- when it has to be **right**

Leica Geosystems

Leica Captivate v10.00
Software Release Notes

Product	Leica Captivate Field Controllers: CS20, CS30, CS35, CC180, CC200 Total Stations: TS10, TS13, TS16, TS20, TS60, TM60, MS60 GNSS Sensors: GS18 T, GS18 I, GS18, GS05
Release date	26th November 2025
Maintenance date	1st November 2025
Available in myWorld	Week 48, 2025

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Contents

1 Leica Captivate v10.00 Release Notes - Introduction

These Release Notes contain important information about new features and bugfixes.

General information

There is a Leica Captivate v10.00 release for the following hardware:

- Field Controllers: CS20, CS30, CS35, CC180, CC200
- Total Stations: TS10, TS13, TS16, TS20, TS60, MS60, TM60
- GNSS Sensors: GS18 T, GS18 I, GS18, GS05

Customer Care Product (CCP) dates

The Leica Captivate software version 10.00 can be loaded onto all CS Field Controllers, GS18 and GS05 GNSS Sensors and TS/MS Total Stations with a CCP valid until at least 01.11.2025.

Jobs, Coordinate Systems, Working Styles, RTK Profiles and other objects

All Leica Captivate “objects” (such as Jobs, Coordinate Systems, Working Styles, RTK profiles etc.) created or used within previous Leica Captivate versions can be used in Leica Captivate v10.00.

Due to the introduction of the eSIM on the GS05, the RTK Rover wizard has needed to be adapted. In Leica Captivate v9.00 and onwards, RTK Rover profiles created with a CS/GS modem configuration will not be compatible with versions prior to v9.00. RTK profiles created in previous versions of Leica Captivate remain fully compatible with v9.00 and onwards.

Compatibility between Leica Captivate versions

Compatibility between Leica Captivate versions is guaranteed if the instruments run the same major version.

This means, for example, when using a version 10.x on a Leica Captivate GS Sensor or TS Total Station, the CS20 Controller or CS30/CS35/CC180/CC200 Tablet must also run an 10.x version to be compatible.

For the new Leica Captivate v10.00, all Leica Captivate GS Sensors and TS/MS Total Stations must be updated to a version 10.x to be compatible with a CS20 Controller or CS30/CS35/CC200 Tablets running v10.00 and vice versa.

Compatibility between Leica Captivate and SmartWorx Viva versions

The table below shows the compatibility between Leica Captivate and SmartWorx Viva versions.

		CS20, CS3x, CC180, CC200			
		Leica Captivate v1.x	…	Leica Captivate v9.x	Leica Captivate v10.x
TS	All versions prior to SmartWorx Viva v6.0 and higher than v5.60	Fully compatible		Not compatible	Not compatible
MS	…				
GS	SmartWorx Viva v8.x	Not compatible		Not compatible	Not compatible
	SmartWorx Viva v9.x	Not compatible		Compatible for Viva TS	Compatible for Viva TS
GS	SmartWorx Viva v13.x	Not compatible		Fully compatible	Not compatible
	SmartWorx Viva v14.x	Not compatible		Not compatible	Fully compatible

- For Windows Tablets, from Leica Captivate v9.00 onwards the following Microsoft® Windows™ operating system editions are supported:
  - Windows 10
  - Windows 11

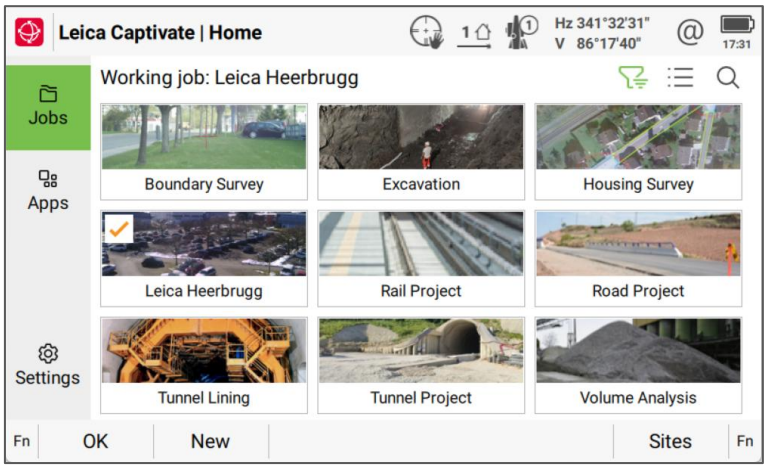
2 Leica Captivate - New Software Features

New Leica Captivate Home screen

Since the first release of Leica Captivate, the Home screen layout comprised of a job carousel, and an app carousel. To find the needed job or app, it was necessary to scroll through each carousel, which could be cumbersome if there were lots of jobs or apps. Access to other functions such as Settings, Design data and Sites could also be hidden from view.

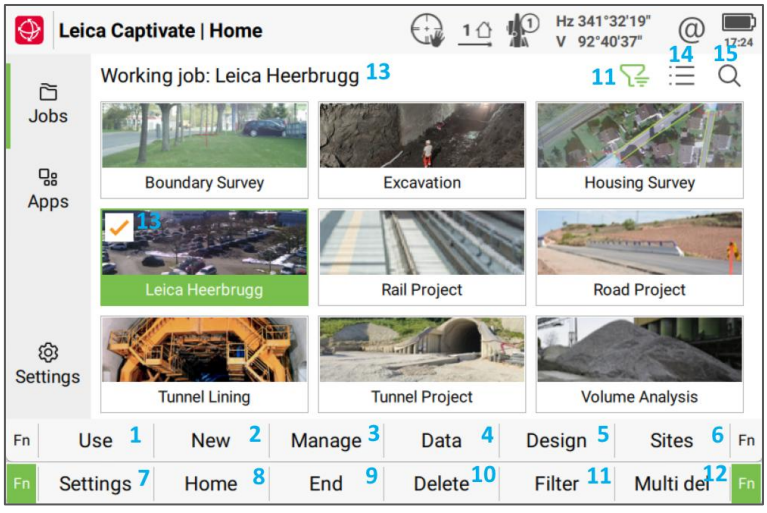
In Leica Captivate v10.00, the Home screen has been completely refurbished, to make it much easier to access jobs, apps and settings. In addition, several other improvements have been added to make organising jobs a lot easier than previously and allow the user to get working as quickly as possible. The Home screen is designed to be fully useable with either a keypad, or touchscreen.

The layout of the new Home screen consists of a navigation menu on the left, the main selection panel to the right, and a header row. The layout of the status line at the very top, and the function key area at the very bottom remain the same as previously, however there are now different function keys available, depending on which menu you are in and where the focus is.



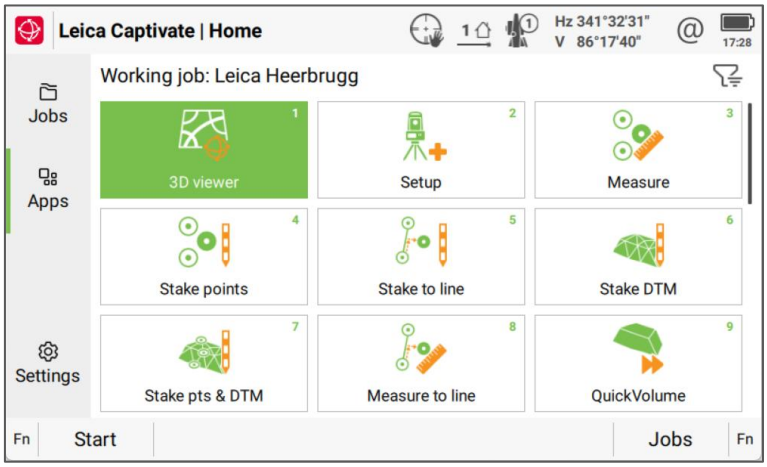
The navigation menu contains **Jobs**, **Apps** and **Settings**. Switching between these menus will change what is visible in the selection panel. Moving the focus into each selection area will allow managing or accessing these items.

With the focus in the **Jobs** selection panel, the following functions are available:



1. **Set/Use (F1)**
    - **Set**: sets the job in focus to be the working job. This can also be done by tapping on the job.
    - **Use**: When the focus is on the working job, **Use** switches to the app selection menu.
2. **New (F2)** creates a new job.
3. **Manage (F3)** opens the job context menu. Tapping on working job tile also opens the job context menu.
4. **Data (F4)** opens the data management panel of the job.
5. **Design (F5)** opens the **Design Data** panel.
6. **Sites (F6)** opens the **Sites** panel, allowing job sites to be filtered by site.
7. **Settings (Fn+F1)** opens the **Job Settings** panel.
8. **Home (Fn+F2)** scrolls to the top of the jobs.
9. **End (Fn+F3)** scrolls to the bottom of the jobs.
10. **Delete (Fn+F4)** deletes the selected job.
11. **Filter (Fn+F5)** opens the **Sort & Filter** panel. The filter panel can also be opened by tapping on the sort & filter button in the header. Additional ways to sort the jobs have been added, which include sorting by **Date created**, or **Last used**. When the icon is green, it indicates that the visible jobs are filtered by a device or a site.
12. **Multi del (Fn+F6)** allows multiple jobs to be selected and deleted.
13. The current working job name is displayed in the header. An orange tick in the job tile also indicates the current working job.
14. The **grid/list** button allows toggling between a grid view and list view.
15. Jobs can be searched for by typing directly or tapping on the magnifying glass icon.

The **Apps** selection panel displays the apps in a grid and allows selecting the app to start work.

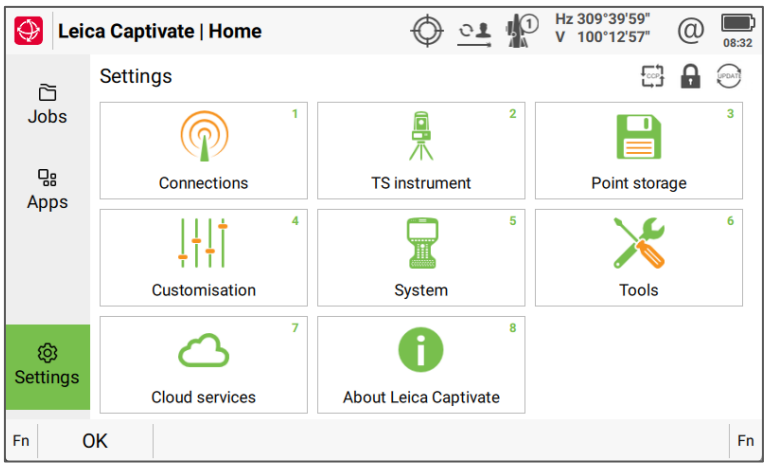


- **Start (F1)** opens the selected app.
- **Jobs (F6)** switches back to the **Jobs** selection panel.
- **Filter (Fn+F5)** opens the **App Visibility** panel. In this panel, the apps can view rearranged or hidden from view.
    - *Note: The ability to "drag and drop" app tiles is not included with v10, making this the only location to manage app visibility/order.*

The **Settings** panel is similar to before and displays the settings submenus in a grid. In the **Settings** panel itself, the header row can display various icons, indicating certain states:

- **CCP** icon is displayed when the CCP has expired.
- **Lock** icon is displayed when the restrict access setting is activated.

- **Update** icon is displayed when there is a new Leica Captivate version available in myWorld.



The new Leica Captivate Home screen provides an easy-to-use and efficient workflow, to get set up and working as quickly as possible, from defining the job to use through to choosing the app to start work.

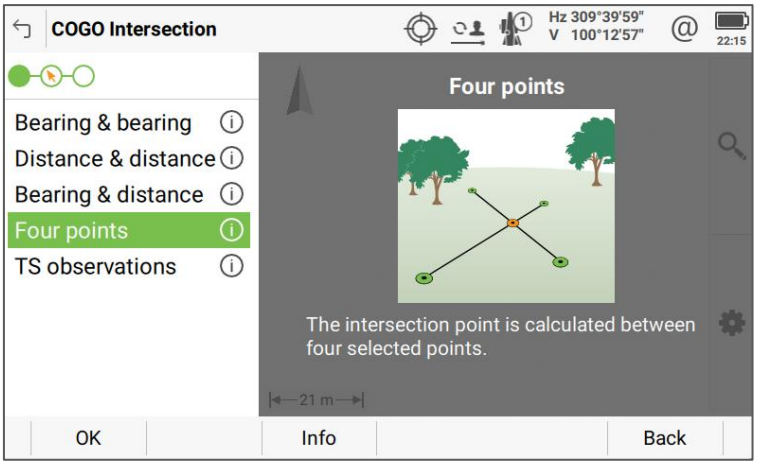
COGO - revised with 3D Viewer split screen

In previous versions of Leica Captivate, the **COGO** app provided many different methods to calculate coordinate geometry. To graphically visualise the selected data and the resulting calculation, it was necessary to switch between the current page and the 3D Viewer, which was not optimal.

