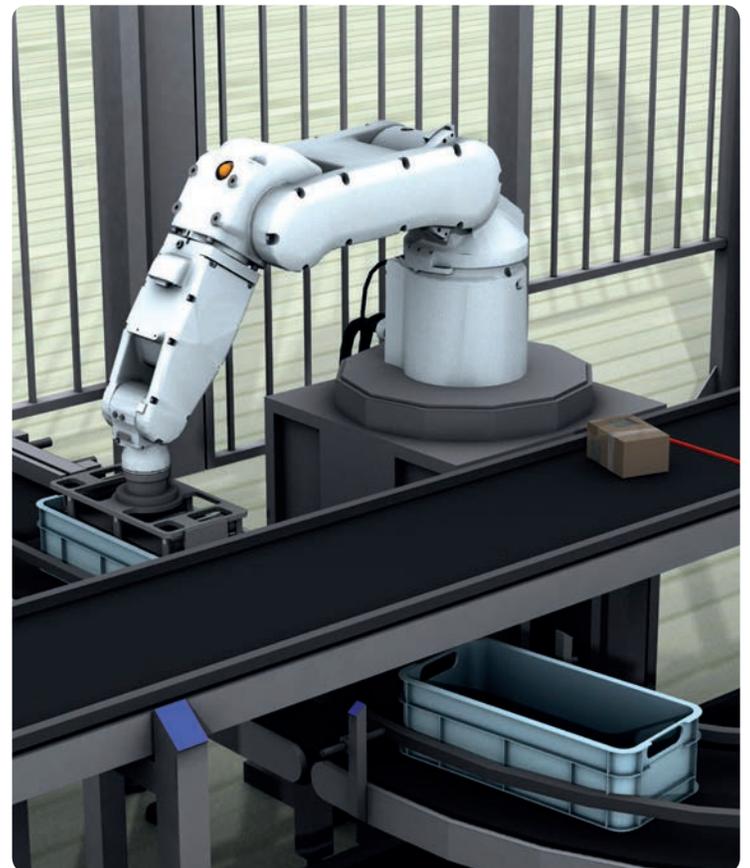


 VISUAL  
COMPONENTS

# VISUAL COMPONENTS in action at Faurecia Automotive Seating

Process Flow Simulation with  
3DCreate and 3DRealize



# VISUAL COMPONENTS 3DCreate and 3DRealize in action

Just going with the flow. Faurecia is one of the largest automotive parts manufacturers in the world, and they rely on smooth running processes throughout the supply chain. Digital factory solutions are used to help optimize operations and the Automotive Seats division are using 3DCreate and 3DRealize to refine material flows within their organization. The software from VISUAL COMPONENTS is a central part to their production planning and plays a pivotal role in their production and distribution processes.

The Faurecia Group is a leading global supplier in four major automotive business areas: Automotive Seating, Interior Systems, Emissions Control Technologies, and Automotive Exteriors. The group currently employs around 99,500 people at 330 locations in 34 countries. Every day, in four continents, vehicle parts are delivered to customer's plants using just-in-time delivery strategies.

The Automotive Seating Group produces the full line of components that go into automotive seating which includes frames, mechanisms and motors, padding, seat covers, accessories, and electronic and pneumatic systems.

The German market represents approximately 38 percent of the total group's worldwide turnover, mainly due to the demand from premium automakers such as the Volkswagen Group, BMW and Daimler. In Germany around 12,000 people are employed at 28 production sites and research and development centers that are spread over eleven locations.

Faurecia prioritise optimized production processes and quality assurance to maintain its leadership position and continuously improve. With this focus, Faurecia Automotive Seating engaged DUALIS IT Solution, the largest VISUAL COMPONENTS distributor in Germany, to implement a productive 3D simulation solution.

Working together, DUALIS and Faurecia develop solutions in close cooperation and on a continual basis to meet new challenges as and when they are presented.

## How Faurecia's future looks through 3D glasses

3D simulation is now used during the early planning stages to support both engineering and sales processes. The primary use is for visualizing material flow for supply and internal logistics, virtual system validation and sales support.

