Right the first time. Every time.

CNC Machine Simulation Software

Software for:
- CNC Machine Simulation
- NC Program Verification
- Cutting Speed Optimization
- Additive Manufacturing
- Automated Composites
- Drilling & Fastening
Go ahead...

CRASH YOUR MACHINE
...as long as it’s in VERICUT

VERICUT CNC simulation software enables you to virtually machine parts before any actual cutting occurs. You can eliminate errors that could ruin the part, damage the fixture, break the cutting tool, or crash the machine. VERICUT also optimizes the cutting process to make your programs fast and efficient.

A simple mistake can ruin your production schedule, part, tool, machine, or even your machinist!

A crash on a VERICUT “virtual machine” can save your real machine!

A Little About CGTech
• When you invest in VERICUT, you’re not just buying software, you’re teaming up with the largest group of CNC machining experts in the world.
• Our core products are developed in-house, which allows for quick changes and customization.
• CGTech enjoys very high retention of it’s sales, customer support engineers, and resellers. This provides a consistent and long-term business relationship with your company.
• Your CGTech contacts work closely with VERICUT developers to best support your needs.
• Founded in 1988, CGTech is privately held and 100% self-financed. This allows us to plan long-term without concern of investors, stock price, or parent company pressure.
• A large pool of trained VERICUT users exist in virtually every industrialized country.
• We are continually exposed to new manufacturing methods and technologies worldwide, and can quickly react to ever-changing industry needs.
• As an approved vendor/product at most major companies around the world, CGTech is a reliable partner for your NC manufacturing operations.

VERICUT’s modular format provides flexibility - you purchase only the capabilities you need. It’s easy to add modules; just contact us and we will provide a license that gives you immediate access. VERICUT runs on Windows platforms as a 64 bit application. G-codes and CAM center-line (CL) formats are supported.

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Other Capabilities:

✓ Video and image capture
✓ Create a custom user interface for specific applications
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Verification

Easily detect program mistakes and verify part accuracy with the VERICUT base module: Verification.

Superior Performance:

VERICUT’s unique algorithm provides fast, accurate results. Performance does not degrade with increased cuts, so VERICUT can process programs with millions of cuts and virtually any type of material removal technique.

Machining Support:

✓ 3-axis milling; 2-axis turning
✓ Rotary 5-axis positioning. Add our Multi-Axis module to detect collisions during positioning and to remove material during continuous 4 and 5-axis milling, drilling, turning, and combination mill/turn operations
✓ EDM Die Sinking
✓ Multiple simultaneous cutting tools
✓ Multiple setups or operations

Control Support:

Verification supports most common control functions, and controls are easily modified.

✓ Rotary axis pivot points
✓ Look-ahead cutter compensation
✓ Supports several different tool length compensation methods
✓ Control cycles; fixture offsets
✓ Variables, subroutines, macros, looping, branching logic

Inspection & Measurement:

✓ Zoom, reverse, rotate, cross-section the cut stock
✓ Measure thickness, volume, depth, gaps, distances, angles, hole diameters, tapping features, corner radii, scallop heights, etc.

Other Capabilities:

✓ Add video and image capture
✓ Create a custom user interface for specific applications
✓ Add previously removed material back to the cut stock when stepping back in Review Mode

Included Analysis Tools

The base Verification module enables you to view and analyze any cross-section of the cut part geometry. The X-Caliper™ tool measures thickness, volume, depth, gaps, distances, angles, hole diameters, tapping features, corner radii, scallop heights, and more. Delta X, Y, Z component distance measurements are also included. X-Caliper™ also allows you to highlight features, such as all planes on the same level. You can even view and measure all tool collisions, even after the subsequent machining operations have removed them from the screen.

Shop Floor Documentation

With VERICUT, you can establish a simple, efficient, and formal method to creating and documenting inspection and setup procedures.

All reports are customizable using a simple template. When modifying a template, you work directly on the document display which makes creating and editing reports quick and easy.