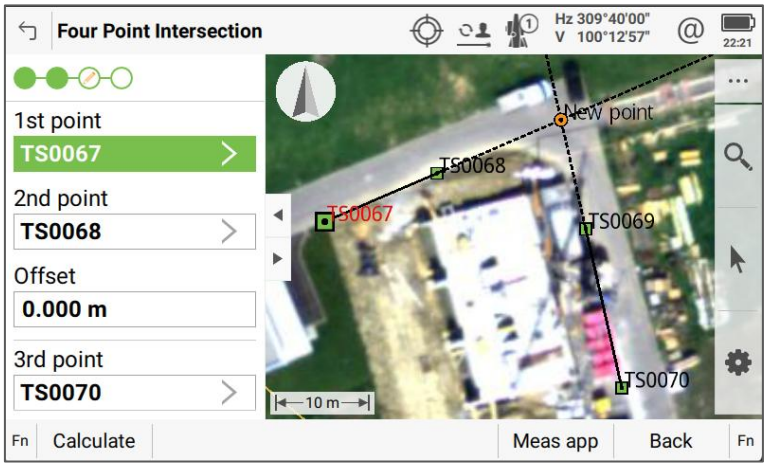
In Leica Captivate v10.00, the **COGO** app has been revised to be more graphical, with a new indication of the workflow process and better integration with the 3D Viewer. The **COGO** methods and calculations remain the same.

COGO can now be accessed from a function key in the **3D Viewer** app, using **COGO (F4)**, in addition to the existing access points from the app tile or context menu options.

When selecting a COGO calculation, the COGO app now opens in a split-screen format. On the upper left side, a new progress graphic indicates the stage of workflow within the COGO calculation. In the first two stages, the left side of the panel contains the method and sub-method selection. On the right of the panel, the current 3D Viewer is shown by default. In the sub-method selection, a method description can be viewed by tapping on the **Info (F3)** button, or info icon.



Once a sub-method is selected, the next split-screen panels allow selecting the points and entering the data for the calculation, as well as displaying the calculation results. The right side of the panel always shows the 3D Viewer, also allowing point selection and displaying the results graphically.

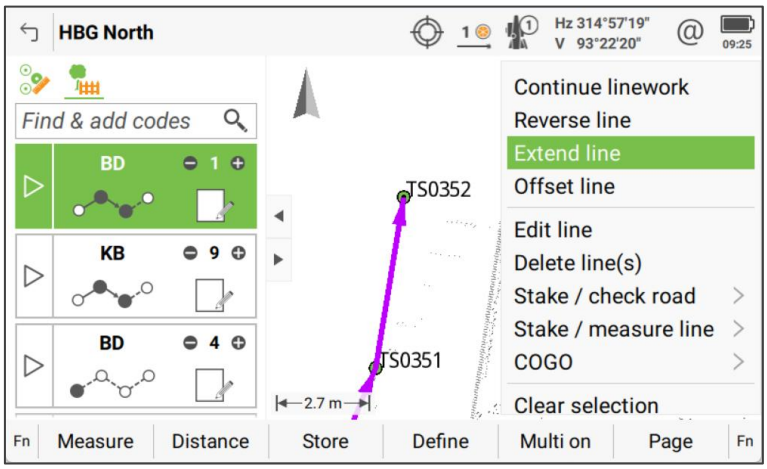


The renewed COGO app provides graphical confirmation of the complete calculation workflow, helping ensure the correct data is selected and the results are fully understood, reducing the chances to get unexpected results and saving time in the field.

3D Viewer - Extend line

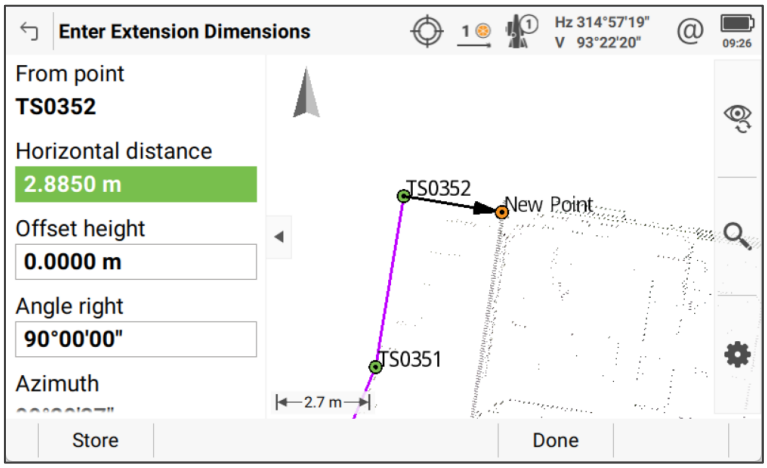
When measuring linework in the field is quite common to reach a point that cannot be accessed or is not visible from the instrument. In these situations, it might be needed to measure the point using an alternative method, or set up the instrument in a new location to measure the point.

In Leica Captivate v10.00, the option to extend an existing measured line has been introduced in the context menu of the **3D Viewer** within the **Measure** app**.** The option **Extend line** is available if one line has been selected in the 3D Viewer.



Selecting **Extend line** will open the **Enter Extension Dimensions** panel, where the line extension can be defined. The last point of the selected line is used as the start point of the line extension. The **Horizontal distance**, **Offset height** and **Angle right** direction of the line extension can be defined, by entering values or with disto input. The proposed line extension and new point will be visible in the 3D Viewer and can be stored by pressing **Store (F1).** Several line extensions

can be added consecutively in this panel, until the line extension function is finished with by pressing **Done (F4).** The line can then be continued by resuming with measuring points.



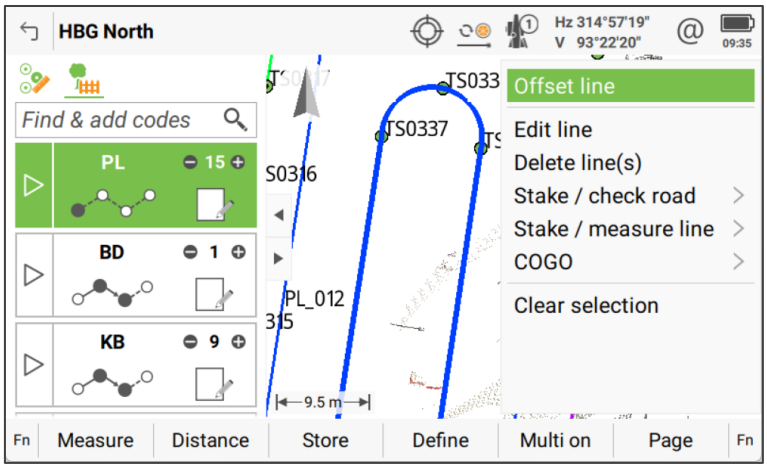
To support extending a line during coding & linework, a new hot key also allows extending the currently measured line without needing to select the line in the 3D Viewer. In the **Measure** app, when using codeboxes and the currently active codebox has linework in progress, pressing the button assigned to the hot key **User – Extend line** will open the **Enter Extension Dimensions** panel, as described previously.

The **Extend line** tool allows measured linework to be completed easily and quickly in the field, speeding up data collection workflows and helping ensure fieldwork completion.

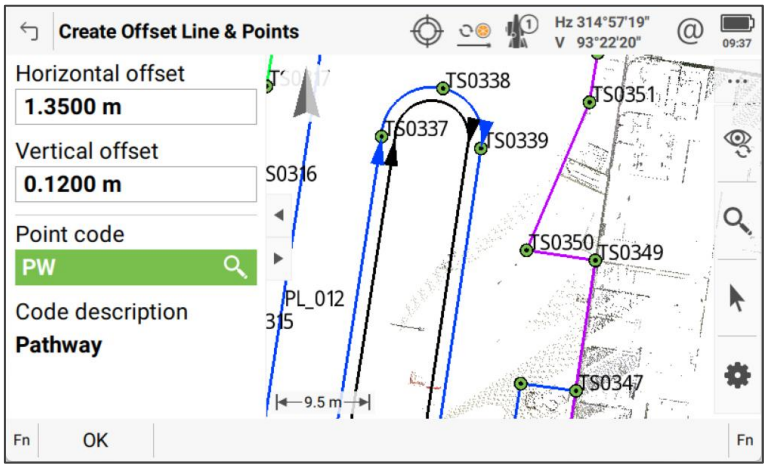
3D Viewer - Offset line

In previous versions of Leica Captivate, it was possible to create an offset line from existing lines, by using the **Create pts & lines** app. This required accessing the app separately, meaning that the workflow of creating points and lines during measuring needed to be interrupted.

In Leica Captivate v10.00, the option to offset a line is introduced in the context menu of the 3D Viewer**.** The option **Offset line** is available if either an existing line, several points or an edge has been selected in the 3D Viewer.



Selecting **Offset line** will open the **Create Offset Line & Points** panel, where the **Horizontal offset** and **Vertical offset** values can be entered. A new point code can also be assigned to the points of the offset line. The proposed offset line will be visible in the 3D Viewer, and the new line can be stored by pressing **OK (F1).**



Note that if the selected line contains linework geometries including splines, clothoids, circles or rectangles, that it will not be possible to offset the line, and a warning message will appear.

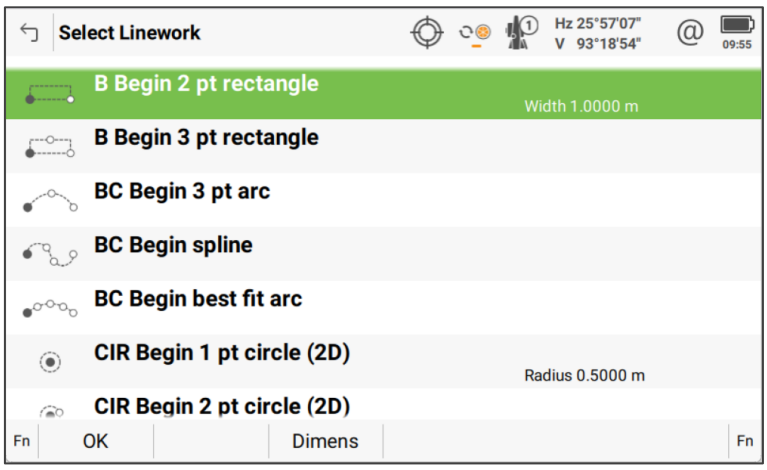
The **Offset line** tool gives surveyors full flexibility in the field to prepare and create data, ensuring work can be completed as quickly and efficiently as possible.

Coding & Linework - Shape size dimension

In Leica Captivate v8.00, several new linework options for coding were introduced. These included the ability to define the linework as a **2 pt circle (2D)**, a **3pt circle (2D)** or a **3 pt rectangle**.

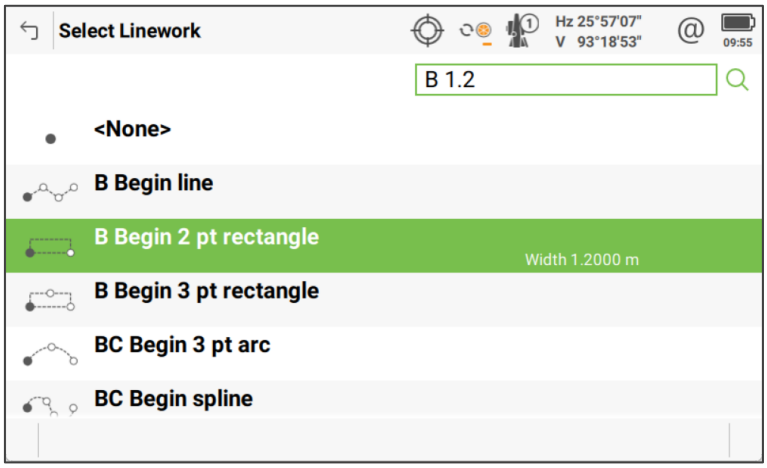
In Leica Captivate v10.00, two further linework options are introduced, a **1 pt circle (2D)** and **2 pt rectangle**. These linework options allow measuring a circle or rectangle by measuring minimal points and entering a dimension to define the shape size.

