

Jinfo's android cuts to the heart of the matter

CAD-CAM. SyvlieXpert stores up the practical experience of its users. This new software, which works exclusively with 3D models, controls swiss type and, mill-turn machines. A quiet revolution in its domain.



Jean-Pierre Bendit, director of Porrentruy-based Jinfo SA : "We opted for the ACIS "volumetric modeller" from Spatial Corp, daughter company of Dassault Systems"

Of course, a 3D CAD-CAM (Computer Aided Design and Manufacturing) software isn't truly revolutionary nowadays. But an entirely 3D modelling program created specifically to control machines with unlimited linear and rotary axes and channels, that's new. Jinfo SA, well known in their region and

even beyond, owed it to themselves to put on an innovative display at the SIAMS (Salon of Industrial Automation and Micro-techniques) Exhibition held at Moutier from the 11th to 15th May. The Jurassian company's latest warhorse is SyvlieXpert, a software conceived by Jurasoft SA - Jinfo's program development sister-company. With the

help of a CTI (Commission for Technology and Innovation) project financed by the Confederation, the system's main objective is to provide a supplementary module for the automatic calculation of cutting parameters for machining.

The software decides

This module was developed in collaboration with Professor Leonello Zaquini from the Locle Engineers School who says : "CAM systems require answers to questions such as cutting speed and parameters, feedrate / tooth and machining strategy. SyvlieXpert will provide these answers." In the industry, these values are often arbitrary, depending often on the instinct or experience of the technician operating the machine. "By working with the part's volume, the system integrates all the information required for the machining, something 2D programs cannot do." A sort of android, SyvlieXpert is thus capable of generating judgements. "The system profits from its experiences by a "learning loop" which takes into account the positive and negative facts of the users experiences." Explains Leonello Zaquini. That's new as well.

Start-up : Jurasoft SA was created in April 2003 by Jinfo, in order to develop CAD-CAM softwares, including SyvlieXpert, which would be marketed by Jinfo.

Collaboration : SyvlieXpert is developed in collaboration with TT-Novatech (of St-Imier) and the Higher School of Engineering of the Jura region.

Advantages : The system is entirely based on 3D modelling. Created for mill-turn and swiss type machines, it allows the automation of the machining of similar-shaped parts and a real simulation of the movements of tool-groups. It is simple, customisable and parametrisable.

Innovations : SyvlieXpert offers you a choice of operational handling : cinematic display of the NC Machine, by tools-groups (tool blocks, turrets, spindles), machining with backwork spindle including intermediary fixture.

The Data-Base Management System

The program also takes into account the machine's

complete kinematics, which is to say the movements of the tools, the fixture systems and the workpiece. It also allows you to associate an operation (parameters, tool and cutting conditions) with several geometric areas. "This method takes into account the experience and knowledge of the user in order to automate machining of similar shaped parts. The data management being such an important part of the program, it was decided to use a Data-Base Management System", explains Jinfo's Director. For SyvlieXpert, the emphasis was placed on a real simulation, not only for parts and tools, but for the whole machine. "The perfecting of the machining demanded by the operator takes place before the simulation, instead of during the post-processing that most traditional CAM softwares use to generate the ISO code.

Our solution enormously simplifies the perfecting of the NC program and the visualisation of collisions. For the NC Machines that employ master patterns and synchronisations, these are automatically generated and the operations placed in the correct channels" points out Jean-Pierre Bendit, Director of Jinfo.

Dassault's Volumetric Modeller

In order to guide all future design efforts towards CAM, Jinfo chose the ACIS « volumetric modeller » engine by Spatial Corp, an American daughter-company of Dassault Systems, who are present in 21 countries. SyvlieXpert is equipped with standard and native CAD interfaces : SAT, IGES, STEP, Para-solid, Pro/engineer, Unigraphics, SolidWorks, Catia V4 and V5.

"With most of the CAD-CAM programs available, the operator describes the required operations, and associates them with geometries. This sequence of events thus generating the operating instructions. With SyvlieXpert, an operator can work thus, but can also create a sequence of operating instructions to be associate with a geometry. Furthermore, he can include standard sequences of instructions."

Second Version

SyvlieXpert is designed to control the latest generations swiss type machines capable of turning and milling. "The program also adapts to other machines, such as transfer machines that impose multiple simultaneous movements difficult to synchronise manually,

when this is beyond the capacities of standard CAM systems." Jinfo's Director continues. The software, unique in its domain, will evolve still further. The second version, due around the middle of 2005, is expected to include an expert system module for the technological parameters amongst other things. A major version is due the year after that. The program is doing well according to Jinfo. " Our objectives, established with our Finance Director Philippe Muelhethaler more than a year and a half ago, are being met by the demand. The SIAMS Exhibition was a success beyond our most optimistic expectations. We are therefore planning to reinforce the Jurasoft team to meet this demand", concludes Jean-Pierre Bendit.

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