



# Optimize production



with cronetwork, the MES software  
for successful enterprises

scheduling board FCS :: APS  
plant data :: machine data  
time & attendance :: business intelligence

# Your partner

## Industrie Informatik: What makes the difference?

Industrial enterprises need strong partners to make their production as efficient as possible. For more than two decades as a producer of standard software, Industrie Informatik has been involved in the optimization of production processes in discrete production. To further establish our status as a technology leader, we continuously invest in the further development of our Manufacturing Execution System (MES) cronetwork and in training our staff.

### Why MES?

The use of MES proves to be an important strategic success factor for our customers. Via scalable use of the software modules, they can monitor, analyze and control all relevant production processes. The complete production becomes transparent, understandable and traceable. Thereby responsible staff achieves a new level of decision making and cause/effect principles become directly visible. This improves the utilization of resources while reducing risks and costs and has helped many of our customers to achieve

Best in Class awards in their branch.

Satisfied customers are our greatest success factor. We have realized more

*"The flexibility and the solution-oriented approach of Industrie Informatik ensure continued successful and optimal implementation of our requirements."*

*Jörn Volckmann, Head of IT, SCHOTT Pharmaceutical Packaging*

than 400 successful installations with renowned enterprises in all branches. We vest particular value in long-range partnerships across the years. At our offices in Germany, Austria and China, over 60 committed staff members work in close, direct contact with our customers. Naturally this includes on-site service worldwide.

We have often proven that we keep our promises. Let our well designed solutions provide the basis for the successful future of your enterprise.

Bernhard Falkner

Thomas Krainz

Eckhard Winter



## A promise is a promise.



You can profit from the highest expectation that we set for ourselves. Your one-time investment decision ensures that you will remain up-to-date in functionality, usability and technology.

- :: We concentrate on core competencies and customer benefits.
- :: We deliver software solutions with assured consistent high quality without third-party components.
- :: We have over 20 years of experience with implementation know-how in international projects.
- :: Worldwide customer service is provided by our competent staff with years of experience.
- :: We continuously develop our cronetwork Manufacturing Execution System.
- :: Your investment security is assured due to our solid financial base (Creditreform credit index ratings of 180, "very good") and healthy organic growth.

# Solutions

## Benefits of MES

### cronetwork product portfolio

A Manufacturing Execution System (MES) establishes a uniform system from which your entire enterprise profits – from management, controlling and quality management, to production planning, and down to the individual production worker. MES supports you in efficient planning of all production orders.

An MES provides a clear picture of your scheduled production: What orders need to be completed in the near future? What capacities are available (machines, personnel, material)? Which delivery dates can be met?

In the same way, an MES visualizes your current production processes, e.g.: machine status, order status and progress, and current order-related personnel and machine allocation. Furthermore, an MES enables systematic evaluation and analysis of the collected data, so that you have a focused foundation for your process control.

cronetwork – Industrie Informatik's MES – has a modular structure. The functional modules can be used independently and deliver particular added value in combination. All modules access a joint database. Thus with every functional module, you use up-to-date

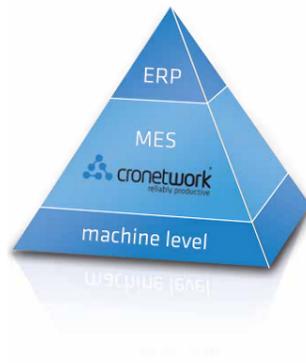
values, and interfaces between modules are unnecessary.

We provide our customers with 100 % releasable standard software. The latest

developments from our product management are available to you along with customer-specific customization that is integrated in each annual release. This ensures your automatic technological progress and real investment security.

*"If we consider functionality, software features and the philosophy and technology behind the software, then in my opinion Industrie Informatik is far ahead of the competition."* Ulrich Babenschneider, Head of Sheet Metal Production, STIEBEL ELTRON GmbH

MES provides the important link between your ERP/PPS system and the machine level.



## Fine planning

scheduling board

advanced planning & scheduling (APS)

## PDC

plant data collection

production data collection

## MDC

machine data collection

process data collection

## T&A

time and attendance

incentive pay

## BI

evaluations :: reports

KPI :: OEE :: dashboard

## Technology

interfaces :: database

web-compatible & releasable

## Some of your benefits



One important criterion for distinguishing the market is that, due to 100 % releasability, Industrie Informatik ensures that every customer with a maintenance agreement enjoys continuous and easy-to-use technological and functional progress.