Using any app that supports creating linework, the two new options are listed in the **Select Linework** panel. The new linework options display the current dimension value on the right of the table.

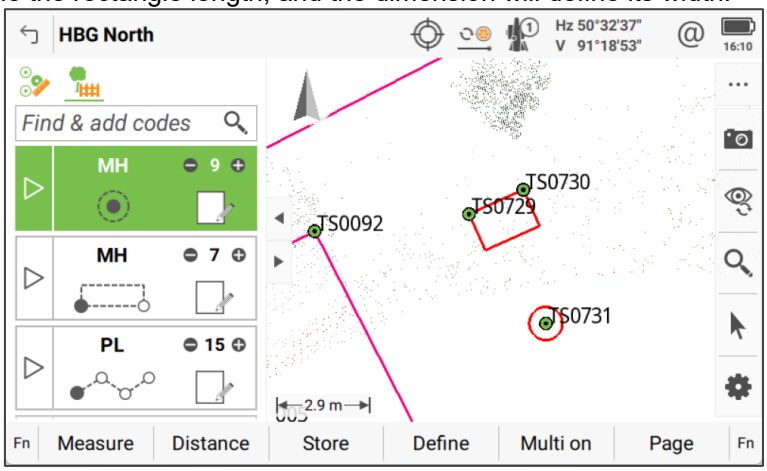


When moving the focus to either of the new linework rows, a new button **Dimens (F3)** appears, which leads to a panel allowing to edit the dimension of either the width of the rectangle, or the radius of the circle.

For a quicker definition of which linework and dimension to use, the search field can be used to type the linework and dimension. For example, to define a 2 pt rectangle, type **B**, then a **space**, followed by the dimension you want to use, e.g. **1.2**. This will define a rectangle linework with a width of 1.2m or ft, depending on your regional settings distance configuration.



By confirming the selection with **OK (F1)**, the required points can then be measured and the linework will be created. In the example, measuring two points will define the rectangle length, and the dimension will define its width.



Having the ability to measure circles and rectangles with an input dimension speeds up data collection when measuring objects of known dimensions, whilst also providing flexibility if all corners of the feature cannot be measured.

Regional Configurator tool - Support online help files

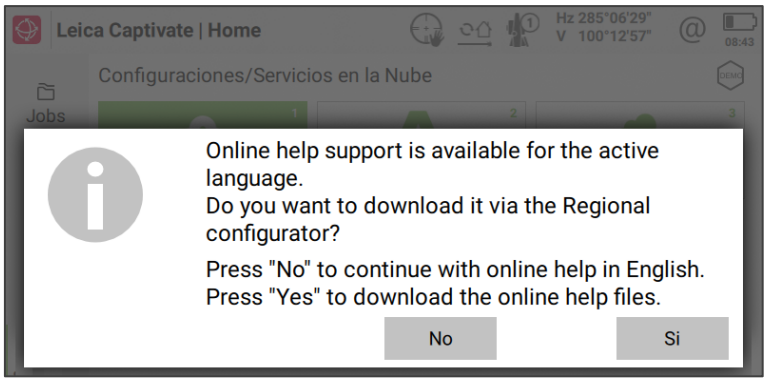
The Online Help feature has been available since the first release of Leica Captivate. It provides quick access to the appropriate page of the technical reference manual, to help explain the prompts, functions and settings of the current panel.

Due to the increasing size of the Leica Captivate software installation, it was necessary to reduce the amount of help files that were included, to free up the memory on the device. In Leica Captivate v10.00, all the online help file languages, except English, have been removed from the firmware file. This has

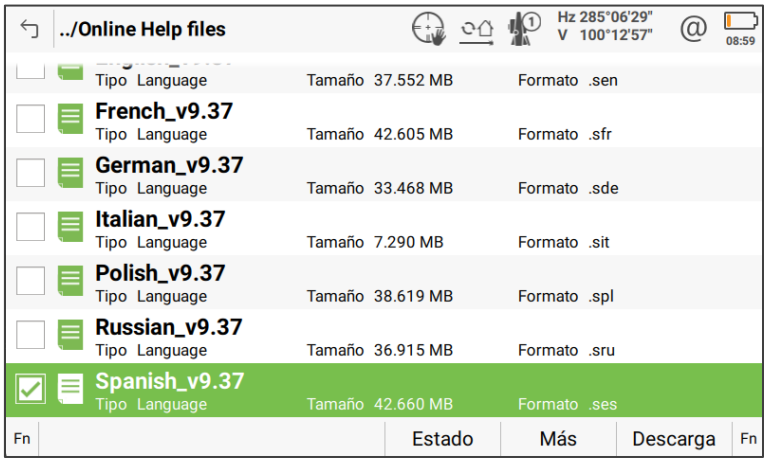
reduced the firmware file size significantly, and reduces the time needed for installation by over 35%.

To continue to be able to access the online help in other languages, the **Regional Configurator** tool provides a way to download and automatically install any help file languages onto the device.

When using Captivate in any of the languages that have online help support (French, German, Italian, Polish, Russian or Spanish), if **Help** is accessed by tapping on the battery bubble, a message will appear informing about the existence of the online help file for the active language.



By agreeing to the message, the **Regional Configurator** tool automatically opens directly to the **Online Help files** panel, where all the available languages are listed.



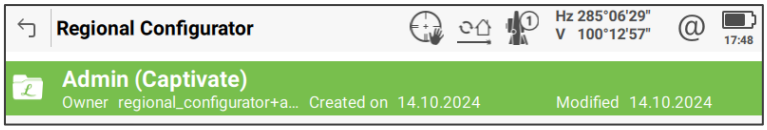
After selecting the required online help language file and tapping on **Download (F6)**, Leica Captivate will download and install the help file, ready for further use.

Regional Configurator tool - Support local apps

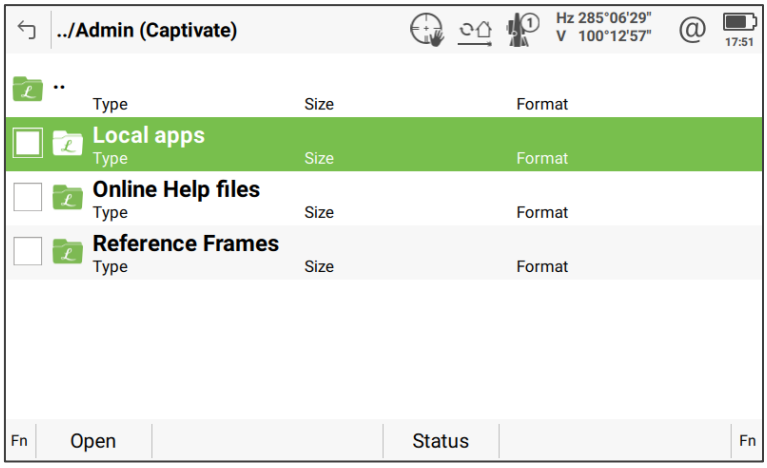
Local apps are field applications in the form of plugins that can be loaded to Leica Captivate, in addition to the apps included with firmware. They are developed by the regional Software Development Centres to fulfil specific surveying workflows. Until now, the only way to find and install these apps was to download them from Leica myWorld and then load them in the **Update Software** panel.

From Leica Captivate v10.00 onwards, the **Regional Configurator** tool allows accessing all available local apps, for total stations, controllers and tablets. Within the **Regional Configurator**, a new folder with the name **Admin**

(Captivate) contains further folders, to share common Leica Captivate objects that can be used worldwide.



Within this folder, a new **Local Apps** folder will contain the local apps.



After choosing the appropriate device type folder, any number of apps can be selected and downloaded simultaneously. When the selected apps are downloaded, a message will appear, providing the option to go to the **Update Software** panel to accept the Software Licence Agreement and complete the install.

Be aware that some local apps require a licence to be able to use them. These licensed apps will be able to be trialled using the standard licence trial with Leica Captivate.

More information on the available local apps can be found on the Leica Captivate website, or by contacting your local Leica Geosystems representative.

Regional Configurator tool - New Authentication Certificate

As with all cloud-enabled tools, security is an important topic, therefore, the automatic “logging in” of devices connecting to the Regional Configuration Tool is a carefully managed process, requiring the use of certificates within Captivate.

These certificates are periodically updated, and new certificates will automatically be installed when upgrading to Captivate v10.00.

Failing to upgrade to a newer firmware will eventually result in being unable to access the Regional Configuration Tool. Users of Captivate 8.x are already unable to access it, and users of 9.x, can only access it until March 2026.

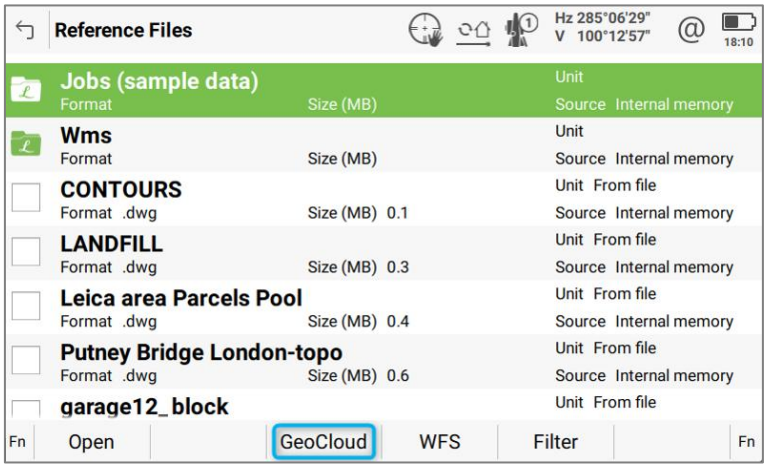
The only way to guarantee continued access to the regional configuration tool onboard is to stay up-to-date with the current Captivate firmware.

GeoCloud Drive - access from reference files panel

HxGN GeoCloud Drive was released with Leica Captivate v8.10, allowing data and Leica objects to be easily synchronised between the office and field.

In previous versions of Leica Captivate, when wanting to attach a reference file that was stored in GeoCloud Drive to the working job in Captivate, it was necessary to first access the cloud service and download the reference file separately, before it could be attached.

In Leica Captivate v10.00, direct access to **GeoCloud Drive** is available in the **Reference Files** panel when creating a new job or editing an existing one.



Having direct access to GeoCloud from this panel improves the workflow and avoid lots of extra screen taps to perform the same task.

GeoCloud Drive - Additional enhancements

In previous versions of Leica Captivate, when a user had logged in to GeoCloud Drive, but had exited the **GeoCloud Drive** tool, there was no visual indication within Captivate that the user had remained logged in. It was also not possible to see which user was currently logged in to the service.

In Leica Captivate v10.00, the status bar at the top of the screen now shows an indication that the user is logged in to GeoCloud Drive.

Furthermore, in the **Internet Connection Status** panel, there is additional information to show the status of the connection to **GeoCloud Drive**, and which user is currently logged in.

This helps the user to be aware of who is logged into **GeoCloud Drive**, which is especially useful when equipment is shared or passed between multiple users who may have remained logged in since their last use.

Another improvement in Leica Captivate v10.00 is to include, within the job being uploaded to **GeoCloud Drive**, any file that was exported and stored in the working job folder. In previous versions of Leica Captivate, exported files were not included with the uploaded job, and had to be uploaded separately. Now a new sub-folder, **Exported data**, is created within the working job folder, containing all the exported files.

Similarly, in previous versions of Leica Captivate, jobs uploaded to **GeoCloud Drive** did not include the folders containing images or scans referenced from XML or DXF files. In Leica Captivate v10.00, any XML or DXF file that requires a folder with additional information (images or scans) is fully uploaded to the cloud service.

