



## Version 4

# Detailed Order Scheduling

### Product Description

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## Product Description

FORCAM FORCE™ Detailed Order Scheduling simplifies and accelerates order processing in production. It supports the planning, scheduling and control components for production-related areas. The user is provided with various planning and optimization strategies.

Detailed Order Scheduling uses the **Adapter for SAP** and **Order Management** modules to build on the production and planned orders available in SAP. The relevant data is extracted and stored in separate tables. From here, the simulation of the production situation is run with any number of simulation models. The resulting schedules, workload profiles etc. can be interpreted and compared. The schedules of the current model can be printed automatically at each workplace.

Within the planning scope defined by the ERP system, the individual orders or operations are dispatched in such a way that an optimal utilization of resources and an enforceable plan with the shortest possible lead time are achieved. Optimization with regard to the fastest setup times can also be taken into account.

## Interaction with SAP

FORCAM FORCE™ Detailed Order Scheduling is based on the result of the MRP run in SAP. The chain sales order → requirements → planned order → production order → confirmation runs completely independently of this in SAP. SAP R3 carries out rough-cut planning without considering the finite capacities.

Detailed planning with consideration of capacities takes place. The material availability for production is assumed as a result of the MRP run.

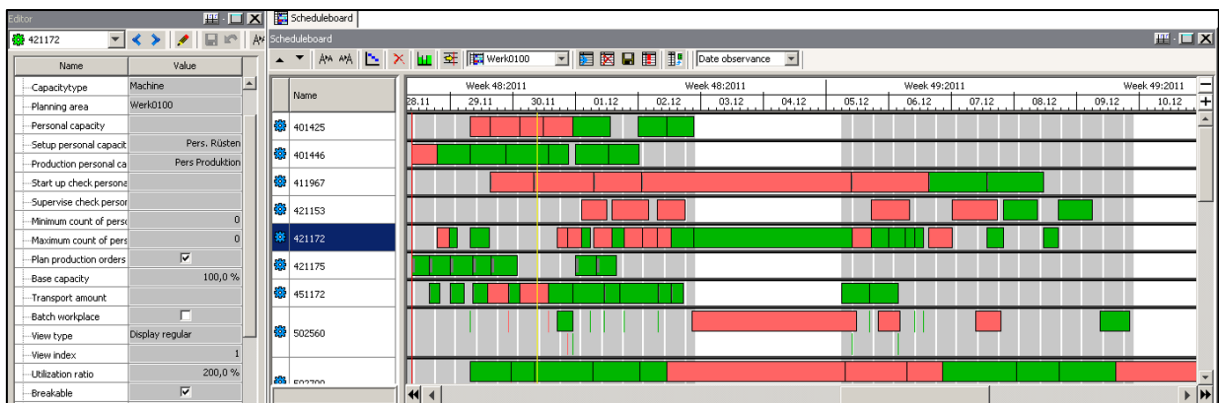
The following data from SAP is used for detailed scheduling:

- Delivery date
- Setup time per operation
- Processing time per operation

The transition period from article to article on a workplace (setup matrix) is also taken into account. SAP carries out backward/forward scheduling of the operations in an order, without considering the actual resource capacities. Since these can be exceeded, the determined start time is inaccurate. To compensate for this, excessive transfer times are entered. As a result, lead times rise and inventories increase.

In FORCAM FORCE™ Detailed Order Scheduling a simulation is carried out considering the capacities. Scheduling only occupies time windows that are actually free. In contrast to SAP, each resource can be used to a maximum of 100 % capacity.

Lead times and thus inventory levels are reduced considerably. The delivery dates are adhered to exactly on time, without overloading the workplace.



**Fig. 1: FORCAM FORCE™ Detailed Order Scheduling (extract)**

- Optimal sequence planning
- Scheduling parameters
- Customer-specific views

## Scope of Functions

- Simulation of resource requirements with any number of workplace models simultaneously and at the same time used in the same system by means of a queue-based method for sequence planning
  - To achieve a global optimization of the order finish date using the priority rules of the queues, the system uses network procedures to determine the time limits at the start of each simulation for each operation.
- Lead time and capacity scheduling with limited capacities
- Scheduling and capacity planning
- Optimization of the order sequence
- Order monitoring
- Capacity management
  - Multi-level (hierarchical) shift management (factory calendar on each hierarchy level, close-up area with individual shifts and long-distance area with shift-week models)
- Configuration of the planning board
  - Free choice of colors
  - Multi-part strip marking
  - Free time axis definition
- Simulation and planning parameters
  - Queue-oriented, multi-stage planning process
  - Urgent orders
  - Setup optimization
  - Orientation of order dates
  - BOM-based order networking across several production stages
  - Simultaneous additional demand planning (machine and labor)
  - Qualification groups: Setup, production, testing etc. per machine
  - Alternative machines
  - Consideration of MES feedback messages
  - Overlapping planning of orders due to transfer quantities
- Capacity calculation rules
  - Consideration of the OEE per workplace
- Check parameters for manual rescheduling
  - Specification of plausibilities
- Interactive graphic layout design
  - Freely configurable tables
  - Free arrangement of graphics and tables
- Key figure-oriented simulation evaluation
  - Utilization profile
  - Residue profile
  - Bottleneck analysis