

SimPlan Newsletter



December 2011

News from the world of simulation

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- Simulation of a module production plant for Reis Robotics GmbH

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Simulation in practise

Chinese automotive manufacturers count on simulation

The rising degree of automation in Chinese automobile factories as well as the **increasing diversity of vehicle models** and **vehicle equipment** require planning technologies, like simulation, to ensure the safety and optimal use of the production layout.

While formerly, assembly lines manufactured only one or two vehicle models in up to three equipment variants, nowadays plants like FAW-Volkswagen in Changchun are quickly approaching German conditions.

In addition to the challenges of this more complex automation, the focus is on **strategies for managing order sequencing**, the so-called *pearl chain*, as well as streamlining processes (*lean production*). This means a **huge developmental step** for the Chinese automotive manufacturers.



Frequently, they turn to German and Japanese specialists for help. Planning technologies like the digital factory, especially **process simulation**, are also gaining importance.

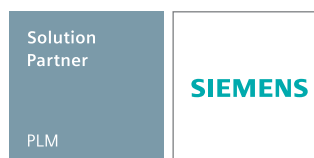
Joint-ventures with German participation pay off especially well in this sector, because of the German partners' more than 20 years of experience in using simulation technology.

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 registration](#)

Simulation of a module production plant for Reis Robotics GmbH

In recent years, simulation has become more and more important as an instrument to **examine production processes** in the photovoltaic industry. It is by now used in all areas of the value chain. Emphasis is on the analysis of plant designs regarding the **output** and the **overall availability** of the production plant.



Fig. 1: insight into a photovoltaic module production plant

Reis Robotics develops and builds plants for the production of photovoltaic modules. Simulation is used during the design phase of these plants to ensure that the plant designs meet the output requirements.

In this plant, a type of **photovoltaic module** is manufactured. The solar cells are interconnected into strings, and the strings into matrixes. Then these matrixes are laminated to protect them from damage. It is crucial that the modules are processed in the laminators within a certain time limit after applying the first film. In the so-called end of line sector (EOL) the modules are framed and tested.

The simulation study's goal was to **test the concept** of the photovoltaic modules production plant regarding its output and the overall availability.

Investigating the **influence of the cycle times** of critical stations was also part of the simulation.

The SimPlan **solar building block library** was used for modelling. It contains the essential building blocks for modelling the **materials handling** as well as the

stations of a module production plant.

The structure of the simulation model is layout-based, that means especially the materials handling's equipment components and measurements were based on the CAD layout's specifications (see fig. 2).



Fig. 2: Simulation model of the photovoltaic module production plant

An Excel spreadsheet provided the input data. The structure of this spreadsheet allows information to be **read directly from Excel** and imprinted on the building blocks of the simulation model.

The simulation evaluated the **hourly throughput of the plant**, which was compared to three target throughputs compiled from a predefined cycle time in undisturbed production and the minimum availability of the plant.

You can read the entire article here:



[Anwendung von Materialflusssimulation in der Solarindustrie \(German\)](#)

Authors: Dr. Harry Kestenbaum, Andreas Manz and Dr. Ilka Habenicht - all SimPlan AG

Dates

**SOLIDWORKS
WORLD 2012**

**12.-15. February 2012 Solidworks World 2012
San Diego, CA**

Visit us at the largest CAD user conference worldwide

[➔ To the Solidworks World 2012 homepage](#)

Simulation tools

CLASS Warehouse and Simulation

SimPlan's software portfolio is expanding: the new tool is CLASS Warehouse and Simulation, developed by British company CIRRUS Logistics. CLASS is a software tool for **planning and simulating manual storage systems**.

The narrow focus on this field makes it possible to quickly learn the basics of simulation, even for **non-experts**. Processes that are common in manual storage systems are already pre-defined and only have to be parameterized and adapted to the individual system.

