

## Shop floor Automation with Fikus Visualcam

Talleres Cridi S.L. is a Spanish company, that provides services along the complete manufacturing process chain, including product design, rapid prototyping, tool design and high-precision manufacturing, quality control and the assembly of parts. Founded 25 years ago in the Barcelona area, the company has meanwhile prestigious customers in the automotive and aerospace industry, the packaging industry as well as in the healthcare and pharmaceutical industry. In its facility of about 2,000 square meters about 30 highly-skilled professionals are using the newest manufacturing technologies for CAD/CAM and CNC machining. Talleres Cridi S.L. is ISO 9001:2000 certified for the high-precision manufacturing and assembly of parts.



Talleres Cridi S.L. has invested in the most modern CNC Machining centres where Milling strategies from 3 axes up to 5 simultaneous axes can be applied. The machine park includes two MIKRON machines VCE 600 Pro and UCP 800 Duro 5-axis, several machines from Kondia and a ZAYER KFU-5000 machine, that enables milling of large parts up to 5 meters. Besides of several turning machines the company is now also using a MAZAK 250 M Mill-Turn centre, that enables multitasking operations in one part setup.

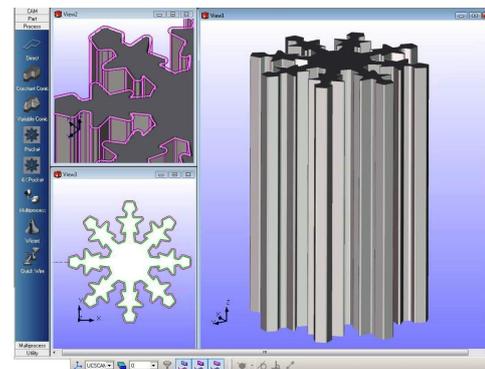
Sometimes the milling of mold or die components in hardened steel has limitations, when sharp-edged holes or pockets need to be cut in thick material. For these applications the company has installed a Wire EDM machine ROBOFIL 240 from Agie Charmilles to cut the parts. As Wire EDM is not affected by constant wear like traditional milling tools, the results of wire cutting are always exact, no matter how complex the job is.

In the Engineering department Talleres Cridi is using high-level CAD/CAM systems like CimatronE and Fikus Visualcam. CimatronE is focussed on the 3D design and the milling of the core and cavity parts. For all other CAM jobs like Wire EDM or 2.5D Milling the company is using Fikus Visualcam, an easy-to-use shop floor programming software from the Spanish supplier Metalcam S.L. It provides an efficient CNC programming solution for Wire EDM, Milling, Lathe, Millturn and NC Cutting & Routing applications. Fikus Visualcam is a native Windows application, that also enables the creation and modification of geometry as well as the import of geometry from other CAD systems.

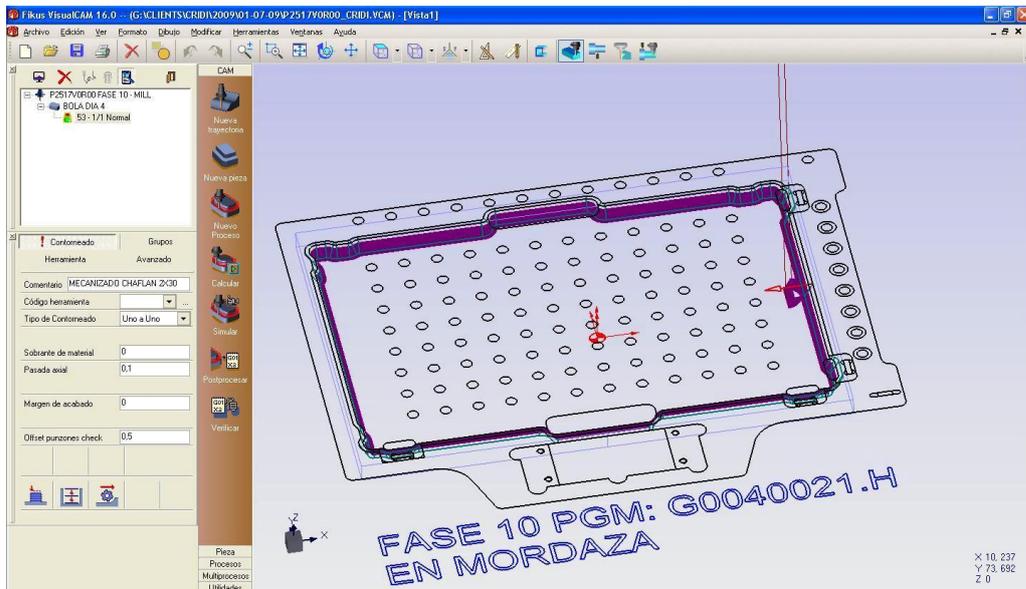
The world-class "Fikus for Wire EDM" module produces 2- to 4-axis toolpaths quickly and accurately for all types and ages of Wire EDM machines. After the part file has been imported from Cimatron E, the Fikus WirePath Manager enables an easy generation of wire procedures.