For inspection reports, VERICUT identifies the feature, extracts feature sizes, and applies a standard tolerance for the measurement. You can then add any additional instructions and select the measuring instrument from a list. The setup plan feature allows you to simply add dimensions and notes to any type of shop floor documentation. All reports can be exported to PDF or HTML.

Multi-Axis

As complexity of the part and the machining operation increases, so does the chance for error. Don’t leave the accuracy of the NC program, the quality of the part, or the safety of the operator to chance! The Multi-Axis module verifies and simulates material removal during:

✓ Multi-axis milling (i.e. cutting with a changing tool axis)
✓ Synchronized motion of multiple independent cutting heads or attachments such as 4-axis lathes/mill-turns or multiple-head machines

AUTO-DIFF™

Detect gouges and excess material by comparing the design model to the “as-machined” model.

By the time a part design is ready to be machined, it may have passed through several engineers, programmers, departments, companies, and CAD/CAM systems. In the end, it can be difficult to tell whether the tool path accurately represents the intended design. With AUTO-DIFF™, you can be sure.

The design model can be a solid, surface, skin, or points. You can “embed” the design model inside the rough material for interactive gouge-checking. If the tool collides with the design, VERICUT highlights the gouge and records the error. The design model even moves with the cut stock as it transitions between setups.

Different colors can be assigned to the design model, rough stock, errors, gouges, collisions, or excess material for easy identification. The Surface Range tables include a value to represent surface cuts exactly match the design model.
A machine crash can be very expensive, potentially ruin the machine, and delay your entire manufacturing schedule! But with VERICUT, you can dramatically reduce the chance for error and avoid wasting valuable production time proving-out new programs on the machine.

Machine Simulation detects collisions and near-misses between all machine tool components (axis slides, heads, turrets, rotary tables, spindles, tool changers, fixtures, work pieces, cutting tools, etc.), and other user-defined objects. You can also set up “near-miss zones” around the components to check for close calls and over-travel errors. Machine movements can even be simulated while stepping or playing backwards in VERICUT’s Review Mode.

A selection of customizable machine models are included. Or you can build models from scratch. Machine components can be designed in a CAD system or defined in VERICUT. The “Component Tree” feature makes it easy to connect the machine’s pieces and manage the kinematics of the machine.

Machine Simulation supports:
- Multi-axis milling, drilling, turning, mil-turn, EDM
- Simultaneous mill-turn on different spindles and workpieces
- Machines with multiple synchronized CNC controls
- Auxiliary attachments: tail stock, steady rests, part catchers, bar pullers, pallet changers, etc.
- Automatic workpiece transfer to pick-off or sub-spindles
- STEP, STL, IGES, and others

Many sample machines and control configurations are included.

Grinder-Dressing Verification & Machine Simulation

The Grinder-Dressing module offers superior G-Code simulation for grinding operations with a dressed grinding wheel. As the grinding wheel size is reduced, the machine components get closer to the part, creating a high risk of collision. VERICUT checks the clearance between the machine components and the part to be machined for potential collisions. VERICUT accurately checks for errors on all 5-axis milling and turning processes no matter how complex the machining operation.

Superior Collision Checking:
VERICUT features the most accurate collision-checking available. Rather than just checking points along a path, VERICUT checks along the entire path of travel by sweeping through space. You don’t have to specify a “step size” tolerance that can slow the simulation if too small or miss the collision if too large!

Today’s NC machine tools process complex NC programs. VERICUT was designed by NC programmers and professionals in NC simulation and verification software. Because of this expertise, VERICUT is an excellent tool when using multi-axis machines, complex NC code, and/or advanced programming techniques.

