Trimble® Access™ Software

Legal Information

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Contents

Trimble Access Software Version 2015.21

These Release Notes contain information about the Trimble® Access™ software version 2015.21.

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 Installation Manager. If you have:

- Never installed the Trimble Installation Manager, go to www.trimble.com/installationmanager for installation information.
- Previously installed the Trimble Installation Manager, you do not need to reinstall it because it updates itself automatically. Select *Start / All Programs / Trimble Installation Manager* to start the Trimble Installation Manager.

For more information, click *Help* in the Trimble 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 2015.21, you must have a warranty agreement valid up to 1 September 2015.

When you upgrade to version 2015.21 using the Trimble Installation Manager, a new license file is downloaded to your device.

Updating office software

When you upgrade to version 2015.21, 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 Installation Manager, the office software on the computer that has the Trimble 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 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 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://apps.trimbleaccess.com/help to download a PDF file of the Help. A separate PDF file is provided for each application.

Trimble Access

New hardware supported

Trimble GNSS receivers

Trimble Access version 2015.21 adds support for the Trimble R2, SPS985L and SPS585 receivers.

Trimble TDL2.4 radio

The Trimble TDL2.4 radio enables you to connect a controller that does not have an internal 2.4 GHz radio to a Trimble VX Spatial Station or Trimble S Series total station. The controller connects to the TDL2.4 radio using a Bluetooth® wireless connection.

For more information, refer to the topic "Radio settings" in the *General Survey Help*.

Software now available in Thai

The Trimble Access software is now available in Thai. Translated software applications are General Survey, Roads, Tunnels, and Mines.

General Survey version 2015.21

Resolved issues

The following issues are now resolved:

- **Polylines in DXF files**: An issue where DXF files with polylines in feet had incorrect positions for starting points of the polylines is now resolved. This issue was introduced in Trimble Access version 2015.20.
- **Area calculations**: An issue where Trimble Access would occasionally calculate significantly inaccurate area results is now resolved.
- **Application error**: An issue where setting up an RTK base on a position that has been derived from a GNSS survey such as VRS or RTK would cause an application error when attempting to store the first point in the job is now resolved.

General Survey version 2015.20

This section includes features, enhancements and resolved issues that also apply to other Trimble Access applications.

New features

AccessVision

AccessVision provides a useful graphical display within task screens. AccessVision incorporates the map view and the video view within the current screen to provide immediate visual feedback and avoid having to switch back and forth between screens. Task screens that support AccessVision include measure, key in, cogo, and station setup screens.

Screens that already provide a graphical display, such as navigate to point, do not support AccessVision.

Note - AccessVision is supported only on second generation Trimble Tablet controllers and supported third-party Windows Tablets. The map view is not available in an AccessVision screen if the 3D map is disabled.

When viewing a screen that supports AccessVision, the graphical display is on the left side of the screen. When the controller is connected to a Trimble instrument that has VISION™ technology, tap the icon on the bottom right corner of the graphical display to toggle between the map and the video view. Selecting points in the graphical display populates the fields on the right of the screen.
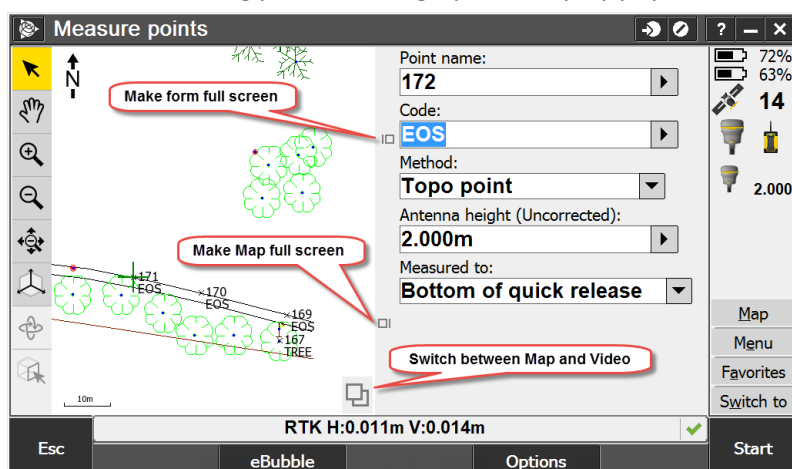
To resize or hide the graphical display, tap the appropriate icon in the center of the screen.

For more information, refer to the topic "AccessVision" in the *General Survey Help*.

Create nodes from lines, arcs and polylines in map layers

Trimble Access now supports creating node points at all polyline vertices. It also supports creating a center point for DXF circle and arc elements. These points can then be selected for stakeout or cogo calculations. To enable this option, select the *Create nodes* check box in the *Options* screen when selecting the layer to display in the map. This option applies to DXF files, ESRI Shapefiles, and LandXML Parcels (polylines).

