

INTELLIGENT PLANNING FREES TIME TO PRODUCE

Intelligent production planning with **FELIOS | APS System**
Plan proactively – Manufacture efficiently – Deliver on time

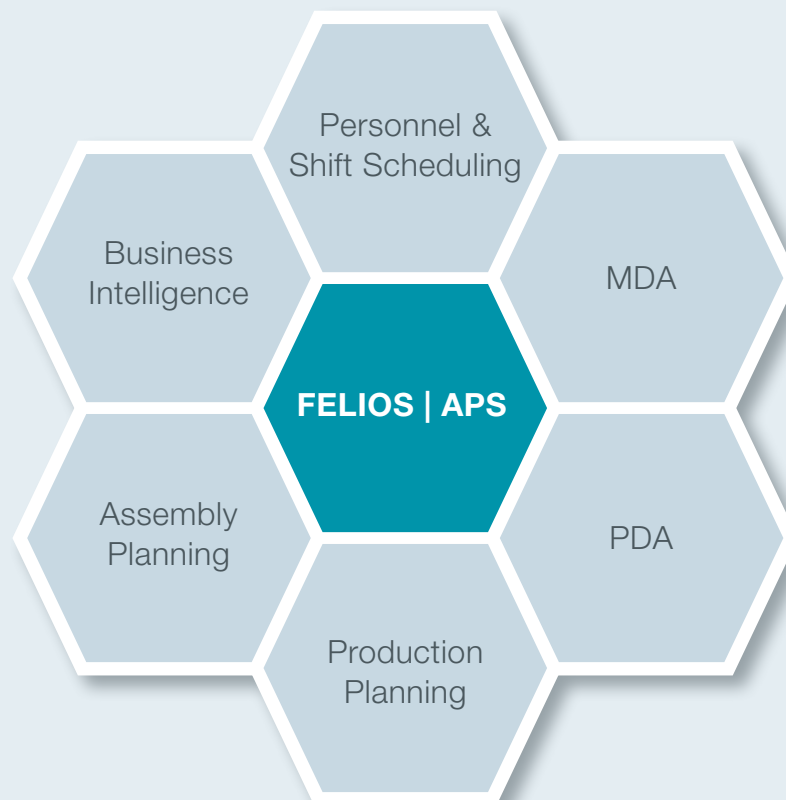


FELIOS
Marktsynchrone Produktion

ACT RATHER THAN REACT

Comprehensive production planning with FELIOS

Companies dealing with single-item and small-batch production simultaneously need to keep sight of several factors when planning and controlling their production. Manufacturers of multi-variant products require a comprehensive, specialized software solution for controlling and optimizing the entire course of production. The APS system FELIOS is an add-on to any conventional ERP system and, thanks to its intelligent operations, ensures a synchronization of all production processes. Using FELIOS, companies gain an interdepartmental planning transparency in production, purchasing, construction and sales. The system offers the security that all processes are carried out as planned and meet delivery deadlines. FELIOS is being implemented in numerous renowned companies and daily optimizes 5.8 million operation sequences in the production planning of single-item and small-batch manufacturers.



MASTERING COMPLEXITY

Manufacturers of multi-variant products face the same challenge every day: How can the complex production processes be planned so that all orders are carried out on time, efficiently and with high quality? The goals are to operate with short production cycles with minimal work-in-progress and high adherence-to-schedule. But in reality, personnel and machines are overloaded and the products are often delayed. Moreover, extensive planning and coordination processes result in high costs.

An efficient production planning needs to enable companies to:

- Inform customers at any time about reliable delivery dates,
- Establish the optimal sequence of all involved production processes,
- Ensure a backlog-free production process,
- Create the production plan without time-consuming team meetings,
- Integrate high-priority orders on short notice,
- Dissolve capital-binding stock buffers yet prevent missing parts that would cause a standstill in assembly,
- Relieve foremen and machine operators from planning tasks,
- Proactively plan the production as a whole system while considering all boundary conditions.