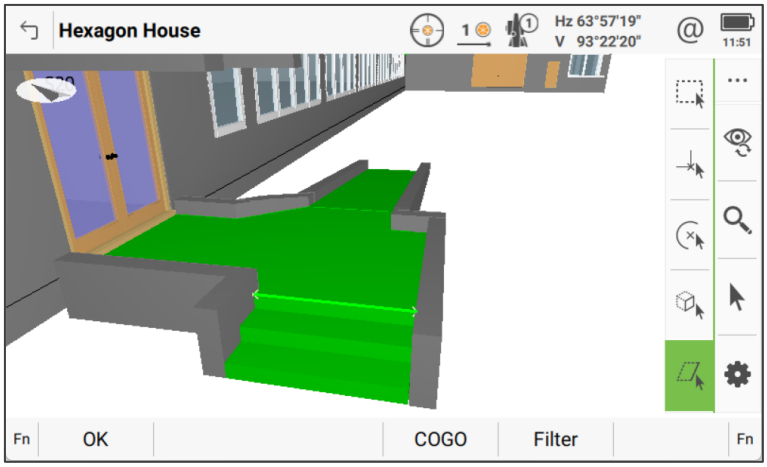
Finally, in Leica Captivate v10.00, when uploading a Codelist to **GeoCloud Drive**, the Codelist is no longer compressed into a ZIP file, as it was previously. This avoids potential issues when downloading that same ZIP file from the cloud onto other Leica Captivate devices.

3D Viewer - Snap to faces and edges of IFC objects

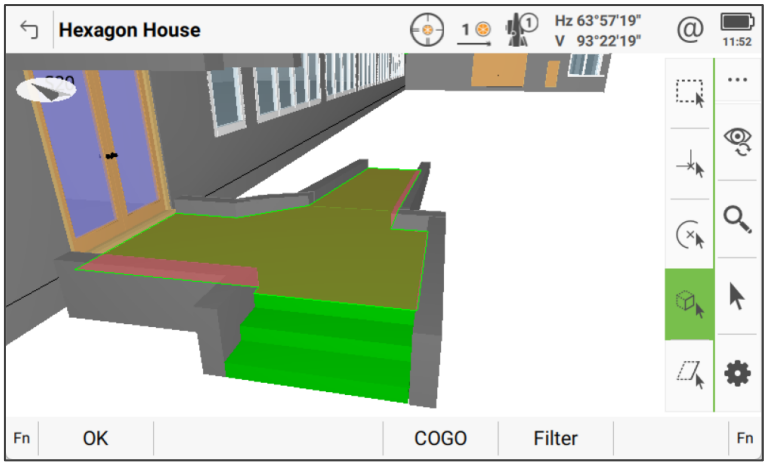
In Leica Captivate v8.50, the first snapping tools were introduced into the 3D Viewer toolbar, allowing points of interest to be easily extracted from attached reference files.

Leica Captivate v10.00 extends the snapping functionality by introducing two new tools specifically for IFC data: ‘Snap to Face’ and ‘Snap to Edge’. These tools are found on the selection toolbar.

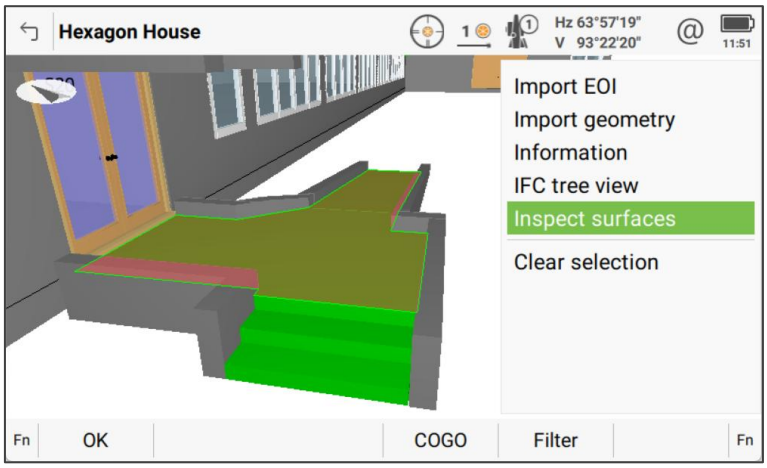
When the ‘snap to edge’ tool is active, an edge of a solid IFC object can be tapped to select the edge of the object. The edge selection is indicated by a green line. The context menu can then be opened to use line-specific tools such as importing the line or Staking and Checking the line.



When the ‘snap to face’ tool is active, a face of a solid IFC object can be tapped to select the face of the object. The face selection is indicated by a green border and red-shaded fill. The context menu can then be opened to use object-specific tools such as importing the geometry or viewing IFC relevant information.



Additionally, when a face of an object is selected, the context menu offers a new option to use the selected face as a surface in the **Inspect Surfaces** app, where the surface can be compared to other surfaces or measurements.

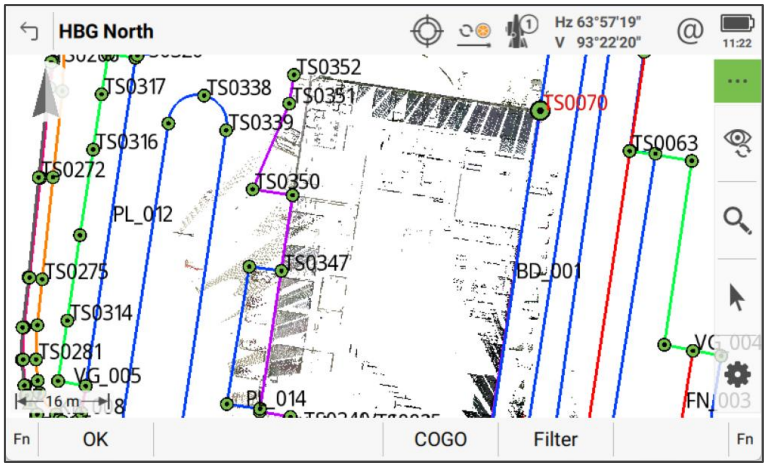


The new snapping tools allow selecting the specific items of interest when working with IFC data, meaning only those items need to be imported rather than the whole object. This keeps the data cleaner and makes it easier to work with.

3D Viewer - Context menu button

When using any 3D Viewer with Leica Captivate, the context menu provides a variety of tools and functions based on what is selected in the map. Since the first release of Leica Captivate, the context menu needed to be opened by tapping and holding down for two seconds within the map view. In situations where there is lots of data selectable in the view, it was sometimes difficult to avoid accidently selecting other data to open the context menu.

In Leica Captivate v10.00, a new context menu button is introduced at the top of the toolbar. After selecting data, such as points or lines, pressing the button will open the context menu, providing the context-specific tools and functions.

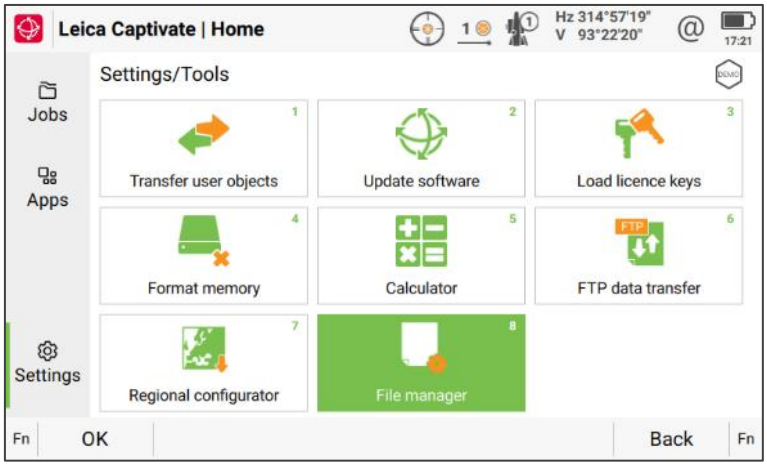


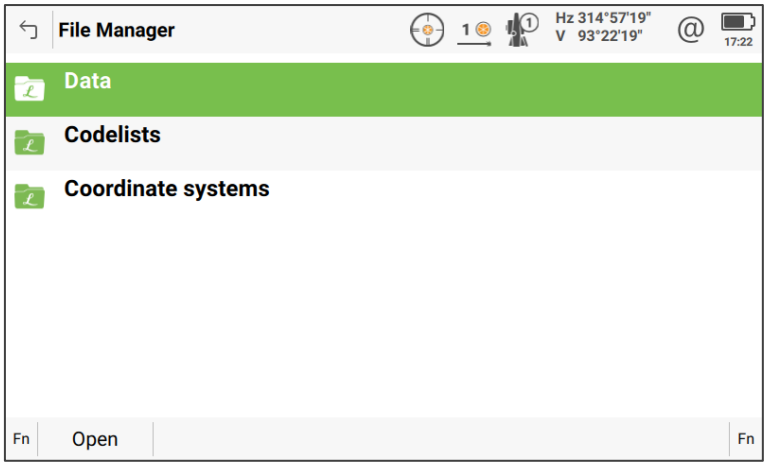
The context menu button provides a quicker and more reliable way of opening the context menu, without needing to avoid accidently tapping on other data or waiting to the menu to open, improving and speeding up the workflow.

File Manager tool

In previous versions of Leica Captivate, it was not possible to delete data files that were stored in the Data directory of the Internal Memory or storage device, from within Captivate. This was only possible by accessing the Windows desktop. Furthermore, to create, edit or delete codelists or coordinate systems, it was needed first to create or manage a job, and then go to the appropriate page of **Job Properties**, which was not intuitive.

In Leica Captivate v10.00, a new **File Manager** tool is introduced in **Settings/Tools,** which solves these issues. The tool allows direct access to the existing **Codelist** and **Coordinate system** management panels to create, edit or delete items, as well as to the **Data** folder of all memory devices to allow deleting data and reference files, such as XML, CAD or IFC files.

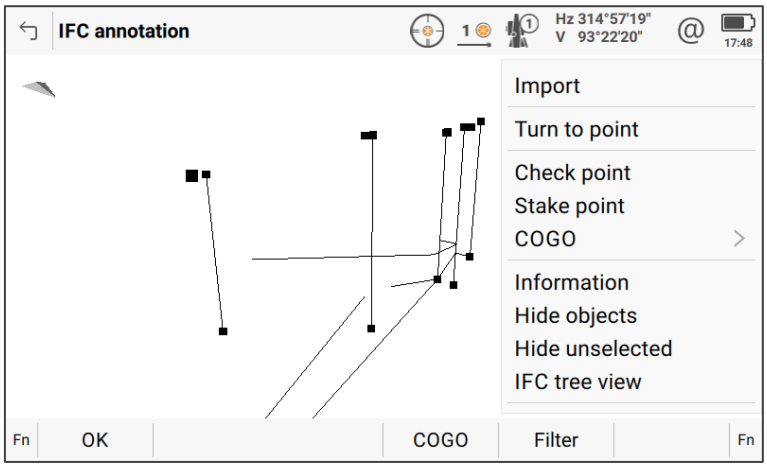




3D viewer - Show IFC data 'annotation', 'point'

In previous versions of Leica Captivate, when attaching and viewing IFC data that contained the data type 'annotation' 'point', it was not visible in the 3D viewer and therefore could not be used within Captivate, for example to stake out the points.

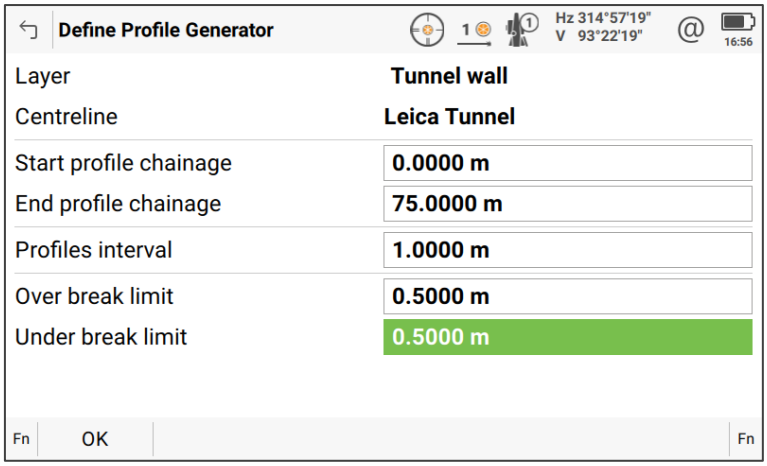
With Leica Captivate v10.00, when attaching and viewing IFC files that contain the data type 'annotation' 'point', the points will be visible and selectable in the 3D viewer, allowing the points to be imported and used for surveying tasks such as stake out.



Tunnel app - Under/over break limits for Profile Generator

In the **Check Tunnel** app, **Profile generator** allows as-built tunnel profiles to be extracted from scanned point clouds that were previously measured with the **Scanning** app of the Leica MS60 MultiStation. In previous versions of Leica Captivate, it was not possible to set any limits to which scanned points should be included to generate the profiles. This could result in unwanted scan points outside of the area of interest being included in the generation of the profiles.