For more information, refer to the topic "Active map" in the *General Survey Help*.

BeiDou only and BeiDou with GLONASS

Trimble Access version 2015.21 supports BeiDou only and BeiDou with GLONASS GNSS surveys.

To enable/disable GPS signal tracking, select/clear the *GPS* check box in the *GNSS signal tracking* group of the *Receiver options* or *Base options* screen. GNSS receiver firmware 5.10 or later is required to perform a survey with GPS tracking disabled.

GNSS surveys must contain either GPS or BeiDou observations. If GPS signal tracking is disabled, Beidou signal tracking must be enabled.

Tracking of Galileo and QZSS signals is available only when GPS signal tracking is enabled.

Continuous topo in RTX surveys

Trimble Access now supports continuous topo measurements in Trimble RTX™ surveys.

Printing from a P4T mobile Bluetooth printer

Trimble Access now supports printing directly from controllers in the field to the Zebra P4T mobile printer. The easy-to-carry P4T printer enables you to print barcode labels and documents up to 4" wide. It uses thermal transfer image technology to print text, barcodes, and graphics such as company logos as labels and documents designed for outdoor use. For more information on the Zebra P4T, see https://www.zebra.com/us/en/products/printers/mobile/p4t.html.

From the Stakeout *View before storage deltas* screen, you can print the stakeout details displayed. This is particularly useful for creating labels that can be affixed to the stake. The deltas displayed are configurable from *Stakeout* options where you can choose from a list of staked deltas formats, or you can create your own display format. A display format must have a print style associated with it for the *Print* softkey to be available. For points, lines and arcs the "Default" deltas format has a print style associated with it. To print from any of the other staked delta formats you must define your own stake print format.

Print layout is configurable and controlled via the use of *.lbl files. For more information, refer to the topic "Printing from a P4T mobile Bluetooth printer" in the *General Survey Help*.

Enhancements

Job-specific data files now stored together

To better group job-specific data files, a **<jobname> Files** folder is now created for each job. Grouping these files together will make it much easier to manage files. The following files are saved to the **<jobname> Files** folder:

- Media files (*.jpg) captured by the camera on the controller or by a connected digital camera
- Snapshots (*.jpg) captured using an instrument with Trimble VISION technology
- Panoramas (*.jpg) captured using an instrument with Trimble VISION technology
- Scans (*.tsf) captured using an instrument with Trimble VISION technology
- Receiver files (*.t01, *.t02)

Previously, all of the other files listed above were saved to the <username> folder.

Panorama files (*.jpg) captured using a Trimble V10 imaging rover (including the calibration check files) are no longer prefixed with the job name because they are now saved to the **V10 Panorama Files** folder in the **<jobname> Files** folder. Previously these files were saved to the <jobname>_ Images folder.

When an image is drawn on or annotated, the original image file is saved to the **Original Files** folder in the **<jobname> Files** folder. Previously they were saved to the <jobname>_Original_Images folder.

Refer to the image below to compare the folder structure for version 2015.21 with previous versions of Trimble Access:
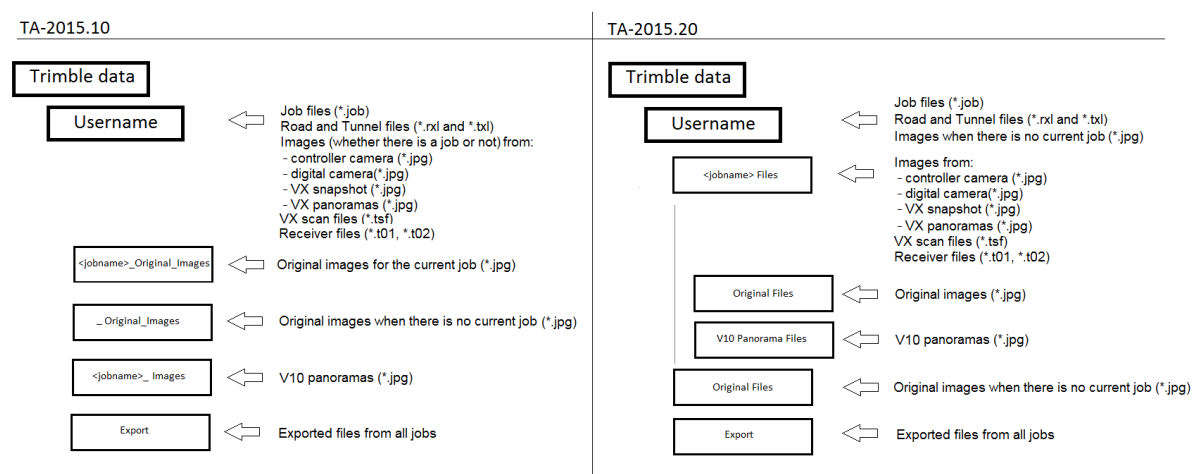
Note that the location of the following files has not changed:

- Files that are used across jobs, including *.rxl and *.txl files, are still saved to the **<username>** folder or, if you have created a project folder, to the **<username>\<projectname>** folder.
- The job (*.job) is still saved to the **<username>** folder or, if you have created a project folder, to the **<username>\<projectname>**.
- Exported files are still saved to the **Export** folder.
- If there is no job open, then media files and snapshots are still saved to the **<username>** folder. When an image is drawn on or annotated, the original file is saved to the **Original Files** folder in the **<username>** folder. Previously they were saved to the <jobname>_Original_ Images folder.

