



VERICUT[®]

NC SIMULATION - SOLUTIONS

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What Managing Directors think of NC simulation

Yet more software? We have recently invested six figures in new CNC machinery.

That's exactly why. We are concerned about protecting the most valuable machinery and valuable orders.

But even in that case: How much extra burden will be on the NC Programmers to implement it?

This is not rocket science. We're talking about a quick, smart introduction in just a few weeks.

Where exactly is this software used? In production planning? Okay, there are already enough problems in the production itself.

VERICUT integrates with your existing process, just one step before production, to fix those problems.

Are you sure that we will increase the machine capacity?

Definitely! Because only verified NC programs are released to the real machines. Because of the reduction in prove-out time, the ROI is usually less than one year.

If we're not cutting parts, we're not earning money. That's a fact!

Retractions, machine collisions, damaged fixtures, tool breakage. Every machinist knows these problems. But it does not have to be this way.

Actually, we are currently in the process of updating our software infrastructure. How does VERICUT fit?

VERICUT is a digital building block that seamlessly integrates with your existing IT systems. And because VERICUT is completely independent of the programming system, machine and controller, it guarantees a non-biased check.



Getting the most out of

NC simulation: Lose the inefficiencies, increase added value



WORK SMARTER

Set up the machine. Load workpiece. Press button. Cut parts with confidence. That's how our customers work calmly, 24/7 around the globe, in all major industry segments. What they no longer have: machine collisions, damaged fixtures, tool breakage and scrapped parts. Because our customers can let it rip in VERICUT, on their desktop, before the real machining begins.



DIGITAL JIGSAW PIECE

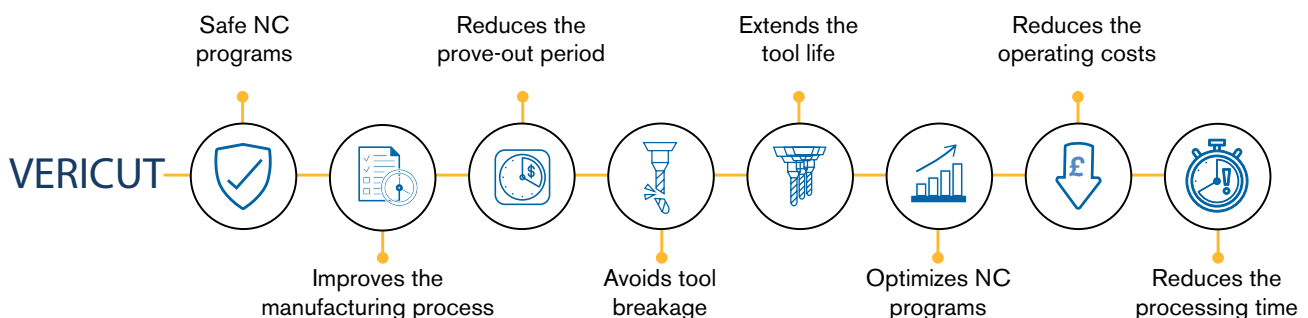
VERICUT is the world's leading CNC simulation software with over 7,000 companies in 60 countries simulating their machining and correcting errors in their NC programs before starting their real machines. The procedure is proven a million times and is a clear "must have". Our customers confirm this since 1988! VERICUT also allows measurement, inspection and analysis functions of the virtually manufactured component. Optional optimization can reduce machining time whilst extending tool life.



PRODUCTIVE FROM THE START

We implement VERICUT in a very short time. We deliver the interfaces which integrate NC code simulation into all popular manufacturing applications. We train employees to work with VERICUT. We provide support – for today and tomorrow. VERICUT acts independently of the programming system, machine and control. In principle, it goes from NC programming to production exactly as before, only much more efficient, safer and less stressful.

What does VERICUT do?



What Production Managers think of NC simulation

The production batches for today and tomorrow must proceed error-free, otherwise we get serious problems.

Then it's time to make things clearer with NC code simulation before machining begins. VERICUT means you do not have to worry about reworking, deviations from schedule or delays in delivery.

We already have a simulation in our CAM system. Why do we need NC code simulation?

Because the only meaningful simulation to offer absolute security must run on the real NC code, after the CAM system's postprocessor or manual edits.

Failed Quality Control? No chance! Do you know what our stock materials cost?

We know. In the aerospace segment individual forgings can cost over £20,000. VERICUT reliably prevents rejected parts before they reach final inspection.

