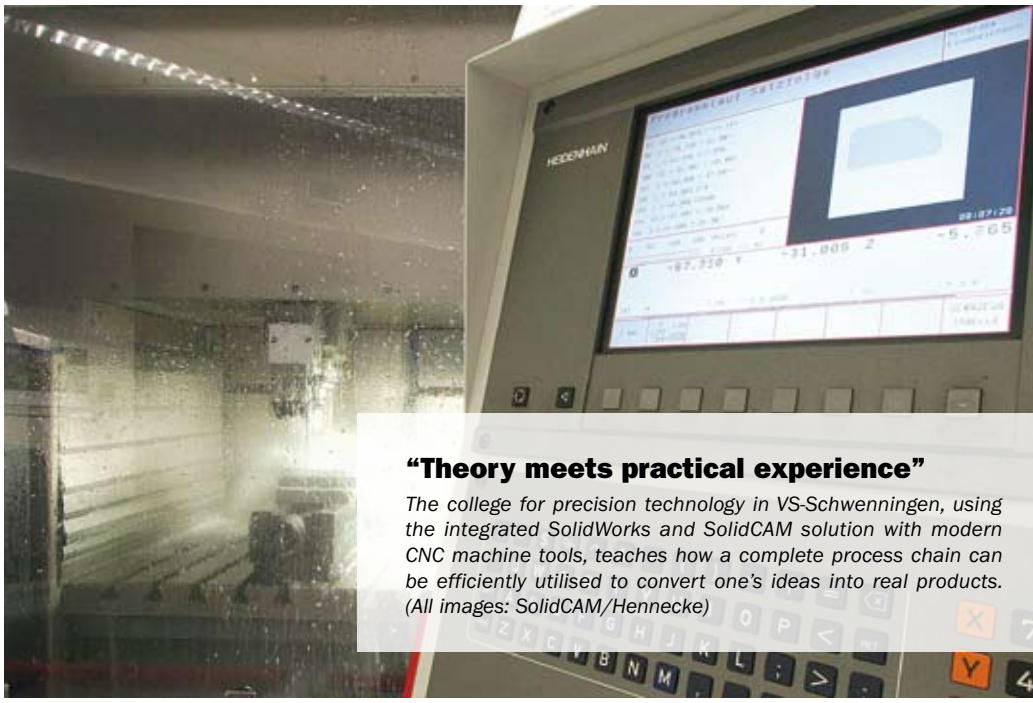
Productive SolidCAM

Groundbreaking CAD/CAM training to ensure the new generation a successful future!

A breakthrough agreement of over 1000 licenses of SolidWorks and SolidCAM guarantees 3D CAD/CAM training on the highest level for 3200 students in 30 technical schools.

The twenty-first century is the century of a rapidly expanding high-tech industry while many other vocations are rapidly becoming redundant. Most young adults will not find work without further vocational training in high-tech related fields. The district authority of Freiburg and software companies, SolidWorks and SolidCAM, have reached an agreement which enables the tradition-rich Feintechnikschule in VS-Schwenningen, as well as a total of 29 other vocational schools in the administrative district of Freiburg, to offer all their students 3D CAD/CAM training at the highest level.

In a highly competitive international market, Germany will only be able to keep its position in manufacturing by concentrating on advanced high-tech products. Competitors in developing countries are advancing extremely fast. The consequences are being felt and are clearly visible internationally. All established industrial countries are facing dwindling numbers of workplaces for simple manual labour. Some branches of industry have almost closed down completely. Even though Germany is the world's largest exporter, a minimum of value creation in manufacturing is needed to earn the foreign currency needed to pay for the vital import of commodities and energy. Therefore a talented and well-trained staff is needed to turn



"Theory meets practical experience"

The college for precision technology in VS-Schwenningen, using the integrated SolidWorks and SolidCAM solution with modern CNC machine tools, teaches how a complete process chain can be efficiently utilised to convert one's ideas into real products. (All images: SolidCAM/Hennecke)

innovative ideas into high quality products that are competitive in today's world markets. Such specialized personnel will only be available in sufficient numbers if the contents and the standards of vocational training are up to world class levels. To achieve this, Germany needs not only demand-oriented technical colleges and curriculum but also an infrastructure that is up-to-date with the latest industry technology. Here the issue of CAD/CAM, as a linchpin for modern value-creation processes, assumes a strategic key role.

