Inspire Overview

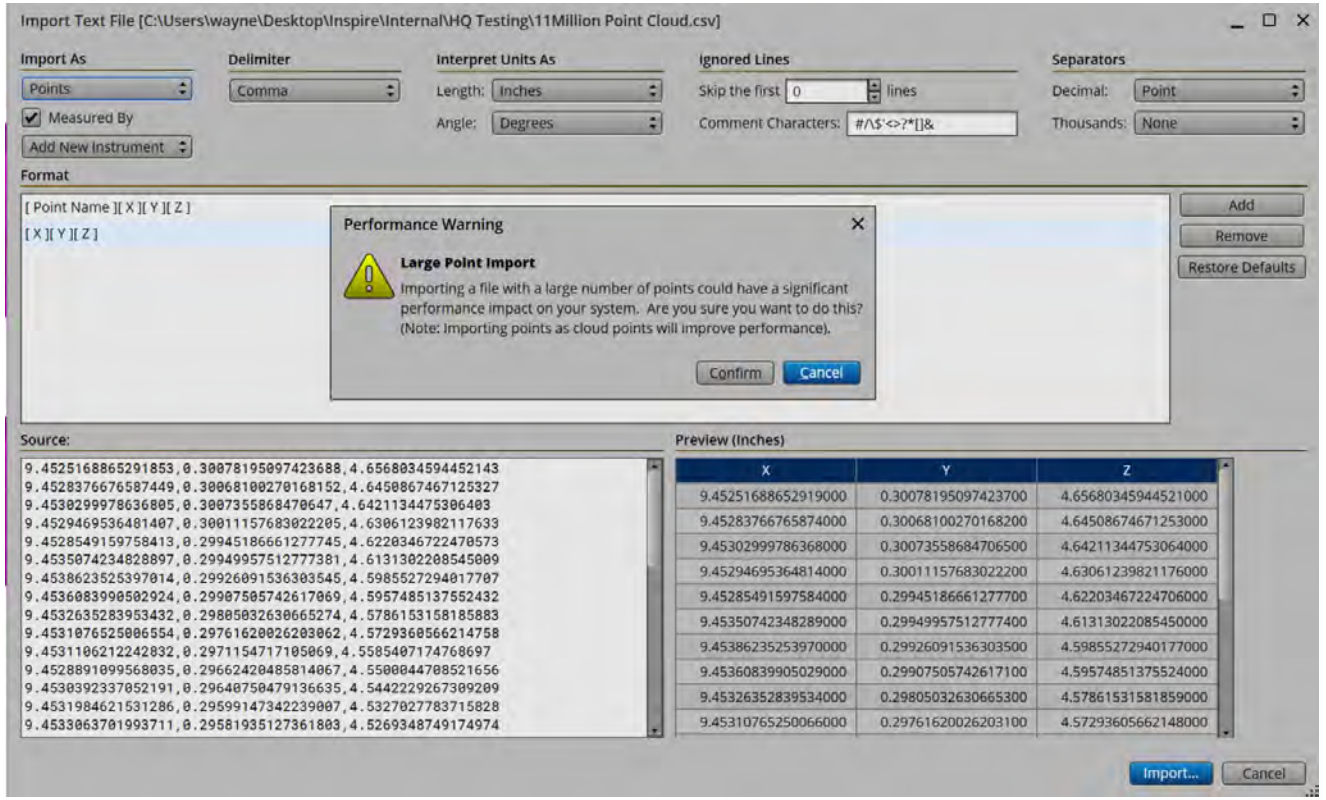
2019 Development and Enhancements

Version 1.0.9.115

Imports and Exports

Imports and Exports

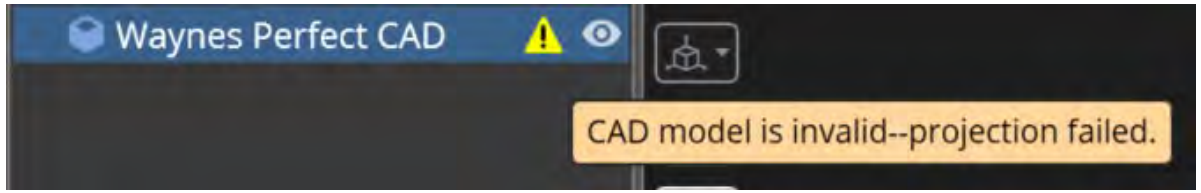
- Improved Drag/Drop Behavior
  - Warnings and notifications if you import a large point set
  - Improved methods for formatting different text files into Inspire



Inspire

Imports and Exports

- C.A.D.
  - Imported CAD now has an analysis performed. Any CAD model errors will be indicated in the tree with a yellow flag



Instruments

Instruments

- ATS600
  - Added support for the new target-less Laser Tracker
  - Create an OVC window around the desired measuring objects

Instruments

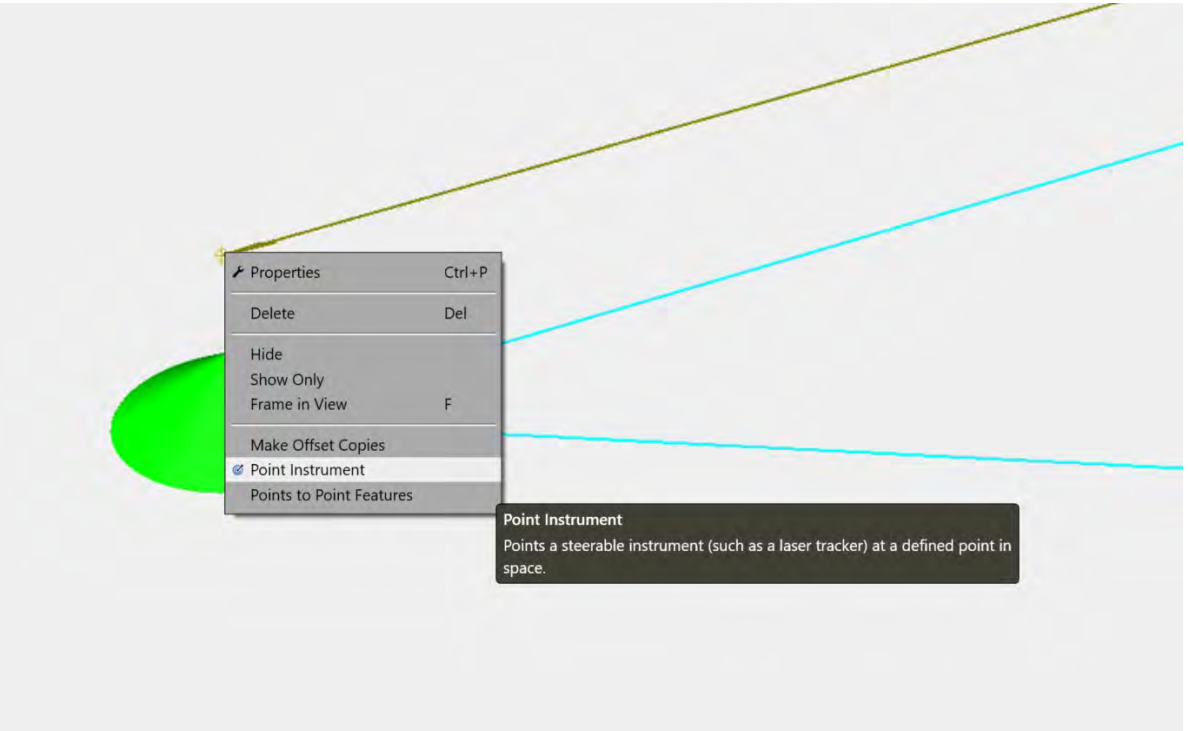
- Leica 40x
  - Acquisition Mode
    - Updates and improvements for acquisition of points
    - Improved Light displays to match current acquisition mode

Instruments

- API Updates
  - Virtual Level Warning
    - When performing it will notify the user of the possibility of moving measurements

Instruments

- Point Instrument Command
  - You can now complete this command from the feature in the main graphics
    - Right click on the point and then select “Point Instrument”



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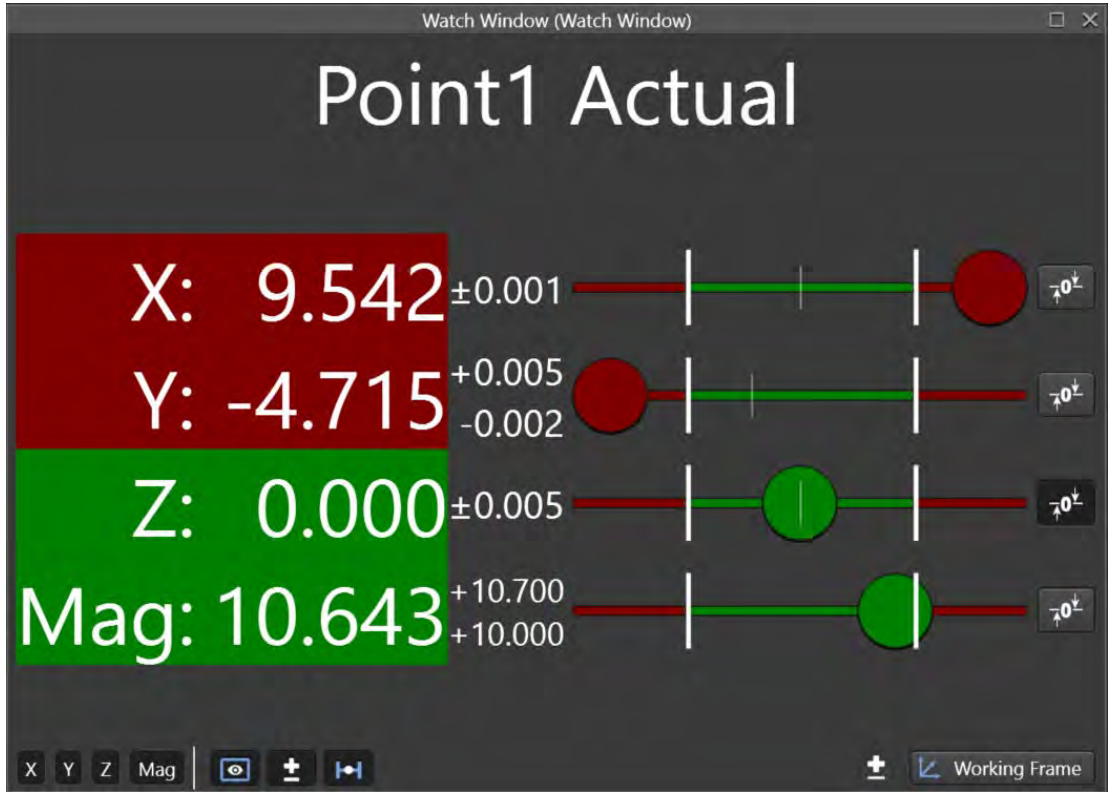
Instruments

- Watch Window Improvements
  - Improved the appearance and visibility of tolerances



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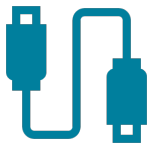
Alignments



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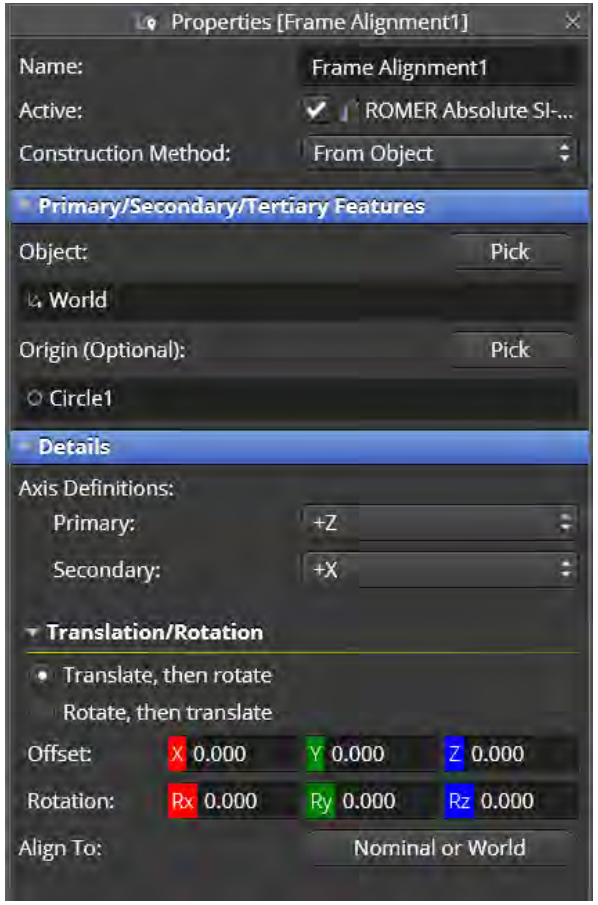
Alignments

- Frame Alignments
  - From Features
    - Based off the frame's primary, secondary and tertiary/origin input from point reducible or directional features
  - From Object
    - “Object” is any object that has a position and orientation in space (and therefore defines a frame)
    - “Origin” is any object that has a position in space and will be used to define the origin of the new frame. If left empty, the origin of object will be used for the frame origin



