- when it has to be right

Leica Geosystems

Leica Captivate v9.00
Software Release Notes

Product	Leica Captivate Field Controllers: CS20, CS30, CS35, CC180, CC200 Total Stations: TS10, TS13, TS16, TS60, TM60, MS60 GNSS Sensors: GS18 T, GS18 I, GS18, GS05
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Leica Geosystems AG
Heinrich-Wild-Strasse
CH-9435 Heerbrugg
Switzerland
www.leica-geosystems.com

Available via: https://myworld-portal.leica-geosystems.com/

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1 Leica Captivate v9.00 Release Notes - Introduction

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

General information

There is a Leica Captivate v9.00 release for the following hardware:

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

Customer Care Product (CCP) dates

The Leica Captivate software version 9.00 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 01.10.2024.

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 v9.00.

Do be aware that a new library has been introduced for the handling of CAD reference files on Leica Captivate v9.00 64-bit versions running on Windows tablets. For Leica Captivate running on CS20 controllers or total stations, the existing library continues to be used. Note that when transferring jobs between different versions, the CAD reference files may need to be reattached to be visible in the 3D viewer. Please see the section in the New Software Features chapter for more information.

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

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 9.x on a Leica Captivate GS Sensor or TS Total Station, the CS20 Controller or CS30/CS35/CC180/CC200 Tablet must also run an 9.x version to be compatible.

For the new Leica Captivate v9.00, all Leica Captivate GS Sensors and TS/MS Total Stations must be updated to a version 9.x to be compatible with a CS20 Controller or CS30/CS35/CC200 Tablets running v9.00 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 v8.x	Leica Captivate v9.x
TS MS GS	All versions prior to SmartWorx Viva v6.0 and higher than v5.60	Fully compatible		Not compatible	Not compatible
	…				
	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 v12.x	Not compatible		Fully compatible	Not compatible
	SmartWorx Viva v13.x	Not compatible		Not compatible	Fully compatible

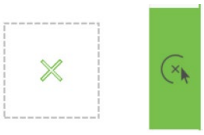
Security Update

Due to a security update related to license keys within the firmware it is not possible to downgrade a total station to a lower version than Leica Captivate v8.51 once Leica Captivate v9.00 is loaded in the instrument.

2 Leica Captivate - New Software Features

8th

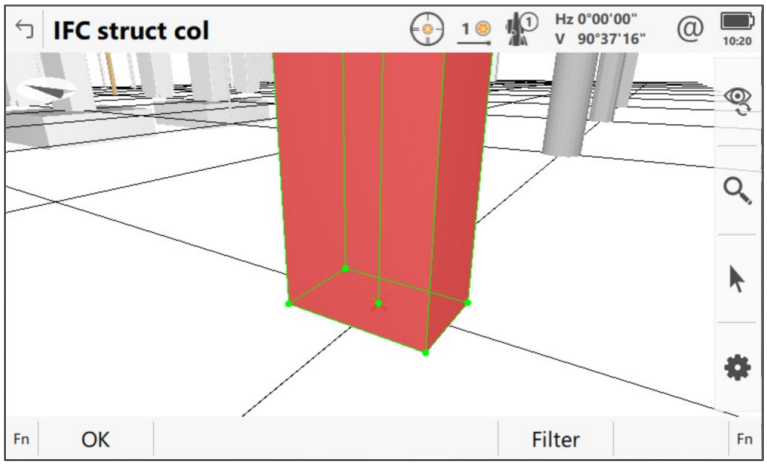
Improvements to snapping

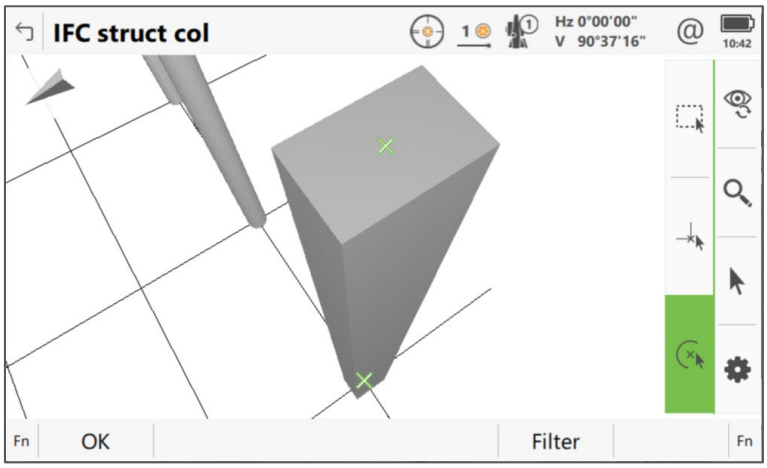


In Leica Captivate v8.50, a new snapping tool was introduced to allow specific points of interest to be easily extracted from attached reference files.

One of the tools, the **Snap to centre point**, allowed snapping to the centre of circular objects such as the centre of a CAD circle, or the centre of the end of a circular column within an IFC file. The snapping tools were available in the **3D viewer** app, as well as the 3D viewer page of **View & Edit data** and the **Measure** app.

