



# Trimble Access

Version 2021.20

November 2021

This release of the Trimble® Access™ software includes the following changes.

## New hardware support

### Spectra Geospatial FOCUS 50 total station

Trimble Access version 2021.20 supports the new Spectra Geospatial FOCUS 50 total station.

### Trimble EDB10 Data Bridge

Trimble Access version 2021.20 supports the new Trimble EDB10 Data Bridge.

When combined with an EM120 radio module, the EDB10 can be used with a controller that does not have an EMPOWER module bay, such as the TDC600 handheld, to connect and communicate with a Trimble robotic total station.

## New features

### Select files and folders from a Connect project for download

In Trimble Access you can now browse files and folders published to a Trimble Connect project and select them for download. The selected cloud folders and files are downloaded to the Trimble Access project directory. This makes it easy to retain the same file and folder structure across your organization's network, Trimble Connect, and Trimble Access.



On project refresh, Trimble Access will identify if there have been any updates in the cloud to the selected files and folders which need subsequent download. The download screen allows the pre-selected files to be skipped if they are not required at that time.


Jobs can be created in Trimble Access. Job files synchronized to the cloud are shown in Trimble Sync Manager as usual.

For more information, see the topic **Managing projects** in the [Trimble Access Help](#).

### Sharing projects and jobs with other people

You can now share cloud projects and jobs with other people from within Trimble Access.

To invite people to the project, and manage who is in the project team, select the project in the **Projects** screen and then tap  and select the **Team**  tab.

To assign the job to someone in the project team, open the job and then in the job details pane, tap . In the **Assignees** list, select the team member or members to assign to the job and then tap **Accept**. Upload your changes to the job to the cloud. To assign a job to someone, the job must reside in the cloud.

For more information, see the topic **Managing team members** in the [Trimble Access Help](#).

## SX10 and SX12 support on Android controllers

You can now use the TSC5 controller and the TDC600 model 2 handheld with the Trimble SX10 or SX12 scanning total station. You can use the scanning total stations to complete regular survey work as well as scan and view point clouds (.rcwx files). IFC and TrimBIM models are not currently supported on Android controllers.

**NOTE** – Connections to the SX10 or SX12 are not supported when using the TCU5 controller or the TDC600 model 1 handheld. Connections to older SX10 scanning total stations with a serial number less than 30415001 are not supported with any Android controller.

## New scan frame methods for SX10 and SX12 scanning

When scanning using a Trimble SX10 or SX12 scanning total station, Trimble Access provides two additional scan frame methods:

- Select **Half dome** to scan 180° horizontally (centered at the HA of the instrument), and vertically up to the zenith and down to 148° (164 gon).
- Select **Rectangle - sides** and then tap in the video window to define the left side and then the right side of the scan frame. By default the vertical edges of the rectangle are up to the zenith and down to 148° (164 gon), but you can limit this if required.

To incorporate the new scan frame methods we have renamed the existing **Rectangle** frame method to **Rectangle - corners**.

For more information, see the topic **To scan using an SX10 or SX12** in the [Trimble Access Help](#).

## Object oriented station setup

You can now perform an **Object oriented setup** to set up the total station in the coordinate system of an object of interest, where the Z axis of the object is not aligned with the vertical axis of the instrument. This setup can be used in a variety of situations, for example:

- In a manufacturing environment where the object of interest, such as a beam or concrete slab, is not sitting flat.
- On a moving platform such as a barge or an oil rig where the instrument cannot be leveled.

**NOTE** – The object oriented station setup is available only when the **Object Oriented Setup** Trimble Access software option is licensed to the controller. To purchase a license for the **Object Oriented Setup** option, contact your Trimble Distributor.

You can complete an object oriented station setup using one of these methods:

- **Known points:** There must be at least three points in the job that are in the same coordinate system as the object. These points may be points in a design file such as an IFC or DXF file, or in a linked CSV file. You will select and measure to these points during the station setup.
- **Point, edge, plane:** The job must contain design files that contain a point, edge, and plane. You will select and measure to these entities during the station setup.

The measurements to the three known points or known entities (point, edge, plane) are used to orient the instrument to the object during the station setup. Subsequent measurements will then be correctly oriented to the object. The software calculates a least-squares algorithm to determine coordinates for unknown points.

**NOTE** – All object oriented station setup observations must be on face 1.

For more information, see the topic **To complete an object oriented station setup** in the [Trimble Access Help](#).

## LAS point cloud export format

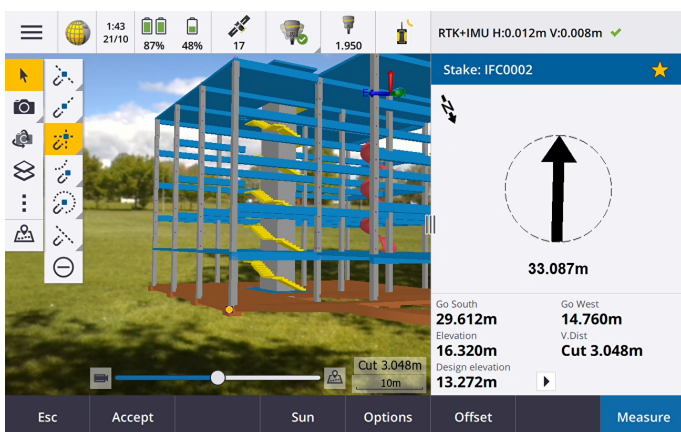
You can now export scan point clouds and regions created using a Trimble SX10 or SX12 scanning total station to the LAS file format version 1.4.

During export, only the scan point clouds and regions that are **currently displayed in the map are exported**. To include or exclude some regions or point clouds, select or deselect scans or regions in the **Scans** tab of the **Layer manager**. Point clouds are exported in the same coordinate system as the current job.

**NOTE** – The **LAS point cloud** export option is available only when the Trimble Access software **LAS Export** option is licensed to the controller. To purchase a license for the **LAS Export** option, contact your Trimble Distributor.

