

# SimPlan Newsletter



October 2013

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## Simulation in practice

### SimPlan simulates high-bay warehouse for Rehau



REHAU AG + Co is a premium brand for polymer-based solutions and international leader in the building, automotive and industrial sectors.

At their location in Feuchtwangen (Germany), Rehau has invested 25 million euros in a new high-bay warehouse with optimised material flow. After a construction period of 13 months, operation started at the beginning of the year.



The new material flow system connects the 12-aisle high-bay warehouse to the sections injection moulding, coating and fabrication. The production-internal transport takes place via an electric overhead conveyor which runs along a rail system on the ceilings of the facilities.

The control system of this highly dynamic and complex intralogistics system does not only include the entire warehouse management, but also the

management and scheduling of the electric overhead conveyor and the load carriers. Parallel to the planning of the material flow concept, SimPlan also developed a simulation model that safeguards the systems and tested and optimised the control strategies in a virtual model.

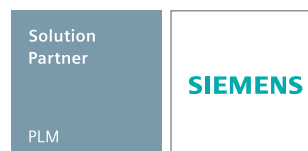
## Software Trainings

We offer different training courses in several of our offices in Germany. If you are interested in a training at your company please ask for an individual offer.

### Software training courses

- Plant Simulation
- Enterprise Dynamics
- SimView
- AutoMod
- Simul8
- Demo3D

➔ [More information and contact](#)



## Simulation of a meat warehouse for EDEKA Südwest Fleisch GmbH

EDEKA Südwest Fleisch GmbH has built a new, highly efficient meat processing facility in Rheinstetten (Germany). Since mid-2011, meat and sausage products are produced there and delivered to more than 1,250 stores of the food retailer EDEKA Südwest.

System supplier Vanderlande Industries GmbH was awarded the contract to build the logistics system in between production and distribution. In order to safeguard planning and investments, SimPlan Integrations GmbH was subsequently commissioned to simulate the entire system.

The challenge of the project was to plan a highly dynamic, 20-aisle shuttle system that serves as supply warehouse for order picking and as buffer storage for distribution at the same time. Distribution requires that the E1 and E2 containers and boxes in the system are stored in exact order on the standard lattice box vehicles. All this requires the shuttle block to store more than 7,000 loading units per hour.

The project was realized with the simulation tool AutoMod. The following sections were modeled strategically and in detail:

- high-bay pallet warehouse with pre-storage area and 10 de-palletizing stations
- 20-aisle shuttle system with double-lifters and 140 shuttles
- more than 3,000 meters of conveyor technology
- order picking area with flow racks at 19 manual and two automatic goods-to-man work stations
- empty-container-loop
- Distribution system with sorter, sequencing buffer and dolly loading station

Due to the high performance requirements all parts of the system have to fulfill and the strict sequence in which the dollies have to be loaded, it was decided to simulate the system in great detail.

The customer provided projections of future order amounts, based on which all logistics processes were set up in the simulation model. In workshops with Vanderlande, suitable high-performance strategies were developed and parameters defined.

During all processes the products were tracked individually, throughout production, storage, inventory, reservation, picking and shipping. As part of this detailed study, all goods flows from the high-bay warehouse to the shuttle block, as well as from the shuttle to the order picking areas, were simulated and the performance and capacity optimized.

In the storage process, it was important that all articles were distributed in the shuttles in a way to facilitate a high-performance distribution that ensures an error-free order sequence.

All the results and strategies of the simulation runs were documented and applied to the real system. Here it has become clear how very realistic the simulation was. The use of simulation is indispensable, especially for complicated systems, because it prevents technical over- or undersizing and allows the determination of parameters and strategies already at a very early stage in the project.

### AnyLogic Student Competition - Modelling and Simulation



XJ-Technologies, developer of the simulation software AnyLogic, gives students the opportunity to prove their modelling capabilities in the **student competition modellierung and simulation**.

The competition is about designing and developing inspirational simulation models that address complex problems and sharing them with the AnyLogic community. Great prizes wait for the winners!

**Deadline for entries is 25th November 2013.**

➔ [More information and participation conditions](#)

## Simulation tools

### News about Siemens PLM Software - Plant Simulation

SimPlan has been successful solution partner of Siemens PLM software for many years, responsible for the sales of the Tecnomatix product family, especially the simulation tool Plant Simulation.

In April, Siemens released the **new version Plant Simulation 11**. A key topic of this new release is energy simulation, due to the increasing importance energy consumption has gained in production processes.

Plant Simulation 11 provides you with a tool for modeling, analysing and optimising production while taking energy consumption into account. Analyses regarding stand-by-operation of machines and energy saving potentials in production are now easily possible.