In Leica Captivate v9.00, the snapping tool has been extended. Firstly, the **Snap to centre point** tool now includes the ability to snap to the centre of closed polygon objects, such as CAD rectangles or hexagons, as well as to the centre of a rectangular column end within an IFC file. A snap marker can be created at the centre of a column end by tapping near the end of the column, allowing a point to be created in the database. For IFC columns, this functionality is available only if the object shape is of the type 'extruded' and Captivate has already interpreted the centre node.





In addition, the snapping tools are now available in the 3D viewer of more apps, including **Setup**, **Stake points**, **COGO**, **Create pts & lines,** and all other apps where CAD data was previously selectable in the 3D viewer.

This means it is now easier and more efficient than ever before, to extract specific points of interest from attached reference data, when needing to interpret and stake out design data in the field.

Job handling - New library to handle CAD reference files

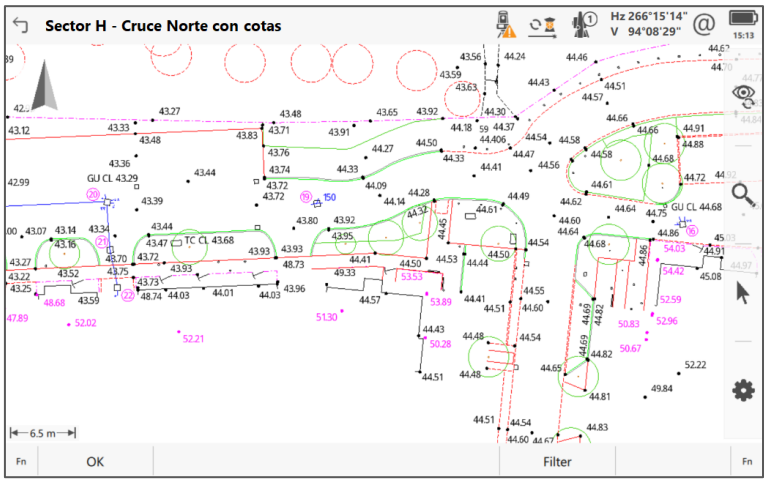
Since the first version of Leica Captivate, the same library has been used for the handling of CAD reference files such as DXF, DWG, DGN or SHP files. The library controls the attaching of CAD data to a job, and how the data is displayed and selected in the 3D viewer.

In Leica Captivate v9.00, a new library to handle CAD reference files on Windows 64-bit tablets is introduced. The new, open-source ODA library brings several improvements when attaching a CAD reference file in Captivate.

Firstly, when choosing the Reference file to attach, Captivate now detects the insertion units defined within the file, and by default will attach the file using these units. As before, a different unit can also be chosen before the file is attached.

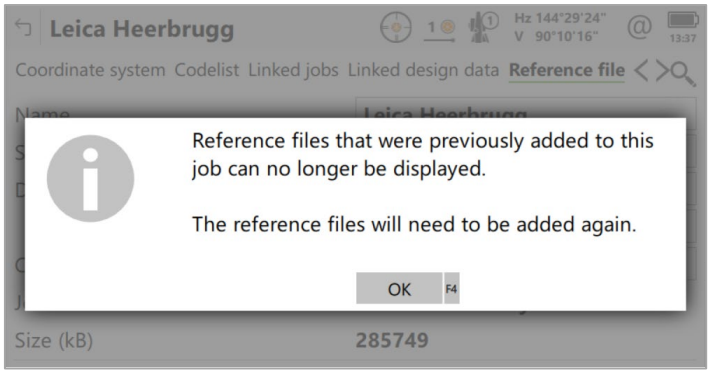
Secondly, the new library is more efficient, as it utilizes the original CAD file instead of converting it to a specific Leica format. This means that the time needed to attach the file and display the data is significantly reduced in most scenarios. Attaching a CAD reference file will now place a copy of the original CAD file into the Map files folder of the job.

The third set of improvements include better interpretation of line geometry, better support of CAD texts, as well as the ability to read and apply the visibility status of CAD layers defined within the file.

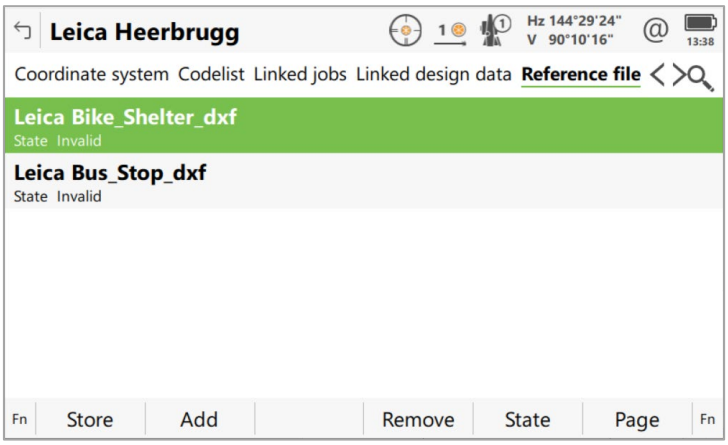


Be aware that Captivate running on a CS20 controller or total station continues to use the existing library and does not support the new ODA library. If a CAD file is attached to a job using one of these devices, and then transferred to a Windows tablet with Leica Captivate v9.00 onwards, initially the CAD file will not be visible in the 3D viewer. The same situation will also occur if a CAD file was attached to a job using a Windows tablet with any version of Leica Captivate v8.50 or earlier, and then transferred to a Windows tablet with v9.00.