VERICUT is designed to support the following advanced control functions:
- Look-ahead or 3D cutter compensation
- Tool tip programming & tool length compensation
- Gage length reference point programming
- Canned cycles and fixture offsets
- Rotary axis pivot points
- Variables, subprograms, and macros
- Subroutines, looping, and branching logic

Tools to Simulate More Complex Applications Also Supported by VERICUT:
- Automatic part transfer between fixtures
- Facing head (or “programmable boring bar”)
- Mill/turn machining centers multi-channel programming/synchronization
- CNC controls which allow programming of the tool axis using UK tool axis vectors
- Turning operations which are not symmetric about the lathe spindle
- Machines that use parallel kinematics
- Multi-axis waterjet cutting operations
- Material removal for gear hobbing (synchronize spindles)
- Kuka Robot Language (KRL)
VERICUT’s optimization modules automatically modify feed rates and cut parts faster, improve surface finish, & reduce tool wear!

**Knowledge-Based Machining**
VERICUT is a true knowledge-based machining system. Through the simulation process, it learns the exact depth, width, and direction of each cut. And it knows exactly how much material is removed by each cut segment. With that knowledge, motion is divided into smaller segments and the best feed rate for each cutting condition encountered is assigned. It then outputs a new tool path, identical to the original but with improved feed rates. It does not alter the route of the tool path. Two independent modules are available for optimizing feed rates: OptiPath and Force.

**OptiPath**
OptiPath uses standard machining formulas, setting the feed rate based on the user’s desired volume removal rate, chip thickness, and surface speed. A setup wizard prompts for cutter settings as you simulate machining operations. Essentially, you add intelligence to the cutter. All the settings for that cutter are stored in an optimization library. You define the settings once. Then each subsequent time you simulate machining operations with that cutter in the same material and machine the motions can be instantly optimized.

OptiPath also features a “learn mode” for creating the optimization library with no setup required. For each cutter, OptiPath finds the maximum volume removal rate and chip thickness and uses them to determine the optimization settings for the cutter.

**Force**
Force uses material properties associated with the workpiece and cutting tool material, plus cutting edge geometry and VERICUT’s simulated cutter contact conditions to predict cutting forces and chip load. Detailed charts can be viewed in order to determine potential problems in chip load, force, spindle power and torque. The software then automatically adjusts the feed rate to stay within desired force, chip load and power limits. Force predicts cutting conditions using a proprietary set of material coefficients that account for the shear-strength of the workpiece material and the effects of friction and temperature. The material data is created from physical machining characterization tests and does not rely on extrapolating from finite element theoretical results.

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**Which One?**
Both methods produce optimized feed rates and achieve impressive reduction in cycle times, improved cutting tool performance and better surface finishes, less tool wear, etc. Both excel in improving NC programs machining any material type from Non-Ferrous materials like: Aluminum, Steels, Stainless Steels, Titanium, Super Alloys, Heat Resistant Alloys, and Hardened Tool Steels. They both efficiently optimize complex five-axis parts.

OptiPath, being knowledge-based, requires more knowledge from the user to make the correct cutting condition settings. OptiPath is most effective when ideal cutting conditions are known for each cutting tool, material and machine.

Force, being physics-based, requires less user experience or knowledge of cutting conditions. The user has minimal inputs to get effective optimization results.

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**How Optimization Works**
VERICUT chooses the optimal feed rates based on cutting conditions. As the cutting tool encounters more difficult conditions, feed rates decrease. As conditions improve, the feed rates increase accordingly. OptiPath uses volume removal rate and chip thickness to determine cutting conditions, and applies the user’s feed rate settings for those conditions. Force uses physically-characterized material data and cutter edge geometry to predict cutting forces and chip load for a given cutting condition. It then computes the maximum reliable feed rate, maximizing chip thickness while preventing tool force overload. Both modules calculate and insert optimum feed rates without altering the tool path trajectory.

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**High Speed vs. High Efficiency Machining**
The traditional method of high-speed machining, cutting at high feed rates with very shallow cuts and small step-over, can actually defeat the goal of reducing machining time! Cutting at greater depths removes material more efficiently. But, the cutter may encounter an overloaded condition causing it to break or exceed the machine’s horsepower. Adjusting feed rates accordingly and maintaining a consistent chip thickness provides more efficient machining while protecting the machine and cutter.

