RELEASE NOTES

TRIMBLE® ACCESS™ SOFTWARE

Version 2013.00
Revision A
February 2013

Trimble

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Release Notes

Corporate Office

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

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Release Notice

This is the February 2013 release (Revision A) of the *Trimble Access Release Notes.* It applies to version 2013.00 of the Trimble Access software.

Product Information

This section contains information about the Trimble® Access™ system version 2013.00.

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.

New controllers

Trimble S3 total station, Trimble M3 total station, and Trimble GeoXR, TSC3, Trimble CU, TSC2® controllers

The controller operating system is already installed. You must use the Trimble Access Installation Manager to install or update the base software, any additional applications, and the application license(s).

For more information, see Updating the software and installing licenses on the controller .

Trimble Tablet controller

The operating system is not installed. Turn on the controller to install the Windows® operating system and then apply Windows updates. Then install the Trimble Access Installation Manager, which in turn installs the applications and license(s).

For more information, see Updating the software and installing licenses on the controller .

Updating the software and installing licenses on the controller

Before you use your controller, you must install the applications, application updates, and license files that you purchased using the Trimble Access Installation Manager.

Note - For a Trimble CU controller the Trimble Access Version 2013.00 can be installed only on the Trimble CU model 3 (S/N 950xxxxx). Trimble CU models 1 and 2 has insufficient memory to support Version 2013.00.

If you previously installed the Trimble Access Installation Manager software, you do not need to reinstall it. When you run the Installation Manager, it connects to the Internet and automatically updates.

To run the Installation Manager, do one of the following:

- For a Trimble Tablet controller: Select *Start / All Programs / Trimble Access Installation Manager*.
- For all other controllers: Select *Start / Programs / Trimble Access Installation Manager* on the office computer and then connect the controller to the computer.

Note - To install Trimble Access on a controller when you do not have access to an Internet connection, download a copy of the Trimble Access Installation Manager and all application files and licenses for the controllers for installation offline. To do this you must know the serial numbers of the controllers that Trimble Access will be installed on.

For more information on updating Trimble Access applications and licenses, go to www.trimble.com/taim/.

Am I entitled to this version?

To install and run Trimble Access software version 2013.00, you must have a warranty agreement valid up to 1 February 2013.

When you upgrade to version 2013.00 using the Trimble Access Installation Manager, a new license file is downloaded to your device.

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.

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.

Converting job and style files and transferring data after an upgrade

During the upgrade of applications on the controller, all existing \Trimble Data files on the controller are downloaded to the office computer. When required, they are converted so that they are compatible with the new applications and then they are transferred back onto the controller.

During installation, new versions of files such as the predefined ASCII import and export formats are installed on the controller. If you created new custom import or export formats, or modified and **renamed** the existing formats, these files are also reinstalled on the controller during the upgrade/installation of the new applications.
If you modified the predefined formats and saved them with the same name, they are replaced when you upgrade the controller. The downloaded files still exist on your office computer.
If you create new formats or customize the predefined formats, Trimble recommends that you save the files with a new name. Use the Trimble Data Transfer utility or ActiveSync technology to transfer these files back onto the controller once the upgrade is complete.

Note - *You* ***cannot*** *copy old jobs onto the controller for the General Survey software to convert on-the-fly.*

The files are backed up in the following locations:

Office computer operating system	Backup location
Windows XP	C:\Documents and Settings\<user name>\Local Settings\Temp\<controller serial number>-TA\<Timestamp>
Windows Vista®/Windows 7/Windows 8	C:\Users\<user name>\AppData\Local\Temp\<controller serial number>-TA\<Timestamp>

Note - You can upgrade a controller with Trimble Survey Controller™ files, and these are converted to General Survey files.
When the files are installed on the controller, they are initially saved to a folder called [UpgradedFromTrimbleSurveyController]. When you first run the Trimble Access software and log into the controller, this folder is renamed to the user name you logged in with.

Using Trimble Access software version 2013.00 with other Trimble products

Trimble Access for Integrated Surveying on Trimble controllers

Trimble Access software version 2013.00 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 Geomatics Office™	1.63
Trimble Business Center	2.82
Trimble RealWorks®	7.1.1
Trimble 4D Control	4.00
Trimble Link™ (AutoCAD Civil and Civil 3D 2011)	6.0.3
Trimble Data Transfer	1.55
Trimble Total Control™	2.73
Terramodel®	10.61

Trimble receiver	Version
Trimble R10	4.70
Trimble R8-2	4.63
Trimble R8-3, R8-4	4.70
Trimble R6	4.63
Trimble NetR9	4.70
Trimble GeoXR	4.53
Trimble R4	4.63
5800 II	4.63
Trimble R7 GNSS	4.63
Trimble R5	4.63
5700 II	4.63

Trimble R8	2.32
5800	2.32
Trimble R7	2.32
5700	2.32

Trimble Instrument	Version
Trimble VX™ Spatial Station	R12.3.39
Trimble S3 total station	M2.1.21
Trimble S6 total station	R12.3.39
Trimble S8 total station	R12.3.39
Trimble M3	1.30 2.10
Trimble 5600 Series	696-03.08
Trimble ATS	696-03.08
Trimble 3600 Elta CP (with interpreter)	1.15
Trimble 3600	2.10

See also: http://trl.trimble.com/dscgi/ds.py/Get/File-93082/Survey%20Software%20and%20Firmware.pdf for the latest software and firmware versions.

Note - *Trimble instrument firmware is available on www.trimble.com.*

Device Operating System first supported in Trimble Access

Device	Microsoft Windows operating system	First supported in Trimble Access version
Trimble Tablet	Microsoft Windows 7 Professional	1.7.0
Trimble GeoXR	Microsoft Windows Mobile® Version 6.5 Professional	2012.00
Trimble TSC3	Microsoft Windows Mobile® Embedded Handheld 6.5	2012.00
Trimble TSC3	Microsoft Windows Mobile® Version 6.5 Professional	1.8.0
Trimble CU Model 3	Microsoft Windows CE .NET Version 6.0	1.7.0
Trimble S3	Microsoft Windows CE .NET Version 6.0	2012.00
Trimble M3	Microsoft Windows CE .NET Version 6.0	2011.10
Trimble TSC2	Microsoft Windows Mobile® Version 5.0 Software for Pocket PC	1.0.0
Trimble CU		1.0.0

	Microsoft Windows CE .NET Version 5.0	

Updating office software

When you upgrade to version 2013.00, 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 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.asp?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.asp?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 Access Latest Release

Trimble Access version 2013.00, February 2013

General Survey version 2.10

Note - For Trimble CU controllers the Trimble Access Version 2013.00 can be installed only on the Trimble CU model 3 (S/N 950xxxxx). Trimble CU models 1 and 2 have insufficient memory to support Version 2013.00.

New hardware

Trimble Slate Controller

The Trimble Slate Controller has the following key new features:

Internal GPS

The internal GPS can be used to navigate to a point and for GPS search. GPS search is automatically enabled but a connected GNSS receiver is always used in preference to the internal GPS.

Internal compass

The internal compass provides an aid to navigation.

Internal camera

The 8 megapixel camera can be used to capture and attach an image to a point.

Internal cellular modem

The integrated GSM/GPRS modem enables wireless Internet connectivity.

Internal phone

The Trimble Slate Controller includes a phone.

Additional Trimble Slate Controller information:

The Trimble Slate Controller only connects to a Trimble R4 GPS receiver.

Operating system available in multiple languages

The operating system on the Trimble Slate Controller controller is available in multiple languages. When you turn on the Trimble Slate Controller controller for the first time, you are prompted to select the language for the operating system. The following languages are supported:

- ◊ English
- ◊ Spanish
- ◊ German
- ◊ French
- ◊ Italian
- ◊ Portuguese (Brazilian)
- ◊ Chinese
- ◊ Korean
- ◊ Japanese
- ◊ Russian

Selecting a language for the operating system also installs the matching Trimble Access language, so you are no longer required to install a Trimble Access language if you selected one of the above operating system languages. If the language you require is not listed above, select the English operating system and then use Trimble Access Installation Manager to install your preferred language.

Note - Once a language is selected, it can only be changed by returning the controller to a Service Center.

New features

Menu improvements: The following improvements have been made to the way menus are displayed:

- Previous pop-up lists are now presented as menu buttons. Menu buttons provide easier selection. This change has resulted in the following menu prompts being renamed:

Old menu name	New menu name
End conventional survey	End conv. survey
Compute + subdivide area	Area calculations
GDM data output	Data output
Autolock and Search Controls	Target controls
Direct Reflex	EDM settings
Send data to another device	Send data
Receive data from another device	Receive data
Export fixed format files	Export fixed format
Import fixed format files	Import fixed format
Export custom format files	Export custom format
Import custom format files	Import custom format
Base surface	Initial surface
Major surface	Final surface

- A symbol (a small black arrow) has been added to the end of the survey style name when starting a survey, indicating that further action is required before the survey will start.

