



## SIMULATION TO VISUALIZE THE MATERIAL FLOW

**It's all flowing smoothly at Faurecia:  
With VISUAL COMPONENTS PROFESSIONAL and ESSENTIALS**

A smooth flowing supply chain is paramount to one of the world's largest suppliers of complete automotive seating products. That is why the Faurecia Autositze GmbH, as a division of the Faurecia Group, selected the VISUAL COMPONENTS digital toolkit to meet their process optimization needs. Faurecia uses the VISUAL COMPONENTS products for material flow simulation, to directly supporting their planning and design processes.

## Strong market position in Automotive

The Faurecia Group commands a strong position among the automotive market suppliers for delivery of car seats, emission control technology, interior systems, and automotive exteriors. In total, the group has over 100,000 employees working at 300 locations in 35 countries. With an infrastructure spread across four continents, vehicle parts are delivered on a Just-in-Time basis whenever and wherever needed.

# faurecia

inspiring mobility

The "Car Seats" division produces a wide range of products from complete seats, frames, adjustment mechanisms, upholstery, seat covers, as well as head and arm rests and specialized pneumatic comfort systems. In Germany alone, the car-seats division employs around 7,000 people working at 30 different production locations, including 5 research and 11 development centers. To continuously strengthen and expand their market position, the organisation maintains focus on two key areas; namely, optimized production processes and quality assurance. For their 3D simulation needs Faurecia uses solutions from the VISUAL COMPONENTS family. These were introduced and are supported by DUALIS GmbH IT Solution, the most experienced distribution partner of

VISUAL COMPONENTS in the German-speaking area. To this day, DUALIS and Faurecia work in close cooperation to gain new perspectives, test new strategies, and develop new solutions for improved productivity.

## Faurecia's view through 3D glasses

The 3D simulations are developed in the early planning phase to directly support the construction and planning processes. The primary function is to visualize the material flow supply and internal logistics along with virtual plant validation.

"Simulation has been a known constant for us for several decades. In order to represent our material flow as realistically as possible, we use the 3D simulation platform from VISUAL COMPONENTS. The main reason we chose this solution was that it can plan with a combination of employees and processes - even under changing conditions," explains Hartmut Beisner, Program Manufacturing Leader/Frames Manufacturing Engineering at Faurecia Autositze GmbH.

VISUAL COMPONENTS has therefore been used since 2008 with the expansion stages Essentials and Professional in addition to further simulation software. This enables Faurecia to plan employee processes by assigning concrete work tasks and then to simulate them.



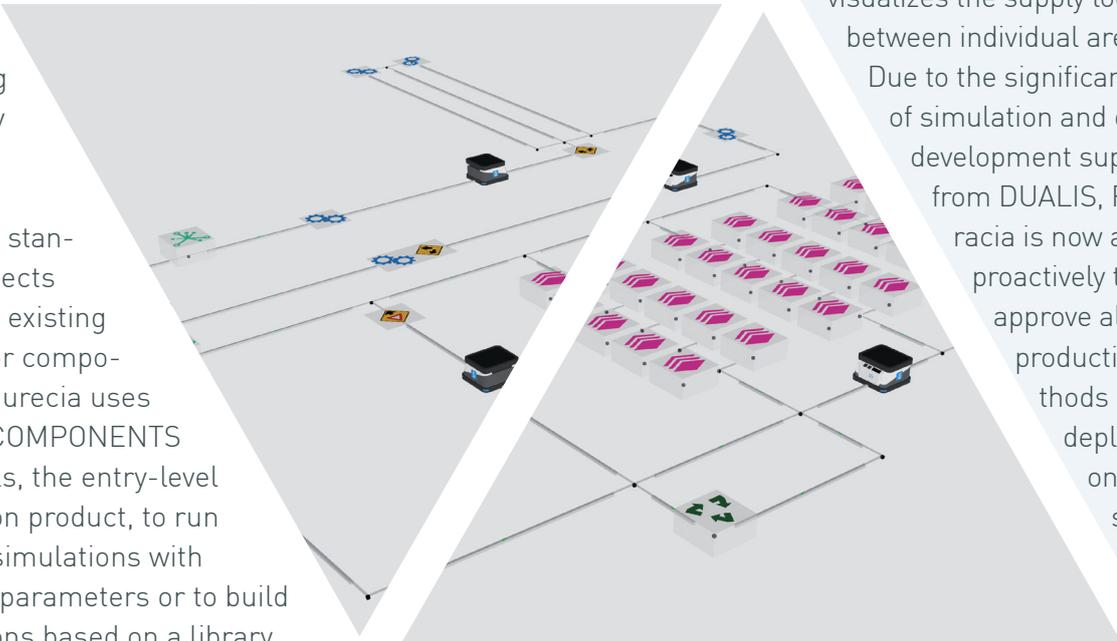
With VISUAL COMPONENTS, Faurecia is able to make models of schematic factory layouts and detailed production lines. To generate the simulation models, users select pre-existing components from the available libraries or create their own custom components. Statistical analysis gives an accurate evaluation of the planned process or layout in terms of performance metrics, such as: resource utilization or possible bottleneck areas.