- :: MES visualization gives you a clear picture of your planning and current production processes.
- :: High acceptance is assured in your company, as every user group profits from MES.
- :: Collected data enable precise evaluation, analysis and corresponding reaction.
- :: Modular software structure means that function blocks can be used independently or combined to meet your needs (even with existing systems).
- :: All functions access a shared database, eliminating redundant data maintenance.
- :: Your data base is always up-to-date and ensures high availability.
- :: With the large cronetwork user group, you profit directly from developments in other firms and branches.
- :: The broad range of courses of the cronetwork academy offers regular dates and compact training.

# Fine planning scheduling board :: advanced planning & scheduling (APS)

The market environment for manufacturing enterprises and the requirements put on production planners change dynamically and rise in complexity. The demand situation varies rapidly, the market for suppliers and personnel changes in short cycles, rush orders require immediate action, etc. Successful enterprises must master these challenges to secure their market positions. A professional fine-planning tool helps you do so efficiently.

cronetwork scheduling board is a flexible tool that lets you import production orders from your ERP system and schedule them on your available capacities. In its functionality, scheduling board extends far beyond ERP, incorporating capacity limits for

***“Scheduling Board APS reliably plans and controls our daily business, taking into account the availability of capacity and material.”***

***Robert Lankhart, Proxy Controlling, Finance and Personnel, KRONEN GmbH***

personnel, machines and tools as well as information such as setup times, qualifications and multiple machine operation. This includes optimi-

zation specifications such as setting the priority on utilization or throughput time. The computed scheduling scenario is displayed visually so that interconnections and effects on other orders are immediately visible. You achieve high transparency regarding the feasibility of orders and meeting of delivery dates, which means realistic guidelines for production. You can take targeted action, and simulations help you decide among alternative scenarios.

cronetwork scheduling board enables you to detect and exploit available optimization potential in your production. You improve your conformity to deadlines, reduce throughput times, decrease idle times, and minimize stock levels. Even in critical phases, your production runs with optimized costs.

scheduling board APS (advanced planning and scheduling) additionally incorporates the availability of parts produced in-house and outsourced orders into scheduling. Even on dynamic rescheduling in the production orders, this enables you to always retain a current overview of the feasibility of scheduling.



*Visualization of interdependencies reduces the complexity of production.*



## Some of your benefits



**You decide:**  
In cronetwork scheduling board, you determine your mix of manual scheduling and automatic functions, so that you remain flexible.

- :: It is easier to react to dynamic markets and changing requirements.
- :: Capacity limits and optimization specifications are incorporated in scheduling.
- :: Scheduled production orders are depicted graphically and enable a quick overview.
- :: Production staff receives realistic guidelines.
- :: Conformity to deadlines is improved, throughput times are reduced and stock levels are minimized.
- :: Simulations enable targeted decisions among various scenarios.
- :: Integration creates added value:
  - ... with plant data collection: real-time feedback automatically updates scheduling,
  - ... with personnel allocation: availability and qualification are incorporated in scheduling.

# PDC

## plant data collection production data collection

Where do you begin in order to make your production processes more efficient and use resources optimally? The most important prerequisite is transparency of production processes. Here everything depends on the data: Only if your data are collected in near real-time, correctly, completely and uniformly can they provide the best information for index systems, enable quick and correct decisions, minimize idle time and improve efficiency.

The module cronetwork plant data collection (PDC) gives you real-time data and enables you to see the current status of your production at a glance.

You can also record production data for quality assurance in cronetwork PDC. At terminals in production or via mobile end devices, you enter data relative to orders, independently of hardware. Many aspects can be configured to your individual re-

quirements, from the front-end interface to parameterizable feedback sequences to different language versions. cronetwork plant data collection

*“This MES solution provides us with the best figures and production data that we have ever had, and with less effort for data collection and evaluation.”*

*Achim Bartenstein, Technical Coordination,  
PMG Füssen GmbH*

is 100 % web-compatible: There is no installation or configuration at a terminal, and data collection is ensured even offline. The MES transfers the collected data to your ERP. This enables post-calculation of completed orders. Further, realistic default times can be derived from the actual values from PDC and used for planning future orders.

