Mena 3D
TOP MEASURE

RENSCAN™ technology

RENISHAW

SM25-2

RENISHAW EQUATOR 300

Verisurf Solution Suites

VERISURF
3D Measurement Solutions

Mena3D
TOP MEASURE

VERISURF SOLUTION SUITES
Everything You Need to Improve Quality and Productivity.

Verisurf Software Solution Suites are designed to address today's most common measurement and reporting needs. Pulling from Verisurf application modules, the Solution Suites deliver high performance, efficiency, and cost-effective answers for quality verification and increased productivity in manufacturing. All Solution Suites are scalable and additional application modules can be added later should the need arise. As with all Verisurf software, Solution Suites are compatible with all new and existing hardware.

"To say AIT utilizes Verisurf metrology software would be an understatement; AIT relies on Verisurf for virtually every aspect of our development and production workflow."

Jaimie Kempen
Quality Manufacturing Systems Manager
*Advanced Integration Technology*

INSPECTION SUITE

Quickly verify finished parts against nominal 3D CAD data or blueprints. Complete first article inspections and generate meaningful reports in minutes.

The Verisurf Inspection Suite is easy to learn and easy to use with its rapid Align / Inspect / Report workflow. The solution includes Verisurf CAD and MEASURE modules and supports all CMMs. When creating inspection plans, intelligent GD&T data can be edited, and additional annotations created to conform with all quality reporting requirements. The Verisurf Inspection Suite is cost effective and easy to expand as needs increase.

- Extensive CMM arm and laser tracker support
- Fast, easy device-to-part alignment
- Extensive geometry file type read ability
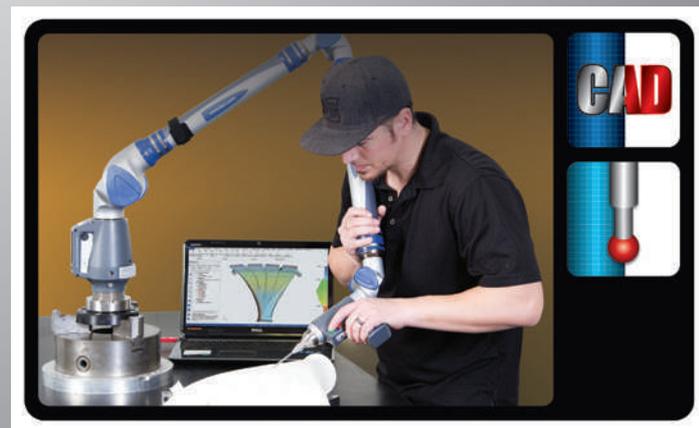
- Inspect to blueprints or nominal CAD
- Annotate and edit associative GD&T
- Extensive report customization and export
- Build and save inspection routines with AutoInspect

CMM PROGRAMMING AND INSPECTION SUITE

Significantly reduce inspection plan setup from hours to minutes with almost no learning curve. Utilize on any fixed CMM in a revolutionary, click-and-build visual interface.

The Verisurf CMM Programming and Inspection Suite includes all of the capabilities you'll need to build, edit, preview, monitor, and re-use inspection programs on your CNC CMM.

The suite includes Verisurf's CAD, MEASURE and AUTOMATE modules and sets a new standard for ease-of-use when authoring automated inspection programs for CNC CMMs. Using the suite's intuitive graphical interface, simply point and click on the model features you want to include in your inspection plan. Enjoy full control over every possible parameter of probe motion. Easily drag, drop, and group inspection steps. You can even simulate full or partial CMM gantry and probe motion prior to running the plan live on your CMM.

Already have a CNC CMM? With Verisurf's optional Universal CMM software, you can program and drive any common brand of CNC CMM without the expense of a controller or probe head upgrade.

- Full probe motion and indexing control
- Point and click CAD features recognition
- Drag and drop inspection step resequencing
- Edit probing details on the fly
- Probing pattern tools for any feature or profile
- On-screen probe path and motion visualization
- Add and easily relocate control points
- Create plans for other parts while program runs

3D SCANNING AND INSPECTION SUITE

Inspect anything; use any device; probe, scan, or use a tracker to produce actionable results fast!

