

New SpatialAnalyzer Version: SA 2025.1&2

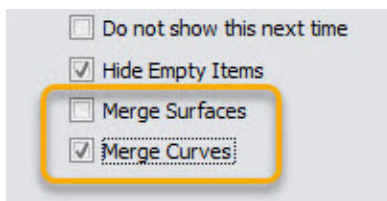
One of the significant advantages of SpatialAnalyzer is that development occurs at a brisk pace. New feature requests, bug fixes, and changes are implemented quickly, giving you the opportunity to start taking advantage of newly implemented features in a very short period of time.



SpatialAnalyzer

EXPANDED DIRECT CAD IMPORT TO INCLUDE MERGE OBJECTS

Some CAD formats can include thousands of items within them. Importing these files and then sorting and condensing them within the SA tree can take pose a challenge. There are now an intelligent options to merge surfaces and curves (b-splines) as part of the selective CAD Import process. This option condenses tree items based on the CAD's inherent structure and can greatly reduce the number separate pieces built within the SA tree on import.

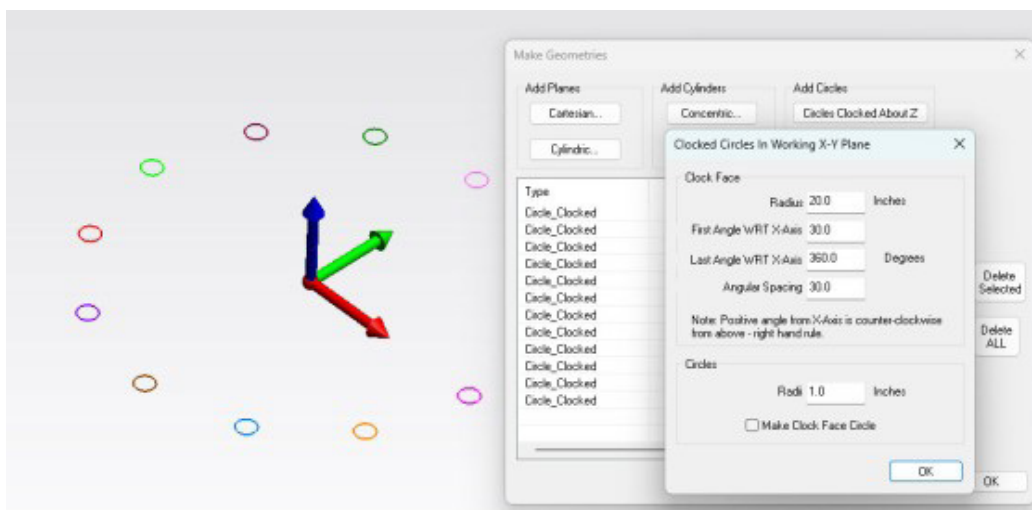


CROSS SECTION MEASUREMENT

Added New Multi-Geometry Building Tool

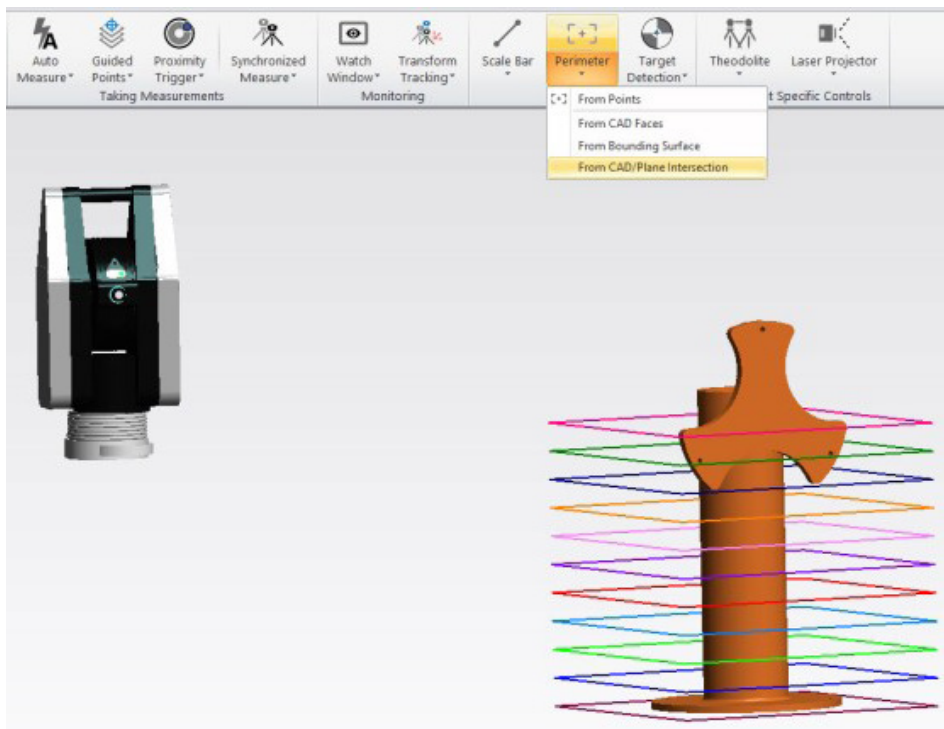
A new tool has been added to easily define and construct a series of items at one time. This tool works great for creation of geometries for cross section cuts as an example. Several options are included:

- ▣ Planes at set distances along selected working frame axes
- ▣ Planes rotated at set intervals about working frame z-axis
- ▣ Concentric cylinders centered on working frame z-axis



Perimeter Construction Options

Added a new construction option to create perimeters „From CAD / Plane Intersection“. This uses a selected instruments perspective to build a set of open perimeters for cross section measurement.



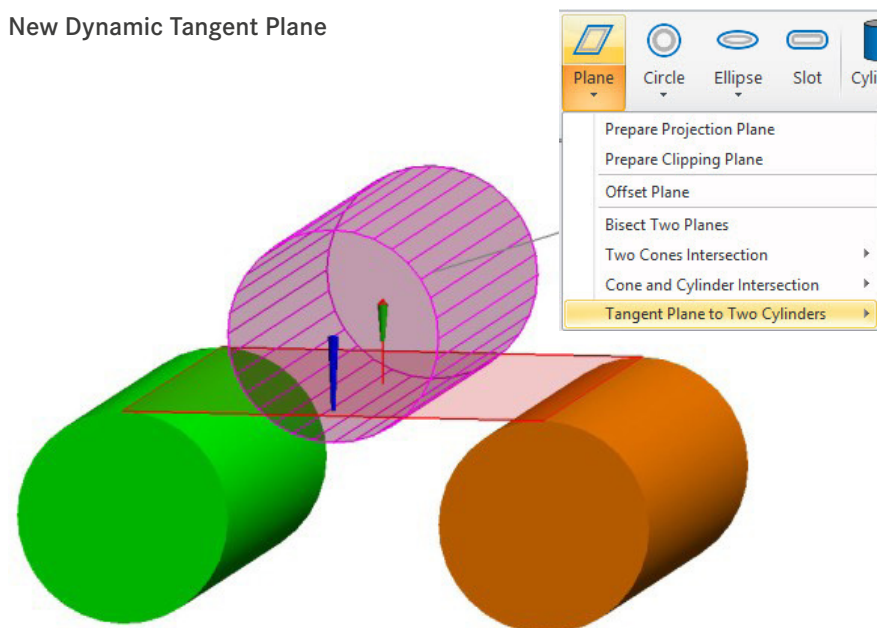
Expanded Cross Section Clouds

Cross-section clouds can now be build directly through measurement. It is now possible to scan directly into a cross section cloud with devices like the Leica ATS600.

- ▣ The default mode for the ATS600 Line Scans is now „Linear“ and a new method Separate Cloud Per Line is now available to facilitate this measurement method which will produce a scan stripe cloud as the measurement result for easy analysis.
- ▣ An additional construction method has been added to allow separate clouds in the tree to be combined into a cross section cloud.

UPDATES FOR ROLLER ALIGNMENT

New Dynamic Tangent Plane



There is now an option to build a dynamic tangent planes based upon the selection of two nominally parallel reference cylinders. Selection is available for all 4 possible tangent variations (top, bottom and both angles).

Impingement Plane for Cylinders

The impingement plane concept was added to aid in roller alignment applications. The idea being that the reference roller should be set at a given depth relative to a tangent plane set by the two adjacent rollers. The 3 Impingement criteria are computed dynamically to return statistics on these values.

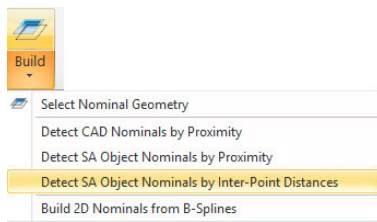


See an example here: [2025.1 What's New in SA: Roller Alignment](#)

FEATURE INSPECTION UPDATES

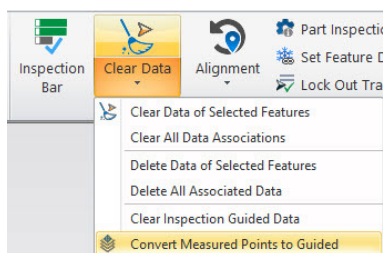
Detect SA Object Nominals by Inter-Point Distances

A more advanced option has been added to detect and add nominal items to measured GR-Features. This option allows point reducible features like circles, slots and spheres to find their nominal based on the spacial distribution in the job file, prior to alignment. This new function works great for applications such as initial part alignment after scanning. For example you can now import CAD and build nominal features from it, scan the part and directly extract desired alignment features from the cloud. This new tool can then be used to directly match up nominal and measured features in one go. This works great when performing a Nominal Geometry Relationship alignment for example.