## The digital factory with VISUAL COMPONENTS

When Faurecia needs to expand their digital libraries to cater for new production equipment, they do so with the help of VISUAL COMPONENTS Professional and training support from DUALIS. Predefined function and behavior modules use standard dialogs to provide raw CAD data with simulation functionality that includes movements, parameters and interfaces to other components.

By combining existing components with customized components, Faurecia can efficiently model, analyze, and test a new manufacturing layout. Problem areas such as bottlenecks, can be identified well before commissioning and quickly resolved before becoming too costly to fix.

For more standard projects based on existing models or components, Faurecia uses VISUAL COMPONENTS Essentials, the entry-level simulation product, to run existing simulations with different parameters or to build simulations based on a library.



for the transport operations?”, are provided by the simulation along with any other validation questions.

Faurecia simulates all their operator’s tasks to achieve the best possible work processes for their employees. The component library directly supports correct work station planning for the operator, including task assignment, and associated material supply. The simulator enables the arrangement of individual work stations and processes in the layout as well as the validation of capacities and routes. Previously, Faurecia could only focus on a single processing area, such as a welding, but now with VISUAL COMPONENTS, they can also visualize the supply logistics between individual areas.

Due to the significant level of simulation and ongoing development support from DUALIS, Faurecia is now able to proactively test and approve all new production methods before deployment on the shop floor.

## Material flow in virtual space

Faurecia also uses 3D simulations to study the transport of individual components between welding areas, the paint shop and assembly areas. In particular, end customer specific car seat components often need to be transported to a pre-defined processing station, and the material flow simulation can be used to check whether there is an issue with employee availability at the specified machine and if the predicted transport times are realistic. In this way, any risks associated with the material flow can be mitigated and the production logistics better optimized.

Frequently asked questions, such as: “Where are the system weak points?” and “How many people and vehicles do we need

## Increased use of AGVs

A good example of this, is the introduction of driverless AGVs (Automated Guided Vehicle) to supplement or replace traditional workshop trolleys and continuous conveyors with the goal of a more dynamic and flexible production system.

The simulation aims to develop the best control concepts for integrated AGV operations and to validate the ability of the AGVs to reduce waiting times at workplaces and increase productivity. DUALIS developed the AGV library with FAURECIA, and by agreement, the AGV library is now available to all of DUALIS’s customers.

## Facts and Figures



Year of introduction: 2008



Budget: 35,000 euros



Goal: 3D layout planning and material flow optimization



License scope:

2x Professional Floating,  
1x Essentials Floating



Highlight:

Group-wide use of operator library to visualize manual assembly processes



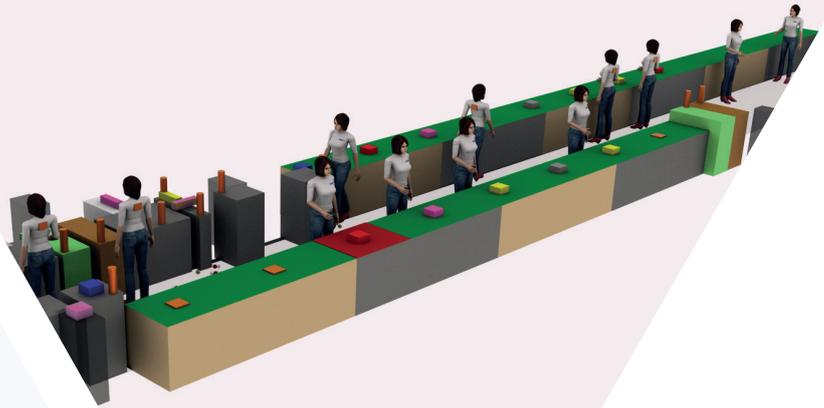
Interface:

data import/export to MS Excel



Applications:

New line layout concepts, 3D visualization for employee training



"In times of shorter production cycles and customized products, it is vital for a company to be flexible to the changing times, and to react and adapt as needed. When reconfiguring, machinery can be reused or modified, scrapped or taken out and used for other projects. Here, flexibility is the highest priority. In order to achieve this, the validation of the new configuration with simulation, is an important piece of the puzzle."

Hartmut Beisner, Program Manufacturing Leader  
Frames Manufacturing Engineering, Faurecia Car Seats division



### DUALIS GmbH IT Solution

Breitscheidstraße 36,  
01237 Dresden, Germany  
Telephone +49 (0) 351-47791-0  
simulation@dualis-it.de  
www.dualis-it.de

**DÜRR** GROUP.

### Faurecia Autositze GmbH

Nordseher Straße 38  
31655 Stadthagen, Germany  
Telephone +49 (0) 5721-702-0  
www.faurecia.de