## Augmented reality viewer

Trimble Access version 2021.20 features the new **Augmented reality viewer**, for use during an RTK survey using a Trimble GNSS receiver with IMU tilt compensation. The **Augmented reality viewer** shows map data in 3D, overlaid on the view from the controller camera, enabling you to interact with your spatial data in the context of the real world. Position and orientation information is provided by the connected GNSS receiver.



Use **Augmented reality viewer** to:

- Visualize map data in 3D, overlaid on the view from the controller camera.
- Use for guidance before beginning precise stakeout.
- Capture images that show the site as well as the features overlaid on the site.
- Document important visual information and share it with stakeholders.

With the exception of background image files, all map files supported in Trimble Access and job data are shown in the **Augmented reality viewer**. You can use any map tools, including the **Layer manager**, **Limit box**, **Snap-to** toolbar, and **CAD** toolbar to work with the data shown.

**NOTE** – **Augmented reality viewer** is available only when you are running Trimble Access on a Trimble TSC7, TSC5, or TDC600 controller and you have started a survey using a Trimble GNSS receiver with IMU tilt compensation.

For more information, see the topic **Augmented reality viewer** in the [Trimble Access Help](#).

## 12da file support

Trimble Access General Survey and Roads now support the display of 12da files in the map.

12da files can contain point, line, arc, circle and polyline strings that are read and treated as standard point line, arc and polyline entities in General Survey. They can also contain super alignments and alignments that have horizontal and vertical definitions that are read and treated as alignments in General Survey and Roads. There is also support for triangulated surfaces.

For more information, see the topic **12da files** in the [Trimble Access Help](#).

## TXL file support

Trimble Access General Survey and Tunnels now support the display of tunnel (.txl) files in the map, where they can be visualized in 3D and used to perform surface inspections comparing the TXL and SX12 scan data.



TXL files typically contain a horizontal and vertical alignment along with templates that define the shape of the tunnel. TXL files can be created in Trimble Business Center or by keying in the definition using Trimble Access Tunnels.

Previously, TXL files could only be viewed in the Tunnels plan view or cross section view.

For more information, see the topic **TXL files** in the [Trimble Access Help](#).





# Enhancements

## Sign in button

The **Sign in** button in the **Projects** screen and the **Jobs** screen now has a user icon rather than a Trimble Connect icon. Tap the **Sign in**  icon to sign in. Once you are signed in the **Sign in** icon changes to yellow .

## Cloud icons on the Projects and Jobs screens are now buttons

The cloud icons next to the project or job name that indicate if there are changes to be downloaded to the controller or uploaded to the cloud are now buttons that you can tap to take action:

- Tap  to download all modified files in the project or job.
- Tap  to upload all modified files in the project or job.
- Tap  and select **Upload** to decide whether to upload or download files.
- Tap  and select **Upload** or **Download** to view which files on the controller are in conflict with those in the cloud and to take appropriate action.

For more information, see the topic **Synchronizing data with the cloud** in the [Trimble Access Help](#).

## Managing file conflicts

When downloading files to the controller or uploading files to the cloud, if a conflict between changes made to the file in the cloud or to the file on the controller are detected, Trimble Access now automatically shows a pop-up menu next to the name of the file in conflict. The pop-up menu provides choices to overwrite the local file or to keep the local file. In previous versions, the pop-up menu was only shown by tapping and holding on the file in conflict.


## Restricted job visibility for users

For cloud projects the **Restrict job visibility** setting is now *disabled* by default. This means that anyone assigned to the project can download and view the jobs in the project but they can only work on those jobs if they are assigned to them.

The **Restrict job visibility** check box is only shown (and can only be changed) if the signed in user is assigned the **Administrator** role.

If **Restrict job visibility** is enabled, users with the **User** role will never see jobs that are not assigned to them.

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 **CAUTION** – Because Trimble Access prevents users from working on jobs that are not assigned to them, always make sure users are assigned to the jobs they need to work on. If a Trimble Access user is unable to see a job or is unable to make changes to a read-only job, assign them to the job. Do not attempt to create an editable copy of the job on the controller, for example by copying the job from a USB drive or by downloading it from an email. Creating a copy of the job can cause unintended problems when you attempt to upload the data to the cloud, such as duplicate jobs or lost data.

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Jobs always remain visible to project administrators, the person who created the job, and users who are assigned to the job, irrespective of whether the **Restrict job visibility** setting is enabled or disabled.

## Alignment stakeout enhancements

The alignment stakeout workflows have undergone some significant improvements by combining the traditional menu workflow with the map based workflow. You can now see the map during alignment stakeout and interact directly in the map to select the alignment and station to stake.

To stake alignments, select the alignment in the map and tap **Stakeout**. To stake:

- **To the alignment**, tap **Start**. This is the default stake method.
- **A Station on alignment**, tap a station and then tap **Start**.
- **A Skew offset**, select the **Skew offset** method from the **Stake** field and use the **Station** and **Skew offset** softkeys to set the station and offset.
- **A Side slope from alignment**, select the **Side slope from alignment** method from the **Stake** field and use the **Station** and **Side slope** softkeys to set the station and side slope.

We recommend you explore the new alignment stakeout workflows before upgrading field crews and sending them to the field. Stay tuned for further improvements in the next release.

### **NOTE** –

- *Tap in the map to clear the current selection and set the stake method **To the alignment**. Tap a station to select a station and set the method to **Station on alignment**.*
- *Construction offsets can be defined from the tap and hold menu in the map.*

## Stake sideslope from polyline

When staking a sideslope from a polyline you can now stake the hinge position as well as the cut slope hinge position if the side slope definition includes a cut ditch. The hinge position and the cut slope hinge position are displayed in the map and can be selected and staked.

## Stake elevation

When staking an elevation you can now tap a point in the map to set the **Design elevation** to stake.