The Verisurf 3D Scanning and Inspection Suite integrates Verisurf's CAD, MEASURE and ANALYSIS modules and tackles inspection challenges head-on. Verisurf's unique, CAD-based architecture can read any file format, interoperate with any common, portable CMM (including arms, trackers, and scanning systems) and has the most flexible reporting capabilities available. Create colorful deviation plots highlighting any nonconformance between measured parts and nominal CAD—all in a Windows-standard graphical interface that always delivers a superior user experience.

- Flexible best fit options reduce scrap and rework
- Embed stunning color results in your reports
- Use any arm, tracker or CMM

- Fastest align-inspect-report
- Measure any 2D or 3D feature type
- Memorize steps to create reusable plans
- Full MBD (GD&T) import and annotation
- Compare as-built to any nominal CAD source
- Advanced best fit increases conformance rates

3D SCANNING AND REVERSE ENGINEERING SUITE

Create manufacturable, 3D, solid CAD models starting from any physical part in record time. A unique product designed exclusively for pointcloud to solid model workflows.

Verisurf's 3D Scanning and Reverse Engineering Suite includes CAD, MEASURE and REVERSE modules and is uniquely suited for any reverse engineering project. The suite features an extensive set of tools for collecting, editing, meshing, and surfacing pointcloud and mesh data. Because all Verisurf solutions are CAD-based, the suite also includes an extensive tool set for completing the 3D CAD model using your measurement or scan data.

Verisurf is fully compatible with the Mastercam NC programming application—allowing you to scan, measure, mesh, and model your part and then use Mastercam (sold separately) to program and drive CNC or additive manufacturing equipment to complete the manufacturing process using a single file.

- Collect scan or probe data from any connected device. You can even start with a drawing
- Verify solid model to part conformance
- Extensive pointcloud meshing and surfacing tools
- Align multiple pointclouds to each other or to CAD
- Fit contiguous smooth surfaces through pointclouds and meshes with Power Surface
- Extensive editing, smoothing and best fit tools

TOOL BUILDING AND INSPECTION SUITE

Verify design conformance faster. Identify precise detail location and orientation through direct comparison to CAD. Set tooling details in seconds with real-time visual feedback right on the shop floor.

Verisurf's Tool Building and Inspection Suite addresses both manufacturing and alignment tasks by combining the capabilities of Verisurf's CAD, MEASURE and BUILD modules. The BUILD module dynamically displays a large, color-coded deviation arrow in real time as a CMM probe or laser tracker SMR is manipulated on the physical part surface. The color, direction, and magnitude of the Build arrow is displayed along with numerical readouts to indicate deviation from the nominal position. The Tool Building and Inspection Suite is ideal for confirming that tooling form or assembly attachment details are within allowable tolerances during fabrication or assembly.
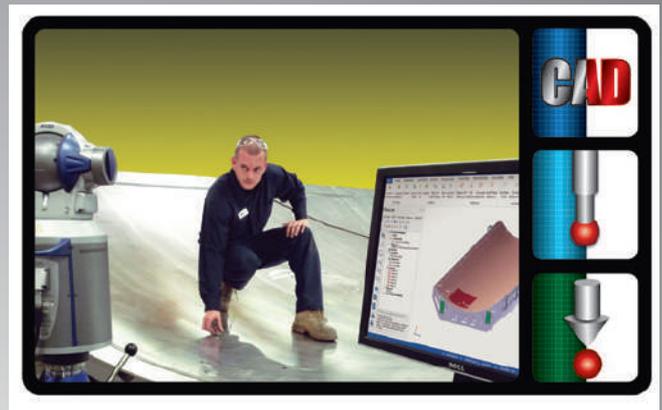
- Dynamic, on-screen Build arrow shows deviation
- Color, size, and orientation indicates positional offset, magnitude, and direction from nominal
- Create multiple, customizable digital read-outs (DROs) to display deviation details
- Eliminate or reduce the need for hard tooling
- Use multiple devices simultaneously to align details to their exact design location

GUIDED ASSEMBLY AND INSPECTION SUITE

Eliminate costly and awkward hard tooling or templates. Transition from CAD to laser-projection guided assembly in minutes. See the results of projection program changes live on your tooling as you make them in Verisurf.

