COSMO Task-Based Scheduling

based on Microsoft Dynamics 365 Business Central

COSMO Task-based Scheduling, based in Microsoft Dynamics 365 Business Central, is an ideal add-on product for COSMO CONSULTS industry solutions. It is a graphic planning tool for all manufacturing companies that are confronted with a wide variety of variants, fluctuating order quantities and ever shorter delivery times. **COSMO Task-Based Scheduling** makes it possible to see delivery dates, lead times and inventories at a glance and to get deviations under control.

The Principle of Task-Based Scheduling

The innovative approach of **COSMO Task-Based Scheduling** makes it possible to use the advantages of process-oriented production planning, even for companies with a high level of component diversity and complex material flows. Order planning and scheduling is carried out roughly based on defined time frames. Through a date and time synchronization and a capacity leveling during dispatching, a feasible order pool will be passed on to the work center groups per time grid.

The actual order management will be done by the employees at the operational level within the time grid. This flexibility in production makes it possible to react quickly and efficiently to disruptions.

The strengths of this „lean" planning therefore include organizational flexibility, appropriate use of resources, short communication and decision-making channels as well as a high acceptance of the planning results by the employees.

Fig. 1: Principles of Order Management

Visualizing the Order Flow – Transparency in Production

Production orders or projects are dispatched to the assigned work center groups or resource groups using the planning board. The graphical visualization allows a quick overview of the current production and schedule situation. The production planner has a foresighted overview of the machine capacity and overall production levels of the planned orders. The order tracking provides transparency about the progress or backlog of the order processing up to the level of each routing. If required, the operations can be rescheduled to a different work center group by drag-and-drop. The Teamboard provides an overview of the workload of each resource and work cycle.

Reliable Capacity Planning – from Sales to Production

functionality to display alternative scheduling scenarios and are therefore able to provide realistic order information to their customers. The capacity-checked scheduling considers the flexible capacity model and can indicate immediately a possible over-planning.
In advance of the order confirmation, the bottleneck visualization enables the production planner to recognize which work center groups require which capacity at which point in time. After the order has been placed, the system reschedules the order, considering a growing BOM or routing, while keeping the original finish date.