Photo attribute name defaults

Photo attribute name fields no longer remember the last used name when collecting the next feature. A new measurement would usually reference a new image, and remembering the last used photo file name made referencing a new image more difficult.

Station and offset

The behavior when the *Coordinate view* is set to *Station and offset* is now improved.

When viewing a point by station and offset relative to a road, tunnel, or alignment, the station and offset for the point (1) is to the intersection point of two horizontal alignment elements when:

- the horizontal alignment includes consecutive elements that are non tangential;
- the point is beyond the end tangent point of the incoming element but before the start tangent point of the next element; and
- the point is on the outside of the horizontal alignment.

Refer to the following diagram.
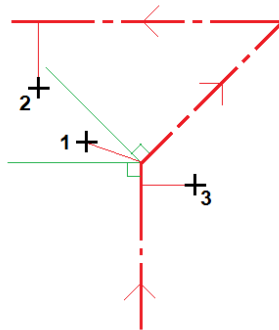
The exception to this behavior is if the distance from the point (2) to the intersection point is greater than the distance to another element in the horizontal alignment. In that case, the station and offset for the point is to the closer element.

When the point (3) is on the inside of the horizontal alignment the station and offset is to the closer element.

Cogo enhancements

Trimble Access version 2015.21 supports the following Cogo enhancements:

- From the map you can now compute the distance between:
  - a point and a line
  - a point and an arc

  The *Compute distance* option is available from the tap and hold menu when the appropriate entities are selected in the map. In previous versions, *Compute distance* was available only from the *Cogo* menu and the Cogo *Calculator* screen.
- From the map you can now compute an intersection from the map using two points and a line or two points and an arc.
- *Compute inverse* now reports the delta north and east values between the two points.
- *Compute point/Project point to line* now reports the following values from the point to the computed position on the line:
  - azimuth
  - slope distance
  - grade
  - vertical distance
  - delta north and east
- *Compute azimuth/Bisected corner* now reports the:
  - inside and outside angle – previously only the inside angle (*Computed angle*) was reported
  - azimuth of the two side points to the corner point
  - angle between the corner point and each side point, as well as the opposite angle
- *Compute point/Bearing and distance* now includes:
  - a *Delta azimuth* field enabling the azimuth value to be adjusted by a delta value
  - options enabling the azimuth to be adjusted by +90°, -90°, or +180° (or the equivalent values in gons and mils)
- When using the *Cogo / Transformations* function to rotate points, you can now enter two azimuths to have the rotation angle calculated for you. In previous versions you could only enter the rotation angle. Tap the arrow on the rotation or azimuth field to select the method to use.

Staking out lines and arcs

Trimble Access version 2015.21 supports the following enhancements when staking lines or arcs:

- When staking a line or arc by *Station on line/arc* or *Station/offset from line/arc* you can now select the start or end station from the *Station* field.
- The new *Details* softkey enables you to review the line or arc definition.

Control codes for offsetting lines and arcs

Trimble Access version 2015.21 supports the following new feature code control codes:

- Horizontal offset: To offset feature coded lines and arcs by a horizontal value
- Vertical offset: To offset feature coded lines and arcs by a vertical value

The new control codes are ideal when surveying a curb and gutter, where points would be measured at the flow line (invert) of the gutter with a line code using horizontal and vertical control codes. The horizontal and vertical control codes would be used to define the gutter lip and the top and back of the curb.
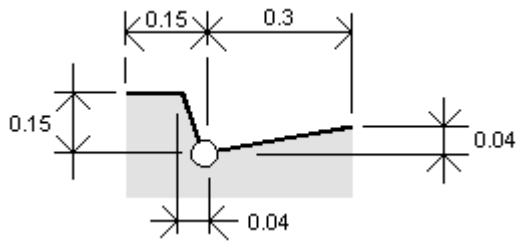
For more information, refer to the topic "Feature libraries" in the *General Survey Help*.

Selecting the direction of lines and arcs

The direction of a line or arc selected in the map is now determined by the tapped position with respect to the viewed portion. That is if you are zoomed in on one end of a line or arc, you can control the direction by tapping the appropriate end of the displayed portion of the line or arc. In previous versions the tapped position related to the total extents of the line or arc rather than the visible portion.