EXPLOITING OPTIMIZATION POTENTIAL

Modern production planning requires a specialized software solution. Conventional ERP-systems, however, ignore the questions about when certain operations can be realistically planned with which particular resources and parts to be provided. Even experienced planners cannot take into account all conditions.

This is where the APS-system FELIOS comes into play. FELIOS is customized to meet the critical requirements of modern production processes.

- **Extensive transparency**
FELIOS links all the departments involved in the production process and merges all the data in a central planning system.
- **Automated real-time planning**
FELIOS schedules all production orders simultaneously. It plans realistically against limited capacities of personnel, machines and material availability. When unexpected changes occur, FELIOS automatically recalculates the production plan during the next optimization run.

EFFICIENT SOFTWARE WITH INDUSTRY 4.0

With FELIOS, companies implement an holistic approach for their order processing. Originating from the customer orders, FELIOS connects all the sequences of the production process into a central order network. In this way, companies secure Industry 4.0-intelligence and produce synchronously according to market demands.

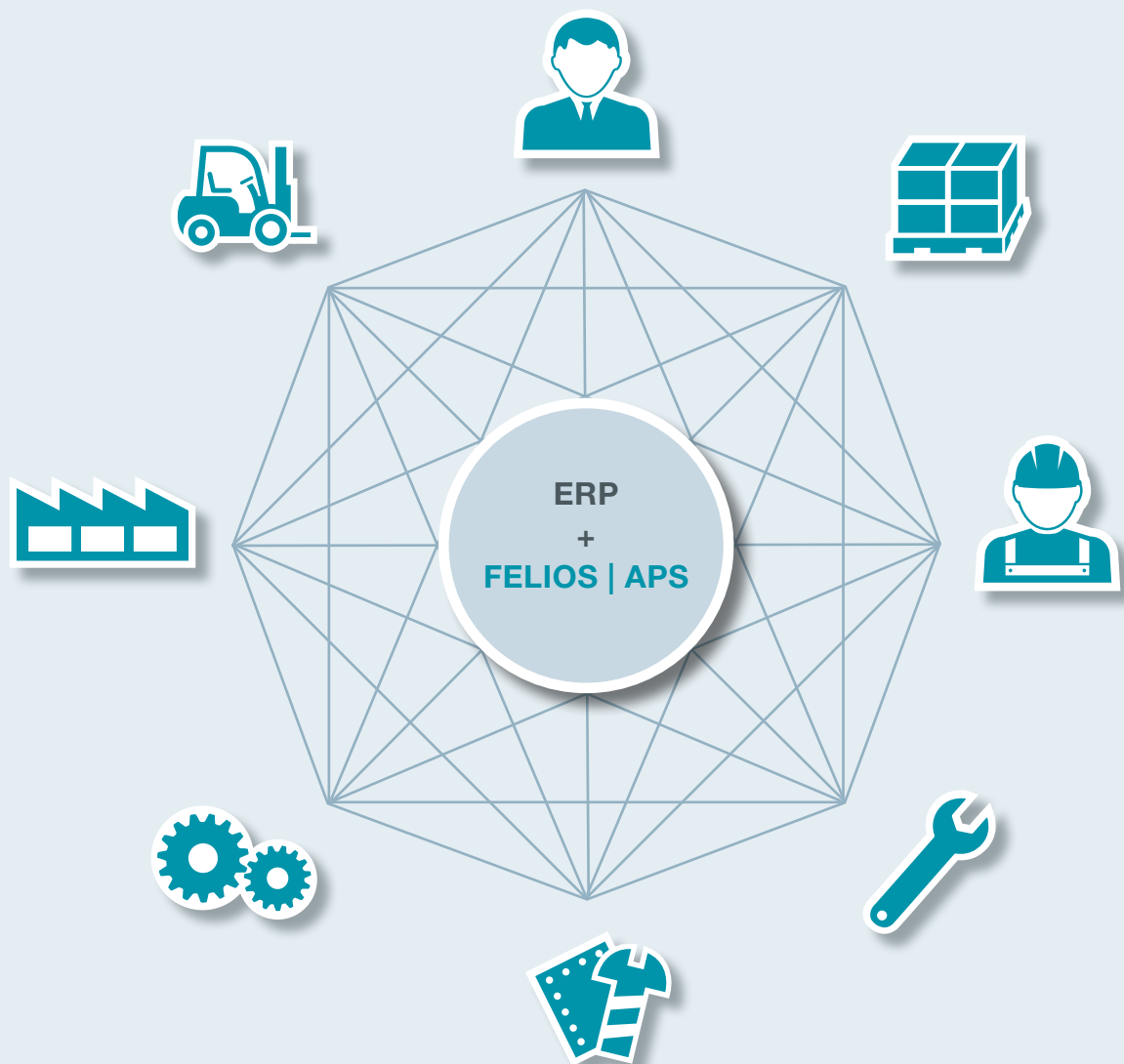
This allows:

- Complete planning transparency,
- More efficient production processes,
- High adherence-to-schedule,
- Low stocks,
- Short lead times.

PRODUCTION AS A WHOLE SYSTEM

The FELIOS order network

FELIOS links all relevant departments for the handling of all the orders. This close interlocking provides extensive transparency, thanks to the fact that every department can view and evaluate the current status in production. By considering all boundary conditions, FELIOS also connects all the sequences of the production process into a central order network. The intelligent FELIOS processes take into account all the dependencies among the various operations, the actual machine and personnel capacities as well as available intermediate products and materials. This results in an optimized production plan.



COLLABORATION IN A NETWORK

Production planning essentially needs to answer the following questions:

- Which customer orders are at risk?
- Where is the problem?
- How can it be solved?

With FELIOS, companies receive precise answers to these questions at an early stage. To do this, the software compiles all relevant data of the involved departments into one system. Apart from production itself, this also includes upstream and downstream areas such as sales and purchasing. All departments have access to the information and know the current status of all orders at any time. This enables employees to quickly evaluate which effects a new purchase order has or which measures need to be taken to fulfill the delivery dates reliably. Extensive coordination and planning meetings using whiteboards and Excel tables are obsolete.

WORKING HOLISTICALLY

The comprehensive use of FELIOS has a direct effect on all involved departments.

- Sales can view the current capacity utilization of production and can then give the customers reliable delivery dates.
- Based on the current order situation and the capacity utilization in production, purchasing will be informed which materials have to be ordered to always ensure that the correct material is available punctually at production. Thus, expensive stock buffers are unnecessary.
- At any given time, production obtains a precise overview about the current status of all orders. On this basis, FELIOS offers recommendations concerning which production steps should run with which resources and machines and in which particular sequence. The production planner can decide either to accept these FELIOS recommendations or to override them.

ROBUST AGAINST DISTURBANCES

With FELIOS, companies can detect possible failures early on so that they are averted: The system continuously monitors all production and procurement processes. Possibly critical missing parts are already known days or weeks in advance. Thanks to this proactive anticipatory planning, short-term interventions in the current production plan are no longer necessary.

ADVANTAGES

The comprehensive transparency of FELIOS enables companies to:

- Give reliable delivery dates always,
- Establish a needs-oriented procurement,
- Implement an optimized material flow,
- Detect and prevent possible disturbances,
- React to unexpected events.

PLAN THE UNPLANABLE

THE SCHEDULING PROCESS WITH FELIOS

Thanks to FELIOS, companies can plan with realistic capacities and produce in sync with market demands. The scheduling takes place easily and fast in three steps:

- 01** The software is connected to the existing ERP-system via an interface. The system hereby extracts all data relevant for the planning process such as purchase order information, material availabilities and machine capacities.
- 02** Based on the ERP-data, FELIOS plans the production process for the next and subsequent day. Applying intelligent optimization processes, the system calculates the worklists for the workers at the machines. For this, FELIOS considers realistic machine capacities and creates deadlines for the delivery of materials, parts and components. The system distributes the capacities so as to meet the predicted delivery deadlines for all existing customer orders.
- 03** Thanks to the worklists generated by FELIOS, the foremen and workers know exactly what needs to be done on that day. The time horizons can be selected individually, enabling the production foremen to organize the setup times optimally. Should changes or disturbances in relevant production parameters occur or if the worklist cannot be completely worked off, FELIOS accounts for these situations in its calculation of the worklists for the next day—just like it accounts for new or changed customer orders.