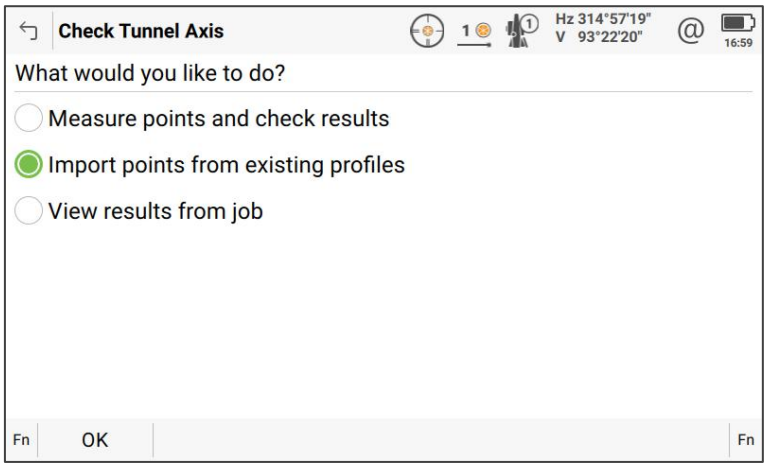
With Leica Captivate v10.00, when defining the profiles to generate, it is possible to define the **Over break limit** and **Under break limit**, allowing only those scan points within the limits to be considered for the profile generation. This allows greater flexibility when generating profiles, with the advantage of being able to exclude unwanted scan points not belonging to the profiles.



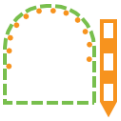
Tunnel app - Calculate BFC using points from Check Profile by scanning

In the **Tunnel** app, **Check Tunnel axis** allows measuring a series of points around a circular tunnel cross section, to calculate the best-fit centre (BFC) point and compare that to the tunnel design axis. In previous versions of Leica Captivate, this was only possible to achieve by measuring the points of the profile within the **Check Tunnel axis** workflow.

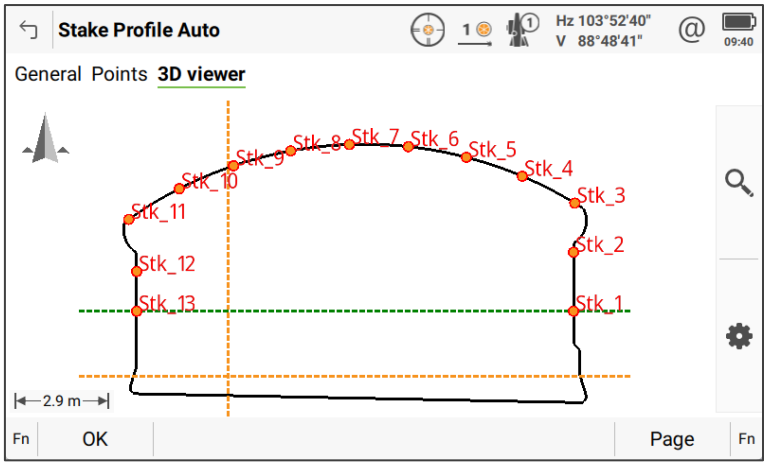
In Leica Captivate v10.00, points previously measured using **Check profile by scanning** can now also be used in **Tunnel axis**, by importing them at the start of the workflow, and using them to calculate the profile and best fit centre.



Tunnel app - Stake Profile Auto



In the Tunnel app, when using **Stake Tunnel face**, the **Stake Face Auto** tool allows a pattern of points to be selected and automatically staked out in sequence using a robotic instrument. In Leica Captivate v10.00, this auto staking functionality has been extended to **Stake Tunnel profile** with the **Stake Profile Auto** tool. By defining parameters such as the starting height, spacing and timing, the tunnel profile can be automatically and repeatedly staked out in sequence, allowing the profile to be easily marked out by using the red laser of the instrument to point at the profile points on the tunnel face.



Captivate DBX - data stored with GUIDs

When collecting multi-day data in the same job with previous versions of Leica Captivate, importing the same job numerous times into the same Infinity project meant that the already imported data was duplicated, creating unnecessary extra data and possibly causing confusion.

With Leica Captivate v10.00, any data collected is stored in the DBX with an individual GUID, which is also read when importing the data into Infinity. This allows Infinity to compare the data with what is already imported, meaning only new data is imported and duplicate data is avoided.

HeXML schema 2.3

In Leica Captivate v10.00, the HeXML schema is updated to version 2.3

Removal of Bricsys 24/7

In Leica Captivate v10.00, the Bricsys 24/7 cloud service has been removed.

3 Leica Captivate New Features – TS specific

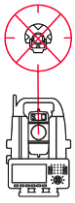
Support of TS20 Total Stations

Leica Captivate v10.00 supports the new Leica TS20 total station.

The new TS20 total station will be delivered with Leica Captivate v10.00 installed.

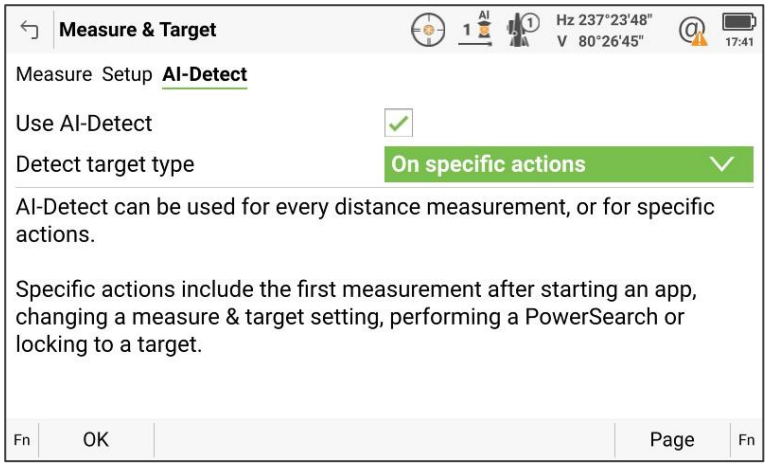
It can be remotely controlled by a CS20 controller or CS30, CS35, CC180 or CC200 tablet running Leica Captivate v10.00.

TS20 I - AI Detect

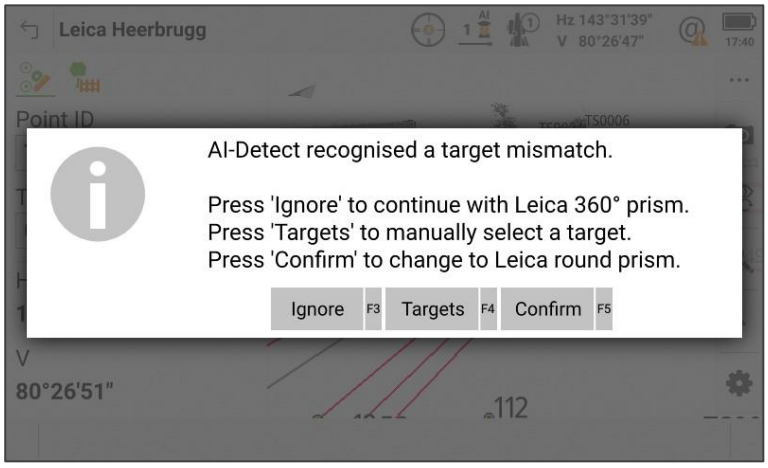


The TS20 I is the first instrument with AI-Detect target type recognition. During the measurement, AI-Detect recognises the target type being measured to, and checks it against the target type selected in Captivate. If there is a mismatch, a warning will be displayed, allowing to confirm switching to the detected target. Once the target is selected, the prism constant is updated and the distance corrected. AI-Detect works when pressing **Measure** or **Distance** in **Once** or **Repeated** distance modes, or when pressing **Store** in **Continuous** distance mode.

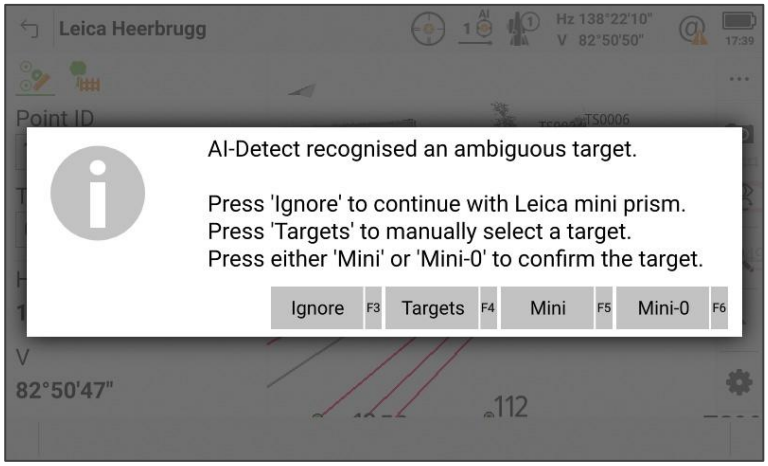
AI Detect is enabled in the **Measure & Target** panel, in the **AI-Detect** tab. When enabled, AI-Detect can be selected to be used **On specific actions**, or **With every measurement**. When used on specific actions, AI-Detect will check the target type on the first measurement after certain actions. These actions include starting an app from the **Home** screen, changing a setting or enabling **AI-Detect** from the **Measure & Target** bubble, performing a target search such as a **Search & lock** or **PowerSearch**, or when a **turn-to** has been performed.



When AI-Detect recognises that the target being measured to is different to the target selected in Captivate, a message will appear. The message can be ignored by pressing **Ignore**, which will keep the currently selected target. A target can be manually selected by accessing the **Targets** panel. The recognised target can be confirmed by pressing **Confirm**.



When a GMP111 or GMP111-0 Mini prism is detected, AI-Detect cannot differentiate between the two prism types, which have a similar appearance but different prism constants. In this case, the message will ask to confirm if the target is a **Mini** or **Mini-0** prism.

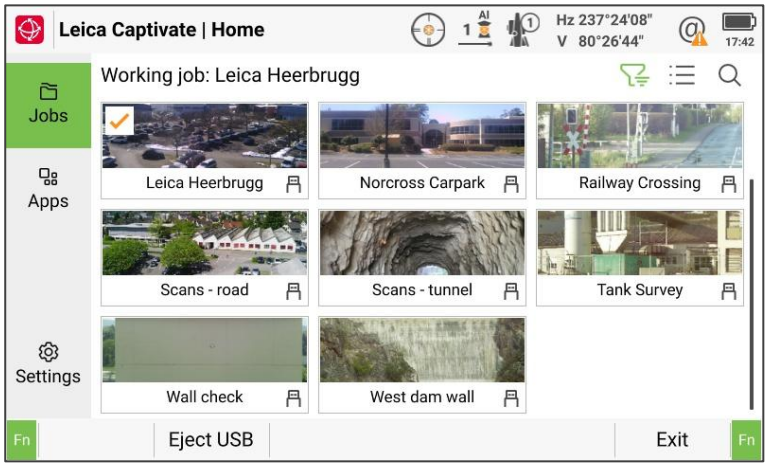


AI-Detect ensures measurements are made with the right prism type every time, reducing mistakes and ensuring data collection quality.

TS20 - USB stick handling

The TS20 has a protected USB-C port under the side cover, which allows a USB stick to be used not only for transferring data to and from the instrument, but also for the active Working job whilst collecting data. When needing to remove the USB stick whilst Captivate is running, it is important to properly eject the stick to ensure the data and file system are not damaged in any way. Not doing this brings the risk of losing data from the USB stick.

To eject the USB stick, go to the **Home** screen, and with the focus on the left navigation menu, press **Fn F2 (Eject USB)**.



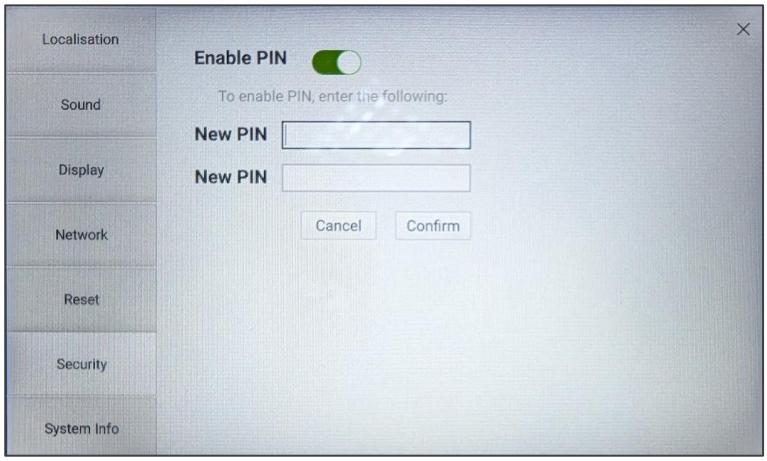
It is also possible to eject the USB stick once the side cover has been opened. Once the side cover is opened, a message will appear giving the option to **Eject USB**. The USB stick should only be removed after the orange confirmation message has appeared, informing that the USB stick is safe to remove.

