

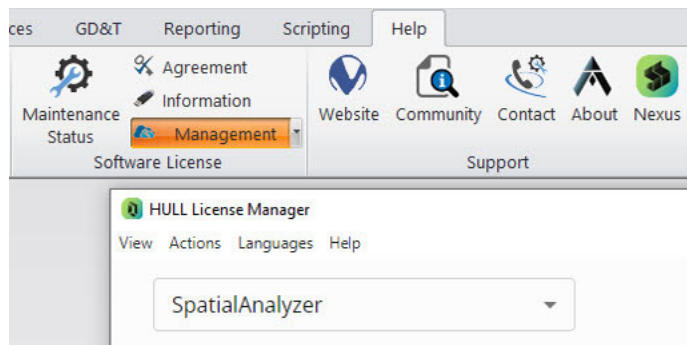
New SpatialAnalyzer Version: SA 2024.1

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.



NEW LICENSE FORMAT AVAILABLE

This version introduces a new licensing strategy. The Hexagon Unified Licenses Library (HULL) is now integrated within SA allowing connection to the Hexagon License Manager (HLM) application. Please contact Support for more details.



PERFORMANCE IMPROVEMENTS

Improvements in graphical performance have been made in this version to facilitate high speed measurements in several forms. Point Cloud scanning operations, Frame Sets measurements, Point Sets measurement operations.

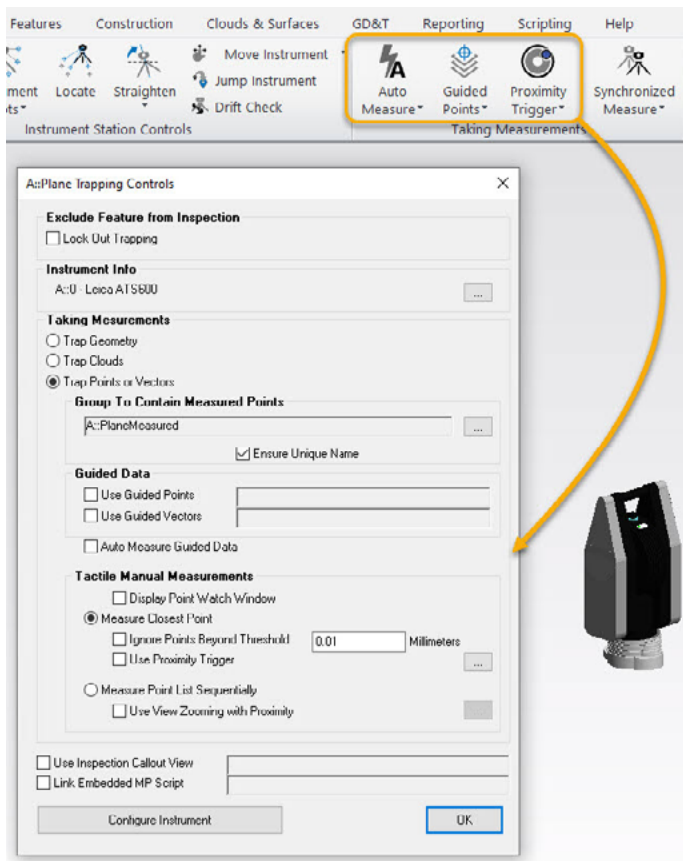
FEATURE INSPECTION

Feature Inspection Controls

SA 2024.1 introduces the ability to fully template a feature inspection process through incorporating advanced measurement methods. This significance expands SA's feature measurement automation capabilities in any SA license package. These updates includes:

- ▣ Guide Points or Vectors for Measurement
- ▣ Watch Window Display and ability to use view zooming
- ▣ Ability to set a point rejection threshold
- ▣ Ability to perform Proximity triggers automatically
- ▣ Ability to simply perform an Auto Measure

To configure a relationship, simply right-click and select the new **Trapping Controls** option. This will open a dialog to offers full control over how to measure the selected feature.



RELATIONSHIP FITTING

Improved relationship optimization fitting with collections by adding a conditional update flag for blob changed update notification for point collections.

Due to potential interactions between relationships as a consequence of dynamically created geometry, all “dirty” relationships independent of their use for calculating the objective function value are now forced to be recalculated subsequent to each solver move.

CLOUD BASED INSPECTION

Instrument View

Added option to view cloud scan stripe points from Instrument mode, “Use Scan Stripe for View Focus”.

