



RELEASE NOTES

TRIMBLE[®] ACCESS[™] SOFTWARE

Version 2013.40
Revision A
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Legal Information

Trimble Navigation Limited
Engineering Construction Group
935 Stewart Drive
Sunnyvale, California 94085
U.S.A.
www.trimble.com

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Contents

- Trimble Access Software Version 2013.40 4
- General Survey 6
- Roads 13
- Tunnels 14
- Mines 17
- Land Seismic 18
- Monitoring 18
- Aerial Imaging 18
- Trimble Access Services 21
- Software and Hardware Requirements 21

Trimble Access Software Version 2013.40

These Release Notes contain information about the Trimble® Access™ software version 2013.40.

The Trimble Access software provides a collection of survey tools for use in the field, and web-based services for the office and in the field. These applications may be installed on the controller, the office computer, or on servers hosted by Trimble, depending on the parts you have purchased.

Installing the software and licenses on the controller

Operating system installation

With a new Trimble Tablet, the operating system is not installed. Turn on the Tablet to install the Windows® operating system and then apply Windows updates.

With all other new controllers, the operating system is already installed.

Software and license installation

Before you use your controller, you must install the applications and licenses using the Trimble Access Installation Manager. If you have:

- not installed the Trimble Access Installation Manager before, go to www.trimble.com/taim for installation information.
- previously installed the Trimble Access Installation Manager, you do not need to reinstall it because it updates itself automatically. Select *Start / All Programs / Trimble Access Installation Manager* to start the Installation Manager.

For further information on how to install or update your software and license file, refer to the Help file in the Trimble Access Installation Manager.

Note – For Trimble CU controllers, Trimble Access version 2013.00 and later can be installed only on the Trimble CU model 3 (S/N 950xxxxx). Trimble CU models 1 and 2 have insufficient memory to run later versions of Trimble Access.

Am I entitled to this version?

To install and run Trimble Access software version 2013.40, you must have a warranty agreement valid up to 1 October 2013.

When you upgrade to version 2013.40 using the Trimble Access Installation Manager, a new license file is downloaded to your device.

Updating office software

When you upgrade to version 2013.40, you must also update your office software. These updates are required if you need to import your General Survey jobs into Trimble office software such as Trimble Business Center.

When you upgrade the controller using the Trimble Access Installation Manager, the office software on the computer that has the Trimble Access Installation Manager installed is also upgraded. To upgrade other computers that were not used to update the controller, do one of the following:

- Install the Trimble Access Installation Manager onto each computer and then run Office updates.
- Run the Trimble Update Office Software packages for the Trimble Access software from www.trimble.com/support_trl.aspx?Nav=Collection-84862.
- Use the Trimble Data Transfer utility:
 - You must have version 1.51 or later installed. You can install the Data Transfer utility from www.trimble.com/datatransfer.shtml.
 - If you have version 1.51, you do not need to update to a later version of the Data Transfer utility; you can run one of the Trimble Update Office Software packages from www.trimble.com/support_trl.aspx?Nav=Collection-84862.
- If you only need to update the latest version of the Trimble Business Center software, you do not need to run the Trimble Access Installation Manager to update the office software. The required converters are now available on the controllers running the Trimble Access software and, if required, they are copied from the controller to the computer by the Trimble Business Center software.

Trimble Solution Improvement Program

The Trimble Solution Improvement Program collects information about how you use Trimble programs and about some of the problems you may encounter. Trimble uses this information to improve the products and features you use most often, to help you to solve problems, and to better meet your needs. Participation in the program is strictly voluntary.

If you participate, a software program is installed on your computer. Every time that you connect your controller to this computer using ActiveSync® technology or the Windows Mobile® Device Center, the Trimble Access software generates a log file that is automatically sent to the Trimble server. The file includes data on what the Trimble equipment is being used for, what software functions are popular in specific geographical regions, and how often problems occur in Trimble products that Trimble can correct.

At any time, you can uninstall the Trimble Solution Improvement Program. If you no longer wish to participate in the Trimble Solution Improvement Program go to *Add or Remove programs* on your computer and remove the software.

Documentation

Trimble Access Help is "context-sensitive." To access the Help, tap ? at the top of the screen.

A list of Help topics appears, with the relevant topic highlighted. To open the topic, tap its title.

Go to <http://help.trimbleaccess.com> to download a PDF file of the Help. A separate PDF file is provided for each application.

