

# Release Notes

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**SPECTRA PRECISION SURVEY OFFICE**

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Version 3.90.1



**Corporate office:**

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# Welcome to Spectra Precision Survey Office

**Spectra Precision® Survey Office (SPSO)** software is ideal for processing and analyzing satellite and terrestrial survey data recorded in the field. The software provides numerous innovative and unique features, and it is easy to learn and use.

## Installing or updating

For installation or update instructions, see the appropriate bullet below.

**Notes:**

- Spectra Precision Survey Office (SPSO) licensing information is contained in a Sentinel HASP hardware or software key connected to or installed on your computer. If no key has been connected or installed, SPSO allows you to import and view data only. It does not allow you to use any licensed features. To view your license after installation is complete, select View License Manager on the Start Page. For a description of the features available in each licensed configuration, see "Licensed Features" in the online Help.

- After installation, be sure to select Check for Updates on the Start Page to ensure you have the latest updates for Spectra Precision Survey Office.

▪ **New users installing SPSO to use with a single-user license:**

- a. Before you insert the new Sentinel HASP hardware key you received in your installation package, install SPSO from the SPSO installation package downloaded from the Spectra Precision website.
- b. Before running SPSO for the first time, insert the new Sentinel HASP hardware key into an available USB port on your computer.

All licensed features will be available when you run SPSO. Your 1-year warranty begins the first time you open the software.

▪ **Existing users installing this version of SPSO:**

Install SPSO from the installation package downloaded from the Spectra Precision website.

**Important Note!** This version is available to users whose current warranty expiration date is **1 May 2017 or later**. If your warranty expires prior to this date and you proceed with the installation, licensed features will not be available. Contact your distributor to purchase a warranty extension. In the SPSO ribbon, select Support > License Manager to verify your warranty expiration date.

## New features

Following are the new features included in the various licensing options for this version of Spectra Precision Survey Office. See "Licensed Features" in the online Help to determine which of these new features are available with your license and to read more information about them. To view context-sensitive help at any time while using SPSO, press F1.

## Data review and editing

- **Point Comparison Report** - You can generate the new Point Comparison Report for a selection of point-related objects that includes all of the point pairs that are within a user-specified proximity and flags those that exceed a user-specified horizontal and/or vertical tolerance value. This is useful for comparing measured and office entered data. For example, you can compare COGO point data entered from survey plans and plats to survey data collected on site to verify the accuracy.
- **Support for new stakeout option in Trimble Access** - SPSO continues to provide full support for Trimble field solutions with the import of the new *Elevation* stakeout option included in a v5.71 (or later) JXL file. The new option is used for elevation stakeouts, enabling field users to measure positions relative to a flat plane.
- **View and export HRMS and VRMS from RTX-PP solutions** - You can now view and export (using the Export Format Editor) HRMS and VRMS precision values for a position computed using RTX-PP indicating the quality of the point. This enables you to view and manage RTX-PP position solutions the same as you view and manage GNSS position solutions. This also means that there is no longer a need to select a coordinate type during the import of an RTX solution file or when using the Send to RTX-PP command.

## Feature coding and attribution

- **Import and export SOSI files** - Import and export linestrings and polygons with feature codes using the new SOSI Vector Data importer and exporter. This is part of the continuing effort to provide a large variety of data format support in SPSO.

## CAD and drafting

- **Three-point circle** - Use the Create Three-Point Circle command to make geometry creation faster and easier. This is especially useful when working with point clouds where you can use a limit box or cutting plane to specify a cross-section of a cylindrical object (for example, a tree trunk or light pole) and then select three points and/or coordinates on the circumference to generate the circle. This provides a useful alternative to the existing Create Circle command where you define a circle by specifying a center point and a radius.
- **Three-point rectangle** - Use the Create Three-Point Rectangle command to create a rectangle by selecting three existing points and/or coordinates. Two points define the corners for one side of the rectangle; the third point defines where to draw the opposite side of the rectangle. This is especially useful when working with point clouds where you can use a limit box or cutting plane to specify a cross-section of an object (for example, a building facade) and then select three points to generate a rectangle within the view. This provides a useful alternative to the existing Create Rectangle command where you define a rectangle by specifying points for two opposite corners.
- **Point label enhancement** - The Label Style Manager has been enhanced to support the creation of point labels that now include, along with previously supported values, global latitude, longitude, and height values, increasing the flexibility of this powerful labeling tool.
- **Text style preview** - The Text Style Manager has been updated to provide a preview of the currently selected text style so that you can be confident of what you will see prior to using a text style in your project. Any style property changes you make in the Text Style Manager are displayed immediately in the preview.

