

# What's New in SA

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## SA 2012.12.06

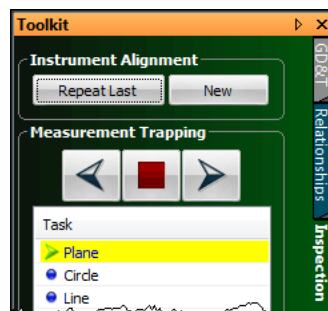
### Repeat Alignments

Any instrument's alignment can now be repeated, making alignments as part of a repeatable process easier to set up.

Whenever an instrument is aligned using Quick Align, Measure Nominal Points, or the Frame Wizard, the alignment parameters are stored with the instrument. This alignment can then be repeated at any time.

#### To Repeat an Instrument's Alignment:

- In the *Inspection* tab of the SA Toolkit, click the **Repeat Last** button while connected to an instrument.

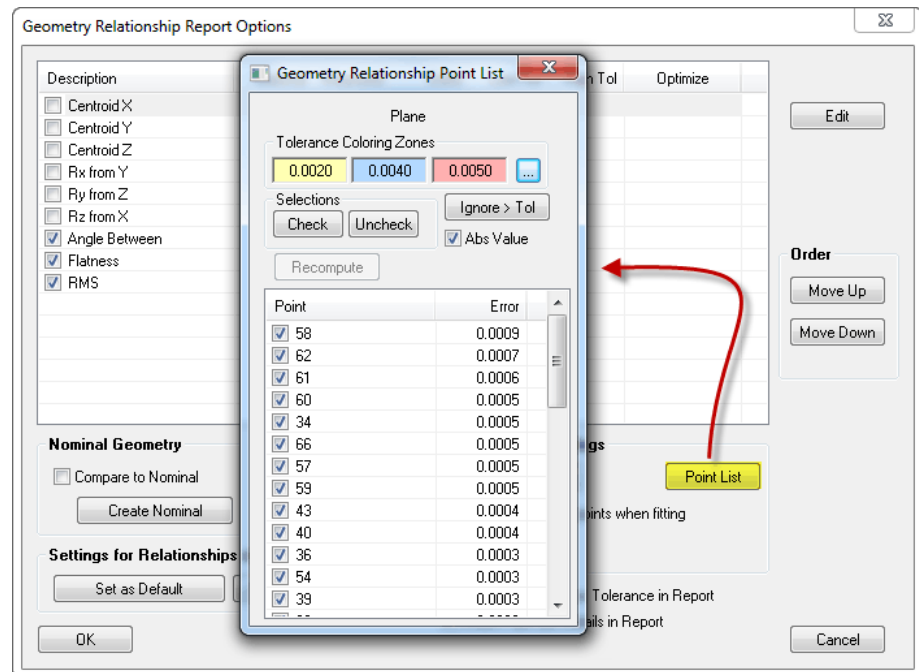


This will automatically recall the previously saved alignment parameters, which can then be modified or committed.

Clicking the **New** button is a convenient way to perform a new alignment on the connected instrument.

## Geometry Relationship Point Lists

You now have access to and control over point lists for geometry relationships. Simply click the **Point List** button in the **Geometry Relationship Report Options** dialog. You can also access the point list by right-clicking a geometry relationship in the tree and selecting **View Point List**. Just as in the **Geometry Fitting** dialog, you can deactivate points, deactivate points exceeding a critical threshold, and sort by name or error.



A new option has been added to the **Geometry Relationship Report Options** dialog to permit the display of these points on a report. Simply select the **Show Point List Details In Report** option, and when the geometry relationship is added to a report, the point list will be included.

## Stock Language Translation

Five stock languages are now included with SA:

- English
- German
- Spanish

- Russian
- Chinese

## Set Viewpoint From Object

The new **View>View Control>Set Viewpoint From Object** command aligns the viewpoint down the -Z axis of the selected object.

## Set Viewpoint From Surface Point

You can now align the view to look directly down the normal to a surface at a specific point. Select **View>View Control>Set Viewpoint From Surface Point**, then click on a surface. The view will realign to look directly down the normal of the surface at the selected point.

## Reporting Improvements

### Insert/Delete Page

Pages can now be inserted or deleted in an SA report. To do so, right-click in the report and choose **Insert Page** or **Delete Page**. These menu items are only available if the action is possible from the right-click location.

- Pages can only be inserted if there are no report items intersecting the horizontal line where the click was initiated.
- Pages can only be deleted if the page does not contain any report items.