A professional PDC solution lets you track and trace production orders in detail, and information transfer times on alarms or disruptions are drastically reduced, enabling near real-time reaction. You also achieve a solid basis for targeted evaluations and analyses. Production staff can invoke a neutral evaluation of their performance and so can better optimize their own processes.

*For order progress, machine status and disruptions, cronetwork plant data collection displays production in real time.*



## Some of your benefits



The simpler and more ergonomic the operation of software is, the greater is its acceptance and benefit: cronetwork plant data collection sets new benchmarks for usability and customer-specific configuration.

- ⌘ Transparent, real-time view is provided of the current situation in your production.
- ⌘ Reduced reporting effort and paperless production are enabled.
- ⌘ Reliable base data are available for reporting, calculation in ERP, scheduling, etc.
- ⌘ User-friendly operation and individual parameterization ensure high acceptance.
- ⌘ Information time after an alarm or disruption is reduced to a minimum to enable quick reaction.
- ⌘ Employees get direct feedback about performance and can optimize their work.
- ⌘ Data collection is order-related, uniform, hardware-independent and (if required) mobile.
- ⌘ Web-compatibility ensures low operating costs and rollout options.
- ⌘ The platform enables integration with other systems (QM, CNC, CAD).

# MDC

## machine data collection process data collection

cronetwork machine data collection (MDC) ensures precise and unambiguous real-time data collection for machine states such as production, idle and disruption. Machine status is automatically detected and a feedback is generated. Piece counts, scrap quantities and disruption reasons are also automatically recorded. This enables a reduction of personnel time and costs.

Erroneous, missing or late feedbacks are largely prevented and there is no influence on collected data; instead, you receive data of utmost quality as the basis for further evaluation and analysis.

Early idle information and transparency of disruption reasons let you reduce down times and increase efficiency in production.

Regardless of whether auto-

matic signals come from a machine or from sensors on a conveyor belt, whether you use a fieldbus module or communicate with SCADA levels at the machine via OPC or SQL interfaces, our modern, standardized connection technology lets you connect any production machine, regardless of manufacturer and year of manufacture. System-specific isolated solutions are a thing of the past with a uniform MES layer between ERP and your machinery.

If required, cronetwork machine data collection can be extended to collect process data. Data such as temperature, pressure and density can be collected relative to orders, processed, and aggregated for long-range archiving. This gives you evaluation and traceability across system boundaries.

*“The Industrie Informatik solution is connected to over 100 machines. It provides us an optimal overview of current machine states and enables real-time data collection and evaluation.”*

*Elmar Krenzler, REFA Industrial Engineering, Muhr & Bender KG*



*The collection of process data makes production processes transparent and supports you in detecting optimization potential.*



## Some of your benefits



Automatic feedback from cronetwork MDC reduces the number of required manual entries to a fraction, which saves personnel costs and largely prevents errors.

- :: Machine states are recorded in real time.
- :: Automatic, unambiguous data collection avoids missing, erroneous or late feedbacks.
- :: Utmost data quality is available for subsequent evaluations and analyses.
- :: Productive time for personnel and machines is increased, improving efficiency in production.
- :: Modern standardized connection technology ensures connection of any production machine, regardless of manufacturer or year of manufacture.
- :: A uniform MES layer between machinery and ERP replaces system-specific isolated solutions.
- :: Integration with cronetwork process data collection enables more precise analyses and traceability of production orders.

# T&A

## time and attendance incentive pay

cronetwork time & attendance encompasses much more than the name reveals. This user-friendly tool enables you to generate payroll-ready data directly from the system, enabling automation of a large share of payroll work. cronetwork collects data once and directly. This reduces time and effort for data entry and maintenance and enables you to quickly react to production events.

The decentralized tool immediately provides up-to-date information for every user (depending on authorization). An employee can use cronetwork time & attendance to see an overview of his work times, balances, leave situation, etc. In addition to collecting attendance and absence times, the system also evaluates these times. Absence times, overtime, etc. are evaluated so that they can be automatically transferred to payroll via interfaces. In addition, it is easy to manage employees as well

as individual time and shift models with little effort.

cronetwork time & attendance contains a scheduling function at the shift level, i.e., which employee works when and with which daily schedule. The additional function personnel assignment lets you schedule in detail at the work center level, where employee qualifications are considered.

