

Leica iCON Field v8.2

Software Release Notes

Product iCON site, iCON build
Date 3rd June 2024
From iCON Field software team

i **co** **n**

intelligent CONstruction

Version 8.2

Download <https://myworld.leica-geosystems.com/irj/portal>

These Release Notes contain important information about

Software	Version	Maintenance Date
iCON build	8.2	20.05.2024
iCON site	8.2	20.05.2024

iCON Software is protected and can only be loaded onto instruments with a valid software maintenance date.

Please do take your time to read these Release Notes!

The release notes contain information about the new iCON Field software and application programs. Please read the release notes in conjunction with the User Manual delivered with every instrument.

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1. New version iCON Field software v8.2

We are pleased to announce the release of the new iCON Field software v8.2. This version of iCON Field software contains important improvements and bug fixes.

1.1 Latest iCON firmware versions

It is recommended to always use the latest available firmware version for iCON Field software and sensors.

- iCON build v8.2.0.3162
- iCON site v8.2.0.3162
- iCON gps 30 v7.813
- iCON gps 60 v6.8.0
- iCON gps 70 v7.94.44
- iCON gps 160 v2.3.0
- iCON iCT 30 v8.0.2.1851
- iCON robot 70 v8.0.2.1851
- iCON robot 80/S v8.0.2.1851
- iCON builder 50/70 v8.0.2.1851
- Leica Builder v2.12
- iCON robot 50 v7.13

1.2 iCON robot 60 v4.5.0

- iCON builder 60 v4.5.0

Captivate sensors

- TS16 / MS60 v8.30

On machine sensors (iCON site excavator)

- SJB21 v4.2.2
- iCON gps 100 v3.0.0
- CR50 v3.0.0

It is recommended to upgrade all iCON system components to the latest available software version.

If the iCON system is running on v6.5 or older it is recommended to upgrade to v6.7/6.8 first and afterwards proceed upgrading to v8.2.

1.3 Customer Care Product (CCP) date

The iCON Field software v8.2 can only be loaded onto iCON Field equipment which has a valid **CCP date of 20th of May 2024 or later.**

1.4 Download new versions

The new version of iCON Field software can be downloaded from the iCON section within Leica myWorld.

1.5 Training Material for iCON Field

Since iCON Field v1.5, many training videos have been introduced to demonstrate the usage of different applications but also to show how the software can be configured to the customer's needs.

The videos can be downloaded from the iCON section within Leica myWorld.

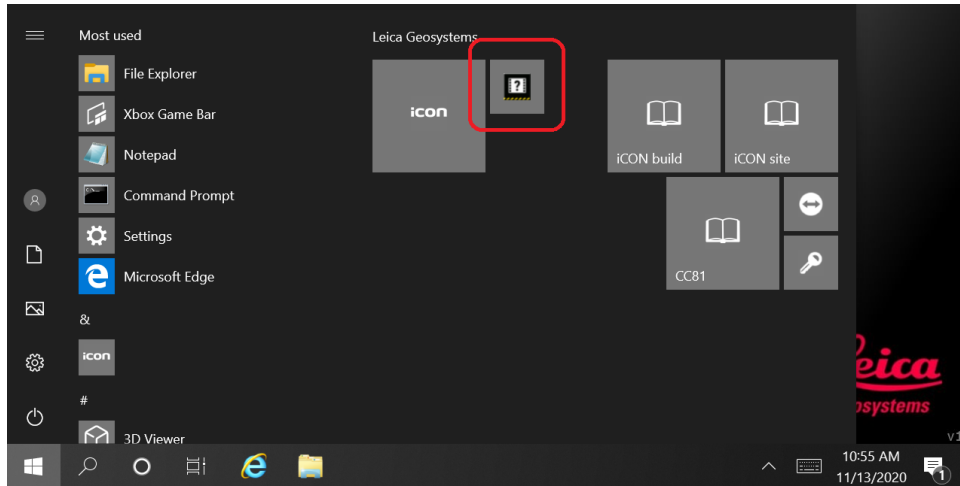
All videos are also available from the Leica YouTube channel.

http://www.youtube.com/playlist?list=PL0td7rOVk_IVTTMQZVWJn6t8qw-zPVwLF

New training videos have been created and are available from:

<https://leicageosystems.how/usingiconsite>

The new videos are accessible on iCON field controllers from the Windows start menu providing extra help to customers on the field.

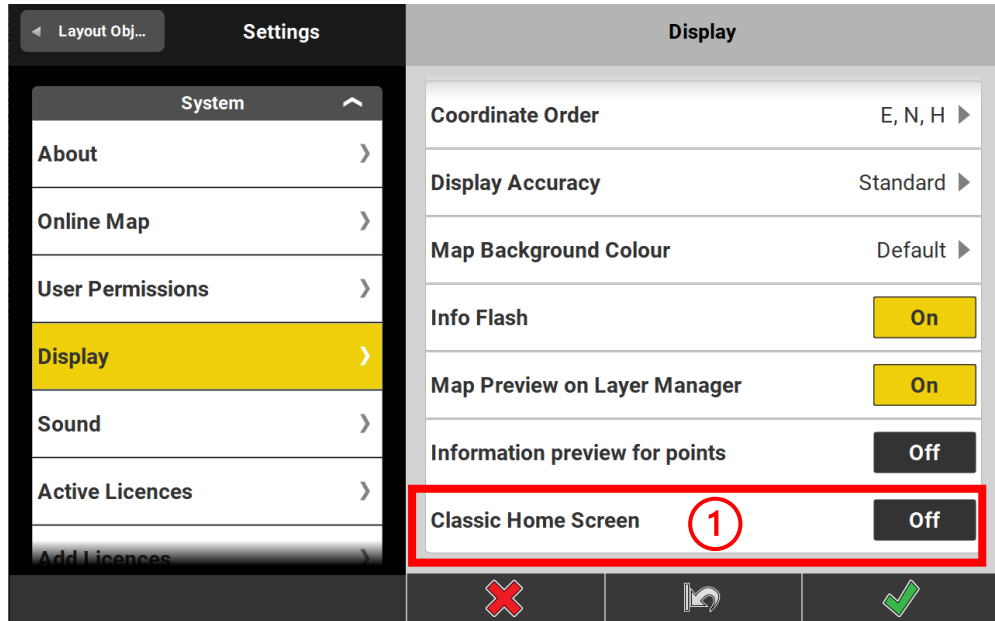


Access to videos from iCON field controller

2. What is new for the iCON Field software v8.2

2.1 New UI for Apps, Data Management and Settings

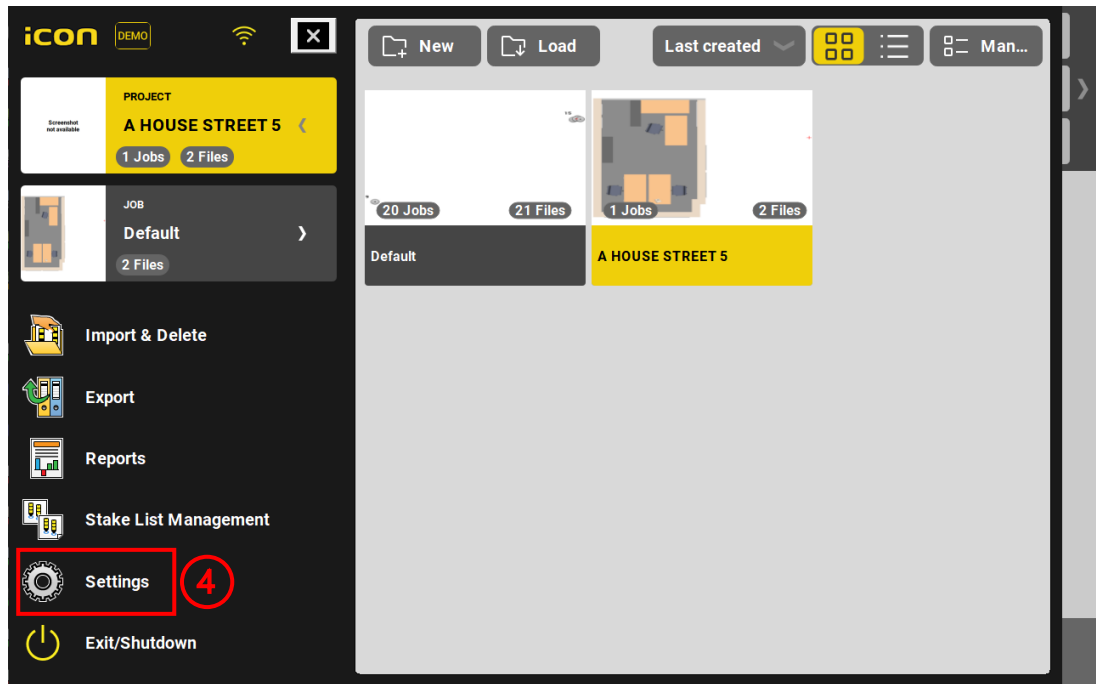
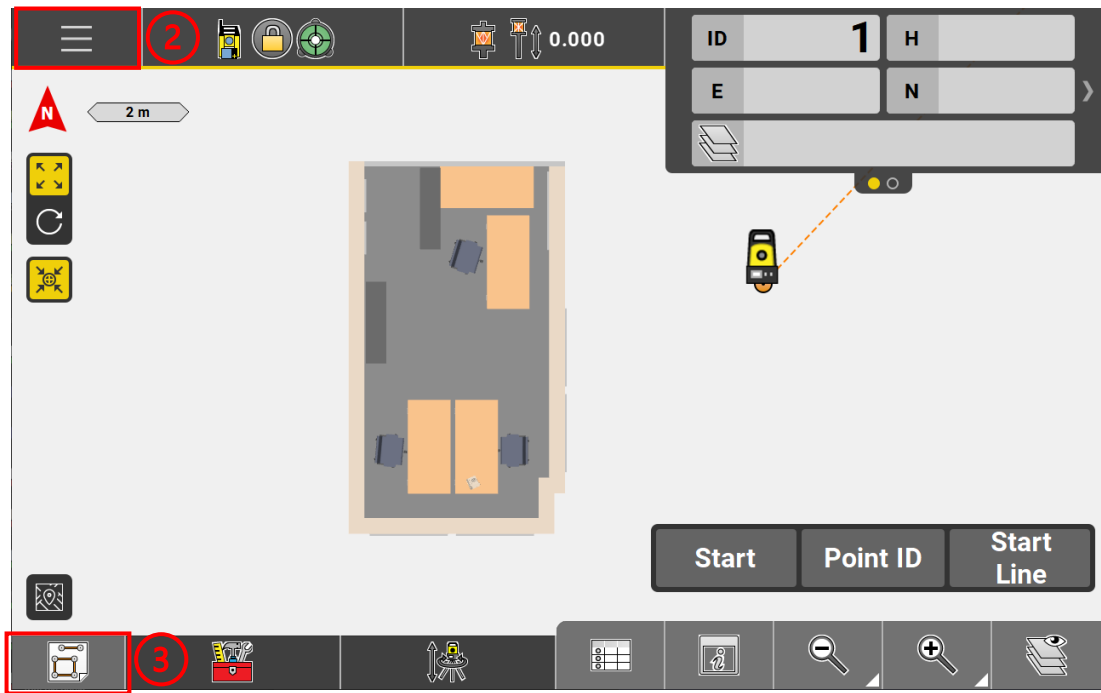
In v8.2 depending on your license you will either start up in the classic home screen (iCON Site licenses) or directly in an app (iCON Build license) including also some workflow changes. In both cases, there is a switch available to turn on/off the classic home screen. This can be found under System – Display – “Classic Home Screen” (1).



For the classic home screen, there are no changes to the existing workflows.

In the new style, the main changes are:

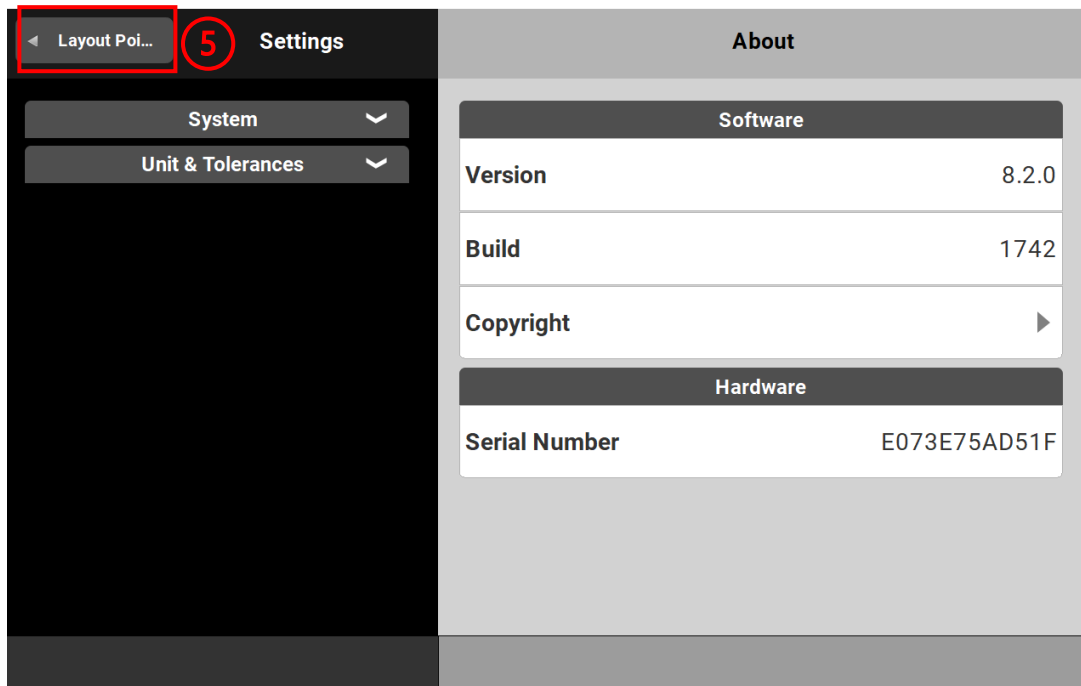
- iCON is starting in the last map-based app (for the very first startup this is Layout Points)
- Access to projects, jobs, and the admin panel can be found in the upper left part (2), by clicking on the button the admin panel will open.
- The application switch is accessible at the bottom left of the screen (former home button - 3)
- In the project/job screens the delete can now be found under “Manage”
- Settings, Unit & Tolerances moved to the new admin panel (see details below - 4)
- Devices and the Cloud access point are moved to the Status bar (see details below)
- Exit & Shut-down is now moved under the Settings



Changes to the Settings

With iCON version 8.2, the settings will be placed directly in the admin panel for users with an iCON build license (4).

The Settings menu contains the content of the current System and Unit & Tolerances settings with collapsible menus (5). Regarding the content and the elements listed under the System and Units & Tolerances, there are no changes.



The collapsible menus open by default, not collapsed. If a user chooses to collapse one, this action will not be persistent; it will only apply at that moment.