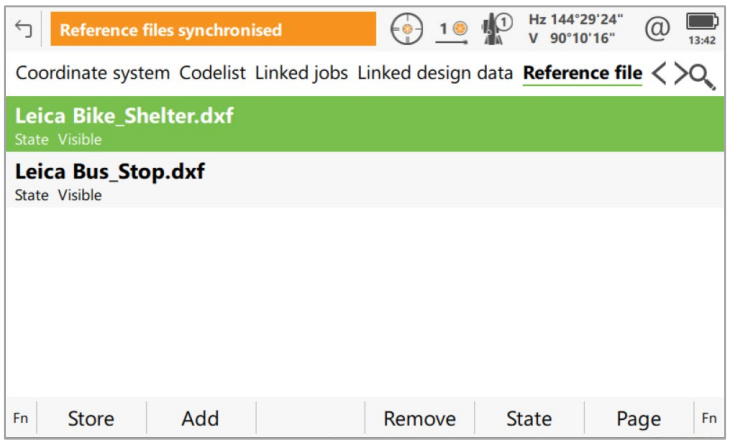
In case the CAD file was attached to a job before Leica Captivate v8.50 and is now used in a Windows tablet with v9.00, when accessing the **Job Properties**, **Reference files** page, the following message will inform that the original reference files are no longer available and need to be added again:



In the list of attached Reference files, any CAD reference files that need to be re-attached will be shown with the status **Invalid**. The files can then be browsed for and attached using **(F2) Add**. The CAD reference files can then be used as normal in the 3D viewer.



In case the CAD file was attached to a job with Leica Captivate v8.50 and is now used in a Windows tablet with v9.00, when accessing the **Job Properties**, **Reference files** page, a notification will indicate that reference files have been synchronised. This is because in Leica Captivate v8.50, any attached CAD reference file was also copied to the Map files folder of the job, and so Captivate v9.00 detects the file and automatically attaches it to the job, using the units defined in the file.



As an additional benefit, from Leica Captivate v9.00 onwards, when attaching a CAD reference file, all CAD files found in the Map files folder of any job in any storage device are also listed, in addition to the files in the Data folder. This makes it easy to create a new job and attach a CAD file from another job.

6th

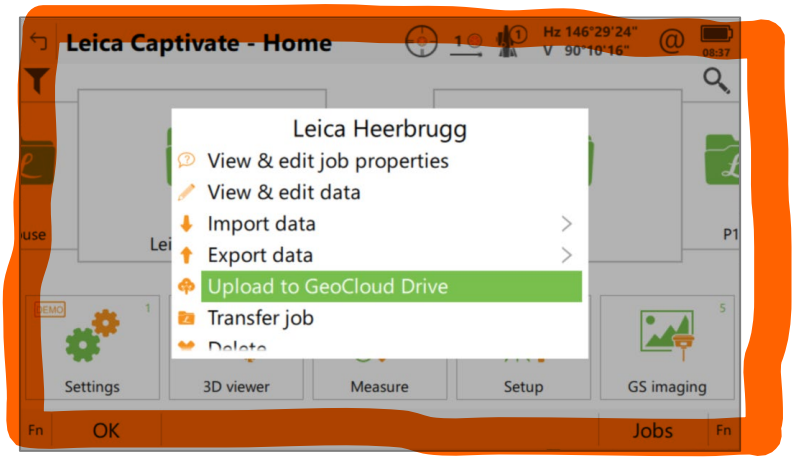
GeoCloud Drive – Directly upload jobs and exported files to the cloud

With Leica Captivate v8.10, the **GeoCloud Drive** service, part of HxGN GeoCloud, was introduced. **GeoCloud Drive** is a cloud-based data transfer and storage service, enhancing field-to-office connectivity.

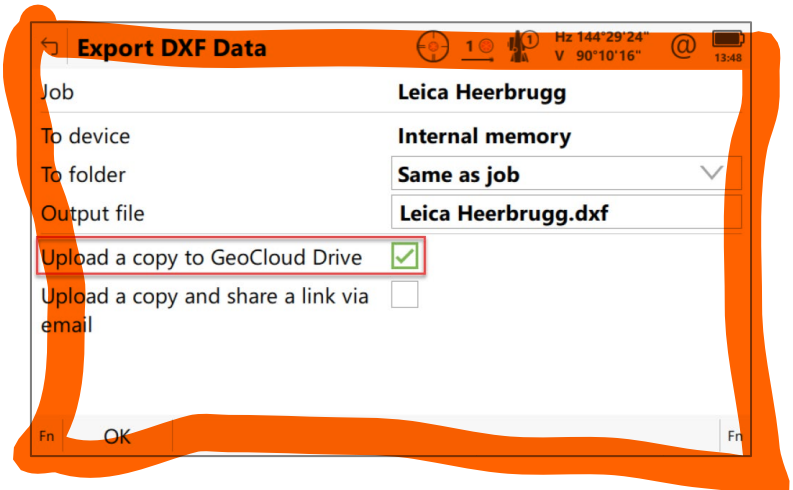
Previously, to upload a job or exported data to **GeoCloud Drive**, it was necessary to access the **GeoCloud Drive** tool, choose the type of data to upload, navigate to the recently completed job or exported file, and then choose the project to upload to. This process required several steps to complete the upload.