### Disabled Table Truncation

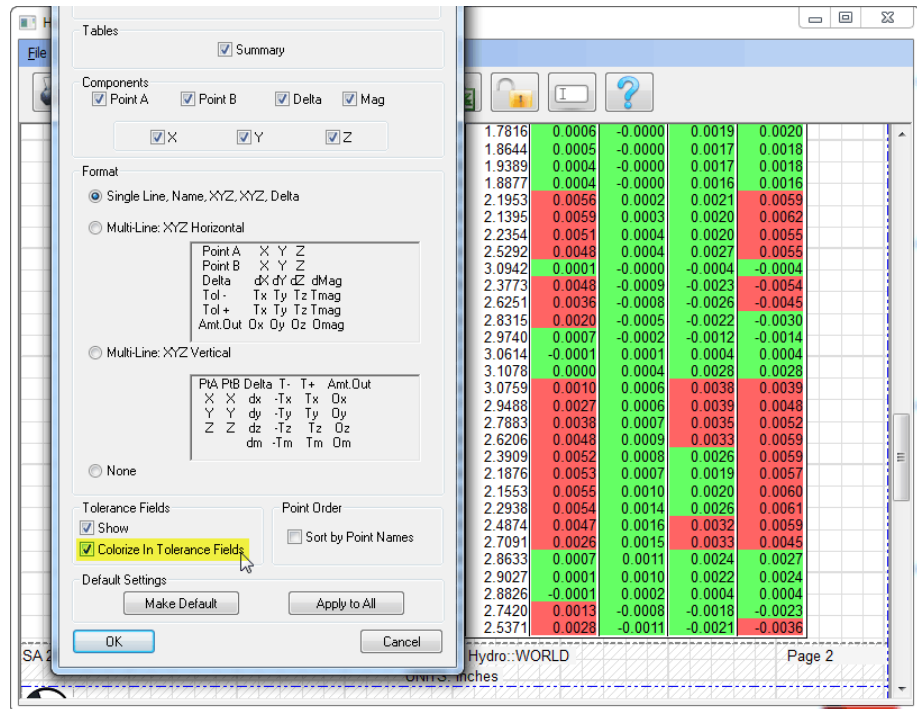
You can disable truncation on a per-table basis (regardless of the *Maximum Number of Rows Per Table* setting in the User Options *Reporting* tab) by right-clicking the table and selecting **Do Not Truncate** from the context menu.

### Remove Trailing Empty Pages

In the Report Designer, there is a new option to remove all empty pages at the end of a report. Simply select **Edit>Remove Trailing Empty Pages**.

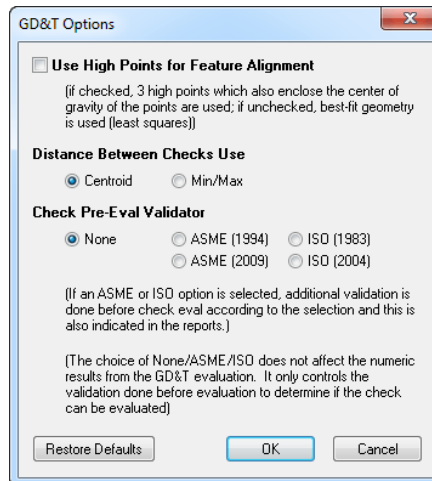
### Colorization of In-Tolerance Fields

A new report option has been added for coloring in-tolerance delta fields green (see below).



## GD&T Improvement: Check Pre-Eval Validator

In the User Options *Analysis* tab, in the *GD&T Options* dialog (accessible by clicking the *GD&T Options* button), a check Pre-Eval Validator has been added. This performs standard-specific validation checks on measurement data prior to a GD&T evaluation.



The GD&T evaluation results are equivalent regardless of setting, since the standards in that area do not differ. However, depending on which standard is active (ASME 1994, ASME 2009, ISO 1983, or ISO 2004), different checks may be performed on the initial data. This may result in a check failing even though it may have passed in an earlier version of SA.

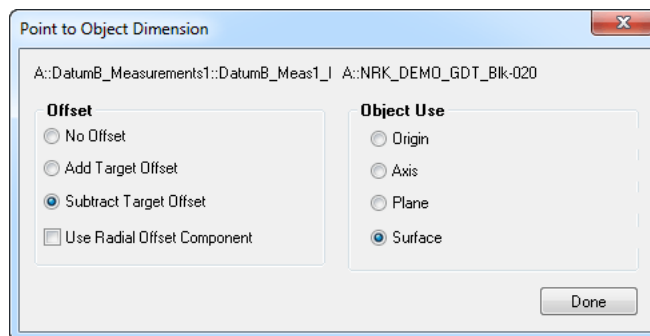
Note that the *None* option maintains the equivalent behavior of previous versions of SA. This setting is saved with the job file.