General Survey

New hardware

Trimble V10 imaging rover

The Trimble V10 imaging rover is an integrated camera system that precisely captures 360° digital panoramas used to visually document and measure the surrounding environment.

The Trimble Access field software integrates the Trimble V10 seamlessly with the Trimble R10 GNSS receiver and the Trimble VX Spatial Station or Trimble S Series total station positioning sensors. Panoramas can also be captured standalone pre or post survey of occupied points.

The captured field data is processed in Trimble Business Center which can then provide survey grade positions from identifiable features in the images.

Trimble Access for Windows

Trimble Access now supports non-Trimble Windows® computers. The Motion F5t Tablet PC and the Panasonic Toughbook 19 have been tested with Trimble Access.

For more information, go to www.trimble.com/Survey/Trimble-Access-IS.aspx and download the *Trimble Access for Windows Minimum Requirements* bulletin.

Trimble M1 total station

The Trimble Access software now supports the Trimble M1 Total Station using an external data collector such as the TSC3 connected via either cable or Bluetooth® wireless technology. The Trimble M1 DR Total Station is a versatile, easy to use, conventional surveying instrument that provides Trimble dependability at an affordable price.

Available in 2" dual face or 5" single face models, the Trimble M1 meets your specific accuracy requirements. Both Trimble M1 models provide 3000 m range to a single prism and up to 400 m DR (Direct Reflex) range to non-reflective surfaces.

The EDM in the M1 provides high precision measurements to both reflective and non-reflective surfaces and includes improved measurement speed for fast and accurate results in typical surveying environments.

A visible coaxial red laser pointer is included for fast and easy aiming along with internal optical plummet for easy known point setups.

The M1 includes easy-to-use dual or single face keypads to operate the instrument. Two user-programmable measure keys allow you to separately configure measurement parameters, eliminating time switching between measurement modes.

Each system comes with two rechargeable long life Li-ion batteries and a dual battery charger providing enough power for even the longest of field days.

New features

Tilt compensated points

The Trimble R10 receiver, together with the Trimble Access software, now supports a *Compensated point* measurement method that allows you to measure points with an unlevelled pole, and have the antenna's offset location corrected to produce a ground position at the tip of the pole.

Compensated points are useful when:

- You want to speed up your workflow by not having to spend time making sure the pole is level.
- An obstruction means that you are unable to position the antenna directly above the point. Traditionally you would have needed to use an offsetting technique to measure such points.

To measure compensated points, the Trimble R10 receiver must have receiver firmware version 4.83 or later. To import Trimble Access job files with compensated points in Trimble Business Center, you must have TBC version 2.95 (32-bit) or 3.10 (64-bit) or later.

WARNING – The performance of the magnetometer is affected by nearby metal objects (for example, vehicles or heavy machinery) or objects that generate magnetic fields (for example, high voltage overhead or underground power lines). To avoid errors due to magnetic interference, it is important to use compensated points only in areas free of magnetic disturbance.

Note – *Calibrating the magnetometer near sources of magnetic disturbance does not “correct” for the interference caused by these objects.*

Refer to the [General Survey Help](#) for more information about magnetic disturbance, and calibration of the magnetometer.

Satellite-delivered CenterPoint RTX service

The Trimble Access software, together with the Trimble R10 receiver, now supports Trimble CenterPoint™ RTX™. Trimble CenterPoint RTX is a high-accuracy, low convergence-time Precise Point Positioning (PPP) system that provides real-time centimeter positioning without the need for a RTK base station or VRS network.

Survey using satellite-delivered CenterPoint RTX corrections in open areas where terrestrial-based corrections are not available. When surveying over a great distance in a remote area, such as a pipeline or utility right of way, CenterPoint RTX eliminates the need to continuously move the base station or maintain connection to cell coverage.

In typical conditions, RTX convergence time is 30 minutes or less when static. RTX QuickStart allows rapid re-convergence on a previously surveyed point or a known survey control point. RTX QuickStart typically converges in less than 5 minutes.

To survey using RTX, create an RTK survey style with the *Broadcast format* set to *RTX (SV)*. To use RTX, the R10 receiver must have an RTX subscription and receiver firmware version 4.83 or later.

For more information, go to www.trimble.com/positioning-services.

For more information on using RTX with Trimble Access, refer to the [General Survey Help](#).