In Leica Captivate v9.00, the ability to directly upload a job or exported data to **GeoCloud Drive** has been introduced.

Firstly, a new option within the job context menu has been introduced - **Upload to GeoCloud Drive**. This allows the chosen job to be selected for upload, before automatically accessing the **GeoCloud Drive** tool.



Secondly, when exporting data from a job in any format, a new option to **Upload a copy to GeoCloud Drive** has been introduced. This allows a copy of the exported data to be selected for upload, before automatically accessing the **GeoCloud Drive** tool. This can be used in combination with the option to upload a copy of the exported data and share a link via email.



With both new options, the selected job or exported file will be selected for upload, and the **GeoCloud Drive** tool automatically opened, where the project can then be selected, and the upload completed. Note that the HxGN GeoCloud authentication will need to be performed when accessing the tool for the first time.

The new options to directly upload jobs and exported data to GeoCloud Drive ensure an easier and quicker transfer of data, further optimising the dataflow connectivity between the field and office.

Leica Exchange - Phase out of the service

Leica Exchange was a cloud-based service that allowed the transfer of data, such as jobs, reference files and other objects, between the field and the office.

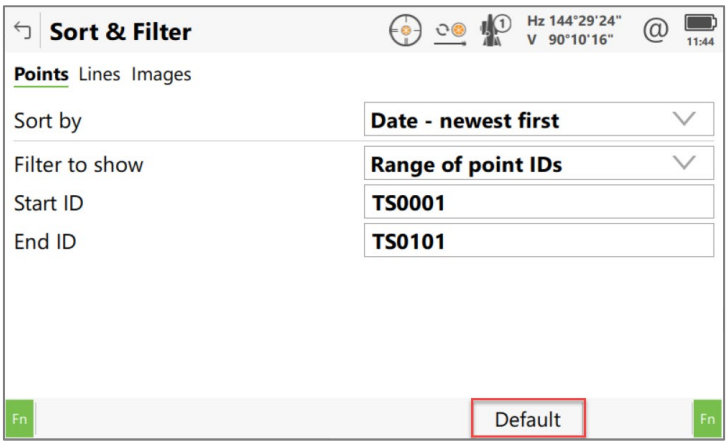
With Leica Captivate v8.10, the **GeoCloud Drive** service, part of HxGN GeoCloud, was released, further enhancing the functionality that Leica Exchange offered.

The Leica Exchange service has now been phased out, and therefore removed from Leica Captivate v9.00 onwards.

Data filter - Reset to default

In Leica Captivate v8.30, a data filter status icon was introduced, allowing easier identification of jobs or datasets that have a data filter active. A new hot key, **Reset data filter,** was also introduced to provide an easy way to reset the data filter back to the default value.

In Leica Captivate v9.00, the data filter can now also be reset back to the default value using a function key. When in the **Sorts & Filter** panel, pressing **(Fn F5) Default** will reset the point data filter of the working job or dataset back to **Highest point class only**.



3 Leica Captivate New Features - TS specific

3rd

Smartpole – Automatic GS & TS measurements in Setup app

The Leica SmartPole is an existing concept that combines a GS sensor mounted on the pole together with the prism, allowing integrated measurements with both total station and GNSS sensors. With easy switching between TS and GS mode, the SmartPole enables both modes to be used together during a total station setup. In previous versions of Leica Captivate, when performing a setup with a SmartPole, it was needed to switch into each mode and make the measurements individually.

In Leica Captivate v9.00, during target measurements within the Setup app, a new option allows GS & TS mode measurements to be performed automatically with a single press of a button. The option is available for the setup methods of Known backsight, Multiple backsights, Resection and Transfer heights.

During the setup, in each **Measure Target** panel, accessing the **(F4) GS** function will reveal a new function called **(F4) Meas+TS**.

Pressing **(F4) Meas+TS** initiates the GS measurement and then, once stored, automatically initiates the TS measurement.

Automating the GS and TS measurement sequence for each measure target point ensures that focus can be kept on the ongoing setup and speeds up the setup completion.

2nd

SmartPole - GS assisted target search

When working with a robotic total station, to find and lock to the target, there are several target search methods available, such as fine search or PowerSearch. Depending on the environment, total station orientation and the target position, searching and finding the target could take several seconds, especially in busy areas where the instrument may detect other potential targets during the search.

With Leica Captivate v9.00, when using a SmartPole (a GNSS sensor mounted on the pole together with the prism), a new search option **GS search** enables the total station to automatically turn directly to the SmartPole target position, before searching for the prism.

The GS search functionality is available when using the combined GS & TS mode, and the GS has a suitable position available, indicated in the Aim & Search icon.