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“...the result of using the optimization feature is a savings of more than 81 hours on one job alone.”
Ben Miller
Tool & Die Programmer
Parker Hannifin Corporation

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**Feed Rate Optimization**
- Feed Rate Optimization
- Cut Parts Faster
- Improve Surface Finish
- Reduce Tool Wear

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“Fast the first time”
VERICUT can be used to create a CAD model from an existing NC program. The model includes features such as holes, fillets, corner radii, pocket floors, and walls - just as it’s cut on the machine.

Export a CAD model at any stage in the machining process

IGES and STL output
CATIA V5, CATIA V4, STEP and ACIS output with an optional Model Interface (not included with Model Export.)

Make Legacy Data Useful:
Create CAD Models from old G-code or APT programs

Improve Process Planning:
Plan for multiple setups or staged machining

Improve Reverse Engineering:
Take the “as-machined” model back into your CAD system

Perfect Offset Surfaces:
Offset surfaces can be created using a CAD program, but this creates undesirable gaps and overlaps that require extensive model clean-up.

Model Export can be used to generate a CAD model without gaps or overlaps!

Create Fillets Automatically:
VERICUT’s cut stock exactly matches the finished part, including fillets. The size of the ball nose end mill determines the fillet radius. Model Export will export a CAD model that includes fillets.

In-Process Stock Model:
Large or complex models may require several setups. Model Export can be used to export a CAD model after each setup, providing programmers with a starting point for subsequent operations.

Contact CCGTech to learn how VERICUT can create and simulate your custom probe cycles!
Verify Laser Activity
VERICUT's Additive module simulates added material via directed energy deposition (DED), laser sintering, 3D printer and powder bed layups from their build files, wire-fed additives, thermo-plastic composite additives, welding, and other layup processes that add material. These additive processes are used to create a “near net shape” part.

Additive Functions
Additive tools have an “Additive Functions” group with options to validate laser, material, and gas usage (sometimes referred to as “recipes”) during the simulation. Errors are issued when checked additive functions are improperly used, or set out of the expected range.

Droplet Technology
Realistic Appearance: Added material in VERICUT is easy to distinguish from machined stock. Programmers clearly see when part features that require finishing have been machined. History: Each bead (or “droplet”) stores “built-in” intelligence that NC Programmers use to quickly find the source of errors, voids in material layers, problem cuts in added material, and where misplaced material came from, with a single click.

5-Axis Machining
The verification process of VERICUT accurately checks for errors on all 5-axis milling, turning, and additive laser sintering processes no matter how complex the operation.

Hybrid Manufacturing
In VERICUT, additive operations are combined in any order with traditional “subtractive” machining, such as milling, drilling, turning, etc. The realistic appearance of added material allows NC Programmers to tell that all necessary machining has been performed.

Detect Collisions
VERICUT detects collisions between the machine and additive part with its collision checking extended to cover additive parts as they are being built, and expensive super multiltasking machine laser equipment.

Do you know how much prove-outs are costing you?
In today's competitive manufacturing environment, software verification is essential to your ability to produce on-time, high quality goods at a reasonable cost. In the conservative example to the right, prove-outs cost $24,000 a month. This does not factor in additional costs such as scrapped or damaged parts, broken tooling, damaged fixtures, and extra machine tool maintenance. What are prove-outs costing you?

The interfaces make verifying and optimizing NC programs, and simulating CNC machines, a much easier and more efficient process. With most interfaces you can verify individual operations, or a series of generations. All stock, fixture, and design geometry is automatically transferred to VERICUT in the correct orientation, along with your NC program, tooling, machine and control data, and other simulation parameters. VERICUT runs independently, so you can continue working in your CAM system while simulating your NC programs. You can also import NC programs from other CAM systems in CL or post-processed G-code format.
VDAF Simulation
Visualize and simulate CNC drilling and fastening machines using the same NC program code that will be run on the machine. Simulation is independent from programming, and VDAF can simulate NC programs from any programming system for any CNC-automated drilling and fastening machine.

