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SCHEDULING AND OPTIMIZATION FACTORY & WORKFORCE SCHEDULING

Factory Scheduling automatically schedules production orders by determining the optima sequence on machines and work centers, in compliance with production capacity constraints and compatibility of the parts to be produced. The objective of the system is the dynamic allocation of production orders, verifying compliance with delivery terms and the available production capacity. Factory Scheduling makes it possible to be proactive in the face of:

- disruptive events (changes in commercial priorities, insertion of urgent orders, variations in resource availability, modification of the material arrival plan)
- organisation and synchronization of internal and external suppliers and materials.

Factory Scheduling allocates production orders (minimising setups while respecting customer deliveries) taking into account the real availability of business assets:

- Centres/Machines
- Multi-batch machines
- Manpower
- Equipment
- Materials
- Generic production constraints

Factory Scheduling generates production plans using heuristic rules and constraints directly enabled by the user, allowing easy viewing of results through free, configurable key performance indicators and analysis descents.

The multi-simulation allows the comparison of multiple what-if scenarios to find the optimal solution.

Factory Scheduling allows the user to force the work plan in a simple and intuitive way, always having as reference the objective of respecting the indicators of the entire company flow. The user operates in drag&drop mode directly on the work plan, moving the activities in time or on other compatible resources, modifying the sequence

of the work orders, lengthening themselves, verifying in real time the implications of the local forcing on the global company indicators.

Factory Scheduling determines the fulfilment dates for each customer order, highlighting any critical delivery dates through configurable alarms, and generates dynamic pegging between customer orders, work orders and supplier orders. The user operates in simulation mode in order to support eventual corrective actions in the case of priority changes to customer orders, delays on material deliveries and production inefficiencies.

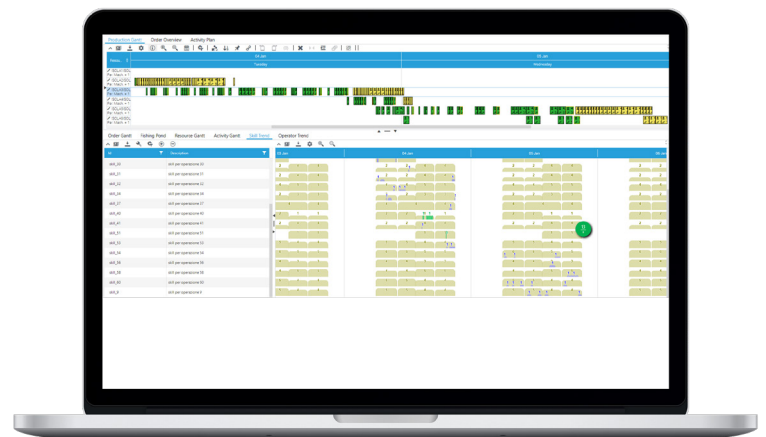
Factory Scheduling is the tool that enables the coordination and synchronization of decision-making activities, providing the following benefits:

Commercial

- dating customer orders through ATP procedures

Scheduling

- reducing lead time by coordinating internal, contracting and supply activities



Production

- work plan generation
- reduction of interphase times
- reduction of setup times

Purchases

- reduction of warehouse value
- dating suppliers' orders in the face of a scheduled finite-capacity plan
- supplier reminders

Logistics

- generation of transport missions as per the consumption plan per resource

Quality Control

- preventive generation of control plans per item/resource

Equipment

- tooling plan management for resources.

Factory Scheduling provides the following benefits:

- improved customer service
- generation of feasible and optimized work plans
- increased quality and promptness of supplier reminders
- decreased equipment queue times
- decreased plant setup
- immediate recalculation of the work plan in the presence of disruptions.

Factory Scheduling allows for structured top-down analysis, such as:

- summaries and merit indexes of the simulations
- work order date analysis (delays and advances)
- gantt per order
- simulated warehouse trends by quantity/value
- load profiles per machine, centre, department, work team
- gantt per machine, centre, department, work team, equipment

- working plans per machine, centre, department, work team, gantt equipment, pouring and consumption plans per machine, centre, department.

Workforce Scheduling

Each specific workforce personal skills can influence the production schedule any time key resources are needed for critical orders and production phases. Individuals will be schedulable taking into account the organizations skill matrix.

Workforce Scheduling will automatically assign resources to the tasks at hand allowing an even distribution of work and instant responses to disruptive events. Plans generated by the scheduler provide clear instructions to each individual specifying where and what they are needed for in production.

The scheduling simulation will first allocate all of the phases to the work centers and afterwards assign the operators to the tasks. The operator, to be assigned to the operation, must satisfy every skill that is required for the activity and be available. The list of possible operators is further refined eliminating operators that have been locked or blocked. Based on specific skills, a constraint is generated to block the workforce movement from one production line to another. For certain batch processes the worker will be locked for the whole duration of time on that task even if the time needed for the operations is less than the worker availability.

Benefits deriving from the use of Workforce Scheduling are:

- work plan detailing activities for each person
- help HR on identifying lack of skills (need for training)
- manage overschedule (more resources than needed)
- help allocating right skills at right task.