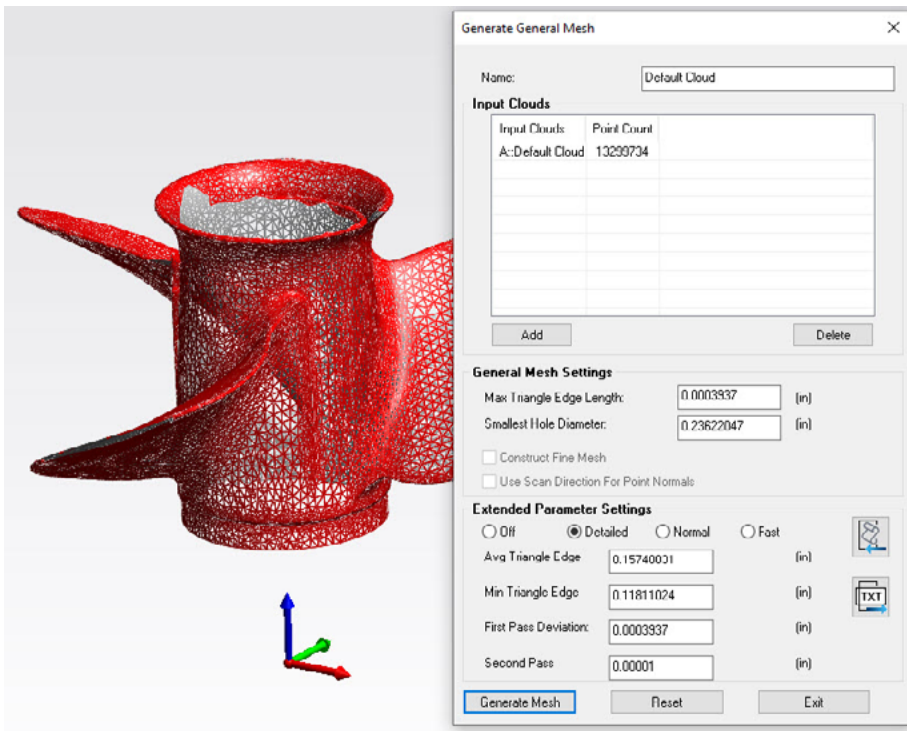
Changed the right-click menu item to be a check box control named, “Enable Viewpoint from Instrument Updates”. This allows the updates to occur without having the dialog popup visible.

Direct Cloud Extraction

Now asserting uniqueness for “Extract Geometry From Clouds” function such that for each instance of the interface, only one geometry object of the search type will be added at the same proximate origin, orientation, and size. Multiple searches of the same cloud region will no longer produce redundant geometry results.

Meshing

SA's meshing tools have been expanded in this release. The old "Extended Parameter" meshing option has been replaced with a new meshing service that is directly available as part of the General Mesh dialog:

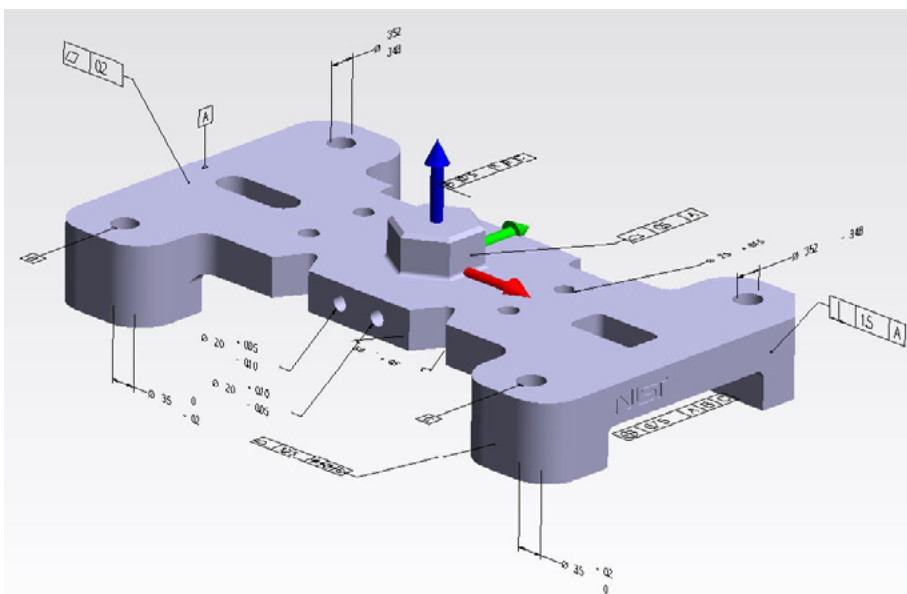


This new tool offers 3 presets (Detailed, Normal, and Fast) as well as direct access to 4 additional core parameters. But it also offers export and import capability allowing access to all settings and the direct use of pre-configured settings based on a JSON file.