## GD&T Improvement: Evaluate All Feature Checks

A new option has been added to force a recalculation of all feature checks in an entire job. Simply select **GD&T > Evaluate All Feature Checks**.

## Point to Object Dimensions: Radial Offsets

Point to object dimensions can now compensate for radial offsets in addition to planar offsets. Simply check the *Use Radial Offset Component* option. This is useful, for instance, when determining the distance to an edge that was measured with a pin nest.

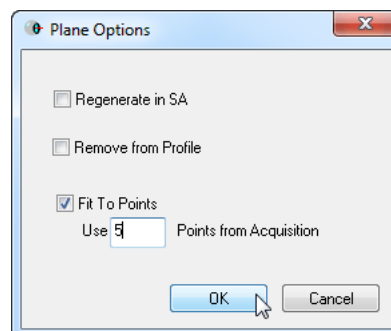


## Laser Trackers: Projection Plane Settings

New settings have been established for measurement operations that accept projection planes, including:

- Circle
- Patch Point
- Single Point Circle

Left-click the projection or intersection plane option in the operation's parameters to select an existing plane to use. Right-click to specify options for automatically fitting the points while measuring:

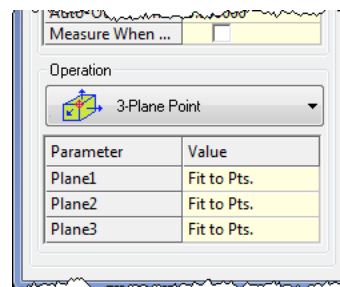


- **Regenerate in SA.** This option automatically creates the construction plane after the profile completes.

- **Remove from Profile.** Clears an existing selected plane from the profile.
- **Fit To Points.** When checked SA will automatically fit a plane to the measured points. Specify the number of points to measure here.

## Laser Trackers: 3-Plane Point

This new measurement operation in the laser tracker interface automates the process of measuring a “corner point”—a point that is constructed by measuring 3 intersecting planes. Many different acquisition modes can be used with this operation, including discrete point, stable point, and spatial scan.

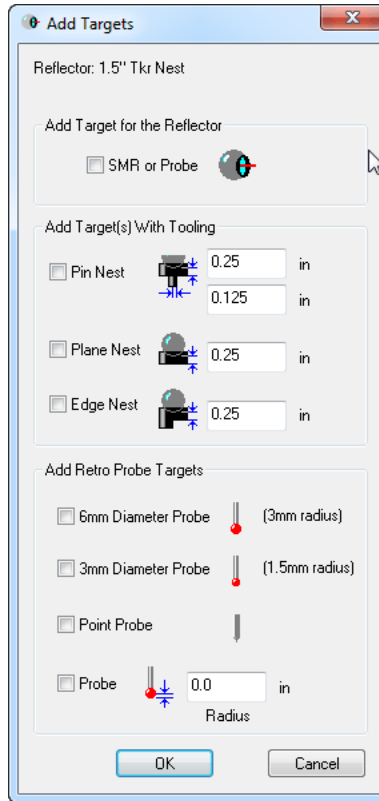


To define or measure the three planes, use the instructions in “[Laser Trackers: Projection Plane Settings](#)” on page 9.

## Laser Trackers: Adding Targets with Custom Radial Offsets

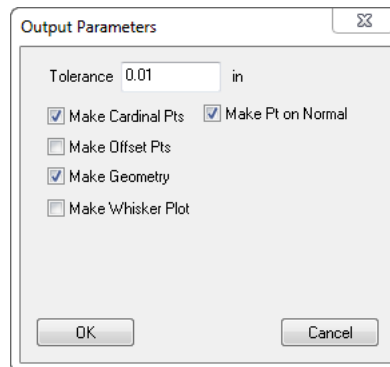
When adding defined targets in the laser tracker interface using the **Add: From Selected Reflector** button, you can now specify both the planar and radial offsets. This allows you to set these offsets in this dialog instead of the *Targets* table.

The default values for these fields will change depending on the size of the selected reflector and your current active units.



## Laser Trackers: Circle Fit Point on Normal Option

When measuring a circle in the laser tracker interface or fitting a circle using Measurement Plans, the circle fit output parameters now have a *Make Pt on Normal* option.