- A symbol (a small black square) has been added to the end of the following end survey options:
  - ◊ End GNSS survey
  - ◊ End conv. survey
  - ◊ End integrated survey

Status line changes: The following prompts have changed:

Style type	Old menu name	New menu name
GNSS	Switch to <style name>	Switch to GNSS
Conventional	Switch to <style name>	Switch to Conventional

Navigation arrow: The navigation arrow has been increased in size offering improved visibility when staking points, lines, arcs, alignments and roads.

Auto F1 / F2: You can now use the *Auto F1 / F2* functionality to automatically stakeout a position on face 2 after the face 1 observation. Previously you could only use *Auto F1 / F2* to measure a point.

Volumes: Support has been added for a new volume method called *Surface area.* This method enables a volume to be calculated from a selected surface and a specified material depth.

> **Note:** The surface area is also displayed.

Remeasuring a GNSS position: Two new behaviors are supported when measuring a position with excess tilt or excess movement:

- **Automated behavior:** A new *Auto abandon* option has been added to a GNSS survey type for *Topo point* and *Observed control point.* When selected, points measured using a GNSS receiver with an in-built tilt sensor that experience excess tilt, or, for all receivers, excess movement, during the measurement process will be abandoned and the measurement process restarted.
- **Manual behavior:** A new *Re measure* option has been added enabling points that experience excess tilt or excess movement during the measurement process to be discarded and remeasured. Previously you could only continue and store the point, or discard the measurement. This option is available for all points measured using a GNSS receiver with an in-built tilt sensor that experience excess tilt, or, for all receivers, excess movement during the measurement process. The pole should be leveled again before tapping re-measure.

Auto measure: When staking a point, line, arc, alignment or DTM in a GNSS survey, a new *Auto measure* option enabling the General Survey to automatically start measuring when the *Measure* key is tapped has been added. This option can be enabled as part of the survey style. Alternatively, tap *Options* from the stakeout screen to enable auto measure for the current survey.

eBubble calibration:

- You can now access the eBubble options from the *Instruments* menu.
- You can now calibrate the eBubble without the receiver tracking any satellites.
  - ◊ The receiver firmware version must be v4.70 or later.
  - ◊ Because the calibration time is stored in the receiver it is important that the controller has the correct time and time zone.

eBubble softkey: An *eBubble* softkey has been added to the *Point, Line, Arc, Alignment* and *DTM* stakeout navigation screens.

GLONASS satellites: Support has been added for tracking GLONASS satellites when the broadcast format has been set to *OmniSTAR* in an RT differential survey.

BeiDou test satellites: You can now track and log the BeiDou test satellite observations.

- The BeiDou option is only available for postprocessed surveys.
- The BeiDou test satellites are tracked and logged, but not used, for postprocessed surveys.
- You can log the BeiDou test satellites data only to the receiver memory.
- Both the base and rover receivers must have v4.70 firmware or later installed to track BeiDou test satellites in a postprocessed survey.

QZSS satellite: Improved QZSS satellite (J1) support.

- To provide improved initialization times for postprocessed surveys, the QZSS satellite (J1) is now included in the satellite count towards initialization times.
- The QZSS L1-SAIF signal can now be used as a correction source for SBAS differential surveys.

QZSS SBAS support: You can now use QZSS SBAS functionality in an RTK survey if your radio link goes down, and in an RT differential survey. For an RTK survey the QZSS option is only available if you are using CMRx as your broadcast format.

Default base radio: For a GNSS survey style the default base radio is now the *Trimble TDL450*. Previously it was the *Trimble PDL450*.

RT differential: The precision default values for an RT differential survey are now set at 0.750 m for the *Horizontal tolerance* and 1.000 m for the *Vertical tolerance*. Previously they were 1.000 m for the horizontal and 3.000 m for the vertical. The tolerances have been reduced due to the latest Trimble receivers having higher-quality tracking.

RTK occupation epoch counter: In RTK, the occupation epoch counter is reset when the precisions go outside tolerance. The counters only count up epochs where the precision of each consecutive epoch meets tolerance. This ensures that all epochs contributing to the final stored coordinate meet the precision criteria. This behavior was implemented for the Trimble Access version 2012.20, October 2012 release but was inadvertently missed from the Help file and not mentioned in the Release notes.

Receiver directory: When transferring files from the receiver to the controller where the receiver has both internal and external memory, the default directory on selecting *Instrument / Receiver files / Import from receiver* is now *Internal*.

DTM display: When displaying the DTM in the map the elevation of your current position is now displayed on the map screen. Previously, only the cut/fill value and the DTM elevation at your current position was displayed. This feature is only available on the Trimble Tablet.

Relative DOP: For receivers with firmware 4.x and later the stored *Relative DOP* record is now set to *No*. This is because these versions of receiver firmware produce constellation DOP.

Configuring base and rover modes: When editing a survey style and connecting to the receiver internal radio you are now prompted to switch to base or rover mode if required.

Receiver files: The following improvements have been made regarding the management of files on a receiver:

- Files with names longer than 8 characters are now displayed correctly
- You can now delete files with names longer than 8 characters
- You can now browse up and down the folder tree, and download files from anywhere on the tree
- Support has been added for /Internal and /External file system trees on receivers that support both

R8/R6/R4 receivers: Support has been added for R8-4, R6-4 and R4-3 receivers:

Controller internal antenna names: The *TSC3 internal* and *Yuma Internal* antenna names have been renamed to *Controller internal*.

Station display: Support has been added for alternative station display. The station is displayed as per the 10+00.0 option but the value before the + is the station value divided by a *Station index increment*. The remainder is displayed after the +. For example if the *Station index increment* is set to 20, a station value of 42.0 m is displayed as 2 + 02.0 m. This method is available from *Job / Properties of job / Units*. From the *Station display* field select *Station index* and then enter the appropriate value in the *Station index increment* field. This display option is applicable for lines, arcs, alignments, roads and tunnels. It is used in Brazil but may have applications in other markets.

Last used settings retained over upgrade: More last used settings are now retained when upgrading from Trimble Access version 2012.20 or later. Settings such as last used options and methods, and prism configurations are now retained after upgrading with the Trimble Access Installation Manager.

Side slope from alignment: When staking a side slope from an alignment a dashed line is now displayed that connects the side slope catch position, (the point where the side slope intersects with the ground), to the side slope hinge position.

Collimation axis tilt adjustment: The standard deviations of the measured observations are now displayed, and updated, during the measurement process. These values provide an indication of the consistency of your observations.

PIN lock security: You can now set or change the PIN and access the PUK for all Trimble VX Spatial Station or Trimble S Series total station using Trimble Access. Do this from the *Instrument settings* screen. Previously PIN lock security could only be enabled via the Face 2 display on the Trimble VX Spatial Station or Trimble S8 total station.

CSV files: Support has been added for the importing and linking of CSV files that have been stored in Unicode (UCS-2).

Backsight centering error: You can now specify an unique centering error for the instrument and the backsight. Previously, you specified a single centering error that applied to both the instrument and the backsight.

World files: Support has been added for the *.pgw extension for .png image files.

JobXML version number: You can now select a version number when exporting a JobXML file.

Improved behavior when changing your login user name: Now, if you change your *Login User Name* while a survey is running, you are only prompted to restart the survey applications to use the new login. Previously an alert was displayed as well but this has been removed.

Coordinate system database updates:

- Reference to the Canadian NTv2 datum grid has been added
- The UPS coordinate systems have been changed to require the selection of a datum
- The following new coordinate system definitions have been added:

- ◊ Columbian Bogota MAGNA
- ◊ Este Central MAGNA
- ◊ Este Este MAGNA
- ◊ Oeste MAGNA
- ◊ Oeste Oeste MAGNA

- ♦ New Russian GKS-2011 and PK-90.11 ellipsoid and datum definitions have been added

Known issues: Resolved

Excess tilt staking an alignment: An issue has been resolved where, having stored a point with excess tilt, and despite the pole being within tolerance, the excess tilt message continued to display.

RTK On Demand: An issue where the *Pause mode* for RTK On Demand did not work for the Trimble R10 receiver has been resolved.

Start base: An issue where the base radio output failed to start when the base was started has been resolved. This was an issue only if you attempted to start the base before the antenna height was displayed in the status bar.