3D Map for Trimble Tablet

A new 3D map is now available on the Trimble Tablet. When using the new map in 3D mode you are able to visualize data in 3D, you can rotate the data and view the data from different sides. 3D data

visualization is useful for looking at surface models, checking elevation changes and detecting antenna height errors, and great for visualizing scan data, be it a true 3D scan, or simply a survey of a building façade.

Notes –

- The new 3D map does not support the CAD toolbar, however this can still be used from the original map. To return to the original map switch off the 3D map by clearing the 3D map checkbox in map options.
- The 3D map is not available on the first generation Trimble Tablet.
- The Windows popup keyboard is now accessed from the right side of the map, to avoid interfering with the map toolbars on the left.





BeiDou satellites in VRS solutions and in Multi station networks

You can now use BeiDou satellites in your VRS™ RTK survey or in your Multi station networked RTK survey.

To use BeiDou at the rover you must ensure you are connecting to a network data stream that supplies corrections in CMRx format and contains BeiDou observations.

Improved xFill status

The status bar icons in General Survey have been improved to better indicate xFill status. The status bar icons used are:

- If xFill is not ready, the icon in the status bar is .
- When xFill is ready the message "xFill ready" is shown in the *Radio options* screen and the status bar icon changes to .
- If you lose RTK corrections, xFill takes over and the status bar icon changes to .
- Regaining RTK reception causes a switch back to RTK and the status bar icon returns to .

Warning when coordinates of base point are different

During an RTK survey, the warning message that appears if a base with different coordinates is detected has been improved. This message appears if the point name of the base received from the base data link is the same as a point name already in the job file, and the two points have different WGS84 coordinates.

If you are certain that the base is set up on the same point as the one already in the job database, then tap *Job* to use the job database coordinates for the point. If the base is in a different location to the point already in the job database, then you must change the point name. Tap *Received* to use the coordinates received from the data link and rename the new base point. Tap *Cancel* to cancel the survey.

Enabling GLONASS for RT Differential surveys

You can now track GLONASS satellites in a real-time differential survey style using RTCM broadcast format. To do this, select the *GLONASS* check box in the *Rover options* screen for the survey style.

When enabled, GLONASS satellites appear in the SV list.

Enabling GLONASS for RTCM (FKP) surveys

You can now track GLONASS satellites in a real-time kinematic survey style using FKP (RTCM) broadcast format. To do this, select the GLONASS check box in the *Rover options* screen for the survey style, and ensure that there are GLONASS observations in the base data being received.

Note – FKP (RTCM) was formerly known as SAPOS FKP.

PRN range of SBAS satellites increased

Trimble Access now tracks SBAS satellites with PRN codes numbered 120 to 158, inclusive. Previously, Trimble Access tracked SBAS satellites with PRN codes numbered 120 to 139.

eBubble location remembered

The eBubble can now be positioned in different locations on different screens. When you return to a screen, the eBubble is displayed in the previously configured position.

Importing files from the receiver

When importing files from the receiver you can now sort files on the receiver by tapping the appropriate column heading.

Improved display of GNSS mount points

The column widths in the GNSS mount point selection screen are now retained so that you do not have to resize the columns each time the mount points are displayed.

Trimble R5 support on Trimble Slate controller

Trimble Access running on the Trimble Slate controller now supports the Trimble R5 receiver.

TabletSync

When using TabletSync to connect a Trimble Tablet to an office computer, the Trimble Tablet and the host computer no longer need to be in the same subnet.

Crosshairs written to Trimble VISION images

When using a total station or Spatial Station with Trimble VISION, the *Snapshot on measure* method can now draw the instrument crosshairs on the image. To enable this, tap the *Options* softkey and, after selecting the *Snapshot on measure* check box, select the *Add crosshair to snapshot* check box. To set the color of the crosshairs, select the color in the *Overlay color* field.

Improved instrument records for the Trimble M3 total station

When running Trimble Access on the Trimble M3 total station, the following information is now stored in the job and is available for reporting: model, serial number, firmware version, user name.

Auto connect for Trimble 5600 and Trimble 3600 total stations

The *Auto connect* option for 5600 and 3600 total stations is now turned off by default, making auto connecting to other devices faster. To turn on auto connect for the 5600 or 3600, select the *Trimble 5600/3600 total stations* check box in the *Auto connect options* screen.

Echo sounder depths of zero now supported

When using an echo sounder to store depths, you can now store depths that equal zero. Previously a zero depth meant no depth was received.