Can the machine operators handle that? Do we need more staff?

Absolutely not! Anyone who uses VERICUT can confidently go through the process so they know how it runs on the real machine. An important step towards lean production.

The Directors want to work towards Industry 4.0 with digital twins.

We really should talk. We have been working since 1988 with manufacturing automation and digital twins, for the simulation of machining processes and helping customers improve their process chains.

We have to reduce prove-out times - otherwise we can forget our KPI targets.

Focus on these goals. We have helped hundreds of VERICUT users drastically reduced their prove-out times.

Reduce prove-out times - reduce costs

VERICUT has many advantages. Let's look at one in particular: the reduction of prove-out times. Because wasting valuable machine time on proving out new parts really costs money.

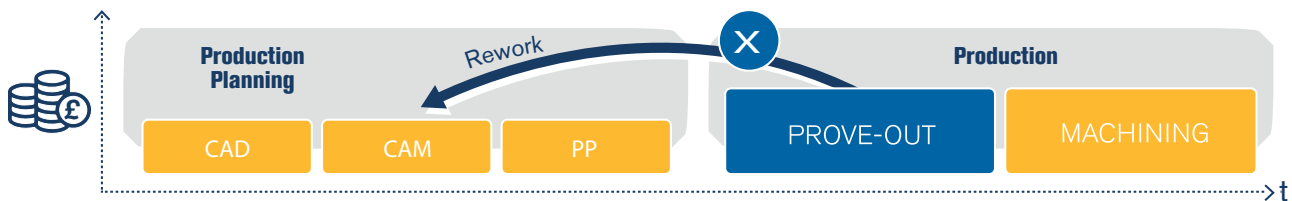
Savings can be made by:

- Avoiding a machine crash
- Preventing tool breakage
- Ensuring no damaged parts or rejects
- Avoiding delivery delays
- Optimized machining time
- Extended tool life
- etc.

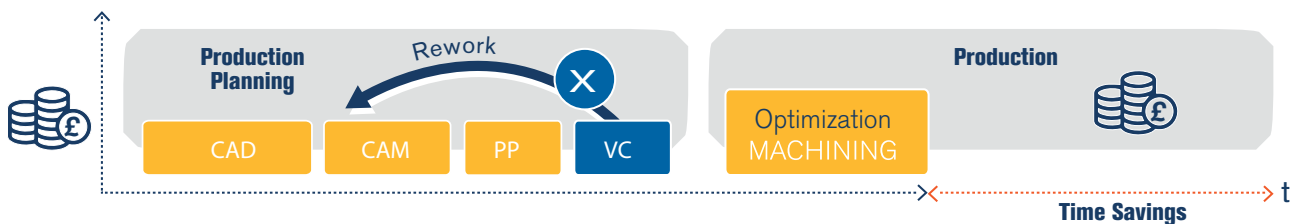
Example return on investment:

Days / Week	5
Hours / Shift	8
Shifts / Day	2
Weeks / Year	48
Number of CNC machines	5
Hourly Capacity / Year	19,200
Prove-out	5 %
Reduction of prove-out time by prior NC simulation	960 Hours / Year
Hourly rate of CNC machines	£80
Saving per year	£76,800

CONVENTIONAL PROCESS CHAIN



PROCESS CHAIN WITH VERICUT



Check NC programs without wasting expensive machine time proving out parts. That's it. VERICUT simulates machining on your desktop, not on the CNC machine,

so rework can be done fast and efficiently. With the optional modules OptiPath and Force, VERICUT optimizes feedrates to reduce machining time and extend tool life.

What NC Programmers think of NC simulation



We are being bombarded with tasks - and now NC code simulation too?

You don't have to. VERICUT runs independently of your CAM system. Above all, let VERICUT help you validate your NC programs right on your desktop.

We don't make mistakes now - the last time there was a machining problem it was arguably not our problem.

It's a fact NC Programmers have less time for increasingly complex tasks. VERICUT is a powerful tool to ensure that rework and rescheduling is kept to a minimum.

Can you be sure that you are getting NC code simulation from our data?

Quite certain. VERICUT works with a multitude of CAD/CAM and CNC format data. Whether you program manually or use a CAM system and postprocessor, we can simulate all CNC operations on all CNC machines.

And the interfaces?

We've got them all covered. We provide the interfaces for integration. All data such as stock, part, fixtures, tools, zero points, NC programs & subroutines are then transferred to the VERICUT digital twin for verification.