Radio settings: An issue where, despite having tapped *Esc* and electing to abandon changes to the *Enable station ID* option, edits to the radio settings were being saved has been resolved.

Receiver hardware version: The hardware version for the connected GNSS receiver is now displayed in the *Receiver settings* screen.

Trimble S3 total station map display: An issue where GNSS points were not displayed in the map on an Trimble S3 total station has been resolved.

xFill issues:

- ♦ An issue where the RTX satellite vehicle did not display in the satellite plot or list has been resolved. Previously the satellite vehicle only displayed when xFill started.
- ♦ An issue where, when creating a new GNSS survey style and selecting R10 as the antenna height, xFill was being automatically selected, has been resolved.

OmniSTAR: If you cancel out of starting an RTK &infill survey where the survey style has been configured to fall back to OmniSTAR, and you select *Continue and start OmniSTAR without waiting for RTK* you will no longer see infill messages appearing in the status line.

SBAS status: An issue where you could not select *SBAS status* from the *Favorites* menu has been resolved. Previously, after adding *SBAS status* to the *Favorites* menu, the text appeared grayed out.

GPS Search / Position: An issue where Trimble Access would attempt to use the wrong receiver type when you used *GPS Search* or the *Instruments / Position* option has been resolved.

RTK base station coordinates: A problem where the incorrect RTK base station coordinates were being used if a new base station was detected during a survey has been resolved. This problem occurred when the new base had the same name but different coordinates as the point with that name

in the open job file.

Incorrect status line message: An issue, when connected to a base receiver, where the status line reported *Base survey* but no survey was running has been resolved.

GPS antenna height: An issue where the GPS antenna height in an *Integrated Survey* was not updated when the target height was changed via the gps antenna icon has been resolved.

Continuous GPS points: An issue where attributes were not always being recorded for continuous GPS points has been resolved. This was only an issue for the first sequence of continuous points in a new job, when no other points with attributes had been recorded previously.

RTK initialization: An issue where the initialization mode was not showing the correct mode in the *RTK initialization* screen has now been resolved.

Internet connection: An issue where Trimble Access failed to establish an internet connection after switching the SIM card in a Trimble R10 receiver has been resolved.

Dialup VRS: An issue where the corrections did not restart after redialing to a dialup VRS has been resolved. However, for this to take effect you need receiver firmware 4.62.

GeoXR satellite tracking: A problem where the Trimble GeoXR was failing to track satellites has been resolved in GNSS firmware version 4.54. The software status bar indicated this issue by showing the flashing receiver icon (displayed when attempting to connect) and the satellite icon with 0 beside it. To check the GNSS firmware version installed, in General Survey select *Instrument / Receiver settings.*

Fast fix:

- An issue where, having tapped *Fast fix*, you were then forced to tap *Measure* in order to measure a point has been resolved.
- *Tilt auto-measure* is now supported for points measured by *Fast fix* from the context sensitive fields in the *Cogo* menu.

Low battery warning: An issue where the low battery warning message was not displayed for the Trimble R10 receiver has been resolved.

Low memory: Improvements have been made that reduce the likelihood of the controller shutting down due to low memory.

Staking a line: An issue where there was a delay in the update of the deltas has been resolved. This was an issue only when using a conventional survey instrument.

Multiple codes: An issue where, if multiple codes of the same name were assigned to a point, the attributes were not being handled correctly has been resolved. Previously, all the attributes for all the features with the same name were grouped together and assigned to each feature. That is, if you had three of the same features, each with four attributes, then each feature was assigned 12 attributes, with all the attributes duplicated for each feature. Furthermore the display of the attributes was not being

split up into feature groups.

Trimble Trimble M3 total station issues:

- An issue where a red electronic level was displayed when the instrument was in fact level, has been resolved.
- An issue where tapping the *Tracklight* button from the GNSS functions screen was not switching on the tracklight has been resolved.

Remote object: An issue where the slope distance for a given *Angles only* observation measured using an Trimble M3 total station was not computed immediately when the angle was measured has been resolved. Previously, if you changed the vertical angle before pressing *Store*, the elevation could have been incorrectly computed.

Video Auto measure: An issue where the *Auto measure* option accessed from the *Options* sofkey on the *Video* screen only worked for the first measurement has been resolved.

Missing Note: An issue where a note added to a media file that was linked to a point, was lost when the media file was linked to another point or to the job, has been resolved.

DXF export: An issue where entities deleted from a job were being included in a exported DXF file, has been resolved.

Antenna height: An issue where, in some situations in an Integrated survey, the last used non DR target and antenna correction was not used has been resolved.

Voice prompts: An issue where survey-specific voice prompts were played when you were not in a survey has been resolved.

Cogo intersection: An issue where the computed intersection point was incorrect has been resolved. This was an issue only if you accessed and then closed the tap and hold menu before selecting the lines and then, from the tap and hold menu, computed the intersection.

Login alert: An issue where you were not warned to restart survey applications after changing your login has been resolved.

Application errors

You should no longer see occasional application errors when you do any one of the following:

- Connect to an Trimble R10 receiver with an old antenna.dat file on the controller.
- Add a new group in *Measure codes.*
- Attempt to switch to a conventional survey style from the *Confirm staked deltas* screen when staking using an Integrated survey style.
- Press the Trimble key on a Trimble CU controller and select anything other than *Trimble Access* or *About* from the menu.
- Close General Survey from the *Alert* dialog after changing the *Username*

- Attempt to add an ESRI Shapefile for selection as a layer from the map where the Shapefile includes a polyline defined by a single point.
- Receive a new Automatic RTCM online transformation.

Roads version 2.10

New features

Plan view line work: The plan view line work defining the road is now displayed when staking a Trimble or LandXML road in a GNSS survey or a conventional robotic survey. Previously the line work was only available when staking a GENIO road or reviewing a Trimble, LandXML or GENIO road.

> **Note -** The line work replaces the grid that was added in release - Trimble Access version 2012.20.

Editing side slopes: You can now edit side slope values and select a new hinge offset from the navigation screen. This functionality is available when staking a Trimble or LandXML road by *Station and offset* and *Nearest offset.* To do this tap and hold on the screen and select *Edit side slope.* Previously, this editing functionality was accessed from the *Select New Offset For Side Slope* option from the *Offset* field. This option has now been removed.

LandXML files: Support has been added for LandXML files:

- Where the horizontal alignment has been defined by Points of Intersection (PI's).

  Note - Curves defined by spiral-arc-connectingSpiral-arc-spiral are not supported.

- Where the cross-section elevations are absolute values. If, when selecting a LandXML file from the *Define* or *Survey* menus, and where the cross-section elevations are absolute values, select the *Absolute design cross-section elevations* option to ensure the templates are resolved correctly.
- From 12d Model, where the transition type is defined as *cubic.* The cubic type is not identifiable, so when selecting one of these files you are asked to choose the applicable type. Two cubic types are supported:
  - ◊ Cubic spiral
  - ◊ NSW cubic parabola

NSW cubic parabola: Improved support when defining a NSW cubic parabola by removing the requirement to enter a *Transition Xc* value. The software now computes and displays the *Transition Xc* value from the entered *Radius* and *Length* values.

Auto measure: When staking a road in a GNSS survey a new *Auto measure* option enabling the Roads to automatically start measuring when the *Measure* key is tapped has been added. This option can be enabled as part of the survey style. Alternatively, tap *Options* from the stakeout screen to enable auto measure for the current survey.

Station display: Support has been added for alternative station display. The station is displayed as per the 10+00.0 option but the value before the + is the station value divided by a *Station index*

increment. The remainder is displayed after the +. For example if the *Station index increment* is set to 20, a station value of 42.0 m is displayed as 2 + 02.0 m. This method is available from *Job / Properties of job / Units.* From the *Station display* field select *Station index* and then enter the appropriate value in the *Station index increment* field. This method is used in Brazil but may have applications in other markets.

GeoXR scroll bar: When you review a Trimble, LandXML or GENIO road from the cross-section view or, for a GENIO road, select a position to stake from the cross-section view the scroll bar behavior has changed. You now slide the bar up the screen to select a station further down the road.

Navigation arrow: The navigation arrow has been increased in size offering improved visibility when staking a road.

Confirm staked deltas prompt: The prompt for an edited hinge offset for a Trimble road has been renamed to *New hinge offset.* Previously it was *New offset for side slope.*

Precise elevation: When staking out using precise elevation the status line now prefixes the vertical precision with V(TS): when the vertical precision is from the total station.

eBubble softkey: An eBubble softkey has been added to the stakeout navigation screens.

