

Field of application: Production

In production, complexity and dynamics are increasing more and more due to a close interlocking of processes from production to customers.

This leads to ever new and recurring tasks in the planning and optimization of production resources and processes. Here, static considerations and calculations with average values reach their limits.

With the help of a dynamic simulation, which realistically represents the complexity and dynamics, these limits can be overcome.

The simulation enables an otherwise impossible transparency of the production processes in advance, because the cause-effect relationships are clearly shown in a simulation model.

This allows bottlenecks to be analyzed quickly and efficiently and optimization measures to be derived, which can then be examined in a simulation model without any risk.

Simulation safeguards your investments in machines and means of production and differs from classical investment calculation, which is designed for local optimization.

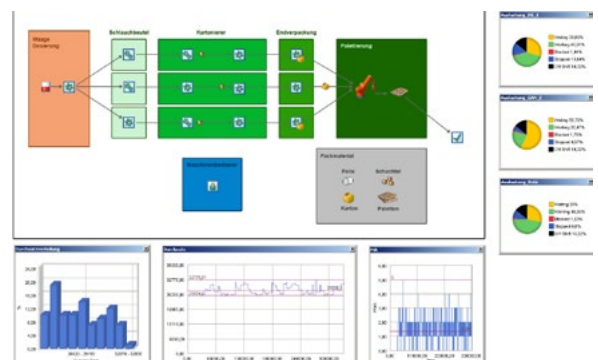
Dynamics and complexity

The use of simulation in the area of production includes the mapping of individual lines from the design of production resources and buffer sizes to the mapping of entire production halls. This also includes intralogistics systems for the coordination of logistics areas and the optimization of means of transport.

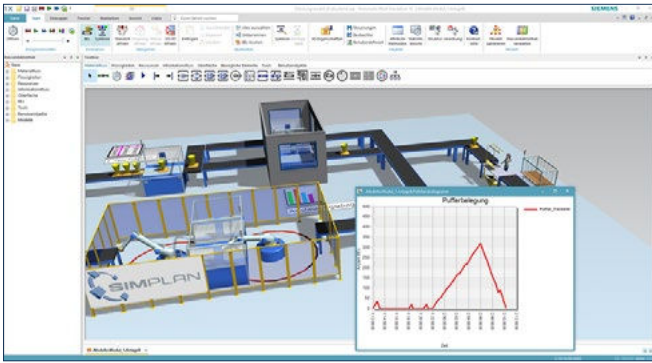
The simulation considers the dynamics as well as the complexity resulting from the analysis of an entire production process. Dynamics are caused, for example, by machine malfunctions, cycle time fluctuations due to manual processes or access to a bottleneck resource.

Input data for simulation

- Layout, e.g. of the line
- Product data (parts lists, variants, cycle times)
- Processing/cycle times
- Set-up times
- Rework and scrap rates
- Malfunction behavior of the machines (availability)
- Shift model
- Employees incl. qualification



Model of an interlinked production plant



Model of a production line

Simulation results

- Visualization of the processes
- Capacity analysis to identify bottlenecks
- Total throughput of a plant (incl. malfunctions, rework, scrap)
- Real overall plant availability
- Stocks in buffers and warehouses
- Utilization over time (machines, buffers, conveyors, employees)
- Personnel requirements for multiple machine operation

Goals and benefits

- Improvement and shortening of the planning of plants
- Increase in process quality, since bottlenecks can already be identified during planning and eliminated by appropriate measures
- Optimization of plant components under realistic conditions
- Optimization of buffer design to decouple plants and increase throughput and overall availability
- Risk-free investigation of improvement measures



SimPlan AG was founded 1992 as a service provider for the simulation of operational processes. Today, with more than 120 employees, it is one of the leading German providers of simulation services.

Why SimPlan?

We are cross-industry full-service provider for simulation, supporting companies in all industries with extensive expertise in the analysis and optimization of their business processes.

- Objective and independent analysis
- Detailed knowledge in logistics and production from over 30 years of project work
 - Development and use of standards
 - Permanent advancement of simulation topics through research and development
- Excellent resources to respond quickly to your issues
- Close collaboration and project integration with a high level of on-site involvement
- Development of innovative solutions for the efficient handling of problems
- Neutral distributor for simulation software
 - Support in software selection and implementation as well as training

Feel free to contact us

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