What exactly is needed for NC code simulation?

Quite simply: a machine model, tools, fixtures and stock. VERICUT simulates the real NC code just like your CNC machine.

What about the support?

Always up to date! We live and breathe VERICUT and don't do anything else. Our technical support engineers can be reached by phone, email, web, online remote support, at training courses and face-to-face. Each year VERICUT users can join us for our regular VERICUT Users' Exchange meetings.

The maximum reliable feed rate

VERICUT Force

Force calculates the maximum reliable feed rate. The technology was co-developed by United Technology Corporation (UTC) and CGTech for more than seven years. Force is ideally suited for difficult-to-machine materials and complex multi-axis operations. Force determines the feedrate for a particular cutting condition based on four factors: maximum chip thickness, cutting force, spindle power, maximum permissible feed.

Fast Results

- No expert user knowledge necessary
- No complicated software tests necessary
- No reprogramming necessary
- Perfect function with aggressive material removal

Increased Productivity

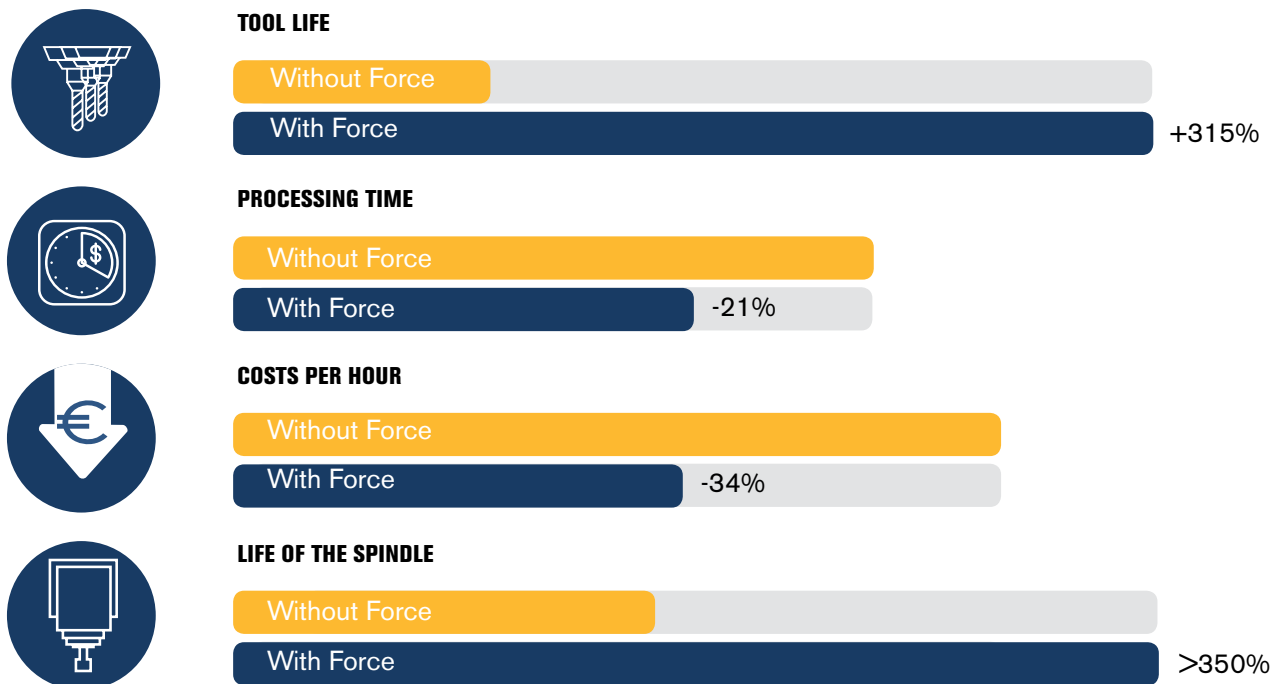
- Shorter machining times
- Improved part quality
- Less tool wear
- Constant cutting conditions

Practical Optimization

With Force, interactive charts make it easy to identify and improve sub-optimal cutting conditions in the NC program. The user then has two options:

- Allow Force to automatically choose ideal feedrates on the basis of chip thickness, cutting force or spindle power.
- Modify the NC programs by re-programming in your CAM system.

Example calculation VERICUT Force



Comparison test: Performed with SANDVIK Coromant

What Machine Operators

think about NC simulation

Actually, I wanted to go to the gym this evening.

Don't worry, the NC program is running as it should. It has been tested in VERICUT.