Known issues: Resolved

Position on road: An issue when staking by *Position on road,* where the stored *Station, H.offset* and *V.Dist. to road* values (as displayed at Review job) did not match those for the measured position (as shown in the As-staked deltas screen) has been resolved. This was only an issue when codes with associated feature and attributes were assigned to the measured point. If you moved away from the measured position prior to storing the point with its attributes, the new location was used for the station, offset and V.dist computation if the attributes were not entered using the *Attrib* softkey. That is, if you wait to be presented with the attributes entry form for entering the attributes rather than forcing it using the *Attrib* softkey then the station and offset values were incorrect.

Position from file: An issue where the values at the top of the stakeout out screen did not reflect the position selected has been resolved. This was only an issue when the position was not selected from the list.

LandXML files: An issue where a **<None>** template was not being inserted when consecutive cross sections had a different number or records has been resolved.

Review line work: An issue when reviewing a road where the plan view line work did not correctly represent the road definition has been resolved. Previously, a cross section was not displayed for stations where templates or superelevation records were applied. If these stations were not co-incident with the cross section interval or horizontal and vertical curve positions and the templates at these stations differed from the previous or next template or the superelevation records included widening, the plan view line work did not reflect these stations.

> **Note -** This was only an issue when reviewing a road. When surveying a road all template applications and superelevation records are taken into consideration.

eBubble: An issue where the eBubble was appearing at the selection screen has been resolved. Now, the eBubble only appears when you are staking, measuring and storing the position.

Delta update speed: An issue where the navigation deltas were slow to update has been resolved. This was only an issue when you were surveying a Trimble road by the *Position on road* method using a TSC2 controller.

Application errors

You should no longer see occasional application errors when you do any one of the following:

- When you attempt to select a position to stake without having selected a file, when staking by *Position from file*
- Stake by *Position on road* or *Nearest offset* and your position is on or about the end of an entry transition.

Tunnels version 2.10

New features

NSW cubic parabola: Improved support when defining a NSW cubic parabola by removing the requirement to enter a *Transition Xc* value. The software now computes and displays the *Transition Xc* value from the entered *Radius* and *Length* values.

Cross-section guide lines: When surveying by *Auto scan, Position in Tunnel* or *Setout* you can now display a horizontal and vertical line in the cross section view. The vertical line displays as a green line that runs vertically through the centerline. The horizontal line, known as a *Spring line,* displays as a horizontal green line through the centerline and can be offset vertically relative to the centerline. These lines are defined from the *Scan/ Manual settings* screen when you start a survey.

Station display: Support has been added for alternative station display. The station is displayed as per the 10+00.0 option but the value before the + is the station value divided by a *Station index increment.* The remainder is displayed after the +. For example if the *Station index increment* is set to 20, a station value of 42.0 m is displayed as 2 + 02.0 m. This method is available from *Job / Properties of job / Units.* From the *Station display* field select *Station index* and then enter the appropriate value in the *Station index increment* field. This method is used in Brazil but may have applications in other markets.

Known issues: Resolved

Set out positions: An issue where alignment offsets were not applied to set out positions has been resolved.

Mines version 2.10

There are no changes in this release.

Monitoring version 2.05

Known issues: Resolved

Level icon: An issue where the icon for the *Level* button on the *Instrument status* screen was not being displayed, when not connected to an instrument, has been resolved.

Level button: An issue where the *Level* button on the *Instrument status* screen was not being enabled when it should, has been resolved.

Land Seismic version 1.40

New features

Conventional instruments: Support has been added for conventional instruments.

Exclusion zones:

- If the current position is in an exclusion zone the name of the exclusion zone is displayed on the screen.
- The initial default color assigned to exclusion zones has been set to red.
- An option has been added to allow the recording of the entry into and exit from exclusion zones.
- ESRI shape files containing polygon definitions (POLYGON, POLYGONM and POLYGONZ) can now be used directly as exclusion zone files. However you cannot add exclusion zone definitions to a shape file.

New database records: Custom database records are used to record grid definition, crooked line, exclusion zone, exclusion zone entry/exit details as well as specific Land Seismic point details.

Cut/fill values: The computed cut/fill value to the point being staked can now be displayed on the graphical stakeout screen.

Inline/Crossline deltas: The inline/crossline deltas are now shown in green when within layout tolerance even when inside an exclusion zone.

eBubble softkey: An eBubble softkey has been added to the stakeout navigation screens.

Known issues: Resolved

Incorrect default point name: When a new point was selected from the map for stakeout the default design point name was not being updated.

Error on tapping *Stakeout* button twice: It was possible to tap the *Stakeout* button twice from the Seismic stakeout screen resulting in an error causing the system to stop.

Map zoom to extents: The graphical extents of exclusion zones and grid definitions are now taken into account in the map zoom to extents option.

Hatching display: The hatching of exclusion zones will now only be drawn if the *Hatch polygons* map option is enabled.

Azimuth value not remembered: The azimuth between 2 points fields are now being remembered between sessions.

Application errors

You should no longer see occasional application errors when you do any one of the following:

- Attempt to re-open the current job.
- Tap the *Stakeout* button when the survey is starting following a previous tap on the *Stakeout* button.

Trimble Access Installation Manager

New features

Trimble Solution Improvement Program: The Trimble Solution Improvement Program is now available with Trimble Tablet installations.

Trimble Access Services

New features

Translations: Trimble Access Services pages within the Trimble Connected Community have been translated into the following languages:

- French
- German
- Italian
- Portuguese
- Spanish
- Korean
- Japanese

Translated pages include the administration tools for organization registration, *Manage Users* and *Manage Sites*, as well the user navigation page and newly created project sites.

New features - Released November 2012

Business Model Changes: AccessSync is now **available at no cost** with a current Trimble Access Software Maintenance Agreement (either standard or extended). AccessSync software and licenses can be downloaded now using the Trimble Access Installation Manager.

Trimble Connected Community organizations are now freely available for use with the AccessSync service: These "free" Trimble Connected Community organizations are designed specifically for use with the AccessSync service. To register for a new organization, browse to http://my.trimbleaccess.com. To register, you must have a valid AccessSync license for one

controller. Organizations are limited to one per company and include:

- one sitemanager (administrator) account
- a maximum of 100 user accounts
- 10 GB storage space per organization

Trimble Connected Community shortcut: Trimble Connected Community can now be accessed at http://my.trimbleaccess.com

New administration tools: New administration tools within your Trimble Connected Community organization simplify the workflow for managing users (add, edit and delete users) and managing project sites (add, edit and delete project sites). Only the *Sitemanager* can access these tools.

Simplified permission controls: Permission controls within Trimble Connected Community have been simplified for Trimble Access organizations. Permission levels for owner, editor, and viewer on the various elements of the Trimble Connected Community organization have been removed and a user now has access to a project site and data, or not. If a user has access to a project then they can use the AccessSync service to synchronize data on that project.

Simpler navigation to other sites: A navigation box has been added to the top right of Trimble Access organizations to allow users to easily navigate between the sites they have access to. Data processing and other free services can now be accessed by clicking in the navigation box at the top right of the services pages and selecting *Survey Tools.* Logging in to your organization is not necessary to access free services.

Trimble Access Services within Trimble Business Center: Trimble Access Services within Trimble Business Center have been updated to be consistent with the new web interface. All features that are available within the web interface are now available through Trimble Business Center. Data processing and other free services can now be accessed by clicking in the navigation box at the top right of the services pages and selecting *Survey Tools.*

Known issues: Resolved

AUSPOS Data Processing Service: You can now upload and process GNSS data to the AUSPOS third party data processing service; previously this failed within Trimble Access Services.

Editing user accounts: When editing user accounts the default site that you land on when logging in is no longer reset to the main navigation page.

***To All Users* folder:** The *To All Users* folder is now created when a project site is created; previously this folder had to be created manually.

AccessSync version 1.51

New features

History and Back buttons: The **History** and **Back** buttons have been swapped on the folder view form to prevent users accidently clearing the history when they open the form.

Known issues: Resolved

Password restrictions: When in the field, you can now login with the following characters in your password: &# + _. Previously this resulted in an error message.

Trimble Connected Community

New features - Released November, 2012

Trimble Connected Community shortcut: Trimble Connected Community can now be accessed at http://my.trimbleaccess.com

For information on changes, log in to the Trimble Connected Community, go to the TCC Central site (www.myconnectedsite.com/site/tcc/tccsite), and then click *What's New in TCC?*

Internet Setup version 1.51

There are no changes in this release.

Settings version 2.10

There are no changes in this release.

GNSS Forecast version 1.51

There are no changes in this release.

Trimble Connected Community Explorer version 1.37

There are no changes in this release.

General Scanning version 1.1.3.17

There are no changes in this release.