To record 0 depths you need to add the `allowZero="True"` flag immediately after the `isDepth="True"` flag. For example: `"<Field name... isDepth="True" allowZero="True" />"`

Selecting points in QC graph

Prev and *Next* softkeys have been added to the QC graph to move to the previous or next point in the QC graph. This is particularly useful when using the Trimble Slate controller, which does not have a physical keyboard.

Deleted points in Point manager

You can now control whether Point manager displays deleted points. To view deleted points in Point manager, tap the *Options* softkey and then select the *Display deleted points* check box.

Improved handling of DXF file entities

Entities without a layer in a DXF file are now assigned to layer 0 when the DXF file is imported. Previously, entities without a layer would cause an application error.

Entities set to the color white in the DXF file are now set to the color black so that they can be seen against the white map background.

USNG/MGRS

You can now display and key in coordinates using the United States National Grid (USNG) / Military Grid Reference System (MGRS).

Coordinate system database updates

- The Alaska Albers 1983 (Alaska) and Alaska Albers 1983 (NAD83 2011) zone definitions have been added to the US Continental zone group.
- The Dominican Republic zone group has been added. It has a UTM Zona 19 Norte zone definition.
- The Hermannskogel datum definition has been added for Bosnia. A new Bosnia zone group and zone definitions have been added.
- The Manoca 1962 datum definition has been added for use in Cameroon.

- The following geoid model references have been added:
 - GSI Geoid 2000 (Japan)
 - Malaysia Geoid 2004
 - Mexican Geoid 2006
 - RANC08 (New Caledonia)
 - DVR90 2013 (Denmark)
 - NN2000-10 (Norway)
- The following items have been renamed:
 - US State Plane 1983 (2011) zone group is now State Plane 1983 (ITRF to NAD83)
 - NAD 1983 (2011) datum is now ITRF to NAD 1983 (2011)

Resolved issues

- **Close job:** An issue where the *Closing Job* screen that displays the message "The following windows must be closed before you can continue" was not displayed correctly is now resolved.
- **Review job:** An issue where QC1 entries for RTK points showed *RDOP* instead of *PDOP* is now resolved. This was only an issue on the Trimble Slate controller.
- **Stakeout:** An issue where auto increment did not return you to the *Stakeout* screen after you had tapped Yes in a "Store last good position?" message is now resolved.
- **Measure topo:** An issue where the fields in the *Measure topo* screen were not displayed correctly is now resolved. This was an issue only if you were using the *Add to CSV* and *Description* fields and using a method such as Distance offset or Dual prism offset.
- **Target height:** An issue where the name of the *Target height* field displayed did not change from *Target height* to *Height (bottom)* in the *Measure topo* screen is now resolved. This was only a display issue and only occurred when the *Target height* method was changed from *True height* to *Bottom notch* from the *Target details* screen.
- **Turn to GNSS:** An issue where the *Turn to GNSS* option in the map behaved the same as the *Turn to* option instead of turning to the controller's GNSS position is now resolved.
- **Auto connect:** An issue where you connected to the receiver's internal radio from the *Rover radio* or *Base radio* screen and the status bar showed the auto connect icons is now resolved.
- **VRS Internet connection:** An issue where the software became unresponsive after starting an RTK survey using a VRS connected via the Internet is now resolved. This was only an issue on the Trimble Tablet.
- **Rover occupation timer:** An issue where the rover occupation timers would be incorrectly set for an R10 receiver when the *Start base* wizard was used to start a non-R10 receiver base, is now resolved.
- **Antenna height:** An issue where setting the antenna height in a rover survey style to 8m or above caused a communication error is now resolved.

