • Actively follow & rate warnings • Model re-tuning	• Monitor model performance • Maintpartner Control Tower support • Regular review meetings • Continuous improvement of data collection, model performance, etc.

Figure 2: A typical timeline for deploying MP INtelligence

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