Note that to use the USB stick in the TS20, it should be formatted with a file system type FAT32 or exFAT.

TS20 - Change of PIN/PUK access

On previous generation instruments, access to the instrument could be secured by setting a PIN which was needed to be entered on startup. The PIN and PUK was managed in Captivate, in the **Startup PIN** panel, accessed from **System/Software startup**.

On the TS20, the PIN/PUK is managed outside of Captivate, in the Operating System. To set up and manage the PIN, switch to the OS from Captivate, either using **Fn + Esc** key, or by pressing **Fn F6 (Exit)** in the **Home** screen. The PIN management is found in the **Security** tab of the OS **Settings**.



TS20 - AP20 and remote imaging restriction

When using a TS20 I and an AP20, the option to display the TS overview camera live “stream” on your controller or tablet is disabled.

This restriction will be removed in a future firmware version.

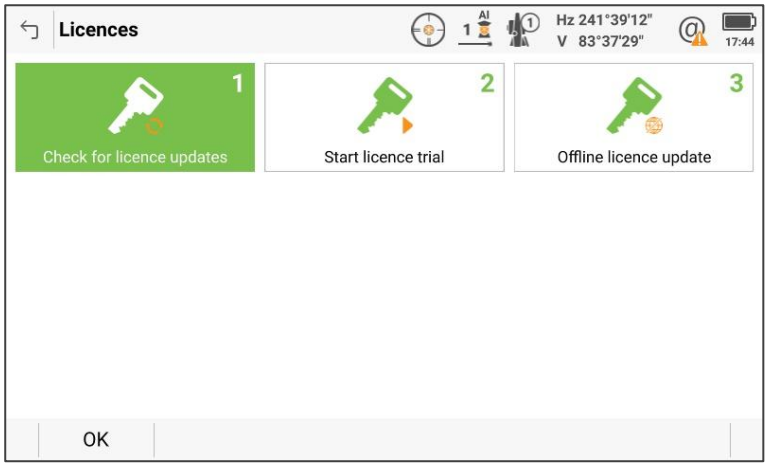
TS20 - Dynamic lock

When using a TS20 P or TS20 I, and attempting to search and lock to a moving target, dynamic lock is currently unavailable.

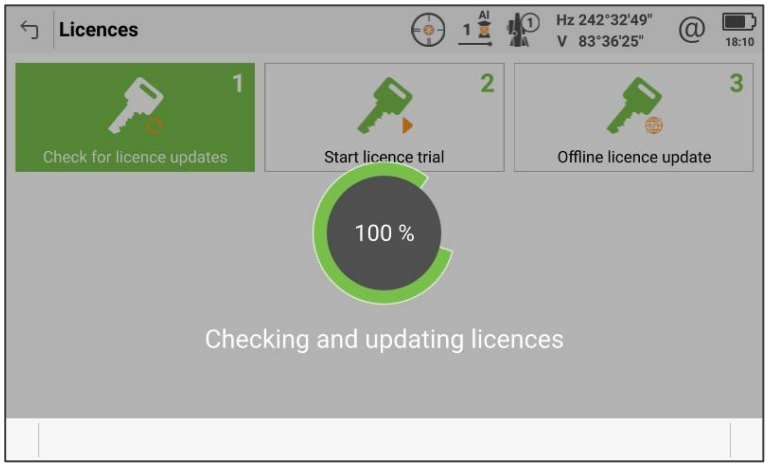
This restriction will be removed in a future firmware version.

TS20 - Changes to licences

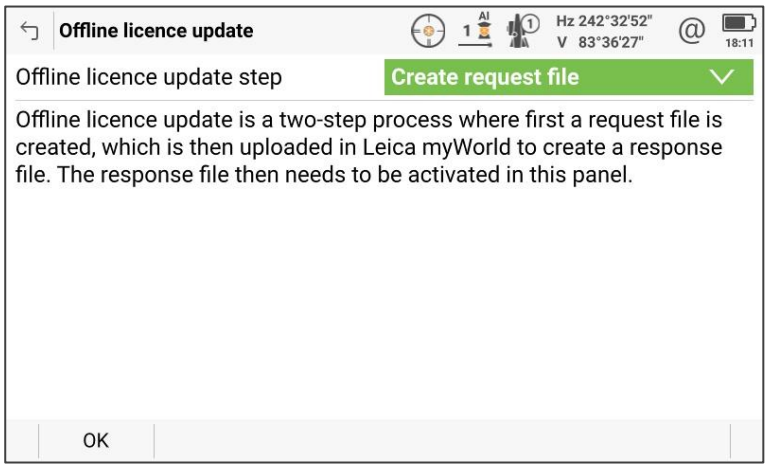
The TS20 uses a different licence system compared to previous generation instruments. The licensing is now handled by an entitlement, which contains the licences, instead of using licence keys. Because of this, there are changes to the **Licences** options in the **Settings/Tools**.



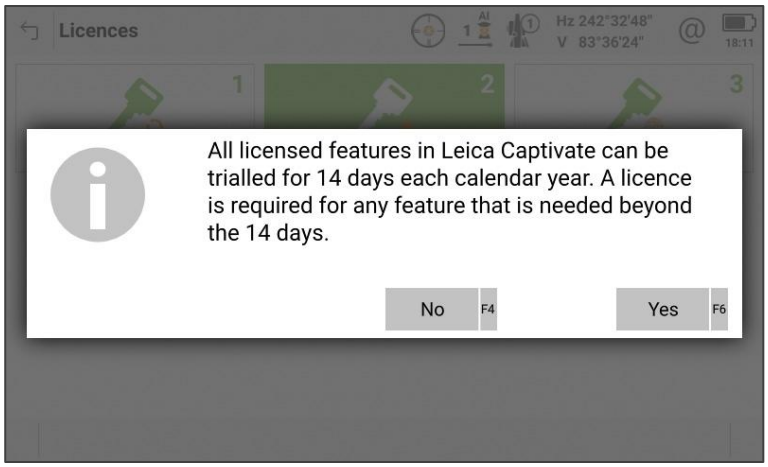
When the instrument is online, the licences can be checked and updated using **Check for licence updates**. Any changes to the licence will be automatically checked and applied. The licences are also automatically checked after startup once connected to the internet.



If the instrument is offline, it is also possible to update licences using **Offline licence update**. The wizard will guide through a series of steps, which involves generating a request file on the USB stick, uploading this on a PC to Leica MyWorld which will then send back a response file, and finally transferring this back to the instrument via the USB stick.



There are also changes to the way licensed applications within Captivate can be trialled. In the **Licences** panel, **Start licence trial** allows activating a 14-day trial period for all applications. This trial can be performed once per calendar year and will be reset after 1st January.

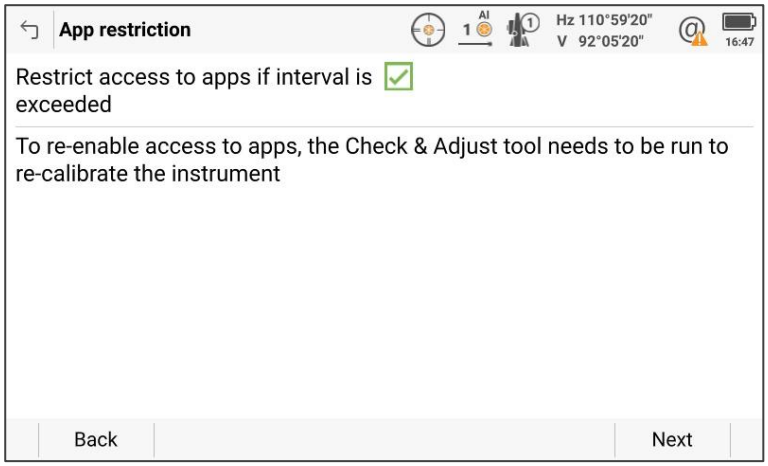


As a final note, there are changes to the way that local apps are licensed on the TS20. On previous generation instruments, each local app could have its own licence, which would have required an individual licence key for each app. On the TS20, the local app licensing is simplified. All local apps (except Machine Control and TPS Monitoring, and apps specific to the Chinese market) are licensed by one subscription – the **Captivate Loadable Apps Subscription 1y**. Purchasing this subscription allows the use of all local apps that are loaded within Leica Captivate.

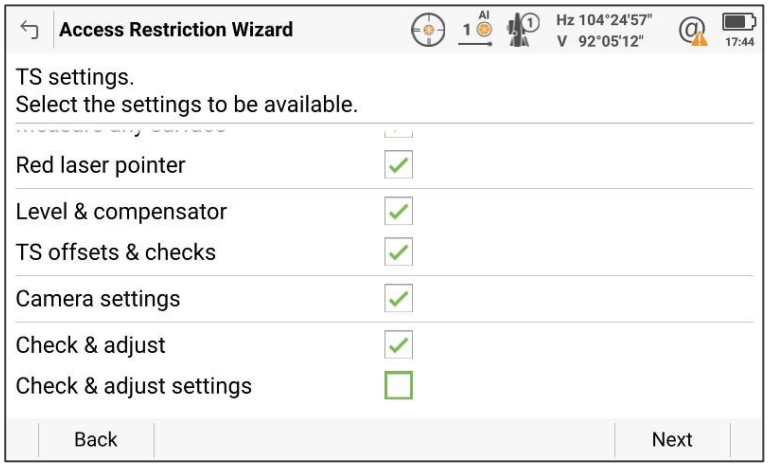
Check & Adjust - restrict access to settings, and apps if interval exceeded

In Leica Captivate v10.00, **Check & Adjust** has been extended, to provide the option to restrict access to apps if the reminder interval has been exceeded. This functionality is enabled by the following changes:

In the **Check & Adjust** settings, in addition to the existing setting to choose the reminder interval, a new page is introduced which contains the setting **Restrict access to apps if interval exceeded**. Enabling this means that if the time since the last-performed Check & Adjust exceeds the configured reminder interval, when trying to access any app where it is possible to measure, a pop-up message will appear, preventing the use of the app. The access to measurement apps is only allowed once a new check & adjust is performed.



In addition, the **Restrict access** tool, found in **Settings/System**, has been extended to include the ability to restrict access to the **Check & Adjust settings**. Within the restrict access wizard, in the **TS settings** page, a new option to uncheck access to the check & adjust settings is introduced. By completing the **Restrict access wizard**, the user restrictions can be applied and a password set to secure access back into the user restrictions.



Together, these features allow, for example, an equipment or site manager to set up the workflow in a way that the site engineers using the instrument can only perform measurements with an up-to-date check and adjust calibration, providing a way of ensuring measurement quality control.

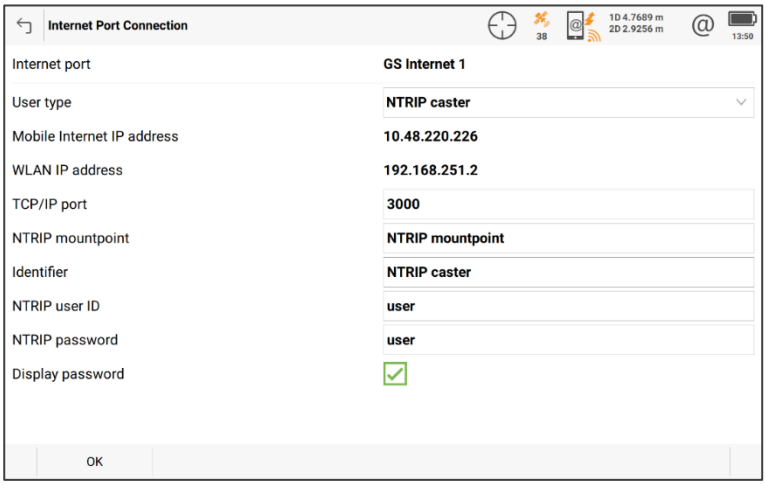
Note, that with this change, the Check & Adjust warning that the reminder interval has been exceed will now also appear on a connected controller or tablet whenever if makes the connection with the instrument.