## Stakeout delta horizontal distance to end of line

When staking a line, arc, polyline or road, or when staking a point on a line, arc, polyline or road, you can now choose to view the **H.Dist to end** stakeout delta. The **H.Dist to end** delta is the 2D or horizontal distance from the current location projected to the end of the line, arc, polyline, or road.

## Stakeout delta "Code"

When selecting stakeout deltas you can now select **Code** to display the **Code** of the entity being staked in the **Stakeout** screen.

For more information, see the topic **Stakeout navigation deltas** in the [Trimble Access Help](#)..

## Save stakeout delta preferences

When selecting stakeout deltas, you can now tap the **Save to style** softkey to save your changes to the current survey style.

## Stake out point in Video screen

When staking out a point, the point being staked is now shown in the Video screen using the same stakeout target icon as shown in the map.

## Feature coded linework treated as polylines


Where there are more than 2 points in a sequence before the line is stopped or a control code is used to skip or join to another code, feature coded linework now creates a continuous line segment or polyline. The linework is not saved to the job as a polyline, but created on-the-fly from coded points. The polyline can be selected and staked. Or, to select an individual section of the polyline, tap and hold on the individual section of interest and then from the tap and hold menu select **Select feature coded line segment**.

## Compute average enhancements

We have made these improvements to the **Compute average** cogo function:

- When you select points from the map and then select **Compute average**, the **Map selected points** method is now automatically selected.
- If you select a single point in the map and there are multiple observations to it, then you can select **Compute average** from the tap and hold menu to average the observations.

## Controller camera softkey in Project properties screen

The **Project properties** screen now has a camera softkey. When creating or editing a project, tap  to capture a photo using the controller camera. The captured image is automatically selected as the project image.

## Layer manager enhancements

We have made some minor changes to the **Layer manager** to improve the display of information. These include:

- Column widths are now remembered.
- The **Type** column now appears next to the **Name** column in the **Map files** and the **Point files** tabs.
- The file extension is no longer shown as part of the file name in the **Map files** tab.
- The **Inspections** tab no longer appears on Android devices, as surface inspections are not supported when running Trimble Access on an Android device.

## Opacity setting renamed to Transparency

The **Opacity** setting in the **Map settings** screen, the **Video options** screen, and the **WMS** screen is now named **Transparency**. Use the **Transparency** setting to control the transparency of IFC files, point cloud data or WMS data in the map and **Video** screen. The default value of the **Transparency** setting is 0, which means that the data is set to full intensity.

## Transparency slider control in SX Video screen

When the connected instrument is a Trimble SX10 or SX12 scanning total station, the **Video** screen now displays the **Transparency** slider control.

Use the **Transparency** slider control to control the transparency of the Video feed and IFC files and point cloud data in the **Video** screen.

Drag the slider to the left to make map data more transparent, or drag the slider to the right to make the Video feed more transparent.

**NOTE** – *Points, lines, arcs, and polylines and feature labels remain full intensity, regardless of the **Transparency** slider setting.*

## Android 64 bit

Trimble Access is now installed as a 64 bit application for Android on the TSC5 and TDC600 64 bit controllers. 64 bit applications can manage larger map files better.

## Vertical offsets for GNSS continuous topo points

In a GNSS survey, you can now add a vertical offset calculated from measured points. To add a vertical offset, tap **Options**. Select the **Add vertical offset** check box and then in the **Measure points** or **Continuous topo** screen enter a value in the **Vertical offset** field. Vertical offsets are not supported for observed control points.

## Auto-connect to GNSS receiver

For improved connection reliability, auto-connect to a GNSS receiver is now automatically disabled for all controllers when the software connects to any conventional instrument. Auto-connect is automatically re-enabled when the connection to the instrument ends, or when an integrated survey is started.

## GNSS RTK NTRIP mountpoint selection

The NTRIP mountpoint table now shows coordinate system information for each mountpoint, if that information is available, so that you can more easily select a mountpoint that uses the same coordinate system as the job.

Tap a row in the table to view more detailed information for the selected mountpoint.

There are also more options for sorting the list of mountpoints. Tap the sort field above the list and choose to sort by **Distance**, **Format**, or **Mountpoint**.

## Site calibration enhancements

We have made the following changes for site calibrations:

- When you tap **Accept** in the **Site calibration** screen of the survey style, the site calibration settings are now written to the job database. The settings stored in the job database are used if you return to the site calibration function, for example to add new points to the site calibration computation.

In previous versions of Trimble Access, the settings from the current survey style were used in all site calibration computations, not the settings from the current job. To restore the settings from the current survey style, use the new **Default** softkey in the site calibration **Options** screen.

As with previous versions of the Trimble Access software, you can change the site calibration settings any time.

- We have changed the default site calibration settings. By default **Constant adjustment only** is now selected in the **Vertical adjustment** field.
- The **Site calibration** screen of the survey style now provides a **Fix horizontal rotation to zero** check box to control whether the calibration calculation should fix or compute the horizontal rotation. This check box is *not* selected by default.

**TIP** – Selecting the **Fix horizontal scale to 1.0**, **Fix horizontal rotation to zero**, and **Constant adjustment only** options is recommended if you are working in a modern well-defined coordinate system with a reliable transformation from the global reference frame and you are using a high quality local control within that coordinate system as well as an accurate geoid model.

For more information, see the topic **To configure the survey style for a site calibration** in the [Trimble Access Help](#).

## T04 GNSS data files

When logging raw GNSS data to the receiver during a survey, for receivers with firmware version 5.46 or later the data is now saved to a T04 file instead of a T02 file.

## GNSS eBubble size

The GNSS eBubble pop-up window now resizes automatically on all controllers, resulting in a slightly larger GNSS eBubble than previously on the TSC5 controller.

We have removed the **Size** field from the **eBubble options** screen.

## Set coordinate order to match CAD files

You can now set the **Coordinate order** for the job to **XYZ (CAD)**, so that the coordinates are in the same order as CAD files.