VDAF Programming Add-on Option
This add-on module to VDAF gives you the ability to create NC programs for CNC auto-drilling and fastening machines. Fasteners are displayed in a tree dialog that allows you to group fastener types under tree branches and order them as needed.

VDAF Helps You Avoid:
- Drilled holes or fasteners in the wrong position
- Missed holes or fasteners
- Wrong holes sizes or fastener positions
- Holes not drilled through the stack
- Double-drilled or double-filled holes
- Wrong fasteners for material stack
- Collisions with structures
- Collisions with tooling
- Collisions with added fasteners

PRODUCT DESCRIPTIONS:

VDAF Simulation
The base simulation software is used to visualize and simulate drilling and fastening from NC program code. VDAF simulation is a universal software application capable of simulating multiple CNC auto-drilling or auto-fastening machines. A single license can simulate multiple machines using a VERICUT Machine Configuration (VMC) configured for each machine. Every VDAF implementation requires at least one VMC.

VDAF simulates machine motion directly from NC program files to check for collisions and other potential process problems. VDAF simulation also checks specific auto-driller/fastener actions. VDAF simulates positioning sensors for the existence of perceptible material close to the inserted fastener location.

The Tool Library organizes the drills and countersinks to be used in a simulation session. The Fastener Library contains models of specific fasteners that can be inserted by NC program commands.

VDAF Programming Add-On Option
This add-on module to VDAF Simulation creates NC programs for automatic drilling and fastening. This is a universal software application capable of programming many CNC auto-driller/fastener machines. A single license can program multiple machines using a postprocessor configured for each machine.

The assembly to be programmed within VDAF contains an individual part model for each member of the CAD assembly, located in its proper assembled position. Each part’s material is identified, as well as the clamp surface and any fastening. VDAF’s fastener locations are created from the CAD model’s fastener locations and attributes, as read by the custom tailored fastener reader utility. Fastener locations contain the attributes of a fastener and its location in the assembly. The set of fasteners and their attributes define the drill and fastener cycles to be used.

One or more reference locations may be selected, typically at Drilled at Assembly (DA) holes or temporary fastener locations. These selections invoke machine reference operations, but typically do not affect nominal locations in the NC program. Hole or fastener locations are grouped by local and global reference locations. Designating and activating reference holes create commands in the NC program to align the operation to the physical part.

Fasteners and operations are displayed in a tree dialog. The tree layout allows the user to group fasteners under tree branches and order and re-order them as needed. The user interface clearly identifies the fasteners that have been processed and those that have not. Fastener information can also be displayed in different ways to meet other user requirements. For example, fasteners may be displayed by type, diameter, length, etc.

The VDAF Programming Add-on Option requires a VDAF Simulation base license.

VERICUT Machine Configuration (VMC)
A VMC reads the auto-drilling/fastening NC program for a specific machine. It contains the definition of all drilling, fastening, utility cycles, and functions used in the NC program. It then emulates the CNC control logic necessary to accomplish the simulation of the NC program on the specific machine, including simulated fastener insertion. Simulated fastener insertion requires CAD models of the various fasteners that will be used in the assembly process (stored and organized in the Fastener Library).

Post-Processor
The post-processor formats the auto-drilling/fastening paths created in VERICUT for a specific machine. The post-processor contains the definition of all drilling, fastening, utility cycles, and functions used in the NC program.

OTHER POSSIBLE REQUIREMENTS:

CATIA & NX Interfaces
You can verify individual operations, a series of operations, or a set of complete NC programs. All Skins, Fixtures, Structures and Fastener locations are automatically transferred to VDAF in the correct orientation, along with your NC program, machine and control data, and other simulation parameters. Also, the optional 3D model interface modules allow VDAF to directly open native CATIA and NX part files.