Trimble Access Previous Releases

Trimble Access version 2012.20, October 2012

General Survey version 2.00

New hardware

Trimble R10 receiver

The Trimble R10 receiver has the following key new features:

- **Tilt auto-measure:** A new measurement option when measuring a *Topo point* or *Rapid point* that enables a point to be automatically measured when the pole is within a predefined tilt tolerance. When surveying using this measurement option the *eBubble* (electronic bubble) is displayed. A point will auto-measure when the bubble is green.

  To enable *Tilt auto-measure* select:

  1. *Settings / Survey Styles - Rover options* and select the *Tilt* option.
  2. *Settings / Survey Styles*, select the *Tilt auto-measure* option and then enter a *Tilt tolerance* for topo and rapid point types.
  3. *Instrument / Receiver settings* and then configure the *eBubble*.

  Notes

  - You can specify a *Tilt tolerance* and not select *Tilt auto-measure*. When you do this the *eBubble* indicates when the receiver is within the specified tolerance but the position is not auto-measured.
  - The *eBubble* is aligned to the receiver's LED panel. To operate the *eBubble* correctly, the receiver's LED panel must be facing you, so that you are looking directly at it.
  - The *eBubble* can be displayed when in an Integrated survey. However, for all conventional measurements, *Tilt auto-measure* is not supported and no tilt warnings is issued.

- **Tilt warnings:** A new option when:
  - Measuring a *Topo point, Observed control point, Rapid point* and *Continuous points* that only enables a point to be stored when the pole is within a predefined tilt tolerance. When surveying using this measurement option an *eBubble* (electronic bubble) is displayed. A point can only be stored when the bubble is within the circle.
  - Staking a *Point* (from either General Survey or Land Seismic), *Line, Arc, Alignment* or *Road* that only enables a point to be stored when the pole is within a predefined tilt tolerance. When surveying using this measurement option an *eBubble* (electronic bubble) is displayed. A point can only be stored when the bubble is within the circle.

  To enable *Tilt warnings* select:

  1. *Settings / Survey Styles - Rover options* and select the *Tilt* option.
  2. *Settings / Survey Styles*, select the *Tilt warnings* option and then enter a *Tilt tolerance* for topo, observed control, rapid, and continuous point types.
  3. *Instrument / Receiver settings* and then configure the *eBubble*.

  Notes

  - You can specify a *Tilt tolerance* and not select *Tilt auto-measure*. When you do this the *eBubble* indicates when the receiver is within the specified tolerance but the position is not auto-measured.
  - The receiver's *eBubble* is aligned to the receiver's LED panel. To operate the *eBubble* correctly, the LED panel must be facing you, so that you are looking directly at it.

◊ The *eBubble* can be displayed in an Integrated survey. However, for all conventional measurements no tilt warnings are issued.

- **eBubble display:** An electronic *eBubble* can be used instead of a traditional pole bubble. The electronic *eBubble* enables clearer, easier and more accessible display of the bubble giving just one place to focus when leveling and measuring. Coupled with tilt auto-measure, the *eBubble* enables measurements to be automatically started when the pole is within tolerance.

  Tip - Press **CTRL+L** to show or hide the eBubble from any screen.

- **xFill™ technology:** Enables you to continue surveying with RTK accuracy during radio or cellular outages for some time depending on conditions. xFill uses new technology that leverages a worldwide network of Trimble reference stations to bridge communication outages via satellite delivered clock and orbit data. Select *Settings / Survey style - Rover options* to enable the xFill technology.
  - ◊ Trimble Access continues storing RTK vectors and all points are measured relative to the same RTK coordinate system.
  - ◊ xFill is only available for areas covered by the broadcast satellite. For more information see www.trimble.com.

  xFill corrections are based on a global model aligned to WGS84. These corrections are used when the RTK radio link from the base station is lost. To achieve optimal positioning performance during xFill operation, set up the base station that RTK is using on coordinates that are as close as possible to the true WGS84 coordinates for the base station point.

  xFill requires the WGS84 coordinates of your RTK base to be accurate to within 1 meter of the correct WGS84 coordinate of that base point. When establishing a field base station using the *Here* key in Trimble Access, the required accuracy of the base coordinates may be achieved when the position is augmented with SBAS such as WAAS or EGNOS. If using xFill with network RTK such as VRS, subscribers should check with their network administrator that the network is providing base coordinates and correction data in a global reference frame aligned with ITRF08 or WGS84.

- **HD-GNSS:** The Trimble R10 receiver has new state-of-the-art core technology for precise GNSS positioning. This uses a weighted ambiguity resolution technique that surpasses the older fixed/float technique. The precision estimates are much more reliable especially in challenging GNSS environments, and can be used as the sole quality indicator for point measurements.
- **Wi-Fi:** You can use the Trimble Access software to configure the Wi-Fi settings in a receiver that is Wi-Fi enabled.
- **OmniSTAR™ support**
- **QZSS satellite:** The Trimble R10 receiver can track the QZSS satellite observations.
  - ◊ The QZSS option is available only when the *Broadcast format* is set to CMRx.
  - ◊ You can log the QZSS satellites data to the receiver memory only.
  - ◊ Both the base and rover receivers must have v4.61 firmware or later installed to track QZSS satellites in an RTK survey.

- **R10 360° prism:** Support has been added for this prism type.

The default RTK style installed is now configured for the Trimble R10 receiver. If the connected receiver does not match a new and unconfigured survey style, a wizard runs and reconfigures the survey style to match the connected receiver.

New features

Trimble LaserAce 1000 rangefinder: New features include

- You can now define a *Trimble LaserAce 1000 rangefinder* specific style. Previously the Trimble LaserAce 1000 was supported indirectly as a LT1 TruPulse.
- The measured distance is now displayed to two decimal places. Previously all readings were truncated to one decimal place.
- The default *Laser VA display* is now set to *Inclination* to match the setting on the LaserAce 1000. Select *Jobs / Properties of job - Units* to edit this setting.

QC graph: New features include:

- You can now navigate to a point selected from the QC graph.
- You can now display Tilt distances.
- You now display the GDOP.
- You can now define a maximum and minimum Y axis range. To access the Y axis range configuration, tap near the Y axis.

Averaging duplicate points: You can now choose *Weighted* or *Unweighted* as the method the General Survey software uses to average duplicate points. Select the method from *Jobs / Cogo settings.* Previously all averaging was weighted.

Measure topo: New features include:

- You can now measure a distance and continually update the horizontal and vertical angles. To do this, select *Dist* when measuring by *Angles and distance* in a conventional survey.
- You can now pre-configure two values for the *L/R offset* and easily set all offset values to 0 from the pop-up menu. These new features enable you to switch between 2 preset offsets, and a regular *Angles and distance* measurement (by setting the offsets to 0), all from the *Distance offset* screen.
  - ◊ When a regular *Angles and distance* observation is stored from the *Distance offset* measurement screen with all offsets set to 0, the observation is now stored as a regular *Angles and distance* observation, and not a *Distance offset* observation.
- Offset values are remembered between survey sessions.

Stakeout: New features include:

- When staking a *Point, Line, Arc,* or *Alignment* in a GNSS survey or a conventional survey, a grid is now displayed as you near the target and when the large navigation arrow disappears. The grid changes scale as you move closer to the target.
- When staking an alignment you can now choose whether the graphics display is widescreen or not. To do this tap and hold on the graphics screen and select the *Widescreen* setting. Previously it was always set to widescreen.

- You can now define and stake a side slope from an alignment. The side slope is defined by a hinge position (three definition methods are supported), cut and fill slope values, and optionally a cut ditch width.
- When staking a *Line* or an *Arc* from the map you can now reverse the direction of the line/arc by selecting *Reverse line direction/Reverse arc direction* from the tap-and-hold menu.
- When staking a *Line* or *Arc* by *Station on line / Station on arc* or *Station/offset line / Station/offset arc* and using the *Stn+ / Stn-* softkeys, you are now prompted if you want to stake the end station of the line / arc.

Area and volume display: You can now select the number of decimal places for a computed area or volume.

Volume units: A computed volume can now be output as Acres-feet or US Acre-feet.

GNSS contacts: When defining a new GNSS contact, you can use a *Config* softkey that has been added to the *Edit GNSS contact* screen to provide improved access to pairing to a Bluetooth device.

Receiver settings: You can now access the receiver settings when you tap and hold the receiver icon in the status bar.

OmniSTAR: New features include:

- When selecting an offset the currently selected offset is now indicated by a tick mark.
- The static icon is now displayed when measuring an offset.