Point name and code labels

You can now view the name and code labels for points in the map at the same time. Previously, only name or only code labels could be viewed.

Orbiting tool in the 3D map

Orbiting in the X and Y axis in the 3D map is now limited to 180 degrees, so that you can rotate from looking straight down on the project to looking straight up from underneath it. This reduces the likelihood of over-rotating and getting lost and also now matches the behavior in Trimble Business Center.

DXF entity names

The names of entities defined in a DXF file exported from Trimble Business Center can now be used in Trimble Access.

Square yard units for areas

Trimble Access now supports square international yards (yds^2) and square US survey yards ($syds^2$) for areas. To change the units, do one of the following:

- From the *Jobs* menu, select *Properties of job / Units*.
- From the *Area calculations* screen, tap *Options*.

Last used values in export custom format reports

Custom exports will often have some options to configure before a report is generated. In the past the default options displayed were always set by the stylesheet defining the export. The software now remembers the last used options, so that the next time you export a report the last used settings are displayed instead of those preconfigured in the stylesheet.

Expanded SV information in GNSS QC1 records

Trimble Access now provides the number of SVs from each constellation contributing to the position stored. To view this information, in *Review job* tap the + to expand the *Satellites* or *Satellites (Min)* item below *QC1* in the position record.

Improved behavior when maximum PDOP exceeded in postprocessed surveys

When the satellite geometry goes above the PDOP mask set in the survey style, Trimble Access now pauses the time to initialize counters in a PPK survey, and pauses the occupation time counter for a FastStatic point. The timers resume when the PDOP drops below the mask.

Dial-in rover

You can now use the Trimble Tablet controller's internal modem as a circuit switched dial-in rover real time survey data link.

User interface improvements for conventional instrument Video screen

The following improvements have been made to the user interface for the *Video* screen in the *Instruments* menu when using an instrument with Trimble VISION technology.

- A toolbar to the left of the screen now provides access to the video tools that were previously accessed from softkeys at the bottom of the screen.
- The *Settings* ⚙ toolbar button provides access to a single options screen for configuring image options, including image size and HDR. Previously image options were accessed using two different softkeys.
- The image size is no longer shown on the Snapshot button but the image size is still based on the current zoom level or can be set in the *Video Settings* screen.
- The *Options* softkey now provides fast access to the auto-measure setting.
- When reviewing a snapshot from an instrument with Trimble VISION technology, the Photo Properties softkey has been replaced with the *Rename* softkey.

Measure points on a plane

When measuring points on a plane during a conventional survey, the Trimble Access software now supports computing a best fit vertical plane using 3 points. Previously 4 points were required before you could force the plane to be vertical.

Check shot circle deltas

The circle deltas (delta H, delta VA, delta SD) displayed when you perform a check shot are now displayed in the *Review job* screen.

Bluetooth connections to total stations

Trimble Access now supports Bluetooth wireless connections to third party total stations.

EDM tracking mode in the Joystick screen

When in the *Joystick* screen, the instrument no longer switches from TRK mode to STD mode.

Observation weightings for instrument precisions

In a conventional or integrated survey, if the precisions from the instrument or from the survey style are null, when performing a resection or station setup plus Trimble Access now uses the same default precisions as those used by Trimble Business Center.

For more information, refer to the topic "Conventional instrument configuration" in the *General Survey Help*.

Coordinate system definitions

When selecting the coordinate system, systems are now ordered by country name and then system name. This matches the list of coordinate systems in Trimble Business Center.

Resolved issues

- **General Survey softkeys:** An issue where the software sometimes did not respond when softkeys were tapped is now resolved.

- **TSC2, TSC3 and Slate controllers locking up during shutdown:** An issue where shutting down the controller by tapping the *Shutdown* button in the *Power menu* screen did not always give the Trimble Access software enough time to close properly and caused the controller to lock up is now resolved.

- **Controller running slowly:** An issue where using AccessSync to transfer data would, over time, cause the controller to run slowly is now resolved.

- **Photo attributes:** An issue where at the end of a measurement the attribute form reappeared showing the photo attribute field as empty despite the attributes being filled out using Measure codes prior to the measurement is now resolved.

- **Draw on images:** The following issues with drawing on an image are now resolved:
    - When adding text, only one line of text was visible at the input panel.
    - Very small lines where the start point is the same as the end point are no longer drawn.
    - The readability of the text drawn on a snapshot image on a Slate controller is now improved.

- **Feature-coded circles:** An issue where a point has a StartCircleCenter code but no Line code and the software drew the circle is now resolved. Circles no longer appear if there is no Line code.

- **DXF files:** The following issues with DXF files are now resolved:
    - Deleted DXF files appeared available for selection in the map.
    - When a DXF file with very large file extents was made an active map layer, rogue points could appear.

