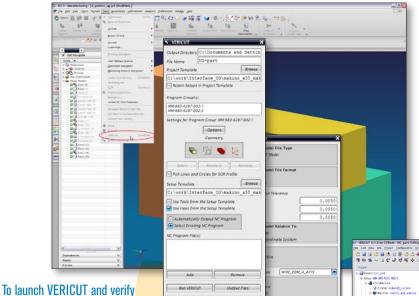# Seamless Integration with Siemens PLM Software

VERICUT is the world's leading INDEPENDENT CNC simulation software – used in nearly every industry by users of ALL leading PLM and CAM systems!

The NX-to-VERICUT Interface from CGTech provides an easy & convenient way to verify, optimize and analyze:
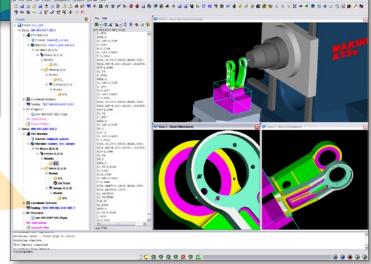
NX

- **individual NC programs**
- **a series of selected tool paths**
- **a complete sequence of operations...**

directly from within Siemens NX!

To launch VERICUT and verify NC programs within Siemens NX, simply select the desired operations from a list and select the VERICUT option. Settings from the Operations Navigator will be automatically transferred to VERICUT's Project Tree.

FAST AND EASY SETUP

With the NX Interface, NC programs are linked to manufacturing operations, enabling easy selection of tool path motion from the desired operation. All tool path and tooling information is automatically transferred to VERICUT. Design, Stock, and Fixture models are also automatically transferred to VERICUT in their proper orientation. The interface supports VERICUT's multiple setup functionality and, by using coordinate systems, models are properly positioned on the machine for each setup.

INDEPENDENT POWER AND FLEXIBILITY

The VERICUT process runs independent from the CAM system so you can continue working in NX while verifying the NC program.

VERICUT OVERVIEW

VERICUT simulates milling, drilling, turning, multi-tasking mill/turn, and EDM operations. Errors that could ruin the part, damage the fixture, or break the cutting tool are easily identified. VERICUT supports G-codes and native CAM files and includes analysis tools to measure and compare the cut part with the design model. You can model any cutter, fixture, or holder shape. During simulation you can create in-process inspection instructions and export a CAD model of the "as-machined" part.

- **ELIMINATE MANUAL PROVE-OUTS**
- **REDUCE SCRAP AND REWORK**
- **TRAIN WITHOUT USING A MACHINE**
- **IMPROVE DOCUMENTATION AND PRESENTATIONS**

CNC Machine Tool Simulation
Multi-Axis Verification
NC Program Optimization
Inspection & Analysis

VERICUT ®

CGTECH.com

Go ahead...

CRASH Your Machine!

...as long as it's in VERICUT

VERICUT is the leading CNC simulation and optimization software for manufacturing! With VERICUT, you can: detect potential collisions and NC program mistakes without doing a prove-out, improve cutting efficiency, perform detailed part analysis, automatically generate inspection instructions, and make "in-process, as-machined" CAD models.
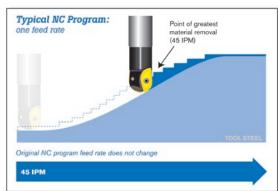
CNC MACHINE SIMULATION

A single crash can be extremely expensive, ruin the machine, and delay the entire production schedule! VERICUT enables you to simulate your CNC machines so you can detect collisions between portions of the machine, the part, fixtures and holders, etc. before any actual cutting occurs. And, because the simulation is driven by the same logic as the machine's control, it behaves exactly like the physical machine and is the most accurate collision-checking available.
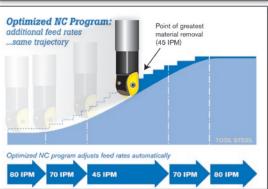
- **ELIMINATE CRASHES AND CLOSE CALLS**
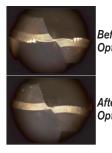- **CHECK MACHINE CAPABILITIES**
- **IMPROVE PROCESS EFFICIENCY**
- **SPEED MACHINE IMPLEMENTATION TIME**
- **ENHANCE DOCUMENTATION AND CREATE DEMOS**
- **INCREASE SAFETY AND IMPROVE TRAINING**

NC PROGRAM OPTIMIZATION

Typical NC Program: one feed rate

Point of greatest material removal (45 IPM)

Original NC program feed rate does not change

TOOL STEEL

45 IPM

Optimized NC Program: additional feed rates ...same trajectory

Point of greatest material removal (45 IPM)

Optimized NC program adjusts feed rates automatically

TOOL STEEL

80 IPM   70 IPM   45 IPM   70 IPM   80 IPM

Optimizing cutting speeds is an effective way to reduce cycle time, increase cutter life, and improve finish quality! Based on cutting conditions and tool capability, VERICUT automatically assigns the best feed rates for each cutting condition encountered. It works on a simple premise: feed rates increase for lighter cuts or better conditions, and decrease as more material is removed. Without changing the trajectory, the updated feeds and speeds are applied to a new NC program.

Before OptiPath

After OptiPath

- **REDUCE CNC CYCLE TIME**
- **IMPROVE FINISH QUALITY**
- **REDUCE FEED RATE ADJUSTMENT**
- **MINIMIZE MACHINE AND CUTTER WEAR**
- **BE MORE COMPETITIVE, AND MORE PROFITABLE**
- **INCREASE PRODUCTIVITY, SPEED TIME-TO-MARKET**

How software optimization works:

As the cutting tool encounters more material, feed rates decrease; as less material is removed, the feed rates speed up accordingly. Based on the amount of material removed by each cut segment, OptiPath automatically calculates and inserts improved feed rates where necessary. Without changing the trajectory, OptiPath writes the updated feed rates to a new NC program.

VERICUT®

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