X-PAD Ultimate Survey

X-PAD Ultimate Build

X-PAD Ultimate GO

X-PAD Ultimate

Service Pack #1 2024

Spring 2024

GEOMAX

MISCELLANEOUS

General improvements

X-PAD Ultimate is being continuously improved and updated. Minor improvements and bug fixes are not listed in this presentation but can be found in the notes for this release.

Release number

X-PAD Office Fusion release number is changed following a simple structure that allows to immediately recognize to which year and month it belongs.

The rule is now the following:

<year>.<month>.<version>

For example:

24.04.00 means that is the first release in April 2024.

Nightly build releases can be recognized by length, as they have an additional number different from 0 at the end.

24.04.01.01

New application icons and start screens

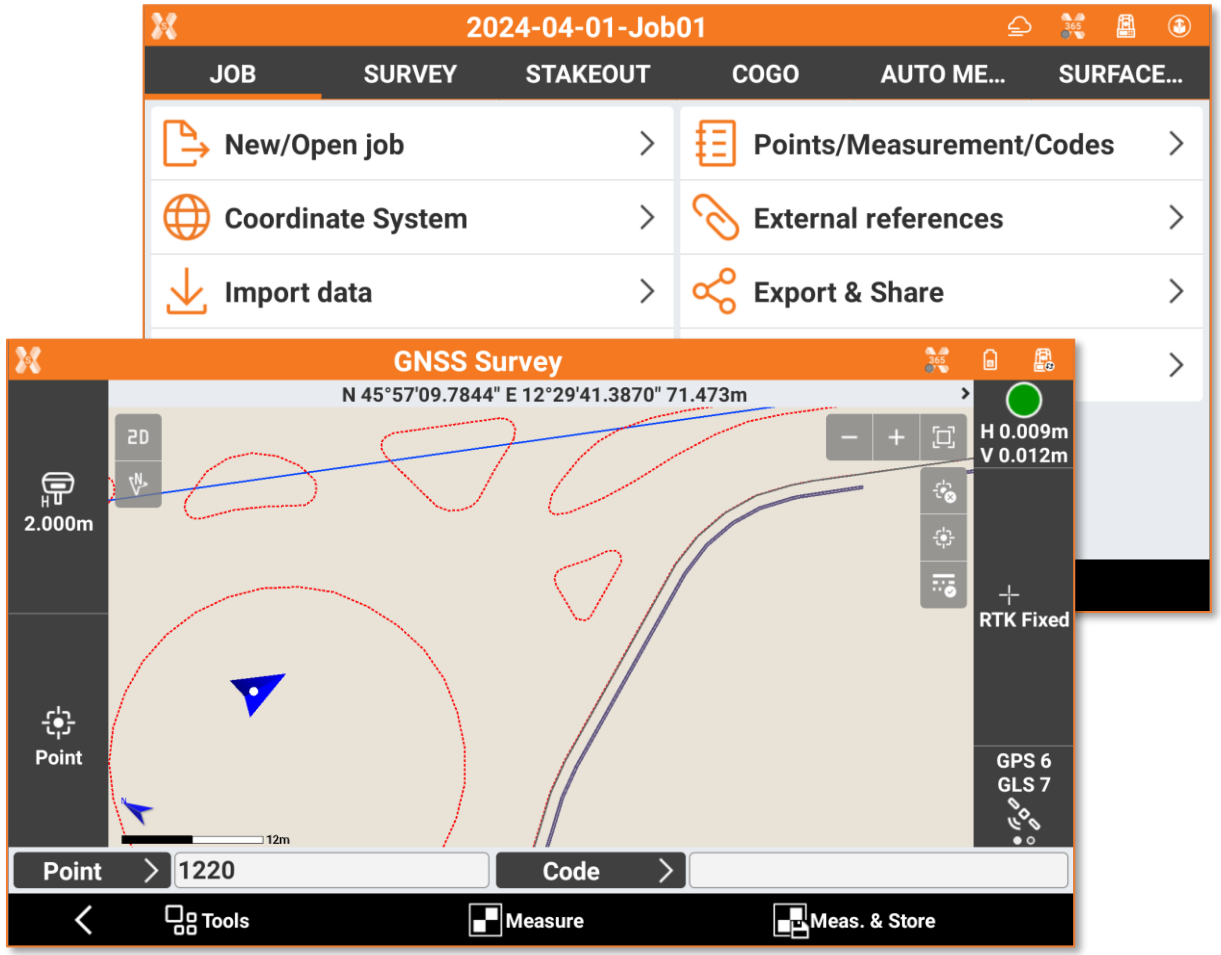
From this release, the application icons and start screens have been redesigned as follows:

Improvements in User Interface

X-PAD Ultimate User Interface has undergone significant improvements across various areas to make it more aesthetic and modern.