- **Raster background images and scale factor only or no projection/no datum jobs:** When using a scale factor only or no projection/no datum job, an issue where the software would crash or display the incorrect scale when you attempted to display in the map a raster background that has a world file defined in latitude/longitude is now resolved.

- **Grid coordinates for ground-based job:** An issue where the project location coordinates for a ground coordinate system were corrupted if not all of the grid coordinate values were entered is now resolved.

- **3D map:** The following issues in the 3D map are now resolved:
    - The *Linked file points* option was overriding other settings in the *Filter* screen.
    - Point symbols in the map were displayed slightly offset when the only points in the job were in linked files.
    - When orbiting with increasing NW/SE coordinate systems, moving the cursor left did what moving the cursor right should do.
    - The way blocks in a DXF file were being displayed when they were rotated and scaled resulted in skewed shapes.
    - Text containing line breaks in a DXF file was not displayed correctly.
    - The red dashed line did not indicate the correct direction of the total station for all coordinate systems. It now indicates the correct direction of the total station with increasing NE, NW, SW, SE coordinate systems, and north/south azimuths.
- **Shapefile feature names:** An issue where the feature names generated for features from Shapefiles did not include the first part of the feature name is now resolved. This issue was introduced in Trimble Access version 2015.10. Feature names are now consistent with previous version of Trimble Access, where the feature name is the first five characters of the Shapefile name, followed by a file index number, then a space and then the line number in the Shapefile where the feature is defined.
- **Navigating during stake out:** An issue when navigating to a point using the *Forward/Backward; Left/right* option where incorrect values for some grid orientations (NE, SW, NW, SE) were displayed is now resolved.
- **Stake out line:** An issue where the stake out graphical display and the Deltas Distance values (Forward/Backward and Left/Right) did not match is now resolved. This issue occurred only when a significant projection scale factor and/or significant sea level correction was in use and the position being staked was a large distance from the start of the line being staked.
- **Continuous topo:** An issue where the *Abandon point?* dialog appeared if you tapped *Esc* when Continuous topo was operating is now resolved.
- **Calibration point:** When measuring a calibration point using an R10 receiver with the observation type set to observed control point, an issue where the software returned the tilt limit for a topo point instead of the tilt limit for an observed control point is now resolved.
- **Rapid point and Measure codes:** An issue when using Measure codes and the Rapid point measurement type where there was a delay before the "Observation stored" message appeared is now resolved.
- **Storing autonomous GPS positions with null antenna heights:** An issue when storing a point from the controller's internal GPS receiver in the *Position* screen where it was possible to store the point without entering the antenna height is now resolved.
- **Receiver settings information:** An issue where the software was sometimes slow to populate the *Receiver settings* screen in the *Instrument* menu with the current receiver settings is now resolved.
- **RTK on demand:** An issue where softkeys that operate the RTK on demand functionality were not being displayed is now resolved.
- **Dial-in data links:** The following issues in the 3D map are now resolved:
    - The software did not enable selection of an external Bluetooth modem when configuring a dial-in RTK survey on a Geo7X controller.

- The TSC3 and Geo7X controller's internal modem could not be selected as a circuit switched dial in rover data link in a real time survey.
- The dial-in data link did not hang up properly on a Trimble Tablet.

- **R10 Wi-Fi configuration:** An issue where Trimble Access was unable to successfully load the receiver's Wi-Fi configuration onto Trimble controllers is now resolved.

- **Postprocessed Kinematic initialization:** An issue where the "Initialization Gained" and "Initialization Lost" messages were reported too many times in succession is now resolved.

- **Annotate snapshot:** An issue where the crosshair did not always appear when you zoomed into a snapshot image is now resolved.

- **Measure points on a plane:** An issue where calculating points using angles only showed station, offset and vertical distance values as ? is now resolved. This issue was introduced in Trimble Access version 2015.10.

- **Shapefile points for station setup:** An issue where points in Shapefiles could not be selected during station setup is now resolved. This issue was introduced in Trimble Access version 2015.10.

- **Store and reorient:** Trimble Access version 2014.20 added the ability to store and reorient when performing a resection or station setup plus, but it was only possible to store and reorient on one face. In Trimble Access version 2015.20 you can now store and reorient on both Face 1 and Face 2. In addition, if *Auto F1/F2* is enabled, the system automatically measures on one face and then the other.

- **Scan frame:** An issue where the *Undo* and *Delete frame* softkeys were shown in the *Scanning* framing screen before you began defining a scan frame is now resolved.

- **Trimble VX Spatial Station scans:** An issue where the Trimble VX Spatial Station did not scan correctly if any of the following were true is now resolved:
  - *Set backsight* was set to *Zero* or *None*.
  - Coordinate direction was anything other than *Increasing North-East*.
  - *South azimuth* was set.