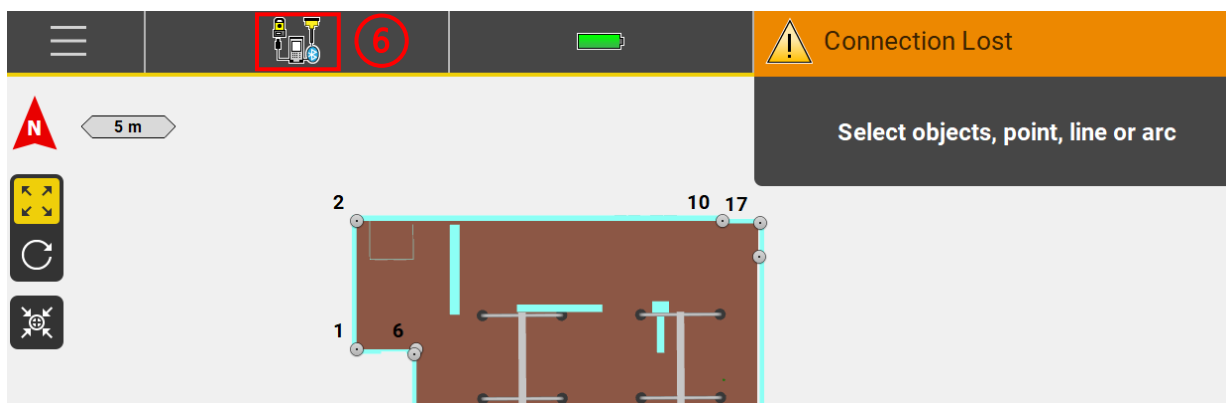
After the user finalizes the configuration in the Settings menu, tapping the application button will transition the user to the last map-based app screen.

In case of no license is loaded in iCON the screen like today will be displayed.

Devices access in the Instrument Status Container

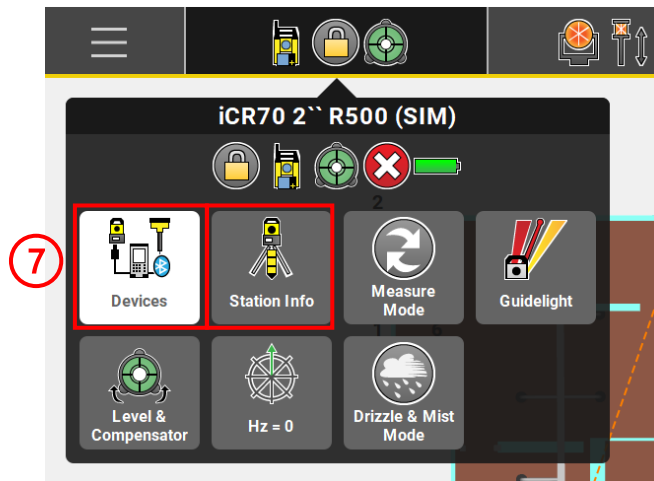
The Devices setting group is positioned in the Instrument Status container.

When users are not connected to any sensor, a warning message will appear in the info panel. Pressing OK will not show the "Connection Lost" message anymore on the map. Users can make a sensor connection by accessing the "Devices" setting in the Instrument Status Container. Only tapping the Devices icon in the status bar will be sufficient to open the Device Profiles screen. (6).

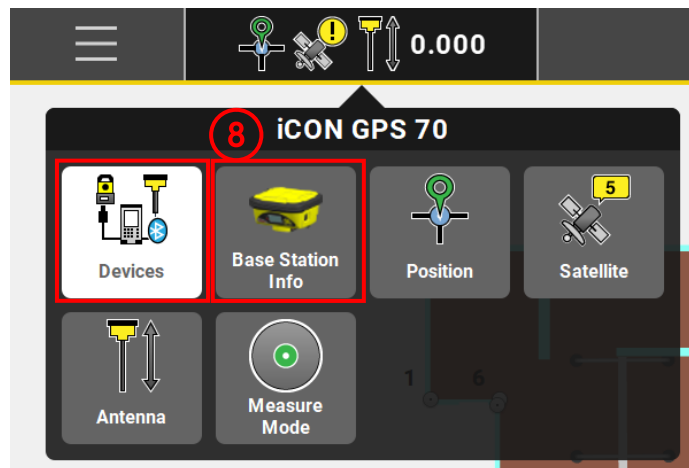


Once the sensor connection is established, tapping the button for the last map-based app at the top left of the screen will redirect the user to the map screen of that app.

The Devices setting is available in the Instrument Status container (7).



Note that both Station Info and Base Station Info are moved to the Instrument Status Container as well. When you tap on Station Info (while connected to a TPS sensor - **7**) or Base Station Info (while connected to a GNSS sensor - **8**), the information screen will display.



Clouds access in the Controller/Target Container

The Clouds access point is positioned in the Controller/Target container (**9**). When you tap on the "Clouds" button in the Controller/Target container, a list of cloud services will be displayed on the left panel (depending on a valid license). The workflow for the cloud services through this new access point does not alter the functionality; the steps to authenticate and log out of the service remain the same.

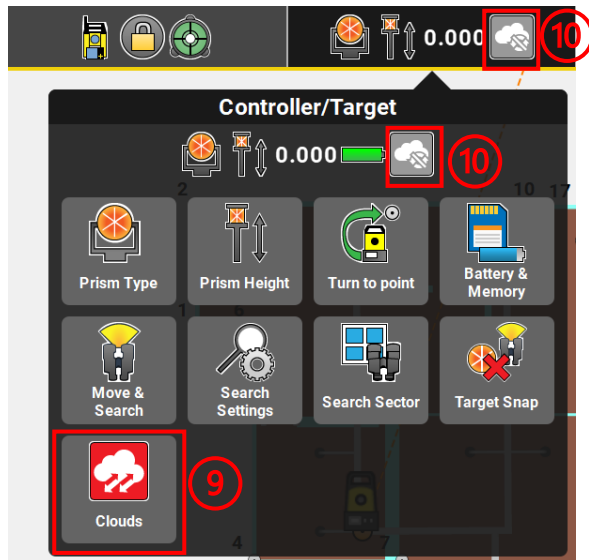
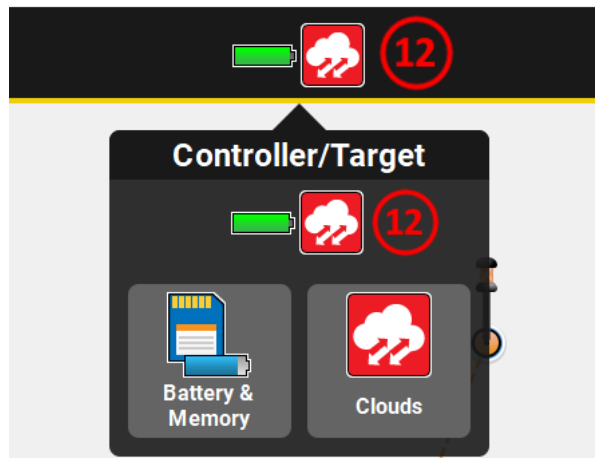
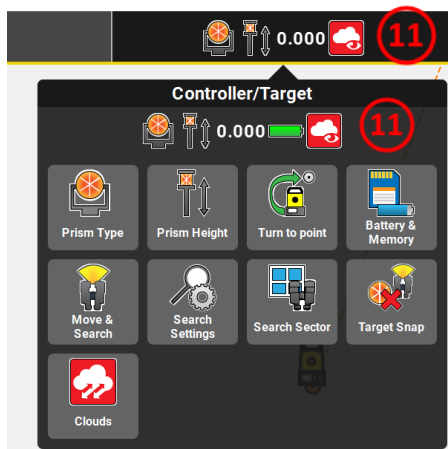


Figure 1: Clouds access point in the Controller/Target container

Note that regarding different ConX statuses, we moved also the status icon, reflecting factors like a connection with a ConX project, and remote/view control progress.

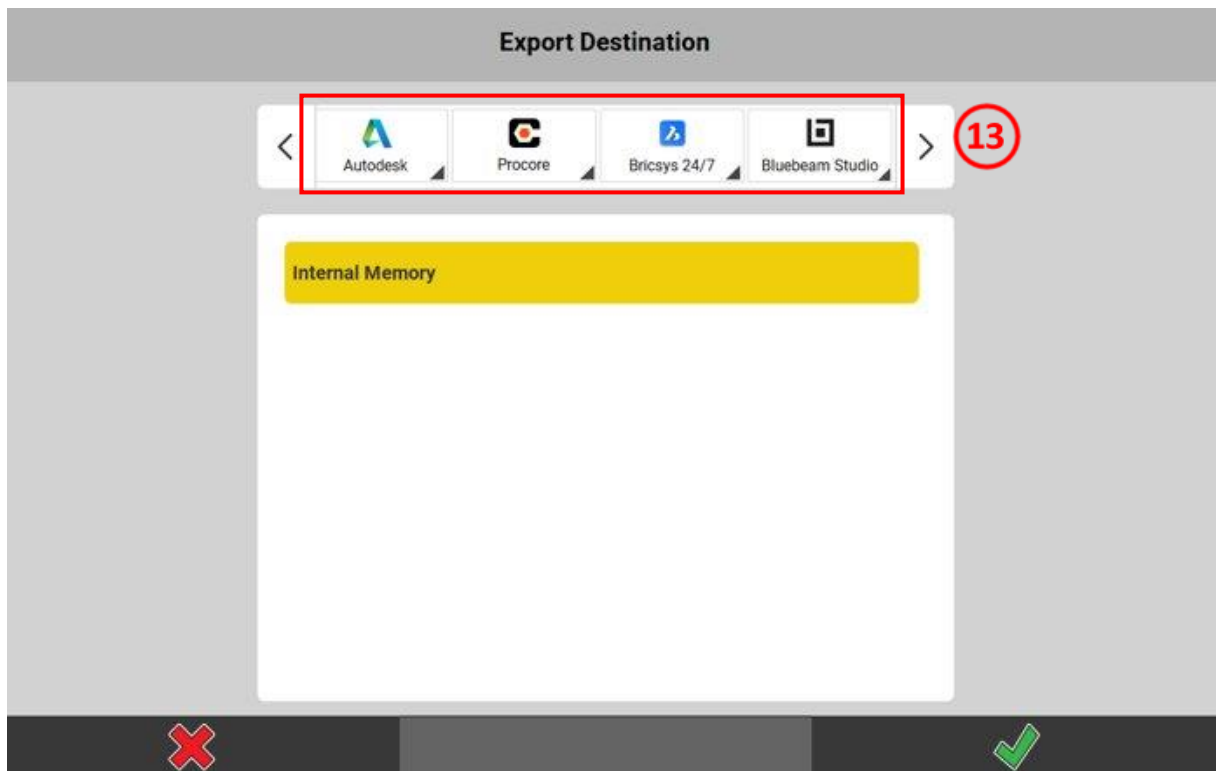
When connected to either a TPS or GNSS sensor, the display indicating the presence or absence of a connection to the ConX cloud service will be shown on the top status bar, and the second row of the status bar in the Controller/Target container (10).

However, when connected to a GNSS or TPS sensor, the ConX remote/view control status (11) and connection status with a ConX project (12) are now displayed on the top status bar and the second row of the status bar.



Clouds authentication in Import, Export, and Reports

In v8.2, we provided users the option to access the Clouds in the Import, Export, Reports > Save to > Export Destination as an alternative authentication and configuration method for supported Cloud Services. An indicator symbol is added at the bottom right of the Driver icons for each Cloud Service (13).



For cloud services with web browser authentication (e.g., Autodesk, ProcCore, Bluebeam Studio, GeoCloud), the workflow is: tap the Driver icon, authenticate in the web browser, and be presented with the existing cloud project structure to get started with downloading data. When tapping and holding the Autodesk, ProcCore, Bluebeam, or GeoCloud driver logo in Import, Export, or Reports, the corresponding cloud configuration page opens, allowing users to log out, enter new credentials via the browser, and authorize iCON with the new credentials.

For cloud services that do not rely on web browser authentication or require additional upfront details, such as BIMPLUS, 24/7, and ConX, tapping on the Driver icon opens the cloud configuration screen where users must enter credentials or any additional details required to establish a connection to the cloud service. Upon successful authentication, the message "Authentication Successful" will be displayed. Tapping and holding the driver logo opens the respective cloud configuration pages. For BIMPLUS, users can modify the displayed credentials or log out. For Bricsys 24/7, the configuration page will allow changing a server URL, authorizing iCON, and logging out. For ConX, the connection can be stopped, configured settings can be modified, and logging into an existing project can be performed.

2.2 XML Improvements

2.2.1 2.2.1 Support for attributes that are relevant for the sets of angles measurements.

To improve compatibility across Leica products, we have made improvements to our XML export for the sets of angles routine. This enables the collected data through the sets of angles routine in iCON to be formatted correctly for easy import into Infinity that allows users to begin post-processing within Infinity.

2.2.2 Enhancements to atmospheric corrections and pressure

To improve the handling of PPM-related aspects in the exported XML dataset, we have included a change to include atmospheric PPM, Temperature, Pressure, Geometric PPM, Earth Radius, and Refraction

Constant in our Total Station (TPS) Setup corrections. This information was previously missing in the XML dataset from iCON.

2.2.3 Storing boundary and breakline information

Boundary and breaklines information of a created surface is now saved when exporting into xml format.

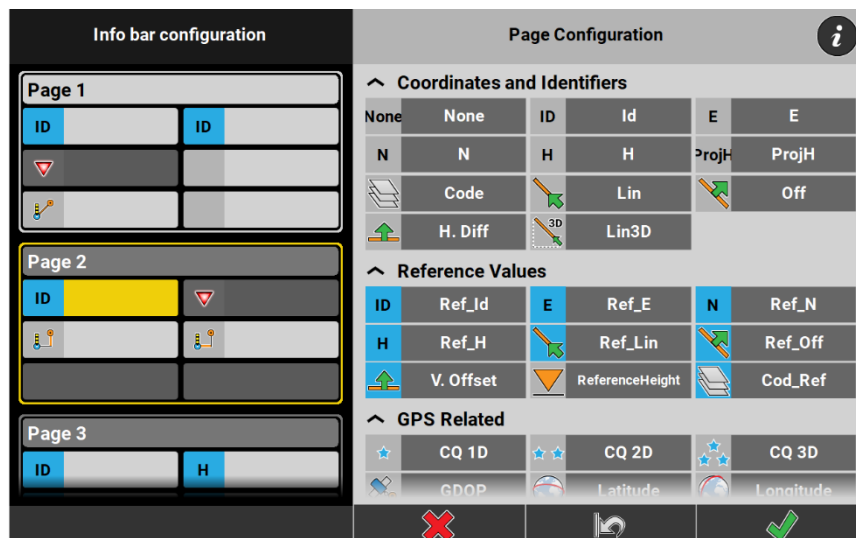
2.2.4 Display surface colours from xml

Coloured surfaces from xml files are supported in v8.2.

