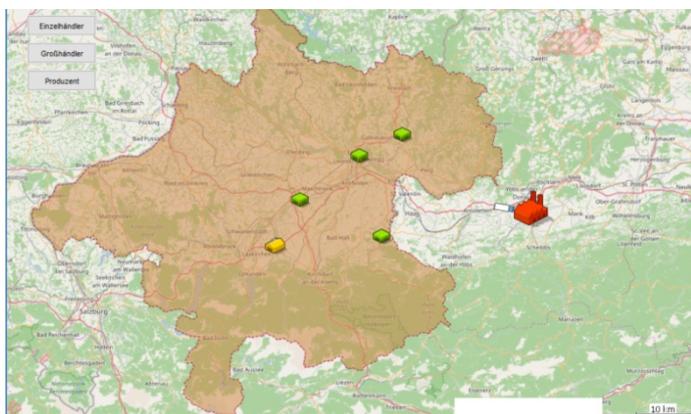
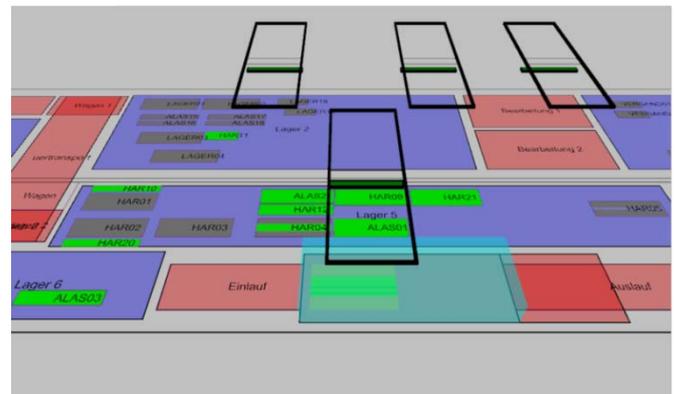


## Supply Chain Planning (SCP)

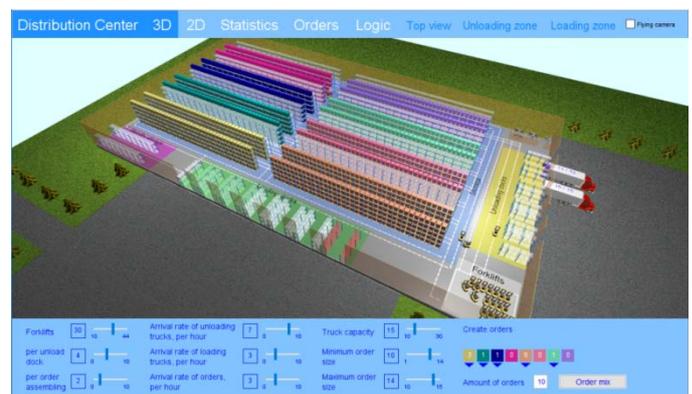
The task of the research field Supply Chain Planning (SCP) is to handle on the one hand uncertainties in the planning processes such as process uncertainties (e.g. delivery times, production lead times) and customer uncertainties (e.g. product, amount, customer required lead time). On the other hand SCP supports to increase the performance of the supply chain.

Planning tasks in a supply chain define goals, such as on-time delivery, optimal utilization, short production lead times and low inventories. Unfortunately, most of these objectives conflict with each other. For example, finishing a job on the customer required due date is much easier if the equipment utilization is low because enough excess capacity is available. The low utilization may lead to poor financial figures such as Return of Investment.



Supply Chain Planning deals with mathematical modelling and optimization of Supply Chain Planning processes on all hierarchical stages from long term planning to short term planning to overcome these goal conflicting hurdles. Topics such as network planning, capacity planning, demand planning, manufacturing planning and scheduling, distribution planning, deployment planning, and transportation planning and scheduling, comparison of scenarios, solving of optimization problems are focused in this research field by the use of discrete event simulation, agent based simulation and stochastic modelling.

Many industries are facing strong global competition because product life cycles are shortened, time-to-market decreases and customers require fast deliveries of a variety of products of an appropriate quality. Therefore, it is absolutely necessary that a company ensures that the right product of the right quality is available to the customer in the right quantity at the right time.



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