With too many rejects, there's trouble.

And rightly so. But we promise to help you get prove-out and rejects under control.

A precise indication of the cycle time might not be bad, then we can get our shifts better organized.

We agree 100 percent. This is also ensured by VERICUT.

Can our new multi-axis CNC machines also be prepared as digital twins for NC code simulation?

Absolutely!

Damaged cutter, crashed machine, delivery problems - we have already experienced everything.

Unfortunately, you are not the only one. We already had companies who wanted to test VERICUT and shortly before the test began they experienced a crash. A very, very expensive story that could have been avoided with VERICUT.

Somehow everything has become more stressful, pressure without end.

We recognise that this can affect all employees in a company. By choosing VERICUT, you can achieve an unparalleled understanding of your machining processes.

7 reasons why

Whether milling, turning, drilling or grinding, VERICUT is the world's leading solution for the simulation of CNC machines and the verification

and optimization of NC programs. This industry-proven solution activates untapped potential in seven key areas.



INTERNATIONAL COMPETITIVENESS

Efficiency gains in manufacturing are the only justifiable answer to rising wages, higher prices for raw materials and energy, shorter delivery times and pressure on profit margins.



DIGITALIZATION

Intelligent manufacturing needs an intelligent workflow: VERICUT has been working with "Digital Twins" for more than 30 years, and is an indispensable element on your journey to automated production.



PROTECT CAPITAL INVESTMENT

Machinery is the capital of a manufacturing company. VERICUT not only protects your investments in machinery, equipment and raw material but also optimizes the processes.



TIME-TO-MARKET

Anyone who uses VERICUT in their NC programming process can realize significant efficiency gains in production. VERICUT helps to get new products to market sooner.



RESOURCE MANAGEMENT

The workforce and machinery must be organized. On the one hand, VERICUT frees workers from tedious checking activities, on the other hand it ensures reliable planning and scheduling through accurate cycle time calculations.



CUSTOMER LOYALTY

A first class product is one thing. Customer care, innovation and dependability are another. All should be considered to identify a company as a reliable partner. VERICUT delivers on all fronts.