"We already had simulation at Faurecia for a long time, and it fulfilled a fixed task. Before VISUAL COMPONENTS and DUALIS, we used another software, but it has not been able to adapt with our growing requirements," informs Mr. Hartmut Beisner from the Manufacturing Support Function at Faurecia Automotive in Stadt-hagen. "We needed to find a software that could also simulate the people function within the process flow, and under ever changing conditions. Now we use the new simulation software for the creation and standardization of all our production layouts at Faurecia."

"Using the VISUAL COMPONENTS toolkit, the layout engineers can create a schematic plant layout with detailed production lines. You can develop a simulation from component libraries or create new components to add to the existing library. Statistical data allows detailed analysis of the planned processes and layouts - source utilization and system bottlenecks, for example."



3D simulation model of a car seat assembly cell used for material flow optimization



“We live in times of ever shorter product cycles and highly customized products, so for a company like ours, it is essential that we can be proactive and flexible with the production process at all times. When a product line ends, the production equipment is decommissioned and dismantled and where possible reconfigured for a new project. For maximum reuse, flexibility is top priority. We achieve this through simulation: and validating a new configuration’s processes is a key for our success.”

Hartmut Beisner  
Manufacturing Support Function, Faurecia  
Automotive Seating  
Stadthagen, Germany



3D modelling of a continuous flow car seat assembly line

## A Digital Factory with VISUAL COMPONENTS

Faurecia use 3DCreate and 3DRealize from VISUAL COMPONENTS 3D simulation software family. 3DCreate is the factory planning tool that supports new simulation component modelling to add to existing libraries. Raw CAD data is made into simulation efficient models and assigned functionality from the 3DCreate menus. The models can be built with parameters for changing appearance and performance and have a realistic look and feel. A plug-and-play interface helps to snap components together into a working layout, which becomes the basis for visualization, analysis and optimization. Work flow issues such as bottlenecks are identified in advance for the new production process. 3DRealize is used mainly for sales support. It uses the same layout functionality as 3DCreate, and can assemble a layout based on existing equipment models. Line and operational parameters can fine tune the models as they snap together to form a layout using the plug-and-play interface. The layouts are included in the sales process and provide the customer plants a comprehensive overview of the production process with detailed statistical analysis and reports.

### Material flow in a virtual space

Faurecia simulates the assembly of seating products. The VISUAL models include the transportation of individual components between welding areas, component assembly and finish coatings in paint booths. Depending on the end-user requirements the seat components are taken through different processing areas to reach final completion. The simulation software indicates whether the transport times and the required number of employees match what was originally expected. When the logistics can be checked and optimized the risk of production underperforming is minimized. Where are the weak points in the design? How many people and transport units are actually needed? These are some of the many questions that can be answered by validating and iterating the simulation.

Faurecia simulates detailed manual production processes to allow for ideal work center layout for each employee and their specific tasks. The component library has strong support for operator simulation and related job assignment and material supply activities. Many individual tasks and processes can be assigned and simulated to validate capacity and travel times. Initially the simulation was used for optimizing the layout of manual work stations around welding stations and assembly areas, but today it’s used to visualize the logistics between different production areas. The simulation of the material flow and the close cooperation with DUALIS enables Faurecia to respond effectively to production changes, by testing a new system through visualization and not through trial and error.

### Facts - Check:

**Goal:** 3D layout planning, optimization of material flow

**Budget:** 35.000 €

**Year:** 2008

**Software licenses in use:** 3DCreate, 3DCreate (floating), 3DRealize (floating)

**Special features:** Group-wide use of a special operator library for mapping manual assembly processes

**Interface:** Data import / export to MS Excel

**Applications:** Layouting of new line concepts, 3D - visualization for employee training



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### Faurecia Automotive Seating

The Automotive Seatings group is one Faurecia 4 main automotive business areas, the other 3 being Interior Systems, Emissions Control Technologies, and Automotive Exteriors. The group of companies currently has approximately 99,500 employees at 330 locations in 34 countries based on four, all delivering vehicle parts just-

in-time to customer's plants.

Faurecia Automotive Seatings has its headquarters in Stadthagen near Hanover. They are a leader in the design, development and manufacture of automotive seating, designing and producing the full line of components that go into automotive seating, including frames, mechanisms and

motors, padding, seat covers, accessories, and electronic and pneumatic systems. The car seats are characterized by high safety, comfort, quality, and modularity along with weight reduction. Their customers are international and premium automakers, and include the likes of VW Group, BMW and Daimler, who all rely on Faurecia.

### 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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