4 Leica Captivate New Features – GS specific

NTRIP Caster available in Base mode

The **NTRIP Caster** configuration option for GNSS sensors in Base mode was first introduced in Leica Captivate v9.00. However, this functionality was exclusively available through the Webserver, which prevented certain sensors, like the GS05, from being configured as an NTRIP Caster.

With the release of Leica Captivate v10.00 (and SmartWorx Viva v14.00), the ability to configure an **NTRIP Caster** is now available directly through the Captivate user interface. This makes the functionality accessible on all GNSS sensors, including the GS05.



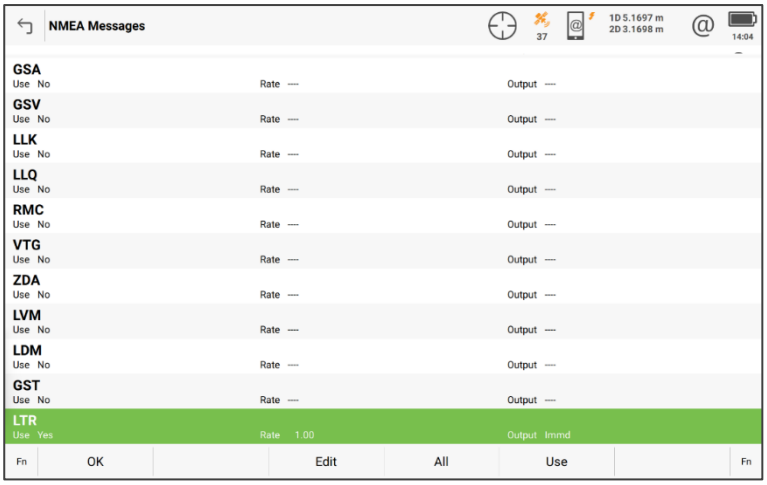
Tilt information in NMEA message

From Leica Captivate v10.00 onwards, **tilt information** is available in a newly created Leica proprietary **NMEA message**, the LTR message.

LTR message includes:

- Status of tilt compensation
- Overall tilt quality
- Tilt value and its quality
- Direction of tilt value and its quality
- GS heading value and its quality

This message can be enabled as usual in the NMEA options available under GS connections (Connection Settings) and through OWI.



Updated Measurement Engine firmware to v7.905

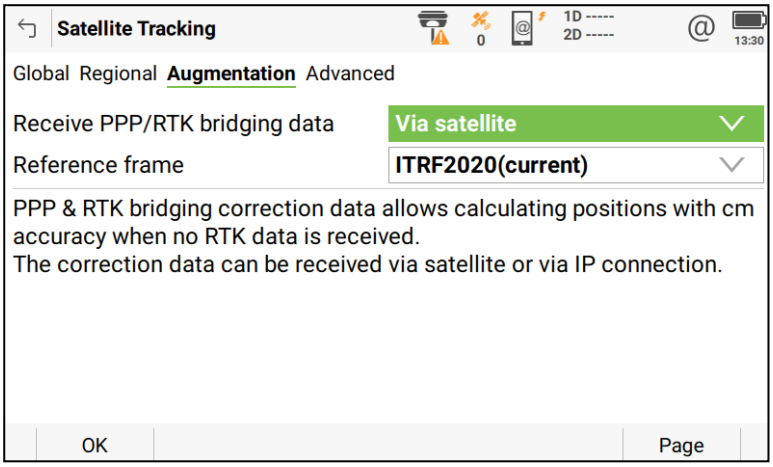
With Leica Captivate v10.00 the **Measurement Engine firmware** has been updated to version 7.905.

This version has optimised channel configuration, improving BeiDou and Galileo tracking performance and reducing the amount of BeiDou cycle slips.

This new firmware version will be automatically installed in all GS10, GS16, GS25 and GS18 with OEM7 boards. For GS07, a manual update via Captivate will be needed.

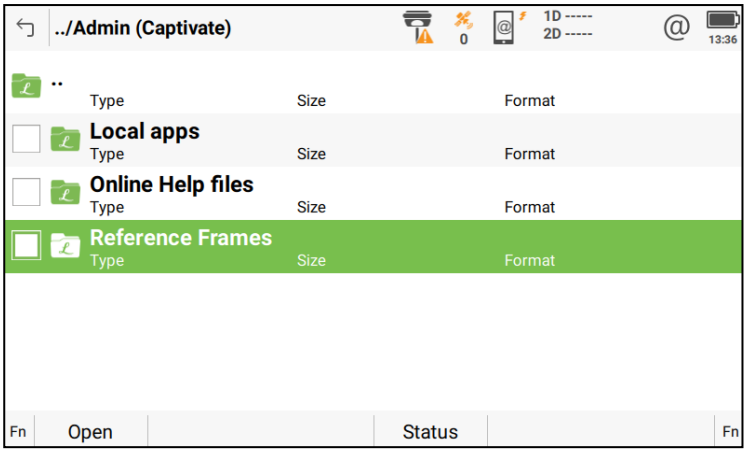
Updated PPP reference frame database REFRMSET.DAT

With Leica Captivate v10.00 the **PPP reference frame** database, which includes the default PPP reference frame transformation parameters, has been updated. This database now includes the reference frame used by HxGN SmartNet, ITRF2020.

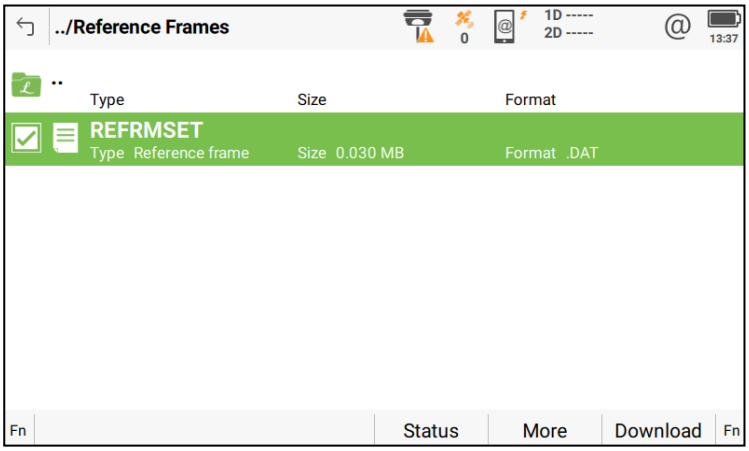


This new PPP reference frame database will be included by default in all new field controllers being delivered with Captivate v10.00.

For all other field controllers currently in the market, the new database can be downloaded directly using the Leica Captivate **Regional configurator** tool. The updated reference frame database is available in the **Admin (Captivate)** folder, within the subfolder “**Reference Frames**”.



Tick the **REFRMSET** file and click download.



The file will be automatically downloaded and stored in the correct location in your device's internal memory, allowing direct use of the new PPP reference frame transformation parameters.

GS05 WLAN connection improvements

Leica Captivate v10.00 introduces significant improvements to the GS05's WLAN connection.

Previously, establishing a WLAN connection could be occasionally unreliable. With the new release, a more robust connection handling approach has been implemented, providing a more stable and dependable connection.

Furthermore, a key enhancement in Captivate v10.00 is the ability to display WPA3 SSIDs when searching for WLAN networks on the GS05, a feature not available in previous versions.

Physical Reference Station Information to GNSS points

Starting with Leica Captivate v10.00, the **Physical Reference Station (PRS)** used to compute VRS baselines is now included in GNSS points.

This enhancement allows users to view PRS information directly in Leica Infinity, making data visualisation more intuitive and simplifying the interpretation of GNSS measurements. Additionally, users can now export GVX files from Infinity

that include PRS baselines, enabling more complete and transparent data sharing across workflows.

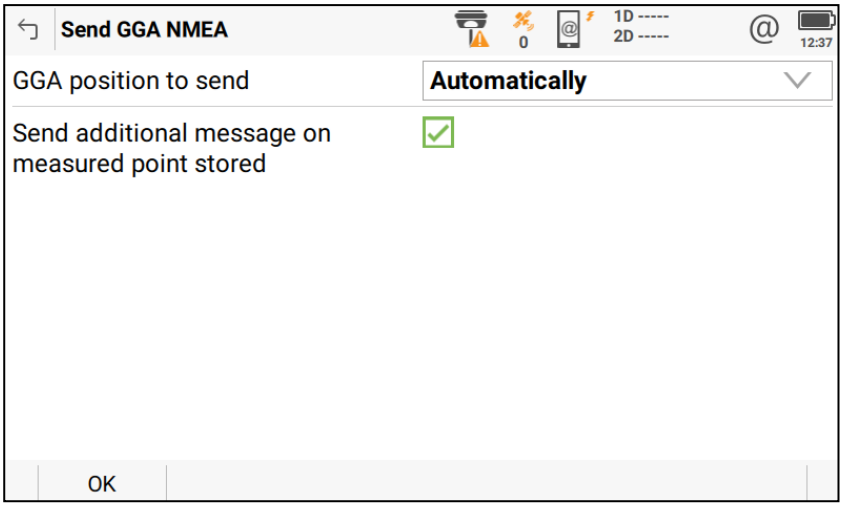
Measured point information sent to GNSS CORS network operators

Leica Captivate v10.00 introduces a new capability that allows GNSS CORS network operators to cross-check survey results delivered by field crews against data received directly from GNSS rovers.

Users can now send measured point information directly to GNSS CORS network operators via the RTK rover settings.

The configuration steps are as follows:

1. Navigate to **All other connections**.
2. Select **GS connections** tab and **RTK Rover** settings.
3. Press **Edit**.
4. Go to the **RTK network** tab.
5. Press **GGA**.
6. Enable the option **Send additional message on measured point stored**.



This enhancement supports improved data validation and transparency between field operations and network operators.

GS05 License Activation before delivery

Currently, when a GS05 GNSS antenna is delivered to a customer, the licences must be activated before the antenna can be used for the first time.

With Captivate v10.00, all licences will be activated prior to delivery, removing the need for customer activation.

5 Leica Captivate Software Improvements

5.1 Software specific

Certain DGN reference files shown in wrong location	Using Captivate on Windows tablets, when attaching certain DGN files as a reference file, and viewing them in the 3D Viewer, they were displayed in the wrong location. This issue is fixed in Leica Captivate v10.00.
Switching between GS+TS mode and TS only mode takes a long time	In certain circumstances, when switching between GS+TS mode and TS only mode, the process took an unusually long time. The issue is improved in Leica Captivate v10.00.
Captivate showed a white screen after an online update	After updating the Captivate firmware using online update, if there were also local app updates, and a specific startup screen was configured, then when restarting Captivate, a white screen would be shown, until the user pressed the Home button. This issue is fixed in Leica Captivate v10.00.
Crash when coding with mandatory attributes and reusing a deleted Point ID	When coding with mandatory attributes, after deleting a point, and then measuring a new point with the same point ID, Captivate would crash. This issue is fixed in Leica Captivate v10.00.
Entering non-printable control character in Point ID causes invalid xml file	When using Captivate with a Windows tablet, it is possible to enter a Point ID with a non-printable control character. When exporting this data to XML, the file becomes invalid because the character is not supported. This issue is fixed in Leica Captivate v10.00.
Changing multiple heights for tilt compensated observations does not update correctly	When using view & edit data to edit the target heights of multiple points, if the points were measured using tilt compensation, although the point coordinates were updated correctly, the displayed target heights were not. This issue is fixed in Leica Captivate v10.00.
Instrument record not written to DBX if serial number has more than 16 characters	When using Captivate on certain 3rd party tablets, if the serial number of the tablet was more than 16 characters, the instrument record was not written to the job DBX files. This led to a message in Captivate indicating the job was no longer accessible. This issue is fixed in Leica Captivate v10.00.
Pressing Store repeatedly during continuous	When using continuous measurements and pressing Store repeatedly and quickly, a pop-up message would appear saying “This key cannot be used at the

measurements would display unexpected message	present time". This prevented the user storing any more points until the message was closed. This issue is fixed in Leica Captivate v10.00.
Using a reference file with a name containing certain characters caused problems with the HeXML file	When a reference file with a name containing certain characters had been attached and used in Captivate, after exporting the job to HeXML format, the resulting file would not be able to be imported into office software such as Leica Infinity or Civil3D. This issue is fixed in Leica Captivate v10.00.
Wrong target height is used after a resection setup in traverse app	In certain circumstances, when using the Traverse app and doing a resection, the entered target height was not used for the calculation, but taken from the last used target height in the Measure app. This resulted in the wrong setup height. This issue is fixed in Leica Captivate v10.00.
Not possible to transfer format file with special character between storage devices	When wanting to transfer a format file between memory devices, if the format file name contained any non-ASCII characters, the transfer would fail. This issue is fixed in Leica Captivate v10.00.
Image groups are exported in XML / DFX export even if setting unchecked	When exporting a Captivate job containing GS18 I image groups to a XML or DXF format, even if the setting to include image groups was unchecked, the image groups would still be exported. This issue is fixed in Leica Captivate v10.00.
Crash when DTM job is created with name of more than 16 characters	When using the Volume calculation app, it is possible to create a surface using points in the job. When creating the surface, a name can be entered which can consist of more than 16 characters. If a DTM is then created and exported, Captivate would crash because the job name was longer than 16 characters. This issue is fixed in Leica Captivate v10.00.
Point stored notification does not appear on remotely controlled TS screen	When a total station was being remotely controlled by a controller or tablet, whenever a point was stored, the 'point stored' notification did not appear on the screen of the total station. This issue is fixed in Leica Captivate v10.00.
Switching between certain apps resulted in outside of DTM symptom	When using an app that can use a DTM, such as Stake line or Stake DTM, when switching to and from certain other apps or panels, it would appear as if the measured position was outside of the DTM. In some cases, the message 'Outside of DTM model' would appear, even if this wasn't true. This issue is fixed in Leica Captivate v10.00.