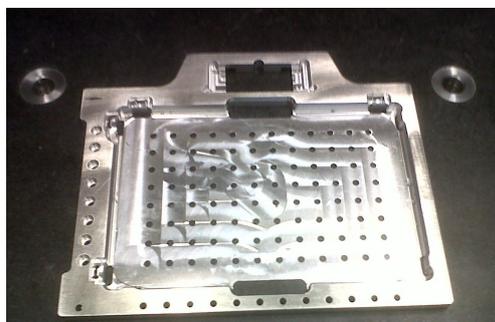
*For WireEDM Talleres Cridi is using an AgieCharmilles ROBOFIL 240, programmed with Fikus Visualcam.*



*Wire EDM programming of a sharp-edged part with Fikus Visualcam*



The screenshot shows how Fikus Visualcam can be applied to the machining of a multihole component of a blood analysis machine.



Finished component of a blood analysis machine manufactured by Talleres Cridi.

These procedures are a combination of geometric and technological data presented in a logical tree, easy to create and edit at any stage in the process. Fikus provides powerful postprocessors that enable users to generate machine programs for the whole variety of EDM machines on the same programming platform. Due to its ease of use, the WireCut programming with Fikus normally takes no longer than 10 minutes.

The manufacturing of a complete mold requires also a lot of pocketing, drilling and profiling operations, that can be programmed with the "Fikus for Milling" module. This module is a complete, easy-to-use solution for the 2D, 2.5D and 3D Programming of Milling machines. The basic 2D features enable contouring and roughing operations with multiple contours and islands.

During the creation of the part, Fikus allows the user to visualize it as a solid rendered object and dynamically pan, zoom or rotate it using the OpenGL standard graphics incorporated. Modifications made are automatically shown on the screen. During the toolpath simulation, Fikus can also show the parts as solid rendered objects and zoom, pan or rotate the scene.

The "Fikus for Milling" module is specifically designed for the programming of CNC machining centers. Fikus automatically detects technological situations like core or cavity and opened or closed parts. Due to the machining intelligence of "Fikus for Milling" the user must only select the roughing or finishing phases. Fikus then sets the necessary parameters automatically and creates the appropriate paths.

Fikus incorporates a powerful CNC editor with the most common edition functions, together with functions developed specifically for the edition of CNC programs. It can also send or receive the programs directly to the different machines connected to the computer, using the different protocols and communication speeds.

The new version 16 of Fikus Visualcam supports an enhanced Tool Table for Milling, Turning and Mill-Turn operations. When a tool for a new toolpath is selected, the technological tool data will correspond to the chosen machine and material. The simulator can now visualize "T" and conical tools. Furthermore, options have been added to save the resulting material in STL format and to show the chip volume removed.



Josep Marsol, CAM Programmer in the Talleres Cridi shop floor.

Josep Marsol, Programmer in Cridis CAM department, summarizes: "Due to the variety of parts we manufacture, we need a robust, flexible and easy-to-use application like Fikus Visualcam, that reduces our overall programming time and ultimately improves the machining capabilities of our WireEDM and Milling machines."

#### About Metalcam

Metalcam, the Spanish developer of Fikus Visualcam, is constantly investing in the research and development of innovative products. The result are software solutions, that are easy-to-use and maximize the productivity in manufacturing. Metalcam's success is based on its long term experience in manufacturing applications and the close technological partnership with customers and machine tool suppliers like AgieCharmilles.