Dial-in GSM on the Trimble TSC3 controller: The internal modem of the TSC3 controller now supports a Dial-in GSM (Circuit Switched Data) connection over a 2G network. Previously only GPRS connections were possible with the TSC3 internal modem.

Joystick screen: When performing a standard search or a GPS search for a target, the *Joystick* screen now automatically closes as soon as the instrument has successfully locked onto the target.

GDOP: The GDOP (Geometric Dilution of Precision) is now reported in the *Instrument / Position* screen and when reviewing the job.

Fine and Coarse mode: With the improved precisions of the latest receivers, the *Fine* and *Coarse* mode softkeys have been removed. The receiver is now set to operate in low latency mode at all times.

RTK Initialization: To support the new HD-GNSS technology in the Trimble R10 receiver, *RTK Fixed* and *RTK Float* mode are no longer applicable when using the Trimble R10 receiver. When RTK with the Trimble R10 receiver is producing positions, it is deemed to be *Initialized*, and when RTK with the Trimble R10 receiver is not producing positions (the system has dropped into DGPS mode for example) it is deemed to be *Not Initialized.* With the Trimble R10 receiver, the precisions estimates and their associated tolerances are the only measure of quality you need to be aware of, greatly simplifying operation of the system.

PPK Initialization: To maintain consistency with the HD-GNSS changes for RTK, and considering the existing terminology for the amount of time to log clean GNSS data to gain an acceptable

post-processed solution precision, *PPK Fixed* and *PPK Float* have been changed to *PPK Initialized* and *PPK Not Initialized.*

RTK Initialization: You can now drop all SV signals without physically dumping the antenna. To do this set the RTK initialization method to *Reset SV tracking* and then tap *Reset.* This will cause the receiver to drop all SV tracking, re-acquire the SVs, and re-initialize RTK.

Trimble Tablet USB radio: To manually install the drivers tap Windows Start to access the Start menu, tap [All programs / Trimble Access Drivers] and run USBRadioDriver.exe. Previously you tapped the USB Radio Driver icon on the desktop.

GPRS renamed: The term GPRS has been renamed to 'mobile internet'.

Point lists: New features include:

- The column width for all lists with a Point and a Code column is now remembered. This is useful if you have long point names.
- The Point and Code columns in the Stakeout points list can now be sorted.

TSC3 controller: New shortcuts include:

- The on-screen keyboard, also known as the input panel, can now be accessed by pressing (Ctrl + 7).
- The camera can now be accessed directly by pressing (Fn + 1).

Geotagging images: When you use the media file workflow to capture an image that is linked to a point, you can now geotag that image. Previously, you could do this only when capturing images through feature and attributes. To geotag an image, select *Geotag images* from *Job properties / Media file.* Alternatively, when linking an image, select the *Geotag images* option.

- This option is only available when the *Link to* option is set to *Previous point, Next point* or *Point name*
- The meta data added to the image is at the measured point.

DXF export: You can now export a DXF file from all controllers. Previously this option was only supported on the Trimble Tablet controller.

PNG files: PNG image files (.png) are now supported in the map.

Mobile Internet service provider: Support has been added for the following service providers:

- China Unicom
- China Telecom

Georeferenced images: You can now display a georeferenced image where the insertion location of the world file is defined as latitude and longitude.

Export CSV WGS-84: A stylesheet enabling the export of a CSV file of WGS-84 point positions (named *CSV WGS-84 lat longs)* is included by default in Trimble Access. Previously the style sheet had to be downloaded from Trimble.com. The existing *Comma delimited with attributes style sheet* has been renamed to *CSV with attributes.*

Navigate to point: The *Store* softkey has been removed from the *Find a point* screen. A *Position* softkey has been added to the *Find a point screen.* This change is to make it clear that the point stored using the *Store a point* functionality is the current position, unrelated to the point that is being navigated to, while still making it easy to store waypoints if required.

LaserLock: A new *LaserLock* option streamlines the process of using the laser pointer to find prisms in the dark and then automatically enables *Autolock* to measure to the prism.

Coordinate system definitions: The following new coordinate system definitions are now supported:

- A set of US State Plane zone definitions based on the new *NAD 1983 (2011)* datum transformation (127 new zone definitions in all).
- A Turkey datum transformation *(TR_ED50)* and 4 new zone definitions using this datum transformation.

Trimble GeoXR Monopole: The General Survey software now supports the new antenna measurement method *Bottom of monopole bracket* for the Trimble GeoXR monopole.

Ignore health: You can no longer choose to ignore the health of a satellite. Satellite health is a process managed by the receiver and should not be overridden by the field software.

Receiver internal rover radio: The Rover radio type *Trimble internal* has been renamed to *Trimble receiver internal.*

Known issues: Resolved

Helmert transformation: An issue when calculating residuals from a Helmert resection on a known point has been resolved. Formerly the General Survey software was incorrectly calculating residuals with respect to the known point instead of the resected coordinate.

Notes

- The actual calculation of the resected coordinate was correct. The calculation of the residuals was incorrect.
- The difference between the known point and the resected coordinate was still computed and displayed on the *Duplicate point* screen when the resection was stored.

TSC3 memory issues: An issue where large or multiple background image files in the map could result in the TSC3 controller running out of memory has been improved.

LandXML files: An issue where larger LandXML files could not be displayed in the map has been improved.

Volume units: An issue where a volume could only be computed in cubic meters has been resolved. This was not an issue for the Trimble Tablet.

Volume computation: An issue where a surface file could not be loaded when attempting to compute a volume has been resolved. This was only an issue when the file name was longer than 16 characters. This was not an issue for the Trimble Tablet.

Linked jobs: An issue where it was possible to lose data when a job became linked to itself has been resolved.

Auto F1/F2 with FineLock: An issue where you could not automatically take a F1/F2 measurement with FineLock selected has been resolved. Previously it would take the F1 measurement, turn to the F2 position, but would not automatically start the F2 measurement.

Continuous topo: An issue, when measuring positions by *Continuous topo* using the *Fixed distance* method in a GNSS survey, where the status line incorrectly displayed a *Poor precisions* or *Waiting for initialized solution* message has been resolved.

Favorites menu: An issue where, having added *Measure codes* to the *Favorites* menu, you could not access it from the *Favorites* list has been resolved.

Staking from the map: An issue where you could not start a conventional survey when staking an entity from the map has been resolved. Previously, after selecting the entity, tapping *Stakeout* and, with the *Station setup* option highlighted, tapping *Next* returned you to the map.

Trimble GeoXR controller - conventional data: An issue where conventional points could not be viewed in the map on a Trimble GeoXR controller has been resolved. Previously the option to view conventional data was not available from the *Filter*. Note that you cannot measure conventional points with the Trimble GeoXR controller, but you may have a job with conventional points that has been copied from another controller.

GPS Search: An issue where, in an integrated survey, the Trimble Access software was not switching to the internal GPS receiver when an external receiver was disconnected has been resolved.

Date attribute format: An issue where creating the date for an attribute by selecting the *Today* option resulted in a *Date: Invalid date* message has been resolved.

Dial-in GSM: An issue where a Dial-in GSM (Circuit Switched Data) connection using an external phone (via Bluetooth) would occasionally fail has been resolved.

Exploded polylines: An issue where, after restarting the General Survey software, previously exploded polylines were displayed as unexploded has been resolved.

Resurveying points: An issue where a resurveyed point with attributes failed to remember the attribute data has been resolved.

Measure calibration point: An issue, when measuring a calibration point, where tapping *Back* (or *Esc)* in the *Find a point* navigation screen failed to return to the *Measure points* screen has been

resolved. Previously it returned to the *Find a point* selection screen.

OmniSTAR: The following issues have been resolved:

- An issue where a survey failed to start due to a communication error has been resolved. This was only an issue if the HP license had expired but the VBS license was still current.
- An issue where it was possible to measure an offset before an OmniSTAR survey had converged has been resolved.. This was only an issue when OmniSTAR was in HP mode.
- An issue where an OmniSTAR survey would end when an existing internet connection failed has been resolved.
- An issue where the *Date measured* field for the OmniSTAR offset displayed 1/1/1980 when no offset was loaded has been resolved. It now shows a "?".
- An issue where the Trimble Access software was incorrectly checking for a Trimble internal radio at the start of a survey has been resolved.
- An issue where, under some circumstances, a *Rapid Point* could be measured without an OmniSTAR offset, has been resolved.

WAAS / EGNOS: An issue where the Trimble Access software was incorrectly checking for a Trimble internal radio at the start of a survey has been resolved.

Mount point: An issue where tapping the *Cancel* button when establishing a connection to a mount point failed to end the connection process, has been resolved. You are now returned to the mount point selection screen.