GS05 disconnects and reconnects when a TS is also connected to CS30 tablet

When a GS05 was connected to a CS30 tablet, in combination with a total station, it could happen that the GS05 would disconnect and reconnect continuously.

This issue is fixed in Leica Captivate v10.00.

Point ID is reset to default template when switching between Stake pts app and Measure app

In certain circumstances, when switching between the Stake points app and the Measure app, the user defined Point ID template was no longer used, and the default ID template was used instead. This meant that the next suggested Point ID was not in the format the user was expecting.

This issue is fixed in Leica Captivate v10.00.

Block insertion points not created for attached reference files

Using Captivate on Windows tablets, when attaching certain DXF files to a job and then viewing the data in the 3D viewer, the block insertion points were not displayed. This meant that the points could not be used, for example, to import them and stake them out.

This issue is fixed in Leica Captivate v10.00.

COGO, Bearing & Distance - Inverse not working when angular units are set to "Bearing"

If the Regional angle ‘Hz angle display’ setting was set to ‘Bearing’, there were issues when using certain COGO calculations. When using ‘Bearing & distance’ method ‘Azimuth’, with the ‘Azimuth’ field highlighted, using Inverse (F2) to compute an azimuth between points would return a blank value.

This issue is fixed in Leica Captivate v10.00.

5.2 GNSS specific

QZSS not used in the RTK positioning

In a single baseline setup using UHF radio, it was observed that QZSS were not used for RTK positioning.

This issue is fixed in Leica Captivate v10.00.

GS05 – Long time-to-fix with single baseline RTK over long baselines

In some cases, the GS05 experienced extended time-to-fix issues, taking several minutes to achieve a fix when using single-baseline RTK over long baselines (approximately 30 km).

This issue has been improved in Leica Captivate v10.00.

6 Obtaining and loading the new software using the online update (CS Field Controller and TS/MS Total Stations)

It is strongly recommended to use the online update to load the new software to the CS Field Controller and TS/MS Total Stations. As a pre-requisite, your instrument must be registered in Leica myWorld.

The online update cannot be used to load the new software to the GS18 and GS05 GNSS receivers.

Once your Controller or Total Station has been registered in myWorld, connect your instrument to the internet. It is recommended to use a WLAN connection.

Open Leica Captivate on the device and navigate to the **Settings – Tools – Update Software** panel. The field **Update software using** contains the option **Online update**. Note that this option is only available if a new version is available online. The instrument will do a check for new versions within the first minutes of being connected to the internet. An SD card needs to be inserted in the instrument (CS20 and TS1x, TS/TM/MS60) for the firmware update to work.

When selecting this option and pressing **F1(OK),** the firmware update is triggered. Should the currently installed CCP license not be valid for the firmware to be installed, a check for new licenses is done first. If any new licenses, such as extended CCPs, are available in Leica myWorld, those new licenses will be downloaded and installed first.

Afterwards, the new firmware file and all additionally loaded apps will be downloaded and once successfully finished, the installation process is started automatically.

- For windows tablets, from Leica Captivate v9.00 onwards the following Microsoft® Windows™ operating system editions are supported:
  - Windows 10
  - Windows 11

7 Obtaining and loading the new software using manual loading (CS20 Field Controller, TS/MS instruments and AP20 AutoPole)

If you prefer not to use the myWorld online update, it is also possible to “manually” load the new software – in this case, please carefully read the notes below.

Obtaining the new software	The new software, language files and apps can be obtained from the following sources: - the myWorld portal - your local Leica Selling Unit or Dealer
Files which need to be obtained for upgrading a CS20 Field Controller	**The following file needs to be obtained to update a CS20 Field Controller - CS20LeicaCaptivate_v10.00.fw** This file contains all Leica Captivate and WinCE languages and apps

Files which need to be obtained for upgrading a TS/MS instrument

The following file needs to be obtained to update a TS/MS instrument -
TSxxMS60LeicaCaptivate_v10.00.fw
TS10LeicaCaptivate_v10.00.fw
TS20LeicaCaptivate_v10.00.fw
These files contain all Leica Captivate and WinCE languages and apps

Files which need to be obtained for upgrading an AP20 AutoPole

The following files need to be obtained to update an AP20 AutoPole -
AP20H_ID_Firmware.swu - for AP20 H and AP20 ID
AP20_T_Firmware.swu - for AP20 T and AP20
Note that for the Captivate v10.00 release, there are no firmware updates for the AP20.

How to load the Leica Captivate files to a CS20 Field Controller or TS/MS instrument

1. Insert your SD card or USB flash drive into your PC or card reader and copy the necessary file to be uploaded to the instrument to the **System** directory of the used memory device. This can be done with Windows Explorer or any other suitable PC software.
2. Insert the SD card or USB flash drive into the CS20 Field Controller or TS/MS instrument and turn on. Ensure the battery is fully charged.
3. From the main menu, choose **Settings** and then choose menu item **Tools** and then choose **Update software**. The **Update software** screen is now visible.
4. In the **File to load** list box ensure the correct file name is visible. If the file name is not visible, then check you have correctly copied the firmware file to the **System** directory of the SD card USB flash drive.
5. Press **F1(OK)** – a message will appear to remind you that the CS20 Controller or TS Total Station will turn off and on during the process. Press **F6(Yes)** to begin the loading process.
6. The loading process will take a few minutes and the CS20 Controller or TS Total Station will turn off and on several times during the process.

How to load the Firmware on an AP20 AutoPole

1. Download the suitable firmware file from https://myworld.leica-geosystems.com to your local PC.
2. Turn on the AP20.
3. Connect the AP20 to the PC using a GEV284 cable.
4. Copy the firmware file onto the root directory of the AP20 memory device.
5. Disconnect GEV284 cable from the AP20.
6. Switch the AP20 off.
7. Switch the AP20 on.
8. The upload starts automatically. During the upload, all three LEDs are flashing consecutively.
9. The update is complete when the Power LED on AP20 is constantly on.

How to load the Leica Captivate files to a TS13 Total Station with a 4-button keyboard

1. Insert your SD card into your PC or card reader and copy the necessary file to be uploaded to the instrument to the System directory of the Sd card. This can be done with Windows Explorer or any other suitable PC software.
2. Insert the SD card into the TS13 Total Station.
3. Ensure the battery is fully charged.
4. Turn on the instrument, the firmware update starts automatically.
5. Check the power LED. If it shows permanent green, the firmware update is finished.

8 Obtaining and loading the new software using manual loading (GS18, GS18 T and I GNSS sensors)

The GS18, GS18 T and I GNSS sensors can only be updated manually. Follow the instructions below.

Obtaining the new software

The new software and language files can be obtained from the following sources:

- the myWorld portal
- your local Leica Selling Unit or Dealer

Files which need to be obtained for upgrading a GS18, GS18 T and I GNSS sensor

The following file must be downloaded to update the GS18, GS18 T and I GNSS sensors:

GS18LeicaCaptivate_v10.00.fw

How to load the Leica Captivate files to the GS18, GS18 T and I GNSS sensors

1. Insert the SD card into your PC or card reader and copy the firmware file to be uploaded to the instrument to the **System** directory of the card. This can be done with Windows Explorer or any other suitable PC software. (it is NOT possible to use a USB stick to update your GS18 T or GS18 I GNSS sensor)
   Or
   Download the firmware file to the PC from which you will update the GS18 T or I GNSS sensor
2. Insert the SD card into the GS18 T or GS18 I GNSS sensor. Ensure the battery is fully charged.
3. Connect the GS18 T or GS18 I GNSS sensor to your PC via a USB cable. Open the web interface by typing **192.168.254.2** into the browser window.
4. Go to **User – Load firmware** to start the firmware update. You can now either browse to the firmware file on your PC or check the box that says the firmware file is on the SD card.
5. Start the firmware update and follow the instructions in the web interface.

9 Obtaining and loading the new software using manual loading (GS05 GNSS sensors)

The GS05 GNSS sensors can only be updated manually. Follow the instructions below.

Obtaining the new software

The new software can be obtained from the following sources:

- the myWorld portal
- your local Leica Selling Unit or Dealer

Files which need to be obtained for upgrading a GS05 GNSS sensor

The following file must be downloaded to update the GS05 GNSS sensors:

GS05_Captivate_Installer_v10.00.exe

How to load the Leica Captivate files to the GS05 GNSS sensors

1. Connect the GS05 GNSS sensor to your PC via a USB cable.
2. Download the GS05 firmware installer and execute it.
3. Once followed all the steps required during the installation, the GS05 starts the update process automatically. LEDs indicate the process.
4. Once the update process is complete, the GS05 instrument reboots automatically.

10 Obtaining and loading the new software using manual loading (CS3x and CC180/CC200 Tablets)

The CS3x and CC180/CC200 Tablets can also be updated manually. Follow the instructions below.

- For windows tablets, from Leica Captivate v9.00 onwards the following Microsoft® Windows™ operating system editions are supported:
  - Windows 10
  - Windows 11

Obtaining the new software

The new software, language files and apps can be obtained from the following sources:

- the myWorld portal (it is possible to manually download the files from the myWorld portal as well as automatically upgrading your controllers and sensors with myWorld)
- your local Leica Selling Unit or Dealer

Files which need to be obtained for upgrading a CS3x/CC200 Tablets

The following file must be downloaded to update the CS3x, CC180, CC200 and the third-party Windows Tablets.

LeicaCaptivate_CS3x-CC180-CC200_v10.00.zip

The file contains Leica Captivate languages and apps.

How to load the Leica Captivate files to the CS3x/CC200 Tablet

1. If the tablet already has Leica Captivate installed with a version prior to v8.00, it will first need to be uninstalled manually within Windows. This can be done by going to **Apps & features**, finding the Leica Captivate application and then selecting **Uninstall**
2. Extract the downloaded .zip file and run the **Setup_x64.exe** file on the tablet
3. Follow the installation wizard instructions

Note that when first upgrading Leica Captivate from a version prior to v8.00, all existing jobs, data files and setting files that existed in the “Leica Captivate” folder will be automatically copied into a new folder called “Leica Captivate_x64”. The folder location can be modified during the installation, by changing the Loadable Application path.

Obtaining sample data

Leica Geosystems provides sample data that can be used with the simulator or the instruments to help you explore the features and apps of Leica Captivate. The sample data needs to be installed using a separate installer. Before using it on a CS20 Controller or a TS Total Station, the data needs to be installed on a simulator first.

During the installation, it is possible to select for which simulators the sample data can be installed (SmartWorx Viva CS simulator, SmartWorx Viva TS simulator, Leica Captivate TS/MS simulator, Leica Captivate CS simulator and Leica Captivate CS x64 simulator).

The sample data installer can be downloaded from myWorld. An installation guide is provided along with the sample data installer, though the installation process is very easy to follow.