Custom Fastener Object Reader
A custom script running inside the CAD system that reads user-defined fastener information and converts it into a VERICUT fastener file, in preparation for programming and simulation. This script is custom-written for each end-user implementation.

Vistagy SyncroFIT Interface
A standard interface for reading the assembly, fastener definition, and process information from SyncroFIT’s Airframe Design Environment, and prepares files for programming and simulation in VDAF.
**VERICUT Composite Programming (VCP)**

VCP gives composite part designers complete control over their part. With a wide variety of path laying algorithms, engineers can ensure that they capture the design intent of their composite work piece. Using tools inside of VCP, the part designer or engineer can easily create and experiment with various AFP path options. They can also evaluate the effects of AFP manufacturing on a composite part’s design intent.

The user can measure and evaluate the effects of AFP path trajectory, material steering, surface curvature, course convergence and other process constraints as they would be applied in manufacturing.

VCP can be used to program any number of machines. It includes support for probing, knife trimming paths, laser projection, and Automated Tape Laying (ATL) machines. Data exportation is also available for further in-depth evaluation by the user’s existing analysis methods and tools.

**VCP Process Features**

- Reads CATIA, STEP, Siemens NX, Pro E, Creo, SolidWorks, ACIS and other surface models
- Reads Fibersim, CATIA, and other external ply geometry and information including:
  - Boundary geometry
  - Ply direction
  - Start points
- Generates layup paths based on manufacturing engineering specifications, including:
  - Rosette projection at specified angles
  - Parallel to guiding curve
  - Follow the natural path of the form’s surface
- Creates NC code for **ANY** machine vendor, including:
  - Boundary geometry
  - Ply direction
  - Start points

**VERICUT Composite Simulation (VCS)**

VCS gives an entire organization the confidence needed to run composite NC machines correctly the first time. Regardless of the programming system used (VCP or others), users can validate NC code to identify issues, such as: collisions, NC syntax errors, and material placement quality. Because the material is applied to the layup form via NC program instructions in a virtual CNC simulation environment, the simulated part can be measured and inspected to ensure the NC program follows manufacturing standards and requirements. A report showing simulation results and statistical information can be created automatically to help build confidence with operators and management. VCS can be used to simulate any number of machines, and includes support for probing, knife trimming paths, laser projection, Automated Fiber Placement (AFP), and Automated Tape Laying (ATL) machines.

**VCS Process Features**

- Reads CAD geometry of the layup form, machine axes, and work cell
  - For collision detection and material application simulation
- Uses VERICUT virtual machine and control emulation to simulate the layup machinery
  - Can be configured for virtually any CNC syntax and machine kinematics configuration
- Reads the NC program from any source and simulates the layup process based on actual NC program commands
  - Validate the actual NC program that will run on the layup equipment
  - Add material to the form based on NC program commands
  - Material is added in discrete layers/sequences, constructing the workpiece exactly like the physical process
- Checks the process for compaction roller/form conformance and direction
  - Verify roller orientation to path
  - Verify path correctness to the form and previously applied sequences/layers of material
  - Check roller conformance for bridging or excessive compaction
- Measures and inspects added material for manufacturing requirements
  - Measure overlap, gap, and thickness
  - Detect steering radius violations
- Exports reports of machine warnings and errors generated during simulation

VCP reads CAD surfaces and ply boundary information and adds material to fill the plies according to user-specified manufacturing standards and requirements. Layup paths are then linked together to form specific layup sequences and output as NC programs for the automated layup machine.
It’s easy to implement VERICUT quickly. Training is offered regularly at numerous locations. The following are descriptions of training, implementation, and consultancy.

Standard VERICUT Training
CGTech’s hands-on training gives you the knowledge & skills to maximize VERICUT’s potential. These courses are suited to NC programmers and CNC machine operators. After completing a course, you will be a better VERICUT user!

