

What's New in Verisurf 2025: *Release Highlights*

Optimize every moment for success with Verisurf 2025
Because at Verisurf, It's About Time.

AUTOMATE



- *Infinite positioning of 5-axis non-contact vision measurement of features*
- *Ideal for parts with large number of holes as small as 0.5mm*
- *High performance sensor for fast exposures with maximum light contrast*

RENISHAW VISION PROBE SUPPORT

The Renishaw RVP vision-probe captures an image of the part and determines feature position and size based on contrast by creating points at the dark-to-light transition, which are then fitted to a feature. A digital read-out displays the captured view, with crosshairs marking the nominal feature location. The RVP is designed to measure features such as circles, lines, slots, and ellipses, as well as 2D profile.



- *Infinite positioning of 5-axis non-contact structured light measurement of complex free form surfaces*
- *Precise and aligned point clouds for inspection and reverse engineering*
- *Automatic exposure compensation for a variety of materials, surface colors and textures*

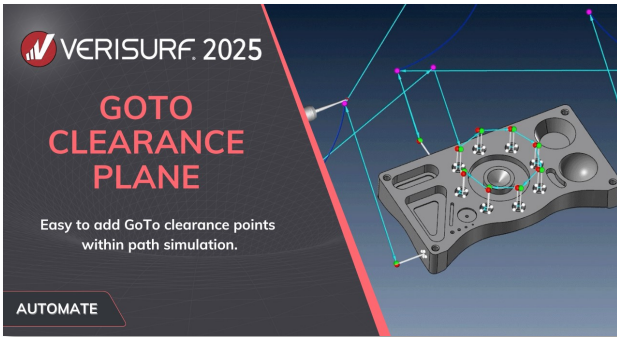
RENISHAW FRINGE PROBE SUPPORT

The Renishaw RFP fringe probe is a 3D structured light scanner that operates by taking multiple scans which are combined into a pointcloud. These 3D scans can be used to calculate feature geometry or to inspect surface-profile tolerance condition. The results can be used to create analysis reports featuring deviation color maps. The RFP also has vision capabilities similar to the RVP which allows it to be used in the most efficient mode for both 2D and 3D feature measurement.



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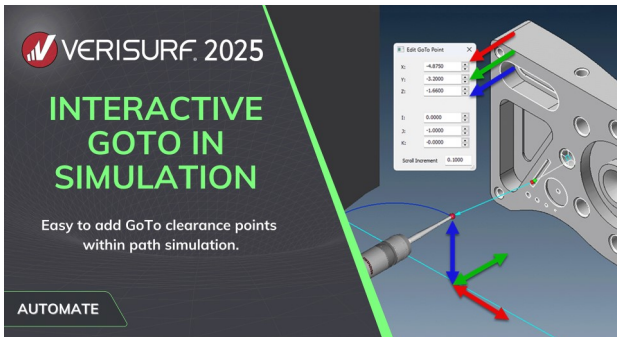
AUTOMATE



GoTo Clearance Plane

Verisurf simplifies CMM programming and collision avoidance through Clearance Planes for Goto points in an inspection plan. These points move the probe to a plane on a specified level above the extent of the model in the z axis direction. The path between features is free of collisions and the probe clears the part during probe change articulation. Path simulation verifies the clearance moves in conjunction with the rest of the path around the model.

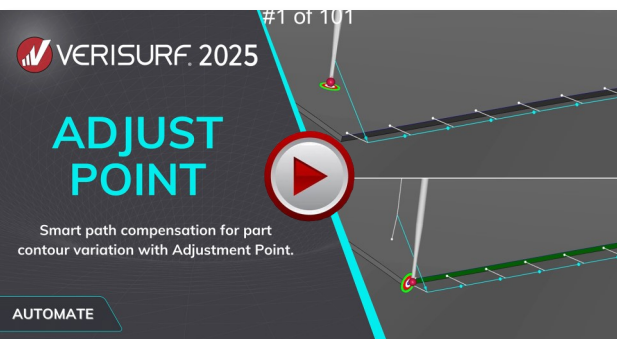
- The Clearance Plane option makes it easy to create Goto points in an inspection plan.
- Select the features above which to create a clearance plane, enter the distance above, and GoTo Points are automatically created at that level above the highest feature.
- Simulation confirms the new path clear of obstructions and probe movement as planned.



Interactive GoTo in Simulation

Verisurf makes it easy to create collision free inspection paths through the enhanced ability to add GoTo points interactively during path simulation. If a collision is detected during simulation, either manually or through the use of Verisurf's Collision Detection tool, a Goto point can be added at the probe location and then adjusted to avoid a collision. This can be used to add Goto points wherever necessary for a collision free path around the part or hold downs that might impede the probe.