- **Disabled BeiDou satellite:** An issue where, if you had disabled a BeiDou satellite, the satellite then disappeared from the satellite list and so could not be re-enabled, is now resolved.
- **Insufficient satellites for postprocessing:** An issue is now resolved where, when measuring a point by RTK, an incorrect "Insufficient Satellite for Post Processing" message appeared, which prevented the point from being measured.
- **PPK known point initialization:** You are now able to perform PPK known point initialization during an RTK Infill survey.
- **Dual-prism offset:** An issue when measuring a point using the *Dual-prism offset* method where you could not re-measure the prisms is now resolved. This issue occurred after cancelling a reading because the distance between A and B exceeded the tolerance.
- **DXF files:** An issue where a DXF file with a near-zero length polyline segment would lock up General Survey is now resolved.
- **Zoom extents for DXF files:** An issue with *Zoom extents* incorrectly zooming out too far when displaying a DXF file with block insertion points is now resolved.
- **Raster files with world files in geodetic units:** An issue where raster files with world files using Latitude and Longitude coordinates were being misinterpreted is now resolved.
- **LandXML files:** An issue where LandXML files that contained extra spaces between elements in the file were not being imported correctly or could not be imported is now resolved. The issue occurred when extra spaces were inserted, for example between coordinate pairs or triplets, or between the attribute name and the '=' char or between the '=' char and the attribute value.
- **Molodenski-Badekas coordinates:** An issue where RTCM transformation Molodenski-Badekas rotation point coordinates were being misinterpreted is now resolved.
- **Camera menu item:** An issue where, if the controller was connected to both a total station and a GNSS receiver, the *Camera* menu item was not available in the *Instruments* menu is now resolved. This was an issue only on Tablet and TSC3 controllers.
- **Editing text fields on a Tablet:** An issue where you could not move the cursor position by tapping in the edit box when editing a text field on a Trimble Tablet using the Trimble Access keyboard is now resolved.
- **ESC and Enter behavior on keyboard:** An issue where the Trimble Access software behaved unexpectedly when you tapped the ESC or Enter key on the Trimble Access keyboard is now resolved. The new behavior for the keyboard keys is:
 - Enter: Accepts the text and closes the keyboard
 - ESC: Abandons the text and closes the keyboard
 - Tab: Accepts the text and moves to the next field
- **Signed VX & S Series USB driver for the Trimble Tablet:** The message "Windows can't verify the publisher of this driver" no longer appears when installing Trimble Access on a Trimble Tablet for the first time.
- **Updated VX & S Series USB driver for the TSC2 and TSC3:** An issue where the instrument would disconnect from the controller when connected via a USB cable and capturing a panorama has been resolved.

- **Application errors:** You should no longer see occasional application errors when you do any the following:
 - Use the Cogo tool *Project point to arc* and the point you are projecting is the start point of the arc.
 - Use a check class point as the first backsight in a resection.
 - Tap the radio icon in the status bar when performing a survey with xFill selected in the survey style. This issue only occurred when running Trimble Access on a TSC3, TSC2, or a TCU controller.
 - Perform a site calibration when the *Broadcast RTCM transformation* field is set to *Automatic*.
 - Close the application and a pop-up message appears while the application is closing.
 - Press the Power button on the controller while Trimble Access is in the process of shutting down.
 - Suspend the controller while it is connected to a GNSS receiver.

Roads

New features

Importing and exporting files

You can now import and export fixed format and custom format files from the *Jobs* menu in Roads. Previously, you could access this only from the *Jobs* menu in General Survey.

Resolved issues

- **Overwritten text:** An issue where text was overwritten at the top of the XS screen when staking a Trimble road is now resolved. This was an issue when staking by *Position on road* or by *Nearest offset*.
- **Converting LandXML files to RoadXML:** An issue where the cross sections in a LandXML failed to convert correctly is now resolved. This was due to the incorrect handling of cross section points with offsets very close to zero.
- **Staking a GENIO road:** An issue when staking a GENIO road with a horizontal construction offset applied relative to a sub-string is now resolved. Previously the construction offset was applied relative to the master string. This was only an issue when staking along a 3D string or when staking a station on a 5D string.
- **Station and offset display:** An issue is now resolved where the *Station* and *Offset* values displayed during the *Stakeout* of GENIO Roads were not the station and offset of your position relative to the road. (The *Station* and *Offset* values are available when the *Deltas* display option is set to *Station and offset*.) Previously the values displayed were based on the projected

station and offset. Note that the Go back/forward and Go left/right values displayed by default have not changed.

- **Widened roads in plan view:** An issue where the plan view linework did not respect widening values when the widening records had no associated superelevation values is now resolved.
- **Stations list refresh:** An issue where the Stations list failed to update after you had edited the available stations selection, is now resolved. Previously you had to exit back to the *Select a file screen* to force the station list to update.
- **Application error:** You should no longer see an application error when you do any of the following:
 - Work near the edge of a complex road, in the area where the number of template elements changes.
 - Stake a road using the *Stake option Side slope from alignment*, and having staked the first position you attempt to stake a second position.

Tunnels

New features

Trimble M3 total station support

You can now survey a tunnel using a Trimble M3 total station. Previously only the Trimble VX Spatial Station and the Trimble S Series total station were supported.

Blast hole support

You can now define and set out blast hole positions that are on the end face of the tunnel.

