

# Trimble® Positions™ Desktop Add-in: New Features

March 3, 2016

This document describes the new features included in versions of the Trimble® Positions™ Desktop Add-in software since version 10.1.0 was released. The new features are reported relative to the previous version. *Note – You cannot have two versions of the Positions Desktop Add-in or Positions Desktop Add-in and GPS Analyst™ software installed at the same time. If you need more information, please see the [Positions Desktop Add-in User Guide](#), [Positions Desktop Add-in Release Notes](#), or the [User Guide for your GPS device](#).*

## **Version 10.4.0.1 (February 2016)**

### **Enhancements:**

- **Enhanced support for the Trimble TerraSync software.** The Data Dictionary Editor and Data Transfer utilities from the Trimble GPS Pathfinder® Office software can be installed with the Trimble Positions Desktop Add-in. This enables the full TerraSync software workflow with Trimble Positions Desktop Add-in without needing the GPS Pathfinder Office software installed.
- **Enables the creation of a TerraSync project from DDF or SSF.** TerraSync software users are able to create a project within the Trimble Positions Desktop Add-in from an existing DDF or SSF file.
- **Improved postprocessing options.** Trimble Positions Desktop Add-in users have additional controls when postprocessing data which allows them to re-correct positions that were corrected in real-time, choose either the best postprocessing result or the last postprocessing result, and to restore sessions and positions to their original status.
- **Increased device support.** The Trimble Positions Desktop Add-in now supports the Trimble R2 GNSS receiver and Trimble Nomad® 1050 handheld. Additionally, support for Trimble FieldPoint RTX correction service and 5 minute RTX convergence has been added for the Trimble Geo 7X handheld and R2 GNSS receiver.
- **Enhanced TerraFlex support.** The Trimble Positions Desktop Add-in includes the latest enhancements to the Trimble TerraFlex workflow that were included in version 3.5 of the TerraFlex plugin for Esri ArcMap, released in January 2016.
- **Database management improvements.** The Trimble Positions Desktop Add-in can be configured to use a SQLite database. This offers a more scalable option for users who were experiencing limits with JET databases. Additionally, the Trimble Positions Desktop Add-in can be configured using DSN-less connection strings.
- **Additional troubleshooting tools.** These include the ability to copy projects to a new SQLite database, to see additional information about a session (satellite count, average SNR), and a new tool which provides better control over downloading sessions from a geodatabase for ArcGIS for Windows Mobile workflows.
- **Support for ArcGIS Desktop 10.3.1 and 10.4.**

### **Issues Addressed:**

- **Improvements to how code postprocessed estimated accuracies are calculated for the Trimble Geo 7X handheld.** This generally means lower accuracy estimates which more closely match the actual error of the postprocessed positions.



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## **Version 10.3.0.2 (March 2015)**

### **Enhancements:**

- **Support for the Trimble R1 GNSS receiver.** The Trimble Positions Desktop add-in can now be used to postprocess data from devices paired with a Trimble R1 GNSS receiver via Bluetooth® wireless technology.

### **Issues Addressed:**

- **Photo handling was not correct in certain TerraSync workflows.** In certain cases, photos may have been missing the full path information or may have received duplicate names on check-in. This has been resolved.
- **Change made to ArcMap.exe.config file during installation caused Version Manager toolbar to stop working.** The Trimble Positions Desktop add-in installer will no longer make a change to the tag in the ArcMap.exe.config file. It will only add a supported .NET runtime version. For more information, refer to the blog.
- **Project wizard should not include hidden fields in TerraSync/TerraFlex project layers.** If fields are hidden at the time the project is created, they will not be included in the project layers. If changes are made to the geodatabase schema or ArcMap layer definition after the project was created, a new project should be created. The OBJECTID and SHAPE fields should never be hidden in TerraSync project workflows.
- **Dockable window should remember last check-out/check-in folder for TerraSync SSF files.** This is now functional.
- **Layer names > 20 characters were improperly handled in TerraSync workflows preventing check-in.** Long layer names are now truncated properly for use in the Data Dictionary Editor. Original layer names in ArcMap should not need to be changed.
- **Layer names should have '.' character stripped before being used in TerraSync workflows.** Layers added from an enterprise geodatabase will by default contain one or more 'dots' in the name. These will be removed automatically for internal layer name storage in TerraSync workflows. Original layer names in ArcMap should not need to be changed.
- **Checked-out features (in TerraSync SSF files) that weren't updated were incorrectly included in a new session on check-in.** Unmodified features will now always be excluded from sessions on check-in.
- **Feature accuracy values were not populated on check-ins from TerraSync SSF files.** In some cases, feature accuracy values were not always populated on check-in. This has been resolved.
- **Export to Excel from feature grid did not work in some locales.** This has been resolved.
- **TerraSync workflow did not work properly if layer or attribute names contained special characters.** This has been resolved.
- **Changes made from DDF import were lost if wizard was continued.** This has been resolved.
- **Out-of-date coordinate system database caused "missing datum" errors when loading newer base station lists.** This has been resolved.