FTS Villingen-Schwenningen

The combined state college for precision technology and technical academic high school (FTS) is a vocational full-time college with five different types of schools: a tri-annual technical academic high school, a technical college, a year long master college, a tri-annual vocational training centre where precision mechanics, watchmakers and system electronics technicians receive qualified vocational training and a technical college for IT and communications technology. With the higher education entrance qualification and an advanced technical college certificate, the FTS offers two diplomas within the general education system. All other qualifications which can be obtained are equal to the general high school diploma.

Let's have a look at the combined state college for precision technology and technical academic high school (FTS) in VS-Schwennigen. The tradition-rich FTS does not only combine 5 types of schools with a total of 600 students and about 60 teachers under one roof, but also serves as a model for a total of 30 vocational training centres in the district of Freiburg. Despite its tight budget, FTS decided to aim at setting up advanced 3D CAD/CAM training for its students.

Elmar Moeschle, head of the manufacturing technology department at the State Seminar for didactics and teacher training, Freiburg: "A minimum amount of standardisation is necessary to ensure efficient operation of the schools. This is especially true for the qualification of the teachers involved in the program."

Juergen Kubas, state qualified technician for mechanical engineering and technical head teacher at the FTS of VS-Schwenningen: "Integrated SolidWorks and SolidCAM provide us with all the technological features we need for advanced, practice-oriented and cutting-edge CAD/CAM training."

Elmar Moeschle, head of manufacturing technology at the State Seminar for didactics and teacher training in Freiburg: "For a practice-oriented CAD/CAM training it doesn't make much sense that each single technical college develops and implements its own strategy. A minimum amount of standardisation is necessary to ensure efficient operation of the schools. This naturally starts with the selection of a suitable CAD/CAM system and the qualification of the teachers. Also the maintenance, i.e. the consistent updating of the software, is an important factor in the future organisational and financial requirements. The support provided by the software reseller has a major influence on how efficient the system can be utilised for training." Juergen Kubas, a technical teacher at the FTS, agrees with this and adds: "The more schools and colleges that can agree on the introduction of a common CAD/CAM system, the higher the interest of an eligible and qualified vendor to support our goals in vocational training. After all, each student will transfer the knowledge he or she has acquired into the industry. Our graduates are highly qualified and will find employment, with almost no exception. Therefore technical colleges and vocational training centres are important multipliers of know-how."

With the above plan and awarded with a mandate from the other technical colleges in the district of Freiburg, the quest started in 2004 for a powerful, easy-to-use, shop-

"Investing for the future"

In the end any school can qualify its students only just as good as its software tools and equipment allows. Fortunately many schools and vocational training centres profit from the energetic and monetary support of the business community and active fund raising.

floor-oriented and cutting-edge 3D CAD/CAM solution. Juergen Kubas, when comparing possible alternatives, focused his attention on integrated CAM functionality: "3D design is not an end in itself. Here at FTS we operate modern CNC-controlled machining centres, Wire-EDM machines and a 3D-Plotter for rapid prototyping. In order to convey to our students the knowledge of the complete process chain, from the idea up to the finished manufactured product, an integrated 3D CAD/CAM system is needed; the system should not only support the manufacturing technologies and their corresponding CNC machine controllers, but should also utilise and maintain a single and consistent 3D data model throughout the complete process."

After extensive tests of various CAD/CAM systems, a clear decision was taken for the integrated SolidWorks and SolidCAM solution. SolidWorks is the world's most successful 3D CAD solution in the mainstream market and the de-facto industry standard. SolidCAM was Gold-certified by SolidWorks in 2003, which means that SolidCAM offers seamless single-window CAM integration in SolidWorks and provides full associativity between the CAD and CAM data. SolidCAM is a powerful, easy-to-use CAM software solution for NC-programming for the manufacturing technologies of 2.5D milling, 3D milling, 3+2 multi-sided machining, 5 axis simultaneous machining, turning, turn-mill and WireEdm. Kubas: "Integrated SolidWorks and SolidCAM provide us with all the technological features we need for practical and cutting-edge CAD/CAM training." Next was the question of how to finance the project and how the teachers would be trained.

Thomas Ettwein, graduate engineer, director of studies and assistant principal at the FTS, VS-Schwenningen: "The terms for educational use of SolidWorks and SolidCAM enable us to provide a quality of technical training at the highest level possible, even with our limited funds."

At the SolidWorks reseller SolidPro GmbH, Vöhringen-Wittershausen and at SolidCAM GmbH of Schramberg, Mr. Moeschle and Mr. Kubas were able to find two counterparts who were in principle willing to greatly reduce the license fees and to support the introduction of the systems with training courses for the teachers. Thomas Ettwein, assistant headmaster at FTS: "The terms for educational use of SolidWorks and SolidCAM enable us, and the other technical colleges involved, to provide a quality of technical training at the highest level possible, despite our limited funds."