The existing **Y-X-Z** and **X-Y-Z** coordinate orders follow the geodetic convention that **Y** is the **East** axis and **X** is the **North** axis, forming a left-hand coordinate system. The new **XYZ(CAD)** coordinate order follows the



mathematical convention and forms a right-hand coordinate system. You can configure the **Coordinate order** for the job from the **Job properties** screen.

For more information, see the topic **Units** in the [Trimble Access Help](#).

## Set job units to millimeters

You can now set the distance units for the job to millimeters. This is especially useful when working with design files for use in a manufacturing environment. Configure job units from the **Job properties** screen. When using millimeters, you can set the **Distance display** field to display distance/length values as whole numbers or to one decimal place.

## Sound events now available in Lithuanian

When Lithuanian is selected in the **Select language** screen of the Trimble Access software, voice messages such as **Observation stored** are now provided in Lithuanian instead of English. To be able to select Lithuanian as the language, you must install the Lithuanian language and help files using Trimble Installation Manager.

## Coordinate system database updates

The coordinate system database installed with Trimble Access includes the following enhancements:

- Updated Geoid Model for Romania to ROVT4.06
- Updated Russian GSK-2011 (GOST 32453-2017) datum parameters
- Updated Geoid for Japan GSIGEO2011 (Ver.2.1)
- Added NTV2 Grid Transformation ETRS89 to MGI for Austria
- Added Singapore Geoid Model 2009 (SGEIOD09)
- Added Kinematic Datum SIRGAS-Chile 2016
- Added Kinematic Datum SIRGAS-AG = SIRGAS-CON at epoch 2016
- Improved management of ETRS89 in Czech Republic & Poland

## Resolved issues

- **Downloading projects:** If the project information is not up to date when starting a download Trimble Access now automatically refreshes the project information before starting the download.
- **Downloading report stylesheets:** We have fixed an issue when downloading projects to the controller, where report stylesheet files attached to the project were not always downloaded.
- **Job status:** We have fixed an issue where if you changed the status of a job in the cloud, or if you changed the status of a local job and then uploaded it to the cloud, the new status was not shown and you had to update the status again.
- **Job templates:** The default **Station display** for the **US Survey Feet Scale Only** and the **International Feet Scale Only** templates is now 10+00.0. Previously it was 1+000.0 m.

- **Coordinate systems:** We have fixed an issue where the **Global reference frame** and Global reference datum were not always shown if the coordinate system included a datum shift grid.
- **Grid coordinates:** We have fixed an issue when keying in grid coordinates for a project location, where the units were always set to meters, even if the job units were set to feet. The units for keying in the grid coordinates now use the units set for the job.
- **Default datum transformation:** Jobs containing a projection but no datum transformation are now given a zero three parameter datum transformation. This includes new jobs (including those created from DC or JXL files) and jobs that are upgraded from earlier versions. Assigning a default datum transformation avoids issues where stakeout line would give incorrect stakeout deltas when there was a projection in the job but no datum transformation.
- **Favorites:** We have fixed an issue where software functions for some Trimble Access apps that you had added to your **Favorites** list or assigned to function keys were not remembered if you restarted the software.
- **Layer manager:** Visibility and/or selectability changes for **Map files** are now remembered if you switch to a different tab before tapping **Accept**. This was an issue only if **Auto update** was not selected.
- **Snap-to toolbar:** When you tap a tool in the **Snap-to** toolbar, the map now automatically switches to Select mode, ready for you to select the line, polyline or arc to snap to in the map. Previously the map remained in the current mode, for example Pan or Zoom.
- **Station values in the map:** If the display of station values is enabled in the **Map settings**, station values for a line, polyline, or arc are no longer displayed if you set the line, polyline, or arc to not visible using the **Layer manager**.
- **Map labels on Android:** We have fixed an issue where labels disappeared when zooming and panning the map on an Android device.
- **Limit box:** We have improved the performance of the **Limit box** when using point clouds.
- **Nodes:** We have fixed an issue where nodes were not always displayed in the map after the **None** softkey in the **Layer manager** was used.
- **Surface inspection color scale:** We have fixed an issue where if you created a surface inspection color scale with values that did not straddle 0.0, then the color bar was not drawn correctly.
- **Surface inspection messages:** We have improved the text of surface inspection messages to give better guidance on how to remedy issues that may occur when using the surface inspection feature.
- **Point clouds in the Video screen:** When point clouds are active, as well as map points and BIM files, point clouds now appear on top of BIM files in the **Video** screen, but under map points.
- **Point cloud updates:** We have fixed an issue where point clouds were not updating when you edited the **Instrument height** or **Target height** in the **Review job** screen.

- **LandXML files:** We have fixed a number of issues with LandXML files:
  - Selected map entities in different LandXML files now have unique names.
  - If a LandXML file contains an arc that starts and ends at the same point (forming a circle) then the circle is now displayed in the map.
  - If a LandXML file from AutoCAD Civil 3D software contains an invalid <Curve> element, the <Curve> element is no longer displayed. Previously, the center point of the curve was incorrectly used as the coordinates of the midpoint of the curve (arc), and the arc was incorrectly displayed.
- **Import CSV:** We have fixed an issue where a previously entered note record was appended to imported points.
- **Attribute images:** We have fixed an issue when linking an image to an attribute, where the last image linked to the job was used rather than the last captured image.
- **Last used attributes:** Setting the default attribute values to **Last used** now reliably populates the attributes fields with the values from the last measured point when measuring a point or topo point.
- **Stakeout performance:** We have improved the performance of all forms of stakeout when DXF files are visible or active in the map. Sometimes the stakeout updates would lag behind the actual position of the antenna.
- **Stakeout line, arc or polyline:** When staking a linear entity you can no longer change the direction during stakeout by tapping on the line in the map. Either set the direction before starting stakeout, or use the **Reverse line direction** option from the map tap and hold menu.
- **Stakeout polyline:** We have fixed a number of issues when staking out a polyline. These included:
  - Occasional issues where you could not select some stations, or you could select stations that you should not have been able to, such as beyond the end station.
  - Issues where station values were sometimes either not shown correctly or were not being updated during stakeout.
  - Issues where delta values sometimes showed null or were incorrect.
  - Issues where temporary lines and symbols drawn on the map during stakeout were sometimes either not drawn correctly or were not being updated.
  - Station values were shown when the station interval was set to null (?). Now station values are shown for the start and end stations plus any PI, PC, or PT stations when the interval is set to 0, and shown for all stations when a station interval is set.
- **Staking polylines using projections with significant scaling and ground distances:** We have fixed an issue when staking a polyline with arcs of a large radius in a job with significant scaling and ground distances. Arc calculations are now computed correctly regardless of the **Distances** setting.