## Version 10.3.0.1 (November 2014)

### Enhancements:

- **Support for TerraSync™ workflows.** You can create projects which contain a dictionary and information required for mapping between SSF and geodatabase data. A dictionary will be used when checking out features to an SSF file, and can also be updated from a dictionary edited in the Data Dictionary Editor. Data (including photos) can be checked in from the SSF using the Trimble Positions Desktop add-in; sessions can be managed in the same way as other workflows.  
*Note – This new functionality has been tested with TerraSync 5.60 and above. Use of earlier versions of TerraSync in the Trimble Positions workflow may not produce the desired results.*
- **Support for TerraFlex™ workflows.** Trimble Positions Desktop add-in users can now publish projects and form templates to InSphere without having to use a separate add-in. Completed forms (including photos) can be downloaded directly into geodatabase feature classes.
- **New wizard for project creation and editing.** A new project wizard significantly improves the user experience when creating and editing projects. Project wizard steps are hidden or shown depending on whether or not they are required for a given project type. Map document validation and GNSS-enabling are now part of this new wizard. Other benefits include:
  - New layers (from the same workspace) can be added to existing projects
  - New fields for metadata transfer can be added through the wizard (file/personal gdb only)
  - Accuracy thresholds can be set for multiple layers at once
  - Unused project types can be turned off through the Configuration tool
  - Simpler administration screens (project-type specific items are largely constrained to the wizard)
  - Additional metadata transfer attribute – vertical estimated accuracy
- **Esri® ArcGIS® for Desktop 10.3 support.** This version of the Trimble Positions Desktop add-in will support ArcGIS for Desktop 10.3 when it is publically released.
- **Support for RTX field configurations.** Field configurations can now be created to support the forthcoming Trimble RTX™ technology support in the Trimble Geo7X handheld firmware. There is minimal configuration for this type of field configuration.
- **Improved use of TrimbleSessions for transferring binary GNSS session and construction data.** Geodatabases and map documents that are GNSS-enabled using version 10.3.0.1 of the Trimble Positions Desktop add-in use a slightly different schema for the TrimbleSessions feature class and layer (except when using ArcGIS for Desktop Basic). This new schema supports the storage of both GNSS measurements AND feature constructions as attachments and will not store any binary data in the feature class itself. This means that a TrimbleSessions feature (in the new schema) will have at least 2 attachments when it is harvested. There is also a configuration (file) option for splitting long GNSS sessions into multiple attachments; this will be covered in a [blog post](#).
- **Improved usability.** This version includes various enhancements designed to improve the usability of the software:
  - the ability to export the current features-in-a-session and positions-in-a-feature grids to Excel
  - the ability to import a field configuration that was exported from a different Trimble Positions database
  - the ability to turn off unused project types through the Configuration tool

### Issues Addressed:

- **Errors when trying to use certain GGF files for MSL calculation.** There were problems using certain GGF files (for example, France and UK geoids) that stored their lat/lon extents in a particular format. This has been resolved.

