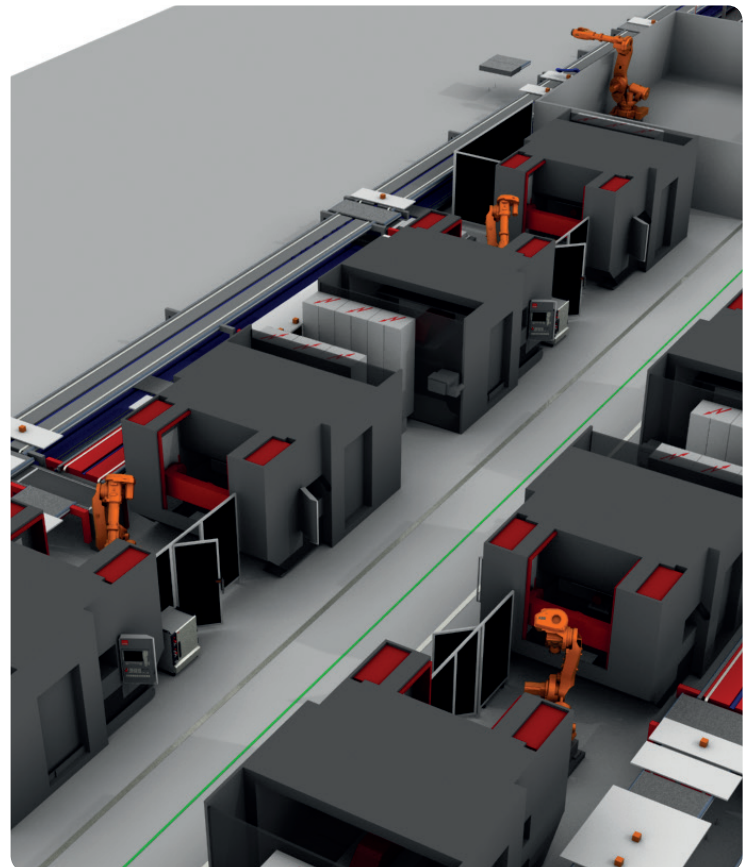


**VISUAL
COMPONENTS**

Cost optimization with VISUAL COMPONENTS

3D simulation of Specialized Production
Machinery at Fill GmbH





Fill assembly hall



Simulation Team at Fill

Visual Components benefiting sales, planning and engineering

Fill is a global mechanical engineering and plant construction company from Austria who are using VISUAL COMPONENTS's 3D simulation software to support its sales, production planning and engineering processes. The software produces simulated 3D layouts for improving communication within the project team and with external suppliers, and this helps the project meet its design goals. The simulation is used to optimize system concepts and avoid errors early in the design cycle. Currently Fill are using the high-end machine designing solution 3DAutomate.

Fill's headquarter is located in Gurten (A) and they supply production lines and machinery for processing metal, plastic and wood for the automotive, aerospace, wind energy, sports and building industries. Fill worked with an external software supplier already in 2009 to simulate a production line to facilitate a customer purchase decision. The results of this project clearly identified for Fill the benefits simulation had for supporting the sales process and early planning stages.



„speedfiller“ - repair unit

Evaluation: Clear set of goals

Based on the initial simulation success, Fill decided to bring simulation expertise into the organization. An evaluation team gathered objectives and criteria to set the requirements for a new simulation process within Fill. The software should support sales with run-time simulations and 3D layout animations that can be easily shared to improve internal and external communications. For optimization, the tool should be able to model proposed systems and plant modifications, providing reliable performance metrics on which an investment decision can be made.

According to these objectives, the team put 69 simulation tools under the microscope. 19 passed the initial cull, by supporting additional criteria that included, an Excel interface, CAD import, and 2D/3D capability. Following a background check on the software companies, the number of potential systems was reduced to just six, with Fill ultimately opting for the 3D solution from the Finnish supplier, VISUAL COMPONENTS. Crucial to the decision for the Finnish company was the localized support available from the Dresden software company DUALIS GmbH IT Solution that had many years of simulation experience with VISUAL COMPONENTS. Additionally, the proven software demonstrated a very good price-benefit ratio. DUALIS also demonstrated for Fill, that close cooperation with VISUAL COMPONENTS would deliver new features and continuous development of the software to meet Fill's future business needs.