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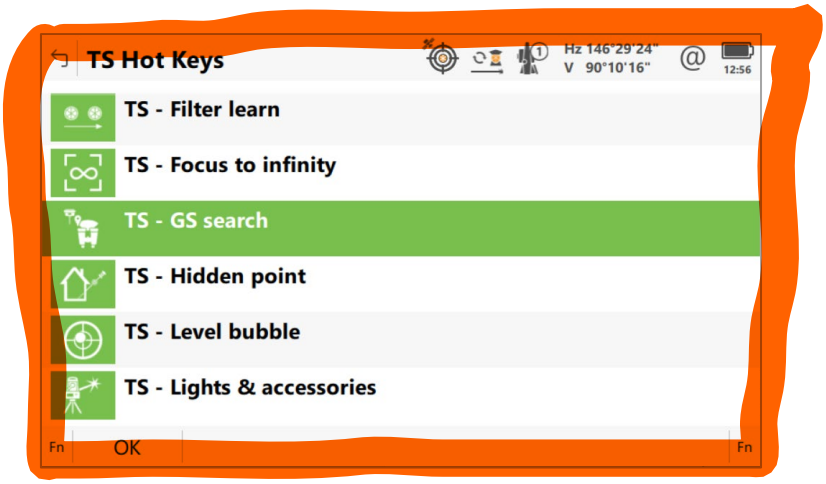
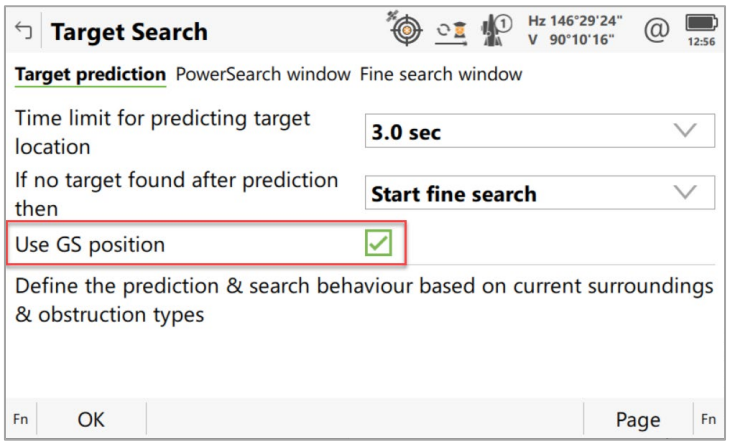
A **GS search** can be triggered on demand using a Hot key, or automatically after losing lock and prediction has ended.

To trigger a GS search on demand, it must be first configured as a **TS Hot key** or **Favourite**.



After triggering a GS search, the instrument will directly turn and point to the prism using the GNSS sensor position. If the GNSS sensor has a fixed position, a fine search will be used to lock to the prism. If the GNSS sensor has a code or navigation position, and the instrument has PowerSearch, a CubeSearch will be used to lock to the prism.

A **GS search** can also be used automatically when re-locking to the target, after losing lock and prediction has ended. For the “If no target found after prediction” options of **Start fine search**, and **Start CubeSearch**, the additional option **Use GS position** can be enabled.



With this enabled, after losing lock to the target, and the configured prediction time has finished, the instrument will then use the GS search to directly turn and point to the prism, and then lock to the prism using the configured search method.

To use GS search, the working job must be configured with local grid coordinate system, and the total station set up correctly within this system to ensure both GS & TS measurements are aligned.

This new feature makes it much quicker to search and lock or re-lock to the target, and ensures the right target is found every time, saving time in the field and maximising productivity.

1st

Allow switching between apps while measuring with continuous distance

In previous versions of Leica Captivate, while in an app, it was possible to switch between different apps, using a hot key or favourite shortcut, or in some cases a designated function key. When using continuous distance measurements, switching to a different app was only possible by first stopping the measurements. When using an AP20, this meant stopping and losing the tilt initialisation and spending time re-initialising once the app was switched.

Leica Captivate v9.00 allows switching between apps while continuous distance measurements are active. This means that the measurements do not need to be stopped, allowing a more seamless app switch, especially when using the AP20, which can now maintain the tilt initialisation.

It is now possible to switch between the **Measure**, **Stake points**, **Stake DTM**, **Stake pts&DTM**, **Stake to line** and **Measure to line** apps, whilst continuous distance measurements are active.

This improvement means that switching apps is now as simple and quick as pressing a hot key, allowing to maintain a seamless workflow and keep focus on the task in hand.

Monitoring prisms included in Captivate as default targets

In previous versions of Leica Captivate, to measure to a Leica L-bar monitoring prism or a large diameter monitoring prism, it was needed to create a new user-defined target in Captivate and enter the correct prism constant.

From Leica Captivate v9.00, the Leica L-bar monitoring prism (GMP004 and GMP104), and the large diameter monitoring prism (GPR112) are now included in the list of targets by default.

4 Leica Captivate New Features – GS specific

The new GS related features released with Leica Captivate v9.00 can be used with a Leica GS18, GS18 T, GS18 I and GS05 using Leica Captivate v9.00 and with Leica Viva GS10, GS14, GS15, GS16 and GS25 sensor using SmartWorx Viva v13.00.