- **Trimble S series scans:** An issue where pausing and then resuming a model-based scan (using Long Range STD or Long Range TRK mode) restarted the entire scan.

- **Scanning with a robotic connection:** An issue when scanning using a Trimble VX Spatial Station or Trimble S Series total station where scanning did not resume after losing and then regaining a radio connection during a model-based scan in Long Range STD or Long Range TRK mode is now resolved.

- **Circular objects using an M3 total station:** An issue when calculating the center of a circular object using the bisect tangent method, where the observation could not be made and the instrument display locked up is now resolved. This issue affected Trimble M3 total stations only.

- **Measuring points during integrated survey:** When measuring points or measuring topo, an issue where the point ID was not preserved when switching between conventional and GNSS surveys is now resolved.

- **Application errors:** You should no longer see occasional application errors when you do any of the following:
  - Start a dial-in rover survey.
  - Tap *Esc* when the 3D map is updating.

- Open a LandXML file that does not contain any entities in the 3D map.
- Press the Trimble key on the Trimble CU controller during station setup.
- Apply a .jot template file to a new job when the template contains a line based on a GNSS point.
- Apply radio settings when the connection to the receiver has dropped.

Pipelines

New features

Joint mapping supports cut out welds

Joint mapping now supports cut out welds. A cut out weld is where a weld has been removed and replaced with a new weld. To change a weld to a cut out weld, find the appropriate joint map record and tap the weld icon next to the Weld ID field. The icon changes to the cut out weld icon . When a joint map record contains a "cut out" weld, the record is moved out of the joint map sequence and added to the end of the joint map list so that it is available to reference and for reporting. When you create the joint map record for the replacement weld, enter the new weld ID and the appropriate joint IDs so that the joint map record references the same behind and ahead joints as the cut out weld.

Printing from a P4T mobile Bluetooth printer

Trimble Access now supports printing directly from controllers in the field to the Zebra P4T mobile printer. The easy-to-carry P4T printer enables you to print barcode labels and documents up to 4" wide. It uses thermal transfer image technology to print text, barcodes, and graphics such company logos as labels and documents designed for outdoor use. For more information on the Zebra P4T, see https://www.zebra.com/us/en/products/printers/mobile/p4t.html.

Printing from the P4T in Pipelines is supported in the tally screens and in stakeout:

- From the *Check tally* and *Create tally* screens you can print the attributes of a joint, including the joint ID as a barcode if required, on labels that can then be applied to joints. This is particularly useful for adding extra labels to a joint or PUP.
- From the Stakeout *View before storage deltas* screen, you can print the stakeout details displayed.

  The deltas displayed are configurable from *Stakeout* options where you can choose from a list of staked deltas formats, or you can create your own display format. A display format must have a print style associated with it for the *Print* softkey to be available. For points, lines and arcs the "Default" deltas format has a print style associated with it. To print from any of the other staked delta formats you must define your own stake print format.

Print layout is configurable and controlled via the use of *.lbl files. For more information, refer to the topic "Printing from a P4T mobile Bluetooth printer" in the *General Survey Help*.

Enhancements

Recording additional weld and bend attributes joint mapping

When performing joint mapping you can now add additional fields to the weld or bend forms, enabling you to capture extra detail for the weld or bend. A weld map form typically displays fields to record the weld number and the joint behind and the joint ahead but now you can add, for example, the welder's initials or the date. A bend map form typically displays fields to record the bend ID and joint ID but now you can add, for example, the bend type, direction, and angle.

The additional information is recorded in the joint map files, and can be displayed and recorded with the survey measurements when the added field's name matches an attribute name. For example, if you add additional bend fields called Direction1 and Angle1 during joint mapping, and you later measure a bend with the code BEND, then if BEND has attributes called Direction1 and Angle1 the values recorded during joint mapping will be recalled, displayed, and recorded with the survey measurements.

Computing a deflection angle

When computing a deflection angle, the true deflection angle is now computed. The true deflection angle is the deflection angle in the plane that the three points lie on.

Workflow enhancements

The following workflow enhancements have been made in version 1.20 of Pipelines:

- You can now stake an entity from the map by selecting the entity and tapping *Stakeout*. Previously when an entity was selected, the *Measure* button did not change to *Stakeout* which meant the only way to stake an entity was to double tap it.

- When creating a PUP joint, the *Checked* button is now available so that you can mark the PUP joint as checked only when you sight the PUP joint. Previously a PUP joint was always marked as checked when the PUP joint was created.

- You can no longer change the column in the tally file used as the Unique joint ID after having performed a joint mapping. You can still change the Unique joint ID column before performing joint mapping.

- When creating a tally, if you edit the joint record for an existing joint by entering a new unique joint ID, the joint is now added to the tally as a new joint definition. Previously the existing joint definition was updated.

