

ORSOFT SOFTWARE SOLUTIONS ENSURE TRANSPARENCY IN CHEMICAL SUPPLY CHAINS

Real-time simulations identify weaknesses and potentials, provide concrete recommendations for action and enable a contribution to continuous risk management along the planning path

Chemical supply chains are characterized by a particularly high degree of complexity. In addition, chemical companies differ considerably in terms of their production depth and breadth as well as in their distribution processes. Thus, differentiations must be applied not only with regard to the value chain – chemical producers, chemical distributors or chemical engineering – but also with regard to their heterogeneity in the product portfolios and their production resources. However, all companies in the industry have one big thing in common: a constant quest for efficiency savings in their supply chains.



ORSOFT Enterprise Workbench

Real-time monitoring and management of global value chains through simulation of SAP ERP or SAP S/4HANA master and transaction data and end-to-end supply chain optimization

Volatile chemical supply chains – characterized by supply bottlenecks and disruptive „just-in-time“ logistics chains on the one hand, and a high adaptation pressure from the customer’s side on the other hand – make supply chain planning increasingly challenging. Different requirements with regard to production processes such as batch or continuous processing and various plant specifications such as multi-site factories or single-product, multi-product or multi-purpose plants play a significant role both in strategic plant planning and allocation and in the operational planning of production capacities.

The ORSOFT Enterprise Workbench in-memory solution supports Sales & Operations Planning (S&OP), demand planning as well as inventory optimization, and enables strategic raw material and capacity simulations including statements on optimal floor layouts – also with regard to decision processes about relocations to other lines or plants, „make or buy“ or considering seasonal effects – as well as a reliable capacity alignment. The various planning scenarios can be selected and prioritized using further indicators such as customer segmentation, product contribution margin or potential contractual penalties in the event of non-fulfilment.

In ORSOFT Enterprise Workbench, sales forecast planning can be optimized through AI- and machine learning-generated historical data. Thus, demand planning can be fed by significantly enhanced data to assist a consensual decision-taking process based on an improved forecast quality. Instead of S&OP in fixed cycles, planning can now be executed at any time and delivers reliable results that can be directly implemented in detailed planning operations within very short response times.

A flow sheet simulation particularly suited to the chemical industry enables accurate sizing of plants and storage tanks in terms of flexibility, throughput and margin, or simulation of secondary resources such as energy, steam, process heat and wastewater. An analysis regarding the feasibility and profitability of new production facilities and resources is also part of the solution.

ORSOFT Enterprise Workbench is based on the production logistics model of SAP ERP or SAP S/4HANA and enables the bidirectional real-time data exchange of master and transaction data from the modules PP, PP/PI, PM, PS, QM, MM and SD. The extracted data is transformed into an internal data structure - the so called Digital Twin.

The advantages of the „ORSOFT Enterprise Workbench“ at a glance:

- Platform for medium and long term SCM processes
- Simulation and planning in real time
- Certified integration with SAP ERP and SAP S/4HANA
- Machine learning and artificial intelligence to improve planning algorithms
- Cross-plant view of multi-level supply chains for early avoidance of bottlenecks



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ORSOFT LabScheduling

Integrated planning of production and laboratories:

Throughput-optimized scheduling of limited laboratory capacities along the production planning process to avoid lab-indicated bottlenecks in complex supply chain networks