Here are the key changes introduced:

- New icons have been integrated in Main menu and throughout all commands - (in progress)
- New icons have been implemented on the buttons to control functionalities
- CAD toolbars have been revamped
- Input fields, buttons and controls have been refined to provide a better user experience overall



License activation: capture Entitlement ID

To simplify and to speed up the activation process, users can now **capture the Entitlement ID** of the license by simply aiming the camera at paper or screen displaying the EID.

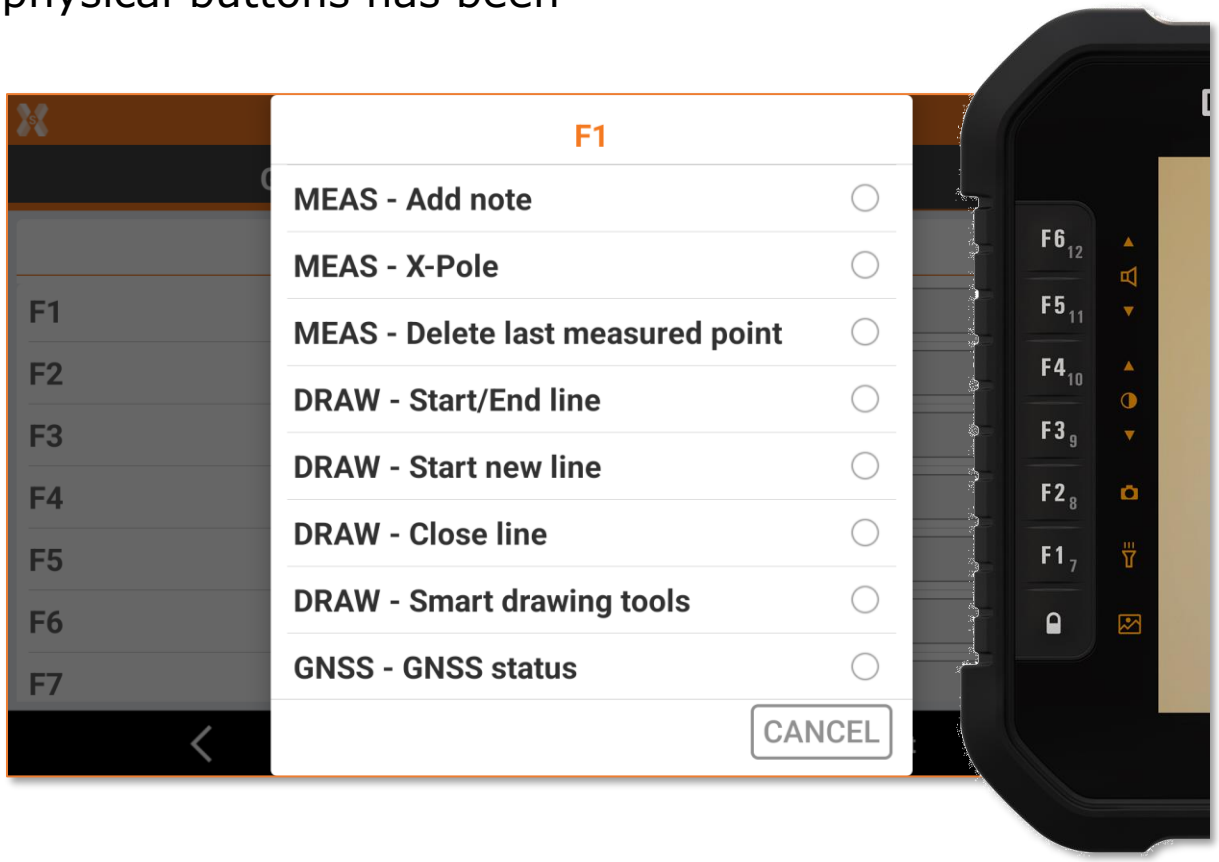
The Entitlement ID is automatically recognized within the image and entered into the corresponding input field.

This eliminates the need for manually entry of the 25-digit Entitlement ID character by character.

