

Jurassians look to challenge the giants

JuraSoft has developed an innovative solution for Computer Aided Manufacturing. And they're aiming at universal mill-turn machines.

Pierre-Henri Badel

The Jurasoft company have undertaken an ambitious project : to propose a radically innovative CAD-CAM (Computer Aided Design/Manufacturing) program.

In collaboration with several Jurassian partners, as well as the Higher Engineering School of the Jura region (HE Arc), they have just unveiled SylvieXpert, an entirely new generation of software, capable of perfectly mastering machining on the most modern multi-capable machines and milling centers.

Over the last few years machine tools have evolved greatly, becoming more and more multi-capable. Factories, and sub-contractors, specialising in machined components are obliged to be ever-more reactive. The time for machine set-up need to be reduced further and further. Therefore "dead" time and per-part costs of series of components must be cut to a minimum.

This tendency, born of the globalisation of markets in perpetual flux, also has

Jean-Pierre Bendit estimates the overall investment in the SylvieXpert project as approximately two million Swiss francs



direct repercussions on the programs created to control NC Machines (Numerically Controlled Machine Tools). And while NC Machines have evolved, these changes haven't echoed back up the chain of order and design. The CAD-CAM softwares on the market are

The systems actually available, therefore, are ill adapted to modern production equipment. They need to follow the evolution of NC Machines that are heading ever further towards fabrication of parts in one single machining process in order to avoid reworking operations that are costly and diminish the machining precision of each part.

Because of this Jean-Pierre Bendit, Director of the Porrentruy-based company Jinfo, began an ambitious project. He founded Jurasoft SA in 2003, in collaboration with Marketing and Finance Director Philippe Muehlethaler, in order to develop the SylvieXpert project. This company has, in close collaboration with Jinfo, created a synergy of efforts in their region so as to create a program specifically designed for latest-generation of NC Machines such as multi-capable machining centres and multi-turret multi-spindle lathes.

"After study, and an analysis of the available CAD-CAM systems, we discovered that most of the solutions on the market are either specialised for controlling simple and standard NC Machines or specific ones (e.g. wire EDM, engraving, mould machining or simultaneous 5-axis milling)" explains Jean-Pierre Bendit.



The project involves several partnerships, particularly with the Higher Engineering School of the Jura region

(a volumetric modeller is a program that “dresses” the 3D outer surfaces of a component designed in two dimensions). *“The development from this core work benefits from a common standard with the most widespread CAD softwares for the importation of data, and gives us a stable core, as well as saving several man-years of development work.”* Notes Jean-Pierre Bendit. He forgets to mention an important side-effect : the SyvlieXpert

program will benefit directly from any improvements that the American company includes in their volumetric modeller. Which is designed to work exclusively with 3D models, and can import component designs from SAT, STEP or IGES as well as native formats to the most widely spread CAD programs in the industry.

“By working with a volume the system possesses all the information required for the machining, which is not true for 2D solutions.” concludes Jean-Pierre Bendit.

This project immediately aroused the industry’s interest as well as that of the Jura Canton Economic Promotion initiative, and is co-financed by the Commission for Technology and Innovation (CTI). *“The global investment could be estimated at around two million Swiss francs”* confides Jean-Pierre Bendit. *“Which includes the investments by Jinfo and Jurasoft as well as the CTI’s contribution.”* Which is not in the form of a Confederation grant but pays the salaries of the two to three HE Arc professors and assistants for two years. The return on investment is expected for 2006, taking into account not only sales of licences but also the renting of solutions

(a new concept that includes maintenance) and supplying of services. Around fifteen people are involved in this ambitious project. Seven work for Jinfo, five for Jurasoft and three in the Engineering School and at TT-Novatech. Its founders will, sooner or later, come up against the CAD-CAM world leaders. Who probably won’t appreciate a modestly sized Swiss company shouldering into “their” marketplace. Fortunately the Jinfo company knows this market extremely well. Each NC Machine needs a version of a program corresponding to its specific needs. Which involves technical adaptations,

a customisation effort that doesn’t necessarily enchant the giants of this market, who would rather sell great series of identical products without losing time in fine-tuning details specific to each individual market (which are too fragmentary for the giants consideration). To face up to the challenges of a world-wide market, a company ultimately requires tools both effective and specialised. Which is the reason why, within the scope of this project, Jurasoft opted for a volumetric modeller. Specifically the Acis engine from Spatial Corp

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