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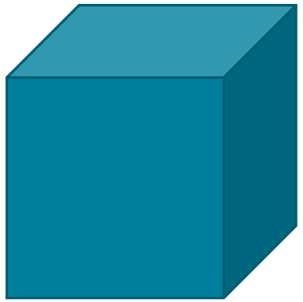
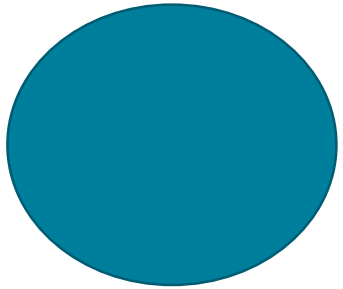
Features





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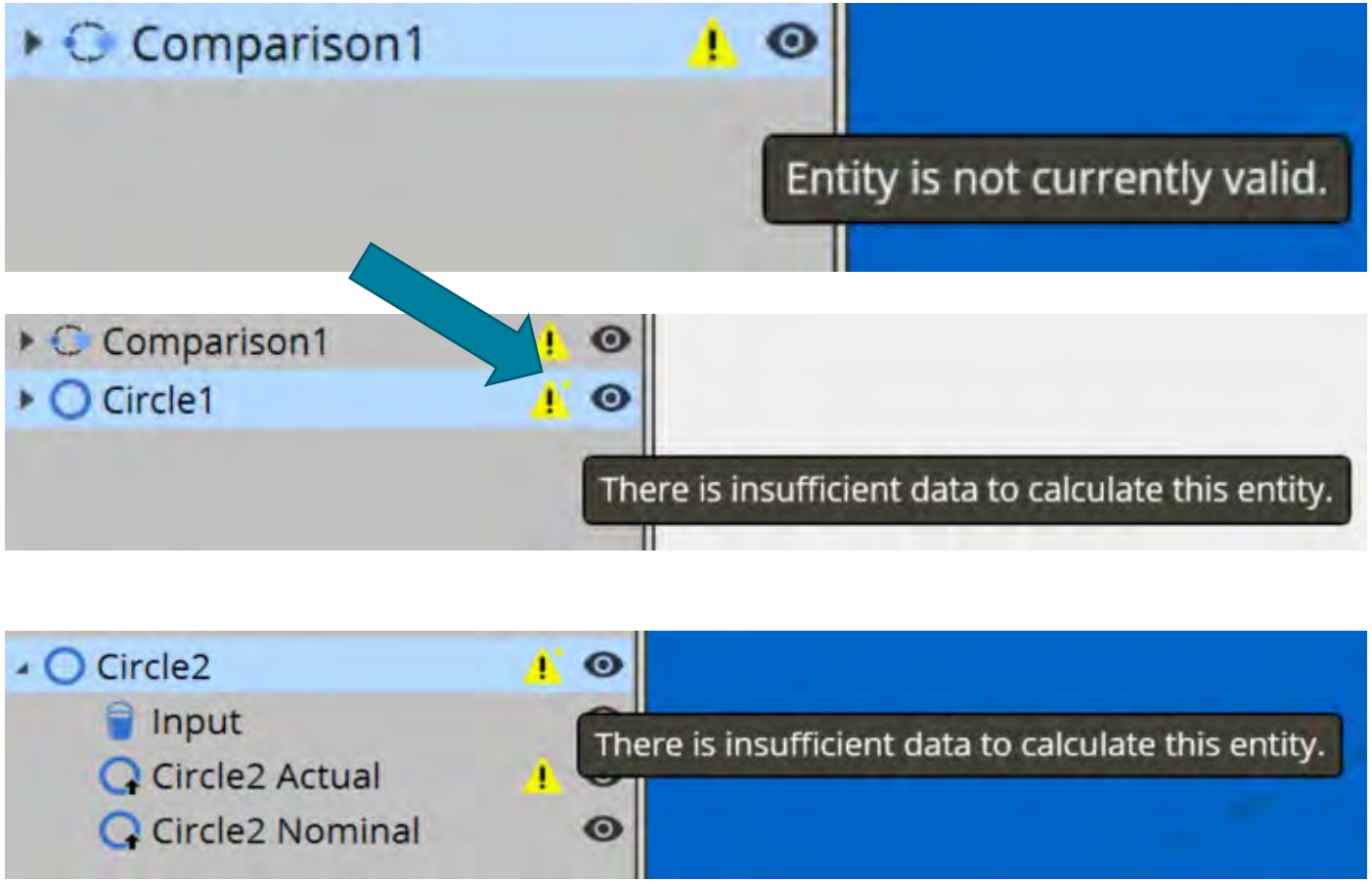
Features

- Detailed Entity Signs
  - Added more detailed explanations for why an entity is invalid
  - When an entity in the tree is invalid, it will show a yellow warning icon next to it
  - If the icon has a yellow dot, a tool tip will appear



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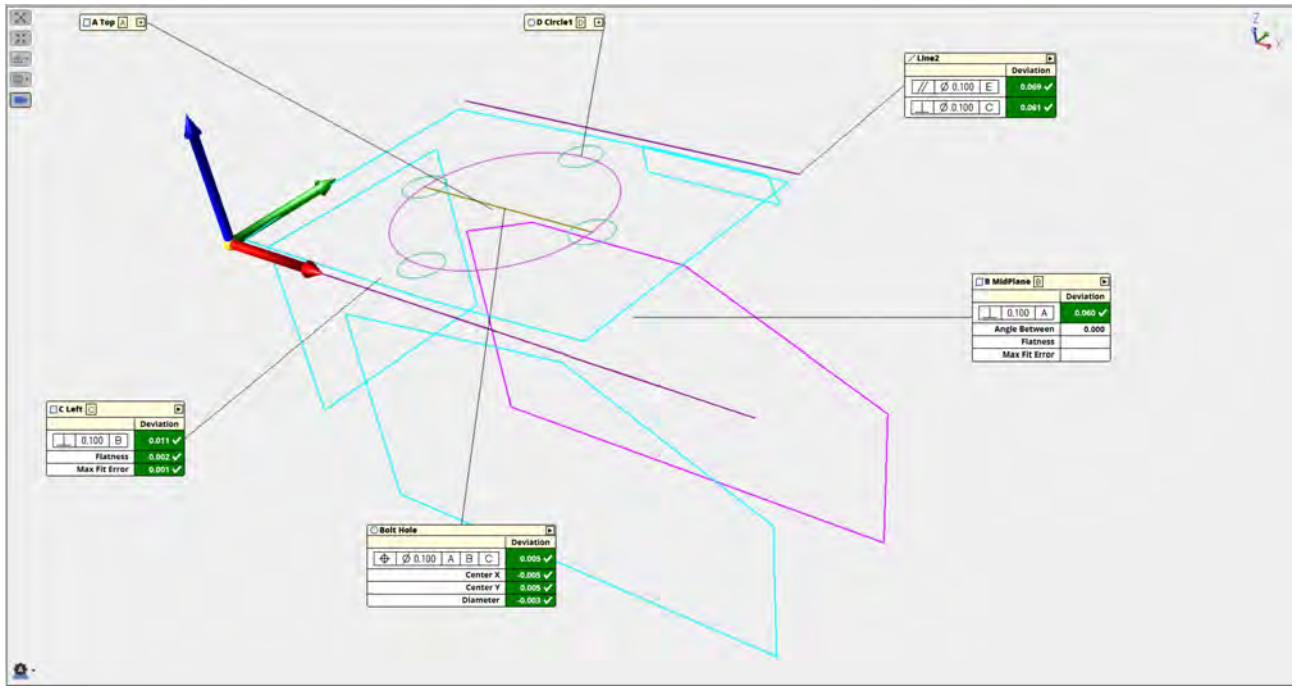
Features

- GD&T Improvements
  - We clarified and added some information pertaining to evaluation checks
  - If the check is invalid, the user will now be notified of what needs to change
    - This will update and change based on the evaluation being performed

Inspire

Features

- GD&T Improvements
  - Features constructed from other features can be used in GD&T checks Examples:
    - Creating a mid-plane from two planes
    - Creating a point from the intersection of 3 planes
    - Creating a line from the intersection of 2 planes



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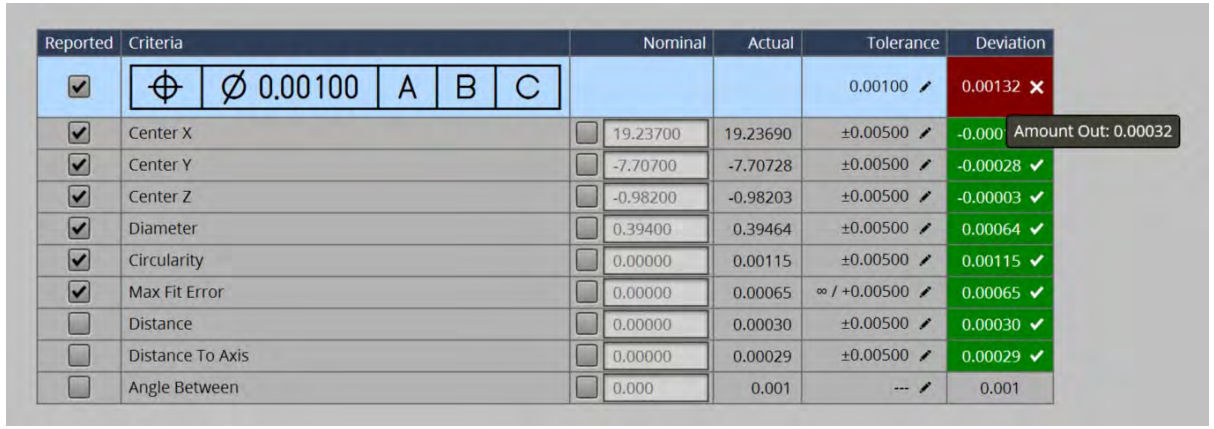
Features

- GD&T Improvements
  - The deviation column gives the entire amount out of tolerance, not the amount that it failed by
  - Hover over that column to see the amount out
  - If the check passed, it will not show the Amount Out



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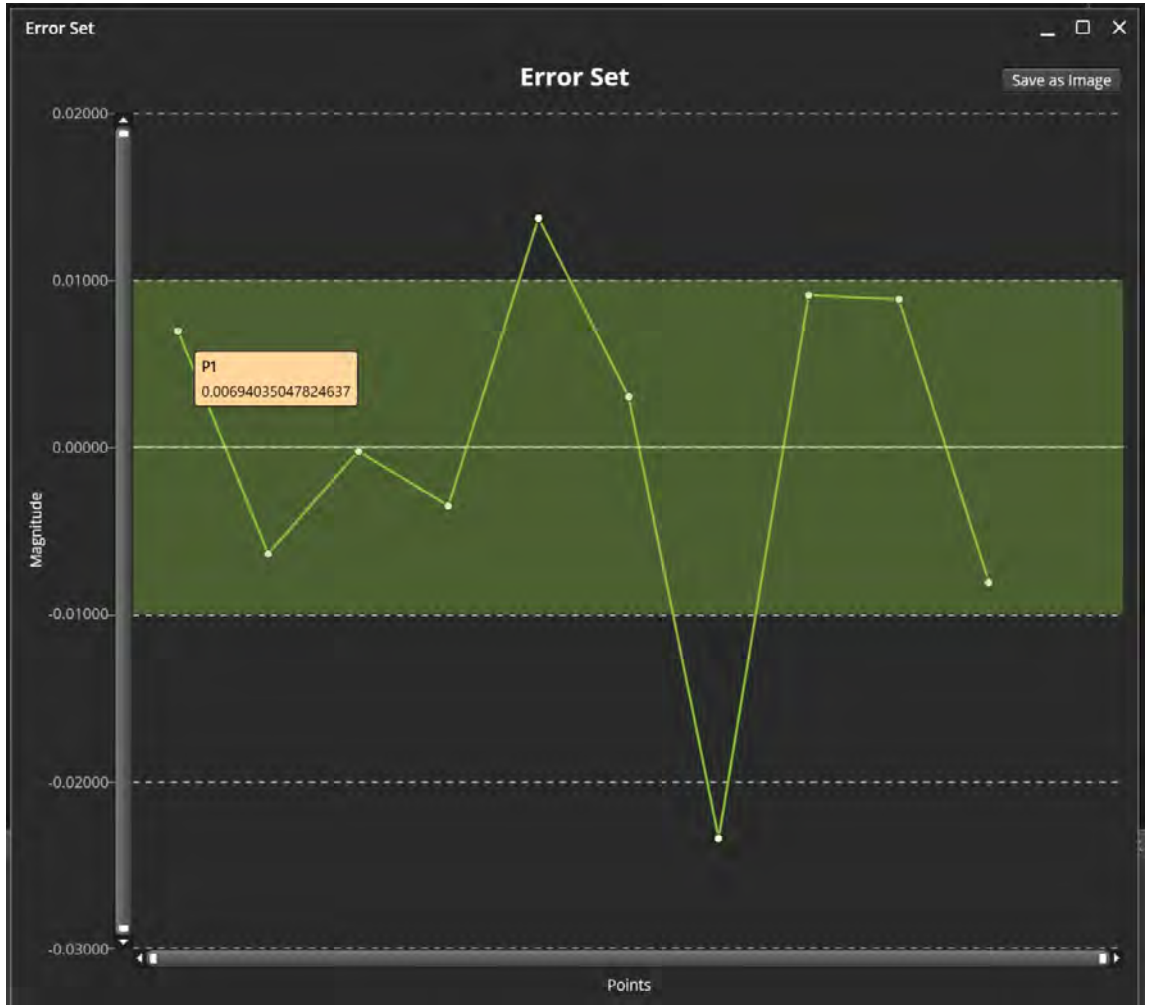
Features