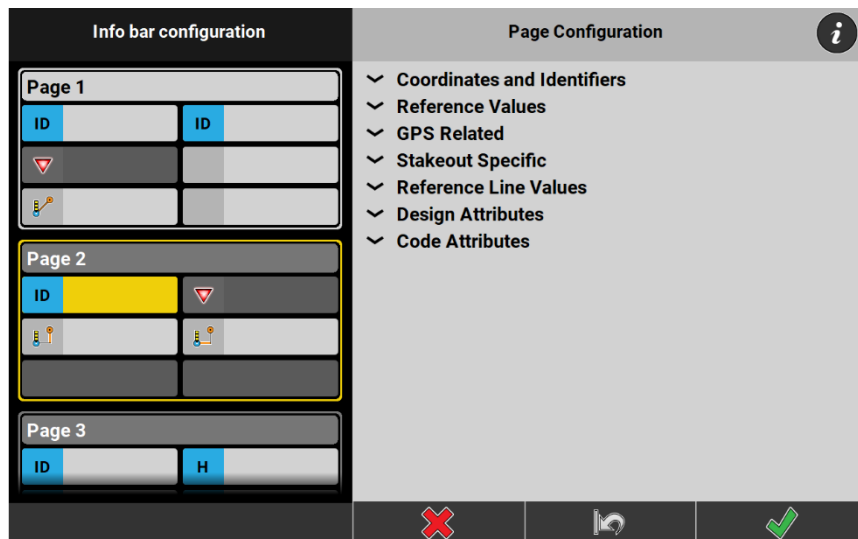


2.3 Grouping Info Panel Items

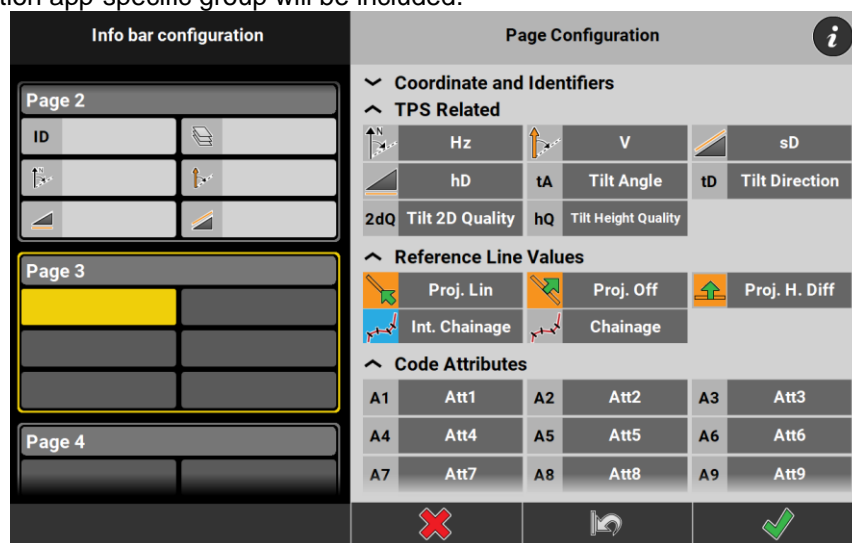
The elements in the info panel have been organized into distinct categories, which will improve navigation within the info panel and help users add desired items to the info bar configuration more quickly.



With the release of V8.2, items are organized under distinct title headers. Users also have the option to collapse containers that are currently not of interest.



When users access the info panel for the first time, pre-configured items are available in the info bar configuration. Unless manually changed, these values will be set as the default configuration. Moreover, as is currently the case, when users are in different applications, they are presented with different app-specific info items that can be configured to display in the info panel. With the info panel grouping, depending on the application and info panel items, users will be presented with corresponding grouping names. For instance, if you are in the Data Collection app, the Reference Values grouping and its corresponding items will not be displayed, as this grouping is specific to the Stakeout apps. Instead, only the Data Collection app-specific group will be included.



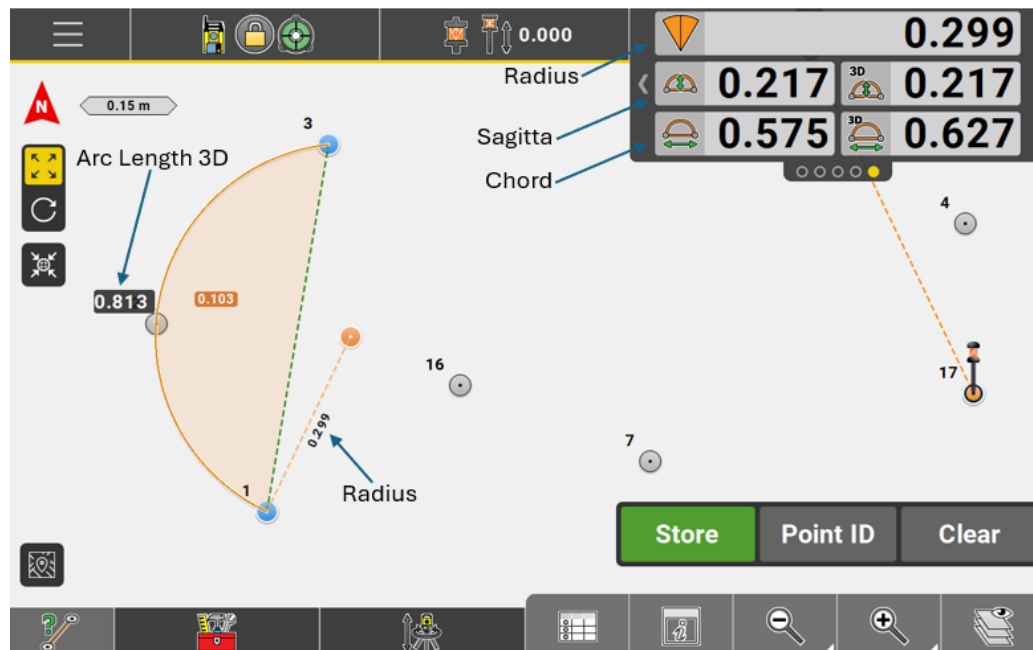
Note that the info panel items also depend on the active connection device type. For example, if a GNSS sensor is connected and you are in an app, you will be presented with the GPS-related group containing its corresponding items. The same applies to TPS.

2.4 Supporting arcs and circles in the Checks application

With iCON version 8.2, the Checks app now supports arcs and circles, adding new values related to these elements.

Users can now select an arc, circle, or polyline (with a site plus license) that includes arc elements.

Depending on the selected element, the map, info panel, and reports will adopt new values. These elements can be used with all current Checks methods - Polygonal, Radial, Point to Line, and Block Volume methods.



When an arc is selected, new values such as Radius and Arc length are shown on the map. When a circle is selected, a circumference and radius are displayed on the map. Depending on the settings in 'Viewing Options' values on the map can be shown in 2D or 3D.

After selecting an arc, the info panel shows new values such as Arc length (2D/3D), Radius, Sagitta (2D/3D), and Chord length (2D/3D). The info panel always displays values from the last selected arc. If no arc is selected, all values related to arcs are empty.

The Checks Report for Polygonal and Block Volume includes new values – Radius, Sagitta, and Chord length. Some existing values are updated due to the selection of arcs and circles. A new column named "Element type" has been added (element types include arc, circle, and line). All values are stored in both 2D and 3D (except for Radius). Point to Line and Radial reports remain unchanged.

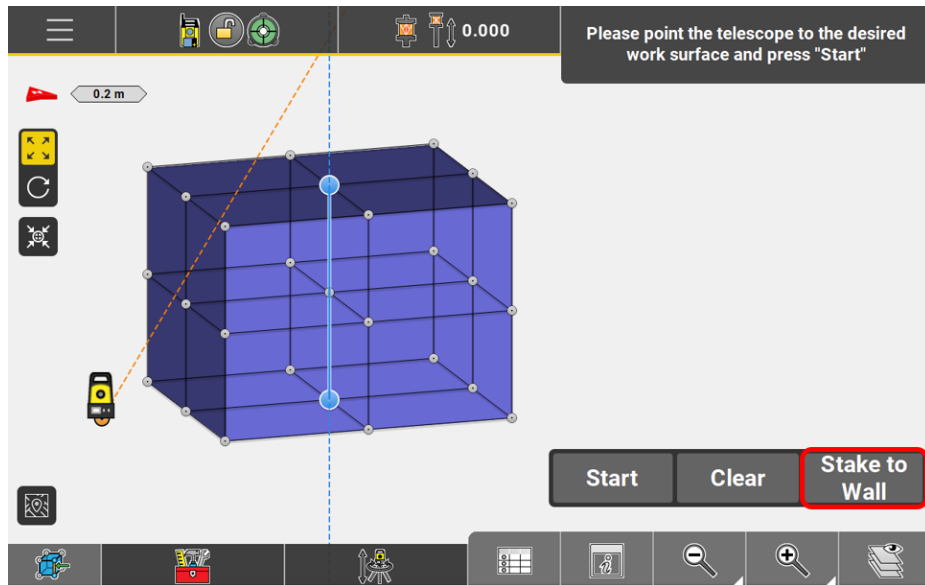
2.5 New Autostaking method for lines to Floor/Ceiling

Previously, iCON allowed users to stake out penetration points (with a selected line) only on the wall. With the release of iCON 8.2, the new autostaking method allows users to stake out intersection/penetration points on the floor or ceiling, depending on where the instrument is aimed.

This method is available in Layout Lines and Layout Objects apps.

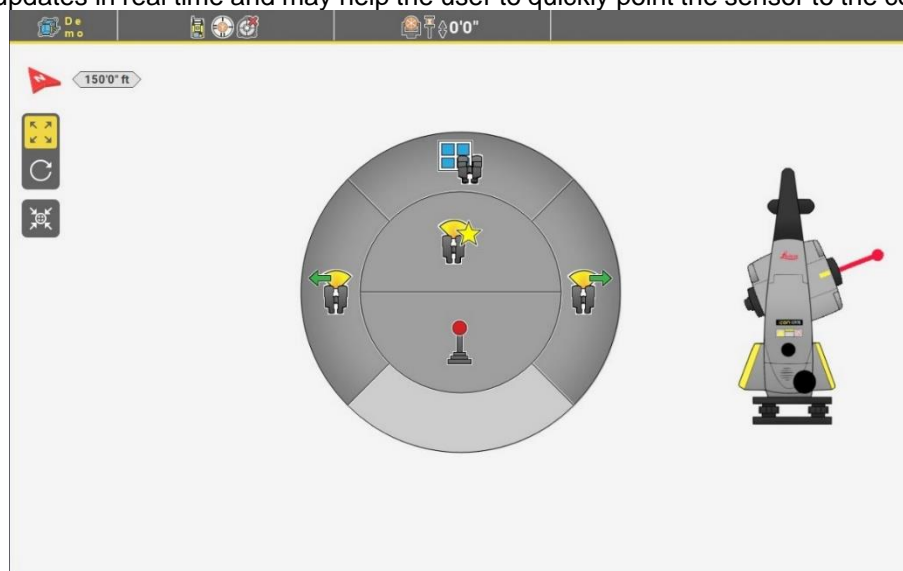
To enable this feature, the user has to turn on the Autostaking tool from the Toolbox and select a line. The line can be completely vertical or vertical with some angles. The measure bar is automatically configured to show the "Stake to Wall" button highlighted in green, indicating that the method for calculating the intersection point on the wall is activated. Deselecting the "Stake to Wall" button will enable the calculation for the ceiling/floor. The user should then point the instrument to the ceiling or floor and press Start.

The instrument will then measure and iterate until the intersection point is found.



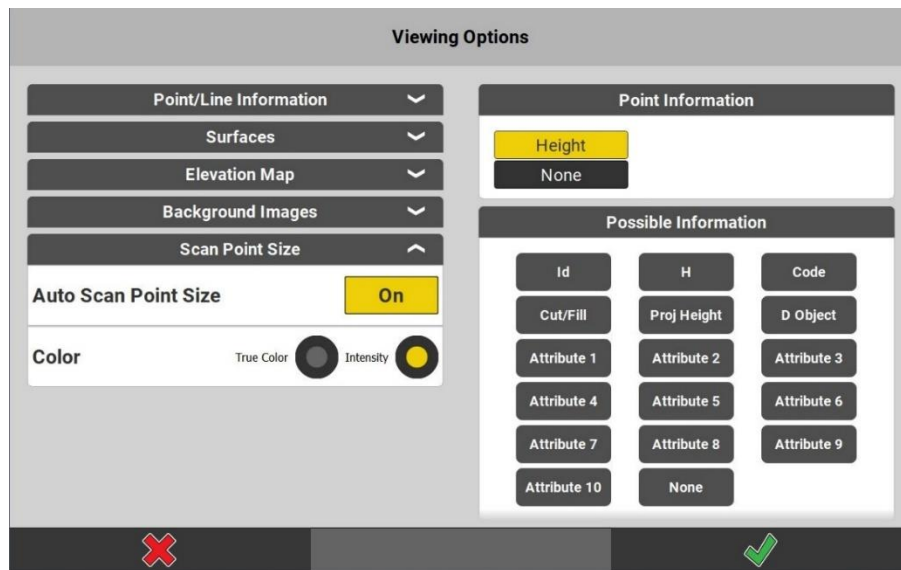
2.6 Total Station Vertical Angle Indicator

The move and search widget has been enhanced with a graphic indicator of the current vertical angle of the total station. When you are a long distance from the sensor it can be difficult to determine where the sensor is pointing, and the guidelights may not be visible if the sensor is rotated vertically. This graphic updates in real time and may help the user to quickly point the sensor to the correct direction.



2.7 Point Cloud Intensity Visualisation

The support of intensity as a method of point cloud visualization is now available as a setting in the viewing options.



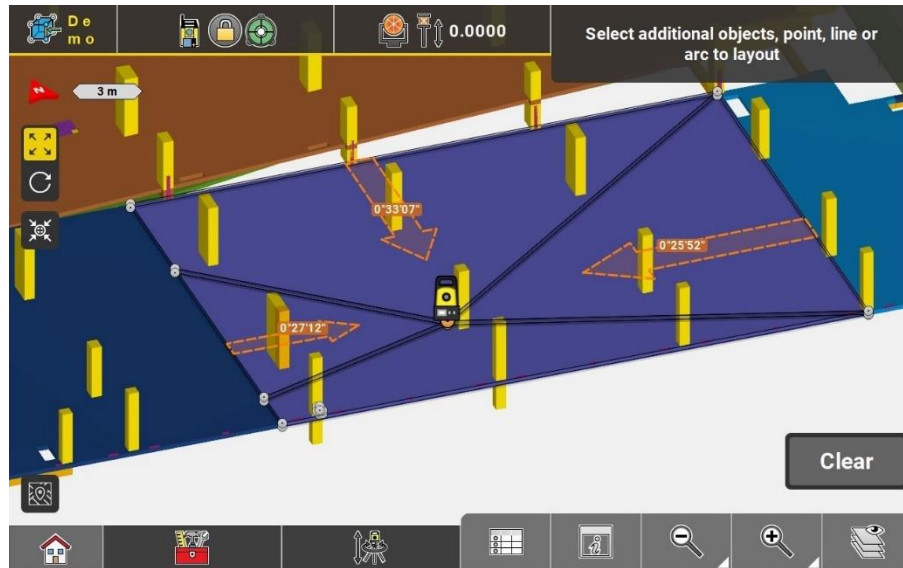
Below is a comparison of the two modes.



2.8 IFC Surface Slope Indicator

A visual aid for identifying sloped surfaces in IFC models is implemented. The user can activate a new tool from the toolbox that will show an indicator on selected IFC objects. The indicator will appear when an object has a sloped face between 0.1 to 45 degrees (up or down). The intention is to quickly identify sloped objects that look flat to the eye.

This feature is available in the Verification, Checks and Layout Objects app if a Verification license is loaded or if the new Scan and Adv. Surfaces license is loaded.



2.9 Reveal Reference Data in Verification

A new button has been added to reveal all the available reference data when a verification to some reference has been done. The legacy behaviour was to hide all data other than the inspected data to provide focus. The new mode allows an overall orientation to the data set if required.

