

One of the 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.

2020.07.20

Language Support

- Added Japanese to SA's list of stock languages
- Updated the German translation file
- Improved language translation control for custom languages and language editing.

Ribbon Menu Improvements

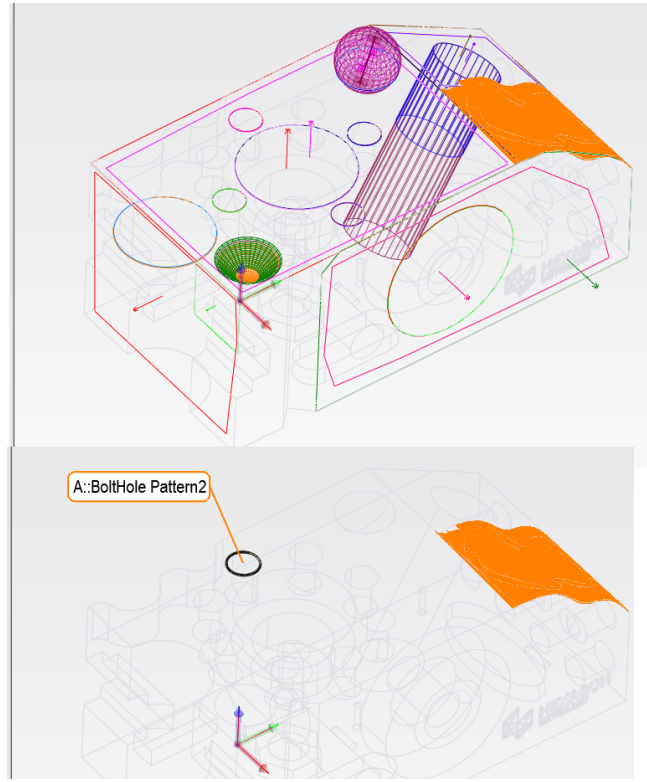
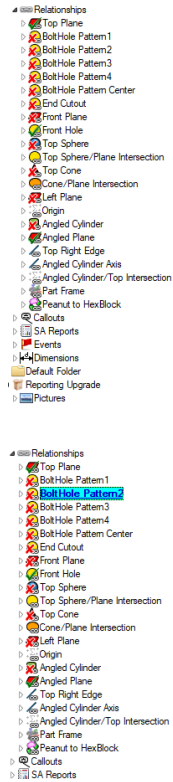
- Expanded ribbon screen tooltip caption to indicate group name and button name in case when screen is small and button names are hidden
- Added many new buttons to support the new functions discussed below.

GR-Feature Inspection Enhancements

Show only Option for GR-Features

An option was added to hide all but the selected relationship. This can make feature inspection a much easier and clearer process. This can be enabled through a right-click option in the tree.

Demo available here: <https://youtu.be/0AY7J63Po24>



CAD Button for GR Construction

There is now a single button that can be used to extract any geometry type from a CAD model. It also searches the surrounding faces and links the specific CAD faces to the geometry to facilitate filter operations.

Demo available here: https://youtu.be/iKpusk_HKNM

Cloud/Mesh Enhancements

Improved Clipping Plane Options

Modified behavior of “Prepare Clipping Plane” so that the affected clipping plane does not activate until the actual geometry becomes valid. This facilitates defining a clipping plane by scanning a surface.

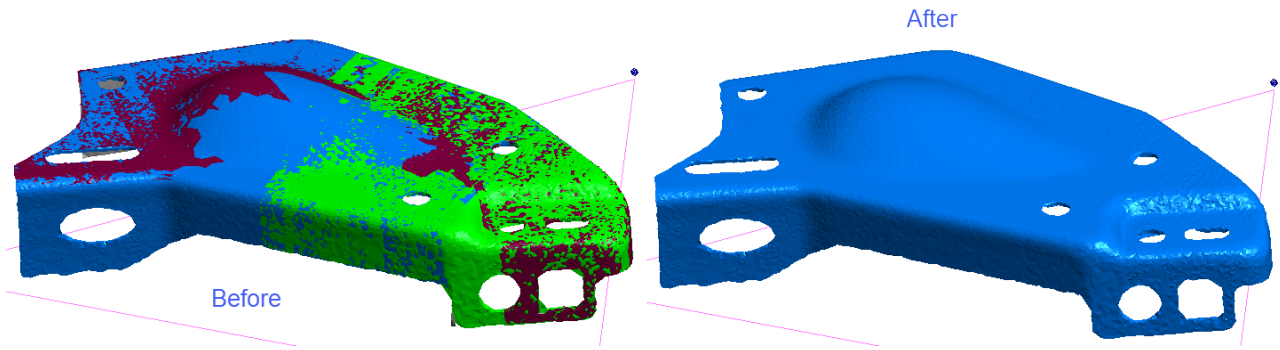
Hole Filling for Meshes

Added capability for filling in missing areas for a scan stripe mesh.