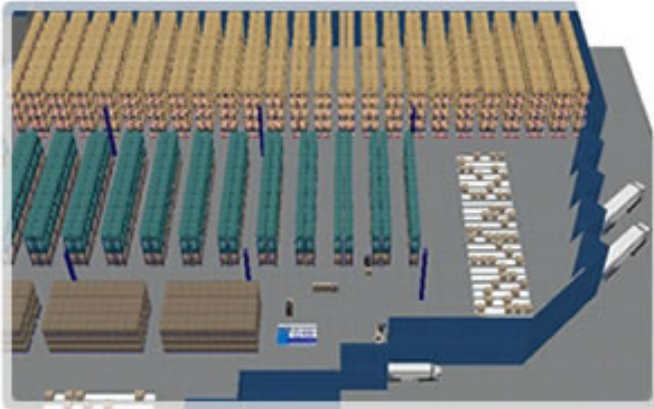


Fig. 1: Example of a storage layout

Application in Warehouse Planning

The planning environment of CLASS is used to design **3D warehouse layouts**. On the available plot size, buildings and storage areas are developed, based on **CLASS building blocks** of building shells, truck docks, floors, storage systems, etc.

Various values (number of parking spaces, land use, etc), images and the 3D model are available as planning results. Planning is rounded off with the creation of **dynamic videos** of the warehousing site.

Application in Simulation

The simulation environment of CLASS allows the **analysis and optimisation of storage processes**. Typical questions that CLASS simulation models can answer are for example:

- Is the number of truck docks sufficient for the delivery and removal of goods?
- Will the target warehouse performance be achieved (storing, stock removal, order picking)?
- How many industrial trucks and employees are necessary?
- Is the warehouse layout suitable for the intended use?
- What are the system's limits and where are possible bottlenecks?
- Which order picking and replenishment strategies are suitable?

The software tool CLASS has been on the market for 15 years and is constantly being optimized and developed. SimPlan AG acts as a **sales partner for the German-speaking region** and offers consulting, workshops and support in addition to the software.

➔ [To the CLASS Website](#)

Dates



13.-15. March 2012 LogiMAT 2012 in Stuttgart, Germany
10th international trade fair for distribution, materials handling and information flow

The SimPlan group will present its portfolio in **hall 7, booth 202**

➔ [To the LogiMAT homepage](#)

➔ [Register for guest tickets](#)

SimPlan News

New cooperation with INOSIM



SimPlan AG, one of the largest simulation service providers in the fields of production, logistics and the process industry, has entered into a sales partnership with INOSIM Software GmbH.

INOSIM is a German software developer for **simulation solutions in the process industry and biotechnology sectors**. The partnership is not limited to the domestic German market, but extends **internationally** to include China, for example. There, SimPlan is successful with its own subsidiary since 2010.

INOSIM Software GmbH is based in Ammersbek near Hamburg, with another subsidiary in Dortmund, and has been operating in the simulation solutions market for eight years

The company sets **new technological standards** in the process and biotechnology industry through its research and development cooperation with the Dortmund University of Technology (department of bio- and chemical engineering). The cooperation resulted in the development of high-performance simulation tools like **INOSIM Professional** (see fig. 1).

Apart from the detailed simulation of batch-oriented and general cargo production processes for **production planning, capacity analysis or plant design**, INOSIM's simulation tools show new opportunities especially in the field of biotechnology: simulating the behaviour of living production factors (e.g. bacterial strains) demonstrates dramatic potential for **optimization in biotechnological production**, especially in the use of resources, waste minimization and output.

This enables SimPlan to offer further specialized software solutions for chemical and biochemical production processes in addition to their products for the process industry.

[➔ To the INOSIM Website](#)

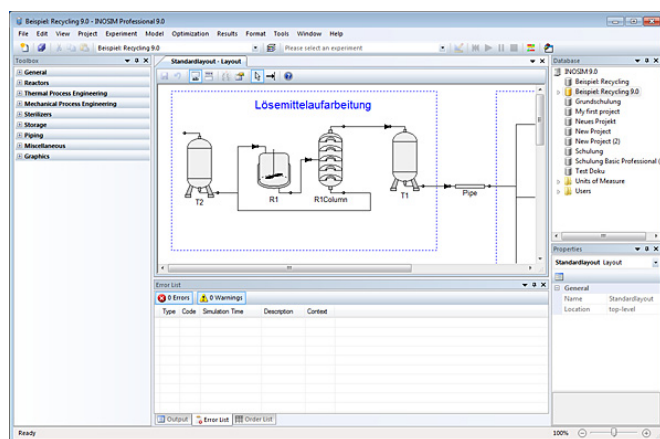


Fig. 1: INOSIM Professional - example layout

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