The Verisurf Guided Assembly and Inspection Suite includes Verisurf's CAD, MEASURE, and PROJECT modules. This suite includes everything you'll need to program laser projectors to accurately project a laser line onto a surface or object using CAD data.

An ideal non-contact solution for both composite layup or part positioning, the Guided Assembly and Inspection Suite imports all standard CAD file formats. Use lines, splines, arcs, points, surface and solid edges to quickly create projection programs and then inspect the finished product to confirm design intent. The Guided Assembly and Inspection Suite is easy to learn and use and works with all major laser projection hardware brands.
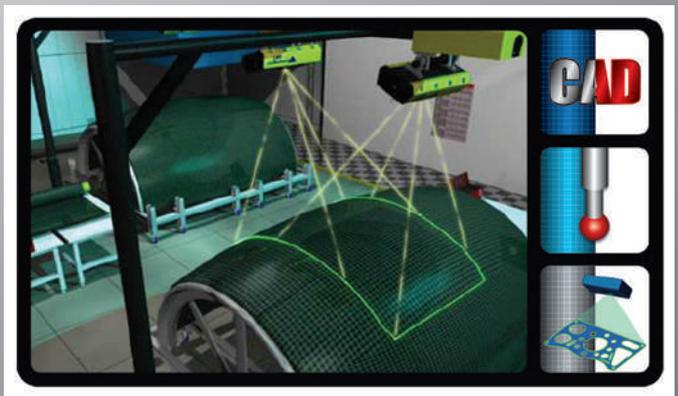
- Import CAD geometry from any source
- Build your own projection paths with integrated CAD
- Simple point-and-click to define, edit, and project
- Use points, lines, splines, arcs, surface solid edges to define projected laser boundaries
- Adapts precisely to surface profile curvature
- Segments projections for multi-projector arrays

METROLOGY ENTERPRISE SUITE

The Metrology Enterprise Suite consolidates all of Verisurf's capabilities in an integrated, easy-to-learn and easy-to-use experience that gives operators the capacity to complete any conceivable metrology project.

Verisurf Metrology Enterprise Suite is a premium, integrated software suite for full-spectrum metrology professionals who want the ability to complete both general and application-specific 3D metrology tasks. It is also the Verisurf suite of choice for specialty and general-purpose job shops requiring the ability to tackle any conceivable metrology opportunity.

The Metrology Enterprise Suite includes CAD, MEASURE, BUILD, ANALYSIS, REVERSE, and AUTOMATE aggregating all Verisurf system capabilities, including:

- Full-spectrum inspection (including full CAD modelling)
- Scan and probe data analysis, editing and management
- CMM programming
- Real-time tool building
- Reverse Engineering

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Application Suites Data Sheet

INSPECTION SUITE
Measure anything; rapid align/inspect/report workflow, get nominal dimensions from imported CAD; easy to expand as needs grow, cost-effective.

- ✔ Fastest device-to-part alignment
- ✔ Read any CAD file
- ✔ Automate inspection plans
- ✔ Inspect to blueprints or CAD
- ✔ Use any CMM or tracker
- ✔ Import, annotate, edit GD&T
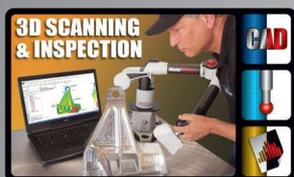
3D SCANNING & INSPECTION SUITE
Do it better! Compare probe or scan data from *any* source to CAD. Best fit to reduce scrap and rework. Create stunning, customized color reports.

- ✔ Compare pointclouds to CAD
- ✔ Measure any feature type
- ✔ Automatic probe compensation
- ✔ Plus - compare meshes to CAD
- ✔ Granular best bit control
- ✔ One-click alignment, analysis, report

* offline version available

CMM PROGRAMMING & INSPECTION SUITE
Slash inspection plan setup from hours to minutes with almost no learning curve.
Do it on *any* fixed CMM in an intuitive, click-and-build visual interface.

- ✔ Run Verisurf on any CNC CMM
- ✔ Preview path/probe motion
- ✔ Programming skills not required
- ✔ Create plan while another runs
- ✔ Drag-and-drop interface
- ✔ Re-use plans on any device

* offline version available

TOOL BUILDING & INSPECTION SUITE
Verify design compliance faster. Position subassemblies precisely by comparing to nominal CAD. Set details in seconds with real-time feedback right on the shop floor.

