
ESPRIT®
The Right Choice
Driving automation
in manufacturing

Inspired by the *vision* of technology's potential, powered by *passion*, *committed* to excellence.

ESPRIT® is a powerful CAM system for CNC programming, optimization and simulation — supporting the entire manufacturing process. With factory-certified post processors delivering machine-optimized G-code and ESPRIT's ability to solve unique challenges with automation solutions, ESPRIT is *the* smart manufacturing solution for any machining application. With world-class technical support, ESPRIT empowers you to get started quickly and keep running at top efficiency.

ESPRIT is the only CAM system you'll ever need.

A powerful, full-spectrum CAM system

ESPRIT® delivers high-performance programming, optimization and simulation to support all your shop's manufacturing processes — from CAD file to machined part. ESPRIT's full-spectrum functionality includes programming for 2-5 axis milling, 2-22 axis turning, 2-5 axis wire EDM, and multitasking Swiss-turn, mill-turn and B-axis machine tools.

Factory-certified digital machines

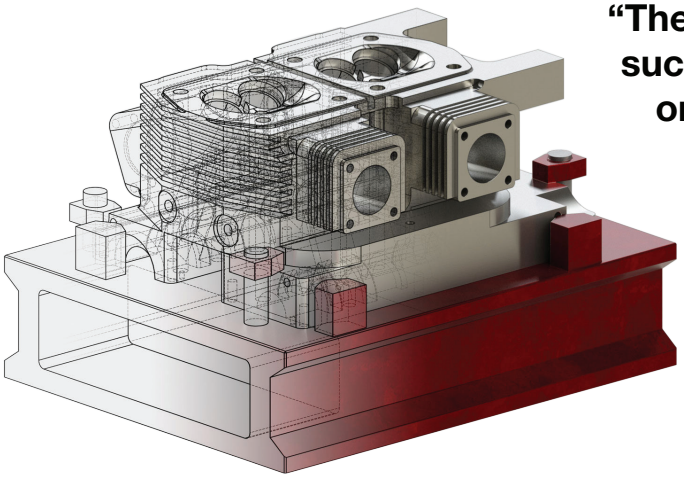
With ESPRIT's digital machine — machine models, controller emulators, machine parameters and post processors — the system delivers accurate simulation and machine-optimized G-code. Factory-certified post processors are available for your machine tools that produce the edit-free G-code you need to take full advantage of your machine tool investment.

World-class technical support

Global training, consulting and programming services help you get started quickly. Full-time, dedicated ESPRIT application engineers make sure you keep running at top efficiency. Our specialists go beyond the software to understand and support your processes, workflow and machine tools.

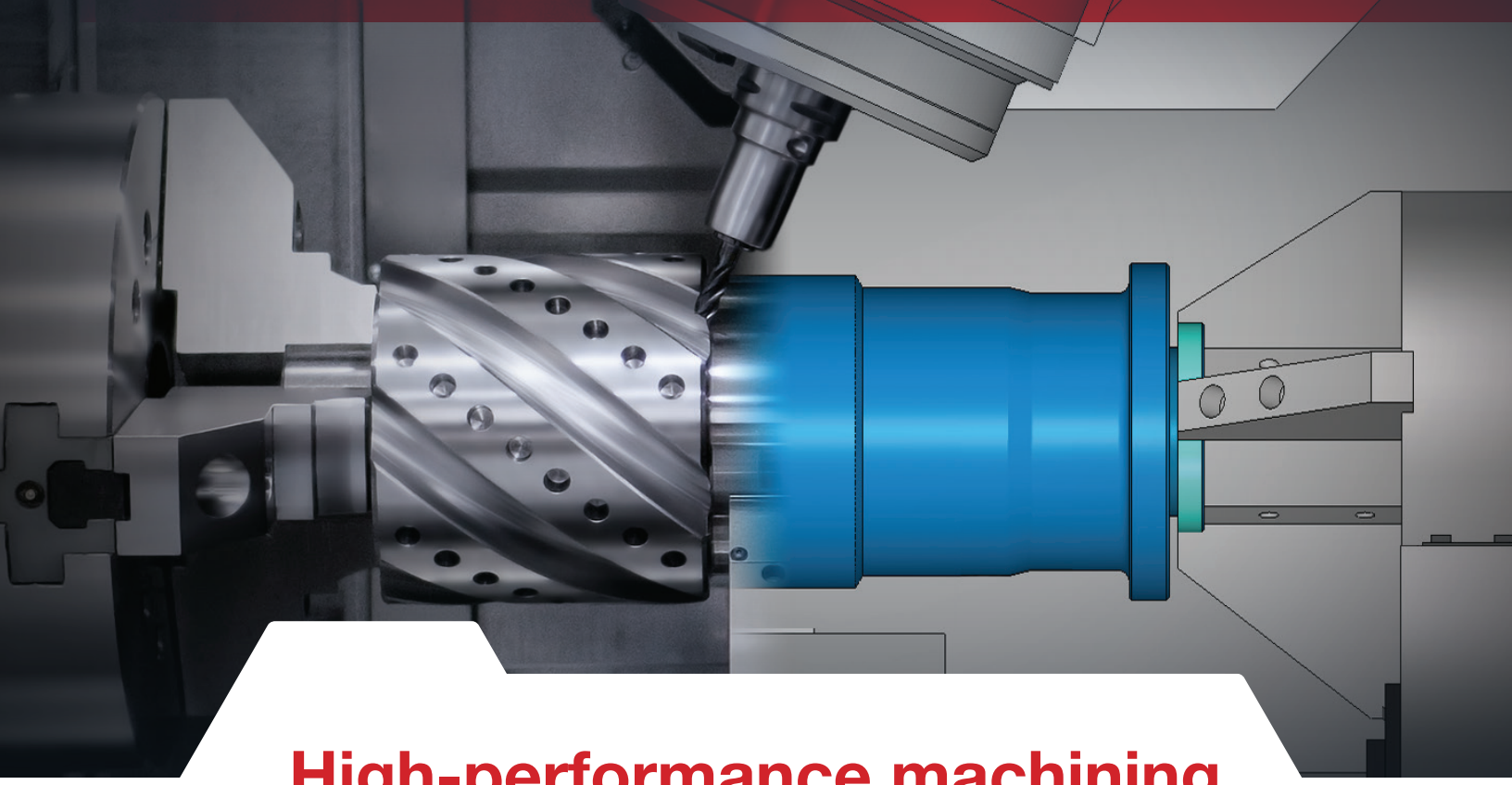
Automation platform and engineering services