To define a blast hole select *Set out positions* and then select *Blast hole* as the method. A blast hole is defined by a horizontal and vertical offset relative to the alignment or offset alignment. Blast holes can be keyed in or imported from a file.

To set out a blast hole, tap to select an individual blast hole or, from the tap and hold menu, select *All blast holes*. When *All blast holes* is selected the set out process is automated. The instrument turns to the first defined blast hole and when the position is found you are prompted to mark the point. It then turns to the next blast hole and so on until all blast holes have been set out. If the position cannot be found within the position tolerance, the software shows "Failed" above the delta display, skips the position and moves to the next blast hole. A *Start delay* and *Mark delay* controls the automated set out process. The *Start delay* gives you time to walk to the location of the first point to be marked. The *Mark delay* gives you time to mark the point on the end face.

Importing set out positions including blast holes

You can now import Radial bolt holes, Horizontal bolt holes, Vertical bolt hole positions, and End face blast holes when defining a tunnel definition. To do this, select *Define / Set out positions* and select the *Import* softkey from the second row of softkeys.

The file format is:

Start station, End station, Method, Hz offset, Vt offset, Code, Direction, Surface name, Center hz offset, Center vt offset

Multiple radial set out positions

You can now define multiple radial set out positions in addition to individual radial positions. They are defined relative to a selected surface by a specified interval starting at the start position for the surface. This option makes it easy to define bolt holes for the fixing of the tunnel lining.

Editing scan points

You can now edit the position of a scanned point by specifying an *Underbreak/Overbreak correction* value. Use this option to correct scan points that have been measured to an obstacle other than the tunnel surface, for example ventilation ducting.

Auto scan and set out in direction of decreasing station

You can now auto scan and set out positions in the direction of decreasing station. To do this, specify a *Start station* value that is greater than the *End station* value when defining the station range.

Tunnel orientation displayed in the direction the instrument is facing

A new option enables the tunnel profile to be displayed in the direction the instrument is facing when:

- performing an auto scan
- manually measuring a position
- measuring a position relative to a tunnel surface
- setting out a position

To enable this option, select the *Instrument perspective profile display* option from the *Settings* screen.

Additional browse and reporting capabilities for tunnel definitions and tunnel surveys

When reviewing a definition and surveying the tunnel you can now browse the following entities:

- Alignment
- Offset alignment
- Design points (points on the profile defined by the scan interval plus the points at the end of each template element)
- Set out points
- Vertex point (point on the profile directly above the alignment or, if available, the offset alignment)

Also you can now calculate the Grid coordinates when given a *Station*, *Horizontal offset*, and *Vertical offset*, and you can calculate the Tunnel coordinates when given a *Northing*, *Easting*, and *Elevation*.

Alignment offsets

A number of enhancements have been made to improve the behavior and reporting of items when an offset alignment has been applied:

- When the alignment has been offset the displayed horizontal and vertical offsets (and rotated offsets where applicable) are now reported in terms of the offset alignment. Previously offsets were in terms of the original alignment. These offsets are displayed:
 - at the base of screen when surveying a tunnel by *Position in Tunnel* or *Set out*.
 - from the *Details* button when reviewing a surveyed tunnel.
 - in the Tunnel Profiles report generated from the *Report* softkey in the *Define* menu.
- The behavior when an alignment has been offset and a rotation has been applied has changed. Previously, the alignment was offset and then the rotation applied. This resulted in the computed profile position being affected because the rotation was applied to the offsets. Now, the rotation is applied first and then the alignment is offset. Trimble believes this provides the expected results.
- An offset alignment is now displayed in the plan view when reviewing the tunnel definition and when viewing the plan in an auto scan or set out survey.
- When reviewing the cross sections for a tunnel that has an alignment offset applied, the horizontal and vertical offsets reported when browsing a position are relative to the offset alignment. Previously these offsets were relative to the original horizontal and vertical alignment.

Additional horizontal and vertical guidelines

You can now display additional horizontal and vertical guide lines in the cross section view when performing an auto scan and measuring or setting out a position. The vertical line displays as an orange line through the alignment. The horizontal line, known as a floor line, displays as an orange line through the center line. The floor line can be offset vertically.

Manual measure

You can now select a position that has been defined by the *Scan interval* and use that position to manually measure.

Importing and exporting files

You can now import and export fixed format and custom format files from the *Jobs* menu in Tunnels. Previously, you could access this only from the *Jobs* menu in General Survey.