## Version 10.2.2.1 (August 2014)

### Enhancements:

- **Esri ArcGIS 10.2.x support.** The Trimble Positions Desktop add-in now properly supports Esri ArcGIS for Desktop 10.2.x in addition to 10.1 and 10.2.RELEASE NOTES 2
- **Support for precise feature heights.** This version adds support for antenna height and type for ArcGIS for Windows® Mobile workflows (real-time and postprocessed) and antenna height for ArcPad workflows (postprocessed) for the purpose of collecting high-accuracy feature heights. Desktop users can specify how Height Above Ellipsoid values are converted to Mean Sea Level elevations (or not) using a fixed geoid separation or calculated from a GGF file downloaded from the Trimble website. Accordingly, the metadata value formerly known as Height Above Ellipsoid is now named Feature Height.
- **Additional hardware support.** The Trimble Positions Desktop add-in can now postprocess data from additional field devices in ArcGIS for Windows Mobile workflows: Trimble Juno® 5 Enhanced GPS, Trimble Juno T41™, and Trimble Juno T41 Enhanced GPS.
- **Improved usability.** This version includes various enhancements designed to improve the usability of the software. Such enhancements include control over session outline display and defaulting new Internet-based real-time correction sources to NTRIP.

### Issues Addressed:

- **Failure to register with ArcMap 10.2.x.** The previous version of the add-in would fail to register with ArcMap when installed on ArcMap 10.2.1 or 10.2.2. This has been resolved in this version.
- **NTRIP source table retrieval problems.** In some network configurations, the Trimble Positions Desktop add-in would fail to retrieve the NTRIP source table in the field configuration wizard. This has been fixed for some configurations and if problems still occur, refer to the fix described here: <http://positionsblog.trimble.com/?p=229>
- **Projects could include multipoint and multipatch geometry types.** If you included layers of geometry type multipoint or multipatch in an ArcPad or Trimble Positions Toolkit project, errors would occur. Layers of this geometry type are now excluded from the list of available layers.
- **Metadata units.** When using projected coordinate systems with a non-metric unit of length, metadata values in the field would be populated appropriately, but desktop processing would overwrite them with metric values. This has been fixed. The unit labeling in the metadata configuration user interface has also been removed to avoid confusion.
- **Postprocessing with folder/file profiles.** There were several problems that could arise when trying to create (and use) a profile for previously downloaded base station files. These have been resolved.
- **Custom spatial references and datum transformations not supported.** The Trimble Positions Desktop add-in did not properly recognize custom spatial references and datum transformations. This has been resolved for common workflows.
- **Database configuration problems would crash ArcMap.** Previously, configuration problems with the Trimble Positions desktop database would cause ArcMap to crash. A relevant error message will now be displayed and the add-in functionality will be disabled.
- **TrimbleSessions.Note field would get null value preventing the session from being available.** In Oracle geodatabases, empty string values in the TrimbleSessions.Note field would be converted to null values after synchronization and this caused problems when checking for new sessions. This has been resolved.

## Version 10.2.0.1 (November 2013)

### Enhancements:

- **Esri ArcGIS 10.2 support.** The Trimble Positions Desktop add-in now supports Esri ArcGIS for Desktop 10.2 in addition to 10.1.RELEASE NOTES 2

•**Trimble GeoExplorer® Geo 7 series and the Geo 7 rangefinder module support.**

- The Geo 7 series' orientation sensors are used to rotate the Skyplot, and to show the current heading in the Navigation section, even when stationary.
- The Geo 7 rangefinder module, together with the orientation sensors, can be used to collect position offsets and record attribute information for distance and angle measurements.

•**Legacy workflow support.** This version adds basic support for a few legacy workflows that have been requested: create data dictionary (DDF) from the layers in the current map document (for the TerraSync™ software), and create a projection file (PRJ) from the coordinate system used in the current map document (for the GPS Pathfinder® Office software). These are both available from the Create... button in the projects administration area. The projection file export feature is the same as that provided in the separate add-in referenced in the GPS Pathfinder Office support note PRJ File Extraction Add-In for ArcMap.

•**Field-to-office session notes.** Mobile users can now enter descriptive text about the session and this text will be visible to the Positions Desktop add-in user. The columns visible in the sessions grid of the dockable window have been adjusted to display start time, end time, and these notes.

•**Populating device names from the field.** For large organizations that have named their devices using the standard Windows Mobile registry key, this data can be used to populate the device name visible in the Trimble Positions Desktop add-in. Please contact your Trimble reseller or consult the Trimble Positions Development Team Blog for more information.