Function keys

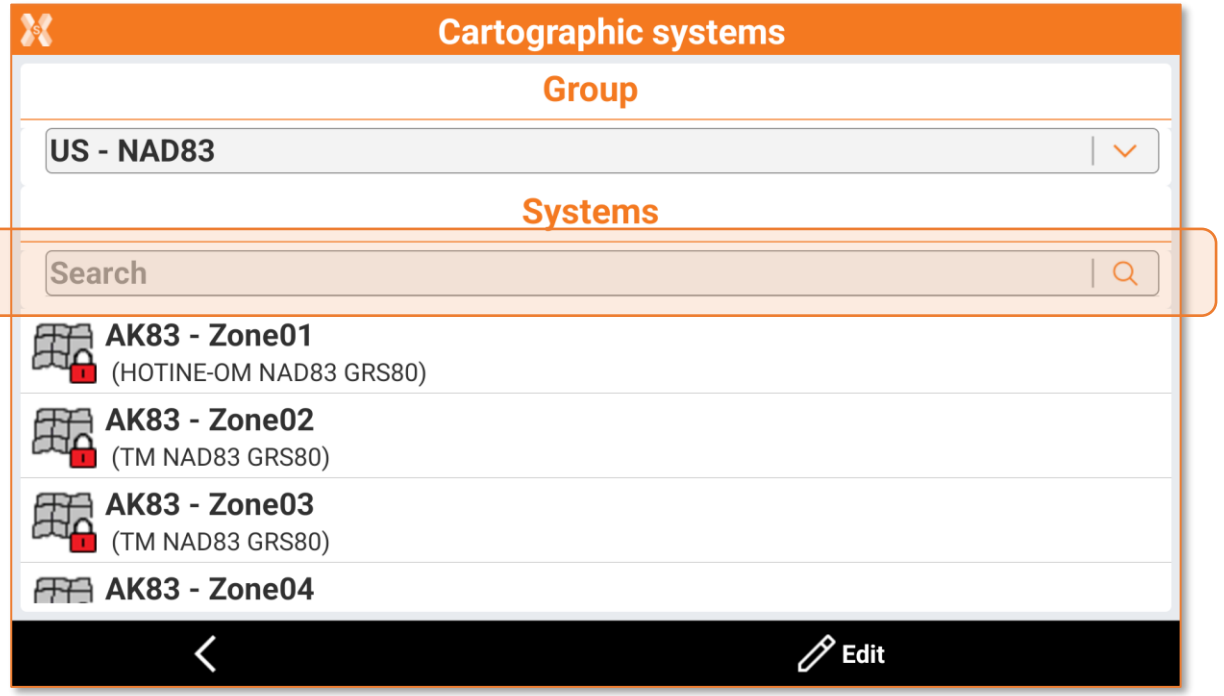
List of the functions that can be associated to the physical buttons has been extended to include the following new entries:

- Search target Left and Right
- Search Window area
- Open Joystick page
- Laser on/off
- Delete last measured point
- Previous point in stakeout
- Close line
- Change TPS measurement mode: Standard, Offset, F1/F2, …



Search on Coordinate systems

The database of coordinate systems is becoming larger and larger due to new systems that are being introduced by the different countries. To simplify the selection process of the appropriate coordinate system, a search bar has been added. This feature enables users to apply a filter based on the coordinate system name.



SPCS2022 – “Alpha version”

The «Alpha version» of the new State Plane Coordinate Systems 2022 for the United States has been added to the coordinate systems library and is now available for use in projects.

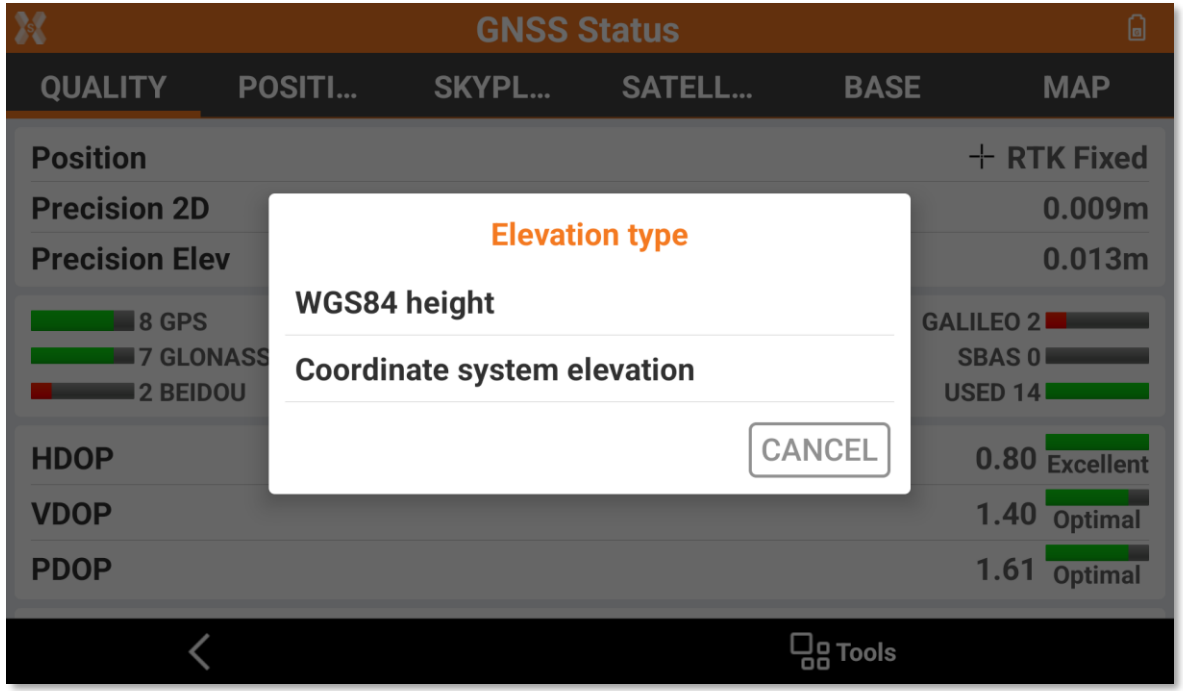
GNSS

GNSS Mock – Orthometric elevation

With GNSS Mock we make available the position, the accuracy and the reliability of GeoMax receivers to other applications running on the controller.