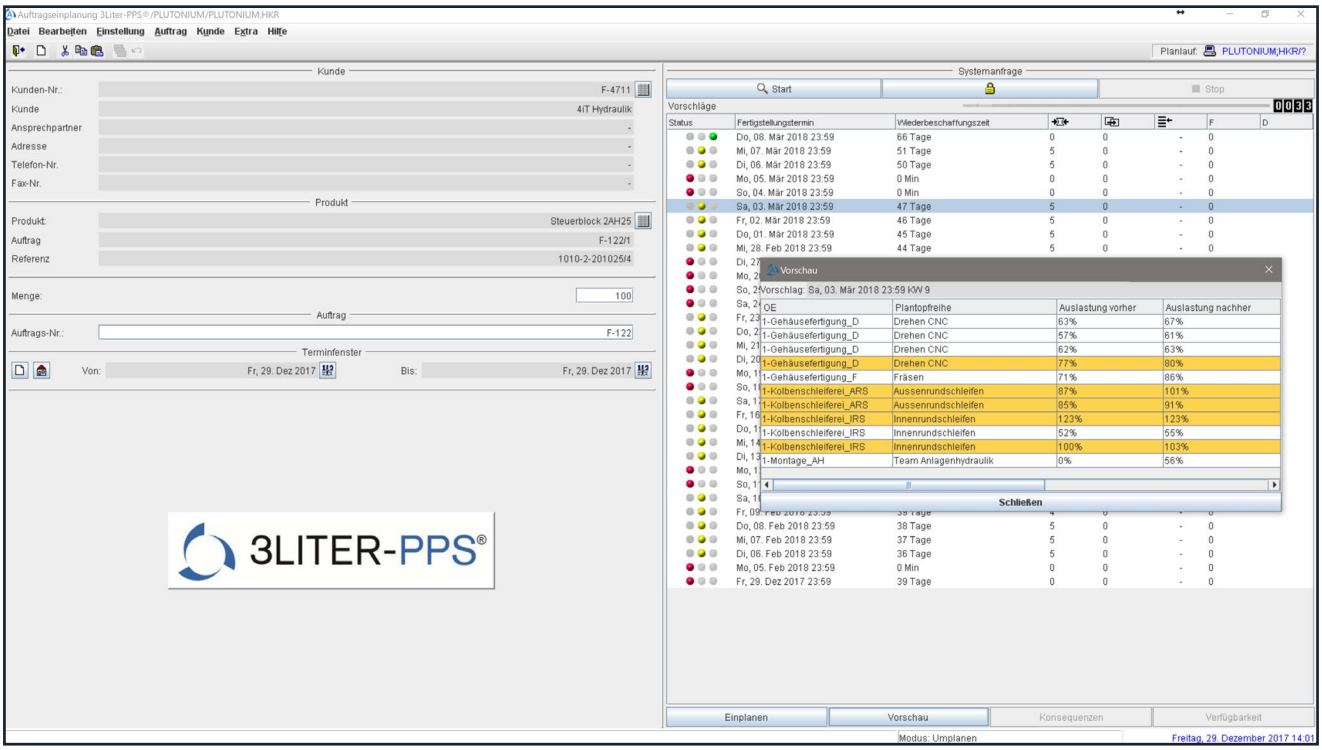

Fig. 2: Planning Board

Easy to use – developed from experience

Single work steps or sequences of operations can be split into partial quantities and simply rescheduled by drag-and-drop. The complete historical planning data is logged for all planning activities for the order or project. The system allows a simple control of the available capacity of a work center group by mapping the work centers and their shift model.

Detailing Where Necessary

After the planning has been done at the individual cycle level, each production area assigns the operations and activities to dedicated work centers and schedules a processing sequence. This is graphically supported by the Gantt chart of the detailed planning. The result of the planning is a task-related worklist in the Team board. All planning results are available graphically and tabularly in real time for the executing areas.

Capacity and Material Planning

When scheduling production orders, only the capacities are often planned, but material availability is not considered. **COSMO Task-Based Scheduling**, on the other hand, considers the availability of material at the level of assemblies and individual parts. To determine if a material is available, planned receipts such as purchase orders and production orders can be considered in addition to the warehouse stock. If a material is not available, the relevant orders are re-scheduled according to the planned replenishment lead time of the material. The order tracking functionality has a traffic light logic that provides the planner a transparency to see which production orders are affected by a material shortage. The MRP navigator quickly displays the available stock and future receipts and reduction for each material by time line.