- Tolerance Band
  - Probed points will have them in the order of measurements taken
  - You can select “Save Image” to these formats:
    - .png
    - .jpg
    - .gif
  - You can save the dimension in a width and height format



Inspire

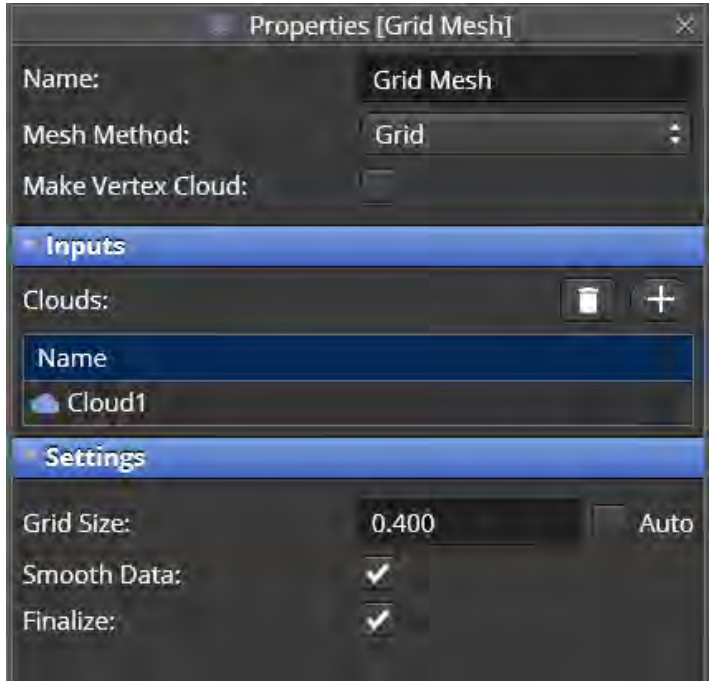
Features

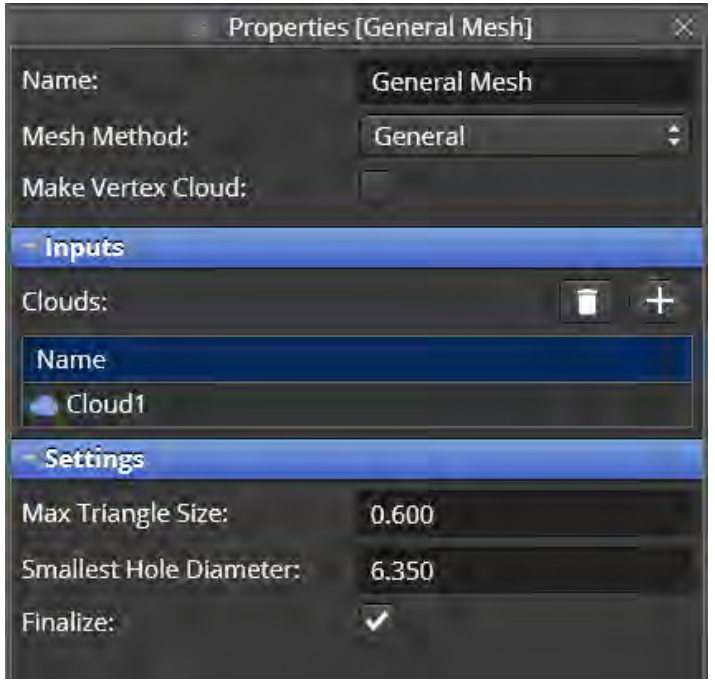
- New Meshing Feature
  - This gives you the ability to keep your meshing data separate from your point cloud
  - Two Different Meshing Methods
    - Grid
      - For use with natively acquired clouds from Arm scanners, T-Scan and LAS scanners
      - Uses raw cloud data
    - General
      - Uses voxel cloud by default
      - Imported point cloud data must utilize this method

Alt-click to create a mesh with one or more clouds selected from the tree

Features

- Mesh Feature
  - Mesh Method
    - General and Grid
  - Settings
    - Grid
      - Grid Size
        - Auto and Custom
      - Smooth Data
      - Finalize
    - General
      - Max Triangle Size
      - Smallest Hole Diameter
      - Finalize





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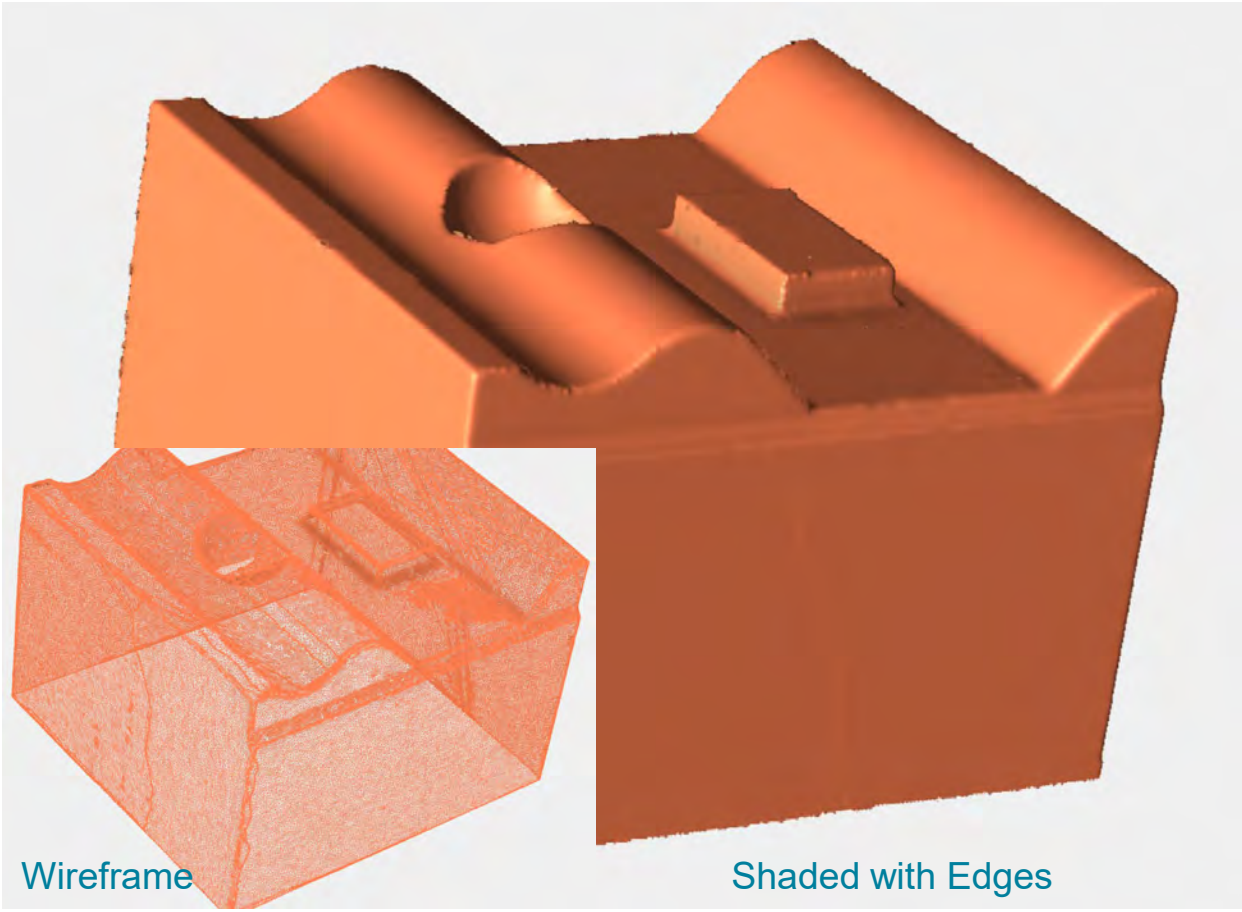
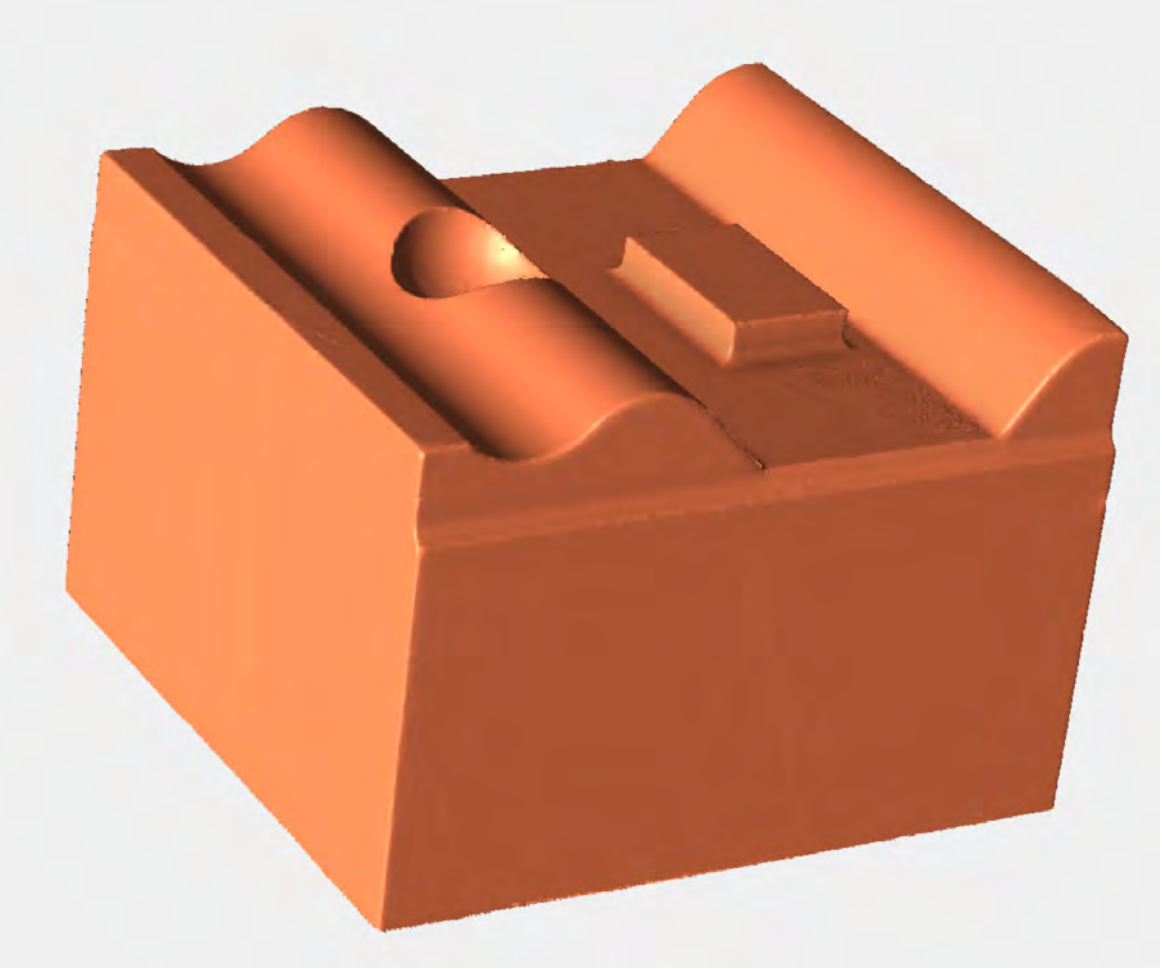
Features

- Meshing Feature
  - Grid
    - Grid Size
      - The size of the mesh facets being used to create the mesh
      - Change the render to wireframe for visualization aspects
    - Smooth Data
      - Removes spikes and eliminates redundancy between scan passes