•**Improved usability.** This version includes various enhancements designed to improve the usability of the software. Such enhancements include better labeling for functionality that applies to ArcPad versus ArcGIS for Windows Mobile workflows, clearer messaging in the integrated mobile cache synchronization tools, integrated check for proper modifications to the ArcMap.exe.config file prior to postprocessing, session grid groupable by day portion of start date/time (to group sessions by the day they were collected), and directly editable QuickProject check-in path.

•**Improved diagnostics.** Additional information is now included in the log file to assist in troubleshooting.

**Issues Addressed:**

•**Configuration log contained numerous DROP TABLE errors.** Previous versions of the Trimble Positions Configuration application would log unnecessary DROP TABLE errors in the TrimblePositionsConfig.log file. This is now fixed.

•**Exiting ArcMap while a session is open.** Due to a documented Esri/Microsoft .NET issue, ArcMap 10.1 add-ins did not have the ability to stop the ArcMap close process. A message was added in the previous version alerting the user to this condition. This functionality has been restored in ArcMap 10.2 and the Trimble Positions Desktop add-in will now properly prevent the close of ArcMap if a session is open.

•**Workspace validation.** The workspace validation that is used to identify projects compatible with the current map document was previously case-sensitive. This may have caused problems in multi-user configurations. This is now fixed

•**Validator showed warning message if projected coordinate system used WGS84 datum.** The validator is used to check the current map document for compatibility with Trimble Positions workflows. Previously it would include a warning message if the map document was using a projected coordinate system regardless of datum. This has been fixed to only generate a warning if the datum is not WGS84.

•**Log file showed messages from other applications and vice-versa.** The Trimble Positions Software Suite uses the Apache 'log4net' library for its logging functionality. As this is a very powerful and common library, it is used by many other software packages, including other ArcMap add-ins. In previous versions of the Trimble Positions Desktop add-in, log messages from other add-ins may have appeared in the PositionsDesktopAddIn.log file and vice-versa. This is now fixed.

- **Fields with aliases at the feature class level could not be used for metadata transfer.** Fields within a feature class can be aliased at both the feature class and layer (map document) level. If fields aliased at the feature class level were specified for metadata transfer, they would not be properly populated in previous versions. This is now fixed.
- **Features in 3D feature classes were not updated in certain cases.** In some cases, Z-enabled (3D) feature classes may not have been updated through the *Update Features* functionality due to how the 3D capability of the feature class was identified. This is now fixed.
- **Fully qualified name for TrimbleSessions feature class was not correct in certain user schema scenarios.** In enterprise geodatabase environments, users may connect to the geodatabase with user-specific credentials. This can create scenarios where TrimbleSessions gets created in user-specific schemas that other users may not have access to. The new version displays a warning message if TrimbleSessions is found in a different schema and also fixes an issue where the incorrect fully qualified name for TrimbleSessions is generated when the user is missing appropriate permissions.
- **Could not postprocess a session spanning multiple hours against a base station having a separate NAV file URL template.** An issue with previous versions of the Trimble Positions Desktop add-in prevented users from postprocessing a session that spanned multiple hours against a base station that has a separate NAV file URL template. Users would get a message about partial coverage. This is now fixed.
- **Nested point collection during line streaming was problematic in data from Positions ArcPad extension.** The previous versions of the Trimble Positions Desktop add-in did not always properly handle nested point features collected during a streamed line feature in ArcPad. This was dependent on the screen workflow that the user employed in ArcPad and may have also resulted in the point geometries being included in the streamed line feature. This is now fixed.
- **Shared vertex between line and area features was problematic in data from Positions ArcPad extension.** There is a specific screen workflow in ArcPad that can result in a vertex being shared between a line and area feature. This caused problems for the Trimble Positions Desktop add-in. This is now fixed.
- **Digitized sub-parts did not display properly in position tree/list in certain cases.** In some cases, manually digitized points and vertices did not properly display in the position list (or tree) of a feature. This is now fixed.
- **Out of memory exception during postprocessing.** Previous versions of the Trimble Positions Desktop add-in may have exhibited a problem during postprocessing when the session data (from an imported TrimblePositions.ssf) was of a particularly large size. This is now fixed.
- **Missing Z coordinate in base station data caused a problem in postprocessing.** The new version of the Trimble Positions Desktop add-in will properly handle the case of base station data missing a Z coordinate.
- **Note field in TrimbleSessions feature class caused problems in personal geodatabases.** The field name Note is not supported in personal geodatabases and when GNSS enabling a personal geodatabase (for the ArcGIS for Windows Mobile workflow), the field name is switched to Note\_. This causes problems for other components which are expecting the field to be named Note. This is now fixed.
- **Positions Desktop add-in crashed in certain floating license scenarios.** In certain floating license configurations, the Trimble Positions Desktop add-in would be unable to borrow a license and this would cause an ArcMap crash when the user tried to enable the Trimble Positions Desktop add-in. The underlying issue relates to the Trimble Positions License Manager missing a required certificate. This is now fixed.