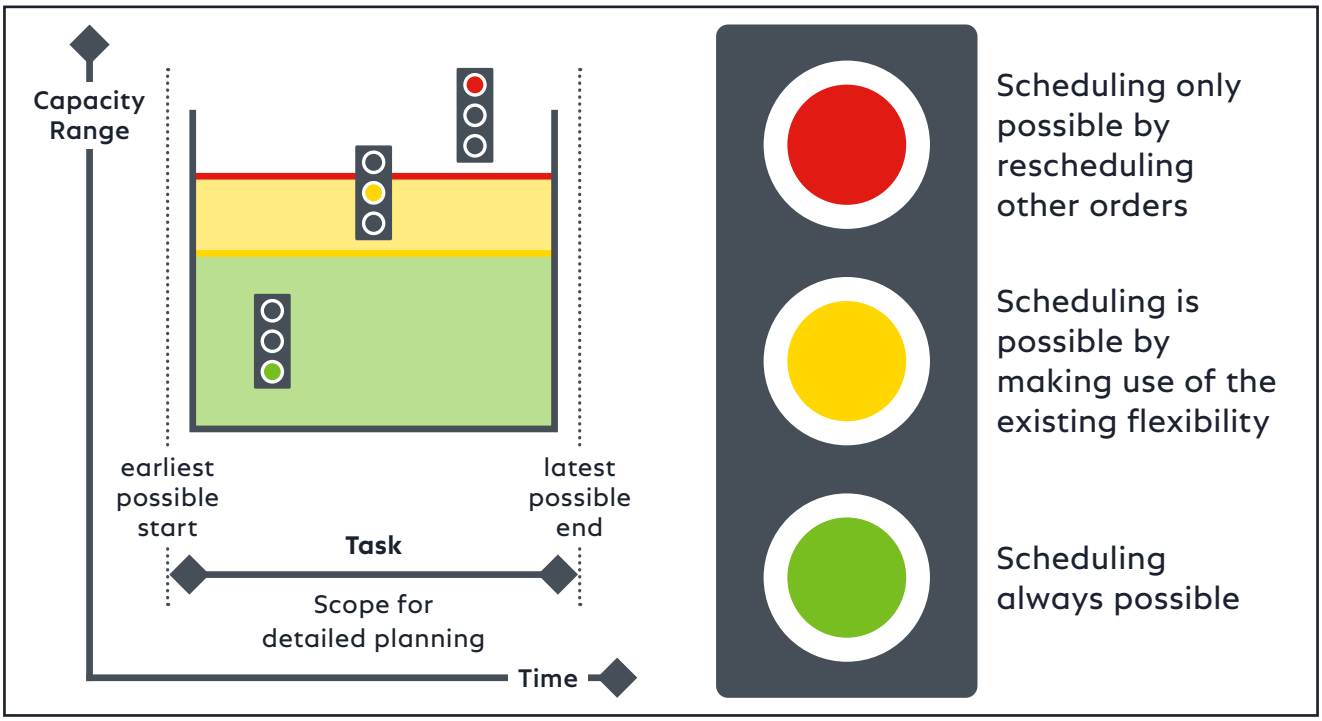

Fig. 3: Capacity Planning

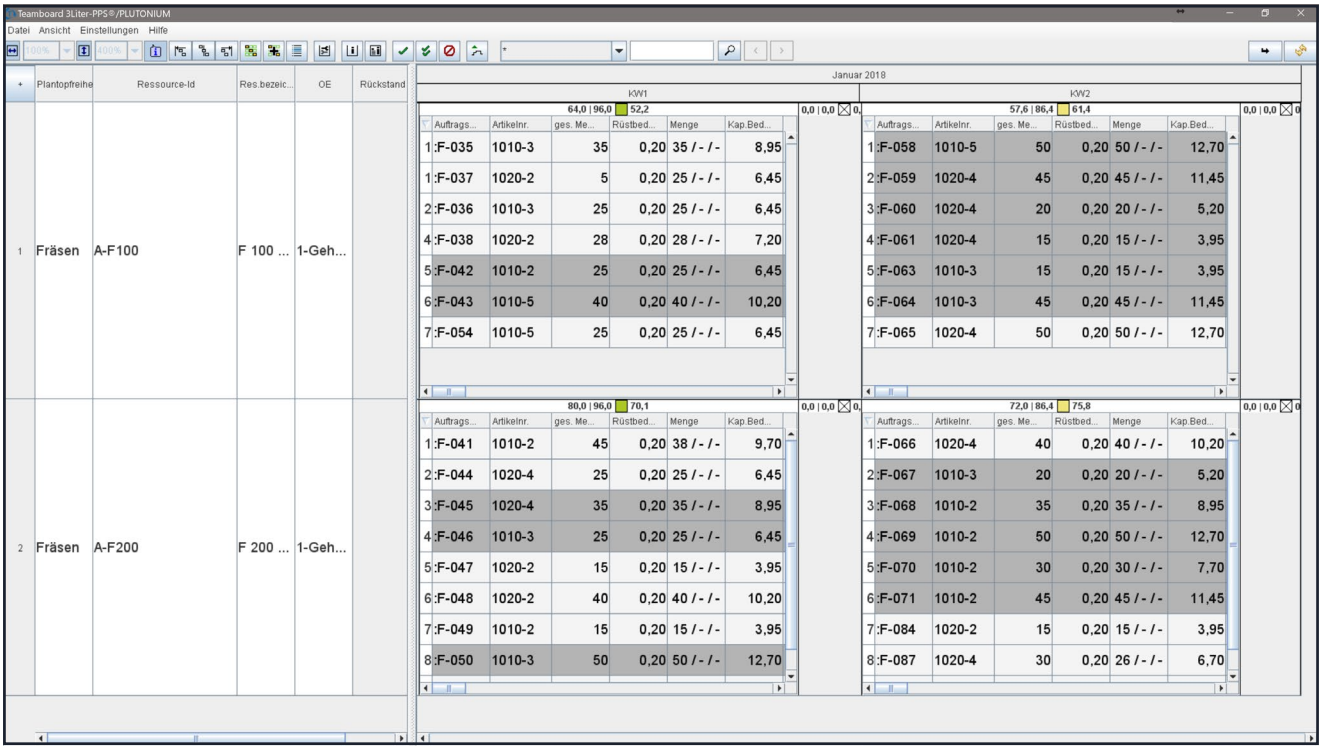

Fig. 4: Teamboard

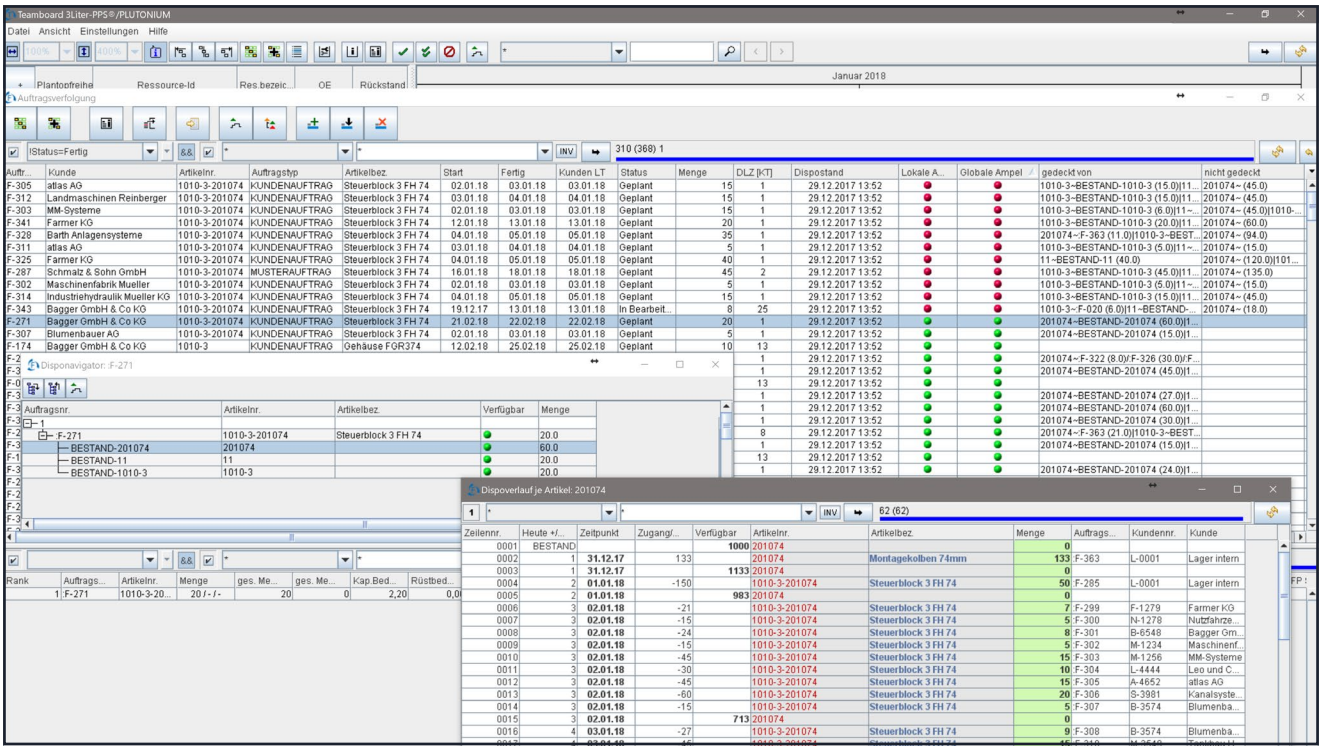

Fig. 5: Availability check

Planning of Projects

In addition to production planning, **COSMO Task-Based Scheduling** provides additional functionalities for service providers or project-based production. Different planning situations can be logged automatically or manually and evaluated graphically as well as in tabular form. Structure levels can be selectively switched on or off in the graphical project tracking. In addition, the graphical representation of the project progress shows predecessor/successor relationships at work process level, the time buffer available to the successor and the critical path in the project. Dependencies across projects can be mapped and displayed in the same way.