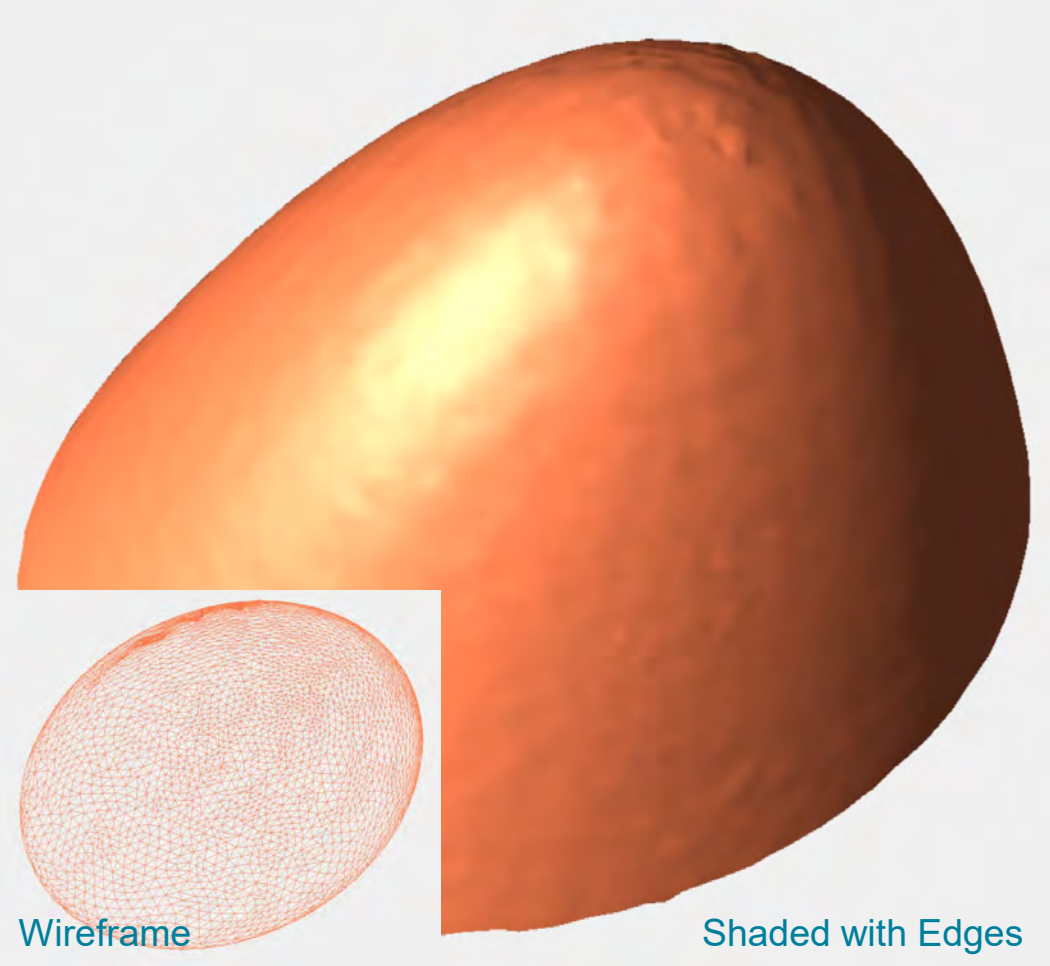
Features

- Grid
  - Finalize
    - Sharpens the edges based off the curvature and size of the vertices
    - It uses the vertex cloud for refinement and if that doesn't have enough data, it will use the raw point cloud
    - This option should be used after you have finished and completed all scanning, editing and alignment of the point clouds



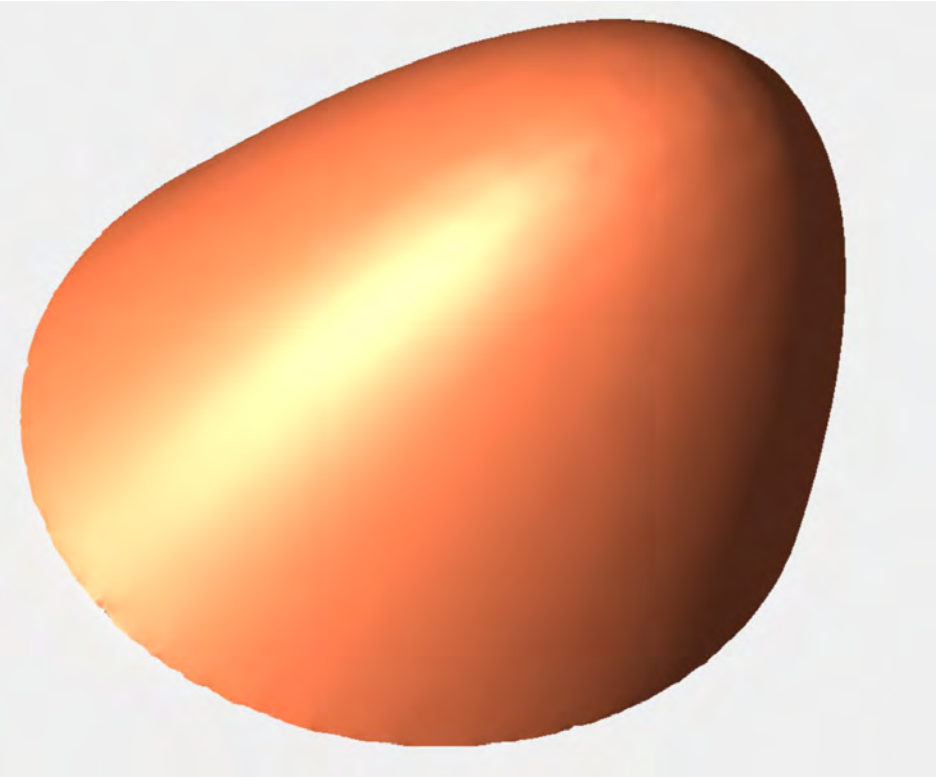
Features

- Meshing Feature
  - General
    - Works with imported scanned data
      - Creating a mesh needs scanner direction to build vertices for polygonal models (.stl files) (not sure if this is necessary)
    - Max Triangle Size
      - This will be the biggest size of your triangle within the mesh vertices
    - Smallest Hole Diameter
      - The smallest hole size should not be less than 3.5 times the max triangle size



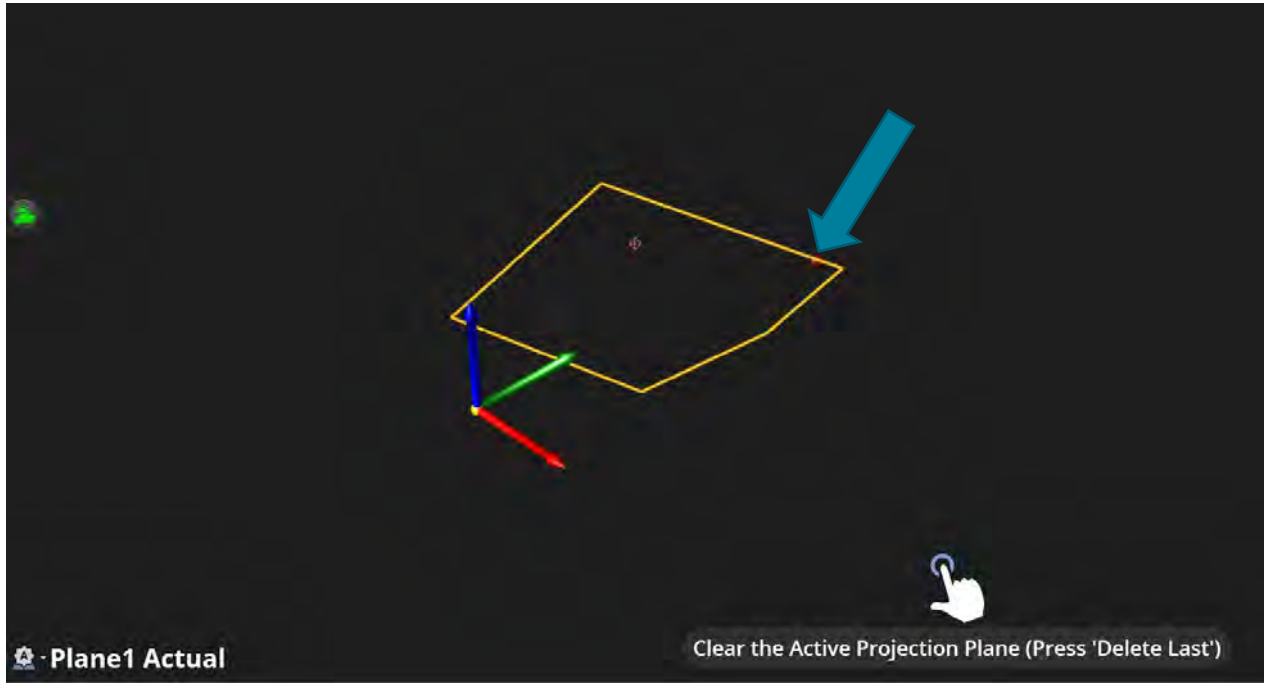
Features

- General
  - Finalize
    - Goes through a two-step process:
      - Reduction and Refinement
    - Reduction
      - Decimates the values of the vertices down and creates an equilateral triangle from the point cloud data
    - Refinement
      - Reduces noise and smooths similar point cloud data together
    - This option should be used after you have finished and completed all scanning, editing and alignment of the point clouds



Features

- Projection Planes
  - If the probe is placed on that feature's existing projection plane and 'Delete Last' is pressed, the projection plane will be removed.
  - If the probe is placed on any other plane and 'Delete Last' is pressed, that plane will be set as the feature's projection plane.



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Analysis

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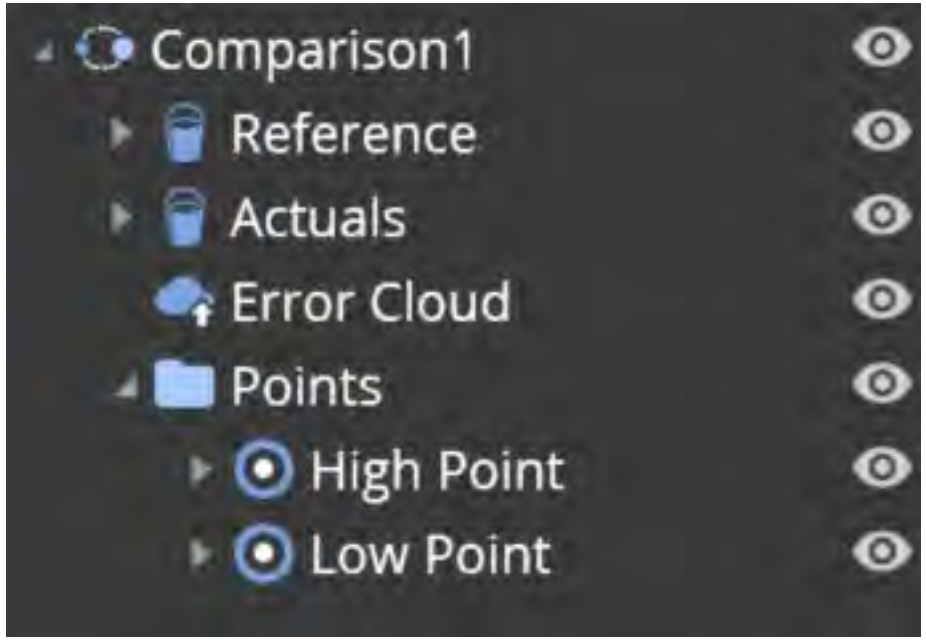
Analysis

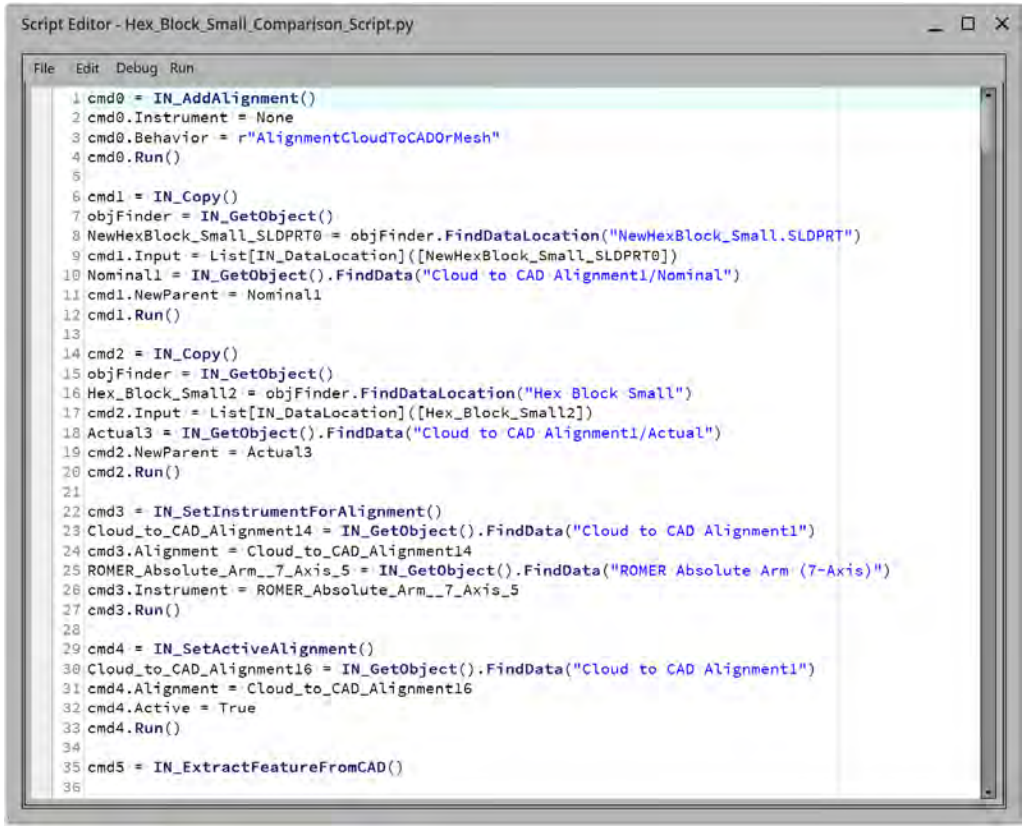
- Comparisons
  - Creates a point group with High and Low Points
    - The nominal point is the projection of each point onto the reference object.
  - Will be automatically calculated in the software upon making a comparison map