This functionality has been extended to include the option to set **the orthometric elevation,** defined in the coordinate system, as elevation.

This means users can obtain latitude, longitude, and orthometric elevation instead of ellipsoidal height.



Zenith06 - Covariance

In Zenith06 receiver, users now have access to the covariance matrix values, which are essential for specific applications in certain countries.

GEOMAX

TPS

Automatic scan of plane with TPS

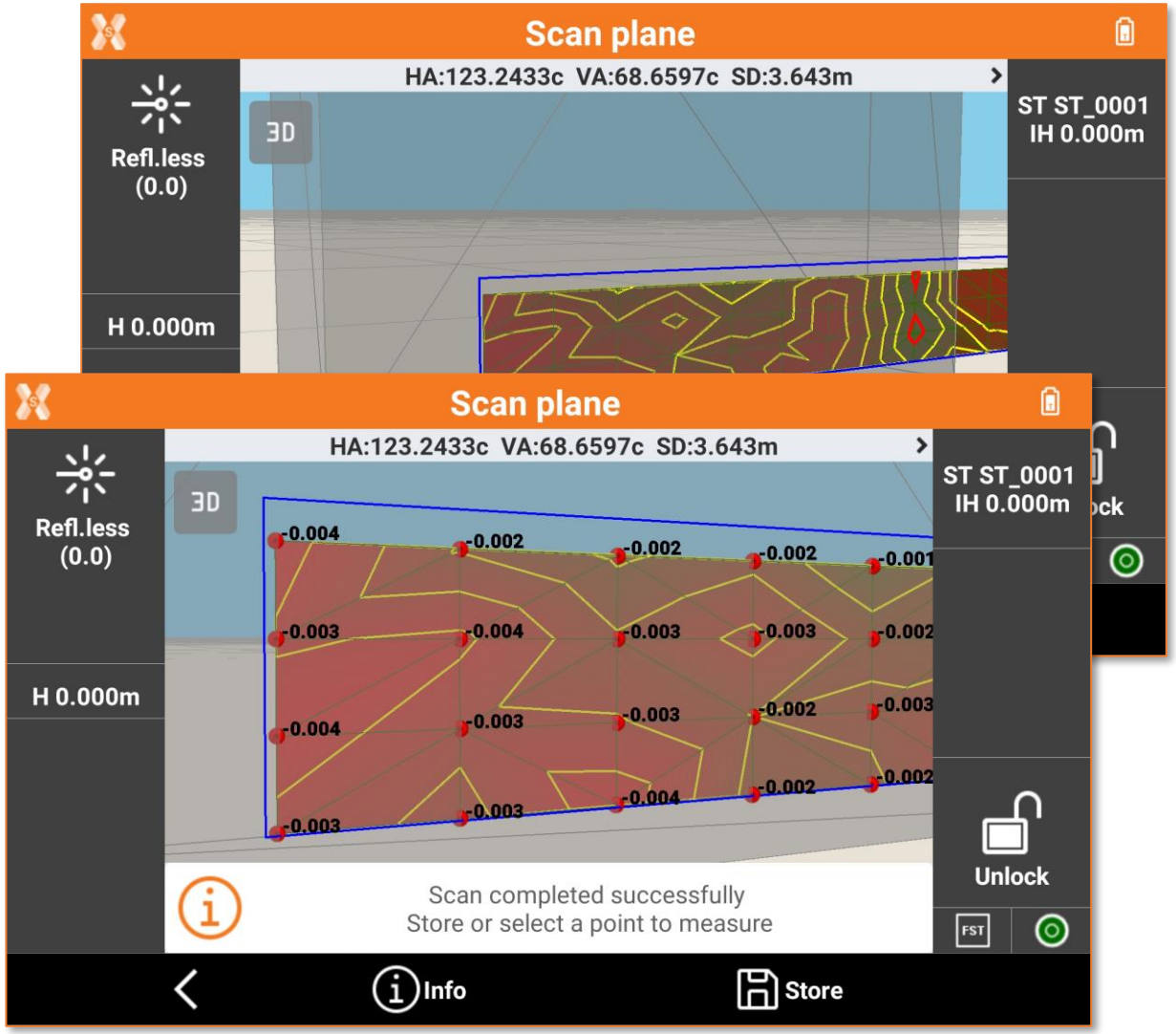
With this release it is possible to use the motorized total station to perform an **automatic measurement of a plane** (horizontal, vertical or sloped) surface; the reference plane can be also a surface of an IFC model.

It is possible to define the area to scan (rectangular or polygonal), the grid size and the software will drive the total station to measure each single point of the grid.

