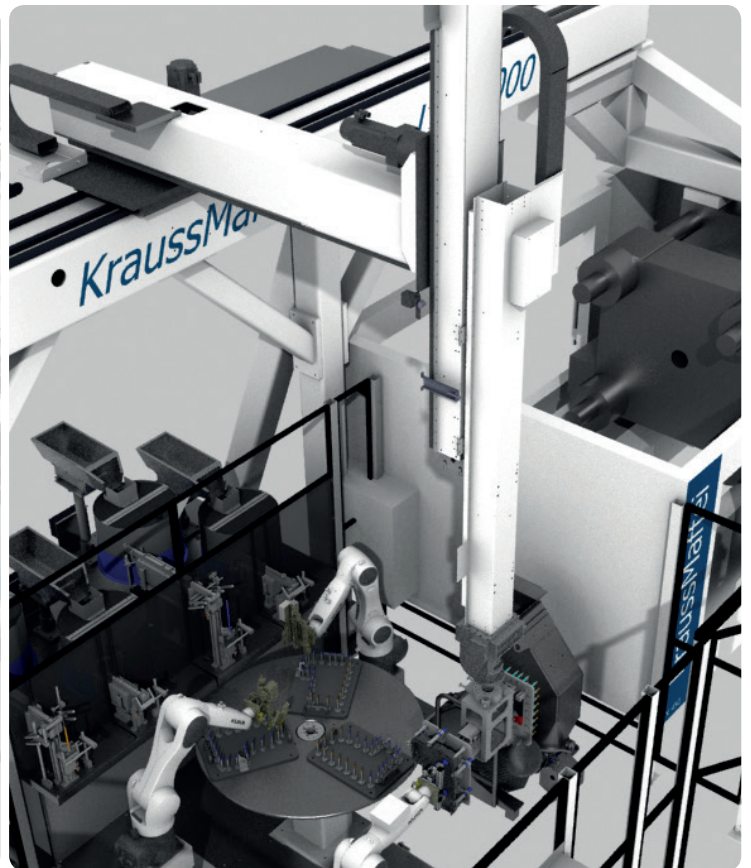
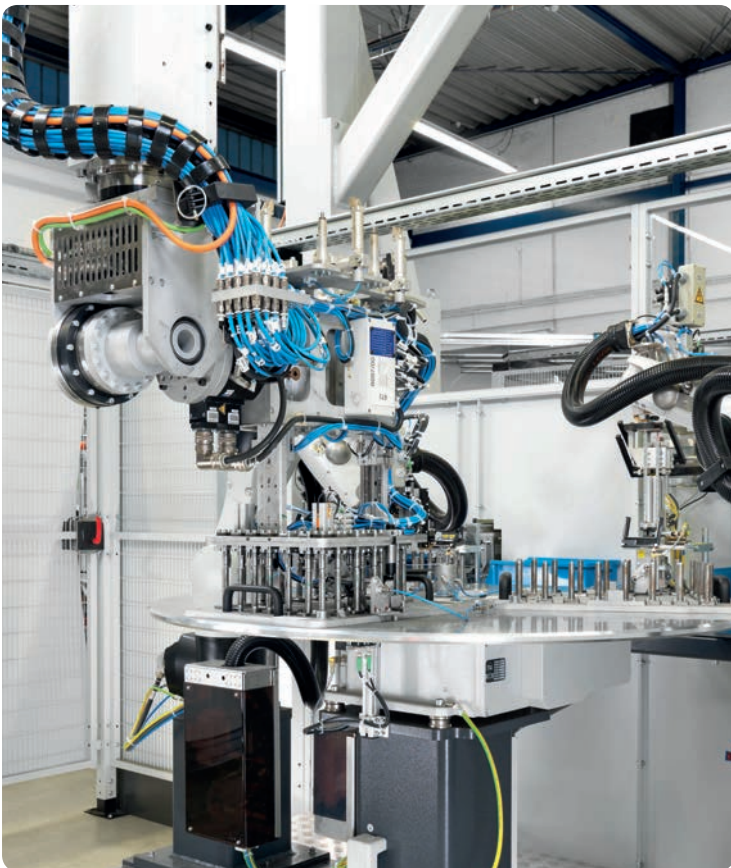


▼ VISUAL
COMPONENTS

KraussMaffei looks to the future with Visual Components

Simulating and optimizing - from conception to commissioning



Prevention is better than cure - Planning security through 3D simulation

KraussMaffei Automation GmbH is multi-tasking with their use of 3D simulation solutions from Visual Components. The 3D software is being used to support their automated injection molding business in layout design, process visualization for equipment and offline programming of robots, as well as supporting sales activities. The results are shorter commissioning times and increased planning confidence. Realizing „prevention is better than cure“, 3D simulation studies early in the planning phase can identify design errors, and possible weak points of the system through a visual walk-through, before it becomes too costly to rectify.