Automation

Automation

- Python Scripting
  - Use the script editor to create an automated routine
    - We've added strings to certain objects to define command lines easier
  - Updated the command lines for alignments
    - This will create the specific objects necessary to automate the commands without user interaction



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Reporting




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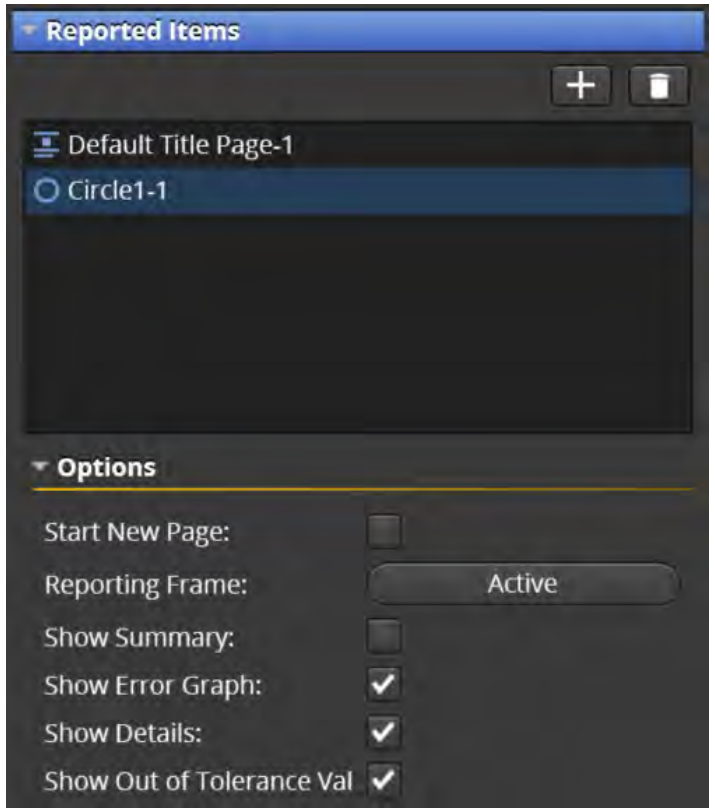
Reporting

Fit Tables in Reported Items



Fit Tables on Reports

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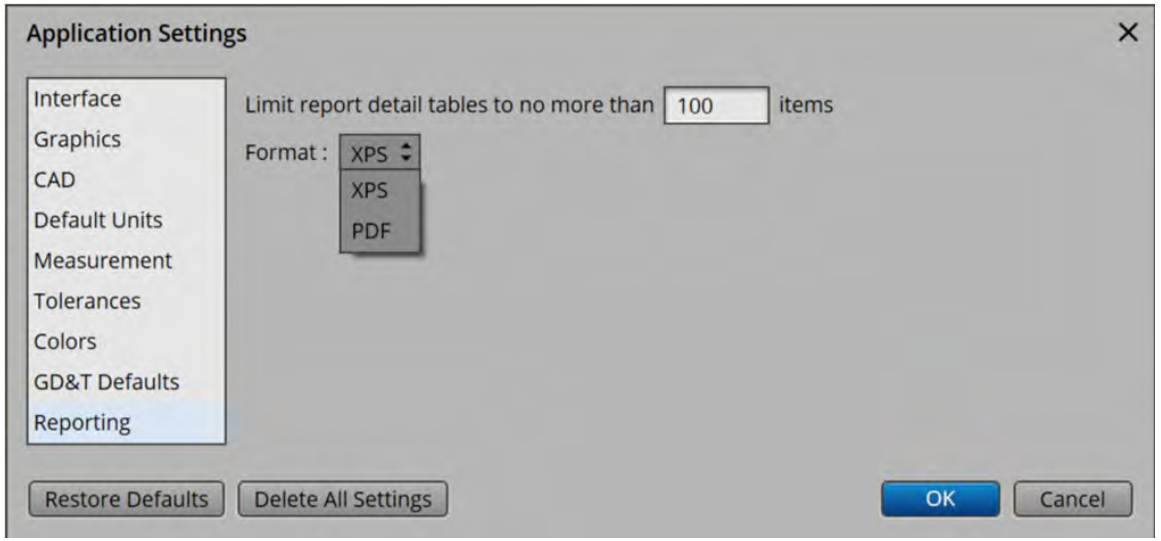
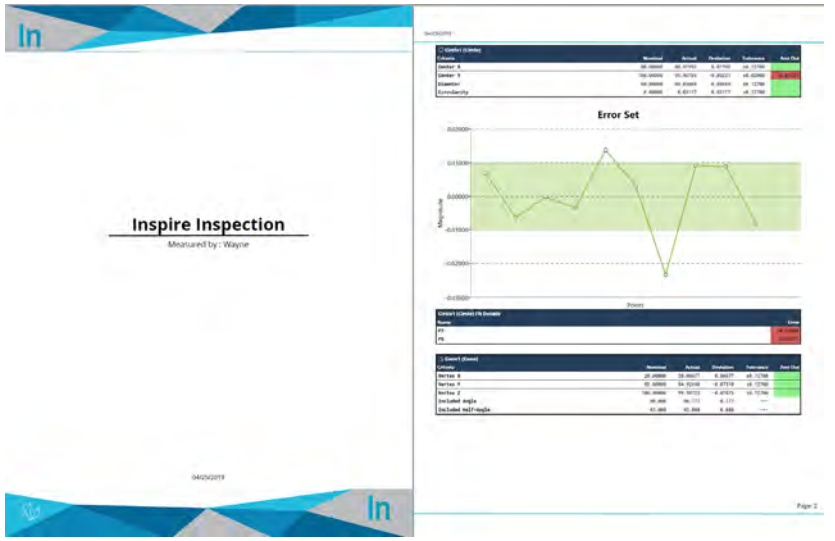
Reporting

- PDF Reports
  - You can now set your default report preference. XPS or PDF.
    - Application Settings >Report>Format>pdf
    - This will now become the default for feature reports and open automatically in Adobe Acrobat
    - Adobe Acrobat must be installed on your computer for this functionality to work

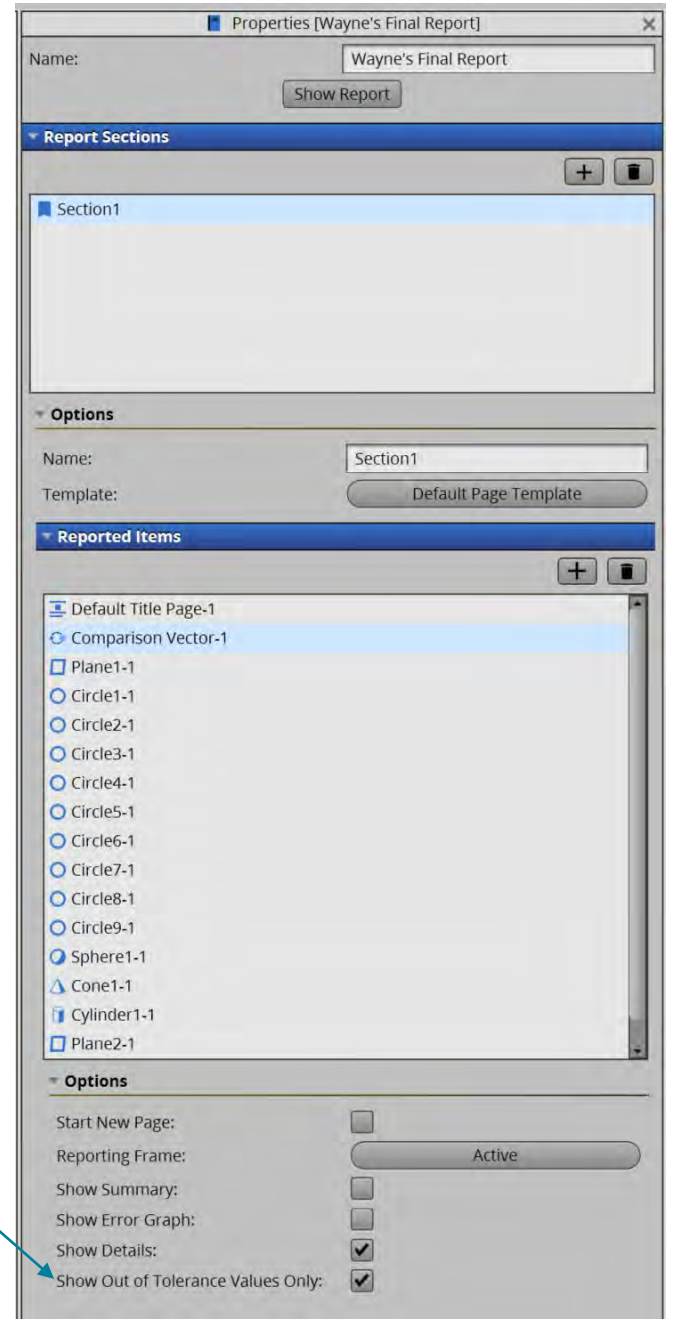




Inspire

Reporting

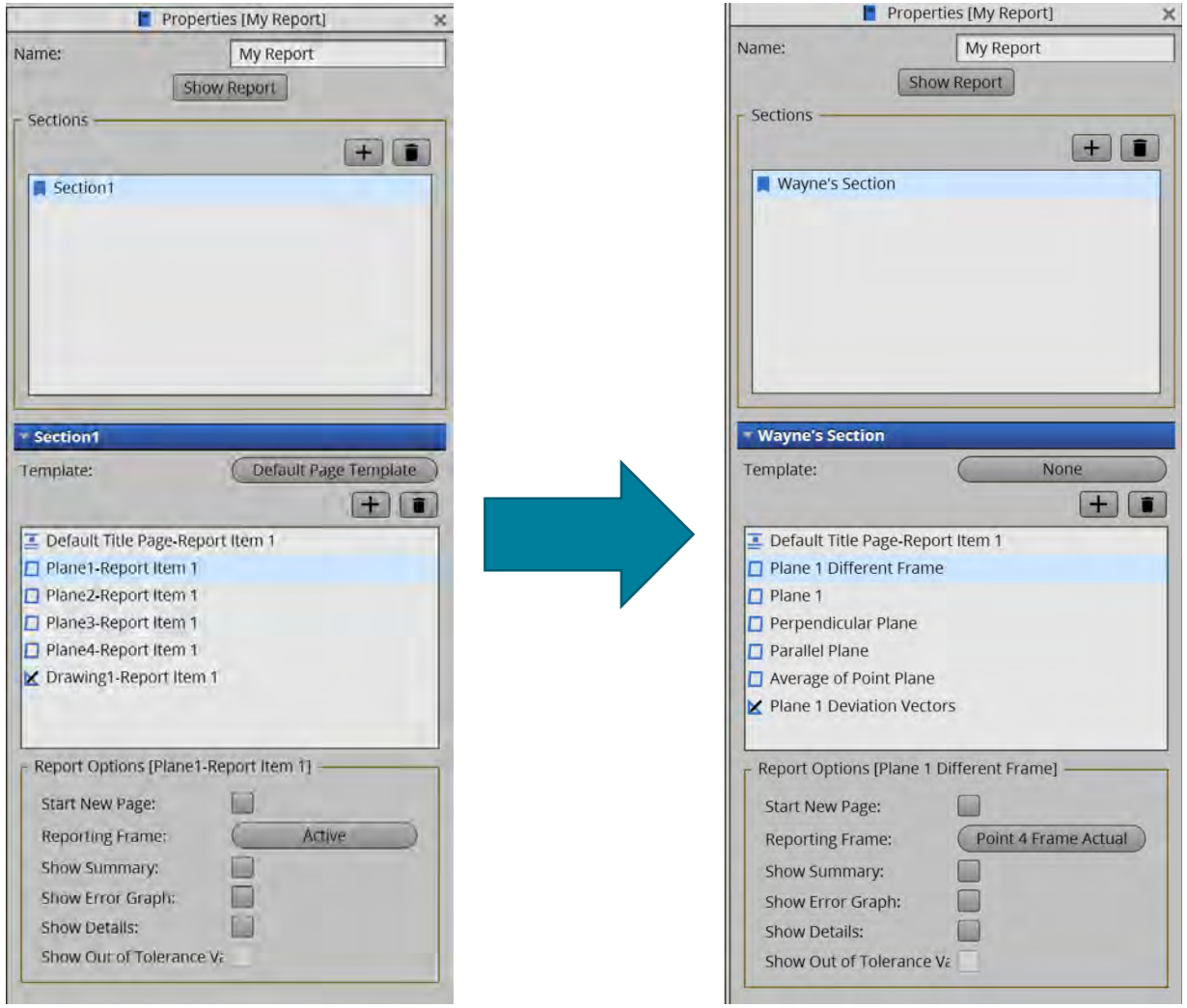
- Comparison Updates
  - Vector Groups and Features
    - You can now only show the values out of tolerance
    - This will work for features and point clouds using comparisons
    - First “Show Details” and then “Show Out of Tolerance Values Only”