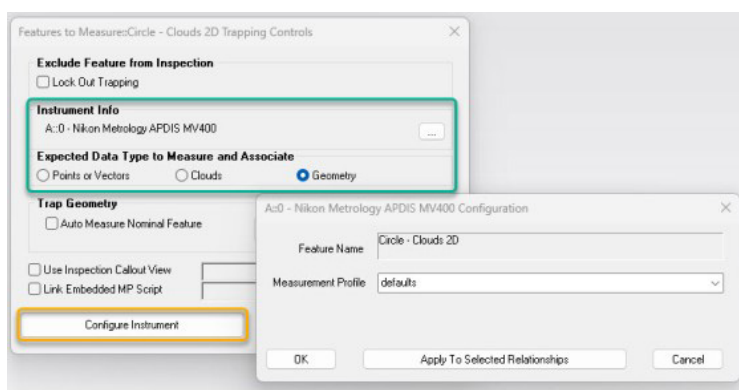
Convert Measured Points to Guided

Guide points can be very helpful for inspection and they can also be used for auto measure operations. The Convert Measured Points to Guided option offers the ability to directly convert a measured set of features into a template that is pre-configured with guide points. The same operation is available on R-click Relationships branch menu. Added new menu option „Clear Inspection Guided Data“ to remove guided points from the assigned relationships.



Expanded Trapping Controls for GR-Features

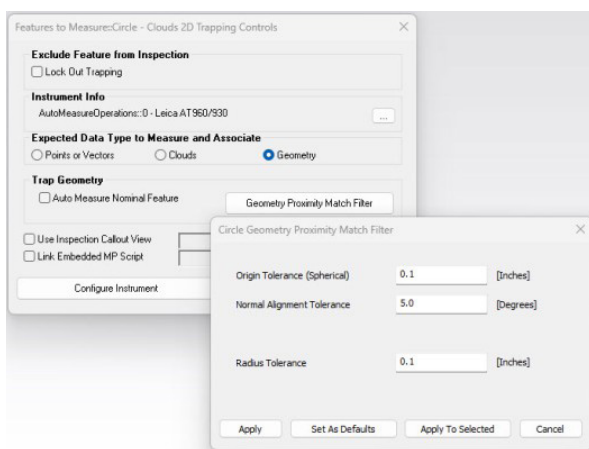
A selection of helpful updates have been made to the *Trapping-Controls* dialog and the options it offers.



- When Clouds are selected a directly link to the proximity filter options is provided.
- Added ability to apply Trapping Controls to the selected relationship of the same type. The new functionality is applicable to all relationships that have Trapping Controls option.
- The application opens a Target Watch Window for sequential trapping instead of the Closest Point watch window.
- Modified Inspection Callout View assignment in the Trapping Controls dialog on checking “Use Inspection Callout View” option. User can create new callout view or select existing one.
- Added Trapping Controls option to the following dialogs: Average Point Relationship Properties, Geometry Relationship Properties, Points to Objects Relationship Properties, Cloud to Objects Relationship Properties.

Expanded Multi-Feature Trapping

There is now an option to trap geometry using multi-feature trapping. The geometry acceptance tolerance settings have also been added to the trapping controls:



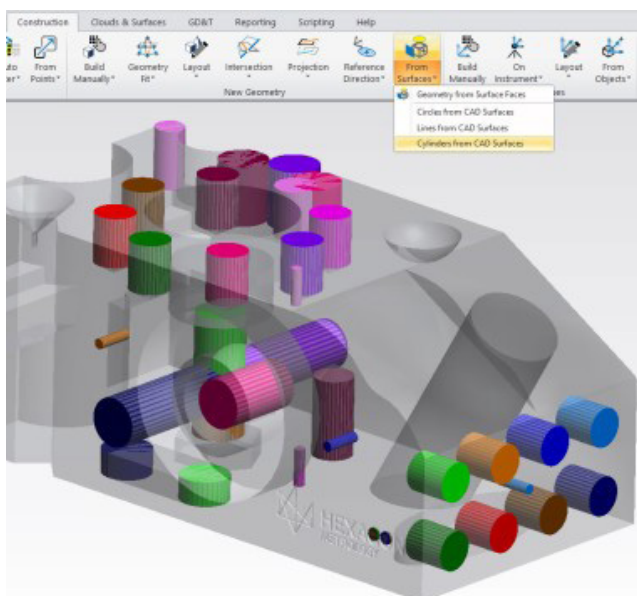
The Measure Batch of Features command now includes Sphere's and Cylinder geometry. The Trapping Controls dialog within each GR-Feature includes a Geometry selection control to aid in building a template for these measurements.