### **Version 10.1.0.3 (April 17, 2013)**

#### **Enhancements:**

- **Localization.** The Trimble Positions Desktop add-in is now available in the Japanese language, in addition to French, German, Spanish (South American), and Portuguese (Brazilian) languages.

## Version 10.1.0.2 (April 4, 2013)

### Enhancements:

- **Trimble Positions Mobile extension offset support.** The Trimble Positions Desktop add-in now supports feature geometry data collected using offsets with the Trimble Positions Mobile extension version 10.1.1.1. This includes support for simple left-/right- offsets alongside a path or perimeter and complex distance-bearing offsets for point features or polyline and polygon vertices.
- **Development Team Blog.** The Trimble Positions Software Suite Development Team Blog is now available at <http://positionsblog.trimble.com>. Be sure to visit and sign-up to this blog. It was started by the Trimble Positions product development team as a way to better communicate directly with dealers and customers. Please check back frequently for new content.
- **Support for ArcGIS for Desktop Basic edition.** The Trimble Positions Desktop add-in now supports the ArcGIS for Desktop Basic edition, with the following limitations:
  - For ArcPad workflow with Trimble Positions ArcPad extension: Limited or no support for enterprise geodatabases and ArcSDE services; refer to Esri documentation.
  - For ArcGIS for Windows Mobile workflow with Trimble Positions Mobile extension:
    - Cannot enable or synchronize attachments.
    - Cannot add GlobalID fields through the User Interface to allow synchronization.
    - Degraded performance when collecting session data in the field.
- **Polyline geometry extension support.** The Trimble Positions Desktop add-in now supports the geometry created with the Trimble Positions Mobile extension version 10.1.1.1 after extending an existing polyline feature in the field.
- **Built-in Mobile Cache creation and synchronization.** The Trimble Positions Desktop add-in now has integrated support for creating and synchronizing the Mobile Cache without needing to use the Esri Mobile toolbox. This streamlines workflow within the Trimble Positions solution.
- **Map extent used to sort base stations when creating a profile.** The Trimble Positions Desktop add-in now allows you to sort the base station list by proximity to the current map extent when creating a post-processing profile.
- **Deletion of previously downloaded base station data.** The Trimble Positions Desktop add-in now allows the user to delete and re-download base station data. This is sometimes necessary when a previously downloaded base station file is corrupted or incomplete.
- **Virtual PC installations support.** The Trimble Positions Desktop Configuration tool now supports activation on virtual PCs. Virtual PC installations are useful when the user wishes to install more than one otherwise conflicting application software versions on a single physical PC.
- **Citrix and roaming profiles support.** The Trimble Positions Software Suite now supports the concepts of roaming profiles and per-user configurations on the desktop. This is useful in larger enterprise organizations where software applications and user configurations are centrally managed. Per-machine configurations are also still supported.