Inspire

Reporting

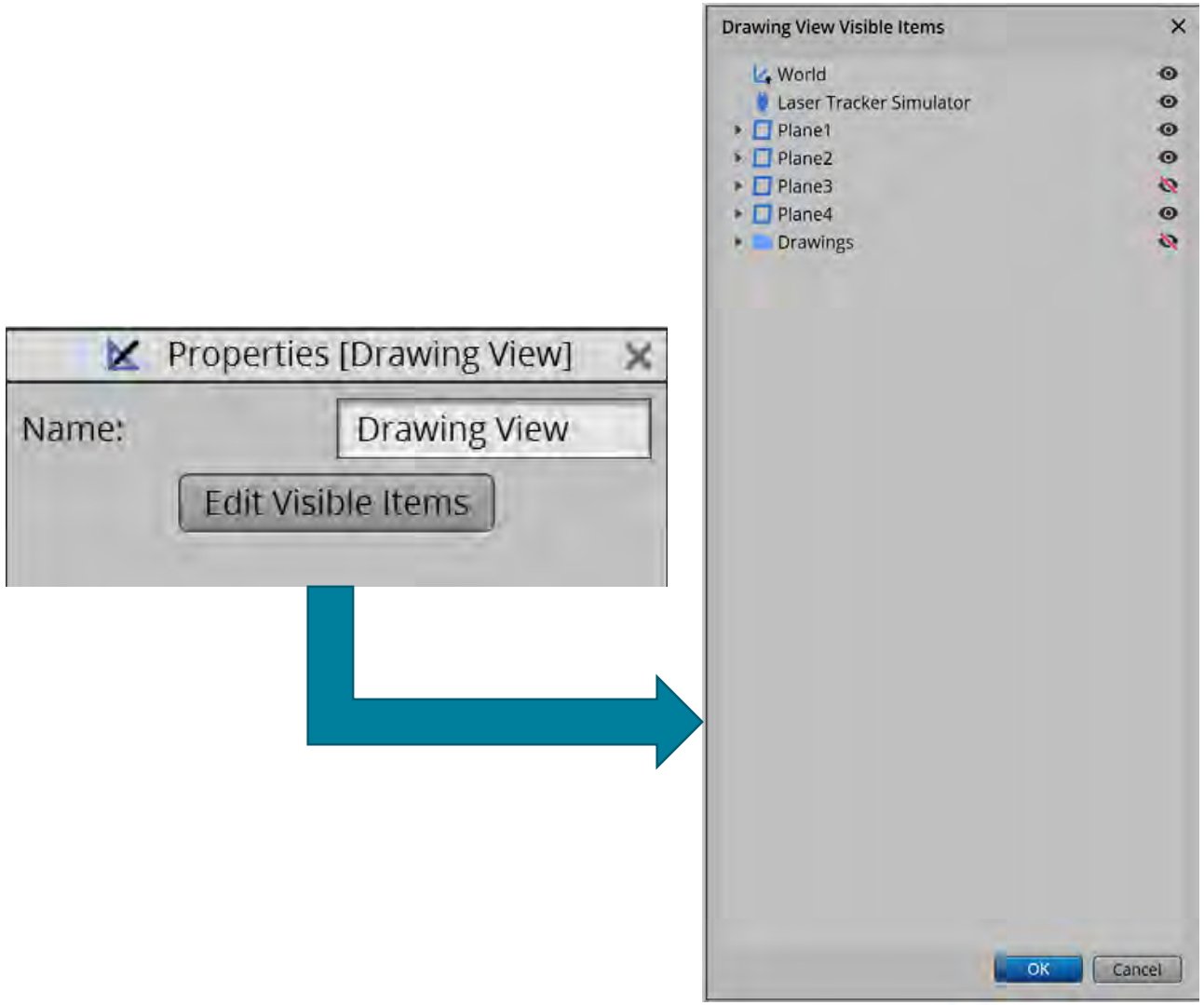
- My Report Updates
  - Create templates or change names inside the properties
    - Simplify your custom report by editing all items in one convenient place
      - This includes changing the active reporting frame or adding more details for features measured
    - Page templates can be selected as “none” which just fills the space with relevant reporting data
      - Select the template icon in My Report and press enter



Inspire

Reporting

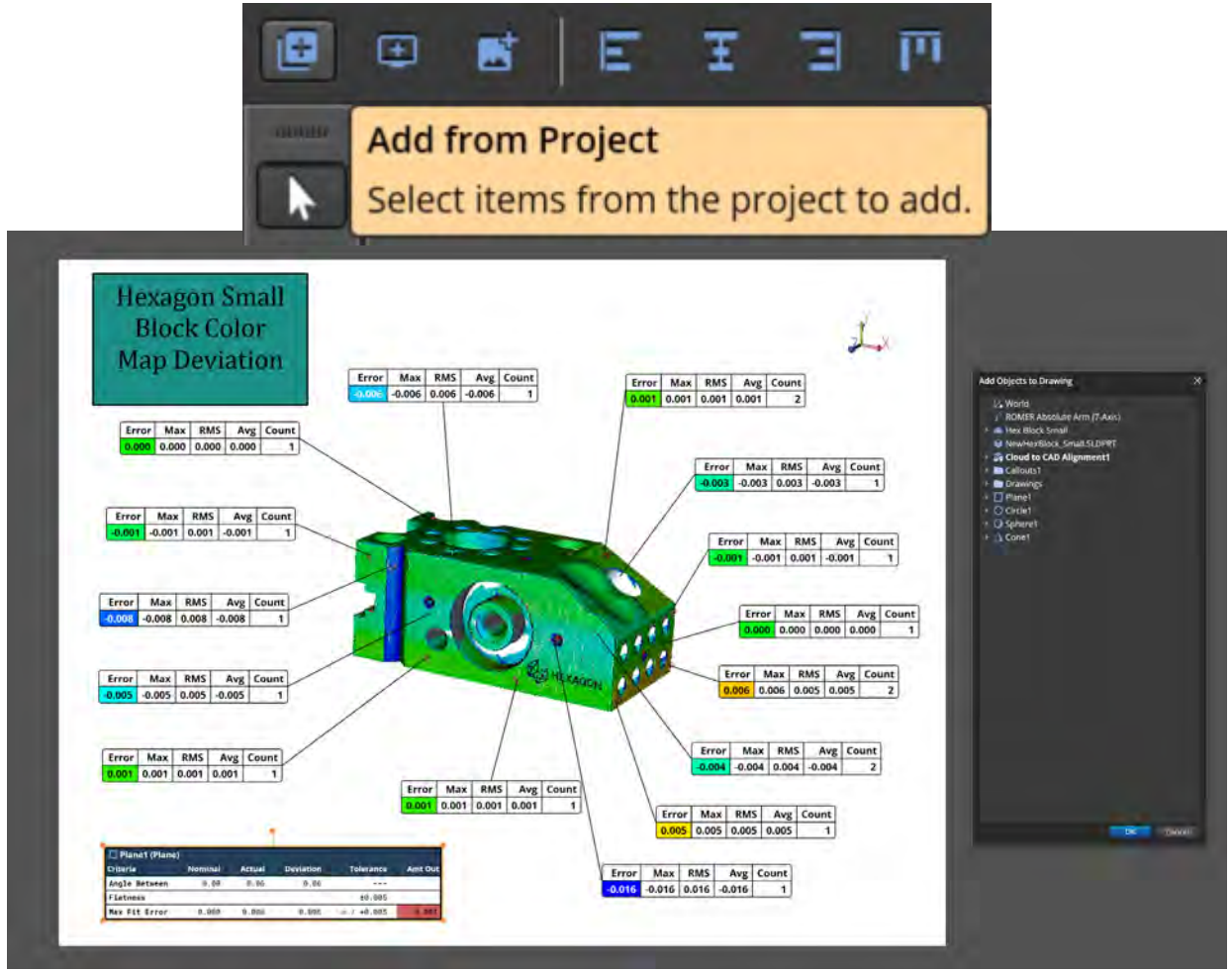
- Layout Editor Enhancements
  - The visibility of items in a 3D view on a drawing can now be controlled easily.
  - Select the 3D View icon
    - Next click "Edit Visible Items" button inside the Properties panel
      - This will bring up the tree and give you the ability to hide and show items
      - After an item is hidden, it will automatically update the view
      - Remember to rotate your view to see other features



Inspire

Reporting

- Layout Editor
  - Add objects from drawing
    - Gives you the ability to add items from the tree into the current drawing
    - Once added, you can designate what items are needed by changing in the properties



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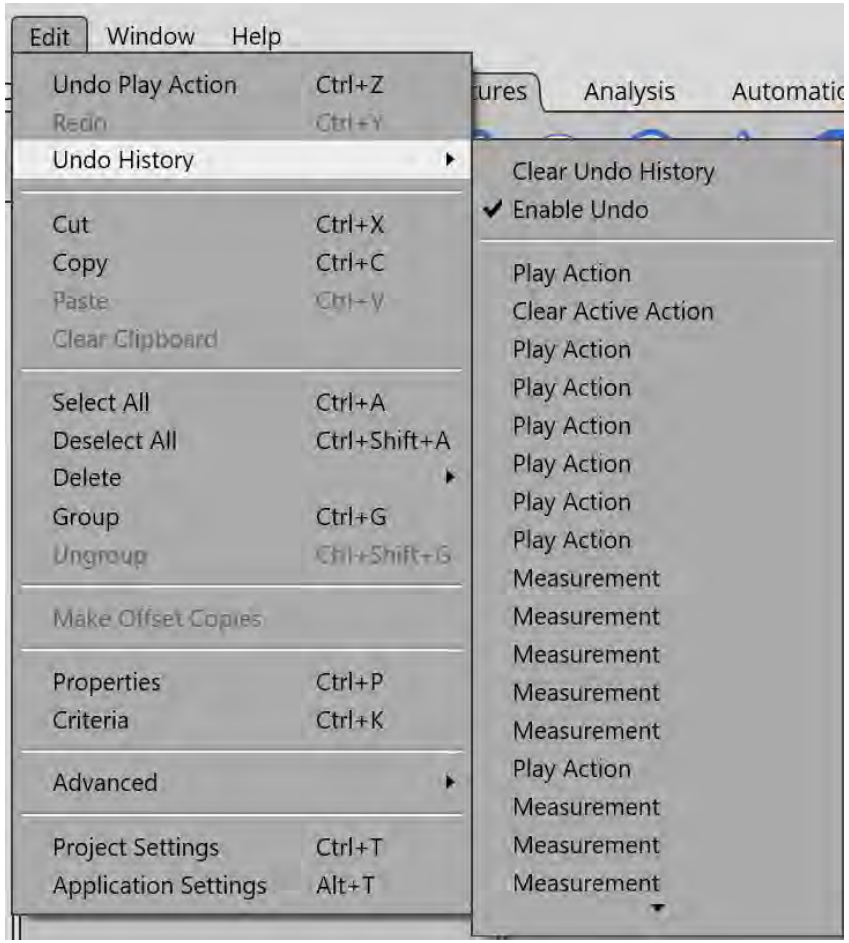
Actions Panel