GD&T IMPROVEMENTS

GD&T Import

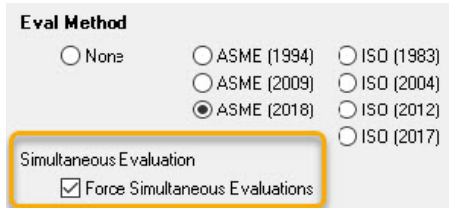
Added semantic annotation parsing to support the import of STP files. This represents a significant improvement in standard format annotation import capability and includes debugging tools to identify issues in CAD file annotation problems.



Simultaneous Evaluations

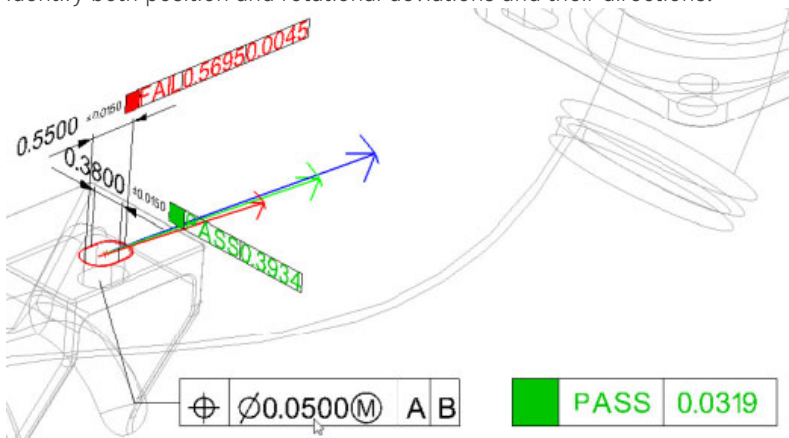
A significant effort was made to support the ASME standard default that directs Profile and Position checks with a common datum reference frame to be evaluated simultaneously by default. Like High Point, there is now a default control in the GD&T user Options that can be enabled that will enforce simultaneous evaluations.

Manual simultaneous evaluations for a particular datum frame can also be performed and MP support is now available for all controls.



Reporting

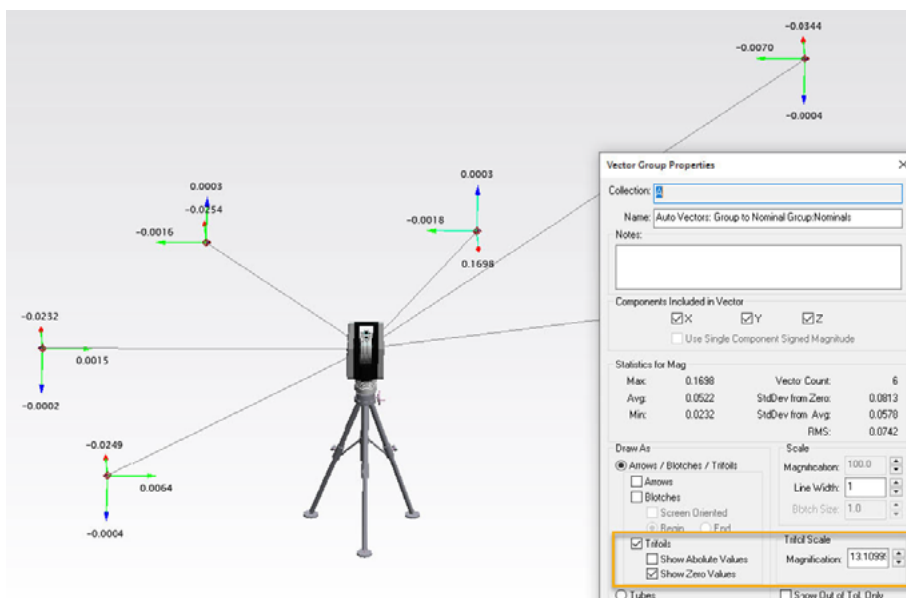
Added graphical vector display to feature checks on slots, similar to those for circle features. This includes 3 points to help identify both position and rotational deviations and their directions.