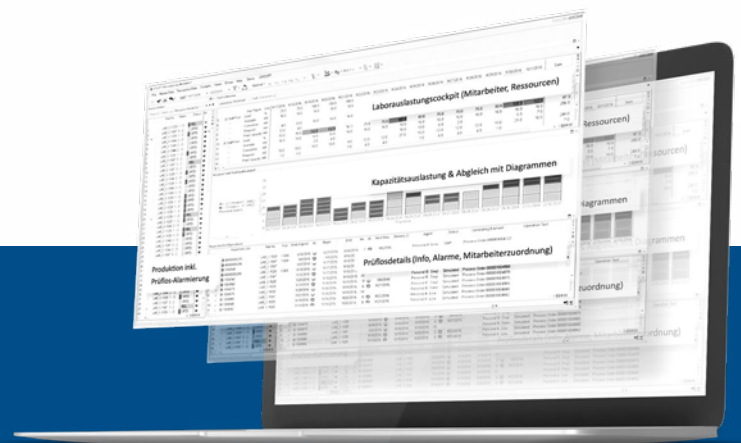
Laboratories represent a time- and capacity-critical factor within quality control in the chemical industry. This fact is caused by its manifold tasks along the overall production process: from incoming goods inspections to outgoing goods inspections, at-line inspections as well as inspections during the intermediate storage in tanks. As lab capacities are critical factors, they should be considered similar to classic production resources and should go in line with their planning. This enables both long-term advanced lab capacity planning as well as tactical-operational capacity adjustments and scheduling.

ORSOFT LabScheduling enables integrated laboratory planning based on the production planning in the ERP and analyses on data from the LIMS system. On a process level, both capacity analysis, capacity planning and detailed planning is supported. This is realized by real-time data processing of the ERP and the LIMS system in a common database. With the avoidance of system breaks and a central data storage between the systems, LabScheduling allows for accommodating horizontal and vertical planning levels.

The laboratory planning software thus combines all planning levels from production planning to the operative execution of quality controls and includes capacity, resource and head-count planning in the laboratories. As the planning horizon of laboratories is analogous to that of the production planning, it enables precise capacity forecasting and early identification of capacity bottlenecks in the laboratories. Within the operational planning cycle, real-time data processing allows for a flexible response to changing parameters and agile detailed planning of the laboratories.

The advantages of the „ORSOFT LabScheduling“ at a glance:

- Short-, medium- and long-term capacity preview of specific functionalities such as simulated inspection lots, individual prioritization of inspection lots or dynamic pegging
- Certified interface to SAP ERP and SAP S/4HANA with bidirectional access to master and transaction data by using SAP user authentications
- Flexible connection to external databases and LIMS
- Fast responsiveness through real-time data processing and complex simulation capabilities
- Access to planning results via web frontend



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ORSOFT Manufacturing Workbench

APS software for short- and medium-term material and (multi-)resource planning and interactive conflict simulation tools for use as an add-on to SAP ERP and SAP S/4HANA

In addition to tactical/strategic challenges in managing chemical supply chains, there are industry-specific planning and restriction parameters such as cleaning and setup times of plants, storage in tanks, silos or vessels, and/or laboratory capacities during production. This complexity requires – in addition to the capacitive planning provided from S&OP – a detailed planning and scheduling.

Production and logistics planning in ERP systems such as in SAP, Oracle or Infor is transaction-oriented and requires an explicit separation of material requirements and capacity planning. ORSOFT Manufacturing Workbench, in turn, follows the principles of Advanced Planning and Scheduling (APS) and provides interactive simulations on material, (multi-)resource and sequence planning while considering finite capacities.

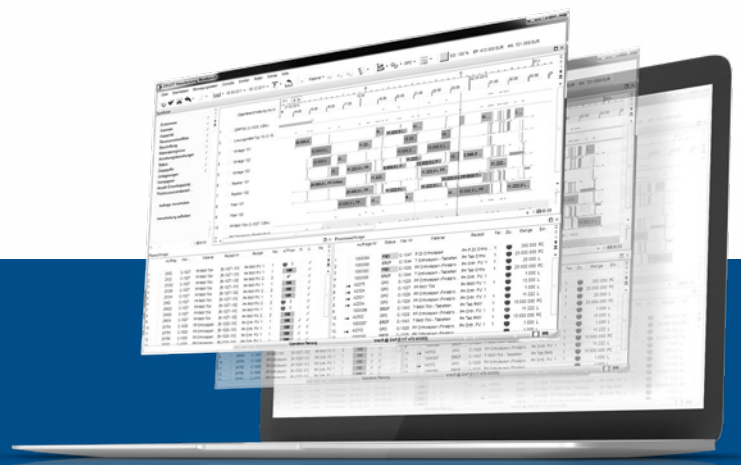
As the APS tool takes a multi-dimensional view on capacities, the software can map the effects of short-term production plan changes and thus enable optimized sequence planning. The continual revision of “best-before”-critical raw materials and pre-/intermediate products may also be monitored at any times.