- **Stakeout line:** We have fixed a number of issues when staking out a line. These included:
  - Issues where the method selected from the tap and hold menu in the map was not respected in the stakeout form and so had to be reselected.
  - Issues where temporary lines and symbols drawn on the map during stakeout were sometimes either not drawn correctly or were not being updated.
- **Staking out from IFC:** We have fixed an occasional problem displaying the target symbol when staking from an IFC model.
- **Stakeout elevation:** When staking an elevation, the **Show stakeout graphics** switch is now available in the **Stakeout options** screen.
- **Re-measure:** We have fixed an issue when remeasuring a position (for example, after an "Excess movement" or "Position compromised" warning), where if you tapped the **Re-meas** softkey the software incorrectly reported a measurement was already in progress and you were unable to continue without first restarting the survey.
- **GlobalFeatures.fxl:** The GlobalFeatures.fxl feature library file installed with new installations of the Trimble Access software has been updated to remove unnecessary layers and to rename an attribute name. Previously the attribute label on the code SvyDisk included commas which caused an error if the file was used in Trimble Business Center.
- **Feature codes:** We have fixed an issue where the previous code entered in the **Measure topo** or **Measure points** form was stored with the point instead of the code set using **Measure codes**.
- **Multiple feature codes:** We have fixed an issue where a point had two codes requiring attributes and some of the attributes were not stored with the point.
- **DTM offset:** We have fixed an issue where if you had set the offset method in the **DTM** field to a value other than **<None>** and then changed the selected offset method to **Vertical** or **Perpendicular** then the **DTM** field reverted to **<None>**.
- **Connections form Favorites:** We have fixed an issue where if you assigned a favorite or function key to one of the tabs in the **Connections** form, the assignment was not saved.
- **SX video:** We have improved performance when viewing the **Video** screen when connected to a Trimble SX10 or SX12 scanning total station.
- **Instrument turning:** We have fixed an issue where sometimes pressing the arrow keys on the keypad to turn the instrument did not work as expected when a form was open alongside the **Video** screen.
- **Measure rounds:** We fixed an issue where the mean turned angles were not being calculated and stored. This was an issue only if, when measuring rounds, the process was interrupted before it was complete.

- **Station elevation:** We have fixed an issue where points could not be selected from the map when performing a station elevation on multiple points.
- **Continuous topo with FOCUS 35:** We have fixed an issue where **Stop and go** continuous topo using a FOCUS 35 did not work.
- **AT360 eBubble:** We have fixed an issue where the eBubble would sometimes not appear when connected to an AT360 active target.
- **Recalculating station elevations:** When you delete a point from a station elevation calculation, the corresponding observation is now also deleted. Previously, the original observation was kept which could result in different results when the point was recalculated in Trimble Business Center.
- **Observation stored incorrectly played:** When measuring topo points in a conventional survey, the **Observation stored** sound is no longer played when you tap **Esc** in the **Attributes** form to discard attributes or when you tap **Yes** to confirm you wish to delete a point.
- **Import from receiver:** You can now sort the files to be imported from the receiver by tapping any column header.
- **Base receiver Internet connection:** We have fixed an issue where after ending a base survey the software sometimes warned that rovers were still connected to the base even though there were no longer any rovers connected.
- **R12i IMU bias calibration:** If you change the screen orientation of the controller during the IMU bias calibration routine, the software no longer returns to the calibration start screen.
- **Averaged observations on TSC5:** The contents of the **Averaged observations** form are now shown correctly when you resize the form. Previously, making the form smaller obscured some information in the form.
- **PDF reports on TSC5:** You can now view PDF reports on a TSC5 controller. Previously the report would either fail to display or the fields would be empty.
- **Unable to accept EULA:** We have fixed an issue when running the software for the first time on a controller with a very low battery, where you were unable to accept the EULA because the controller low battery warning had appeared in the background and required action.
- **Signing in to Trimble Access using Microsoft Edge:** We have fixed an issue when attempting to sign in to Trimble Access using the Microsoft Edge browser where the sign in screen did not appear correctly and the browser reported an error.
- **Survey styles:** The **Options** softkey has been removed as it served no useful purpose.

- **Application errors:** We have fixed several issues that caused occasional application errors when using or closing the software. In particular:
  - When attempting to open a job that has a missing geoid file.
  - When you select a polyline to auto stake where the polyline consists of more than one a line.
  - When importing a file into a job where the file name is longer than 58 characters and then exporting from the same job as a dc file.
  - During stakeout when selecting items to stake out from the selected entities list.
  - If you tap the **Stn+** softkey when staking the end station of a line.
  - If you close the software when the **Select reference alignment** form is open.
  - If you press an arrow key when viewing any screen that shows a tree folder structure when no node in the tree structure is selected.
  - After upgrading to a recent version of Trimble Access from version 2018.xx.

## Roads

### New features

#### 12da file support

Trimble Access General Survey and Roads now support the display of 12da files in the map.

12da files can contain point, line, arc, circle and polyline strings that are read and treated as standard point line, arc and polyline entities in General Survey. They can also contain super alignments and alignments that have horizontal and vertical definitions that are read and treated as alignments in General Survey and Roads. There is also support for triangulated surfaces.

