New SpatialAnalyzer Version: SA 2021.3

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.



Starting with the 2021.3 release, SA has adjusted the version number to include the date in the version format: <year>.<release #>.<mmdd>.<minor #>

The <build #> in 2021.2 has been replaced by <mmdd> field which defines the month and day of the build. Finally, the <minor #> field is a sequential number for the build of that day.

INSPECTION IMPROVEMENTS

Relationship Construction with Alignments

Repeating alignments just got easier. A simple alignment now creates a relationship that can directly be used to repeat an alignment.

- **Best Fit.** This will now generate a group to nominal group relationship
- Cuick Align. This will now generate a points to surface faces relationship
- Align Cloud to CAD. This will now generate a clouds to objects relationship

Each relationship includes a right-click menu option to Execute Alignment. This provides a simple means to repeat a prior alignment.

Swatch (Surface Pt) Relationships

Surface point analysis has been simplified even further. Name control and template creation has been greatly improved.

Clouds to Objects/faces Relationships

Clouds to Objects or Clouds to CAD Faces relationships can now be included in an inspection list and use for trapping.





Cross Section Cloud Improvement

Added user selectable planes for cross section cloud builder.

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L.	Cross Section Cloud Input Clouds Cross Section Input Clouds A::Default Cloud	>	Add Delete
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Moved Clipping Planes to Features Tab

By popular demand the clipping plane controls have been moved from the Clouds and Surfaces tab of ribbon to the Features tab. This seem lines the measurement process when scanning a part and extracting features.

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GR-FEATURE IMPROVEMENTS

Expanded Cylinder fit Control

Added options for asserting additional fit constraints for cylinders. These include the ability to hold the axis and/or orientation of the nominal reference feature, providing fit axial constraints for cylinder geometry relationships.

Lonstraints		
🗌 Constrain Radius	1.0	Inches
Constrain to Nominal G	ieometry Axis	
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Master Criteria Edit Panel

A master criteria panel is now available in the properties for geometry relationships that allows easy access to and editing of any and all criteria settings including tolerances.

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GD&T INSPECTION UPDATES

A single point sphere is now supported

Devices that scan a sphere and return a single point to SA, such as the Laser Radar scanning a tooling ball, can now be used more seemliness with GD&T inspection routines.

Added Pin/Hole High Point Evaluation

With High Point enabled in the GD&T Options circles, ellipses and spheres will now respect the Pin/Hole designation in the Feature Check properties and fit using either a Max Inscribed or Min Circumscribed fit.

INTERFACE IMPROVEMENTS

Simplified Selection and Visualization

Extended the middle mouse button Graphical Center and Ctr+middle mouse button Show/Hide function to the branch level of categories in the tree. Added select by color and by wild card match to the F2 item selection dialog.

WATCH WINDOW IMPROVEMENTS

Added New Projected Point to Objects Watch

The watch window will project the current live point position to the reference object(s) by an amount corresponding to the live point offset value in the direction opposite the reference objects normal. The data for this resulting point is then displayed relative to the measured object(s).



Ability to Zero a Watch Window

Any row of a watch window can now be zero'd through a simple double click. This saved off set is noted in the row and can be removed at any time.

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d	Zero Y-Axis Component	
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Expanded Watch Window Tolerances

Added asymmetrical tolerance settings for point to objects watch windows.

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Watch windows will now gray out text after three seconds without a refresh.

REPORTING IMPROVEMENTS

Hyper-links added to Callouts

Callouts can now be configured with a hyper-link to files, URLs, embedded files, MPs and Charts. Once configured the hyper-link reference can be accessed by double-clicking on the callout in the graphics.

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Added Signed Magnitude in Component Vector Reporting

Vector group magnitudes when based on a single cartesian component may now be optionally activated to control displayed magnitude result.



Expanded Transform and Feature Reporting

Greater transform reporting has been added to the instrument history. This should now provide a detailed log of each move made by an instrument, making it easier to follow the operations in a job file.

- Added date/time stamp information to report table for instrument alignments -- measure nominal points, cloud to CAD, cloud to MESH.
- Added measured group to report table for instrument alignments in Measure Nominal Points.
- Added nominal and actual geometry to geometry relationship report tables.

A Position Lock has been Added to SA Reports

SA Reports can now be configured such as to lock the position of all report items without preventing them from updating or being edited. This will aid greatly in report layout and organization.



NEW CAD IMPORT LIBRARIES

Added Formats:

3MF 2020

Updated Formats:

AutoCAD DWG 2018, RealDWG 2021, AutoCAD 2019, CATIA V5_6R2021, JT 10.5, NX 1953, Parasolid 33, Revit 2021, Rhino 3D 7, Solid Edge 2021, Solidworks 2021

NEW EXPORT FORMAT

Q-DAS Export

SA now offers an export format that can be imported into Hexagon's Q-DAS application, which offers advanced Statistical Process Control capabilities.



Q-DAS export has been implemented for appropriate relationships, GD&T checks, dimensions, and vector groups.