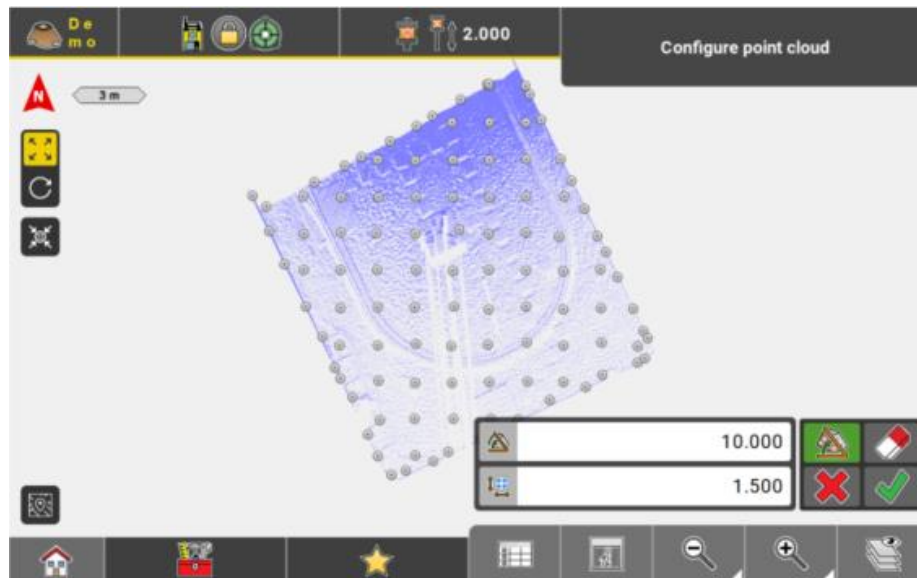
The feature does not appear when a point cloud is used as the source data, and only when some reference data has been selected.

The reference data is shown revealed and hidden in the screens below.




2.10 Volumes app – Surface from a point cloud

Functionality to select a Point Cloud (scan) file has been introduced as a part of the new surface creation workflow within the Volumes application.



The function provides the possibility to:

- a) adjust the density of the surface points for the surface triangulation and
- b) use all points from the scan or apply a ground sloping angle filter (to filter out noise such as trees or other objects) by toggling on/off the relevant toolbar button .

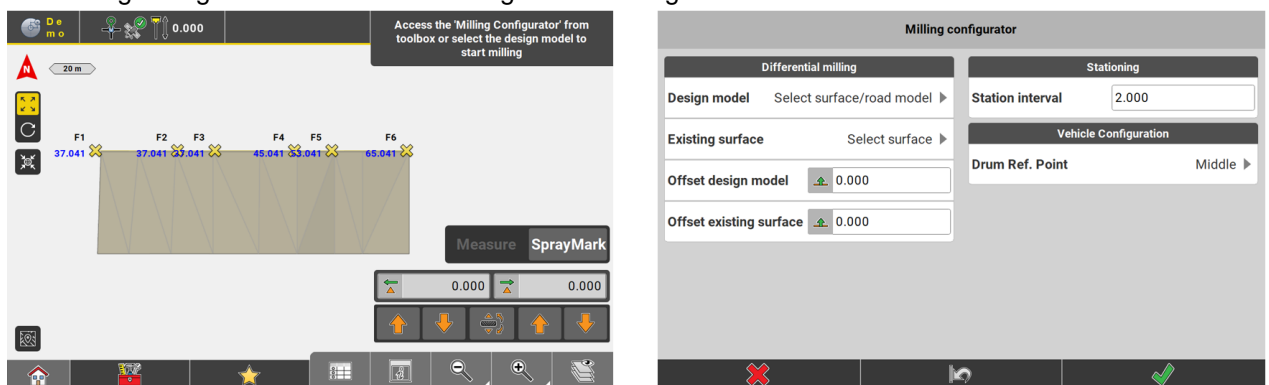
The generated surface points can be deselected or further used in the software to fine tune the surface and define boundaries or breaklines.

The feature becomes available on the tablets with CSW 268, "Scan & Adv. Surfaces" license.

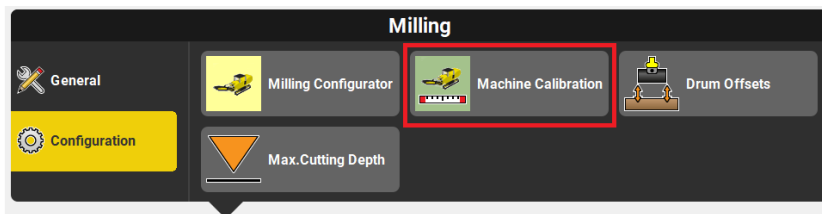
2.11 Dedicated iCON Milling app

The differential milling functionality has been extracted from both the "Cut&Fill" and "Roothing" applications and integrated into a new iCON site milling app.

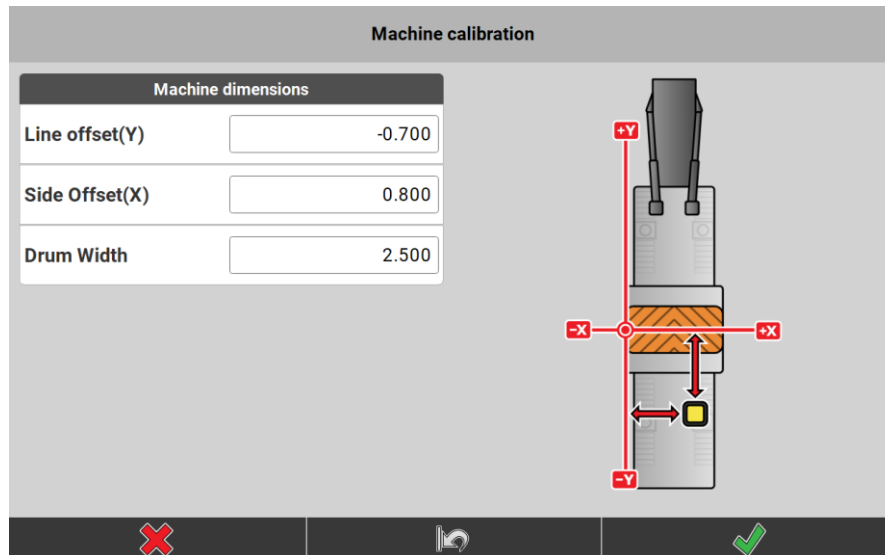
To initiate milling operations, users can either directly select the design model from the map or navigate to the "Milling configurator" to define the design and existing surfaces.



It is important to remember that the machine needs to be calibrated beforehand. Hence, the user will tap first on the "Machine calibration" option from toolbox:



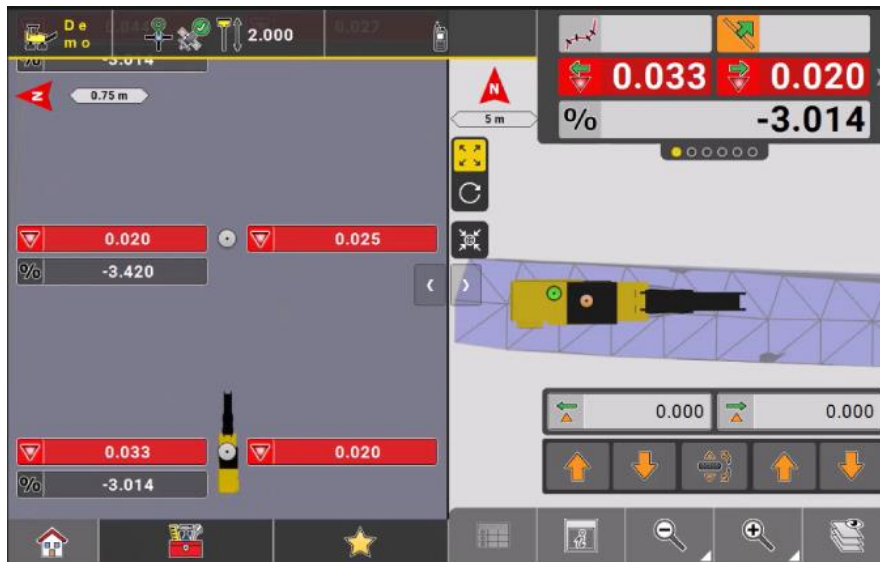
The position of the sensor has to be determined with respect to the drum.



- Line offset (Y): the position of the sensor along the machine
- Side offset (X): the position of the sensor along the left side of the drum
- Drum Width

If the sensor is positioned behind the drum, the line offset (Y) value will be negative. Regarding the side offset (X), if the sensor is placed outside the left side of the drum, the value will also be negative, as indicated in the displayed pictogram.

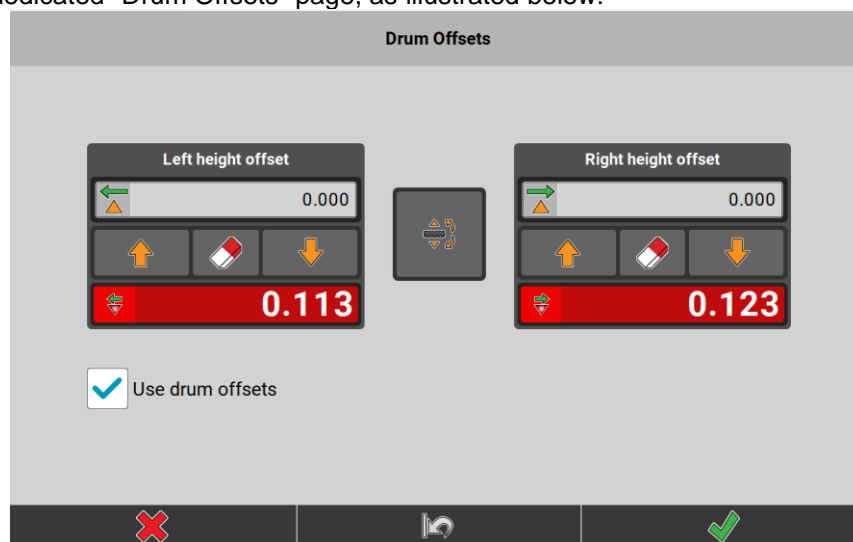
Once the connection to the sensor is established, users will automatically be directed to the following screen after confirming the settings in the "Milling configurator":



The display will automatically be split into “Milling mode operations” and “3D map elements” based on the “Multi view configuration” ratio. Additionally, two navigation arrows, situated in the middle of the screen, allow users to expand either the left or right side, collectively defining what we refer to as the “Milling view”. However, users have the option to turn off the “Milling view” from the “Viewing options”, showing only the 3D map elements on the screen.

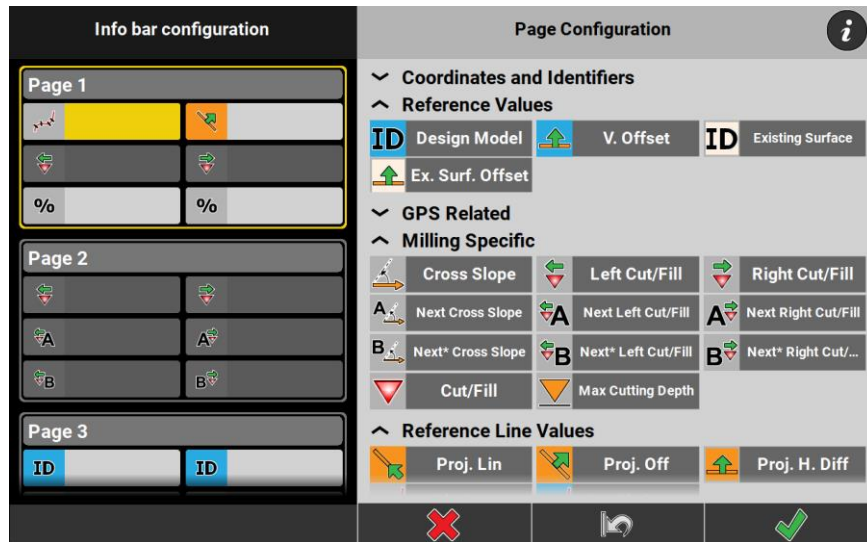
The current left and right cut values are calculated and displayed in the info panel. Additionally, next spray marks are shown to indicate to the operator how much they need to lower the drum, either manually or automatically. Moreover, on the milling machine, users can view both the tool point (in orange) and the sensor position (in green).

The drum offsets are enabled by default, allowing users to directly adjust the left and right cut values on the map. However, users can also modify these values without interrupting the milling operations by accessing the dedicated "Drum Offsets" page, as illustrated below:

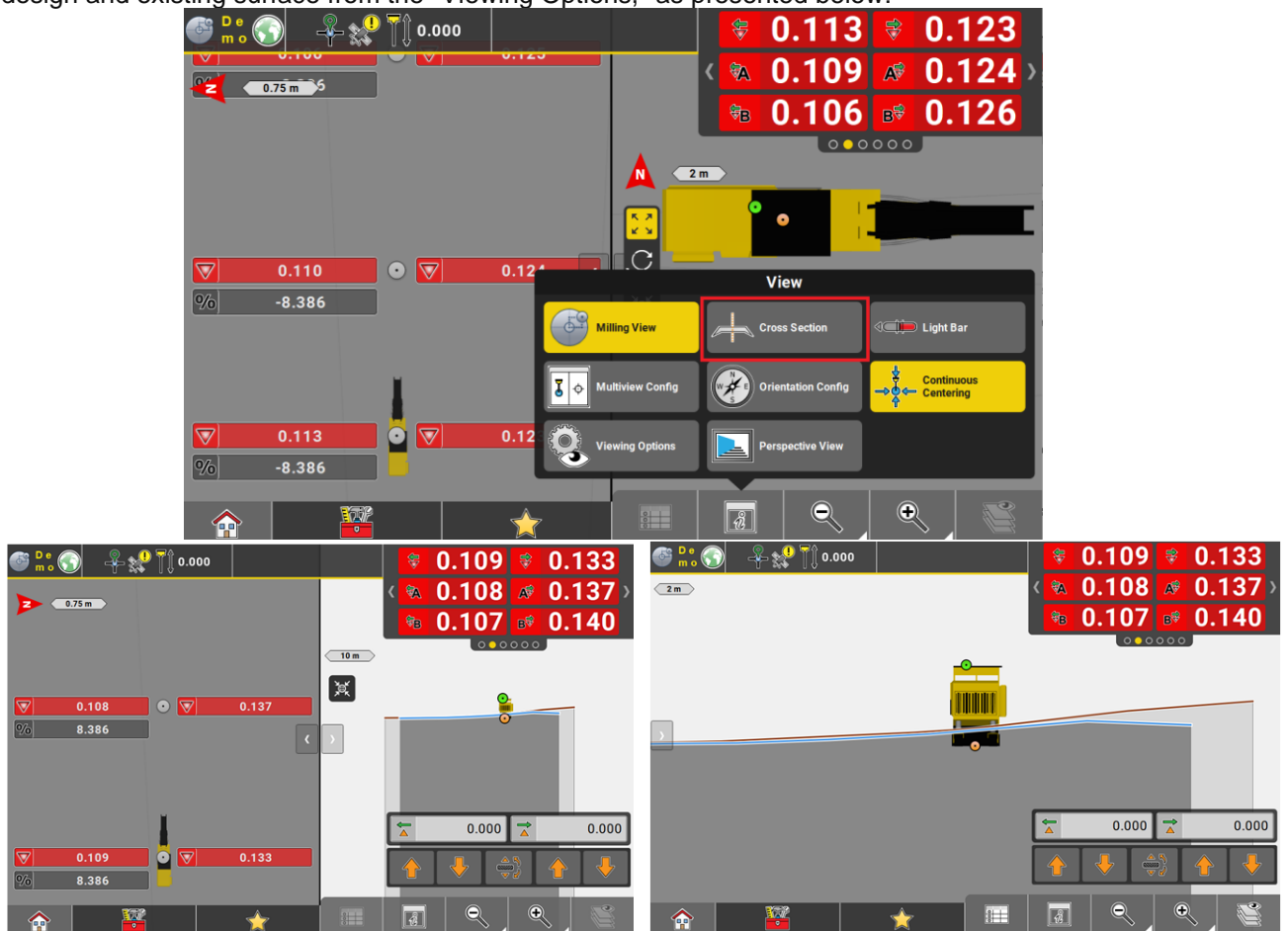


The page remains synchronized with the milling operations, guaranteeing that any adjustments made at this level are promptly reflected on both the map and the info panel. Additionally, users have the flexibility to toggle the drum offsets on or off at any given time.