- **Drawing in ortho mode** - You can now create rectangular CAD geometry (for such objects as foundations, buildings, and so on) more efficiently by easily ensuring the linework created consists of exactly 90 degrees angles.
  - **Ortho snap** - This snap option results in a new "free" point that is aligned either horizontally or vertically with the previous (anchor) point.
  - **Ortho tracking** - This snap option results in a new "free" point that is aligned either horizontally or vertically with the previous (anchor) point only when at least some portion of the pick aperture is positioned on the horizontal or the vertical line of the anchor point. The size of the pick aperture (specified in the Options dialog) determines the tolerance used for the snap.

When you select to use an ortho snap option, other selected snap options are still applicable when you make your pick, allowing you to override the restrictions of the ortho snap.

For ease of use, there is a shortcut button on the status bar located at the bottom of the SPSO window to turn the ortho snap option on and off.

- **Dimension style preview** - The Dimension Style Manager has been updated to provide a preview of the currently selected dimension style so that you can view and verify changes as you make them. This enables you to work quickly and efficiently when creating or "fine tuning" a distance or angular dimension style before applying it in a graphic view.
- **Curved dimension labels** - The Dimension Style Manager has been updated to allow you to create angular and linear dimension labels that are curved as necessary to align with their associated dimension arcs, resulting in a closer visual relationship between the dimension and the CAD object, helping to minimize ambiguity.
- **Match object properties** - Use the new Match Properties command to match (copy) properties assigned to a selected object (for example, a CAD object or survey point) to one or more other objects of the same type. Properties that can be matched include layer, line style/scale/weight, color, text style, dimension style, label style, label table style, and feature code. This allows you to efficiently standardize objects in your project with complete control of the properties.
- **Select similar objects** - Use the new Select Similar command to select objects (for example, CAD objects or survey points) that have properties matching the properties of a chosen object. Properties that can be used in the selection search include layer, line style/scale/weight, color, text style, dimension style, label style, label table style, and feature code. This makes it easier to manage and edit as necessary the objects in your project.
- **Point elevation label precision in DWG and DXF exporters** - The DWG and DXF exporters have been enhanced to allow you to specify the decimal precision to be used for exported point elevation labels. This provides more flexibility when exporting CAD deliverables.

## Surface and volume analysis

- **Points to Surface command enhancements** - The Report Delta Elevations table in the Points to Surface command, which is used to measure the distance from one or more points to a surface, now allows you to click any column header in the table to sort the rows based on ascending or descending values in the column. In addition, you can select only those rows in the table that you want to include in the Points to Surface Results report. These enhancements enable you to organize and display data in a manner that best suits your needs.

## Corridor design

- **Super Elevation View** - Add and modify text objects, polylines, and linestrings in the super elevation view of an alignment. You can also add a frame (closed line) and create a dynaview in another view using the frame.
- **Create and Edit Shareable Slope Table** – Use the Create Shareable Slope Table command to create a new shareable slope table object. The object can be drawn as a line in the super elevation view of any corridor that is related to an alignment. Use the Edit Shareable Slope Table command to edit an existing shareable slope table object.
- **Corridor Earthwork Report** – View the surface areas of each material computed by multiplying the average slope length times the change in station and the same area adjusted for curve and grade slope. These new properties are only shown in the Excel report option.

## General software enhancements

- **Improved command search** - The Command Pane (press F12), which provides a handy means to access any of the commands in SPSO without the need to locate them in tab menus, has been enhanced to provide easier command searches. As you type in the command search field, a list displays that dynamically updates to show each command that includes the character string you have typed. This makes it easier and faster than ever to find the command you need, even if you are not sure of the complete command name.
- **Use the Delete key to delete objects** - You can now easily delete selected objects (for example, CAD objects, observations, survey points, and other selectable objects in your project) by simply pressing the Delete key. This is in addition to the current Delete command available in right-click context menus.
- **Context menu action commands** - Commands used to create and edit objects displayed in graphic views (including points, lines, labels, dimensions, and so on) now replicate the command's action buttons (for example, Apply, OK, and Close) in right-click context menus that display directly in the graphic view. Because you don't have to keep moving your cursor back to the command pane to complete an action, you can create and edit single and multiple objects faster and more efficiently.

In addition, the right-click context menu for the Polygon Select command now includes Enter Key and Escape Key options to allow you to save or cancel your selection without using the keyboard.

## Known issues

Following are known issues in this version of SPSO:

- **View refresh** - If you change focus from SPSO to another application window on your desktop and then return focus to SPSO, it is possible that the tab view will be black. In addition, if you "float" your cursor on the view, a string of cursor icons will be drawn. This is a graphic view refresh issue and can be resolved simply by panning or zooming on the view.