For more information, see the topic **12da files** in the [Trimble Access Help](#).

### Enhancements

#### RXL and LandXML stakeout enhancements

The RXL and LandXML road stakeout workflows have undergone significant improvements by combining the traditional menu workflow with the map based workflow. This provides improved access to all stake methods via the menu, as well as access to most methods from the map – and all from the same screen.

Six stakeout methods can be selected directly from the map:

- **To the road**
- **To the string**
- **Station on string**
- **Additional points**

- **To an additional string**
- **Station on additional string**

When using the **Additional points** method you can tap the additional points displayed with a red symbol in the map, or use the **Select** softkey at the bottom of the screen.


When using the **To an additional string** or the **Station on additional string** method you can tap the string or stations on the additional string in the map to select them, or select them using the **Station** and **String** softkeys at the bottom of the screen. Previously these methods were available from the tap and hold menu in the map.

Less commonly used stakeout methods can be selected from the **Stake** field in the **Stake out** form that appears alongside the map:

- **To the nearest string**
- **Skew offset**

We recommend you explore the new road stakeout workflows before upgrading field crews and sending them to the field. Stay tuned for further improvements in the next release.

#### **NOTE –**

- *When you start stakeout from the map only the roads that are layered on and selectable are available. LandXML string roads and 12da roads can only be selected for stakeout from the map. When you start stakeout by tapping  and then **Stakeout**, all RXL and LandXML cross section roads in the project are listed for selection, and when selected are layered on in the map automatically.*
- *Tap in the map to clear the current selection and set the stake method **To the road**. Tap an alignment to select a string and set the method to **To the string**. Tap a station to select a station and set the method to **Station on string**.*
- *Construction offsets and reference alignments can be defined from the tap and hold menu in the map.*
- *You cannot change the staking method from the cross-section view, it can only be changed when in the plan view.*
- *Previously you could stake out a side slope from an alignment when working with the traditional menu workflow. Because a fully defined road design includes the sideslope, this workflow was not commonly used and has been removed. If you still need to stake a side slope from alignment switch to General Survey and do it from there.*
- *There have been no changes to GENIO road stakeout.*

## Reference alignments

When staking a road with a LandXML string road selected as the reference alignment you can now select the string from the road for which the software shows the station and offset values of your current position relative to the selected string. During stakeout, a dashed line is drawn from your current position to the selected string.

## Staking to the road options

The option to display the cut/fill perpendicular to the road in the **Stakeout options** screen has been moved to the new **Road** group box to clarify that it is only applicable to a road. Previously it was part of the **Display** group box.

## Staking to the road messages

We have improved the following messages when staking to a road:

- The text **Undefined (Non-tangential)** now appears when consecutive horizontal alignment elements are non tangential and 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. This message used to read simply Undefined.
- The text **Off road** appears when your current position is before the start of the road or beyond the end of the road.

## AutoCAD Civil 3D LandXML roads

AutoCAD Civil 3D LandXML roads that comprises only an horizontal alignment, or only a horizontal alignment and a vertical alignment, can now be used without saving as an RXL road. Previously these roads were treated as cross section roads which do require conversion to an RXL road before they could be used.

## Cogo menu now available within the Roads app

The **Cogo** menu is now available within the Roads app. Use the **Cogo** menu to carry out coordinate geometry (cogo) functions without having to switch to General Survey. You can also access some of these cogo functions from the tap and hold menu in the map.

## Resolved issues

- **Re-measure:** We have fixed an issue when remeasuring a position (for example, after an "Excess movement" or "Position compromised" warning), where if you tapped the **Re-meas** softkey the software incorrectly reported a measurement was already in progress and you were unable to continue without first restarting the survey.
- **RXL folder location:** When you create an RXL file in Trimble Access, the RXL file is now stored in the same folder as the current job. Previously it was always stored in the project folder.
- **LandXML string roads:** We have fixed an issue when editing a road where you could not select the first string in the list without first selecting another string. The list in question is accessed from the **Strings** softkey via the **Strings** menu item.
- **LandXML string roads from SBG Geo:** We have improved loading times for files from SBG Geo Professional software.
- **LandXML string roads from Civil 3D:** When reviewing or staking a LandXML string road from AutoCAD Civil 3D software, you can now use the arrow keys to select another station.
- **Staking with a calculated construction offset:** We have fixed a number of issues with the displayed staked deltas when staking with a construction offset, including:



- The calculated construction offset value is now displayed. This was inadvertently missing from Trimble Access version 2021.10 and 2021.11.
- When staking to a string the **Go Left/Right Relative to string** delta is no longer displayed as it does not apply.
- When staking a station on a string the **Go North/South, Go East/West** and the **Go Left/Right Relative to string** deltas are no longer displayed as they do not apply.
- **Staking with a skew offset:** When staking a road with a skew offset, the **Go forward / Go backward** delta now shows the appropriate value. Previously it always displayed null.
- **Application errors:** We have fixed several issues that caused occasional application errors when using or closing the software. In particular:
  - When you tap and hold in the map when staking a GENIO road.

## Tunnels

### New features

#### TXL file support

Trimble Access General Survey and Tunnels now support the display of tunnel (.txl) files in the map, where they can be visualized in 3D and used to perform surface inspections comparing the TXL and SX12 scan data.

TXL files typically contain a horizontal and vertical alignment along with templates that define the shape of the tunnel. TXL files can be created in Trimble Business Center or by keying in the definition using Trimble Access Tunnels.

Previously, TXL files could only be viewed in the Tunnels plan view or cross section view.

For more information, see the topic **TXL files** in the [Trimble Access Help](#).

### Enhancements

#### Cogo menu now available within the Tunnels app

The **Cogo** menu is now available within the Tunnels app. Use the **Cogo** menu to carry out coordinate geometry (cogo) functions without having to switch to General Survey. You can also access some of these cogo functions from the tap and hold menu in the map.

