Integrated Post-processing & Machine Simulation Solution

Field Proven Technology Solution
ICAM has been working with customers to provide efficient and innovative ways to dynamically move actuators to avoid collisions. ICAM’s Integrated Post-processor can quickly program various types of UHF systems. What used to take hours can now be done in minutes depending on the machining complexity!

What is a UHF System?
A Universal Holding Fixture (UHF) and relative methods corresponds to flexible fixture mechanisms to accommodate a wide range of work-piece contours, geometries, sizes, and configurations. As compared to traditional clamping / holding assemblies that are created for one part and can not be easily used for various different part shapes and dimensions.

Why were UHF Systems Created?
For years organizations were obliged to design and manufacture complex fixtures and tooling in order to properly hold a single free-formed shape. Design, manufacturing, production and storage of these fixture assemblies are very expensive. Currently, companies want to produce small lots of parts on demand and therefore, it is important to find a solution to these expensive fixture systems, especially for large parts like aerospace skin – thus, the birth of UHF Systems.

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The programming of UHF systems and correct synchronization of the dynamic actuators, to avoid collisions during machining, is very time consuming and dramatically reduces the overall manufacturing process efficiency.

Organizations are spending a significant amount of time to program UHF systems to properly hold the part inside the machine. The height and sequence of each actuator must be programmed and timed in the correct order (between part support, index positioning and vacuum setting). It also requires a proper part list of physical elements to be installed on the machine side before initiating the machine.

Companies that strictly want to use its standard CAM system to compute every single position of the different devices, post-process and simulate the NC program in order to program the UHF correctly, will typically invest several hours to several days of work.

Additionally, programmers will still need to anticipate possible collisions that may occur during machining. Again, the programmer will need to iterate back and forth many times using "after the fact" machine simulation in order to modify the CAM program. This will extend UHF programming time from hours to several days.

Field Proven Technology Solution
ICAM successfully implemented its integrated Post-processing & Machine Simulation Solution for different types of UHF systems around the world - some with actuator systems (cylinders going up and down with air vacuum system) as well as 3D clamps used to hold the side of sheet metal or composite sheets.

ICAM Celebrates 40 years of excellence in business
Since 1971, ICAM has been providing aerospace, automotive, medical & heavy equipment organizations with advanced NC post-processing solutions that have enabled them to increase productivity & achieve greater manufacturing performance.

ICAM is committed to maintaining and furthering its position as the most well respected developer and supplier of NC post-processing solutions in the advanced industrial software market.

ICAM's success can also be attributed to the company's focus on customer service and support. Where and when a client has had special needs, ICAM has always positioned the challenge as an opportunity to develop new solutions, thus staying ahead of shifts in the market. ICAM remains committed to working with both CAD/CAM and Machine Tool and Control manufacturers to develop new leading edge products and ISO standards whenever possible.