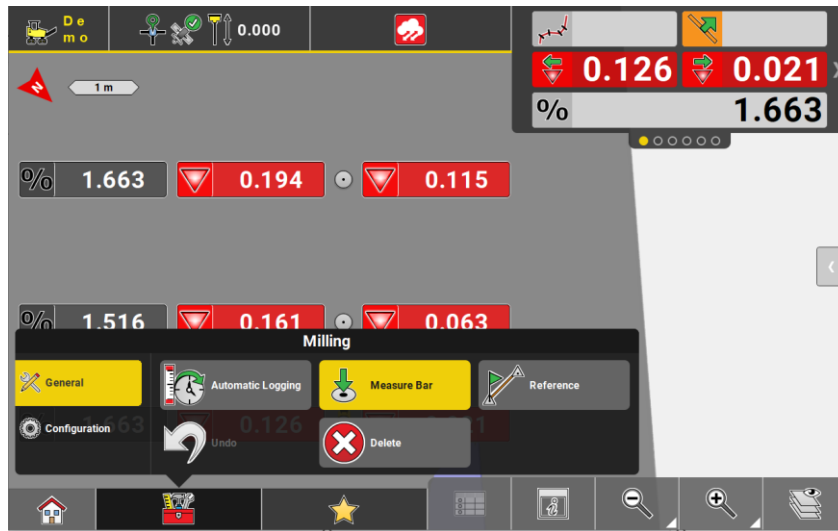
All six pages of the info panel are initially pre-defined; however, users have the flexibility to modify and configure them according to their preferences.



It's important to note that users can have both the "Milling view" and "Cross Section" active simultaneously and expand one of the views for better visualization. Therefore, users can enable the cross-section of the design and existing surface from the "Viewing Options," as presented below:

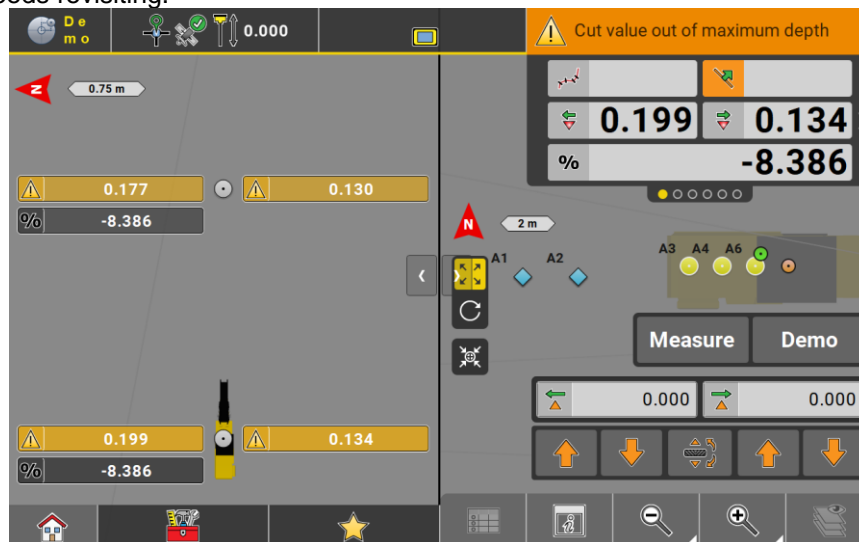


If the user wishes to store the current tool point position, they would first need to enable the measure bar from the toolbox, as depicted below:



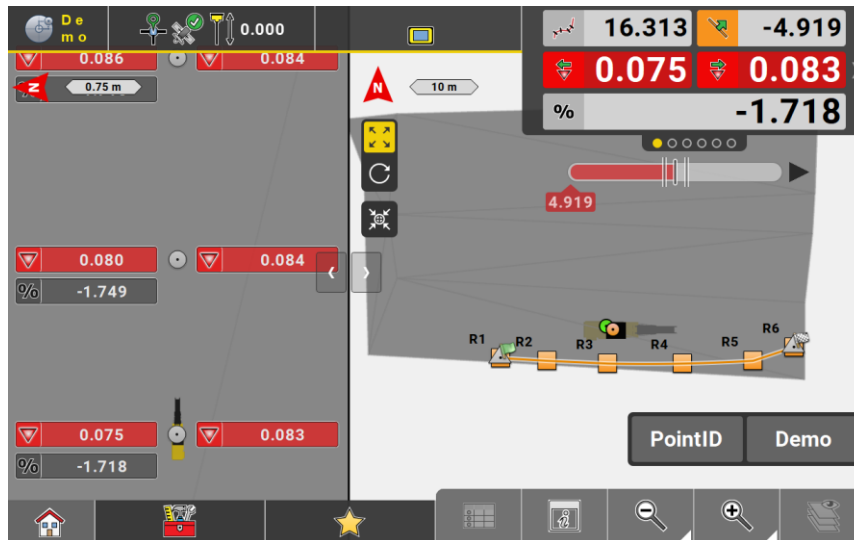
Unique "Point ID" and "Codes" can be defined, and the tool point position can be stored accordingly. All this information will be stored in the point list. Automatic point logging by a defined 3D distance is also possible.

If the maximum cutting depth is reached (indicating how much the machine can cut in one go), a warning will appear, and the points on the map will be marked in yellow. This allows the operator to easily identify the area that needs revisiting.

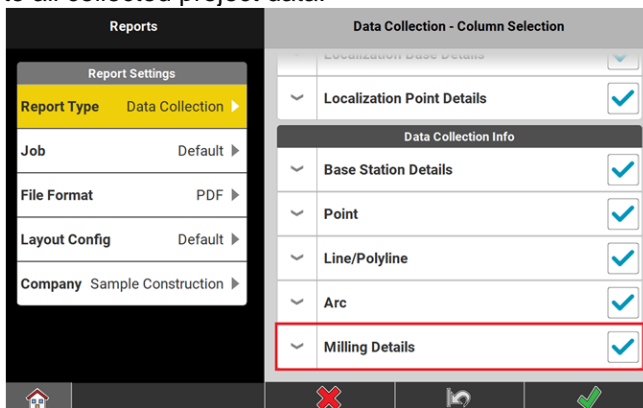


It's worth noting that the maximum cutting depth value is not set by default.

A reference line can be defined at any point in time by accessing the item from the "toolbox". Users can choose either a roadline or any other line, which will determine the direction the machine moves. The chainage and the side offset information will be immediately calculated and displayed in the info panel. Additionally, users can enable the "Horizontal light bar" from the "Viewing options", providing a better indicator for navigation.



All the points stored in the database can be saved into a "Milling" report, accessible under "Data collection". This report can include all relevant milling information stored either as standalone data or as an addition to all collected project data.



DATA COLLECTION REPORT

Report created by SampleReporter
Report created on the 04.04.2024 - 18:09:23

DATA COLLECTION INFO

MILLING DETAILS

#	Point Name	Easting	Northing	Code	Cut/Fill Left †	Cut/Fill Right †	Cross Slope
1	A1	3654.859	60378.251	Demo	-0.075	-0.083	-0.017
2	A2	3657.756	60378.266	Demo	-0.083	-0.083	-0.018
3	A3	3659.759	60378.263	Demo	-0.090	-0.087	-0.018
4	A4	3662.563	60378.274	Demo	-0.098	-0.095	-0.018
5	A5	3664.667	60378.281	Demo	-0.104	-0.102	-0.018
6	A6	3667.772	60378.294	Demo	-0.114	-0.111	-0.018
7	A7	3670.176	60378.293	Demo	-0.121	-0.119	-0.018

#	Point Name	Drum Position	Chainage	Existing Surface	Offset Existing Surface	Design Surface/Road	Other Design Model
1	A1	Middle	16.313	MeasuredSurf.TRM	0.000	TargetSurface.TRM	0.000
2	A2	Middle	19.182	MeasuredSurf.TRM	0.000	TargetSurface.TRM	0.000
3	A3	Middle	21.224	MeasuredSurf.TRM	0.000	TargetSurface.TRM	0.000
4	A4	Middle	24.082	MeasuredSurf.TRM	0.000	TargetSurface.TRM	0.000
5	A5	Middle	26.123	MeasuredSurf.TRM	0.000	TargetSurface.TRM	0.000
6	A6	Middle	29.389	MeasuredSurf.TRM	0.000	TargetSurface.TRM	0.000
7	A7	Middle	31.835	MeasuredSurf.TRM	0.000	TargetSurface.TRM	0.000

#	Point Name	Created Time	Updated Time
1	A1	04.04.2024 - 18:09:08	04.04.2024 - 18:09:08
2	A2	04.04.2024 - 18:09:08	04.04.2024 - 18:09:08
3	A3	04.04.2024 - 18:09:09	04.04.2024 - 18:09:09
4	A4	04.04.2024 - 18:09:10	04.04.2024 - 18:09:10
5	A5	04.04.2024 - 18:09:11	04.04.2024 - 18:09:11
6	A6	04.04.2024 - 18:09:13	04.04.2024 - 18:09:13
7	A7	04.04.2024 - 18:09:14	04.04.2024 - 18:09:14

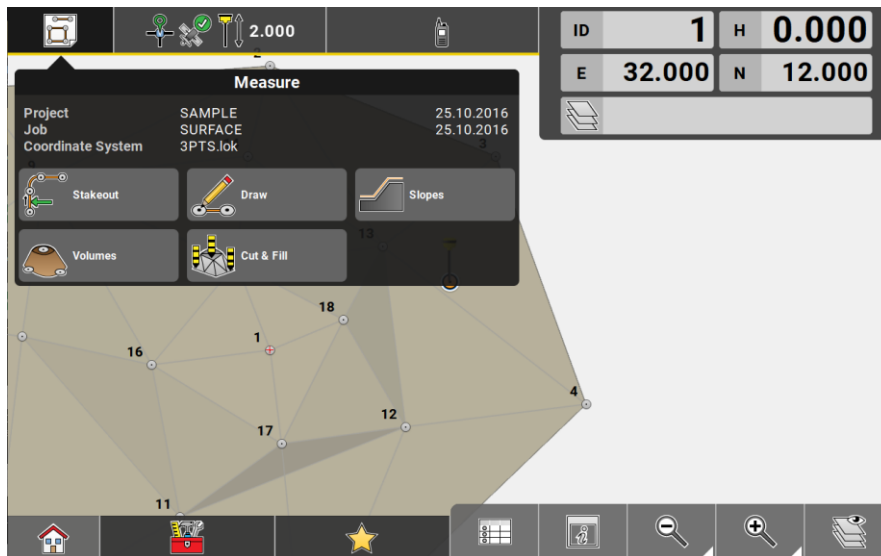
NOTES

† Theoretical Cut/Fill Values

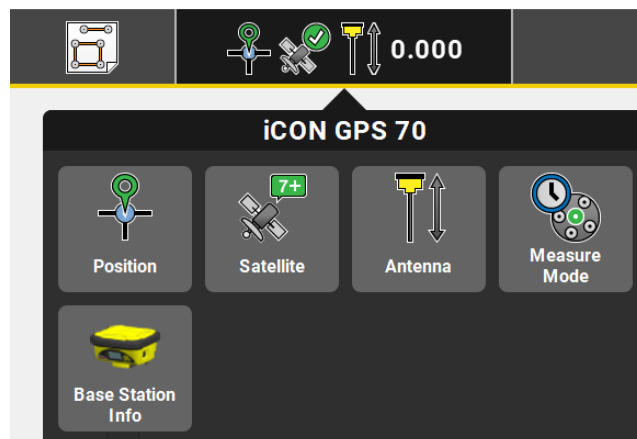
Licensing for Milling application

Article No	Name	Description	Note
876585	CSW286	iCON app "Milling Pilot"	Adds milling app to an existing iCON site license.
1005480	CSW294	iCON site Milling	Standalone application. Measure, Stakeout etc. applications not included.
974302	CSW287	iCON site entry upgr.	Upgrade path of iCON site Milling standalone application. It adds iCON site entry functionality.
9743303	CSW288	iCON site upgrade	Upgrade path of iCON site Milling standalone application. It adds iCON site functionality.
928294	CSW277	iCON "Dual Connection"	Enables connection to CR20 BT CAN Interface device. This license has been phased out. Connection to the CR20 device is enabled with CSW286, iCON app "Milling Pilot" and CSW294, iCON site Milling.

2.12 Quick application switch



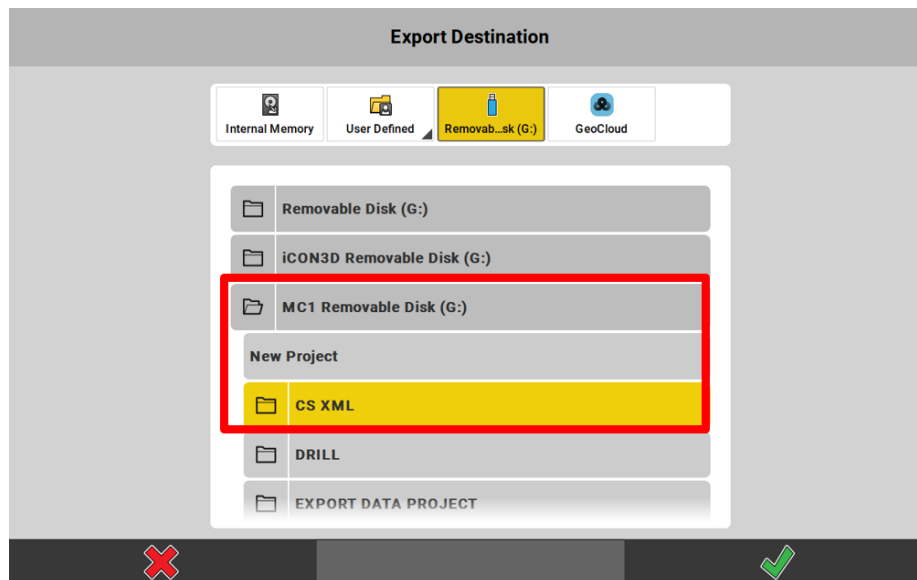
In v8.2 iCON site & iCON site plus users can switch between different applications directly from the map screen without the need to exit to Home Menu.



Total Station setup or Base Station information is moved to the middle status bar container.