Although the parties concerned would like to keep the agreed terms strictly confidential, it is apparent that they are very attractive. For the 30 technical colleges, a general agreement has been signed which includes 1000 licenses of SolidWorks and the necessary SolidCAM licenses with the corresponding G-code post-processors needed for the CNC machine controllers. Vocational training centres, which have already been working with SolidWorks, will join the new licensing model. In addition, the new

SolidWorks

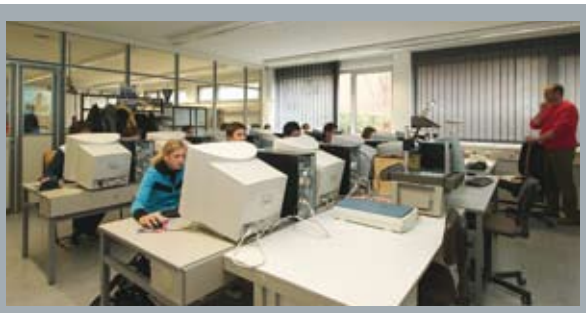
SolidWorks Corporation, a Dassault Systèmes S.A. (Nasdaq: DASTY, Euronext Paris: #13065, DSY. PA) company, develops and markets software for mechanical design, analysis, and product data management. It is the no.1 supplier of 3D mechanical design software for the mainstream market. SolidWorks leads the market in number of users in production, customer satisfaction, and revenue.

www.solidworks.com

SolidCAM

SolidCAM is a powerful CAM solution for NC-programming which has been especially designed for use in machine workshop environments. In 2003 SolidCAM received the Gold-Product certification from SolidWorks. In one single integrated application, the SolidWorks and SolidCAM solution supports the manufacturing technologies of 2.5D milling, 3D Milling, 3+2 multi-sided machining, 5 axis simultaneous machining, turning, turn-mill and WireEdm. SolidCAM G-code post-processors can be customised easily to meet the requirements of individual applications and machine controllers, so that users can generate CNC-programs for all machine tool controllers.

www.solidcam.de



“Real life industrial conditions”

Real life industrial conditions: At the college for precision technology of VS-Schwenningen more than 250 PCs are linked up. Utilising advanced machine tools and a 3D plotter, students of the integrated technical academic high school as well as prospective precision mechanics, watchmakers, system electronics technicians, masters and state qualified technicians can check their theoretical knowledge and put it into practice.

licensing framework regulates the follow-up costs as it includes free-of-charge software maintenance and free updates for the first five years. As an additional bonus, SolidPro GmbH, the regional reseller of SolidWorks and SolidCAM, offers a free in-depth training course for the teachers responsible for CAD at each school. On request, the technical colleges can order the CAD add-on for piping. Last but not least, students will receive a SolidWorks license valid for a period of 15 months for home use, free of charge, after their successful training. Where applicable, the educational license can even be prolonged.

Already about 3200 students, at the technical colleges taking part in the program, are using SolidWorks and SolidCAM to get their qualification for the practical use of advanced 3D CAD/CAM software. In the light of this success, Mr. Frank Schlupp, office manager at Solidpro, wishes that, “Germany, as a manufacturing location, would see a nationwide cooperation between educational institutions and industry.” As Gerhard Laegeler, the SolidCAM sales manager points out, “such arrangements as they have been agreed on in this case, could easily be transferred to other school districts.”

text and images
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www.retema.de

Frank Schlupp, office manager at Solidpro GmbH of Vöhringen-Wittershausen: “… cooperation between educational institutions and businesses could serve as a nationwide goal.”

Gerhard Laegeler, SolidCAM sales manager, Schramberg: “…the agreement could easily be transferred to other school districts.”

SolidPro GmbH

The SolidPro system house sees itself as a CAD integrator and a one-stop shop for complete professional solutions. Extensive CAD experience and top-notch technologies from market leading companies help its clients gain a competitive edge. According to their individual requirements, small to medium enterprises, large corporations or educational institutions alike will receive specially tailored complete solutions. SolidPro is particularly committed to schools, colleges and vocational training centres because only by promoting students and junior staff, the country will be able to maintain its competitiveness in the future. These principles have enabled SolidPro Informationssysteme GmbH to become one of the largest resellers of the leading 3D CAD software, SolidWorks.

www.solidpro.de

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