Inspire

Actions Panel

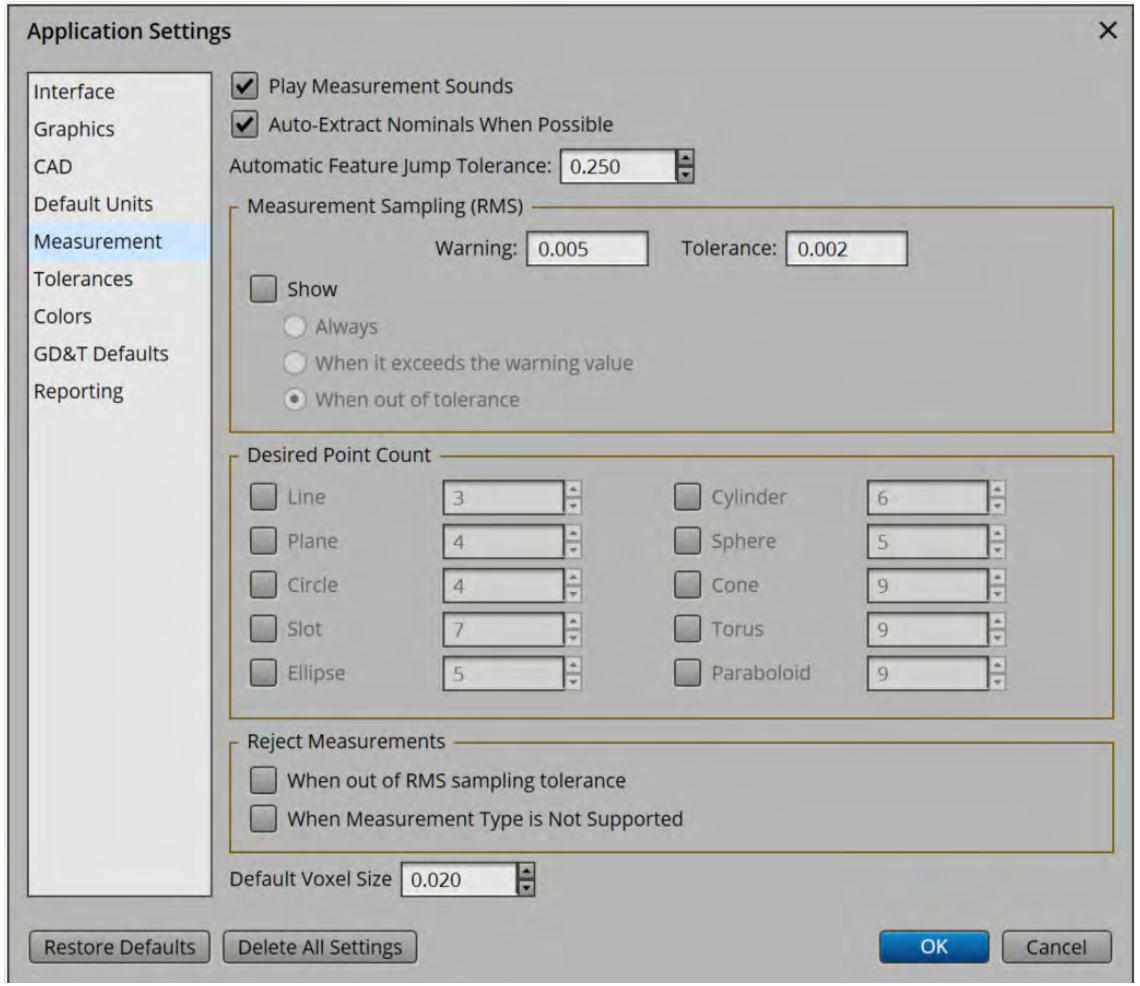
- User Interaction Improvements
  - Deleting last measurement and navigating through the instrument commands
    - Each measurement is now stored in the instrument's measurement history
    - Pressing the "Delete Last" or "Backspace" button as well as the trash can icon, will remove the most recent measurement from the history



Window and Layout Applications

Window and Layout Applications

- Application Settings
  - Measurement
    - New layout for clarity when selecting measurement defaults
    - Desired Point Count
      - Used for individual features measured in the software



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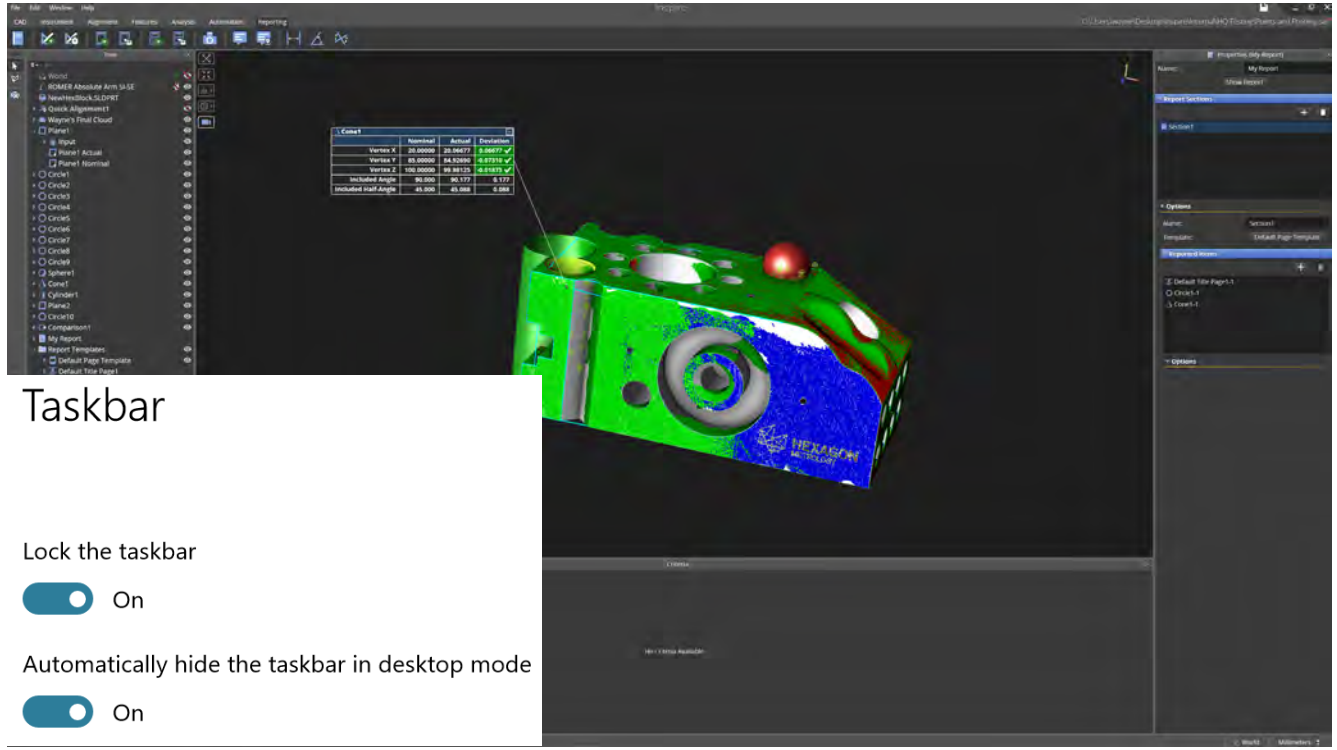
Windows and Layout Applications

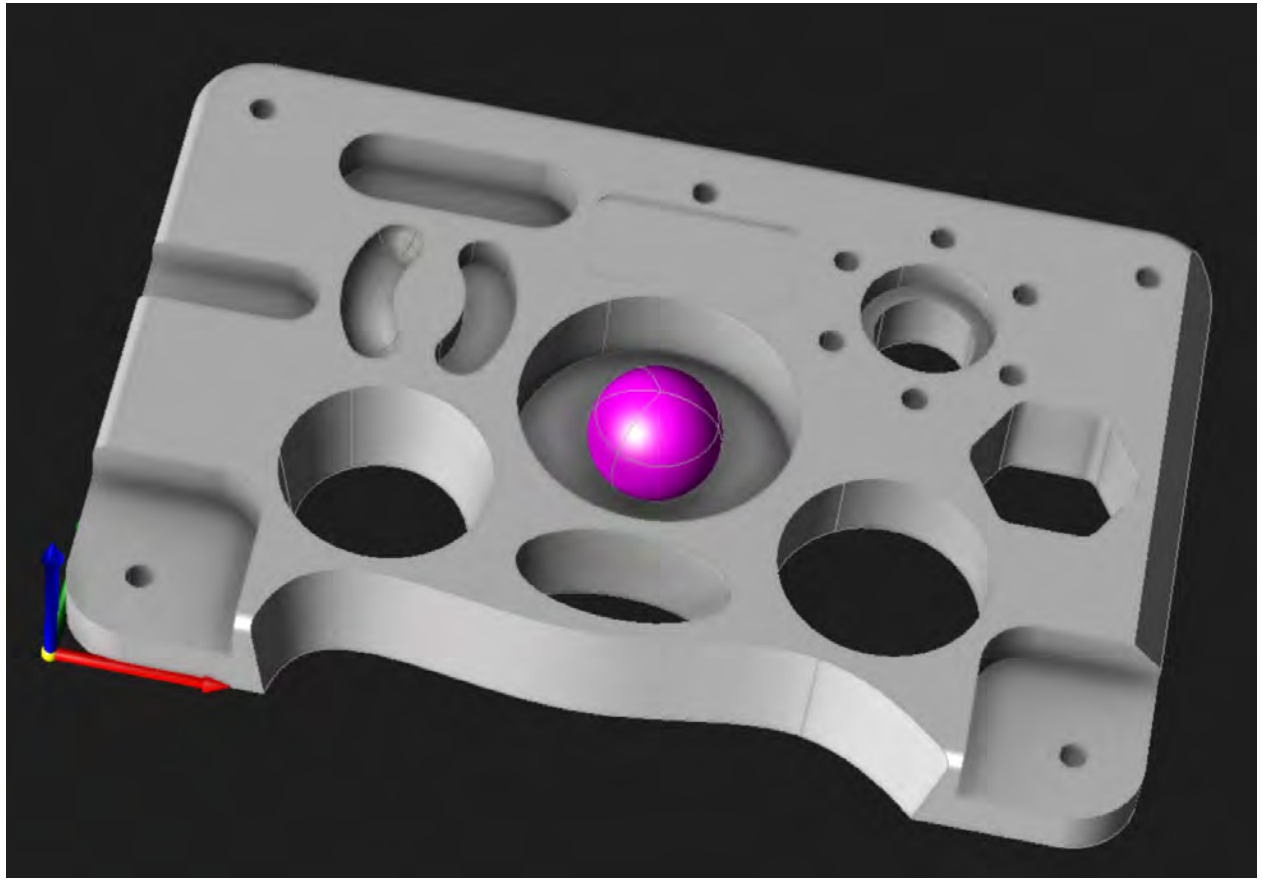
- We now support Auto-Hiding Taskbar
  - You can now run Inspire while having the taskbar in auto hide mode
  - This is now supported in Windows 7 and 10
  - The taskbar can be hidden from the taskbar settings



Inspire

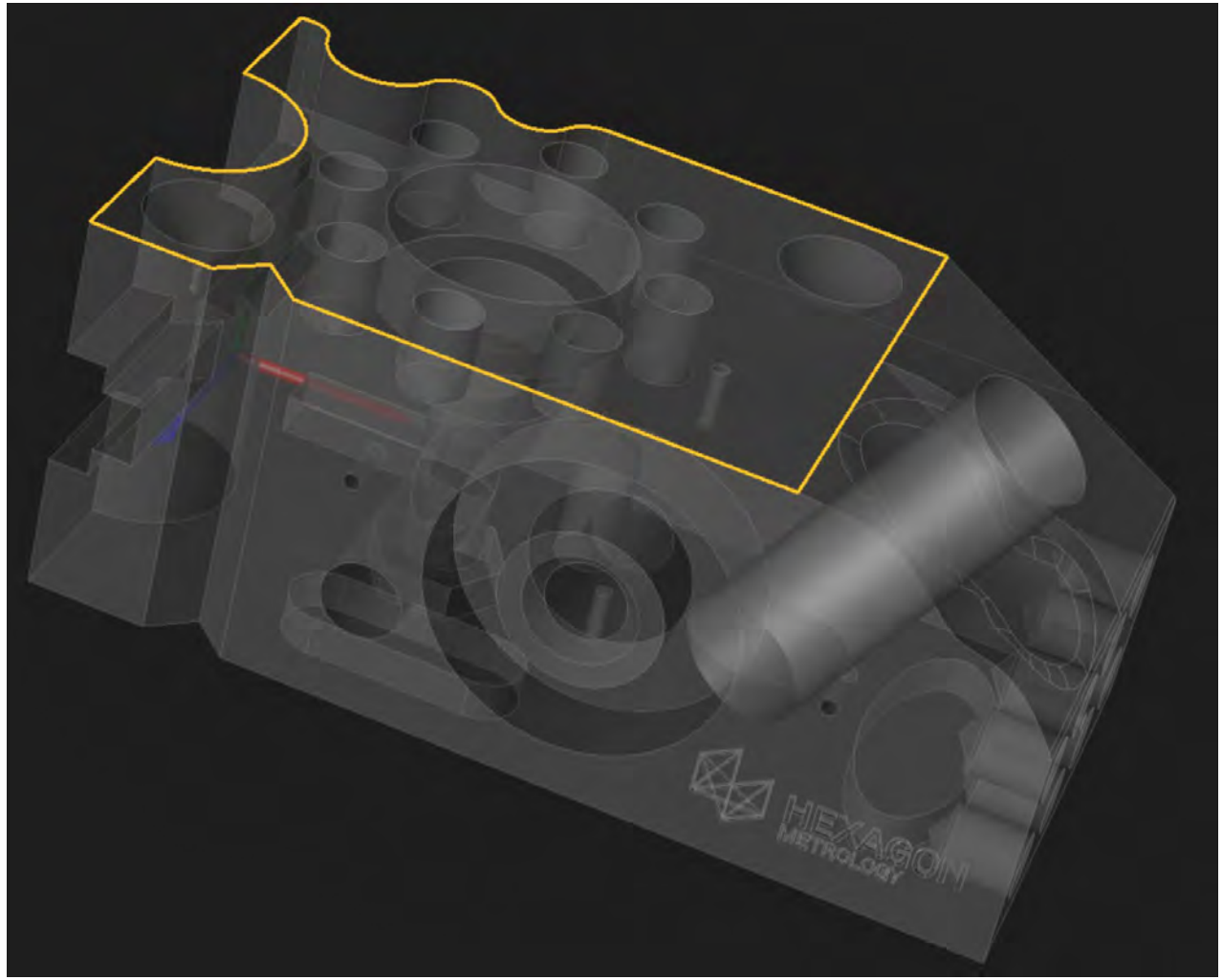
Windows and Layout Applications

- New Hoops and CAD Updates
  - Improvements
    - ACIS, NX, Solidworks, JT, STEP, DWG and more.
    - This was implemented in version 1.0.9.63 so take a second and see if your CAD models have been improved or if something has changed
    - Multiple fixes to CAD faces that were reversed in previous version.