To plan additional administrative tasks that are not project-related, immediate orders can be created and scheduled. Project plans can be generated or printed as PDF files.

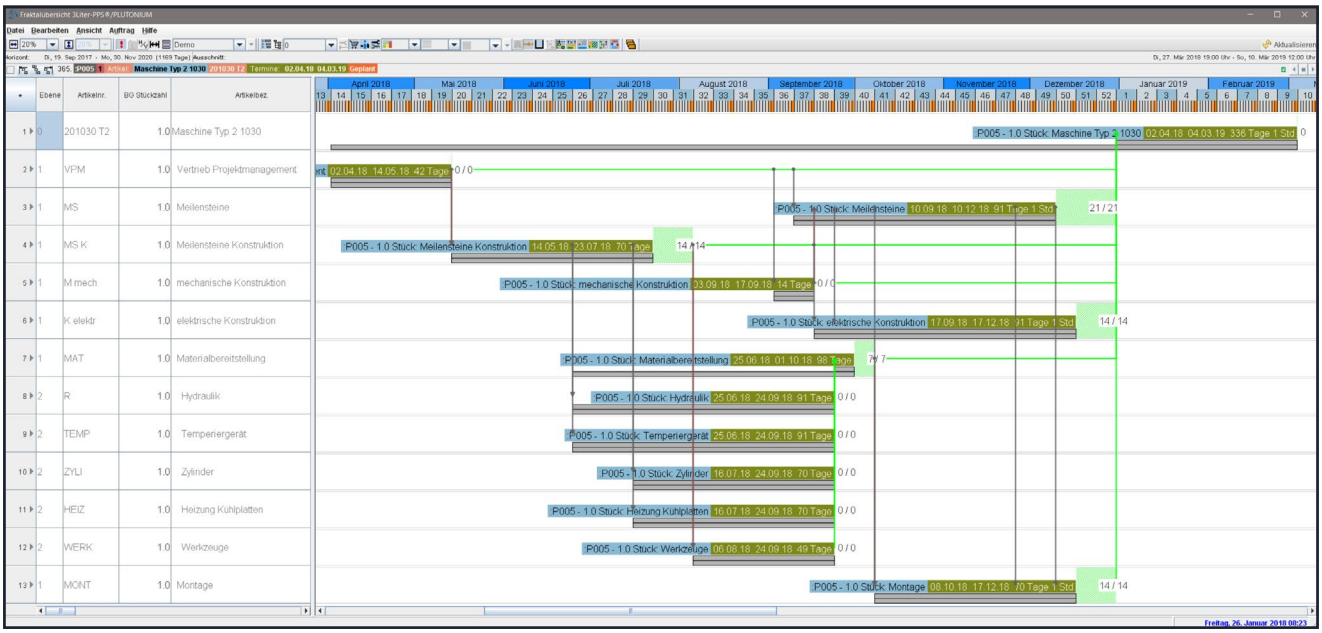

Fig. 6: Project Planning

Concluding from Planning for the Future

The integrated Key Performance Indicators provide production-logistics indicators for production control and monitoring. The web interface contains relevant KPIs such as on-time delivery, backlog history and lead time for order and shop floor management. The standard version of COSMO Task-Based Scheduling provides these extensive key figures:

- Date variance in receipts per plan lot row
- Date variance in issues per plan lot row
- Relative date deviation per plant lot row
- Delay in delivery of completed orders
- On time delivery orders
- Plant lot series on schedule
- Residue curve per plant lot row
- Planned and actual throughput time for orders
- Planned and actual throughput time of assembly
- Planned and actual lead time of plan lot row
- Absolute capacity utilization per plant lot row

The standardized KPIs can be extended by further company-specific key figures.

Benefits at a Glance

- Lead time reduction up to 50%
- Increase of the delivery reliability up to more than 98%
- Stock reduction up to 30%

COSMO Task-Based Scheduling, based on Dynamics 365 Business Central and the industry solutions of COSMO CONSULT, is a planning solution that allows production to be planned realistically and effectively.

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