Apart from many smaller adjustments, 3D integration has been improved. More information about the new functions on our website:

➔ [www.plant-simulation.de](http://www.plant-simulation.de) (German)

Plant Simulation enables users to develop their own simulation building blocks as well as entire individual libraries or building block kits. SimPlan continually expands its range of application- and industry-oriented building block kits and makes them available to customers.

Apart from the building block kits *assembly* and *value stream* offered by Siemens, SimPlan has developed solutions for the automotive industry, for warehouse/logistics (*Logistics Suite*), supply chain (*SimChain*), solar/photovoltaics and shipbuilding.

Throughout the past year, several building block kits were created during projects – for assembly systems/workpiece carriers, the simulation of linked machine tools (*PlantEasy*) and construction site logistics (*Sim-BauLog*).

More information about all building block kits can be found on our website:

➔ [www.plant-simulation.de](http://www.plant-simulation.de) (German)

Recently, SimPlan has become **official academic partner** of Siemens PLM and with that the exclusive sales partner of all academic (non-profit) licenses. This includes, besides Plant Simulation research and education licenses, also the Tecnomatix academic bundles *Manufacturing Academic* and *Robcad Academic*.

You can find more information about the bundles here:

➔ [www.plant-simulation.de](http://www.plant-simulation.de) (German)

Meet our experts at the Tecnomatix Plant Simulation user meeting on October 30th in Stuttgart (Germany), organized by Siemens PLM software.

More information and registration form [here](#).

## Dates



**25.-27. February 2014 LogiMAT 2014 in Stuttgart, Germany**  
*International trade fair for distribution, materials handling and information flow*

The SimPlan group will present its portfolio in **hall 5, booth 202**

➔ [To the LogiMAT homepage](#)

➔ [Register for guest tickets](#)

## SimPlan news

### Federal state government sponsors SimPlan research project for more energy efficiency



In Juli 2013, Hessian environment minister Lucia Puttrich presented a grant of 305.000 euros to SimPlan AG in Maintal to be used for the research project

“SimEnergy” which is about simulation-based planning and evaluation of energy efficiency for manufacturing systems in the automotive industry. “Hessen is full of technical innovations to achieve a turnaround towards an environmentally friendly energy policy” the minister said when presenting the grant.

Apart from modeling information and material flow, discrete event simulation methods are up to now only partly able to model energy flows and their interdependencies, which is necessary to evaluate the energy efficiency of a process. Instead, energetic aspects of production processes are generally only determined by static process analysis and key indicators.

The SimEnergy research project aims to support an energetic evaluation of production and logistics processes using existing and established simulation tools by modeling material flow in one dedicated simulation tool and energy flow in another dedicated tool and by linking these simulations together. Among other potentials, this for example allows to investigate the consequences on energy consumption of normal

vs. stand-by mode in production processes or to see the effects of switching systems on or off.

This holistic view will improve the forecast of energy consumption, thus resulting in more reliable data for forecasting the energy demand. Depending on the system, energy saving potentials may reach up to 20 to 30 percent. The industrial project partner Volkswagen AG will provide application scenarios that are characteristic for the automotive industry. These scenarios also will be used to derive a generalized set of requirements for combined manufacturing and energy simulations.

“Without the funding by the Hessian federal government, we would not be able to realize such an innovative research project with industrial and academic partners,” said Dr. Sven Spieckermann, managing director of SimPlan AG.

Further project partners, apart from SimPlan AG and Volkswagen AG, are energy efficiency service provider Limón GmbH and the department of Organization of Production and Factory Planning at Kassel University. Together the project partners will contribute about 316.000 euros of third-party funding to the project.

Pictured: Hessian environment minister Lucia Puttrich (on the right) presents the grant to three of the project partners: (from right to left) SimPlan managing director Dr. Sven Spieckermann, Professor Sigrud Wenzel (University Kassel), Carsten Pöge (Volkswagen AG). Photo: Renate Hoyer

### Follow us on:



#### Imprint

**SimPlan AG**  
Edmund-Seng-Str. 3-5  
63477 Maintal  
Tel. +49 6181 40296-0  
Fax +49 6181 40296-19

[info@SimPlan.de](mailto:info@SimPlan.de)  
[www.SimPlan.de](http://www.SimPlan.de)

#### Board of Directors:

Dr. Sven Spieckermann, Dirk Wortmann

#### Supervisory Board:

Prof. Dr. Ulrich Noack (Chairman),  
Prof. Dr. Stefan Nickel,  
Andreas Schindler

AG Hanau HRB 6845  
USt-ID-Nr. DE 154 989 277