

# Scan Data Software Suites

*Easily create 3D solid models from scan data or compare point clouds and meshes to nominal CAD models in minutes*



## Unique Suites Make Best Use of Scan Data for Manufacturing

Verisurf scan data suites empower manufacturers with affordable inspection and reverse engineering solutions that ensure product quality, reduce waste, and expedite workflows to improve overall business profitability. Educators benefit from discounted suites while students enjoy the free home learning software edition.

### SCAN DATA INSPECTION SUITE

**Easily import 3D scanner point cloud or STL mesh formats. Automatically analyze scan data to extract and compare features to CAD nominal with intelligent GD&T. Save reusable, automated inspection plans to support high-volume production.**

The Verisurf Scan Data Inspection Suite integrates Verisurf's CAD and ANALYSIS modules to tackle inspection challenges using imported point cloud data. Verisurf's CAD-based architecture reads all popular CAD file formats with intelligent GD&T as the inspection nominal and imports all common 3D point cloud and mesh data formats. Create and customize colorful deviation reports highlighting any nonconformance between measured parts and nominal CAD - all in a Windows-standard graphical interface that always delivers a superior user experience.



### SCAN DATA REVERSE ENGINEERING SUITE

**Quickly import point cloud or mesh scan data and create manufacturable, 3D CAD models. A unique product designed for point cloud to solid model workflows.**

Verisurf's Scan Data Reverse Engineering Suite is uniquely suited for any 3D reverse engineering project starting with importing point cloud or mesh scan data. The suite features an extensive set of tools for managing, merging, hole filling, smoothing, filtering, meshing, and surfacing both point cloud and mesh data. Because all Verisurf solutions are CAD-based, the suite also includes an extensive set of tools for completing a clean, smooth and water tight, printable STL file or a fully featured solid model with detailed drawings and intelligent GD&T.



### SCAN DATA REVERSE ENGINEERING AND INSPECTION SUITE

**Combines functionality of both scan data suites above. Adds the ability to analyze and report on the accuracy of CAD surfaces derived from scan data.**

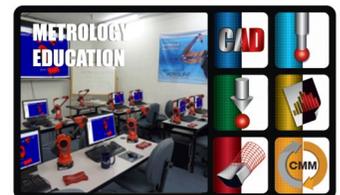
The Scan Data Reverse Engineering and Inspection Suite offers the best choice for manufacturing professionals who need the flexibility to support both of these workflows. Quickly generate detailed reports and colored model plots that illustrate conformance or deviations between scan data and the original or reverse-engineered CAD model based on tolerance limits.



### METROLOGY EDUCATION SUITE

**The Metrology Education Suite for educational institutions includes all Verisurf modules at a fraction of the cost. Exclusively for the needs of technical educators and their students, the Metrology Education Suite presents students with the opportunity to develop the metrology skills employers seek.**

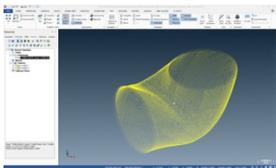
The Verisurf Metrology Education Suite is a premium software bundle suitable for performing a broad spectrum of metrology tasks. It is the logical next step to extending popular CAD/CAM training programs to include reverse engineering, tool building, and inspection skills development. Import all common 3D geometry file types, connect to any common scanner, fixed or portable measuring device, or work offline with imported point cloud or mesh files. Can be used for both scan- and probe-based inspection, tool building, reverse engineering, CMM programming, guided assembly, and more - the Verisurf Metrology Education Suite has it all.



# See the Difference

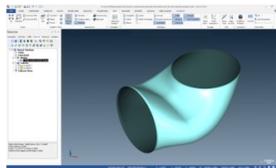
3D scanning technologies have seen dramatic improvements in accuracy, resolution, and price in recent years - making them ideal for metrology applications when used in concert with capable software. With its ability to handle virtually any scan-based workflow, Verisurf is the natural choice for both inspection and reverse engineering applications based on scan data.

*(photo: cobra-head-shaped downpipe (shown installed) reduces exhaust gas restrictions to increase performance. Corresponding reverse engineering workflow steps below.)*



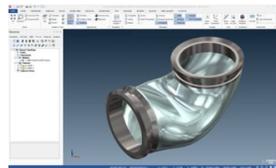
imported point cloud

- Opens native scan file formats directly
- Reads point cloud and mesh data
- Color scans



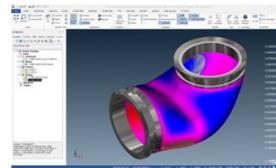
STL mesh surface

- Extensive meshing and mesh editing
- Refine, smooth, crop, export to CAD
- Fill holes



CAD solid model

- Integrated NURBS-based CAD modeler
- Multiple, advanced surfacing tools plus *Power Surface*
- Easily build 3D solids from scan data



deviation analysis

- Analyze to nominal or derivative CAD
- Integrated translation validation
- Colorful, informative deviation reports



manufactured part

- Seamless integration with Mastercam CNC
- Write to STL for 3D printing (incl. color)
- Export any format for downstream use

## Why Verisurf?

- 3D scan data processed by Verisurf provides a fast and economical means for creating CAD models from sample parts in order to take advantage of model-based manufacturing. This process is also ideal for updating current designs or for creating CAM programs of new designs based on prototypes.
- Verisurf quickly evaluates the accuracy of reverse-engineered models by analyzing the scan data to the model to identify deviations between the CAD representation and the physical part.
- Verisurf is the only scan data management system with complete 3D surface modeling, solid modeling and drafting.
- Verisurf can be configured specifically for your workflow



## Scanning Technology Overview

**Stationary Structured light** 3D scanning technology measures the deformation of projected structured light patterns on a surface. The sensor typically remains stationary while scanning. Advantages include speed, resolution, and the ability to capture complex profiles. Verisurf excels at filtering, meshing, and surfacing the dense, 3D scan data sets produced by structured light scanners.



**3D Laser line** scanners measure the intersection of a plane of laser light with a surface to generate 3D data. Handheld versions provide portability and high articulation during data capture while programmable CMM and robot mounted types provide repeatability and automation. Verisurf easily registers multiple, individual scan passes to existing CAD geometry (or to each other) prior to surfacing and creation of a 3D CAD model.



**Optical Tracker** technologies use an optical tracker sensor to track targets rigidly mounted to a handheld laser line scanner. Although the optical tracking sensor needs to maintain a line-of-sight with the handheld scanner these systems provide mobility, support larger working volumes, and feature excellent resolution.



**What about color?** Scanners with color cameras can capture high-quality color information if required for visual clarity, 3D printing, or documentation. Verisurf easily handles color point cloud data and derivative color meshing.

Contact Verisurf Software now to request additional information, schedule a demo, or request a quotation for your organization's needs.

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