Improved error reporting

When scanning tunnels, the message "No profiles available" is now displayed if the current station has no vertical alignment or no template assigned.

Resolved issues

- **Previously surveyed stations in new surveys:** An issue where previously surveyed stations were included in the current survey is now resolved. Now for the current survey, only the stations defined by the station range and station interval are included in the survey.
- **Measuring positions:** An issue where the start point was not displayed when defining a tunnel template by measuring positions is now resolved.
- **Scanning multiple tunnel template surfaces:** An issue where the last selected surface was not remembered between scan sessions is now resolved. Previously it always defaulted to the last surface in the list.
- **Reported elevation value:** An issue where the elevation value for the center line was incorrectly reported from the *Report* option in the *Define* menu, and when browsed at *Review*, is now resolved. This was only an issue for positions on a circular vertical curve when the template was applied perpendicular to the vertical alignment.
- **Reported values for templates applied perpendicular to the vertical alignment:** An issue when templates were applied perpendicular to the vertical alignment resulting in the coordinates and elevation for all positions being incorrectly reported from the *Report* option in the *Define* menu, and when browsed at *Review*, has been resolved. This was not an issue when the template was applied vertical to the alignment.
- **Outside tunnel reported:** An issue is now resolved where if the vertical alignment was very steep and you were surveying on a vertical circular arc, the software could report that you were outside the tunnel.
- **Perpendicular stations:** When defining a station range by measuring a position in an Auto scan or Set out survey, for a tunnel where the templates were applied perpendicular to the alignment, the resolved station is now the perpendicular station. Previously the resolved station was always the vertical station.

Mines

New features

Improved Auto Stakeout report

The Auto Stakeout report has been reformatted and now includes the station offset value for *Center line*, *Grade line* and *Laser lines offset from CL* auto staked points.

Resolved issues

Reports: An issue where positions that were measured using the *Auto stake* option *Laser lines offset from CL* were not included in the Auto Stakeout report has been resolved.

Land Seismic

New features

Stakeout grid display

The 'stakeout grid' previously displayed in the *Stakeout points* screen is no longer displayed. This feature provided a graphical representation of how far to go to get to the stakeout point but was regarded as confusing for Seismic stakeout and therefore removed.

Resolved issues

Slow 2D azimuth selection: Specifying the azimuth for 2D stakeout from a line is now faster when using large jobs.

Stakeout default display settings: The default stakeout display settings, including *View before storage*, *Horizontal tolerance*, *Display mode*, *Display orientation*, and *Compass*, are now coming from the default system settings, rather than having a different set of values coming from Land Seismic.

Map display drawing order: The seismic grid is now drawn after the exclusion zone, thereby avoiding the possibility of an exclusion zones obscuring the display of the grid.

Monitoring

Resolved issues

- **Importing .CSV files:** An issue where if the file extension on a CSV file was upper case (.CSV), the file type was not recognized and was not imported is now resolved.
- **Displacement screen:** An issue where the table in the *Displacement* screen did not display correctly if the table contained fewer than 8 epochs (rows) is now resolved.

Aerial Imaging

Note – An update of the Aerial Imaging software usually includes an eBox firmware update. The update is triggered during the flight checklist and can take up to 30 minutes.

New features

Safety enhancements

- The flight and post-flight checklists have been extended with additional steps for safety reasons.

- An **Abort** button is now available during landing.
- The FTS fail-safe pattern is now available during the final approach of the landing pattern. FTS confirmation is always required.
- When the unmanned aircraft is forced to land after a communication loss, an audio signal now sounds.
- The **Home** button is now named the **Here** button, to better reflect the behavior of this button.
- **First line entry:** You can now choose if the UX5 enters the scan area using right or left turns. This will also set your first waypoint, which is highlighted in yellow. The UX5 no longer flies an extra line before entering the scan area.

Improved monitoring and display

- When viewing the Aerial Imaging software on the Trimble Tablet, the battery level of the Trimble Tablet is now monitored and displayed in the Aerial Imaging software. When you arm the UX5, a warning appears if the Tablet battery life is less than 90 minutes.
- The total number of flight lines and the number of flight lines already flown are now displayed.
- The first waypoint that the aircraft will pass after take-off is now highlighted in yellow.
- New icons and a new stylesheet improve the visibility of the user interface.
- You are now able to hide or show map layers during flight planning.

GCP support

You can now add ground control points (GCPs) saved in a .csv file to the map as a map layer.

Extended KML support

Circles, images, and labels in KML files are now displayed on the map.