ESPRIT solves unique challenges with individually tailored automation solutions and apps built using the software's API. Tap into the power of ESPRIT via the API to eliminate repetitive tasks, provide higher degrees of automation and facilitate the flow of data into and out of the CAM system.



"The only way that a company can succeed in manufacturing is by staying on the cutting edge of technology, and it's solutions like ESPRIT that give us the opportunity to compete."

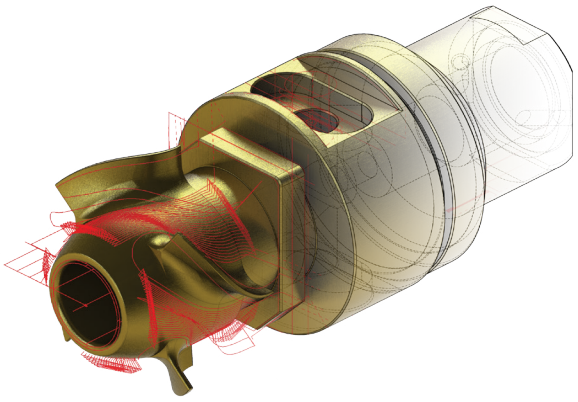
— Kevin Reed, CEO of Innovative Mounts



High-performance machining

Maximizing machine utilization for high-value parts and demanding machining applications