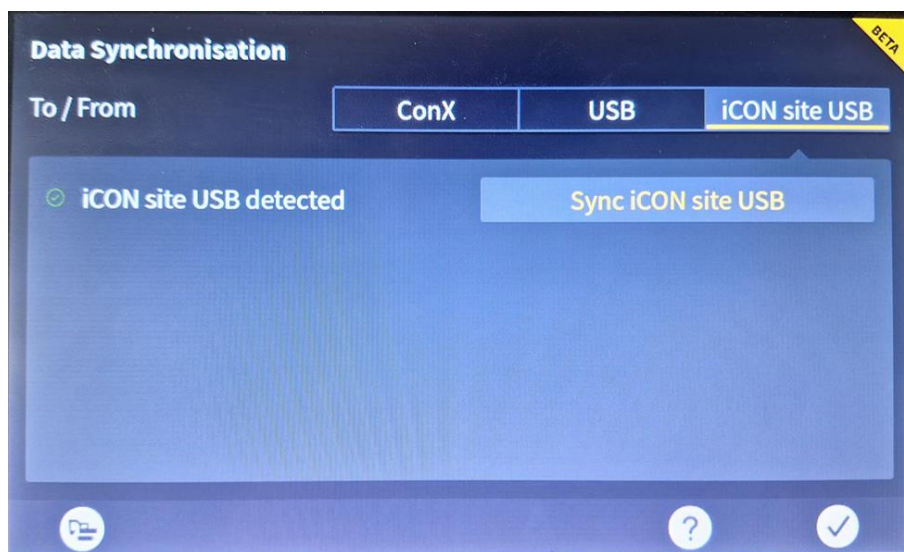
2.13 File transfer to/from MC1

In v8.2 the data exchange process between the iCON software and the MC1 software has been improved. When exporting files, it is now possible to select the MC1 Removable Disk option.

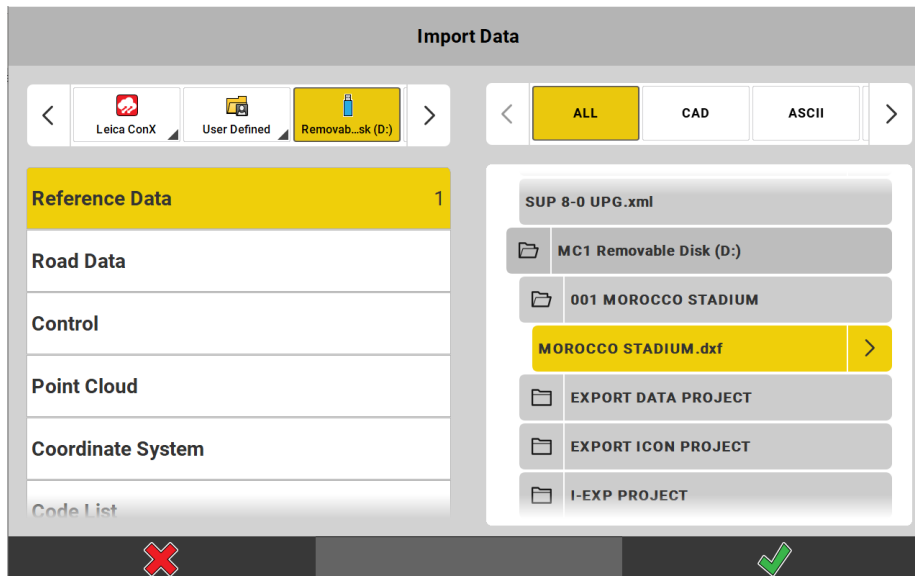


Here users can either select an existing project from the usb stick or create a new one. It is possible to export “Data”, “Coordinate Systems”, “Stakeout list” and “Drill patterns” to MC1.

In MC1, when using the **sync option “iCON site USB”**, the software will check for the data and will sync all available files.



In addition, this option will also export files from MC1 to the usb stick (*this functionality is available in the upcoming MC1 version*). Those files can be imported to iCON directly by searching in MC1 Removable Disk option.

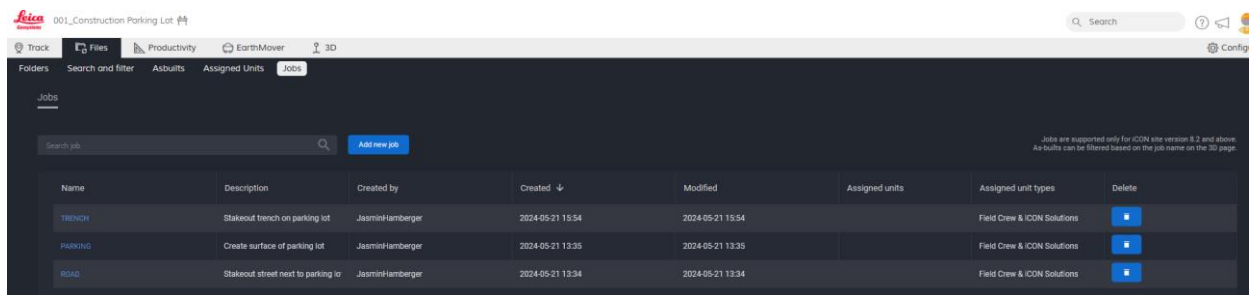


It is possible to import “Reference data”, “Road data”, “Control” and “Coordinate System” from MC1.

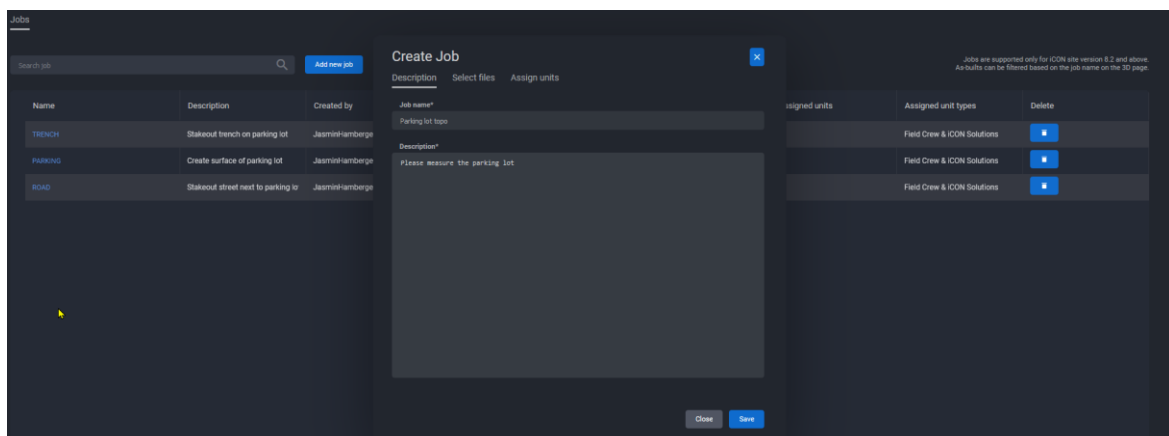
2.14 Import ConX Jobs workflow

A new workflow has been introduced allowing to create Jobs on a ConX project. The introduction of jobs improves the data preparation and handling in the office, as the project data can get grouped into smaller tasks/jobs. The new workflow allows to share the same jobs and files with multiple iCON field controllers.

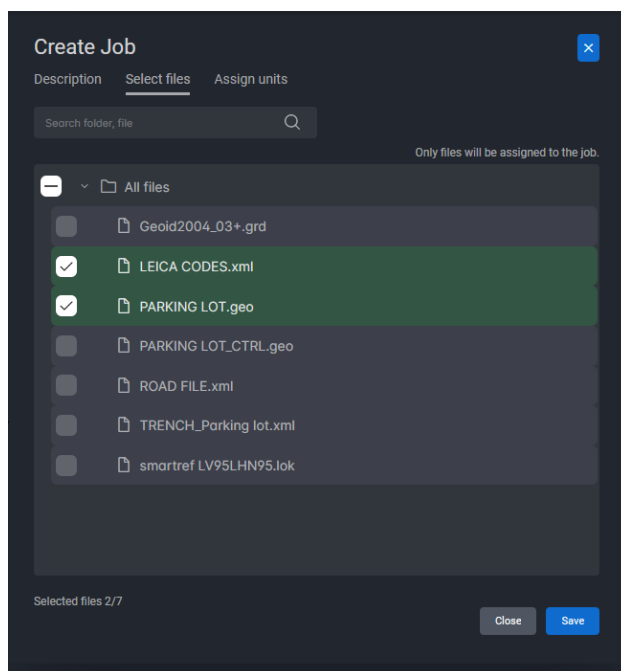
Jobs setup on ConX Project:



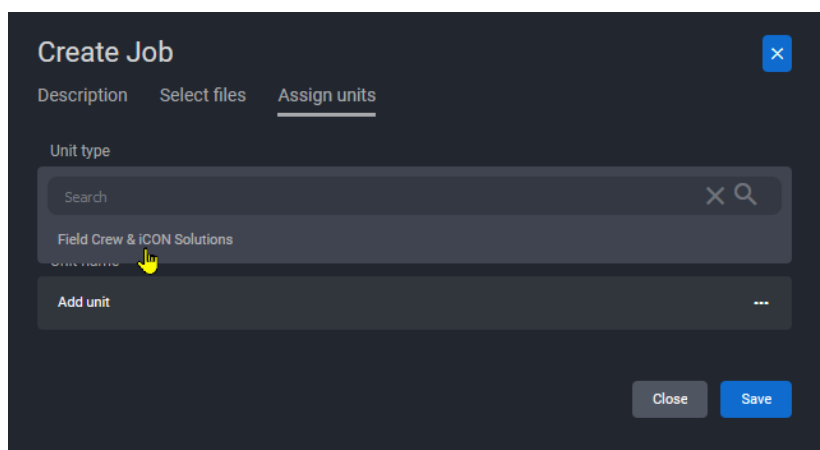
The jobs can be created under the Files→Jobs tab in the ConX project.



Name and a description of the job is part of the 1st step.



In the “Select files” tab, the necessary files for the job can be selected.




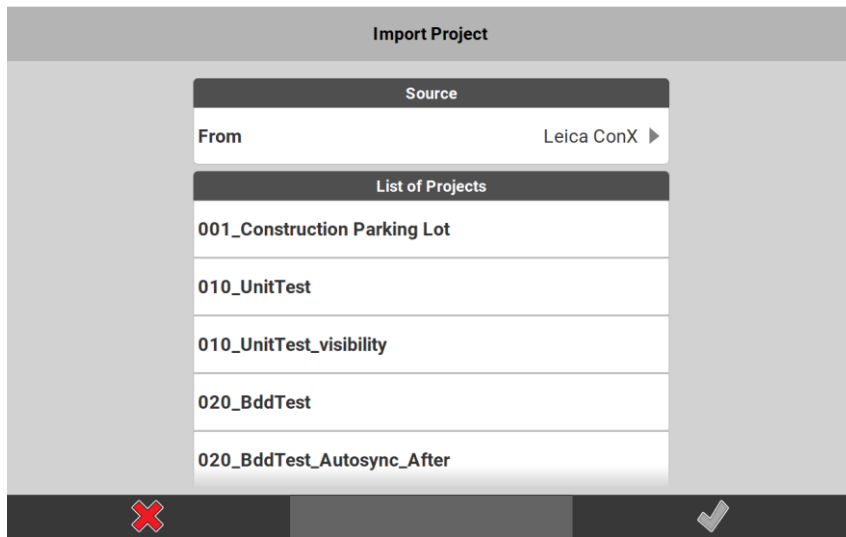
As a last step, the job needs to be assigned to the Unit. It is no longer necessary to assign files to the Unit as the files which are part of the job will be imported into iCON field software.

It is strongly recommended to assign the job to “**Field Crew & iCON solutions**”*

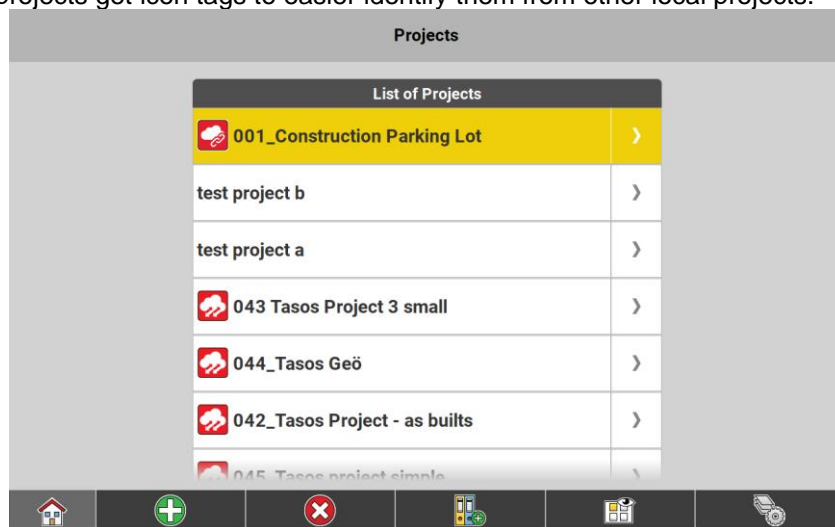
*Known issue: After a job or file is assigned to an individual unit and the unit gets moved to a different ConX project, the Unit assignment in the original project is lost. To avoid this from happening, it is recommended to assign the jobs to “**Field Crew & iCON solutions**” unit type.

Import the ConX Project into iCON field:

To import the ConX project into icon, go to Projects and press the  button. The list shows all available ConX projects for import.



Imported ConX projects get icon tags to easier identify them from other local projects.

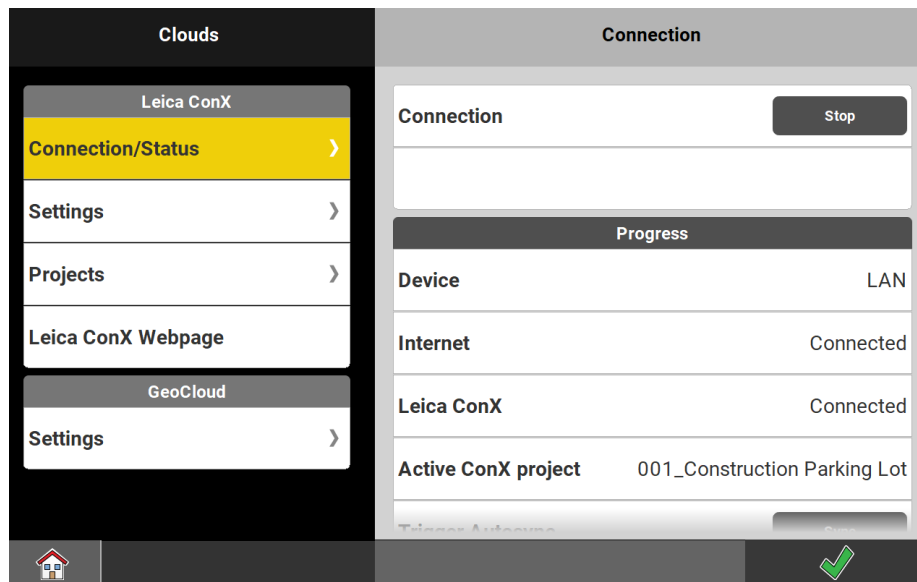


Indicates an imported ConX project.