Reporting enhancements

A number of changes to the reporting workflow have been made to improve the overall experience when using reports, including:

- When generating a *Joint details* report two new options enable you to include only checked joints and/or modified joints in the report.

- When generating a *Checked joint list* or a *Joint details* report you can filter the results to exclude any PUP joints or to report PUP joints only.

- When closing a Tally report, you are now returned to the report screen where you can either generate another report or exit to the Pipelines menu. Previously, closing a report took you back to the Trimble Access menu.

Ahead and back stationing

When staking a point or when staking the pipe alignment, the ahead and behind station values are now reported for positions measured in the internal and external angles of non-tangential intersection points in the alignment. To report the ahead and back stations, you must select *Pipelines - Alignment stakeout* or *Pipelines - Point stakeout* in the *Staked details format* screen in the Stakeout *Options* screen.

Refer to the diagram where:

1	Staked point
2	Ahead station
3	Ahead offset
4	Back station
5	Back offset
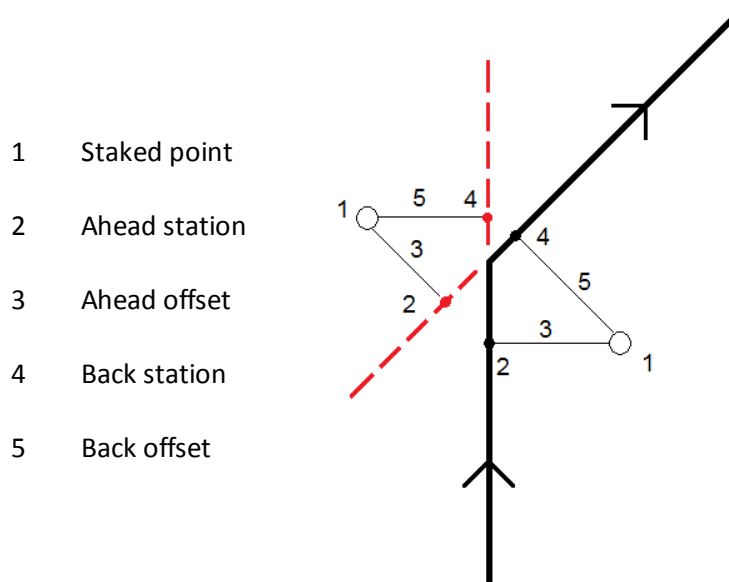
For more information, refer to the topic "As-staked point details" in the *General Survey Help*.

Use spacebar to select buttons

Buttons, including the *Checked* and *Record position* buttons can now be selected using the spacebar key. Previously you had to tap them to select them.

Resolved issues

- **Manifest file:** An issue where it was possible to select the same file as the tally file and the manifest file is now resolved.
- **Measure code:** When measuring a point with a code that is not in the selected feature code library the code is now stored with the point.
- **Compute pipe cover with code:** When computing the pipe cover with the *Method* set to *Use ground point* and the *Default ground point* field set to *Last point in job*, the Pipelines software now respects the code specified in the *Use only ground points with the code* field. Previously any code value specified was ignored and the last point in the job was always used.

Pipelines Tally and Joint Map Updater Utility

The Trimble Access Pipelines Tally and Joint Map Updater utility is used to merge the updated tally and joint map data from multiple field crews into a master set of files in the office at the end of each

day. The master tally files are then distributed to each field crew, ready for the next day's work. An XML file containing all the merged data is also available for generating custom reports from.

The utility is available for download from www.trimble.com/Survey/Trimble-Access-IS.aspx by clicking *Downloads* on the right and navigating to the *Trimble Access Pipelines* section.

The following updates to the utility have been made since the Trimble Access 2014.20 release in October 2014:

25 August 2015

- **Checking for consistent joint ID usage:** If the tally file definition (.dfn) files are available for both the master tally .csv file and the new tally .csv file, the utility now checks to ensure that the unique joint ID column name defined in the two tally definition files match. If the unique joint ID column names do not match then an error message appears and the update processing will not continue.

7 August 2015

- **Duplicate joint IDs:** To help you more easily find and resolve duplicate joint IDs, the Tally and Joint Map Updater utility now checks for duplicate joint map IDs and reports them in the *Preview* window. Details of duplicate points are also recorded in the log file.

14 July 2015

- **Rebuild XML file:** The Tally and Joint Map Updater utility can now rebuild the master and/or new report XML files from the tally and joint map data without first updating the tally or joint map files.

23 June 2015

- **Improved merging of duplicate records:** Enhanced checking to ensure that the time stamp in the new file line is newer than the time stamp in a matching master joint mapping file line before updating the master file with the new information. This is now consistent with the way tally .csv files are updated.

19 June 2015

- **Improved support for quotation marks:** Changes to handle quotation marks in .csv file lines in the same way as the Pipelines software.