- Easily add GoTo points interactively during CMM path simulation.
- In simulate mode, stop or drag the probe to the point before the indicated collision and simply scroll to a suitable GoTo location for clearance.
- When five axis moves are enabled, the vector of the Goto point can also be modified to ensure the correct approach to the feature.



Adjust Point

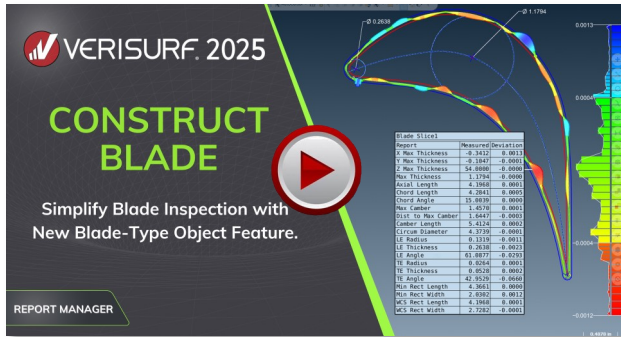
Verisurf simplifies the inspection of thin edges and shallow features through an adjustment point option for inspection paths. When the parent surface of a thin part such as a sheet metal stamping deviates from nominal contour, it can result in failed probe hits due to the material being outside of its nominal location. Verisurf solves this problem through the use of adjustment points and corrected probe path to restore the locations of the nominal edge points.

- Simplifies the inspection of thin edges and shallow features through the addition of an adjustment point option for inspection paths.
- Adjustment points added to the probe path modify the locations of the nominal edge points to compensate for out of place edge surfaces.



What's New in Verisurf 2025: Release Highlights (cont'd)

REPORT MANAGER



- Profiles are analyzed to the model individually, to create a series of analysis objects for reporting.
- Display cross section results for the border, leading edge, trailing edge and maximum inscribed circles including camber-line; chord-line; and the centerline ribs.
- Inspection reporting of key parameters including max thickness, chord length, camber length, max camber, leading edge and trailing edge thicknesses, radii, and angles.

CONSTRUCT BLADE

Blade analysis works with data measured in Verisurf or imported from a file. Cross-sections can be probed with a CMM; grid-slice filtering can be used to capture cross sections during scanning; or Create Slice can be used to extract cross-sections from a cloud-or-mesh. When a blade object is created from an analysis, Verisurf constructs the actual geometry from the point-cloud and extracts the nominal values from the model.

REVERSE

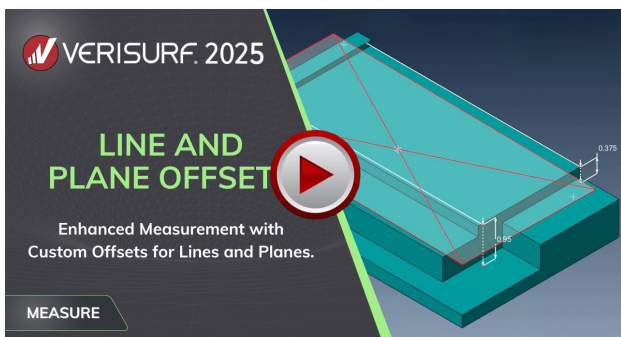


- Roll and Unroll works with all clouds and meshes, even those converted from CAD.
- Unrolling a scan facilitates part inspection, where the nominal values are provided from a 2D drawing, for example, which are designed flat and then rolled into shape.
- Scan data can also be rolled into a form that can be compared to a model of the working part.

ROLL AND UNROLL

When a part with an axis of symmetry is scanned, the resulting cloud or mesh object can be unrolled by specifying the radius or diameter and the axis around which the scan is rotated. The axial profile does not need to be constant, so scans with repeating and unique patterns can be unrolled. The same tool can be used to roll up the scan of a flat, in part by specifying the diameter and axis. These tools are essential in applications such as rotary dyes and barrel cams, where a thorough understanding of the rolled and unrolled geometry is required.

MEASURE



- Measurement of lines and planes now include use of custom offsets for calculated measurements.
- Used when a measured plane is defined by three points on two or more parallel surfaces that are offset from one another.
- When a 2-point line is measured on a stepped edge, the step value can be determined using a 2-point dimension and entered as the offset.

LINE AND PLANE OFFSET

Verisurf 2025 enhances the measurement of lines and planes through the addition of settings that enable custom offsets. When the plane is measured Verisurf calculates a plane that's tangent to the probe, offset by the defined values. The resulting plane accounts for both probe and custom offsets. Offsets work in a similar manner for lines. When a 2-point line is measured on a stepped edge, the step value can be determined using a 2-point dimension and entered as the offset.