OPTIMAL SEQUENCE

The decisive question in production planning is: When should production steps be scheduled with which particular resources and parts to be procured? Conventional ERP-systems do not address this question.

By contrast, FELIOS offers the solution to this puzzle: The software calculates optimally when and at which workplace a part for a certain order should be fabricated. The planning always considers all competing orders so that companies always obtain a feasible production plan.

PRODUCE WITHOUT BACKLOGS

FELIOS determines the optimum distribution of capacities. The workers at the machines receive an automated daily schedule with a list of tasks to be worked off. Even if unexpected, if a schedule cannot be completed, FELIOS accounts for this delay when calculating the task lists for the following day. Moreover, because of the cross-linking of all processes, the effects of such a delay are exactly predictable for the entire production. Without extra manual effort, FELIOS can dissolve these backlogs immediately and sensibly reschedule them. With FELIOS, backlog-free production becomes reality.

TURNING PROGRESS CHASERS INTO PRODUCTION MANAGERS

FELIOS relieves the schedulers and dispatchers from planning and routine tasks. FELIOS is responsible for the detailed planning of daily production. The software looks after customer order deadlines, compares them with the status of customer orders in production and sensibly allocates work packages among the machine resources. Additionally, FELIOS displays personnel capacity requirements and indicates impending delays, critical orders and material availabilities.

Due to the now transparent production processes, the planners can optimize the entire production on a long-term basis. The system reveals process waste, where particular capacity requirements exist or where future resources are needed. Dispatchers, foremen and machine operators turn from being progress chasers into production managers.

ADVANTAGES

Production planning with FELIOS enables companies to:

- Reduce planning and controlling efforts,
- Improve the fulfillment of deadlines,
- Create realistic production schedules,
- Optimally utilize machine and resource capacities,
- Realize daily production without backlogs.

PROACTIVE PLANNING



WHAT IF...?

Modern production processes require that the consequences of a decision on the entire production process are visualized immediately. What happens if we run an extra workshift? Can we justify prioritizing the processing of a particular order? How would this affect other orders? What if...? With FELIOS, companies always receive answers to these questions pertinent to their decision-making.

PROCESS-ORIENTED SIMULATION

FELIOS enables companies to simulate their realistic production processes. Not only does it calculate the temporal effects by the shifting of orders back and forth. But rather allows FELIOS companies to also simulate the particular effects, for example, of purchasing a new machine. Through fast analyses, FELIOS allows the success of every measure to be presented transparently already in advance.

SOUND MANAGEMENT DECISIONS

The FELIOS-simulation also optimizes day-to-day operations. Delivery- and deadline queries can be answered precisely and at short notice. Also the effects of disturbances—such as machine failures or delayed purchased parts—can be recognized immediately. Thanks to the process-oriented simulation with FELIOS, companies can make sound decisions based on conclusive dashboards and KPIs at any time.

ADVANTAGES

The process-oriented simulation with FELIOS enables companies to:

- Act out every possible measure in advance,
- Identify disturbances early,
- Answer delivery- and deadline queries realistically,
- Make sound management decisions.