*“Industrie Informatik is by far the best software vendor for our company.”*

*Ing. Erich Baumgartner, Production Planning & Logistics, Umdasch AG*

The following additional functionality is available:

- :: **project time:** assignment of work time to customers/projects, travel expenses, evaluations and target/performance comparison
- :: **employee services:** lean interfaces for data collection in a browser, supported workflows for leave requests
- :: **access:** management of authorizations and access models

*Personnel scheduling is simplified. You always have a current overview of your personnel and can react flexibly.*



## Some of your benefits



All data in one system means less effort and high transparency.

Existing data collection terminals and card or chip systems can be integrated.

- :: Payroll-ready data are generated directly from the system.
- :: Time and effort for data entry and maintenance are reduced.
- :: This helps you to quickly react to production events such as large orders or rush orders.
- :: Collected data are available immediately for any employee with authorization.
- :: Acceptance by employees is assured due to direct benefits for users (balance information, leave situation, etc.).
- :: Integrated personnel scheduling at the shift level is user-friendly and graphical.
- :: Integration creates added value: Information about personnel resources is available in the scheduling board module; combination with the modules PDC and MDC enables a joint view of attendance and work times.

# BI

## evaluations :: reports KPI :: OEE :: dashboard

All cronetwork modules that you use and all existing systems integrated via interfaces generate data that are stored in a central database. What is decisive is how you process this information sensibly for your requirements. This is precisely what our evaluation and analysis functions do: Each module already delivers the most often required queries in the form of standard reports. Via the central data, you receive up-to-date evaluations, e.g., balance reports from personnel time & attendance, idle times of individual machines.

Furthermore, cronetwork affords extensive options that let you configure a customized package for your enterprise and your requirements. For example, a dashboard lets you display information

from various modules, customized for you and in easy-to-read form. A cockpit interface provides meaningful information with a drill-down function per mouse click.

***“By introducing cronetwork we succeeded in gaining greater control of the overall process from planning to controlling and have a better overview. KPIs that are important for our production are monitored online, so that we can immediately react to deviations.” Markus Heinz, CEO, Ivoclar Vivadent Manufacturing GmbH***

Because of the application's web-compatibility, even from mobile end devices and remote locations you can access live data for your production.

Another function lets you monitor Key Performance Indicators (KPIs) for your enterprise; you can configure the KPIs yourself from an included base pool of indicators that meet your requirements. In the KPI cockpit or as a module in the portal, you can display the current performance at the shop-floor level and set up alarm functions to monitor thresholds. In addition, the analysis tool gives you the option of detecting and displaying cause & effect relationships to help you derive appropriate measures.

*Simplify internal reporting!  
Current data are presented graphically and clearly in dynamic and contextual analysis as well as in classic reports.*



## Some of your benefits



You can click through your production in real time. From a broad range of modules, you can configure your own production cockpit. With web-compatibility, you can always keep an eye on production even from remote locations.

- :: All evaluation and analysis tools access the same up-to-date data.
- :: Graphical display of data facilitates an overview and supports decision-making.
- :: Each cronetwork module includes standard reports.
- :: Access and evaluations can be configured per user.
- :: Each target group, from management to the shop floor, receives customized information.
- :: Tools can be configured without programming effort by Industrie Informatik.
- :: Web-compatibility of the application enables mobile access via any browser.

# Technology

interfaces :: database  
web-compatible & releasable

Just as the functionality of an MES, the underlying technology is an important quality criterion. A well designed MES solution must be flexibly connectable to an existing system landscape and dynamically adaptable to future changes.

cronetwork provides a standardized parameterizable interface that lets you connect to any ERP system. This keeps you independent in your choice of an ERP and you remain free over time. Furthermore, you can connect applications from the areas of quality assurance, CAD, DNC, etc. and open documents such as parts drawings or inspection instructions in PDF directly in cronetwork.