Implementation: making individual adjustments

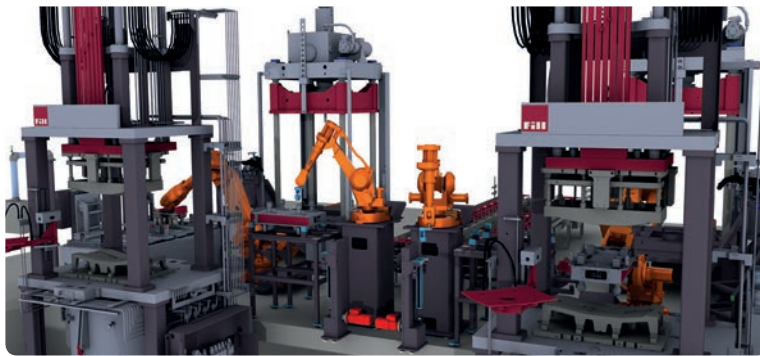
Over a nine-month implementation phase, the project team worked on the first simulation projects developing in parallel a standardized library of component models. While stan-



“The first impression from our customers is always positive. Simulation gives us the opportunity to present our equipment and processes for everyone to understand, creating a common basis for discussions.”

B.Eng(mech) Alois Wiesinger,
product developer at Fill

Standard industrial components such as conveyors and robots were already available from the VISUALCOMPONENTS library, numerous specialized equipment models that feature in Fill solutions, needed to be defined individually. The first simulations were presented to customers and all received a very good response.



A Fill casting line

Simulation for system optimization and planning

At Fill, the 3D simulation is used not just for supporting the sales and marketing processes, but also for machine and line design. The equipment is modelled and configured to optimize performance and detect any processing errors. By catching problems early in the design cycle, Fill is able to significantly reduce costs and development times.

A practical example comes from the wood processing industry. Initial calculations using an Excel spreadsheet with static cycle times, indicated an output of 500 planks per hour for the production line. However, the simulation showed that the output would actually be as few as 400 planks per hour as flaws in the drive reduced the feed rate.

Using simulation, the central bottleneck was identified. The project planners then optimized processes and increased the performance of some resources. In the end, an output of 500 planks per hour was realistically achievable.

“This example shows that a purely static analysis, in which all units operate at the same speed with no mutual interaction, will not give a realistic performance value” explains Alois Wiesinger.

“It was only through the simulation and its realistic modelling of dynamic interactions that we were able to discover the weak points of the system at an early stage and ultimately meet the requirements to the complete satisfaction of all concerned.”

3DAutomate introduced for plant design

Fill has also added 3DAutomate, the high end version of Visual Components software to support direct import of large CAD data sets for robot path planning and other machining processes. “3DAutomate is a high-end solution ideally suited for the effective 3D simulation and optimization of complex production processes” explains Heike Wilson, managing director at DUALIS.

Facts Check

Goal: Simulation and optimization based equipment planning

Year: 2009

Software licenses in use: 3DAutomate, 3DCreate (floating), 3DRealize (floating), PLC add-on

Special features: Specialised Fill component library for standard modules (metal casting, clamping fixtures, woodworking), internal expertise for component modelling

Interfaces: OLP, MS Excel

Applications: Layout and line planning, visualization, robotics, workcell studies, sales support, project engineering, product development



Fill GmbH

Fill is a leading international machine and plant manufacturing company serving diverse branches of industry. The family-owned business excels in the use of the latest technology and methods in management, communication, and production. Business operations encompass the fields of metal, plastics and wood for the automotive, aircraft, wind ener-

gy, sport and building industries. The company is the global market and innovation leader in aluminum core removal technology, casting technology, in wood bandsaw technology, as well as in ski and snowboard production machines. Andreas Fill and Wolfgang Rathner are joint CEOs of the company founded in 1966 that is still completely family-owned and

now has more than 670 employees. In 2015, the company recorded sales of 120 million euros.

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DUALIS GmbH IT Solution

DUALIS GmbH IT Solution was founded in 1990 in Dresden, Germany and is specialized in simulation and planning software. Proprietary products GANTTPLAN and the optimization tool ISSOP provide detailed planning and optimization of production and manufacturing processes. In addition the simulation tools from Finnish VISUAL COMPONENTS deliver 3D planning and optimization for production and logistics systems.

Users benefit in multiple ways from the DUALIS products, first during strategic planning and then through operational use. Using a 3D simulation platform, realistic models of complex production systems can

already be evaluated during the planning stage. The plant simulation saves time and costs and ultimately reduces risk. Software based production planning significantly increases the efficiency of the entire production process. Orders are optimized based on all planning restrictions and available resources including personnel, fixtures and tools. The ability to meet delivery deadlines is increased significantly by identifying exact delivery dates. Combining production and 3D simulation results in an optimally designed facility running optimised operations.

The realistic 3D visualisation from the VISUAL COMPONENTS suite is not

only for internal planning processes, it also supports system integrators and machine builders to convincingly demonstrate their system's benefits and communicate new production concepts.

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