Combine Meshes

We have the ability to combine meshes by stitching them together.

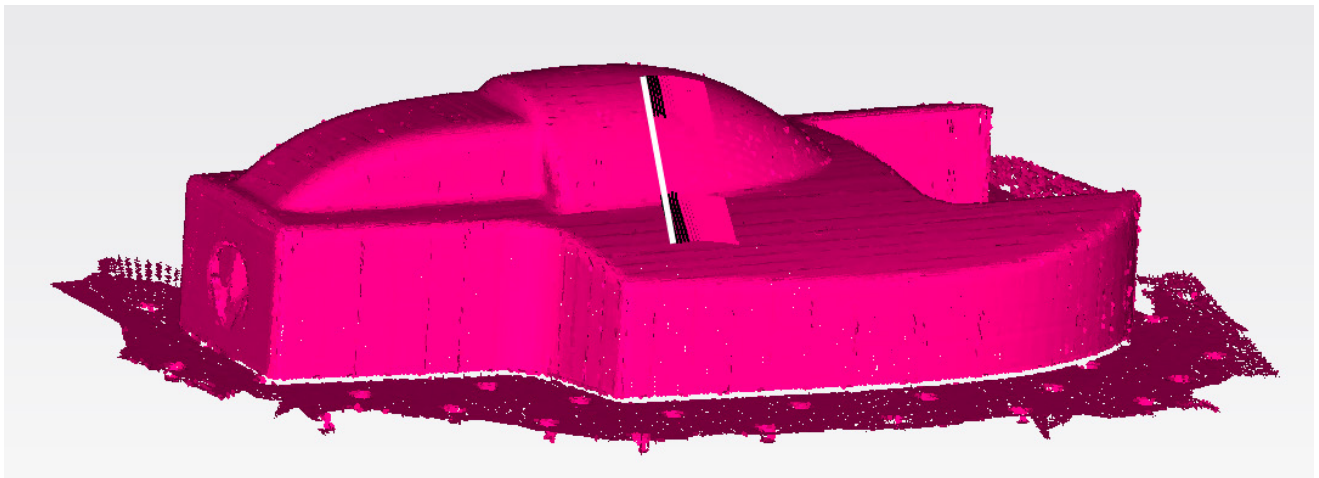
Demo available here: <https://youtu.be/7kfCvx8qOBc>



Voxel Pseudo Surface Mode

We can now compute a local normal for a voxel on the fly while scanning and display a voxel much like a mini-surface. This employs surface lighting like a surface and looks more realistic. It is also computed following the initial cloud data lines, making the current scanner line easy to identify:

Demo available here: <https://youtu.be/lzTV3lK4rVg>



Improved RGB Color Controls

The RGB Filtering control has been expanded to offer both the ability to display a cloud using the embedded color values independently or in grey scale. It also offers the ability to remap the contrast to improve grey scale visualization. This can be very helpful for viewing scan data with embedded color or intensity information (such as from an AT5600 scanner or imported e57 file from a room scanner)

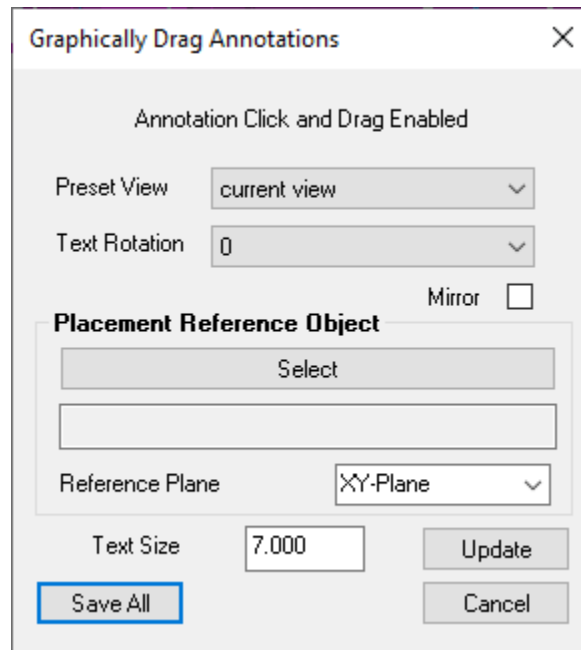
Demo available here: <https://youtu.be/m11ufArEKJU>

GD&T Enhancements

Annotation Placement Control

Our “Drag Annotation” placement control has been greatly expanded to help facilitate annotation placement. Movements can be restricted to a defined plane such that 3D depth can be ignored. This dialog also now includes a text sized control.