The Trimble Positions system configuration is stored in one of the following folders, dependent on profile type and operating system:

Profile type	Windows 7	Windows XP
Per-user (roaming)	C:\Users\ <username&gt;\appdata\roaming\trimble\positions\10.1< td=""><td>C:\Documents and Settings\<username&gt;\application data\trimble\positions\10.1<="" td=""></username&gt;\application></td></username&gt;\appdata\roaming\trimble\positions\10.1<>	C:\Documents and Settings\ <username&gt;\application data\trimble\positions\10.1<="" td=""></username&gt;\application>
System (local)	C:\ProgramData\Trimble\Positions\10.1	C:\Documents and Settings\All Users\Application Data\Trimble\Positions\10.1

- **Base station management support.** The Trimble Positions Desktop Configuration tool now supports base station management, including updating the CBS List from the Trimble FTP server, loading of user-defined base stations defined and used in GPS Pathfinder® Office and Trimble GPS Analyst™ extension, and saving of user-defined base stations defined in Trimble Positions Desktop add-in.

- Localization.** The Trimble Positions Desktop add-in is now available in French, German, Spanish (South American), and Portuguese (Brazilian) languages.
- Educator license program.** The Trimble Positions Desktop add-in is now available within the educator license program.

### Issues Addressed:

- Connections to a JET database on computers with Windows® XP would sometimes fail.** In rare cases, on a small number of computers powered by the Windows XP operating system, connection to the Data Source Name (DSN) would fail. This was caused by the presence of one or more space characters within the DSN, which would cause an invalid value to be written to the Registry. The Trimble Positions Desktop add-in now correctly handles DSN names and warns the user when an attempt is made to connect to a DSN that includes one or more space characters in the name.
- H-Star receivers not correctly recognized.** The Trimble Positions Desktop add-in now handles all supported H-Star receivers correctly, providing superior postprocessed accuracy.
- Accuracy estimates with negative heights.** The Trimble Positions Desktop add-in now correctly calculates accuracy estimates for offsets collected in the Trimble Positions ArcPad extension where the vertical offset is negative, for example when collecting an offset down a slope.
- Height metadata incorrectly calculated with offsets.** The Trimble Positions Desktop add-in now correctly calculates and populates the height metadata when used with offsets.
- Negative values are not allowed in the offset construction edit dialog.** The Trimble Positions Desktop add-in now allows the user to enter negative values for bearings and heights in the offset construction dialog. Horizontal distance offsets can still only be a positive value.
- Postprocessing with DAT files requires a NAV file.** The Trimble Positions Desktop add-in no longer require a NAV file to be defined and downloaded when postprocessing using a DAT file.
- ArcGIS for Desktop sometimes crashes when a Trimble Positions postprocessing session is canceled.** The Trimble Positions Desktop add-in now correctly handles cancellation of a postprocessing session.
- Base station access using authentication credentials fails for NAV files.** The Trimble Positions Desktop add-in now correctly applies the authentication credentials used to access base station observation files when downloading NAV files.
- Base station access using authentication credentials fails from behind a proxy server.** The Trimble Positions Desktop add-in now correctly applies the authentication credentials used to access base station observation files when downloading files from behind a proxy server.
- Base station URL definition format incorrectly recognized.** The Trimble Positions Desktop add-in now correctly substitutes formatted fields (such as %DDDDD%, %CCCC%, %YY%, etc.). Non-standard characters represented by escape sequences (such as %7c) are also correctly handled.
- Trimble Positions Desktop Configuration tool not uninstalled correctly.** The Trimble Positions Desktop add-in installer now correctly uninstalls the Trimble Positions Desktop Configuration tool when the extension is uninstalled.
- Floating licenses not released after Trimble Positions Desktop add-in has been disabled and re-enabled.** The Trimble Positions License Manager now correctly handles the release of a floating license in this circumstance.
- Floating licenses not released after ArcGIS for Desktop crashes.** The Trimble Positions License Manager now correctly handles the release of a floating license in this circumstance.

## Version 10.1.0.1 (December 2012)

### **Enhancements:**

- ArcPad workflow support.** Version 10.1.1 of the Trimble Positions Desktop add-in now supports data collected using ArcPad with the Trimble Positions ArcPad extension version 10.0.1. This includes support for AXF check-in/-out and the handling of QuickProjects created in ArcPad.
- Juno 5 series support.** Version 10.1.1 of the Trimble Positions Desktop add-in now supports GNSS measurements from a Juno 5B or 5D receiver.