ESPRIT® SolidMill® for 2-5 axis milling



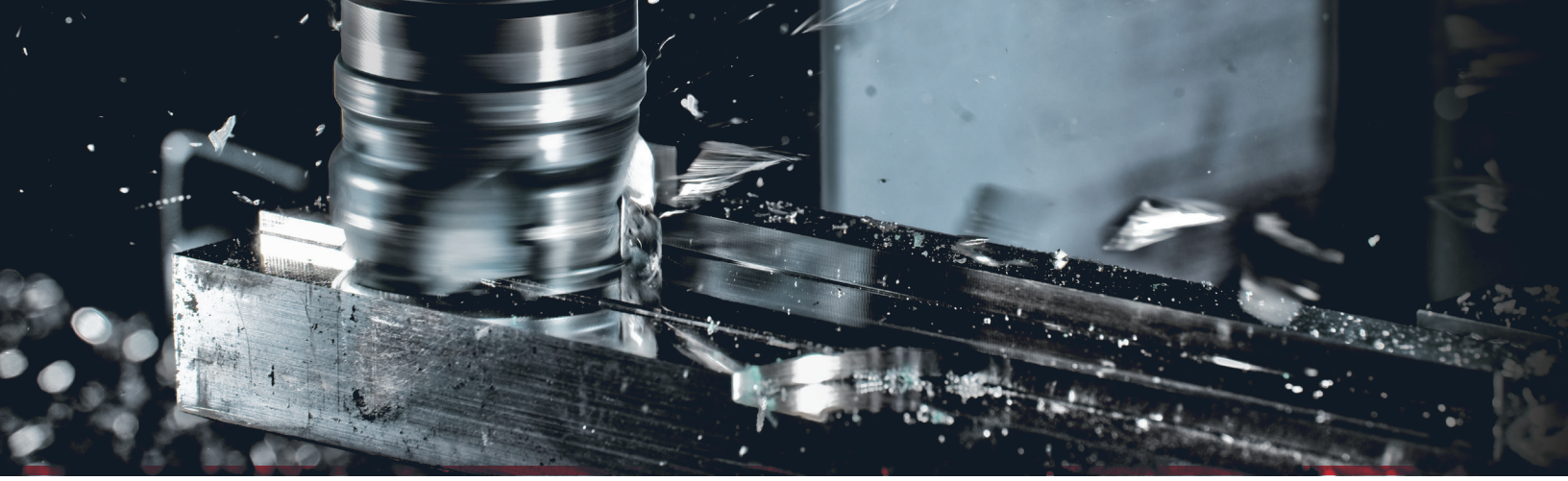
ESPRIT offers machining cycles for traditional 2.5 axes and production 3+2 cutting, as well as programming for high-speed simultaneous 3-, 4- and 5-axis free-form toolpath — giving you the programming power you need along with the ease of use you expect.

ESPRIT SolidTurn® for 2-22 axis turning

SolidTurn offers a full suite of facing, roughing, turning, grooving and hole-making cycles. By combining SolidMill and SolidTurn machining cycles with workpiece handling, you can take advantage of your multi-tasking machine and easily perform simultaneous milling and turning operations on the front and back of the part in a single setup.

ESPRIT SwissTurn® for Swiss-type machining

All the power of ESPRIT's SolidMill and SolidTurn machining is available for your Swiss-type machine. ESPRIT is tuned to support the unique requirements of the Swiss-type machine — sliding head-stock, co-linear axes, gang-based tooling, program segmentation, etc. — providing you with programming flexibility, accurate simulation and machine-optimized G-code.



Adaptive machining cycles

High-performance cycles, including ProfitMilling® for 2-5 axis high-speed roughing and ProfitTurning™ for turning, facing, and grooving, yield shorter cycle times and longer tool life by monitoring tool loads and optimizing cutting speeds.

Dynamic stock-aware toolpath

Adapting to setup and process changes, ESPRIT® dynamically optimizes toolpaths based on the state of the stock, eliminating air cuts and minimizing repositioning — thereby optimizing cycle times.

Automatic link generator

Using the digital representation of the machine, ESPRIT automatically manages rapid positioning between cuts. The linear and rotary position in between cutting operations, tool changes and part handling operations is performed safely and efficiently.

Synchronized and optimized

Synchronized, sequential and parallel machining optimizes cycle times for multi-spindle, multi-turret and multi-channel machines, allowing you to utilize the full capability of your multitasking machine tools.

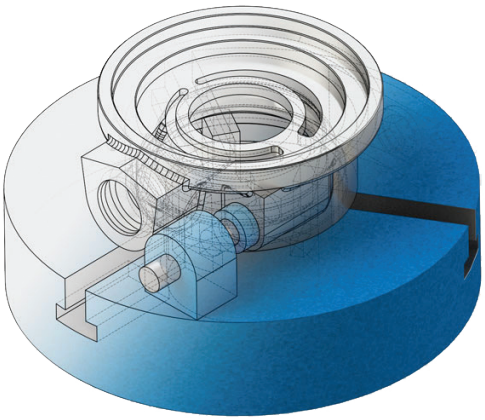
ESPRIT for wire EDM

ESPRIT dramatically simplifies the wire EDM part-programming process, significantly increases part accuracy and greatly reduces the length and complexity of the G-code. ESPRIT's process knowledge database and versatile EDM contouring cycle supports any number of straight or tapered rough and skim cuts and can machine any contour, mold, die, core, cavity, shape or profile, while optimizing wire cutting paths.