Demo available here: <https://youtu.be/-ToXGkd1hyQ>



Sort Capability has been added

Annotations, Datums and Feature Checks can now intelligently be sorted in the tree based upon a number of criteria including alphabetic, numeric, by type and by feature.

Automatic Surface Face Selection

Features are now extracted when you select a surface face and the additional faces that represent that feature are also directly selected. This accelerates annotation construction and facilitates auto-filter operations.

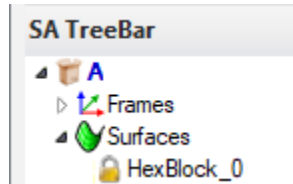
Additional Analysis Functions

Lock Objects

The ability has been added to lock Objects. This blocks any attempt to edit an object’s transform in any way, ensuring that its position cannot be changed. This capability applies to:

- Instruments

- SA Objects (excluding objects associated with an instrument)
- Surfaces, Polysurfs, and Meshes



Added View Control

SA graphic control has been expanded with a frame reference control that makes it easy to spin the graphics about a selected frame's axis.

Improved Point Set Interaction

- Refined selection method for individual frames in a frame scan set to support differentiation between frames with coincident origins but different orientations.
- Added support for F2 and graphical selection of Point Set and Frame Set

Import Export Improvements

- Modified STL file export such that it is no longer necessary to consolidate mesh prior to export thereby significantly reducing time required to export a compound mesh.

Direct CAD Import

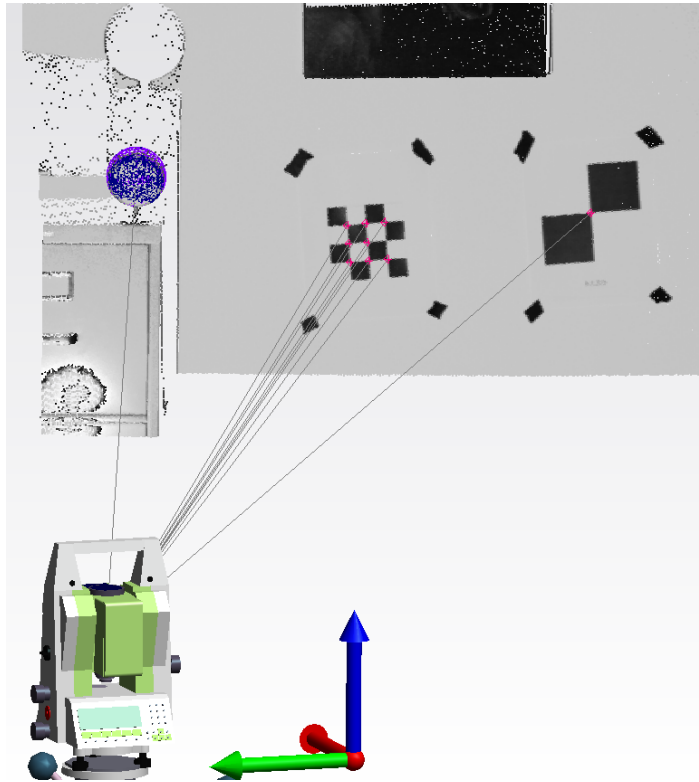
- Added "Surface Compatibility Mode" to import settings. When enabled, adapts each surface (brep) in the imported CAD to improve compatibility. Try enabling this when running into import problems with specific CAD files
- Added "Explode Surfaces" to import settings. When enabled, individual surfaces will be created for each face in the imported model. Individual face colors will be set as the object colors, preserving more of the color information from the model during import
- When importing surfaces which do not have names. If importing into folders matching CAD hierarchy, the enclosing folder name is used. The same approach is now used for collection naming also (applicable when importing into folders).

Instrument Developments

Detect Intensity Target Points from Scans

New intensity target detection has been added for triangular and circular targets.

Demo Available here: <https://youtu.be/BSBPYRHYfm0>



Pre-Voxel Data Reduction

There is now the ability to thin the data as it is passed to SA using a voxelization analysis that keeps only the best cloud point representing a defined volume. This can dramatically reduce file size and simplify feature analysis.

