# Proof positive

**Supplier of CNC Simulation and verification software, CGTech continues to invest heavily in software development**

THE latest release of VERICUT, version 6.1, contains a host of improvements, mostly as a result of feedback from users. VERICUT is CNC machine simulation, verification and optimisation software that enables users to eliminate the process of manually proving-out NC programs. It reduces scrap loss and rework. The program also optimises NC programs in order to both save time and produce higher quality surface finish. VERICUT simulates all types of CNC machine tools, including those from leading manufacturers such as Mazak, Makino, Matsuura, Hermle, DMG, DIXI, Mori Seiki and Chiron. VERICUT runs standalone, but can also be integrated with leading CAM systems such as Catia V5, Unigraphics, PTC, MasterCAM and EdgeCAM.

## Integrated

In VERICUT 6.1, NC Program Review is now integrated in the main desktop allowing the user to navigate backwards from the last NC program line simulated. Error messages and NC program text is highlighted when a collision on the stock or fixture is selected. Optionally, material can be replaced while stepping backwards, and then removed again while stepping forward, giving the ability to easily identify problem areas. Both machine views and profile views are now active in Review mode, including an optional tool path line display in the profile view. Additionally, synchronised subsystem simulation (such as for Mill-Turn and multi-channel controls) can now be displayed in Review mode.

A new logger display shows messages in a scrolling list. Messages are organised by category. Each category of message can be blanked or displayed as desired. Selecting an error or warning message in the list highlights the associated NC program line in the NC program display. The logger display is a dockable panel and can be located horizontally within the desktop or outside the desktop. Furthermore, additional VERICUT status lights indicate activity during simulation.

AUTO-DIFF Constant Gouge Check can now optionally check for a minimum amount of excess material relative to the design model. This is typically used where roughing cuts should leave a specific minimum amount of material for subsequent machining. AUTO-DIFF profile is improved to give more robust results on large and complex profiles where the design and cut stock models are nearly coincident.

## Enhanced

MDI is significantly enhanced to include axis jog buttons and tool positioning by graphical picks. This can be especially useful during planning stages. The simple MDI controls can be used to make sure the machine will reach all the necessary features of the part. Tool positioning includes offset values along the tool axis and side of the tool.

It may be desirable to 'lock-down' VERICUT's machine configurations at companies with multiple machines and several NC programmers. Encrypted machine and control files allow the site manager to prevent machine configurations from being inadvertently modified. Menu features are reorganised so 'project-specific' settings used during NC program simulation tasks are clearly separated from 'machine/control' configuration settings. Using encrypted machine/control files automatically disables machine/control configuration menus. If desired, the machine/control configuration menu can be completely removed from VERICUT's main menu bar.

Turning tools with multiple inserts (such as 'Flash' tools or other types of tools with multiple inserts) are now supported--including definition of multiple driven points. Each insert's position is checked for valid turning orientation before it will cut. Cutting limit checking (added in 6.0) is enhanced to include checking Minimum/Maximum RPM values. A new model choice automatically creates a milling tool's gage location at the highest point on the tool assembly.

## Operations

VERICUT's CAD/CAM Interfaces make verifying NC Programs from within the CAD/CAM/PLM system easy and convenient. Users can verify individual operations, a series of operations, or a set of complete NC programs. All stock, fixture, and design geometry is automatically transferred to VERICUT in the correct orientation, along with the NC program, tooling, machine and control data and other simulation parameters. The following CAD/CAM/PLM interface updates have been made in 6.1:

- Unigraphics Interface - merges tools from the UG session with tools in the template project file's Tool Library.
- CATIA V5 users can choose how to apply the part operation's machining axis in their VERICUT simulation by selecting the offset table (Program Zero, Work Offset, etc.) and relationship to the machine (tool, rotary axis pivot). CATV allows the user to select sketch geometry used to define tool shapes in CATIA. This geometry is then used to create tools in VERICUT. CATIA length units (inch or millimetre) are now automatically detected and set in the VERICUT session.

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