- **Cannot check in detachable HASP license early** - A HASP network key can be configured to allow users to check out a "detachable" instance of the multi-user license for a limited period of time, allowing the user to run the software without being connected to the network. In earlier versions of SPSO, a detachable license could be checked back in (canceled) early, prior to the expiration date and time, making it available for other users. However, at this time, a detachable license cannot be checked in early (a system-time error message is displayed) and is checked in only on the expiration date and time. Then it is available for use by other users.
- **Windows 10's Anniversary Update** - Upgrading to Windows 10's Anniversary Update (version 1607) with the HASP drivers installed can cause the HASP license system to stop working for SPSO. To resolve the problem, you must reinstall the HASP drivers. See the *HASP Troubleshooting Guide* for instructions.
- **Microsoft Edge web browser** - When SPSO reports are displayed in a Microsoft Edge web browser, the links to objects within the application no longer work. It is recommended that you use a different browser to view SPSO reports.
- **HASP license key and Intel C602 chipset** - The HASP license key required to run SPSO is not compatible with the Intel C602 chipset used in some server/workstation environments. The use of the HASP license key in combination with the C602 chipset will cause the application to crash.

## Miscellaneous notes

- **OpenCL Runtime driver** - OpenCL Runtime is a graphics accelerator driver required when SPSO is performing automatic tie point matching or dense point cloud creation. If the driver is not installed, an error message is displayed indicating OpenCL Runtime cannot be found. In this case, you must download OpenCL Runtime from <https://software.intel.com/en-us/articles/openccl-drivers#phiwin> and install it on your computer using the instructions provided.
- **VCE compatibility** - As a general rule, you cannot open a VCE project file created in a newer version of SPSO in an older version of SPSO.
- **Windows 8 users** – Some components in SPSO require Microsoft .NET Framework 3.5 to operate. If the .NET Framework 3.5 is not installed, you are prompted to install it when you install SPSO. If your computer is connected to a domain that does not allow you to directly connect to Windows Updates on the Internet to enable and install .NET 3.5, you may need to change your group policy settings. See your system administrator for assistance.  
For more information, see <http://technet.microsoft.com/en-us/library/dn482065.aspx>
- **Windows XP users** – Some components in SPSO require Microsoft .NET Framework 4.5, which is not supported by the Windows XP operating system. To run this version of SPSO, you must install a different operating system. See "System requirements" for complete operating system requirements.
- **TabletSync transfers** - If you use TabletSync to transfer large files (for example, panoramas) into SPSO, it can take a long time for the upload to complete. As an alternative, you can shorten the transfer time by copying the files from the tablet onto a USB memory stick and copying the files from the stick into SPSO.

## System requirements

<b>Operating system:</b>	Microsoft Windows® 10 (64-bit version) Microsoft Windows 8 (64-bit version) Microsoft Windows 7 (64-bit version with Service Pack 1)
<b>Processor:</b>	Dual-core 1.80 GHz or better recommended  Quad-core 2.80 GHz or better (for example Intel i7-860 2.8 GHz) recommended for Aerial Photogrammetry Module and Scanning Module
<b>Random access memory (RAM):</b>	2 GB or more recommended  32 GB or more recommended for Aerial Photogrammetry Module and Scanning Module
<b>Hard disk space available:</b>	5 GB or more recommended  100 GB or more on solid-state drive required for Aerial Photogrammetry Module and Scanning Module
<b>Monitor:</b>	1280 x 1024 or higher resolution with 256 or more colors (at 96 DPI)
<b>I/O Ports:</b>	USB 2.0 port required if HASP hardware key is used
<b>Graphics:</b>	DirectX 11 compatible graphics card with 512 MB memory or more  OpenGL version 3.2 or later required when working with point cloud data (latest version recommended)  2 GB graphics card (for example, NVIDIA GTX 670) required when working with UAS data (Aerial Photogrammetry) and/or point cloud data



***Important!***

**It is critical that you keep your graphics driver(s) updated if you are working with point cloud data.**

Whether your computer has one or multiple graphics cards installed, you must ensure each has been updated with the latest driver provided by the card's manufacturer. The best way to determine if your driver needs to be updated and, if so, perform the update is to visit the card manufacturer's website. For more information, see "Update and Configure Your Graphics/Video Driver" in the online Help.

(If, instead, you decide to update your driver using the Windows Device Manager and the "Search automatically" option, the program may suggest using a Microsoft-approved WHQL version of the driver. However, to ensure you have the latest bug fixes and new features for your graphics card, it is recommended that you use the latest manufacturer version instead.)