REPORTING

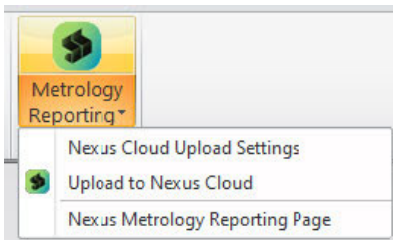
Trifoil Vectors

Added a “Trifoil” vector group display mode for vectors. Much like a small frame this deviation display shows the direction of the deviation components in the working frame and is ideally suited for large construction jobs where relative scaling of vectors is difficult.



Metrology Reporting Connection

There is now a connection control directly within SA on the Reporting tab that facilitates connecting to Nexus and Metrology Reporting. This makes uploading your job for shared visualization and analysis a simple process.



INSTRUMENT UPDATES

All Laser Trackers

Added [Wait for Target](#) option which facilitates single operator measurement operations with a reflector, such as Drift Check and Measure Nominal Points. If you use the Measure Multiple button the tracker can now point at a target and wait. When you catch the beam it will start a “Wait for Stable” mode, and as soon as you measure it will point you to the next target.

New level Indicator

A new Level Indicator has been to the tracker interface to help identify when a level compensation such as Orient to Gravity (OTG) or Virtual Level are enabled. This status can have important implications and is now clearly indicated.

Laser Projectors

Added Projection Filters within the LAP interface.

MP/SDK SCRIPTING UPDATES

New Commands

- ▣ [Construct Perimeters from Surface Face List](#). Allows a set of perimeters to be built from a list of surface faces and returns both bounding and exclusion perimeters.
- ▣ [Create Point Uncertainty Cloud Point Sets](#). Facilitates creation of uncertainty clouds as usable point locations for further analysis.
- ▣ [Get Geom Relationship Criteria Name List](#). Offers an option to build a list of criteria names using the name index and reporting order.
- ▣ [Import Polyworks File](#). Offers an option to import a Polyworks File.
- ▣ [Make Surface Face List from Surfaces](#). Offers an option to build a list of surface faces from a selected surface.
- ▣ [Set Cylinder Properties](#). Offers an option to directly edit the properties of an existing cylinder.
- ▣ [Set Global Force Simultaneous Evaluation](#). This command is used to modify the option within the Users Options>Analysis>GD&T options.
- ▣ [Set Point Weights From Uncertainties](#). Offers an option to build a set of points with adjusted weighting using a selection of normalization modes.
- ▣ [Show/Hide Inspection Bar](#). This command offers the ability to display the standalone Inspection bar instead of the toolkit.

Instrument Specific Commands:

- ▣ [Multi Measurement Initiate](#). Offers a means to send a start measurement command to multiple instruments at the same time (note that synchronization still depends on the speed of the instrument response).
- ▣ [Multi Measurement Stop](#). Works with the Multi Measure Initiate command to offer a handy way to stop operations for multiple instruments at one time.
- ▣ [Edit Scan Perimeter Profile](#). Currently only supported for the Hexagon ATS600 tracker, this command offers the ability to directly edit scan regions saved in a measurement profile.
- ▣ [Align Laser Projector](#). This command will initiate the manual alignment procedure using the referenced points.

Updated Commands

- ▣ Added an argument for a list of exclusion perimeters to the [Scan with Perimeter](#) command
- ▣ Added arguments to support trifoil vector group display mode to both [Get](#) and [Set Vector Group Display Attributes](#)
- ▣ Added an option for forcing moved observations to become active for [Move Measurement Observation](#) command.
- ▣ Added optional parameter within [Generate General Mesh](#) to reference a JSON file, used as an input to the new meshing engine.
- ▣ Added graphics settings to [Get Cylinder Properties](#).
- ▣ Added simultaneous evaluations controls to [Evaluate Feature Check / Checks](#) options.

Additional Instrument Operational Check command have also been added:

- ▣ [Level Compensator On/Off](#) . For use with Laser Trackers.
- ▣ [Set SearchRadius Degrees \[\]](#). For use with the LAP projector