The result of the scan is a **colorized grid of points and a 3D surface** in which areas out of tolerance are immediately visible; the tolerance can be changed interactively and a new colorized map is generated.

To identify the areas out of tolerance in the physical plane, just select a point on the screen and TPS will rotate toward the selected point.

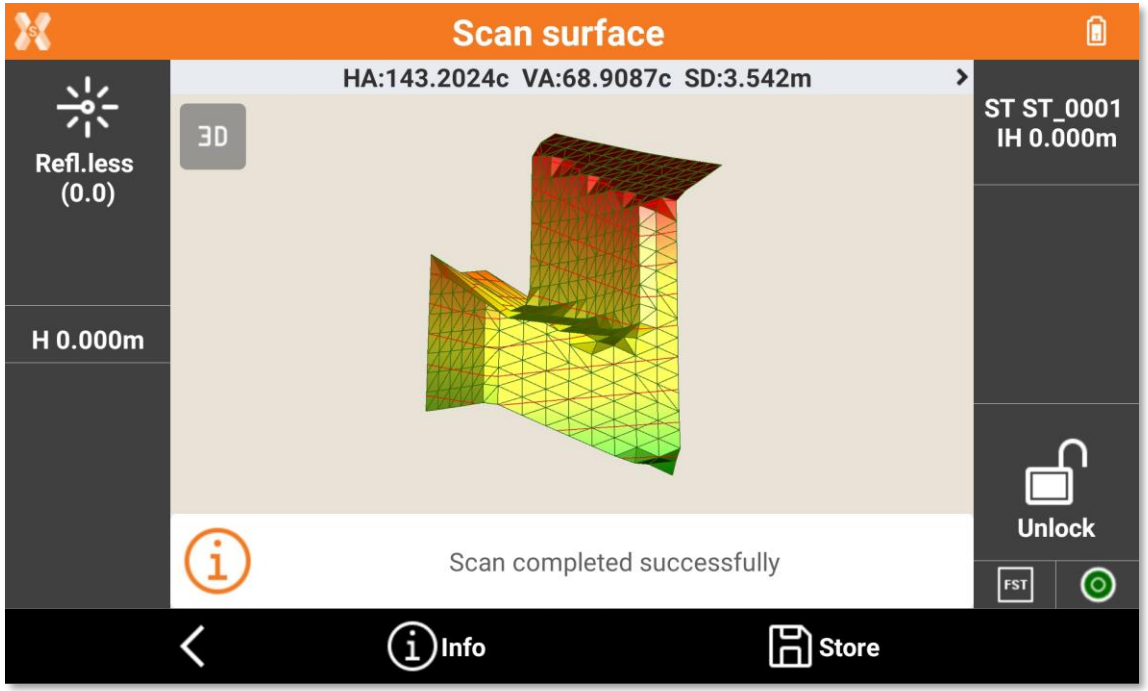
Points and surface can be exported (in 3D or plane 2D coordinates) to be used in different ways.



Automatic scan of a surface

Together with automatic scan of a plane, in this new release is possible to run an **automatic scan of a generic surface**. Even in this case, it is possible to define the area to scan (rectangular or polygonal), the grid size and the software will drive the Total station to measure each single point of the grid.

The result of the scan is a grid of points and a 3D surface that can be used for further calculations or can be exported to be used in different ways.