7th

Support of new GS05 GNSS sensor

From Leica Captivate v9.00 onwards, the new GS05 GNSS sensor will be supported as a GNSS sensor on the CS20, CS30, CC180 and CC200 Field Controllers.

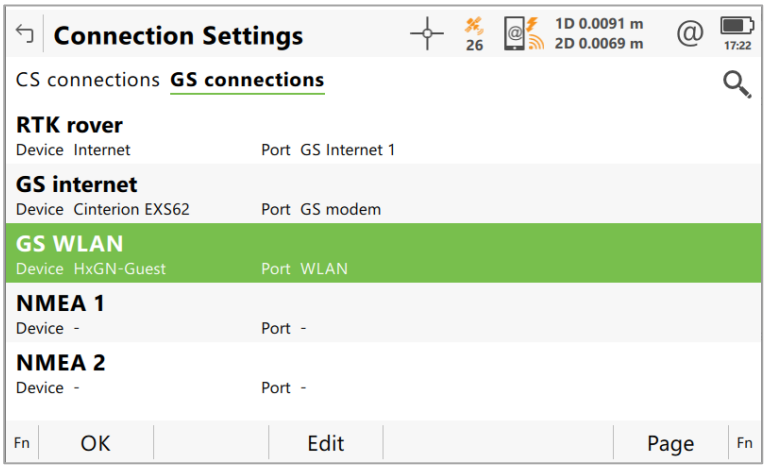
The next points outline all the new functionalities introduced in Captivate v9.00 due to the release of the GS05 GNSS sensor.

GS05 Internet via WLAN

In previous versions of Leica Captivate, establishing a GS internet connection via WLAN was not possible.

From Leica Captivate v9.00 onwards, WLAN connectivity is now supported for GS internet connections using a GS05 GNSS sensor. This new connection option is available in both rover and base modes.

The connection can be selected under **All Other Connections**.



For the GS05, both *GS WLAN* and *GS Modem* can be configured as simultaneous internet sources. These two options are classified as **GS Internet** options and are utilized when **GS Internet** is used as a port, such as for RTK data reception.

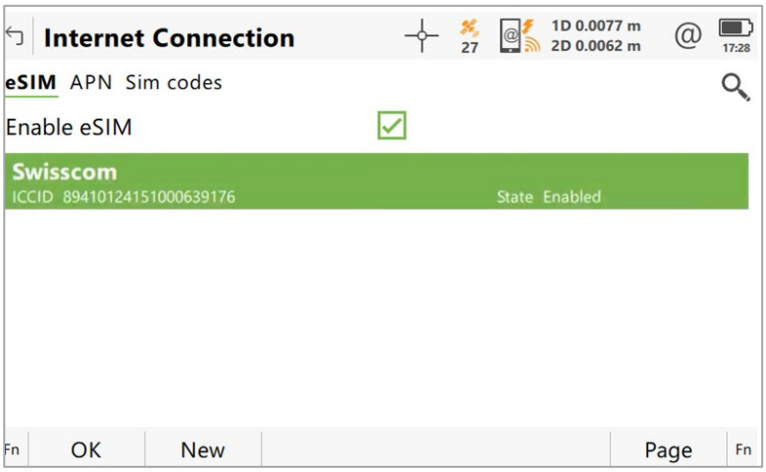
The introduction of **GS05 WLAN** enables new possibilities, such as setting up a simple NTRIP or TCP/IP server, synchronizing the GS05 licenses, or activating eSIM profiles, which require an internet connection for activation. Note that the GS WLAN will not provide internet access for the connected controller or tablet.

GS05 eSIM configuration

Leica Captivate v9.00 allows loading and utilizing eSIM profiles on the GS05 GNSS sensor (LTE variants only). Configurations can be managed in the **Control** options in the **GS Internet** menu.

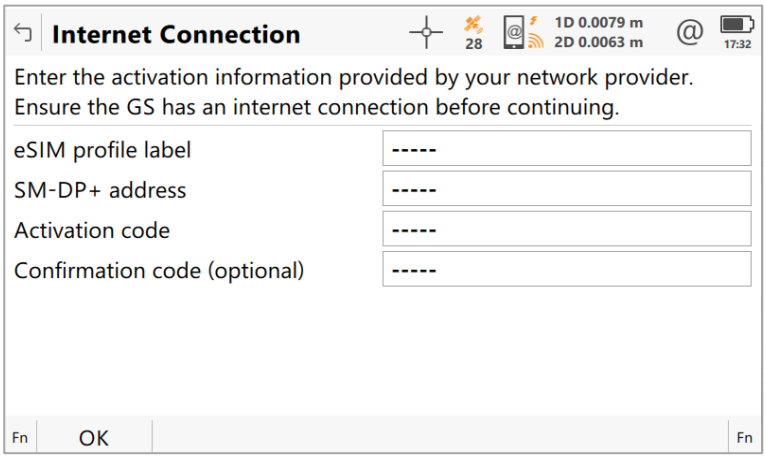
In the **eSIM tab**, users can manage profiles and their respective states, including:

- Enabling and disabling eSIM
- Viewing existing eSIM profiles
- Creating, editing, deleting, and navigating eSIM profiles



When adding a new profile, some information will be required. Below is a summary of the key terminology:

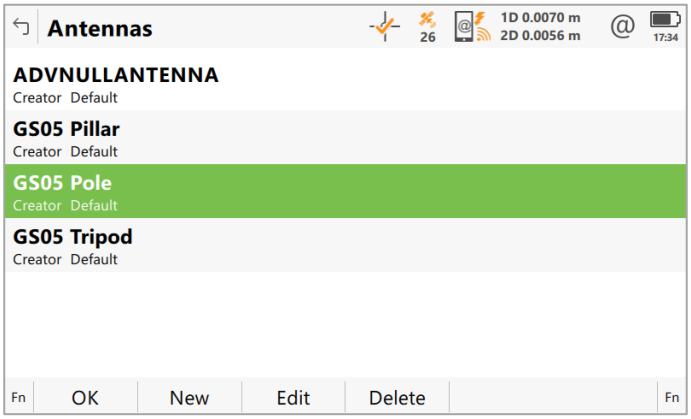
- *eSIM Profile Label*: The name assigned to the profile.
- *SM-DP+ Address*: A unique identifier specifying the address of the subscription management server used to activate the eSIM.
- *Activation/Confirmation Code*: The code required to activate and confirm the profile.



Be aware that the eSIM configuration is currently not possible within the RTK Rover Wizard. To use the RTK Rover wizard, the eSIM will need to be configured before, in the GS Internet menu.

GS05 antenna profiles

Captivate v9.00 introduces three new antenna profiles for the GS05: GS05 Pole, GS05 Pillar, and GS05 Tripod.



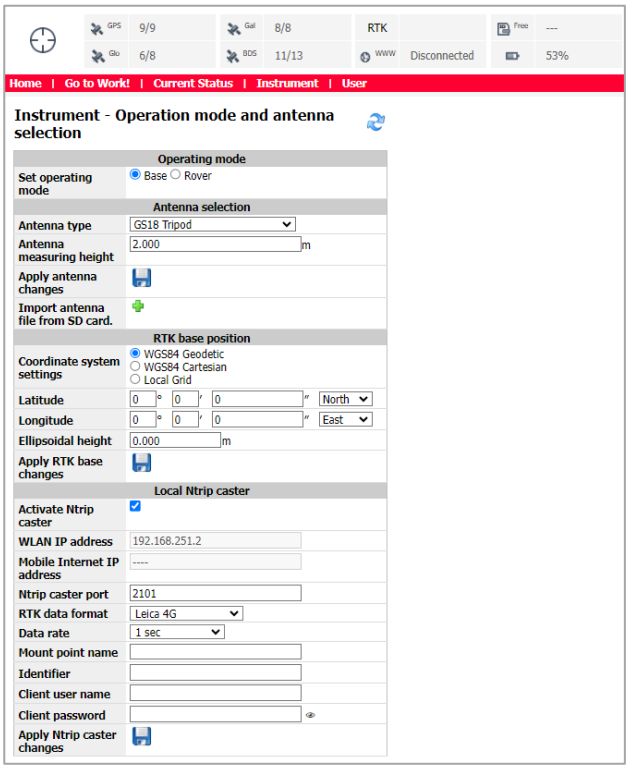
Please note the usage of the GAD54 adapter. A user-defined antenna profile is required to compensate for the 5 cm vertical offset introduced by the GAD54. If the GAD54 is used with a tripod, the vertical offset in the user-defined antenna profile must account for both the 5 cm offset from the GAD54 and the 36 cm from the tripod carrier.

5th

NTRIP Caster available in Base mode

Leica Captivate v9.00 for GS18 (and SmartWorx Viva v13.00 for GS10/GS25/GS16) introduces the option to configure an **NTRIP Caster** when the GNSS sensor is in Base mode. This functionality is available exclusively through the Webserver and requires the *RTK Reference Station* license to be enabled on the sensor.

The NTRIP Caster settings are added to the operation mode and antenna selection page:



Once all settings are configured, the NTRIP Caster becomes fully functional without any further input needed from Leica Captivate on a controller/tablet. The NTRIP Caster receives RTK corrections from the sensor's NTRIP Server and supports up to 10 NTRIP Clients, which can connect using the displayed GS18 WLAN IP address or, if configured, the Mobile Internet IP address, and can access to a single mount point.

Please note that upon reconnecting to Leica Captivate on a controller/tablet, the NTRIP Caster settings will be deleted if no configuration is set in *Base RTK 1/2*. If a configuration is set, the NTRIP Caster settings will remain enabled.

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This functionality opens up new possibilities, particularly in drone applications, where Leica GS sensors can be used as a Base station to provide RTK corrections to drones.

4th

GS18 T/I Tilt performance improvements

From Leica Captivate v9.00 onwards, enhancements to the inertial navigation algorithms have improved the quality of tilt-compensated RTK measurements. With these improvements, the additional horizontal uncertainty under open sky is reduced to less than 2 mm + 0.3 mm/° tilt down to 30° tilt. The user manual and datasheet have been updated accordingly.