### Resolved issues

- **FOCUS 35 station setups:** We have fixed an issue where station setups performed using a Spectra Geospatial FOCUS 35 total station could not be used in version 2021.11 of the Tunnels app. You could still survey using a FOCUS 35 in Tunnels if the station setup was completed in General Survey.

- **Application errors:** We have fixed several issues that caused occasional application errors when using or closing the software. In particular:
  - When you export multiple **Amberg tunnel profile reports** from the same job.

## Mines

### Enhancements

#### Auto stakeout blast holes

The following improvements have been made:

- The names of the points in the file defining the collar and toe are now displayed at the **Blast hole definitions** screen.
- You can now sort the list of blast hole definitions by their collar name. To do this tap the **Collar** column header at the **Blast hole definitions** screen.
- When you select blast holes from the map by dragging a box around them, the blast hole definitions are now listed in the order they are defined in the file. When you select them by tapping them individually in the map, the blast hole definitions are still shown in the order selected in which you selected them in the map.

#### Auto stakeout laser lines

The following improvements have been made:

- The names of the points in the file defining the laser lines are now displayed at the **Laser line definitions** screen.
- When you select laser lines from the map by dragging a box around them, the laser line definitions are now listed in the order they are defined in the file. When you select them by tapping them individually in the map, the laser line definitions are still shown in the order selected in which you selected them in the map.

#### Auto stakeout grade lines

You can now point the instrument toward the location where you want to start staking the gradeline and select the **Start auto stake at laser position** check box. The software calculates the distance from the design start point and automatically populates the distance in the **Station offset** field. This saves you having to determine the distance from the design start point and enter it manually in the **Station offset** field.

#### Auto stakeout centerlines

You can now point the instrument laser toward the location where you want to start staking the centerline and select the **Start auto stake at laser position** check box. The software calculates the distance from the design start point and automatically populates the distance in the **Station offset** field. This saves you having to determine the distance from the design start point and enter it manually in the **Station offset** field.

## Cogo menu now available within the Mines app

The **Cogo** menu is now available within the Mines app. Use the **Cogo** menu to carry out coordinate geometry (cogo) functions without having to switch to General Survey. You can also access some of these cogo functions from the tap and hold menu in the map.

## Resolved issues

- **Application errors:** We have fixed several issues that caused occasional application errors when using or closing the software. In particular:
  - When you open another form or a message appears when items are selected in the map during auto stakeout of blast holes.

## Supported equipment

Trimble Access software version 2021.20 communicates best with the software and hardware products listed below.

***NOTE** – For best performance, hardware should always have the latest available firmware installed.*

For more information on recent software and firmware versions, refer to the [Trimble Geospatial Software and Firmware Latest Releases document](#).

## Supported controllers

### Windows devices

The Trimble Access software runs on the following Windows® 64-bit devices:

- Trimble TSC7 controller
- Trimble T7, T10, or T100 tablet
- Supported third-party tablets

For more information on supported third-party tablets, go to [www.trimble.com/support\\_trl.aspx?Nav=Collection-62098](http://www.trimble.com/support_trl.aspx?Nav=Collection-62098) and click **Support Notes and Bulletins** to download the **Trimble Access 2021 on 64-bit Windows 10** bulletin.

### Android devices

The Trimble Access software runs on the following Android™ devices:

- Trimble TSC5 controller
- Trimble TDC600 handheld
- Trimble TCU5 controller

A small number of features are not supported when running Trimble Access on an Android device. For more information, see the section **Tips for Android devices** in the [Trimble Access Help](#).

## Supported conventional instruments

Conventional instruments that can be connected to the controller running Trimble Access are:

- Trimble scanning total stations: SX12, SX10
- Trimble VX™ spatial station
- Trimble S Series total stations: S8/S6/S3 and S9/S7/S5
- Trimble mechanical total stations: C5, C3, M3, M1
- Trimble SPS Series total stations
- Spectra® Geospatial total stations: FOCUS® 50/35/30
- Supported third-party total stations

The functionality available in the Trimble Access software depends on the model and firmware version of the connected instrument. Trimble recommends updating the instrument to the latest available firmware to use this version of Trimble Access.

**NOTE** – *Connections to the SX10 or SX12 are not supported when using the TCU5 controller or the TDC600 model 1 handheld.*

## Supported GNSS receivers

GNSS receivers that can be connected to the controller running Trimble Access are:

- Trimble integrated GNSS surveying systems: R12i, R12, R10, R8s, R8, R6, R4, R2
- Trimble modular GNSS surveying systems: R9s, NetR9 Geospatial, R7, R5
- Trimble SPS Series GNSS Smart Antennas: SPS585, SPS785, SPS985, SPS985L, SPS986
- Trimble SPS Series GNSS modular receivers: SPS85x
- Trimble Alloy GNSS Reference Receiver
- Spectra Geospatial receivers: SP60, SP80, SP85, SP90m
- FAZA2 GNSS receiver
- S-Max GEO receiver

**NOTE** – *Because Spectra Geospatial receivers use different GNSS firmware to other supported receivers, not all functionality in the Trimble Access software is available when a Spectra Geospatial receiver is in use. For more information, refer to the support bulletin [Spectra Geospatial receiver support in Trimble Access](#).*

# Installation information

## License requirements

You can install Trimble Access 2021.20 using a perpetual license or a subscription.

### Perpetual license

To install Trimble Access 2021.20 onto a supported controller that has a *perpetual license*, the controller must have a Trimble Access software maintenance agreement valid up to **1 November 2021**.

**TIP** – To upgrade from an older controller to a new controller, you can relinquish your Trimble Access software license from an older controller that has current software maintenance using the appropriate Trimble Installation Manager. Once your distributor has reassigned the licenses to your new controller, you can install Trimble Access to the new controller using Trimble Installation Manager.

### Subscriptions

If you are using a Trimble Access *subscription* rather than a perpetual license, you can install Trimble Access 2021.20 onto any supported controller.