 See an example here: [2025.1 What's New in SA: Trapping Controls](#)

CONSTRUCTION OPERATIONS

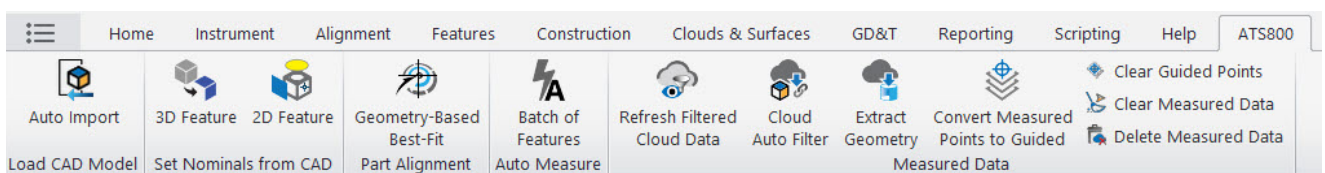
Cylinder Construction

Added Construct Cylinders from CAD Surfaces to the list of extractions available within the From Surfaces options.



LEICA ABSOLUTE TRACKER ATS800 - HEXAGON

This version introduces the new Leica Absolute Tracker ATS800 laser tracker. This is a unique instrument that can operate both as a precision laser scanner and as a traditional laser tracker.



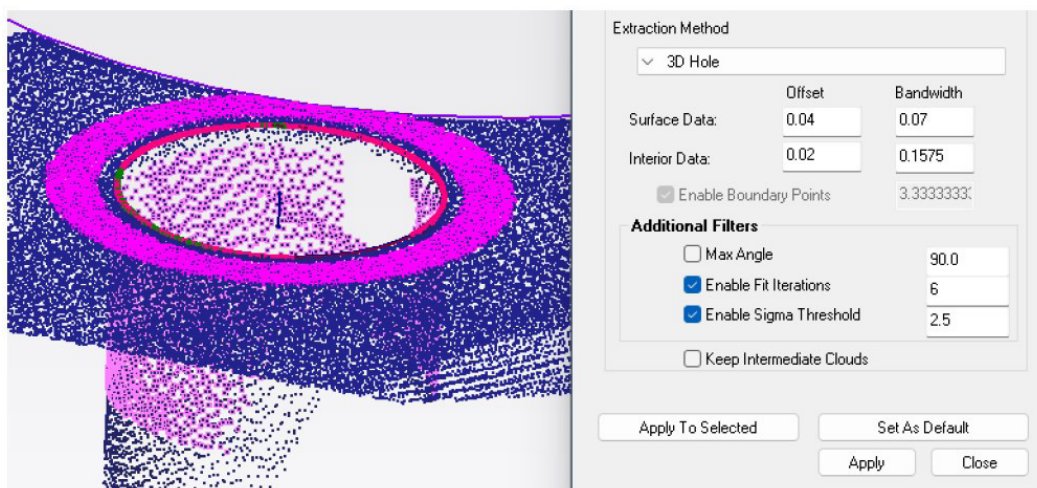
POINT CLOUD OPERATIONS

Cloud Based Feature Extraction Refinements

Feature based cloud proximity filtering has been greatly expanded and improved in this version for both 3D and 2D extractions relative to a nominal feature.

These enhancements include:

- ▣ Improvements to the Ringband cloud extraction process to ensure adjacent features don't influence the extraction process.
- ▣ Precision scanners such as the ATS800 exclude interior points based on the probing direction.
- ▣ Both an iterative outlier rejection process and a sigma threshold are now available for noise reduction.



- ▣ Slot extractions have also been greatly improved, including control over the boundary point detection threshold.

New Cloud Format- Now Available

A new cloud format has been added to SA to help facilitate both visualization and performance with large point clouds.



This includes a right-click *Split Cloud* option for simplified cloud editing. This allows an operator to select a portion of the cloud and hide all points but those selected. This selection can then be edited directly or saved as a separate cloud. Right-click again to restore the full cloud display.

NEW INSTRUMENTS ADDED

API iLT Laser Tracker

The latest API iLT Laser Tracker is now supported. This new tracker is significantly smaller than the other Radian laser trackers. This version includes API's latest SDK and support for the vprobe.

Further new and updated commands can be found [online](#).