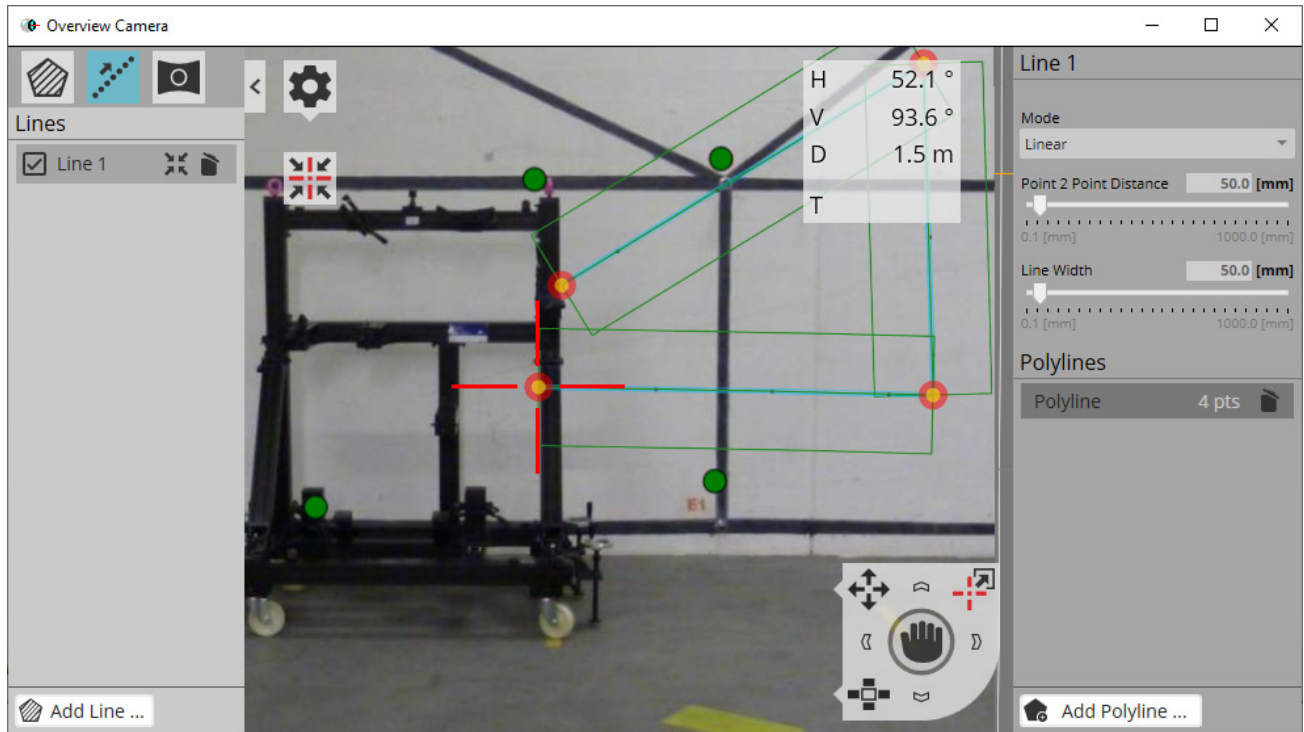
Added Support for new ATS600 tools

This version includes support for the newest ATS600 capabilities released in their Firm Ware version 1.1.0.678 including:

- A simple and direct Instrument Toolbar mode
- Line and Polyline and Ring Scans
- Direct measurement from the Overview camera

For more information and video demos see the following link:

<https://kinematics.force.com/SA/s/article/ATS600-Quickstart-Guide>



Expanded Shank Measurement Capabilities

The AT960 and T-probe can be used both for probing and shank measurements and this version expands the plane measurement capability within the profile.

Demo Available here: <https://youtu.be/hXnoj4ov1GA>

Aicon Updates

New accelerated data transfer method added to pass points from Move Inspect and DPA to SA.

Scripting Enhancements

- **Run Powershell Script.** This will facilitate the printing of EXCEL files to PDF files and opens to door to a number of custom applications.
- **Lock Imported Items.** Controls the default behavior of the import process.
- **Lock/Unlock Selected Items.** Provides a means to control the locked status of items already in an SA file.
- **Set Object Reporting Frame.** Provides a means to set a reporting frame for an existing object.
- **Get Object Reporting Frame.** Returns the reporting frame for a given object.

- **Make a Collection Object Name Ref List - By Type and Color.** Returns objects which are of the specified type AND have the specified object color
- **Color Comparison.** Allows comparing 2 color values and specifying the allowable deviation in red/green/blue components.
- **Set Target Computation Options.** This controls the User Options Settings for Target Computation Method.
- **Set Decimal Digits for Display.** Controls the User Options setting for decimal display.

Branching versions were already available, but “(result)” options provide result only versions for analysis and SDK applications:

- **Color Comparison (result) .**
- **String Comparison (result).**
- **Boolean Comparison (result).**