Machine & Control Building Training
VERICUT Machine & Control Building training is intended for experienced VERICUT users with a good working knowledge of VERICUT. The class builds on your existing knowledge as you learn techniques for configuring VERICUT Machine Configurations (VMCs) that can be utilized by all users at your company.

On-Site or Web-Based VERICUT Training
Can’t make it to a CGTech facility? Need customized training? We’ll come to you! On-site or online training can raise your VERICUT skills to the next level and is a perfect complement to implement newly purchased VERICUT Machine Configurations (see “Contract Services” on the next page).

New Release Update Training
Improve your productivity with new VERICUT features quickly as a CGTech expert helps you learn how to apply them to your manufacturing processes.

Implementation Services:

Implementation & Automation Consulting
Get help integrating VERICUT into your manufacturing engineering and NC programming processes: both upstream CAD/CAM systems and downstream shop-floor systems. Ensure that VERICUT fits into your electronic workflow as smoothly and efficiently as possible! On-site advice from a VERICUT expert while working on your initial VERICUT projects, eliminates false starts and confusion, and can be the key to accelerating your ROI.

VERICUT Audit
Are you using VERICUT to its full potential? Here’s how to tell! A VERICUT expert comes to your site and evaluates your VERICUT use and provides you with a written report covering potential risks in your current operation and areas where you can achieve better results. We check your VERICUT installation and assess whether your staff is sufficiently trained.

OptiPath/Force Mentoring
Take full advantage of CGTech’s manufacturing experts with VERICUT’s optimization capabilities. We teach you how to optimize your NC programs using your parts on your machines. We will work with you using VERICUT OptiPath or Force to demonstrate competitive advantages to your company. Results can be proven on your machine and demonstrated to your manufacturing team and management.

Contract Services:

VERICUT Machine Configuration
Hire CGTech to create VERICUT Machine Configurations (VMCs) of your exact equipment and make running simulations a “push-button” operation!

NC Program Optimization
Want to improve the quality and production rates of your NC machining? Send us your NC programs (G-code or APT), and we return faster, more efficient programs. This is an ideal solution for shops with limited time, manpower, or optimization expertise.

CAD Model Export
Need an accurate CAD representation of your machined part, mid-process, or at the end of the final operation? We convert your NC programs (G-code or APT) into an “as-machined” CAD model.

Custom Tool Libraries & Custom Software Development
We build VERICUT tool libraries from scratch or from your existing spreadsheets and databases. Do you need special capabilities not currently found in the software? We tailor the software to suit your specific needs!

Configuring VERICUT to Simulate your CNC Machines

Custom Tool Libraries & Custom Software Development
CGTech has many years of experience creating and editing VMCs to meet the needs of its users. We maintain this collection, updating it for new VERICUT versions, features, and added machine and control functionality. CAD models are only part of a working VMC: VERICUT also needs the control emulation logic and machine kinematics contained in the VMC. The VMC is configured to exactly match the Machine Tool options to ensure that your virtual machine and real machine behave identically.

Supplying VMCs
Each VMC requires some configuration to ensure it meets your exact machine specifications and options. This configuration is usually done by CGTech (or a VERICUT reseller). However, training can be provided to allow an experienced user to create and configure VMCs. Your CGTech representative or reseller can work with you to provide a quotation for VMCs. They will discuss your requirements in detail in order to accurately determine the project scope. They will need to know the make and model of your machine(s), control type, special machine features, basic motion axes (tool changers, talistocks, etc.) and control features. They will also make sure that the VMCs are delivered to your satisfaction.

Our Machine Tool Partners
CGTech has many years of experience creating and editing VMCs. We are able to provide VMCs for machines from many of the leading Machine Tool Builders, often using CAD data supplied through our partnerships with these companies. Our Machine Tool partners include DMG, Mazak, Mori-Seiki, Matsuura, Makino, Chinon, Hermet, Doosan, and many more. Machine Tool brands we have built VMCs for include:

- DMG
- MORI
- SEIKI
- MAZAK
- MITSUBISHI
- MAKINO
- CHINON
- HERMET
- DOOSAN
CGTech® is the leader in CNC machine simulation, verification, and optimization software technology. Since 1988, our products have been the standard in manufacturing industry sectors including aerospace, automotive and ground transportation, mold and die, consumer products, power generation, and heavy industry. With subsidiary offices throughout Europe and Asia, and a global network of resellers, CGTech software is used by companies of all sizes, universities, trade schools, and government agencies.

