

## Case Study: EXAPT selects ModuleWorks machining technology



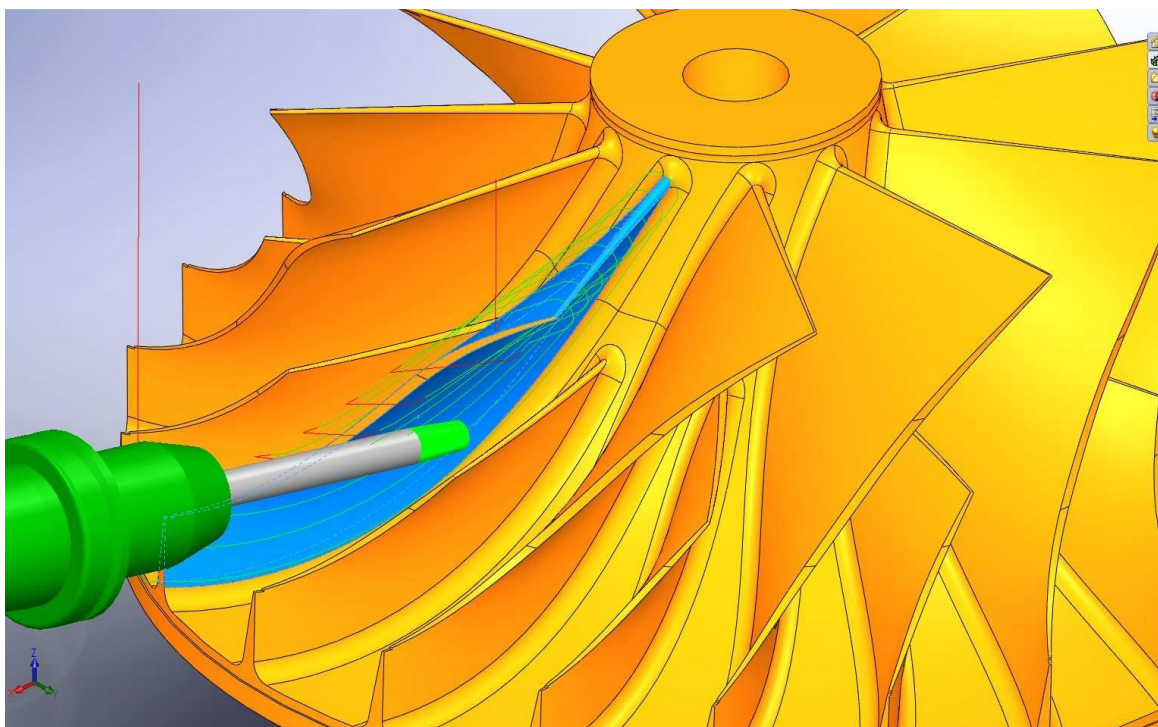
### Introduction

EXAPT has a rich history in the German CAD/CAM industry with a track record of success going back over 40 years to 1967. They provide a wide range of CAM solutions from lathe through to full 5-Axis simultaneous milling.

EXAPT and ModuleWorks have long been partners collaborating in a number of projects to extend EXAPT CAM coverage and capability. Initially EXAPT selected ModuleWorks for 5-Axis machining capability but has since gone back to partner with ModuleWorks for 3-Axis and Simulation technologies.

### 5-Axis Machining Project

Back in 2005, EXAPT recognised the growing demand for 5-axis simultaneous machining. At the time they had a full development schedule enhancing the other areas of their product and were wary of diverting resource into what could be a long and expensive development project. They were also concerned about time to market and therefore elected to look for a technical partner. Having evaluated the market, they selected the ModuleWorks 5-axis machining component.



Dr. Arndt Richter, Managing Director for EXAPT comments, "It was clear to us that we needed to offer a solution for 5-Axis simultaneous machining but were concerned that the time and effort involved would distract us from other key areas of development. When we met with ModuleWorks, they quickly became the obvious choice as a partner. They had huge enthusiasm for the technology, a big development team dedicated to 5-Axis machining and lots of applications experience."

The development project began end of 2005. ModuleWorks provided some onsite consultancy and support to determine the integration strategy which would best suit the EXAPT product and EXAPT began the process of integrating the ModuleWorks component and giving a unique EXAPT look and feel that their customer base would be happy with.

Technical challenges were gradually overcome and the initial integration work was completed in around 6 months. Further integration, quality control and beta testing took place before the product was ready for launch in early 2007.

The initial reaction to the new product was extremely positive and orders soon began to arrive, both from existing customers and new customers looking to utilise 5-Axis machining. Since then EXAPT has worked with ModuleWorks to continually enhance the product with new 5-Axis capability added at each release.

### **3-Axis Machining Project**

Following on from the success of the ModuleWorks 5-Axis integration, EXAPT began to look at other component opportunities and elected to be an early adopter for the new 3-Axis Mesh machining component which was under development from mid-2007. EXAPT was keen to bolster their 3D machining capability and provide increased flexibility and performance to their customer base.

As the 3-Axis component developed, EXAPT and ModuleWorks worked together to integrate prototype components and address specific requirements of EXAPT customers. The first EXAPT release containing the new 3-Axis component took place in mid-2009.

The initial release contained flexible roughing and finishing strategies which have since been enhanced with additional toolpaths for rest-roughing, rest-finishing, pencil finishing and flatland detection.