In the case of scheduling “plain” dispositive process orders, it is still possible to intervene regulatively, e.g. by changing the planned production quantity and/or the planned production date. The software can thus support both manual and automated planning regimes. Therefore, all modules for short- and medium-term planning are not only used as an APS system or digital control station, but affect the way in which existing SAP processes are directly replaced from SAP transactions at the touch of a button. This would ensure, for example, that ATP and CTP checks can be processed online and in real time.

A further specific add-on to ORSOFT Manufacturing Workbench qualifies the software for use in the chemical process industry: A tool to manage single-product, multi-product or alternating and mixing tanks and their capacitive planning both as source and target tanks in the production process. As a result of its application, existing storage capacities - also automated - can be optimally utilized, so that investments in tank and vessel capacities can be minimized.

Advantages of the „ORSOFT Manufacturing Workbench“ at a glance:

- Flexible detailed planning solution with the possibility of customization and automation
- 100% integrated with SAP: processing of existing SAP ERP and SAP S/4HANA PP/DS data using SAP user authentication
- Proven industry solutions such as tank and campaign planning are already available in the standard system
- High-performance response through local RAM database with the ability to plan in real time
- Minimal project risk during implementation due to piloting on customer data



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ORSOFT Digital Factory Scheduling

Benefit quickly and effortlessly from the advantages of operational production (fine) planning by applying the cloud- and SaaS-enabled software solution

In medium-sized companies or in smaller plant sections of large corporate entities, detailed production planning is often managed through individual stand-alone solutions such as those based on Excel files. Hence, the information is often only available asynchronously and not in real time and is neither horizontally nor vertically integrated into the central ERP system.

Based on the PaaS platform Edge.One, the ORSOFT Digital Factory Scheduling offers a cloud/Software-as-a-Service (SaaS)-enabled planning tool that is open to all ERP system interfaces. The application creates transparency about the current planning situation and can run through AI-driven optimization scenarios for material, capacity, time and demand conflicts on which the software provides automatic planning suggestions.

By implementing the software, the production planning teams can benefit from the expertise of numerous customization projects for the ORSOFT Manufacturing Workbench, while the system itself is easy to integrate and to operate due to intelligent standardizations.

Advantages of the „ORSOFT Digital Factory Scheduling“ at a glance:

- Standardized planning board for easy implementation
- SaaS-enabled web application based on Edge.One, the platform-as-a-service (PaaS) solution from the Germanedge Group
- Open interfaces to all ERP systems including certified integration with SAP ERP / SAP S/4HANA
- Use of artificial intelligence enables to choose from different options for resolving planning conflicts
- Intuitive user interface through UI/UX-optimized menu navigation and dashboard functionalities
- Partner-ready due to an open platform strategy

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About ORSOFT

As an internationally acting software and consulting company, ORSOFT develops and implements innovative and reliable solutions in the field of Advanced Planning & Scheduling (APS) and Supply Chain Management (SCM) as certified add-ons to SAP ERP and SAP S/4HANA and other Enterprise Resource Planning (ERP) systems. With its affiliate companies, ORSOFT is part of the Germanedge Group which incorporates a focus on digital production 4.0. In the chemical industry, ORSOFT has successfully implemented projects at Allessa GmbH, Hüttenes-Albertus Chemische Werke GmbH and Sanofi-Aventis Group, among others.