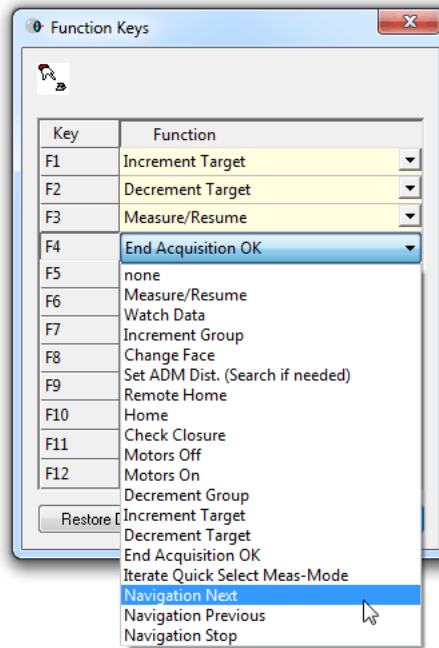


When checked (if *Make Cardinal Pts* is enabled), the fit will create a cardinal point on the circle's normal (existing behavior). You can now turn this option off to create a cardinal point only on the circle center.

## Inspection Routine Navigation Enhancements

You can now program function keys (or remotes that emulate function keys) for "Next", "Previous" and "Stop" navigation operations, primarily to allow easier progression through an inspection routine in

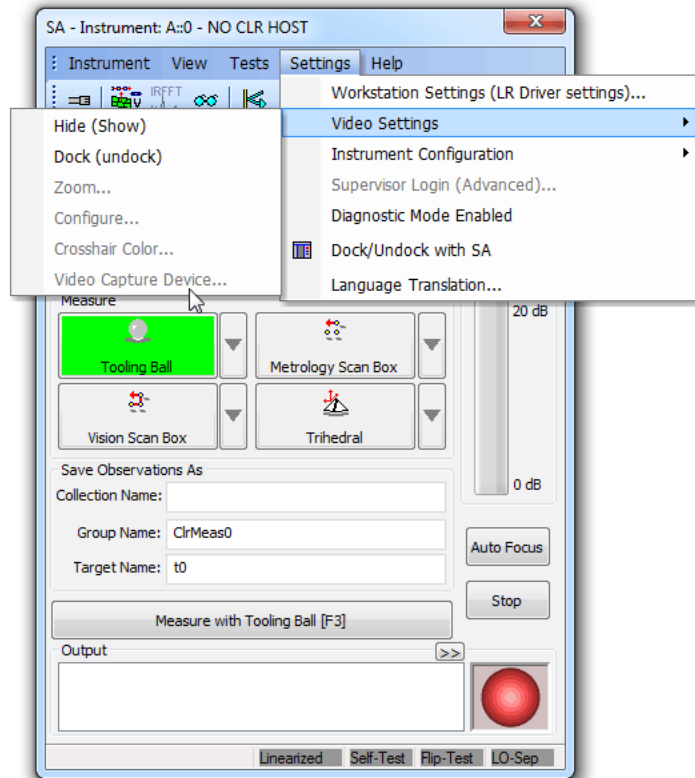
the SA Toolkit.



You can now also program CMM arm buttons for Next/Previous to correspond to a short/long button press.

## Laser Radar: Video Source Selection

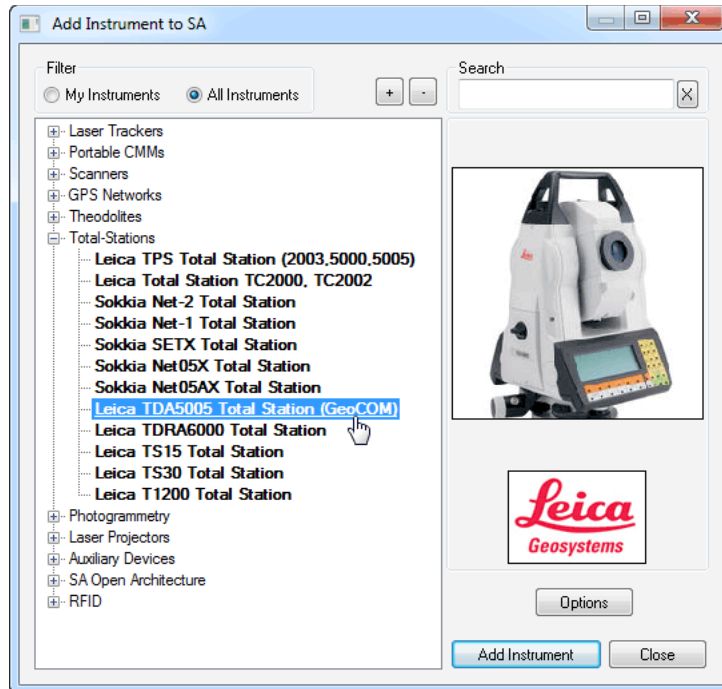
In the Laser Radar interface, you can now explicitly choose the video source. From the interface, select **Settings>Video Settings>Video Capture Device**.