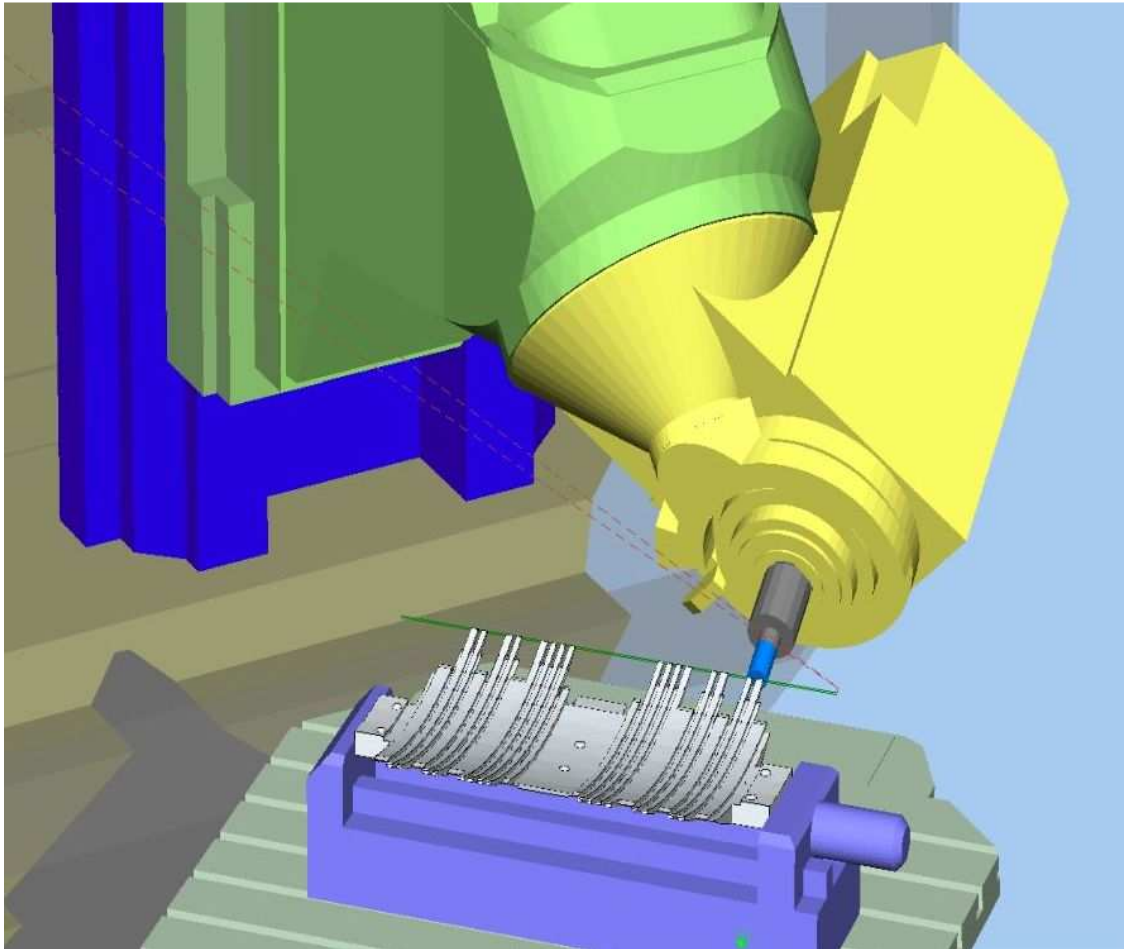
Dr David Plater, Technical Director for ModuleWorks comments, "3-Axis STL or mesh based machining is a key technology for today's manufacturers and they require flexible, robust and high performance toolpaths. Our 3-Axis component is designed to give good performance with a flexible range of toolpath strategies and be suitable for CAM vendors looking to add capability or machine tool vendors looking to offer some programming capability on the control."

### **Machine Simulation**

EXAPT have now begun work with a third ModuleWorks component, Simulation and has integrated stock removal into EXAPT in their current release. EXAPT elected to use many of the inbuilt tools in the ModuleWorks Simulation component to speed time to market and maximise leverage of the technology.

Implementation went smoothly and was complete within a few months. Previous experience with component technology was a benefit and ModuleWorks provided a high level of local support and

advice. EXAPT customers are now beginning to benefit from Simulation with inbuilt collision detection and a wide range of toolpath analysis tools to help eliminate programming problems and optimise final part quality.



In looking back at the ModuleWorks partnership, Dr. Arndt Richter comments, “It has been a highly beneficial relationship, both to the EXAPT company and our customers. By working with ModuleWorks we have had access to an extended development team and this has enabled us to develop software much faster than would otherwise have been the case. Each of the components have performed as expected and the 3 monthly releases from ModuleWorks have allowed us to get new features to our customers quickly.”

#### **About EXAPT**

EXAPT was founded in 1967 as a CAD/CAM system provider to rise to the outstanding challenges of the NC technique.

The future-oriented EXAPT-product- and service programme constantly grows and contributes for many years to profitable NC manufacturing. Customers from a whole range of industries home and abroad, appreciate the continuity of EXAPT-products. Many years of practice experience ensure optimal introduction, installation and support of CAD/CAM systems.

The developments of machine-, tool- and process-technology for manufacturing have furthermore a high dynamic. EXAPT-system solutions are continuously adapting to new techniques.

The close cooperation with all EXAPT-users enables market- and added value-oriented system development and creates investment-safe solutions for a profitable NC manufacturing.

### **About ModuleWorks**

ModuleWorks is a software component provider for the CAD/CAM industry. ModuleWorks' expertise in 5-Axis simultaneous machining is recognised throughout the CAM industry and its software components for machining and simulation are used by more than 50% of the leading CAM vendors as (reported by analyst CIMdata). ModuleWorks 5-Axis software has been used to manufacture complex 5-axis parts for more than 12 years and now has over 4000 users worldwide.

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