An Industry 4.0 Smart manufacturing platform

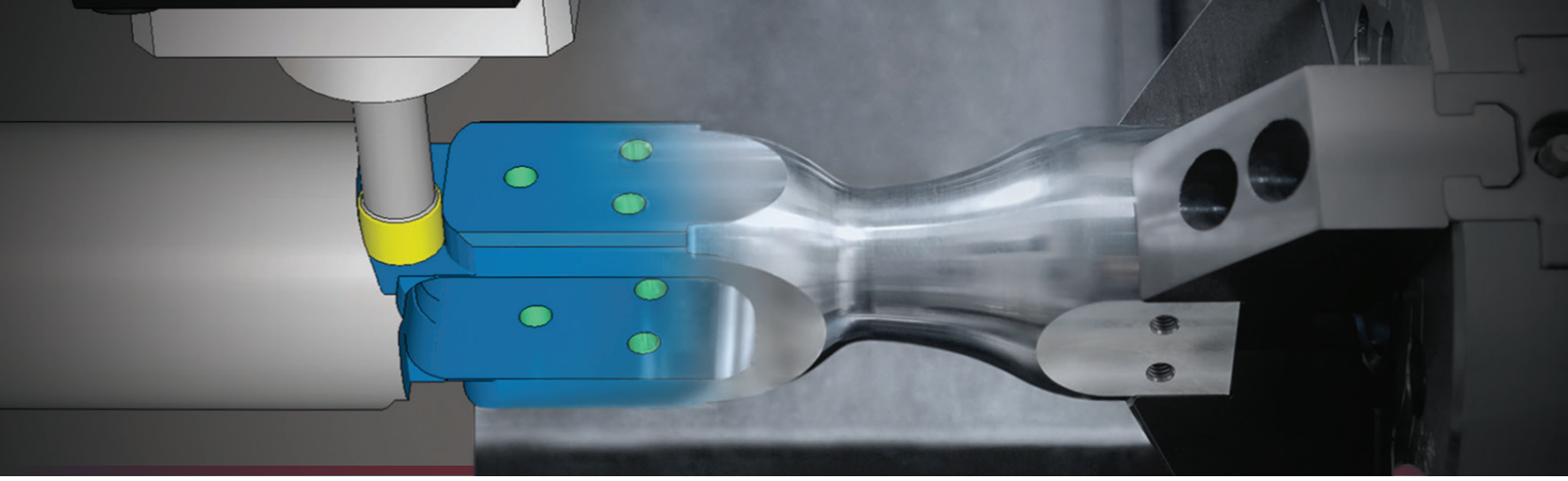
Digital twin of your machining environment

ESPRIT® allows you to create a digital twin of your machine tools for programming, optimization and simulation. Workpieces and cutting tools are set up virtually, resulting in exacting simulations, better toolpaths for higher quality parts and greater productivity. Whatever happens on screen will also occur on the shop floor.



Digital thread for discrete manufacturing

With ESPRIT, a digital thread ties together each step of the workflow, ensuring that the entire manufacturing process is connected. ESPRIT reads part data from CAD software and creates machine-optimized G-code and setup sheets, which it passes on to shop floor management, tool data management and manufacturing resource planning software.



Machine awareness

Machine-aware CAM programming represents a fundamental change in the way toolpath is created, resulting in increased tool life, reduced cycle times and improved machine utilization. Unlike traditional CAM software, ESPRIT®'s awareness of machine kinematics and dynamics is used for setup, programming, optimization and simulation. With machine awareness, CAM programmers make better choices regarding toolpath, resulting in improved machining performance.

Artificial intelligence (AI)

ESPRIT KnowledgeBase™ streamlines part programming by automatically selecting the optimum processes — machining cycles, cutting tools and machining conditions — for part features based on proven best practices. Because programming is more predictable and consistent, machine operators encounter fewer problems and machines produce higher quality parts.

Cloud-enabled

Integration with cloud-based databases, such as MachiningCloud®, facilitates access to knowledge, product data, resources and process controls for machines, cutting tools and work holding. These cloud-enabled databases suggest factory-recommended feeds and speeds and provide continuously updated manufacturer product data for improved programming and simulation.

Additive manufacturing

The ESPRIT Additive Suite drives both 3D powder bed fusion systems and direct metal deposition machine tools. This powerful suite provides comprehensive control over the additive manufacturing process and delivers machine-optimized job files. For hybrid machines (CNC machines with additive capabilities) ESPRIT supports combining additive and subtractive processes in one G-Code program. For dedicated additive machines, ESPRIT offers a patent-pending Part-to-Build™ workflow that quickly guides the build process from CAD file to printed part.

The only CAM system you'll ever need

High-performance machining

- 2–5 axis milling
- 2–22 axis turning
- 2–5 axis wire EDM
- High-speed simultaneous 3-, 4- and 5-axis toolpath
- Swiss-turn, mill-turn, and B-axis multi-tasking machines

Hybrid manufacturing

- Combining additive and subtractive processes
- Direct energy deposition and direct metal deposition machines

3D printing / additive manufacturing

- Part-to-Build™ workflow quickly moving from CAD file to printed part
- Powder bed, binder jetting and material jetting printers

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