*“We were sold on the flexible customization of the feedback process and simple adaptation of interface logic for data exchange with our ERP system.”*

*Thomas Brottrager, Head of IT, Stia Holzindustrie GmbH*

You can do much parameterization in cronetwork yourself. Directly from the user interface you navigate through a guided, self-explanatory

workflow. Likewise, documentation and help are at your fingertips in cronetwork: at any time you can invoke the latest documentation at the click of the mouse.

Background installation is well designed. cronetwork accesses a powerful database server, and all applications are started from an internet application server. Thus each module can be invoked in a browser. This keeps maintenance costs low and easily implements roll-outs.

We implemented rapid prototyping to enable your quick start up in real operation. The full software version is at your disposal from the start. During actual operation, customization is done on the basis of your empirical values via parameterization of the software. You profit from lower introduction costs and earlier usability.

**SAP® Certified**  
Powered by SAP NetWeaver®

**SAP® Certified**  
Integration with Applications on SAP HANA®

*Our powerful partnerships and certifications ensure perfect functionality and continuous further development.*

**Microsoft Partner**  
Gold Application Development

**ORACLE®**



## Some of your benefits



cronetwork user interfaces are user friendly and can be individually configured. You determine how data collection occurs: via keyboard, mouse, barcode scanner, chip or touchscreen; on a PC, terminal or mobile end device.

- :: Standardized, parameterizable interfaces to ERP systems and to existing hardware and machines ensure sustainable independence in your choice of solutions.
- :: All cronetwork modules can be used stand-alone or they can be combined to create significant added value.
- :: All function blocks access the same database, thus making current data immediately available.
- :: Powerful database technology in the background keeps the system at state of the art, and automatic updates occur with each cronetwork release.
- :: All modules are web-compatible and guaranteed to be 100 % releasable.
- :: Rapid prototyping enables a faster move to real operation of the MES with lower introduction costs.

# References

An excerpt

We pursue one primary objective: We seek to convey to all interest groups in your enterprise and to each individual employee the benefits of introducing an MES and to create direct added value – from production workers to decision-makers in IT and production, from controllers to the workers' council. This ensures the success of joint projects with our customers.

With increased market dynamics, our customers' requirements change, so that internal change processes are a matter of course. As a flexible system, cronetwork is ready for changing conditions and creates a new market edge.

Our system is in use in discrete production in enterprises of various branches, from SMEs to multinational concerns. It meets specific requirements without additional programming. Because

*“With cronetwork we profit from an integrated system that enables utilization of shared master data and highly stable continuous operation. Our users praise the quick and competent service of Industrie Informatik.”* Claus Pilarsch, IT, Dentaureum GmbH & Co. KG

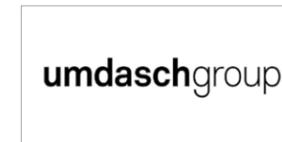
all our customers use exactly the same software and cronetwork serves such a large user group, each user profits from a broad exchange of experience, from branch-internal

and -external knowledge and innovation. Further development is conducted over the complete product portfolio at a fast rate with consistent high quality. With the help of cronetwork many of our customers have been able to assert, maintain or extend their market leadership.

Service and competent customer relationship management are our strengths. We do not differentiate large and small customers. We have been maintaining many of our customer partnerships for over 15 years. International implementation, training and on-site customer service are perfectly natural for us.



*Our long-term staff members are directly accessible for you. We do not maintain an anonymous call center.*



## Some of your benefits



We will be happy to show you our reference projects in detail.

Request our success stories or contact us about a consultation at your site.

- ⌘ cronetwork enhances the competitiveness of manufacturing enterprises on the international market.
- ⌘ The system equips enterprises for changing conditions and simplifies change processes.
- ⌘ All cronetwork customers use the same software and profit from every further development and the broad exchange of experience of a large user group.
- ⌘ cronetwork is in use in various branches and handles specific requirements flexibly.
- ⌘ Industrie Informatik maintains long-range partnerships both with its customers and with its own staff.

## Scheduling Board

Graphic scheduling for your production: live, fast and flexible

## Plant Data

Low feedback effort for a real-time view & traceability

## Machine Data

Correct data & information automatically

## Time & Attendance

Clear employee administration and flexible scheduling

## Business Intelligence

Analyses & evaluations with real-time information

## Mobile Applications

Enter and evaluate data from any location

## Technology

Benefits for software owners and users

# cronetwork MES: The data hub for the Smart Factory



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