## Leica TDA5005 GeoCOM Interface Added

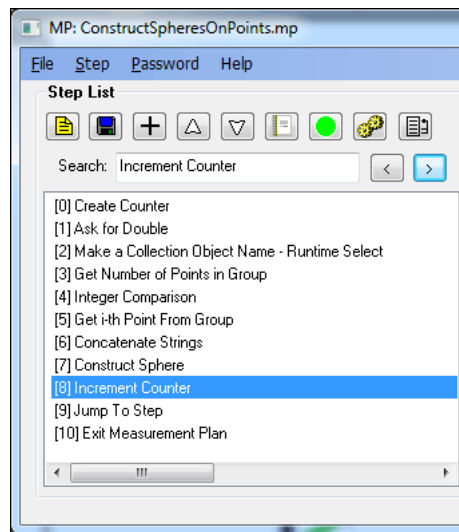
A GeoCOM-based interface has been added for the Leica TDA5005 that does not require the use of the NRK embedded SpatialAnalyzer application. This interface looks similar to the TDRA6000 interface. For this to function properly, the instrument must be added as a 'Leica TDA5005 Total Station (GeoCOM)' type (see below).

For the GeoCOM mode to work properly, the instrument must be in the 'MEAS' program, running from its top level menu. Entering lower-level menu items within the program will cause the device to cease GeoCOM communication until returning to the top level menu. The TDA5005 should be configured with GSI Communication: 9600/N/8/1/No Protocol and GeoCOM Communication: 9600/N/8/1/GeoCOM Protocol.



## MP Script Searching

The MP Editor now has a *Search* field which allows you to search the current script to find a command or comment (below).



This can save a lot of time when working on a lengthy script.

## Measurement Plan Commands

A number of new commands have been added to Measurement Plans. These include:

- **View Control>Show/Hide Instrument Probe Tip.** Shows or hides the probe tip in the graphical view.

- **View Control>Show/Hide Points.** Shows or hides individual points.
- **Construction Operations>Points and Groups>Copy Group Excluding Obscured Points.** Creates a new group of points by excluding points from source groups that are not visible to a specific instrument (because they are obscured by surfaces).
- **Analysis Operations>Get Cone Properties.** Obtains the properties of a cone.
- **Instrument Operations>Delete Measurements.** Deletes a set of specified measurements from an instrument.
- **Instrument Operations> Advanced Instrument Operations> Issue Instrument Actuator Command.** asfd
- **Instrument Operations> Advanced Instrument Operations> Set Instrument Axes.**
- **Instrument Operations> Advanced Instrument Operations> Set Alignment Projector.**
- **Instrument Operations> Nikon Metrology - Metris Laser Radar (LR)> LR Hardware Connect.**
- **Instrument Operations> Nikon Metrology - Metris Laser Radar (LR)> LR Hardware Disconnect.**
- **Instrument Operations> Nikon Metrology - Metris Laser Radar (LR)> LR Verify Hardware Connection.**
- **Instrument Operations> Nikon Metrology - Metris Laser Radar (LR)> LR Set Red Laser Intensity.**
- **Instrument Operations> Nikon Metrology - Metris Laser Radar (LR)> LR Self Test.**
- **Instrument Operations> Nikon Metrology - Metris Laser Radar (LR)> LR Self Test - Linearization.**
- **Instrument Operations> Nikon Metrology - Metris Laser Radar (LR)> LR Self Test - Flip Test.**
- **Instrument Operations> Nikon Metrology - Metris Laser Radar (LR)> LR Self Test - LO Sep.**
- **Instrument Operations> Start Instrument Interface.** Added a "Run in Simulation" argument to force immediate simulation mode, useful for testing scripts.
- **Instrument Operations> Locate Instruments (USMN).** Added arguments for "point groups to exclude" and "exclude points measured by only one instrument."
- **Relationship Operations>Make Group to Group Relation-**

**ship.** Added arguments for placing tolerances and constraints on the relationship.

- **File Operations>File Import>Import Leica GSI File.** Imports the Leica GSI file format.
- **View Control>Show Labels.** Independent control is now provided for turning point labels and object labels on or off.
- **Process Flow Operations>Ask For ...** Font control is now provided in the "Ask For ..." commands.

For additional improvements, changes, and fixes, please refer to the SA Readme file.