Postprocessed survey: A rare issue where the first position logged in a postprocessed file would appear some way from the survey area prior to postprocessing has been resolved.

Improved workflow when using video to aim to the point you are trying to measure: In previous versions the General Survey software switched back to a *Station setup, Station setup plus, Resection, Measure rounds,* and *Station elevation* if they were in progress when tapping *Measure* from the video screen. In the current version we have extended this to switch back to any *Measure topo* window that is open when tapping *Measure* from the video screen.

Invalid antenna height: An occasional issue where an antenna height could not be entered has been resolved.

QC graph: The *Prev* and *Next* softkeys have been removed from the *Review* screen for a point selected from the QC graph.

Navigate to point: An issue where *Navigate to point* from the *Instrument* menu would navigate you to a point selected in the map has been resolved. *Navigate to point* from the *Instrument* menu now always brings up a form that allows you to select the point to navigate to. Selecting *Navigate to point* from the tap-and-hold menu in the map continues to navigate you to the selected point, as it always has.

Residual display: Two issues relating to residual display have been resolved:

- When performing a resection, the elevation residuals of angles-only observations were displayed as null.
- When performing a station elevation, the elevation and vertical angle residuals of angles-only observations were displayed as null.

Grade entry: An issue where a value entered in a *Grade* field was not being converted to the display setting has been resolved. For example, if the display is set to *Ratio - Run: Rise* and a grade is entered as for example, a percentage, the entered value will now be converted and displayed as Ratio - Run: Rise.

Find key: Two issues related to using the *Find* softkey from *Measure points / Calibration point* have been resolved:

- There is no *Store* softkey on the *Find a point* screen when navigating to a calibration point.
- Tapping *Back* or *Esc* from the *Find a point* screen now takes you back to the *Measure points* screen.

Unit symbol display: An issue where the unit symbols were truncated when viewing the results for a *Station setup, Measure topo,* and *Rounds - Backsight* has been resolved.

Softkeys: An issue where you could access, but not select, a softkey using the keyboard has been resolved. This was only an issue for the second row of softkeys.

Integer attributes: An issue where any edits made to the integer attributes for a stored point were not being saved has been resolved.

Transit adjustment: A potential divide by zero error in the transit adjustment has been resolved. This was only an issue if you had a perfect misclose and the start and end northings or eastings were identical.

Antenna height: An issue, when switching from an integrated survey to a GNSS survey, where the target height was still applied to the antenna height, has been resolved.

Station scale factor: Improved handling of *Scale factor* fields when performing a *Station setup* in a conventional survey. In previous versions the scale factor fields were hidden when the *Measure backsight* option was switched off. These fields are now independent of the *Measure backsight* option.

Data entry during measurement: An issue where a value entered **while** measuring a point was discarded, has been resolved.

Application errors

You should no longer see occasional application errors when you do any one of the following:

- Load a large LandXML file in the map
- Exit stakeout arc when the coordinate system for the job is set to *No projection / No datum.*
- Use the *Receive data from another device* option to import the following file formats:
    - ◊ Trimble GDM (Area)

◊ SDR33 coordinates and SDR33 DC
◊ TDS CR5
◊ Topcon (FC-5) and Topcon (GTS-7)
◊ SC Exchange
◊ Trimble Zeiss M5

- Remeasuring a backsight in Face 2 with no Face 1 backsight measurement.

Roads version 2.00

New features

Define: New features include:

- The following transition types are now supported when defining a Trimble road:

  ◊ Cubic spiral
  ◊ Bloss spiral

  Also, these spiral types are now supported for a LandXML road.

- You can now define a new template by copying a template from another road. Previously you could only copy a template from the current road.
- When browsing a position from *Define / Review* the results now respect the coordinate order for the job.

Survey: New features include:

- When using a Trimble R10 receiver, you can now configure the survey style to prompt a warning when the pole is outside a specified *Tilt tolerance.*
- You can now stake positions from a CSV or TXT file relative to a Trimble or LandXML road. Each position in the file must be defined by a station and offset and optionally an elevation and code in that order. See the following:

  1+000.000, 0.250, 25.345, ,
  1+000.000, 2.000, 25.345, Median
  1+000.000, 3.000, , Lane
  1+000.000, 7.000, 25.294, Shoulder

  Select *Roads / Survey* and then *Stake* option *Position from file* to use this new feature.

- When staking a Trimble road by *Station and offset* in a conventional survey the *Station* and *Offset* fields now appear on the same page (page 1), providing improved workflow. Previously the *Station* and *Station interval* fields were on page 1 forcing the *Offset* field to page 2.
- When staking a Trimble or LandXML road in a GNSS survey or a conventional survey a grid is now displayed in the plan view as you near the target and when the large navigation arrow disappears. The grid changes scale as you near the target. The grid applies to all stake options except *Position on road.*

Design data display - GENIO roads: The following improvements have been made to the display of the design data when staking a GENIO road:

- The string name is now prefixed with *String:* when staking a station on a string or along a string.
- The station value is now prefixed with *Stn:* when staking a station on a string.
- The design elevation for a station on a string is now displayed at the top of the plan and cross section selection screens.
- If the design elevation is edited, the edited value is now displayed in red at the selection and stakeout screens.
- If the side slope is edited, the edited value is now displayed in red at the stakeout screens.

Design data display - Trimble and LandXML roads: The following improvements have been made to the display of the design data when staking a Trimble and LandXML road:

- The station value is now prefixed with *Stn:* when staking by *Stake* option *Station and offset.*
- The code value is now prefixed with *Code:* and the offset value is now prefixed with *Offset:* when staking by *Stake* option *Station and offset.*
- If the design elevation is edited, the edited value is now displayed in red at the stakeout screens.
- If the side slope is edited, the edited value is now displayed in red at the stakeout screens.

Known issues: Resolved

Missing stake deltas: An issue where the *Station, Offset* and *V.dist* deltas were not always being displayed has been resolved. This was only a problem when staking a GENIO road by the *Along a string* method with a calculated construction offset or when staking a Trimble road by the *Nearest offset* method with a calculated construction offset.

Station equations: An issue where you could not select an equated station to stakeout has been resolved. Previously the Roads software reported that the selected station was out of range for the zone.

GENIO roads: The following issues have been resolved:

- You can now escape, when defining or editing a road, without being warned that your edits will be lost.
- You can now stake a GENIO road by the *Along a string* method, when the selected string had no elevation.

LandXML roads: The following issues have been resolved:

- Incorrect computation of the start azimuth for an entry and exit spiral. Previously the azimuth was assumed to be tangential to the previous element.
- Slow loading of large LandXML files.

Horizontal construction offsets: When changing from a *Calculated* horizontal construction offset the calculated value is now cleared from the *Horizontal offset* field. Previously the offset as calculated

from your last position was displayed in the *Horizontal offset* field when you deselected *Calculated.*

View before storage: An issue where the *View before storage* screen was not being displayed when staking by stake option *Position on road* has been resolved. This was only an issue if the *Horizontal tolerance* was set to value greater than 0.000.

Non-tangent horizontal alignment elements: The following improvements have been made when consecutive horizontal alignment elements are non-tangential:

- When staking by *Position on road* or *Nearest offset* your position is shown as *Undefined* when your current position is beyond the end tangent point of the incoming element but before the start tangent point of the next element, and you are on the outside of the road.
- When staking by *Position on road* or *Nearest offset* and your current position is before the end tangent point of the incoming element but after the start tangent point of the next element, and you are on the inside of the road, the station and offset is reported relative to the closest horizontal element.
- If a template has been assigned to the road, the resultant linework, when reviewing the road, now respects the non-tangency. Note that this was a display issue only. When staking by *Position on road* or *Nearest offset* the reported station, offset, and coordinate values were correct.
- If your current position is off the road, that is, you are before the start or beyond the end of the road, the *Off road* message is now displayed in red when staking by *Position on road* or *Nearest offset.*

Slope entry: An issue where, when defining a template, a value entered in the *Cross slope, Cut slope* or *Fill slope* field was not being converted to the display setting has been resolved. For example, if the display is set to *Ratio - Run: Rise* and a grade is entered as a percentage, the entered value will now be converted and displayed as *Ratio - Run: Rise.* This was also an issue for the *Left super* and the *Right super* when defining a superelevation record.

Browse information: An issue where previously browsed information remained displayed when you switched to another application has been resolved. This was only an issue when browsing cross sections from the *Define / Review* screen.

Tunnels version 2.00

New features

Measuring a position using a prism: You can now measure a position perpendicular to the tunnel profile when using a prism. This option is available when performing a *Manual measure* or when measuring by *Position in tunnel* by selecting *Applying a target height perpendicular to profile* from *Settings* and entering the prism radius as the target height.