Map downloadable area

The maximum download area of the online map has increased with one zoom level.

Flight planning and flight checklist now available on the desktop

Flight planning and the flight checklist are now available on the desktop for demonstration purposes.

Note – *When exporting to the Tablet it does not save the flight settings. You must repeat the flight planning steps and the flight checklist on the Tablet in the field.*

Mission auto save

When you select **Checklist** in the *Flight Planning* screen, the mission is automatically saved. This avoids losing information after an unexpected closing of the application.

Log files generated after application error

When the application closes unexpectedly, a crash dump file is now generated that you can then send to Trimble Support.

About dialog

An *About* dialog is now available from the *Settings* screen of the Aerial Imaging software. It shows version and copyright information for the installed version of the software.

Update eBox firmware button

An **Update** button to immediately jump to the *Update* procedure of the eBox firmware is available from the *Settings* screen.

Resolved issues

- **Double-clicking a .gwt file:** An issue where double-clicking a .gwt file did not automatically open the Aerial Imaging software is now resolved.
- **.gwt file size:** To reduce the size of a .gwt file, all large files are now zipped.
- **Grid layer:** An issue where the grid did not completely cover the offline map when zooming out to 800 m is now resolved.
- **Imperial units:** An issue where not all units changed to feet when *Imperial* was selected as the unit type in the *Settings* screen is now resolved.
- **COM status:** An issue where the COM status was not updated after disconnecting and then connecting the modem is now resolved.
- **Communication link monitoring:** An issue where the monitoring of the communication link was not always accurate is now resolved.
- **Camera settings:** A Settings button has been added to the camera step of the flight checklist. Tap the Settings button to view the help topic for the camera settings.
- **UX5 flight:** The first line approach has been improved, and the glide slope is now more accurate.
- **Avoidance zone:** An issue where the aircraft entered the avoidance zone during flight due to the extra room required for turns even though this was not shown during flight simulation is now resolved.
- **eBox standby mode:** An issue where the eBox did not always switch to standby mode after confirming that the flight has finished is now resolved.
- **Minimum flight height:** An issue where the flight height could be set lower than 75 m during a fail-safe pattern is now resolved.
- **Image capture after landing:** An issue where images were taken after landing is now resolved.
- **Post-flight checklist:** An issue where the **Next** button was sometimes replaced with the **Finish** button is now resolved.

- **Mission names:** The characters allowed in a mission name are now restricted to: a-z, A-Z, 0-9, _ and -. These restrictions avoid issues with mission import and export.
- **Import and Export notification:** A notification is now displayed when Import and Export are completed.
- **Cancel Export:** An issue where it is not always possible to cancel Export is now resolved.

Trimble Access Services

New features

Getting Started with Trimble Access Services PDF guide now translated

When you log into Trimble Access web services via Trimble Connected Community, the Getting Started with Trimble Access Services PDF is now available in the following languages: Chinese, Dutch, French, German, Italian, Japanese, Korean, Portuguese, Spanish, Swedish, Russian.

Software and Hardware Requirements

Trimble Access software version 2013.40 communicates best with the software and hardware products shown below. The software can also communicate with any version later than that shown.

Trimble software	Version
Trimble Business Center (32-bit)	2.95
Trimble Business Center (64-bit)	3.10

Trimble receiver	Version
Trimble R10	4.83
Trimble R8-4, R8-3	4.83
Trimble R6-4, R6-3	4.83
Trimble R4-3, R4-2	4.83
Trimble R7 GNSS	4.83
Trimble R5	4.83
Trimble NetR9	4.83
Trimble GeoXR	4.55
Trimble R8-2, R6-2, R4-1	4.63
5800 II	4.63
5700 II	4.63

Trimble Instrument	Version
Trimble VX Spatial Station	R12.4.17
Trimble S8 total station	R12.4.17
Trimble S6 total station	R12.4.17
Trimble S3 total station	M2.1.31
Trimble M3 total station	1.30 2.10

For the latest software and firmware versions, see also <http://trl.trimble.com/dscgi/ds.py/Get/File-93082/Survey%20Software%20and%20Firmware.pdf>.

Controller operating system support

Trimble TSC3 controllers with Microsoft Windows Mobile Version 6.5 Professional can run Trimble Access software version 1.8.0 to version 2011.10.

Trimble TSC3 controllers with Microsoft Windows Mobile Embedded Handheld 6.5 must have Trimble Access version 2012.00 or later.