Window and Layout Applications

- Increased Visibility
  - We've increased the visibility for extracting features from the CAD model
  - In measurement mode, you will be able to see those features better
  - This will help users see the actual feature they plan on measuring before they begin.



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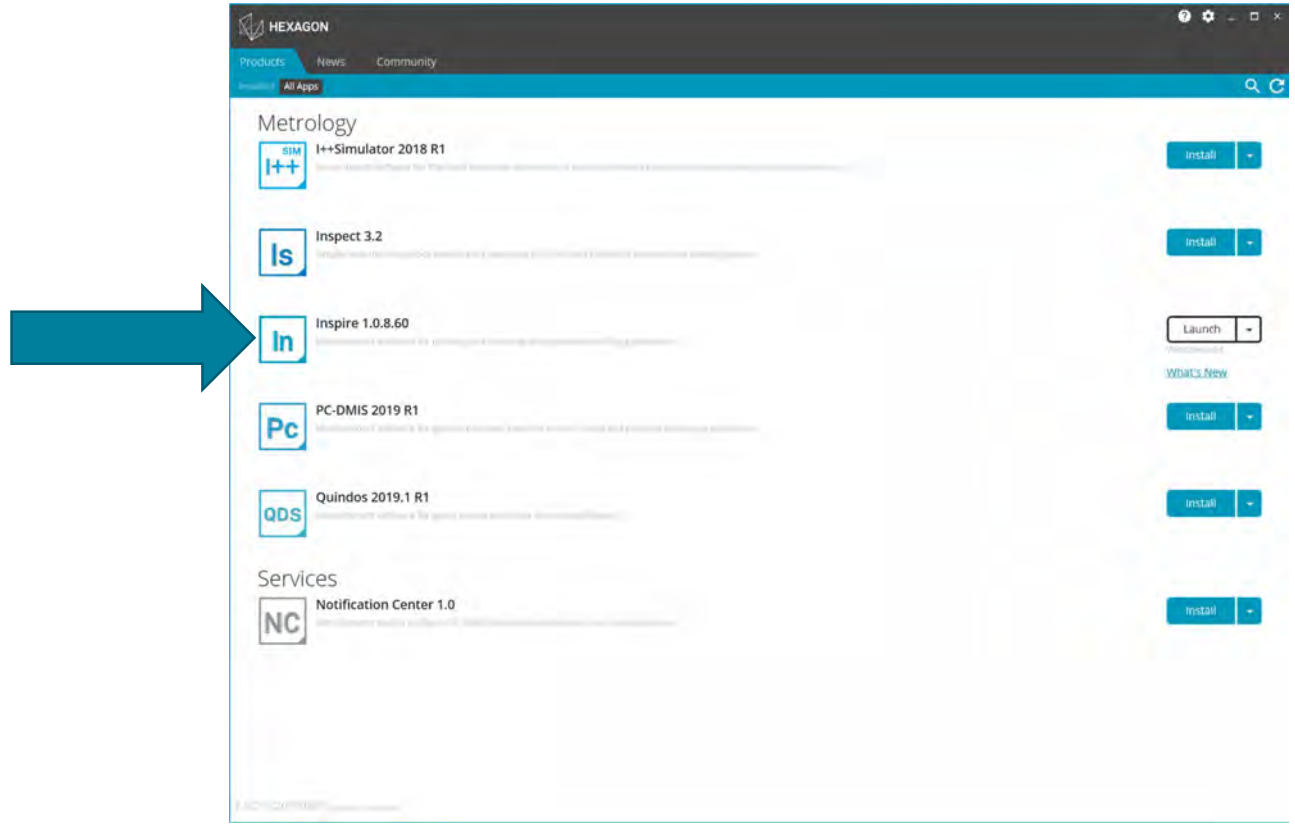
Windows and Layout Applications

- Hexagon Updater
  - This will automatically find the latest release of the Inspire software and notify users if we have released a new version of the software
  - It can be installed as an option upon installing the software



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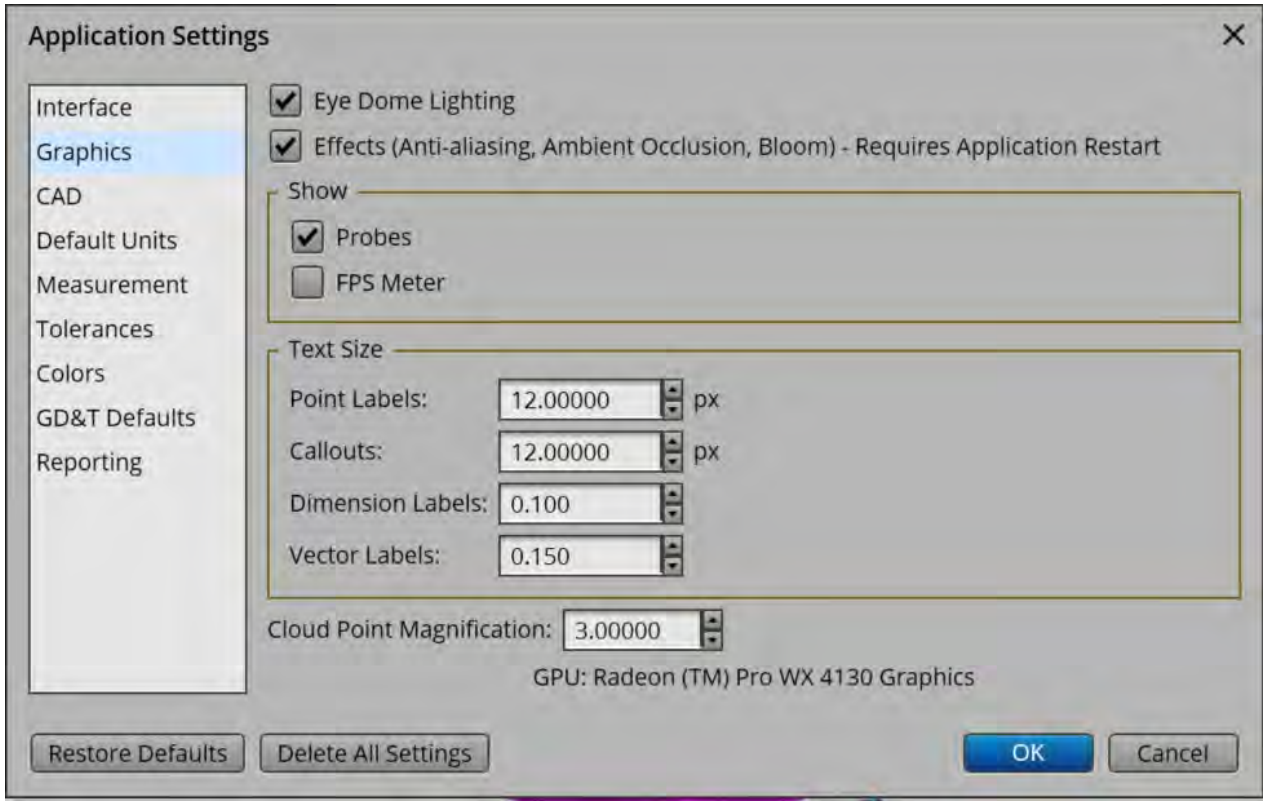
Windows and Layout Applications

- Cloud Point Magnification
  - While scanning large areas it may be hard to see clouds with large point spacing. You can change these in the application settings for aesthetically changing the look of your point clouds



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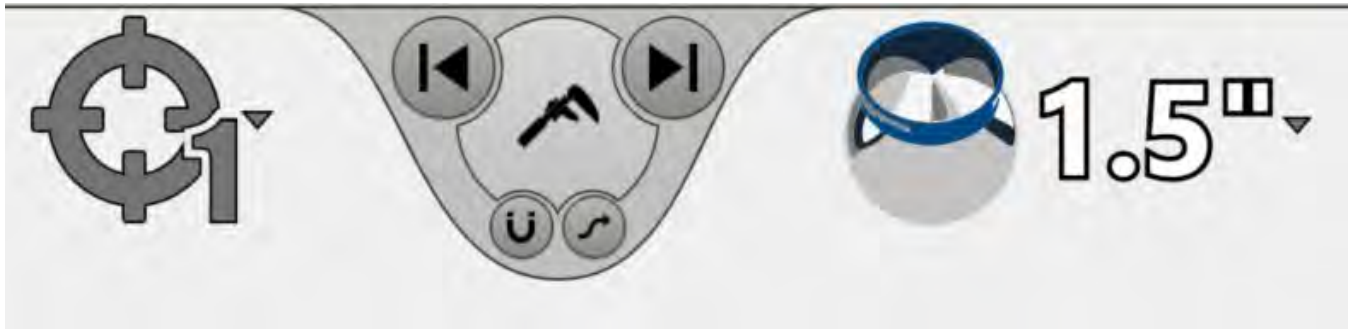
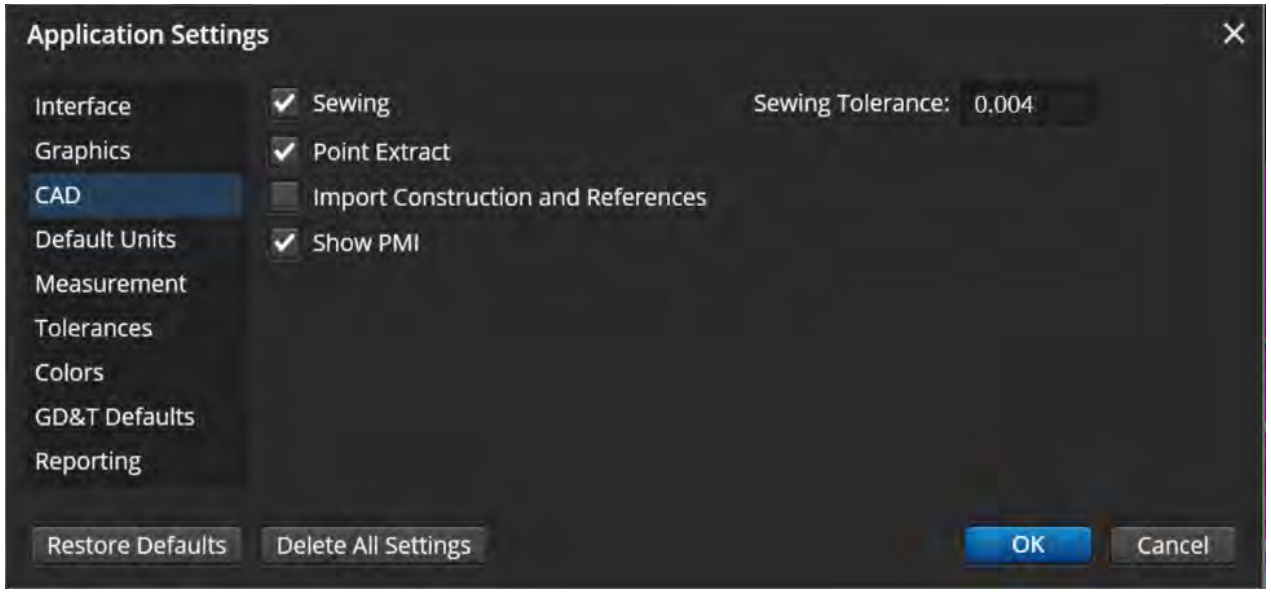
Windows and Layout Applications

- Keyboard Shortcut Improvements
  - [: Plays the previous action
  -]: Plays the next action
  - F5: Takes a measurement
  - F6: Cycles Acquisition modes
  - F7: Cycles probes
  - F8: Cycles tooling.



Windows and Layout Applications

- Sewing Tolerance
  - When enabled, the software will try to “sew” the faces of the CAD model together after import
    - The purpose of this to make it a water-tight solid
  - When disabled, the software will not “sew” the faces of the CAD model together after import
    - If it is disabled, it will not create the water-tight solid model and use the CAD designers' default
  - The default number is set to .004” or .100mm



Windows and Layout Applications

- Cancelling Commands
  - When you click the “cancel recomputation” it stops all items currently being calculated in the software
  - You must recompute the data by:
    - Manually recomputing the data (ex. changing a tolerance in the properties of the feature)
    - Ctrl+Alt+Shift+R
      - This will automatically recalculate features that are selected in the tree