To use the software subscription:

1. The License Administrator in your organization must assign a subscription to you using the [Trimble License Manager webapp](#).
2. On software startup, you must sign in using your Trimble ID to use the Trimble Access subscription on your controller.

Subscriptions are locked to that controller until you sign out. Once signed out, you can run Trimble Access on a different controller and sign in to lock the subscription to that controller and use the software.

### Don't have a current license? You can still try out the software

You can use Trimble Installation Manager to create a limited demonstration license and then install Trimble Access 2021.20 onto any Windows 10 computer or a supported Trimble controller running Android.



Demonstration licenses are limited to adding 30 points per job, however large jobs created elsewhere can be opened and reviewed. Demonstration licenses allow connections to GNSS receivers and total stations for the first 30 days. After 30 days you can emulate a total station survey using a manual instrument (Windows and Android), and emulate a GNSS survey (Windows only).

**NOTE** – You can only create a demonstration license for Trimble Access on devices that do not already have a Trimble Access license.


For more information, refer to the topic **To try out software** in the *Trimble Installation Manager Help* for your controller operating system.


## Installation and upgrades using Trimble Installation Manager

To install the software to your controller, use the appropriate Trimble Installation Manager for your controller operating system:

- Trimble Installation Manager for Windows ,
- Trimble Installation Manager for Android 

### To install the software to a Windows controller

To download and install Trimble Installation Manager for Windows , connect the controller to the internet, and then go to [www.trimble.com/installationmanager](http://www.trimble.com/installationmanager) and select the **TIM for Windows** tab.

To run Trimble Installation Manager on the controller, tap the **Search** icon in the Windows task bar and enter **Install**. Tap Trimble Installation Manager , in the search results to open the Trimble Installation Manager. When you run the software, it updates itself automatically with the latest changes and software releases.


Jobs that were last used in Trimble Access version 2017.xx and later are automatically converted to the latest version of the software when you open them in Trimble Access. There are a number of tools for converting older jobs. For more information, refer to the **Trimble Access: Converting jobs to a newer version** document, available from [www.trimble.com/support\\_trl.aspx?Nav=Collection-62098&pt=Trimble%20Access](http://www.trimble.com/support_trl.aspx?Nav=Collection-62098&pt=Trimble%20Access).


Trimble Installation Manager for Windows can be installed and uninstalled as required, without affecting the Trimble Access software.

For more information refer to the *Trimble Installation Manager for Windows Help*.

### To install the software to an Android controller

Trimble Installation Manager for Android is **often preinstalled** on Trimble Android devices.

To download and install Trimble Installation Manager for Android , connect the controller to the internet, and then go to [www.trimble.com/installationmanager](http://www.trimble.com/installationmanager) and select the **TIM for Android** tab.

To run Trimble Installation Manager on the controller, go to the Android **Apps** screen and tap the Trimble Installation Manager for Android  icon. When you run the software, it updates itself automatically with the latest changes and software releases.

**NOTE** – *Trimble Installation Manager for Android must remain installed on the controller for the Trimble Access software to run.*

Jobs that were last used in Trimble Access version 2019.xx are automatically converted to the latest version of the software when you open them in Trimble Access. There are a number of tools for converting older jobs. For more information, refer to the **Trimble Access: Converting jobs to a newer version** document, available from [www.trimble.com/support\\_trl.aspx?Nav=Collection-62098&pt=Trimble%20Access](http://www.trimble.com/support_trl.aspx?Nav=Collection-62098&pt=Trimble%20Access).

For more information refer to the *Trimble Installation Manager for Android Help*.


## Updating office software

You may need to update your office software, so that you can import your Trimble Access version 2021.20 jobs. All required updates to Trimble Business Center are handled using the **Check for updates** utility provided with Trimble Business Center.

**TIP** – If you are using other office software such as Trimble Link™ to convert job files to other file formats, install the Trimble Installation Manager onto the computer where Trimble Link is installed and then run Trimble Installation Manager to install office updates.

## 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. At any time, you can choose to participate, or not to participate in the Solution Improvement Program. To do this, in Trimble Access tap  and select **About**. Tap **Legal** and select **Solution Improvement Program**. Select or clear the **I would like to participate in the Solution Improvement Program** check box.

## Trimble Access Apps

The Trimble Access software suite offers surveyors and geospatial professionals a range of specialized field applications designed to make fieldwork easier. With an easy-to-use interface, optimized workflows, and real-time data synchronization, the Trimble Access software suite enables you to accomplish more every day. Improve your competitive edge by selecting the applications that best suit the work that you do.

### Trimble Access apps supported on Windows devices

The following Trimble apps are supported when running this version of Trimble Access on a supported Windows device.

App	Contact
Roads	<a href="#">Trimble</a>
Tunnels	<a href="#">Trimble</a>
Mines	<a href="#">Trimble</a>
Land Seismic	<a href="#">Trimble</a>
Pipelines	<a href="#">Trimble</a>
Power Line	<a href="#">Trimble</a>
Katastermodul Deutschland	<a href="#">Trimble</a>
Monitoring	<a href="#">Trimble</a>
AutoResection	<a href="#">Allnav Ag</a>

App	Contact
BathySurvey	Geometius

Some apps, as well as additional apps, are supported for previous versions of Trimble Access. For more information, see the [Trimble Access App availability](#) webpage.

### Trimble Access apps supported on Android devices

The following Trimble apps are supported when running this version of Trimble Access on a supported Android device. We are working on supporting more apps.

Trimble Access Apps	Contact
Roads	Trimble
Tunnels	Trimble
Mines	Trimble
Pipelines	Trimble
Power Line	Trimble
Katastermodul Deutschland	Trimble
Monitoring	Trimble
AutoResection	Allnav Ag
ALLNAV Rounds	ALLNAV

Some apps are supported for previous versions of Trimble Access. For more information, see the [Trimble Access App availability](#) webpage.

### Legal information

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