KraussMaffei Automation has more than 30 years of experience delivering injection molding process automation and offers a balanced portfolio of operator-friendly standard robots ranging from simple pick & place applications up to technologically advanced turnkey solutions. Whether linear, industrial, or side-removal robots—KraussMaffei Automation works closely as a system partner to arrive at the optimum system solution, based on the process machinery, the robots, and the automation controls. Facing the challenges of an increasingly competitive market, the company decided to use 3D simulation software to continue delivering cost effective solutions with reduced investment risk. Through the use of a simulation tool, new concepts and system solutions could be visualized for internal discussion with employees and external distribution to clients to help speed investment decisions. The software is also used for process planning and system validation of complex robot based layouts. The offline pro-



gramming phase of the robots saves time in the commissioning phase.

Visual Components: quickly implemented – quickly simulated

Once the decision was made KraussMaffei wasted no time getting up to speed with the visual Components software. A 3DCreate license was first purchased and put to work. After an initial familiarization period, the license was upgraded to a network license and an additional license of 3DAutomate was purchased. 3DCreate is an authoring environment for developing customized simulation component libraries, end user applications, as well as layout simulations. 3DAutomate is the top-level product that also caters for interactive simulation-based offline programming of robot cells. The initial simulation projects were completed in cooperation with the DUALIS GmbH IT Solution, Visual Components most experienced German sales partner.

It took KraussMaffei just four weeks, to integrate the 3D software with the company IT infrastructure, to the modelling of the first LRX robot based layout. A good IT department and human resources with previous CAD and robot programming experience

„An important simulation requirement was to be able to accurately represent both our linear robot (LRX series) and other in-house developed solutions. We also looked for a platform that included an extensive library of industrial robots, and a platform that supported the parametric modelling of our linear robots. Through DUALIS we discovered the Visual Components platform easily supported these needs and was a very open platform for future development and simulation support.”

Erwin Maushammer
Roboter simulation / 3D Automate
KraussMaffei Automation GmbH





contributed to the rapid project implementation.

On advice from DUALIS experts, the 3DAutomate open COM API was used during the development stage. The COM API is a sound interface technology that supports future corporate development projects that would extend the functionality of the software through Add-ons and interfaces to third party programs.

Virtual Assistant for design, marketing and operations

KraussMaffei use their simulation platform for concept and process validation, robot collision checking, offline programming, and sales support.

For sales, 3DCreate is indispensable. The software delivers high quality images and animations to visualize the sales arguments for the customers. 3D animations form an excellent basis for discussions while demonstrating the feasibility of the process. Results also include indicative information about cycle times and the process flows.

KraussMaffei validate new automation concepts with the simulation, by modelling the process operations and flows at a realistic level of detail. This demonstrates reachability for the robotic devices and any possible collision and near miss situations. The cycle time for individual work stations can be tuned and the interaction of many dynamic operations can be studied in one model. Concept prove-out with the simulation give the company confidence going into the commissioning phase.

„The simulation enables us to identify potential concept or design flaws early in the design phase and helps to find a better solution.“

Erwin Maushammer

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The use of simulated automation to test control logics was another important consideration. For this purpose, 3DAutomate is able to provide a process audit by running through the robot programs and checking for collisions and near miss events. It delivers a cycle time, and robot programming code all of which contributes to a

more efficient commissioning phase.

Creating customized functions and modelling special equipment was fully supported by the software. Extensive robot libraries from different manufacturers, existing add-ons from DUALIS, and a well documented interface specification for integrating to other programs, are some of the strengths of the Visual Components solution.

The three-dimensional future reality

The benefits for KraussMaffei from implementing the software solution provided by DUALIS were „The simulation enables us to identify flaws or room for improvement in our conceptual designs and mechanical prototypes early enough that the correction cost is not too much. From this we save time, money and have greater confidence in our designs and delivery plans. Additionally we shorten commissioning times, and the sales and marketing staff also have convincing tools to help with sales,“ concludes Erwin Maushammer.

The company plans to integrate the software with more products and processes. Work has already started on a KMA components library extension and a sales support tool to generate standard solution layouts automatically. Offline programming of their robotixc solutions is also high on the list in KraussMaffei’s virtual future.

Fact-Check:

Aim: simulation-based concept planning and validation of injection molding applications

Budget: 35.000 €

Year: 2013

Software licenses in use: 3DAutomaze, 3DCreate, 3DRealize Floating

Special features: Layout configurator with C#

Interface: MS Excel data import/export

Applications: Layout planning, visualization of injection molding applications, sales and project support



KraussMaffei

About the KraussMaffei Group

The KraussMaffei Group is among the world's leading suppliers of machinery and systems for producing and processing plastics and rubber. We develop and manufacture our products in more than 10 production plants and market them under the established product brands KraussMaffei, KraussMaffei Berstorff and Netstal through a worldwide, tightly-woven sales and service network with more than 140 companies and agencies.

Around 4500 employees service international customers in industrial sectors ranging from the automotive, building, consumer goods, electrical, electronics, and chemical industries to medical, pharmaceutical and white goods. The group's clientele know and appreciate delivery of high quality products and services along with trend-setting system and process solutions. The KraussMaffei brand is internationally recognized for pioneering and

delivery of complete cross-technology systems and process solutions for injection molding and reaction process machinery automation.

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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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