CGTech maintains an active Technology Partnership program. VERICUT users in this program include many of the world’s leading machine builders, CAD/CAM developers, and manufacturing software companies.

<table>
<thead>
<tr>
<th>United Kingdom</th>
<th>Germany</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGTech Ltd.</td>
<td>CGTech Deutschland GmbH</td>
<td>CGTech India</td>
</tr>
<tr>
<td>Curtis House, 34 Third Avenue Hove, East Sussex, BN3 2PD</td>
<td>Neusser Landstr. 384 D-50769 Cologne</td>
<td># 38, 1st Main, 3rd Cross Malaqala, Krishnananda Nagar</td>
</tr>
<tr>
<td>TEL +44 (0) 1273-773538 <a href="mailto:info.uk@cgtech.com">info.uk@cgtech.com</a></td>
<td>TEL +49 (0)221-97996-0 <a href="mailto:info.DE@cgtech.com">info.DE@cgtech.com</a></td>
<td>New Outer Ring Road Bengaluru, 560091</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TEL +91 080 23 18 69 81 <a href="mailto:info.india@cgtech.com">info.india@cgtech.com</a></td>
</tr>
<tr>
<td>Italy</td>
<td>France</td>
<td>Russia</td>
</tr>
<tr>
<td>CGTech s.r.l.</td>
<td>CGTech S.A.R.L.</td>
<td>CGTech Ltd.</td>
</tr>
<tr>
<td>Via Castaldi 1</td>
<td>Les Passerelles</td>
<td>White Stone Business Centre</td>
</tr>
<tr>
<td>31100 Treviso</td>
<td>104 Avenue Albert 1er</td>
<td>Floor 5, Office 524</td>
</tr>
<tr>
<td>TEL +39 0422 583915 <a href="mailto:info.italia@cgtech.com">info.italia@cgtech.com</a></td>
<td>92500 Rueil-Malmaison</td>
<td>4-Y Lesnoy Pereulok 4,</td>
</tr>
<tr>
<td></td>
<td>TEL +33 (0)1 41-96-88-50 <a href="mailto:info.france@cgtech.com">info.france@cgtech.com</a></td>
<td>Moscow, Russia, 125047</td>
</tr>
<tr>
<td>Japan</td>
<td>China</td>
<td>South Korea</td>
</tr>
<tr>
<td>CGTech Japan</td>
<td>CGTech China</td>
<td>CGTech Korea</td>
</tr>
<tr>
<td>3F ERG Bldg. 1-5-3,</td>
<td>Room 905, Raise Plaza,</td>
<td>505, Daerung Techno Town 15-Cha</td>
</tr>
<tr>
<td>Nishi-Ikebukuro, Toshima-ku</td>
<td>No.126 Jianguo Road,</td>
<td>401, Simin-daero, Dongan-gu</td>
</tr>
<tr>
<td>Tokyo 171-0021</td>
<td>Chaoyang District, Beijing, 100022</td>
<td>Anyang-si, Gyeonggi-do</td>
</tr>
<tr>
<td>TEL +81 (3) 5911-4688 <a href="mailto:info.japan@cgtech.com">info.japan@cgtech.com</a></td>
<td>TEL (086) 10-6566 9919 <a href="mailto:info.china@cgtech.com">info.china@cgtech.com</a></td>
<td>TEL +82 (31) 389-6070</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="mailto:info.korea@cgtech.com">info.korea@cgtech.com</a></td>
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When you invest in VERICUT, you’re teaming up with a manufacturing partner with the best reputation in the business!