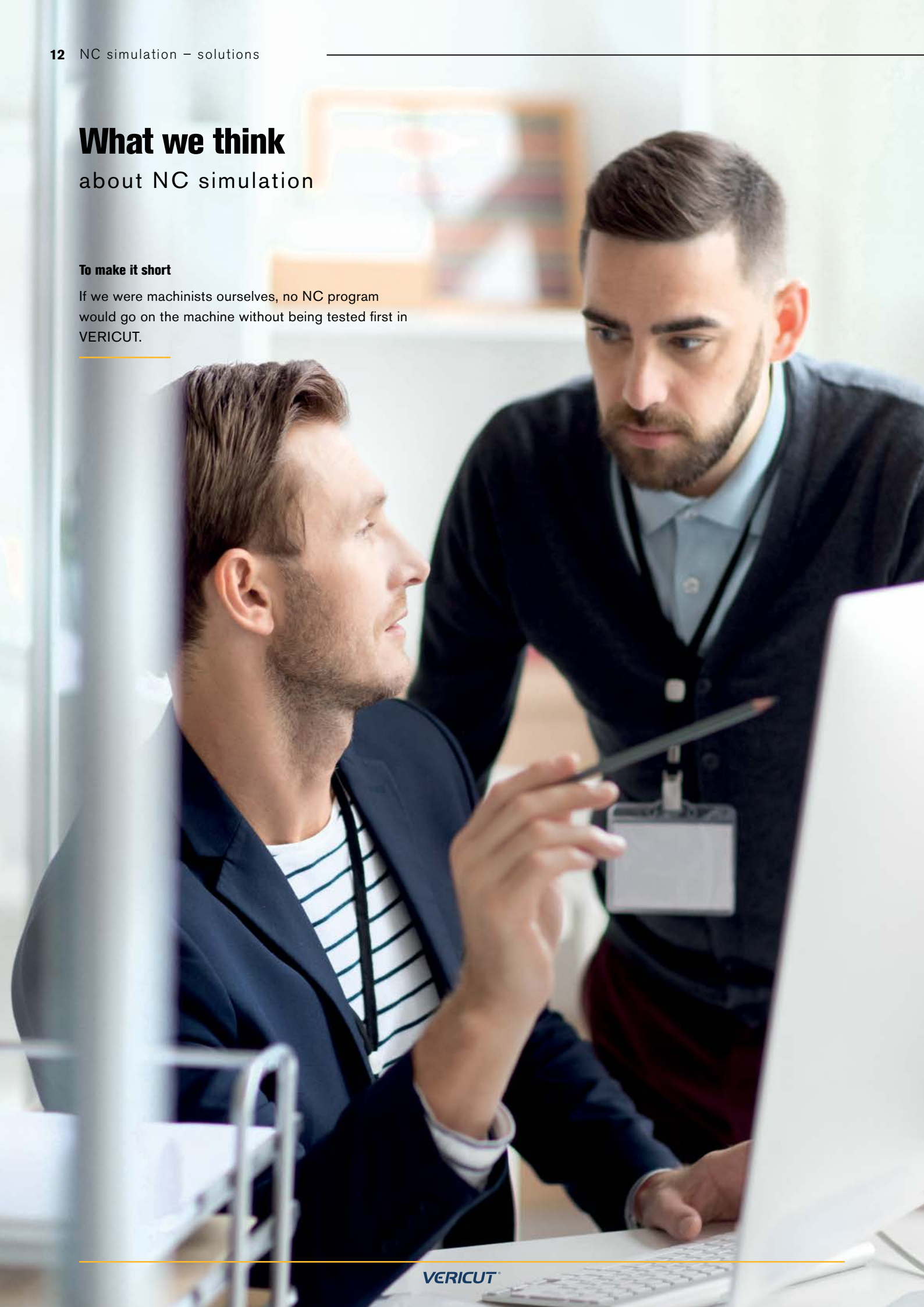
EMPLOYEE MOTIVATION

VERICUT not only saves time, minimizes errors and improves productivity, but it also helps reduce the need for rework, delays and rescheduling. Consequently reducing employees' stress levels significantly.

What we think about NC simulation

To make it short

If we were machinists ourselves, no NC program would go on the machine without being tested first in VERICUT.



CGTech

CGTech is the market leader in software technology for CNC machine simulation, testing and optimization. With its head office in California there are further offices in

UK, France, Germany, Italy, Japan, China, South Korea, Singapore, India, Brazil and Russia and a network of Resellers worldwide.



CONTINUITY

Market leader since 1988. Headquartered in Irvine California for over 30 years.



SECURITY OF INVESTMENT

CGTech owner-managed since 1988. 100% in-house development - Global Support.



GLOBAL FOOTPRINT

Industry standard in 60 countries. 12 CGTech locations worldwide. Resellers worldwide.



EMPLOYEES

Over 200 employees worldwide. Over 300 Reseller employees.



WORLDWIDE SUCCESS

Over 7,000 customers with over 20,000 licenses.

Always and everywhere



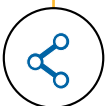
PERSONAL SUPPORT

- Training, hotline, services



REGULAR SOFTWARE RELEASES

- Always upwardly compatible



CUSTOMER-ORIENTED DEVELOPMENT

- Strong industry partners, annual VERICUT Users' Exchange meeting



MANY CUSTOMERS - MANY SECTORS

- Interdisciplinary expertise



UP-TO-DATE TECHNOLOGY

- Timely support of new industry practices and emerging standards



Investing in VERICUT is more than purchasing software. It is the start of a partnership with one of the world's leading manufacturing software vendors. Nowhere else will you find as many CNC specialists as at CGTech.

What VERICUT customers think of NC simulation

"The level of confidence brought about by VERICUT's AUTO_DIFF feature has increased the complexity of the programs that we can produce."

John Kelly, Stoneswood Precision Components

"VERICUT has been an established part of our workflow for over a decade - nothing goes out to a machine without first going VERICUT"

Rob Yuile, Castle Precision

"The overall benefit of using VERICUT is the option+ to send the program to the machine with the certainty that it will run smoothly without collision."

Itamar Minerbo, Mould Department Manager, PLASSON

"If we damage a spindle, that means one week of production downtime. Therefore, we simulate all NC programs with VERICUT. Once the simulation has been completed, an e-mail confirms whether or not there is a green light for production."

Christian Wissing Kruse, LEGO Engineering, Prototypes & Tooling

"VERICUT has been an important link to allow us to deliver quickly, when required, and always reliable."

Jeremy Gray, Company Director, Blackmore Precision Engineering

"We've seen up to 40% more tool life and 30-40% savings in machining cycle time when using VERICUT Force."

Jason Mills, Engineering Manager, AML

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