These improvements also positively affect the overall quality of Image Groups recorded with the GS18 I.

5 Leica Captivate Software Improvements

Setup on the fly – The setup cannot be resumed when using linked jobs	When trying to resume an open setup and the working job had a linked job, Captivate froze and the setup could not be finished. This issue is fixed in Leica Captivate v9.00.
Switching sensor mode in CS20 – Captivate freezes when switching to TS mode	When a CS20 was connected via WLAN for the very first time to a GS18 sensor, and RTK corrections were received, Captivate froze when switching the CS20 sensor mode to TS. This issue is fixed in Leica Captivate v9.00.
TS IP address - Static IP address is overwritten after a restart	When a static IP address was set in a TS device, Captivate overwrote it each time the device was restarted. This issue is fixed in Leica Captivate v9.00.
TS setup – Status bar does not show GS information	Previous Leica Captivate versions did not show GS related quality information in the status bar during a setup using SmartPole. Only the Hz and V angle information was displayed, even after switching to the GS mode. This issue is fixed in Leica Captivate v9.00.
Stake points – Next point to stake is not instantly available	In previous Leica Captivate versions, there was a significant throughput time in Stake points app till the next point to stake was available and Leica Captivate started to show the delta values to it. This issue is fixed in Leica Captivate v9.00 and the next point to stake and the deltas are offered as soon as the design point is selected.
Stake points – Height & Cut/Fill info lost when updating the target height of a measured point	When editing an already measured point from the Stake point app, and updating the target height value, the calculated cut/fill and height were lost. This issue is fixed in Leica Captivate v9.00.
Stake/Measure to line – Captivate crashes when importing a line from a reference file	In previous versions of Leica Captivate, when using the Quick line method and trying to import a line from a reference file in the map view, the app could crash. This issue is fixed in Leica Captivate v9.00.

COGO Area division - First point of a closed line cannot be used as rotation point	When using the Swing line (% and area) method of COGO Area division app, the division could not be calculated if the rotation point of the swing line is either the first or the last point of a closed line. This issue is fixed in Leica Captivate v9.00.
Settings – General cannot be entered	In previous Leica Captivate versions, after coming back from some specific panels, such as the layer management settings, the general settings were not accessible. This issue is fixed in Leica Captivate v9.00.
Codelist – Attribute values wrongly shown in Infinity after measuring points in Captivate	If a codelist created in Leica Infinity contained codes with some pre-defined attribute values, and this was used in Leica Captivate, it could happen that the values defined while measuring points were wrongly displayed once the job was imported back into Infinity. This issue is fixed in Leica Captivate v9.00.
Reference files – Property set information missing from IFC file	Previously in Leica Captivate, when an IFC design file was attached to the working job, the property set of IFC objects was not shown when checking the information of the IFC geometries in the map view. This issue is fixed in Leica Captivate v9.00.
GeoCloud Drive – Limited data downloading speed in CS20 LTE variants	CS20 LTE variants showed a reduced downloading speed when the controller was connected to the Internet using the internal modem module. This caused longer download times and was especially noticeable during GeoCloud Drive download processes. This issue is fixed in Leica Captivate v9.00.
GeoCloud Drive – Cannot download files with extended ASCII characters	Previous versions of Leica Captivate did not allow downloading files containing extended ASCII characters when using the GeoCloud Drive service. This issue is fixed in Leica Captivate v9.00.
GeoCloud Drive – The option to stay logged in GeoCloud Drive requires authentication	GeoCloud Drive offers a setting to remain logged in the cloud service, allowing subsequent access to the service without needing to re-enter authentication credentials for 30 days. In previous versions of Leica Captivate, after 30 days, the authentication credentials needed to be entered every time the GeoCloud service was accessed, instead of only once. This issue is fixed in Leica Captivate v9.00.

Selected stake navigation settings now apply to camera view

In previous versions of Leica Captivate, when using Stake applications and using the live TS camera view, the selected stake navigation settings were ignored and forced to be: Help me navigate - Facing instrument, and Navigational arrow types - Direction & Distance.

In Captivate v9.00, the user-selected navigation settings are also applied to the camera view, ensuring all views utilise the same navigation settings.

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.

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 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.

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 web site - 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_v9.00.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_ v9.00.fw** **TS10LeicaCaptivate_ v9.00.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 v9.00 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 web site
- 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_v9.00.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 web site
- 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_v9.00.fw

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. Open a file explorer in your PC and navigate to the folder called Update.
3. Copy the GS05 firmware package into the folder called Update.
4. The GS05 starts the update process automatically. LEDs indicate the process.
5. Once the update process is complete, the GS05 instrument reboots automatically.

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

The CS3x, CC180 & CC200 Tablets can also be updated manually. Follow the instructions below.

Obtaining the new software

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

- the myWorld web site (it is also possible to manually download the files from the myWorld web site 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/CC180/CC200 Tablets

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

LeicaCaptivate_CS3x-CC180-CC200_v9.00.zip

The file contains Leica Captivate languages and apps.

How to load the Leica Captivate files to the CS3x/CC180/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.