REFERENCES (EXTRACT)

ABB

ALSTOM

ARBURG

 **BOSCH**

SIEMENS

 **BENZ**
Werkzeugsysteme

oerlikon

LIEBHERR

 **ACHENBACH**
BUSCHHÜTTEN

 **BÜHLER**

 **Eickhoff**

 **FRIATEC**

 **GEORG**


ZWILLING
J.A.HENCKELS

 **RHEINHÜTTE**
PUMPEN

UNICOR

Lorange
YOUR POWERFUL INJECTION

 **HATZ**
DIESEL

 **IMI Z&J**


WITTENSTEIN

 **starrag**
Starrag Group

 **PETKUS**

GRUNDFOS

 **bielomatik**
We look further.

 **Schütte**

 **GÜNTHER**
HEISSKANALTECHNIK

 **KAMA**

VOITH

 **MIXING GROUP**

 **MBH**
Maschinenbau & Blechtechnik

 **GEFEG-NECKAR**
ANTRIEBSYSTEME

KOMATSU

 **KLAUS UNION**

 **BAUSCH+STRÖBEL**

KraussMaffei

 **mtu**

 **HERMLE**
Machine Company

 **IWK**
an  company

Waldmann 

 **HORA**
REGELARMATUREN

illig

 **Reifenhäuser**

 **TANDLER**

 **ZF**

ANDRITZ

ruhlamat 
solutions for your needs.

 **PILLER**
Blowers & Compressors

SMS  **group**

 **WALTHER**

 **BURKHARDT**
+ **WEBER**

SCHULER 

 **Neumeister**
Hydraulik

 **STÖBER**

MANY YEARS OF KNOW-HOW AND SUPERIOR TECHNOLOGY

With FELIOS, INFORM has combined 25 years of IT-supported production planning with the know-how gained from more than 40 years of experience in the optimization of business processes. Today more than 600 INFORM employees support over 1,000 customers worldwide. Since its establishment in 1969, INFORM software solutions have simplified business and logistical processes with the help of cutting-edge technologies to develop profitable rationalization potentials.

For this process, INFORM relies upon superior technologies from Operations Research and Fuzzy Logic. Hereby complex mathematical methods are applied on operational processes. The core competency of INFORM is the software-engineered implementation of these methods. Operations Research is admittedly the best method to optimize highly complex systems. INFORM products can decisively improve business processes in the long term through the interplay of planning-supporting methods, optimizing processes and corresponding IT services.

INTELLIGENT IT FOR COMPLEX PROCESSES

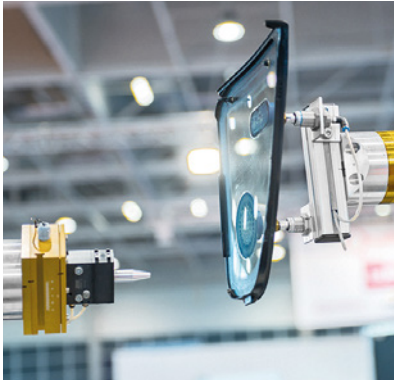
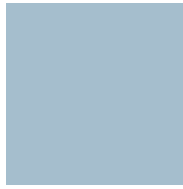
As a specialist for production planning, INFORM, with its APS system FELIOS, offers a software solution that incorporates Industry 4.0-intelligence into the production planning process. Using FELIOS, companies can permanently synchronize their production processes with current customer orders. As an add-on, the software complements conventional ERP- and PPS systems. Companies can optimally utilize their valuable resources of personnel, machines and materials by implementing innovative planning and controlling strategies customized to fit their respective business objectives. The software frees employees from routine tasks. With FELIOS, former progress chasers can now focus on optimizing sales, manufacturing and purchasing processes.

COMPREHENSIVE SERVICE

INFORM offers comprehensive customer service to supplement its software. As a partner, INFORM extends its customers detailed consultation about all important questions of everyday practice.

Our experts offer:

- Presentations free of charge,
- Workshops free of charge,
- In-depth consulting and support during installation and process development,
- Competent employee training sessions,
- Open user training sessions within the scope of the INFORM Academy,
- Regular software updates free of charge,
- User meetings for further developing and optimizing the software.



FELIOS – The comprehensive system for intelligent production planning.

Continuous transparency and automated real-time planning combined in one software solution.

»ADVANCED OPTIMIZATION!«

»OPTIMIERT ENTSCHEIDEN!«

INFORM GmbH
Pascalstr. 35 . 52076 Aachen . Germany
www.inform-software.com

 **INFORM**