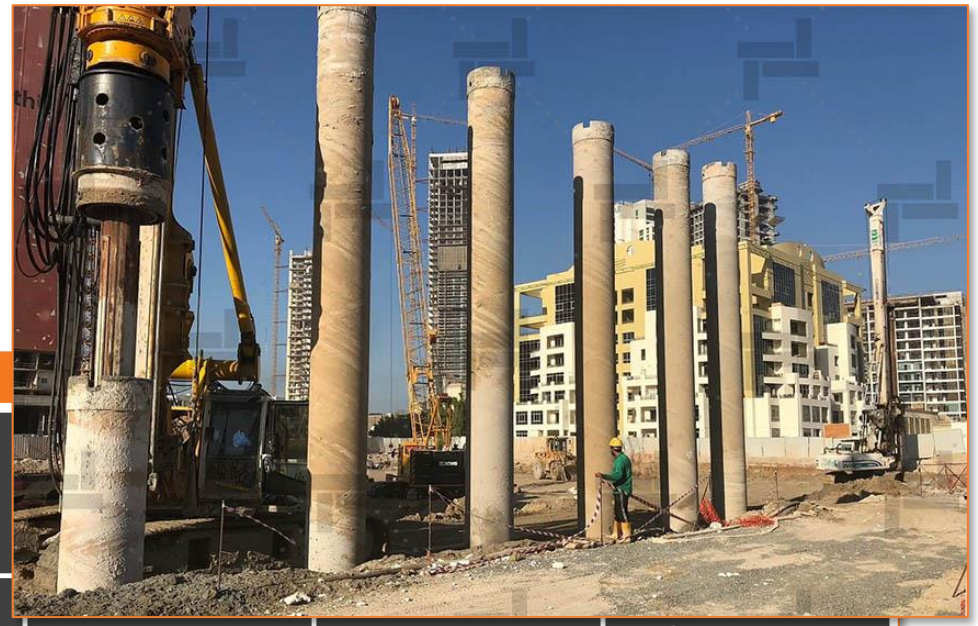


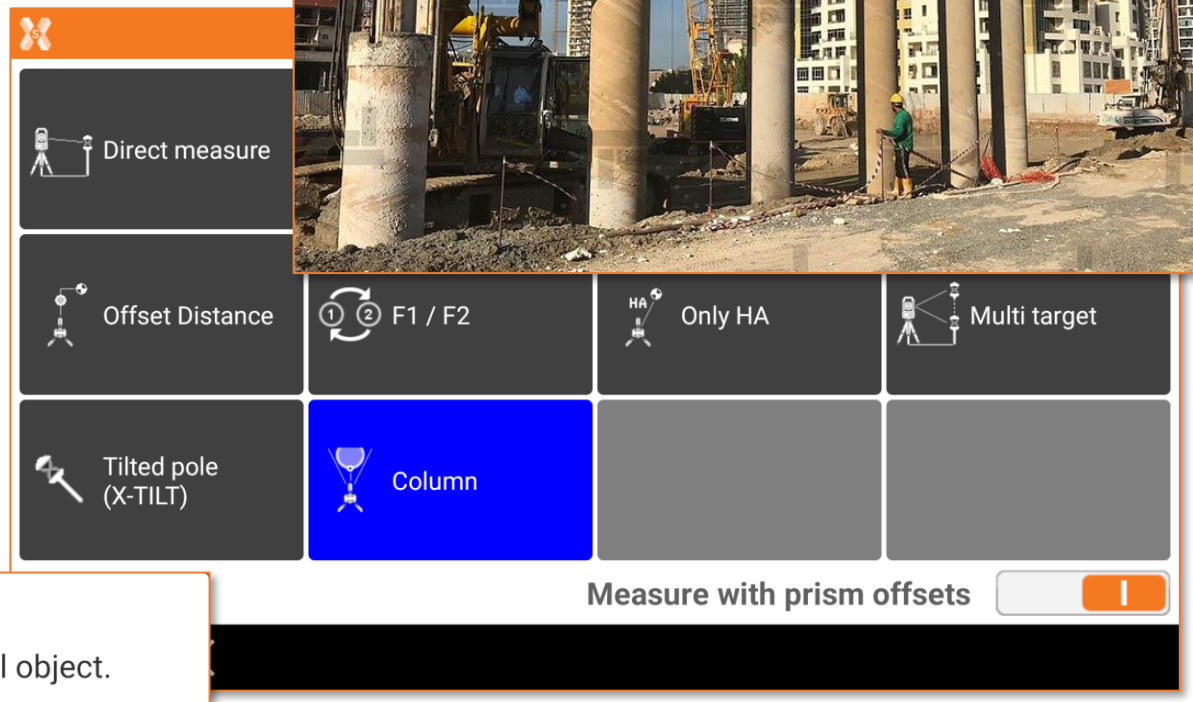
Column measurement

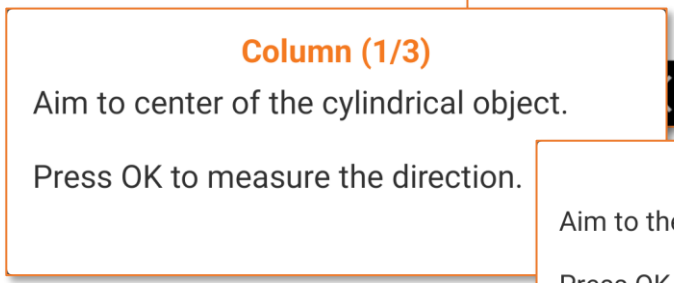
This new tool enables accurate measurement of the **center of a cylindric object** such as columns, trees or pipes using a TPS.

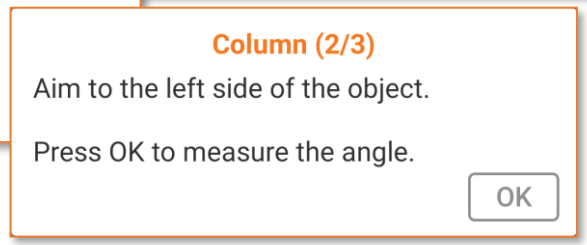
To calculate the center, users need to measure one point on the external surface of the object and to measure the tangent points of the object (angle only) .

With these measurements, the tool calculates the center of the object.