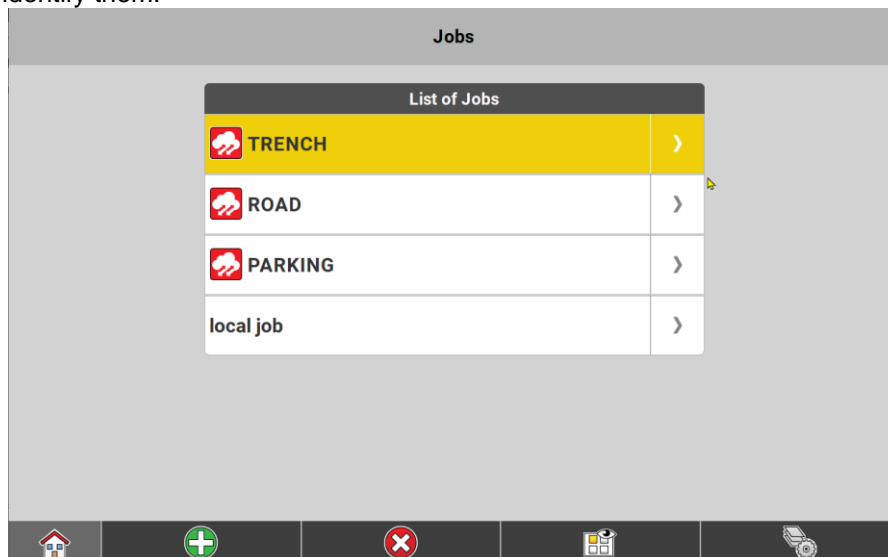


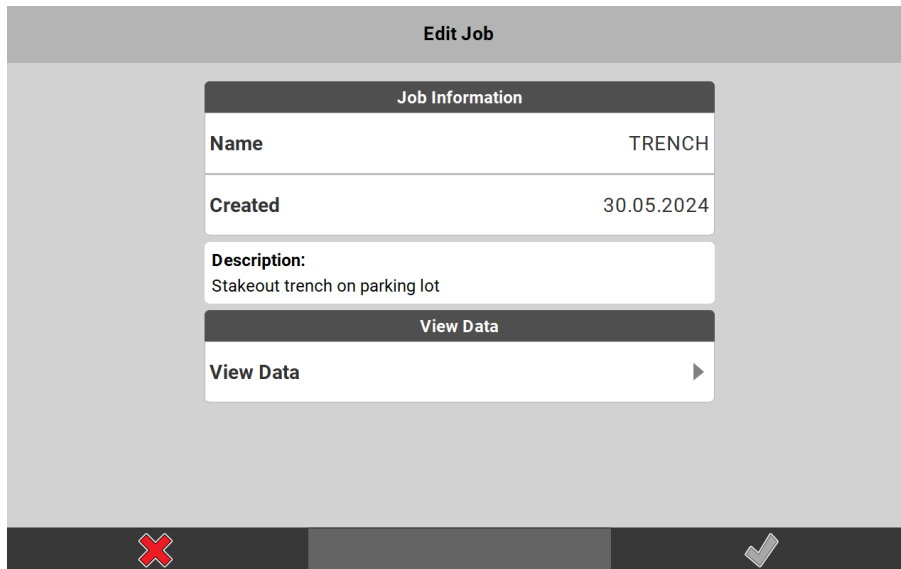
Indicates the ConX project at which the unit is currently located on the server.

When activating a different ConX project in iCON, the unit automatically moves to the relevant ConX project on the server to ensure proper data synchronization with the relevant/linked ConX project. Information regarding the location of the unit (Active ConX project on the server), can be found in the Leica ConX connection screen.



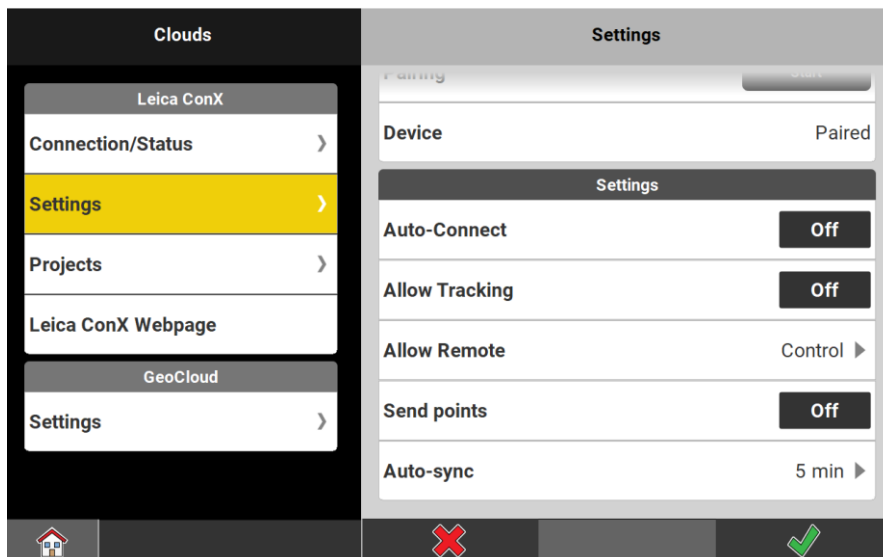
The Jobs created on ConX get imported together with the ConX project. ConX Jobs also get the relevant tags to easier identify them.






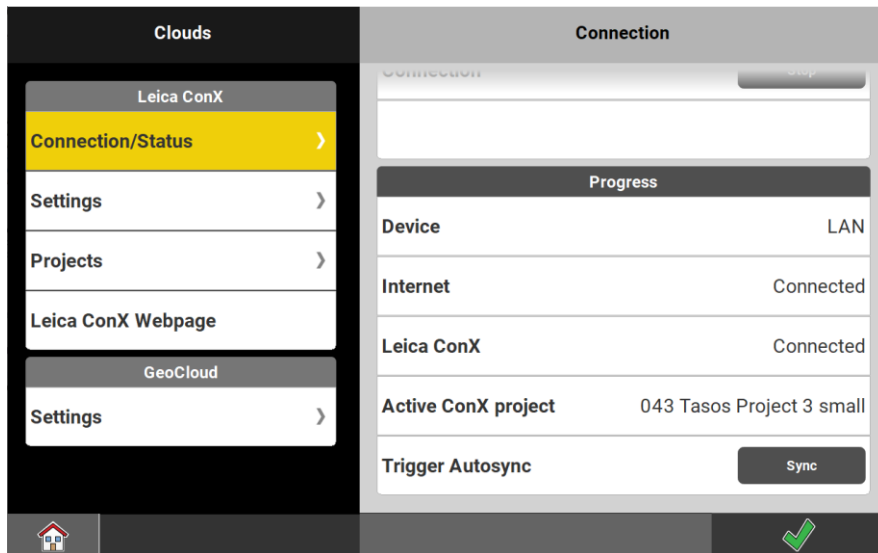
A job description from ConX is shown in Job information screen.

Automatic/manual project sync:



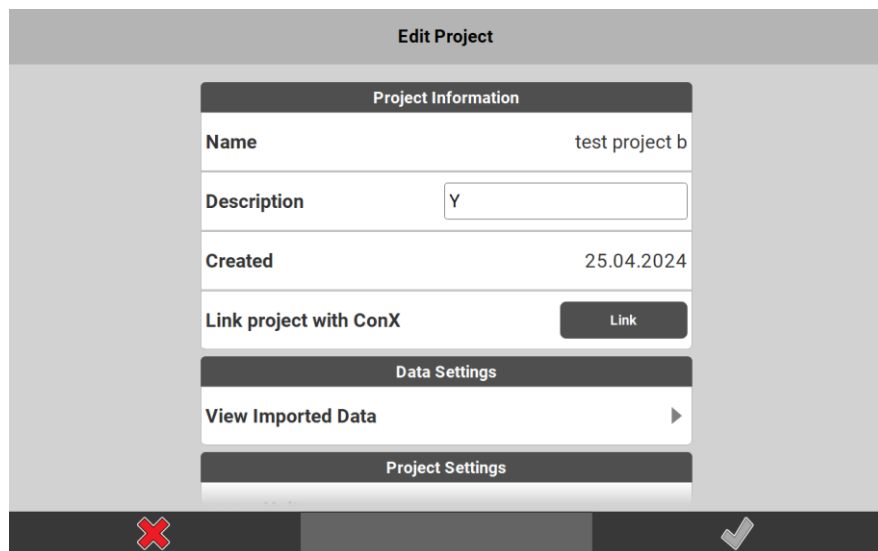
When the Auto-sync option is active, the software check for updates on the linked ConX project. When a new Jobs or files are added, the software will notify the user. Similarly, when a job or a file is removed from the ConX project on the server, the user gets notified, and the tags gets updated with . The jobs or files with this tag are not automatically deleted.

In v8.2 it is also possible to trigger a manual sync with the ConX project.



By pressing the Sync button and returning to an application, an one-time sync with the ConX project will occur.

Linking projects that have been imported from ConX with older version:



Projects that have been imported from Leica ConX with older versions of the iCON field software can be manually linked with the respective project on Leica ConX server.

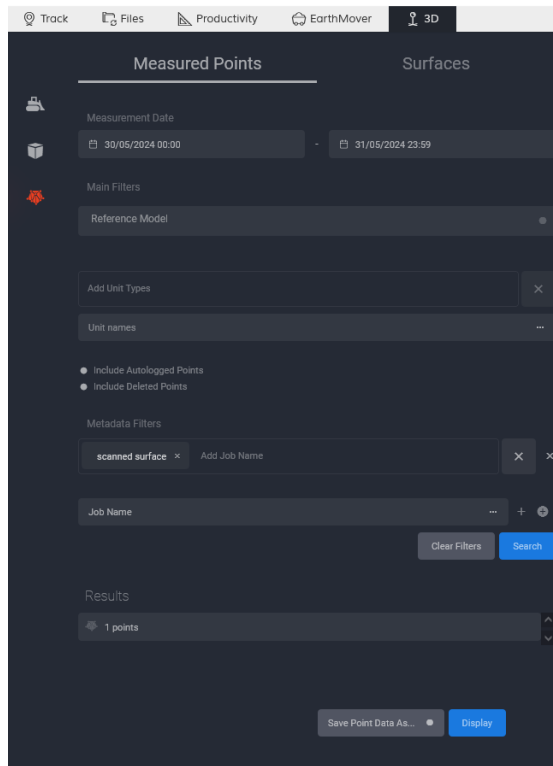
Preconditions:

- a) it is required that the iCON and ConX projects have the same name.
- b) the iCON project that needs to be linked must be active.

This will allow users to sync-in files and send points to the linked ConX project.

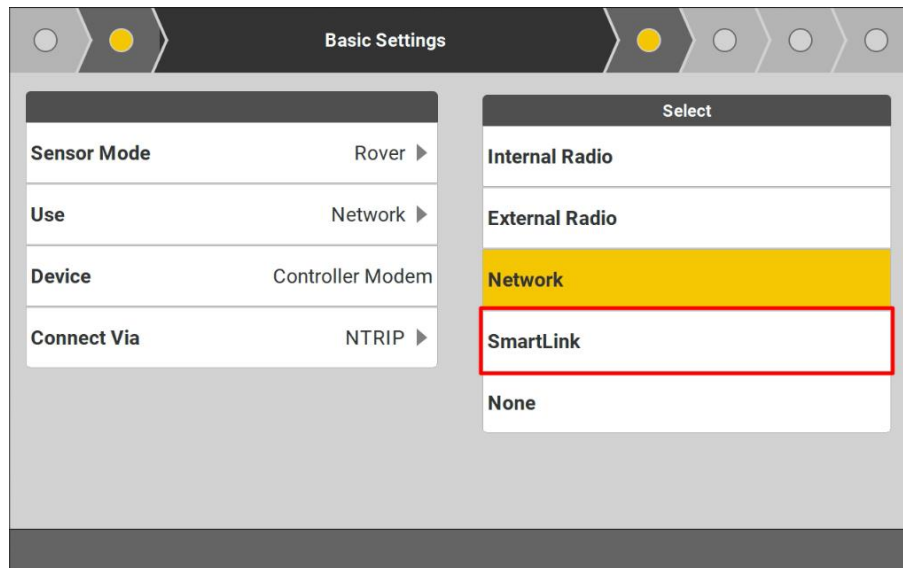
Job information to the sent points:

Points sent to Leica ConX include the ConX Job information. With this information ConX users can filter the points based on the jobs.

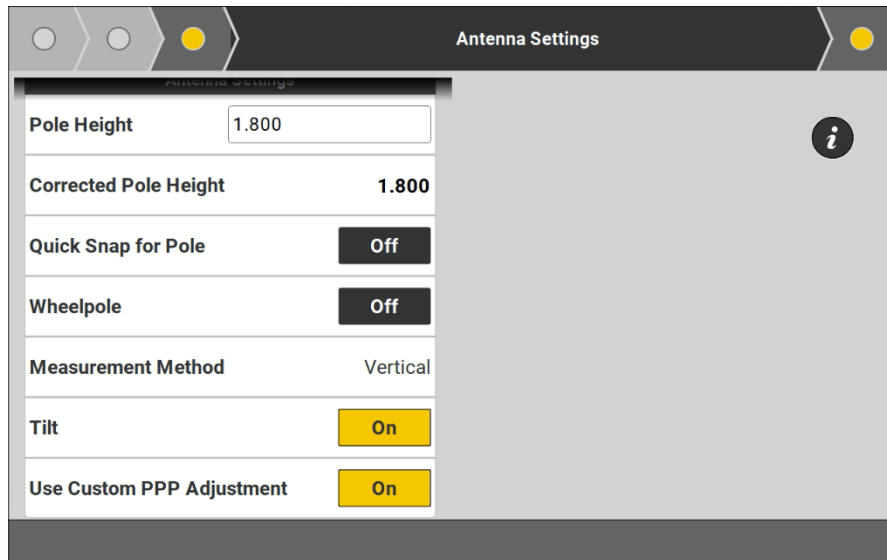


2.15 SmartLink PPP – Custom adjustment

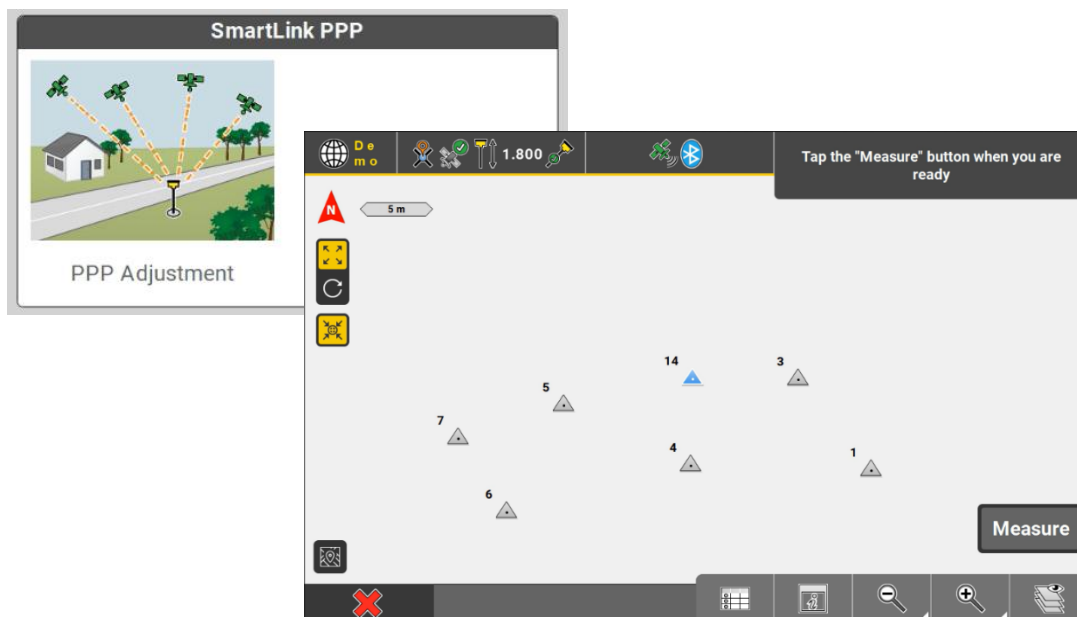
In this version, new SmartLink rover profile type for iCG70 and iCG160 has been introduced. SmartLink PPP provides GNSS corrections at areas where there is no network coverage nor a base station available. A SmartLink license is required on the GNSS sensor. To setup SmartLink, make a new profile and select the “SmartLink” option.