11 June 2015

- **Additional safety checks prior to updating:**
    - Added support to ensure that the .csv and .idx files, for both master and new files, have the same number of lines in them. If they do not, you cannot continue.
    - Added support to ensure that when a new item is being added to the master .csv file from the new .csv file, the unique ID from the equivalent line in the new index file has the same unique ID. If it doesn't a warning message is output to the preview or log file and the unique ID from the new .csv file line is placed in the master index file to ensure it matches with the master .csv file entry.

9 June 2015

- **Additional weld and bend fields support:** Added support for when extra weld and bend fields are filled out during joint mapping.

3 June 2015

- **Identifying PUP joints:** An extra flag setting was added so that PUP joints created by the Pipelines software are flagged as PUPs. Adding the additional information to the XML file and supporting this in the Tally and Joint Map Updater utility means reports about PUPs can be more easily generated from the XML data.

This utility is updated from time to time. To view the latest update information, view the *Pipelines Tally and Joint Map Updater Utility Release Notes* document available with the utility download file.

Roads

New features

Enhancements

- **Subgrade support**

  Roads subgrade support previously relied on the subgrade of a selected line intersecting with another line. Where there was no intersection, subgrading was not possible either because the cross section had only one line, or because the depth of the subgrade meant there was no intersection with another line.

  Now, when defining a subgrade, if no intersection can be found then a new point is computed on the subgrade at the same offset as the start and end of the selected line.
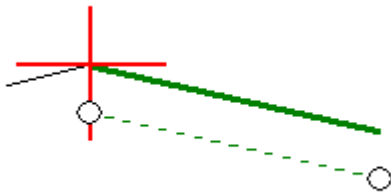
- Additional improvements to subgrade include:
  - When a line is selected, it immediately appears green and bold. Previously this happened only after the subgrade had been applied.
  - If a subgrade position is computed back toward the alignment, the dashed green line extends to that point. Previously the line was not drawn.
  - If you select a computed subgrade point and then remove the subgrade, the selected point is also removed.
  - For a GENIO road the displayed string dimension for a computed subgrade point is 3D. Previously it was that of the previously selected string.

- When you define a cross slope, a line immediately appears green and bold when you select it; previously this happened only after the cross slope had been applied.
- When surveying a GENIO road, the graphical selection screen no longer re-orientates to match the orientation of the survey screen.

Mines

New features

Surpac file support

You can now select Surpac files in the Map and select linework from an STR (Surpac) file to define and then auto stake a Center line, Grade line, Laser lines, Project line, and Blast holes. You can also use points from an STR file to define Pivot points.

Vertical elevation for laser lines

When measuring a laser line, you can now measure a position to define the elevation of the line. This is particularly useful when the line has no elevation or has an arbitrary elevation of 0, as can be the case when the laser line is defined from a line in a DXF file.

Enhancements

Compute intersection

The *Compute intersection* option is now available from the tap and hold menu in the map. Previously you had to access this option from the map in General Survey. This option is useful when the drive deviates from design and a new center line has to be defined, requiring the pivot points defined by the intersection of the center line with the laser lines to be re-computed. You can now select the two points that define the center line and a laser line, and then select the *Compute intersection* option to compute a point at the intersection, with the option to derive the elevation from the center line. Once the computed point is stored you are returned to the map where the next laser line can be selected and the process repeated. When all pivot points have been computed you can select them and then, if you select *Pivot points* from the *Auto stakeout* menu, the points automatically appear as pivot points ready for auto staking.

Trimble Installation Manager

Enhancements

- **TabletSync:** When you connect a supported Tablet, a new version of TabletSync (version 1.60) is available. This update requires .Net 4.5, so the Trimble Installation Manager will automatically install .Net 4.5 if it is not already on the Tablet.

Software and Hardware Requirements

Trimble Access software version 2015.21 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)	2.99
Trimble Business Center (64-bit)	3.60

Trimble receiver	Version
Trimble R10	5.10
Trimble R8s	5.10
Trimble R2	5.10
Trimble R8-4, R8-3	5.03
Trimble R6-4, R6-3	5.03
Trimble R4-3, R4-2	5.03
Trimble R7	5.00
Trimble R5	5.00
Trimble NetR9 Geospatial	5.10
Trimble Geo7X	4.95
Trimble GeoXR	4.55
Trimble R8-2, R6-2, R4-1	4.64
5800	4.64
5700 II	4.64

Trimble Instrument	Version
Trimble V10 imaging rover	E1.0.67
Trimble VX Spatial Station	R12.5.44
Trimble S5/S7/S9 total station	H1.0.18
Trimble S8 total station	R12.5.45
Trimble S6 total station	R12.5.45
Trimble S3 total station	M2.2.18
Trimble M3 total station	V2.0.4.4

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.