- ✔ Real-time 3D deviation display
- ✔ Fast detail alignment
- ✔ Rapid assembly to nominal CAD
- ✔ Intuitive, graphical BUILD arrow
- ✔ Ideal for plumb and level
- ✔ Easy scribe and trim line positioning

3D SCANNING & REVERSE ENGINEERING SUITE
Create solid CAD models starting from any physical part in record time. A unique product designed exclusively for pointcloud to 3D, solid CAD model workflows.

- ✔ Fast part-to-CAD model process
- ✔ Extensive point cloud editing
- ✔ Robust, integrated CAD modeler
- ✔ Import, scan/measure, and mesh
- ✔ Precise alignment tools
- ✔ Advanced *Power Surface* tool

* offline version available
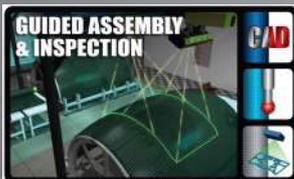
GUIDED ASSEMBLY & INSPECTION SUITE
Eliminate costly and awkward hard tooling. Transition from CAD to laser-projection guided assembly in minutes. View projection program changes live on your tooling.

- ✔ Non-contact detail positioning
- ✔ Full CAD modeling capability
- ✔ Use all popular laser projectors
- ✔ Projection programs from CAD
- ✔ Highlight non-visible features
- ✔ Import CATIA composite ply data

METROLOGY ENTERPRISE SUITE
All of Verisurf's capabilities integrated into a single, easy-to-learn and use experience that gives operators the capacity to execute any conceivable metrology workflow.

- ✔ Ideal for job shop flexibility needs
- ✔ Multiple levels of automation
- ✔ Import CAD data from any source
- ✔ Easy import/export to/from CAD
- ✔ Use any measuring device
- ✔ Includes all core Verisurf capabilities

Application Suites

Verisurf Modules

Verisurf Modules	Inspection	3D Scanning and Inspection	Offline Inspection	CMM Programming and Inspection	Offline CMM Programming	Tool Building and Inspection	3D Scanning and Reverse Engineering	Offline Reverse Engineering	Guided Assembly and Inspection	Metrology Enterprise
CAD *(required for all configurations)* • Read any proprietary or universal CAD file type • Import, create, and edit associative MBD (GD&T) • Interrogate CAD model for dimensions • Create and edit solid CAD models • Use any portable or stationary measuring device	●	●	●	●	●	●	●	●	●	●
MEASURE • Measure any type of geometry feature • Guided, graphical device/part/model alignment • Create stunning reports in multiple formats • Instantly analyze and display surface deviations • Learn mode builds inspection plans while measuring	●	●	●		●	●			●	●
ANALYSIS • Analyze deviations by comparing pointclouds and meshes to CAD • One click alignment, deviation analysis, and report creation • Automatic probe radius compensation • Best fit analysis of points and pointclouds to surfaces and holes • Report and annotate analysis results with continuous color plots		●	●							●
AUTOMATE • No programming; build inspection plans for any CMM graphically • Automatic CAD feature recognition when constructing plans • Display probe paths and simulate motion before running • Simple, form based parametric control of probe movement • Use the same saved inspection plan on any measurement device				●	●					●
BUILD • Position objects in 3D space using real-time graphical feedback • Position or adjust object to assigned tolerance values • Graphical build arrow displays direction and distance to nominal • Use with gravity-based devices to plumb and level objects • Position scribe and trim lines on complex surfaces easily						●				●
REVERSE • Create CAD models suitable for mfg. from part measurements • Build mesh surfaces and solid models • Easily align multiple, scanned pointcloud objects to each other • Create CAD geometry from pointcloud or mesh cross sections • Fully automated CAD surfacing from pointclouds and meshes							●	●		●
PROJECT • Position objects using all common laser projection devices • Import CATIA composite ply data to create projection programs • Replace or eliminate hard tooling and templates • Program and edit layouts on the fly to see effects immediately • Reveal features not visible on projection surface									○	