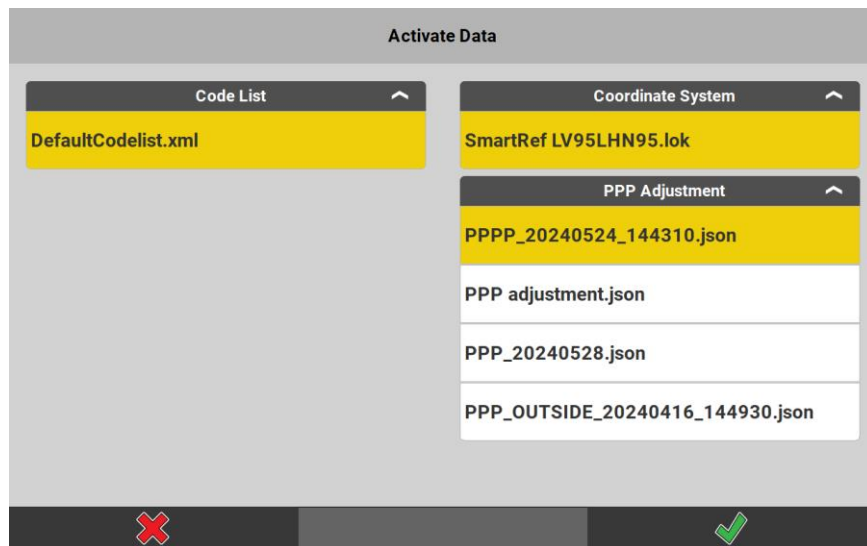
In the Antenna Settings, the option to “Use Custom PPP Adjustment” is set ON by default. In this case the received position from SmartLink must be adjusted to fit with the project coordinates.



To create the adjustment file, access Coordinate Systems and select the PPP Adjustment option. From the map select a point that had been measured previously with an RTK fixed position (it is required this point to have Lat/Long/Ell.H. information) and measure it.



The information is stored in an adjustment file within the iCON project and can be exported and imported to other iCON field tablets.

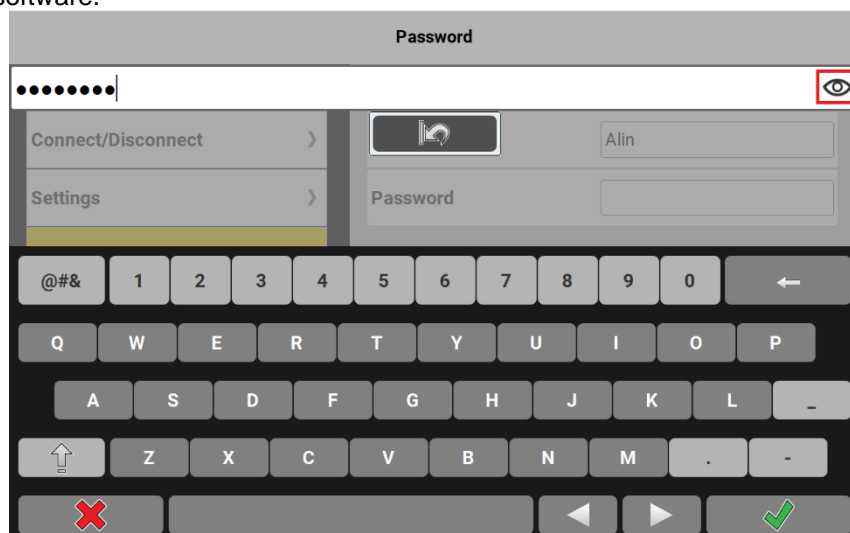


It is still possible to use a predefined Reference frame and Reference frame epoch as in previous versions by turning off the Custom Adjustment option in the profile.

The new custom adjustment functionality is available with the upcoming firmware release for iCG70 and iCG160 sensors.

2.16 Show/hide password

It is now possible to see the password input and to correct potential mistakes. When the “eye” symbol is pressed, the password can be readyble. This feature is applied to all passwords fields that are available in the iCON field software.



Possibility to show/hide the password.

2.17 Support of QZSS satellite constellation

iCON field v8.2 can now support QZSS Japanese satellite constellation for the GNSS sensors:

- iCG100 v3.0.0
- iCG70 (available in the upcoming firmware release)

- iCG160 (available in the upcoming firmware release)

Note: A valid license on the sensor is required.

2.18 GNSS signal interference reduction (HDR mode)

This feature activates the interference mitigation option on the GNSS sensor, which mitigates out-of-band interferences and enables filtering functionalities to remove in-band distortions. When this option is enabled, although it increases the power consumption on the sensor, it allows obtaining the highest robustness of signal tracking against interferences (ionospheric disturbances excluded) for the GNSS sensors:

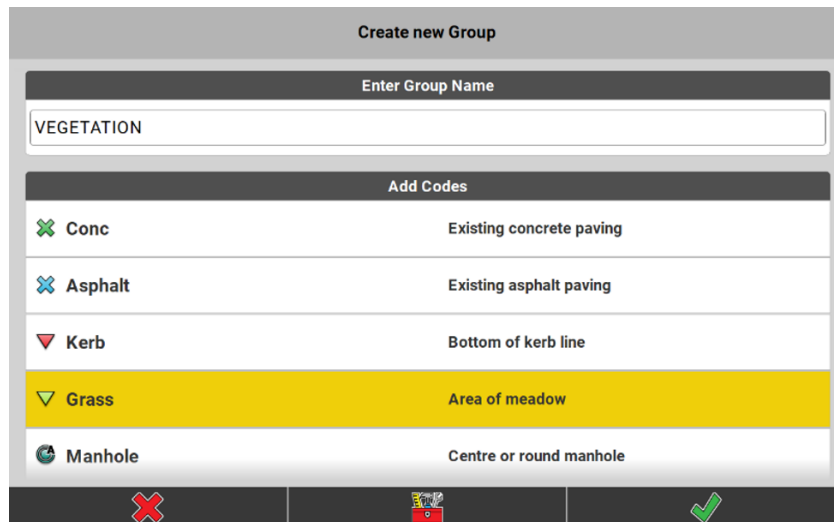
- iCG100 v3.0.0
- iCG70 (available in the upcoming firmware release)
- iCG160 (available in the upcoming firmware release)

Note: A valid license on the sensor is required.

3. iCON Field software improvements and bug fixes

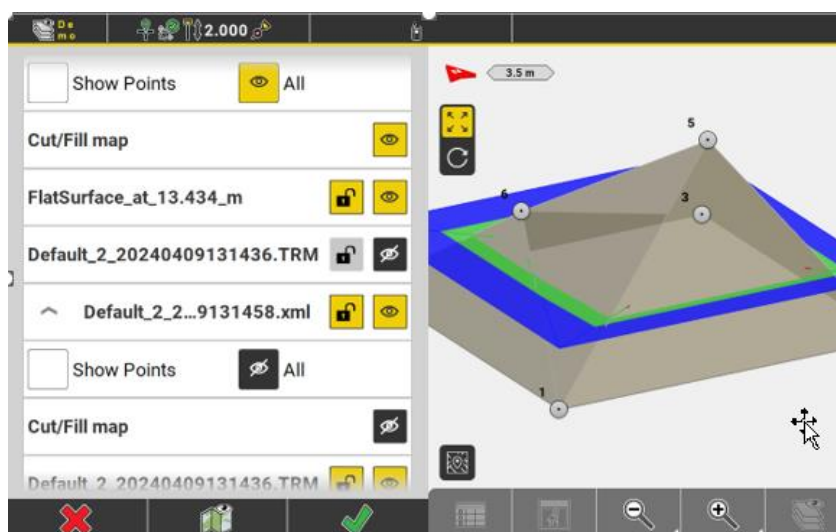
3.1 Code grouping improvements

The improvements target to ease the workflows when working with code descriptions and code groups. Within code grouping management, the codes descriptions are now displayed next to the codes. Additionally, it is possible to find a code by searching for the description.



3.2 **Cut/Fill map for flat surface**

In volume calculation “Surface to Elevation” or “Surface to Point” it was possible to create a flat surface at the set elevation. These methods allowed to create a cut/fill map of the surface only. In v8.2 the cut/fill map of the flat surface can be created as well.



3.3 **Edit point height for points measured with iCG160/70 tilt or AP20**

The height coordinate of the points measured with iCG160 or iCG70 Tilt sensor or using AP20 is now editable in edit point tool.

3.4 **Select Foremost option in TPS setup**

When the Layout Objects license is active, the select Foremost functionality is now available in TPS setup.

3.5 **Smart Coding option activated for iCON Prep license**

It is now possible to activate Smart Coding function when having an iCON prep license.

3.6 **iCON site Excavator – Problems switching from tilt rotator bucket to a standard bucket**

In previous version, when trying to switch from a tilt rotator bucket to a standard bucket, a message stating that the “Rotation sensor is not configured” was shown. The solution was to disconnect the cable from the rotation sensor. In v8.2, this check is removed making it easier to switch buckets.

3.7 **MC Calibration – Redundant measurement to point C6 removed**

When measuring the excavator cylinders during calibration, the point C6 measurement has been removed as it is the same measurement with the required DB1 point.

3.8 **Updates of coordinate systems**

The coordinate systems for Denmark and Finland are updated.

3.9 **Improved stability with MS60 scanning**

A couple of software crashes related to MS60 scanning workflows have been identified and fixed.

3.10 **Prism search with TS16/MS60 – no measurements after prism is found.**

After automatic searching and finding the prism with a TS16/MS60, in some cases the software was not starting the measurements. This issue has been fixed in v8.2.

3.11 DWG import – problem reading properly the arcs

In previous icon versions, it has been identified that some arcs from DWG files were imported with inverted curvature. This issue has been fixed in v8.2.

3.12 Leica ConX webpage access when using CC80

Accessing the Leica ConX webpage for some of the CC80 controllers was not working since the internet explorer browser was used. In v8.2 this is changed. Leica ConX opens in whichever browser is set as default in windows.

3.13 New point creation from reference data

In previous version, it could happen in rare cases that points from reference data could not be selected to create new points. This is now fixed in v8.2.

3.14 Checks and Volumes calculations are not deleted properly

In previous versions, checks or volumes calculations were not properly deleted since some related files were still available in the system. This is now fixed in v8.2.

3.15 Volumes report fails depending on the Volume calculation name

In previous versions a Volume report was not possible to be created when the volume calculation name contained dots. This is now fixed in v8.2.

3.16 DWG/DXF file import settings not accessible when too large

In previous versions, the import settings of large DWG/DXF files were not accessible although the file could be imported. This is now fixed in v8.2.

3.17 Slope side switch after changing slope parameters

In Slopes application it could happen that the defined slope might flip sides after defining the slope parameters (slope angle, distance/height, offsets). In v8.2, the side of the slope is kept.

3.18 File explorer opens-up automatically on CC200

In previous version it could happen that the windows file explorer opens automatically without any user interaction. This is now fixed in v8.2.

3.19 Points unable to be stored when offsetting lines in Sketch/Draw app

In previous version, it could happen that an error appears after trying to offset a line in sketch/Draw application. This is fixed in v8.2.

3.20 JPEG Background raster images not available in layer manager

Raster JPEG Background images, although they could be imported and displayed on the map, they were not listed in layer manager. This is now fixed in v8.2.

3.21 Import of XML files (pipe network)

LandXML files containing pipe networks can now be imported.

3.22 Data blue box indicators failure

For some files it could happen that after long press of the -zoom button (zoom extend) the data blue box indicators were not displayed on the map. This is now fixed in v8.2

3.23 *Coordinate system creation could not be finished*

In previous version, it could happen in rare cases that a "configuration store error" message was shown when trying to finish a new coordinate system. This is fixed in v8.2.

3.24 *User defined base ID for iCG160 not set correctly*

In previous version, after setting up the iCG160 base, the base station ID was always set to 0. This is now fixed in v8.2

3.25 *CC170 – Autostart of iCON field software failure*

In previous versions, it could happen that iCON field software was not starting up automatically after turning on the controller. This is fixed in v8.2.

4. Known issues

4.1 *AP20 – moving out of snap lock positions while working with the short tip*

When using the AP20 with Tilt and Auto PoleHeight functionality (AP20 or AP20T), please be aware that you might run into situations where the calculated position is not updating correctly anymore. This might happen if you are measuring to the short side of the pole and the long pole side gets moved from a valid snap lock position into an invalid, also when moving back then to a valid position. Changing back to the long side recovers the correct calculations.

5. General information & recommendations

5.1 *How to update manuals on the CC70/CC80/CC170 /CC200*

On the Start screen and Windows desktop of the tablet, there are links to the iCON site and iCON build PDF manuals. These manuals are NOT updated as part of the installation of the new version.

If you wish to have the latest version of the manuals available on your tablet, follow these steps:

- Download the manual from myWorld / myDownloads / iCON / iCON Field / Manuals / ... download the "iCON field How to Guide" in the language of the manuals which are currently installed on your tablet. Ensure to keep the naming of the downloaded PDF file.
- Copy the downloaded PDF file to your tablet in the folder D:\iCON-Manuals.
- Delete the old versions of the manuals from the same folder.
- Check that the update was OK, by tapping on one of the manual icons from the Start screen or Windows desktop.

5.2 *Crash reporting function*

To improve the robustness of iCON Field even further, and to ensure good customer support, a function to report software crashes was introduced with iCON Field v2.5. This common tool to improve worldwide used software products is implemented for iCON Field controllers. In case the software detects a malfunction, the report containing important information about the event is sent automatically to the server – if an internet connection is established or after this is established. Only information related to the malfunction is sent and NO personal customer data is collected.

5.3 Connectivity to cloud services

Due to security updates on the ConX server, the connection from iCON Field software version 4.5 or older is not possible for technical reasons anymore.

To be able to connect to the ConX server, please upgrade iCON Field software to the latest version.

5.4 Projects compatibility after upgrading from older version than v3.5 to v6.7/6.8

Direct upgrade from very old iCON Field version (e.g v3.0 or older) to versions 6.7/6.8 causes a compatibility issue to the active project.

To avoid the issue from happening, please follow the steps:

- a) When using an older version, install the intermediate v3.5
- b) Start iCON and activate each project, one after the other, so they all get updated to v3.5
- c) Exit icon and install desired version (up to v6.7/6.8). After installation all the projects work as normal.