New transition types: The following transition types are now supported when defining a tunnel:

- Cubic spiral
- Bloss spiral

- NSW cubic parabola. This special spiral type is used for railway designs in New South Wales, Australia.

Also, support has been added for a Trimble xml file (txl) generated from a LandXML file (using the ASCII file generator), where the LandXML file includes the following transition types:

- Cubic spiral
- Bloss spiral

Measure template: You can now define template elements by measuring positions within a tunnel. Measured positions can be used to define *Start point* and *Line* element types.

Templates: You can now define a new template by copying a template from another tunnel. Previously you could only copy a template from the current tunnel.

Start station: You can now enter a start station when defining a tunnel from the map.

Review: You can now browse the coordinates and elevation of positions from the plan and cross section views when reviewing a defined tunnel. Also, the horizontal and vertical offsets from the browsed position to the alignment are reported from the cross section view.

Store tunnel: You can now store a tunnel before it is fully defined, Previously a tunnel definition needed at least a horizontal alignment, vertical alignment, and assigned templates before it could stored.

Widescreen: You can now disable the widescreen enabling the status bar to be available all the time when surveying by *Auto scan*, *Position in tunnel*, and *Set out* methods. To do this, tap and hold on the screen and select the *Widescreen* option.

Grid display: When staking a point from the map, and when the delta display is set to *Delta grid)*, a grid is now displayed in the plan view as you near the target and when the large navigation arrow disappears. The grid changes scale as you move closer to the target.

Application errors

You should no longer see occasional application errors when you do the following:

- Survey a tunnel where the vertical alignment includes non-tangential elements and the template application method is set to *Perpendicular*.

Mines version 2.00

New features

Project line to face:

You can now stake the intersection point between a mine face and a line projected on to a mine face. The projected line can be offset horizontal and vertically if required. The line can be defined by:

- Two points:
    - ◊ Selected from the map
    - ◊ Keyed in
    - ◊ Measured
- A line selected from the map
- Two points or a line selected from a DXF file

DXF file support:

- You can now use linework from a DXF file to define and auto stake a *Center line*, *Grade line*, *Laser lines*, *Project line*, and *Blast holes.*
- You can now use points in a DXF file to define and auto stake *Pivot points.*

Grid display: When manually staking a point or a line, and when the delta display is set to *Delta grid*, a grid is now displayed in the plan view as you near the target and when the large navigation arrow disappears. The grid changes scale as you move closer to the target.

Monitoring version 2.04

Known issues: Resolved

Electronic level: An issue where the electronic level could not be accessed when the controller was connected to an instrument via a radio has been fixed.

Job file: An issue where a new job file (*.mobs) was not being created at midnight rollover has been resolved. This issue was a result of the unintentional removal of the *Obs file rollover* checkbox from the *Settings / Other* screen.

Land Seismic version 1.30

New features

Tilt warnings: When using a GNSS receiver with an in-built tilt sensor, you can now configure the survey style to prompt a warning when the pole is outside a specified *Tilt tolerance.*

Point buffer circles: You can now define point buffer circles. These are used if you need the vibroseis truck to stay a certain distance away from points. Unlike exclusion zones, point buffer circles are display only. There is no warning if you enter a buffer circle.

Grid definition files: You can now display the current grid definition file (*.gdf) in the map. Select to show or hide the grid definition file from the tap-and-hold menu.

Automatic search: You can now automatically search for next or previous points. To enable this option, select *Automatically search for next or previous point* from the *Options* menu of the *Seismic point stake out* screen. When selected, it suppresses the *Point name does not exist* warning message and automatically searches for the next point name in the job.

Warn if point has already been staked: You are now warned if the current point has already been staked. To enable this option, select the *Warn if point has already been staked* option from the *Options* menu of the *Seismic point stakeout* screen.

Best OS softkey: A *Best OS* (best offset) softkey has been added to the options menu of Seismic point stake out. When selected, it will take the first offset from the offset template (*.tpl) file that is not in an exclusion zone.

Selecting points from the map: If you are currently in the stake out screen and you select a new point from the map, tap *Enter* to return to the stakeout screen and update the point.

Grid display: When staking a point or a line a grid is now displayed in the plan view as you near the target and when the large navigation arrow disappears. The grid changes scale as you move closer to the target.

Receiver settings: You can now review the *Receiver settings* from the *Instruments* menu.

Known issues: Resolved

Default point name: The default as-staked point name has been changed to *Design name*, and the default as-staked code has also been changed to *Design code.*

Crooked line files: Since GPSeismic crooked line files only contain numeric point names, the first number found in the name of the point being staked will be used to locate the reference azimuth from the crooked line file.

AccessSync version 1.50

New features

Send/Receive Indicator: There is now an arrow beside each file in the list of files to be synchronized The arrow indicates whether the file needs to be uploaded or downloaded from Trimble Connected Community. An up arrow indicates that the file needs to be sent to Trimble Connected Community and a down arrow indicates that the file needs to be downloaded from Trimble Connected Community.

File order: Files are now presented in a collated list.

History screen: The *History* screen can now be accessed from a button in the status bar. History has been reformatted as a table which makes it easier to read and enables columns to be sorted.

Back button: A *Back* button has been added to the *History* screen and the screen displaying the list of individual files to be transferred.

Minimize button: A minimize button has been added.

File Priorities: The priority settings on the files to be synchronized are now remembered, even when AccessSync has been shut down and restarted. Previously these settings were lost when AccessSync

was shut down.

Trimble Access

New features

Alerts: A *Do not show again* option has been added to the *Alert* screen when an application license has expired. Previously you could only dismiss the alert.

Files application: When you access the *Files* application for the first time you are now taken to the *\Trimble Data* folder. If you then navigate to another folder, when you access the *Files* application again you are taken to the last folder you were in.

Known issues: Resolved

Login user name: The login user name is no longer case sensitive.

License update: An issue where updating your license via the *About* box failed has been resolved.

Trimble Access Installation Manager

The Trimble Access Installation Manager has been tested with Windows 8 Consumer Preview.

Internet Setup version 1.50

There are no changes in this release.

Settings version 2.00

There are no changes in this release.

GNSS Forecast version 1.50

There are no changes in this release.

Trimble Connected Community Explorer version 1.37

There are no changes in this release.

Trimble Connected Community

For information on changes, log in to the Trimble Connected Community, go to the TCC Central site (www.myconnectedsite.com/site/tcc/tccsite), and then click *What's New in TCC?*

Trimble Access Services

There are no changes in this release.

General Scanning version 1.1.3.17

There are no changes in this release.

Other Information

This section applies only to Trimble CU, TSC2, and TSC3 controllers.

Configuring the system options

The new General Survey systems are shipped unconfigured. They are configured automatically when you connect the controller to the instrument. Alternatively, select *Settings / Connect / Survey styles / Options* and then select the option(s) appropriate for you:

- GNSS users - select *GNSS surveying*
- Conventional Total Station users - select *TS surveying*

For more information, refer to the *General Survey Help* or contact your local Trimble dealer.

These options control the styles that are available and the relevant options that appear throughout the software. You can reconfigure the General Survey system at any time.

Connecting a Trimble CU controller to the office computer

The Trimble CU controller communicates through the docking station to the office computer using USB. The docking station must be connected to the office computer through the USB-to-Hirose cable.
You cannot connect the Hirose-to-7-pin lemo cable to a 7-pin lemo-to-DB9 cable (supplied with GNSS systems) and use this to connect the docking station to the serial port on the office computer.

Connecting a TSC2 controller to wireless devices

When you connect a TSC2 controller to a device using wireless technology, the icon on the status bar at the top of the screen should be animated, showing that the connection is being attempted. Once the controller is connected, the icon should appear as two large arrows. This functions correctly in the operating system version 5.0.2, but not in version 5.0.3. However, if you click the icon, the *Connectivity* dialog correctly shows the connection status.

Microsoft ActiveSync technology issues

Microsoft Explorer and the Trimble Data Transfer utility may sometimes fail to find the folders and to show files on the controller. This can occur if another Explorer window is still browsing to the controller from a previous connection, or if the controller has been reset and a new connection made. To avoid this, make sure that you close all Explorer windows before you disconnect the controller.

Pairing a Trimble Tablet with a Trimble CU controller

To avoid time-out issues when pairing a Trimble Tablet with a Trimble CU controller, Trimble recommends that you promptly enter a short pairing code.

Documentation

General Survey 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.

The help is also available from www.trimble.com as a single file download in Adobe Portable Document Format (PDF), which you can view on an office computer, search for a particular word or topic, or print.