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ANALYSIS

WAVINESS ANALYSIS

Verisurf 2025 extends the power of Analysis through the addition of an enhanced Waviness function for clouds and meshes. Waviness can be used to analyze range, average, and deviation based on a round or square sampling zone. This analysis can be applied to both flat and contoured surfaces. Waviness is the absolute value of the difference between the highest and lowest deviations of the initial analysis within the search radius. This value is often referred to as local profile, and is typically reported when inspecting a part.

- *Enhanced waviness analysis for clouds and meshes.*
- *Analyze range, average, and deviation based on a round or square sampling zone.*
- *Deviation Waviness helps identify the high and low areas on a part. This information is used both for reporting and for reworking a surface.*

REVERSE

ENHANCED ACCESS TO EDIT MESH

Verisurf 2025 streamlines the use of mesh data by providing access to the Edit Mesh dialog from multiple operation managers. Edit mesh can now be run from the toolbar or speed menu and the Reverse Manager, or by double clicking a mesh in the Measure, Analysis, and Manager tabs. Fast access to mesh editing is important because of the broad range of new scanning devices that output mesh.

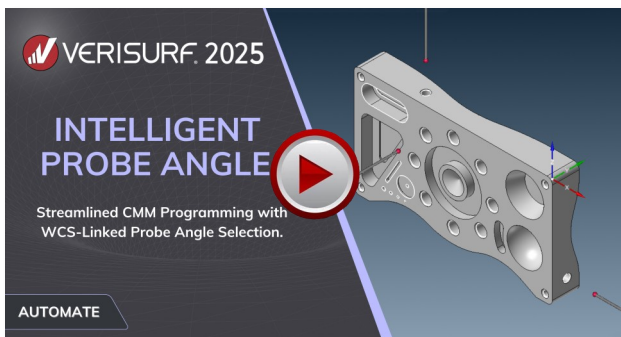
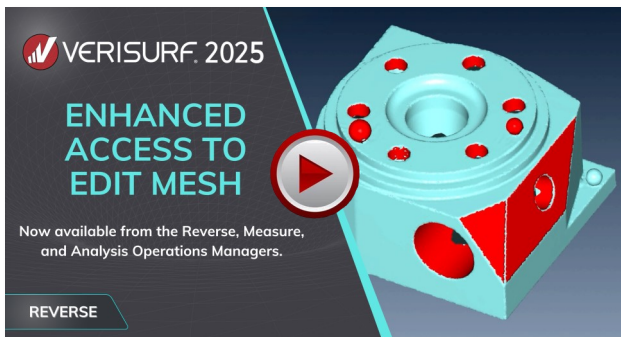
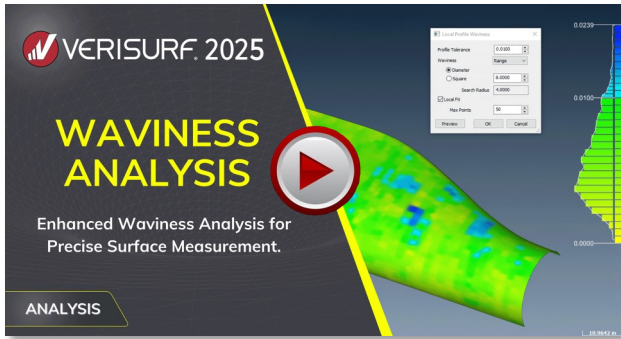
- *Enhanced Edit mesh can now be run from the Reverse, Measure, or Analysis Managers.*
- *Fast access to mesh editing is important with many new scanning devices outputting meshes.*
- *Both inspection and reverse engineering workflows require access to mesh editing tools.*

AUTOMATE

INTELLIGENT PROBE ANGLE

Verisurf 2025 streamlines the use of mesh data by providing access to the Edit Mesh dialog from multiple operation managers. Edit mesh can now be run from the toolbar or speed menu and the Reverse Manager, or by double clicking a mesh in the Measure, Analysis, and Manager tabs. Fast access to mesh editing is important because of the broad range of new scanning devices that output mesh.

- *For CMM programming the intelligent probe angle is associated with a Work Coordinate System (WCS).*
- *Changes to the WCS are reflected in intelligent probe angle.*
- *Simply select "Update WCS for Probes" to automatically set new probe angles based on the revised WCS.*





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ANALYSIS

PROJECT TO SURFACE MESH

Verisurf enables faster analysis through an option to project points to a mesh generated from a surface. When analysis speed is paramount, Verisurf provides a setting to create a mesh from the target surface based on a maximum cordal offset. The mesh is automatically created in the background and during analysis, measured points are compared to the nominal mesh instead of the surface. Projecting points to a mesh offers much greater speed than projecting to a surface.



- *Faster analysis through an option to project points to a mesh generated from surfaces.*
- *Cut the time it takes for profile analysis of complex shapes.*
- *Especially helpful for parts with a lot of surfaces and for large pointclouds.*

Get Verisurf 2025