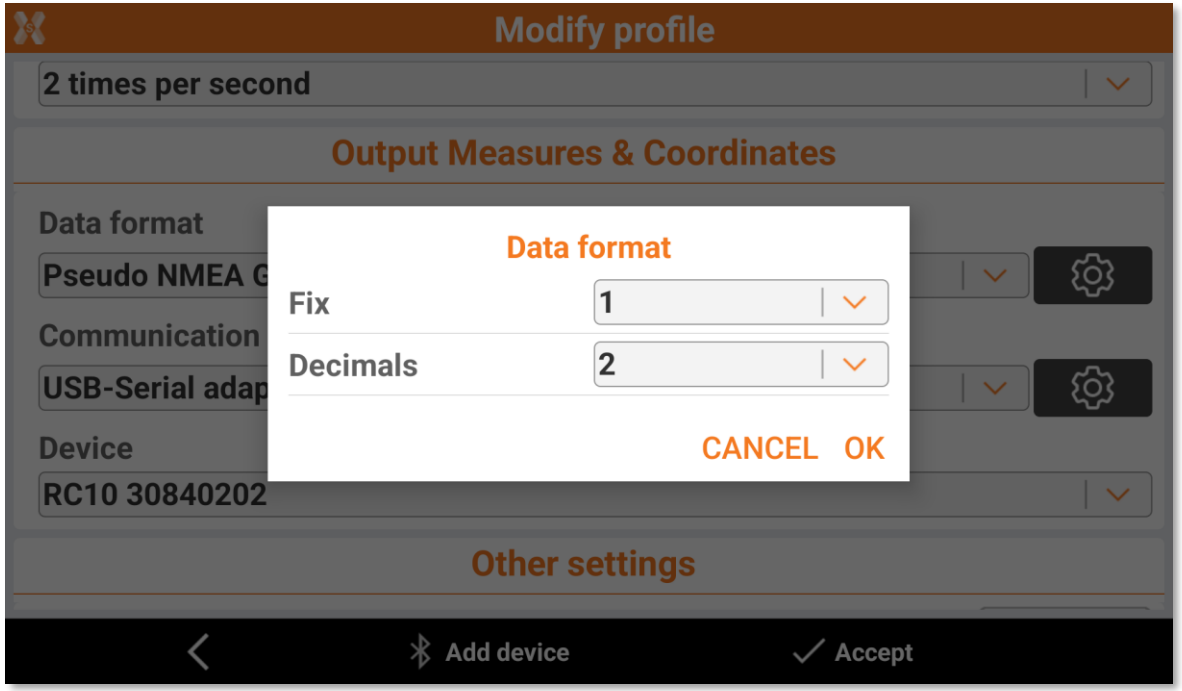


TPS Pseudo NMEA Output

TPS measurements can now be transferred in real time to other application via Bluetooth communication.

To accommodate various types of applications user can **customize the format** in which information is expressed.

Among the available settings, users can now define the number of decimals to be used in formatting the data.

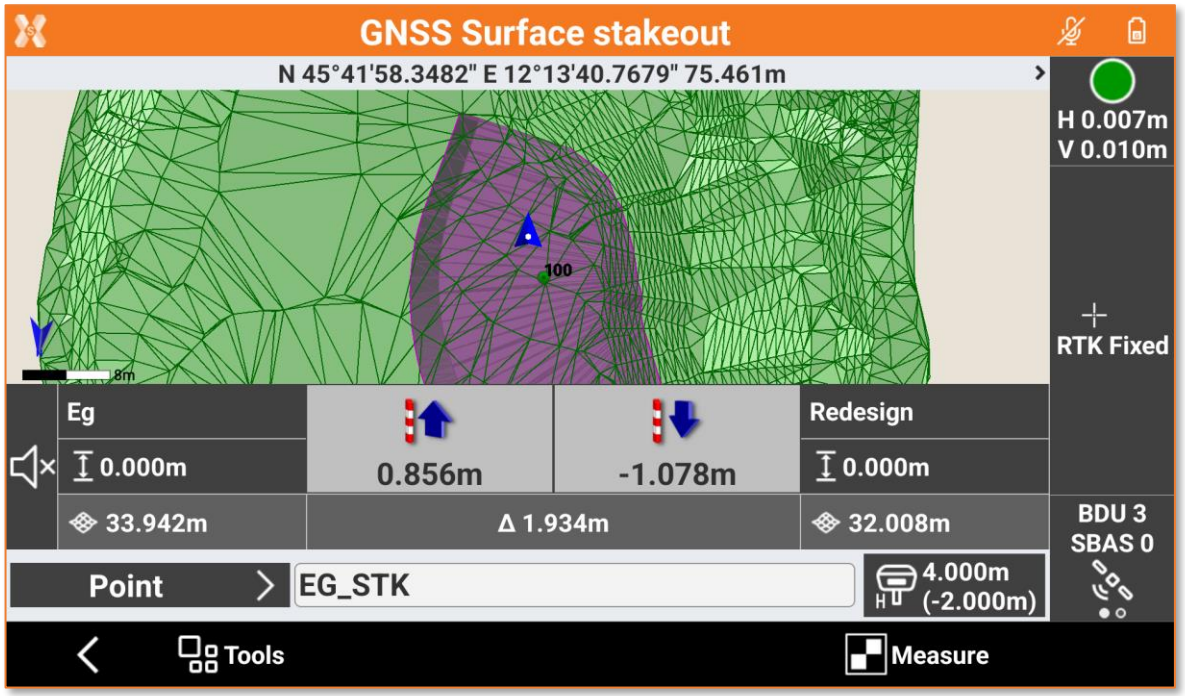


SURFACE

Stakeout multiple surfaces

The command that allow to stakeout a selected 3D surface has been extended with the possibility to consider in the calculation a **second surface**. When a second surface is selected is then possible to have in real time multiple values related to current position:

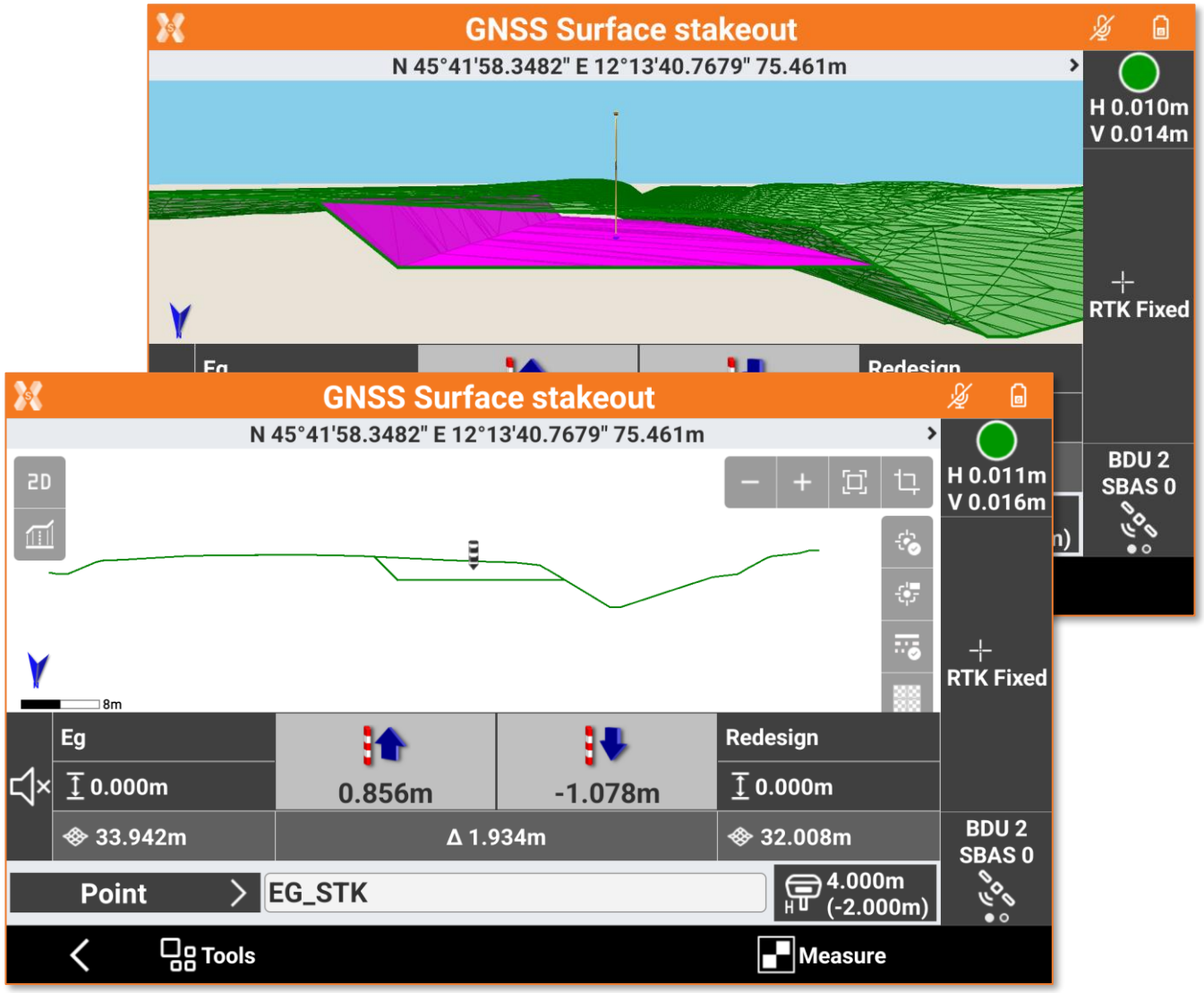
- Elevation difference between current position and the two surfaces
- Elevation difference between the two surfaces on current position (delta)
- Elevation of first reference surface
- Elevation of second reference surface



Cross-section view

Not all X-PAD users are aware that in surface stakeout command there is the possibility to activate the 3D cross-section view; this visualization mode allows to have, in real time, the transversal section view of the surfaces, considering the current direction.

This feature has been extended with **2D cross-section view** in which only the extracted lines are displayed.

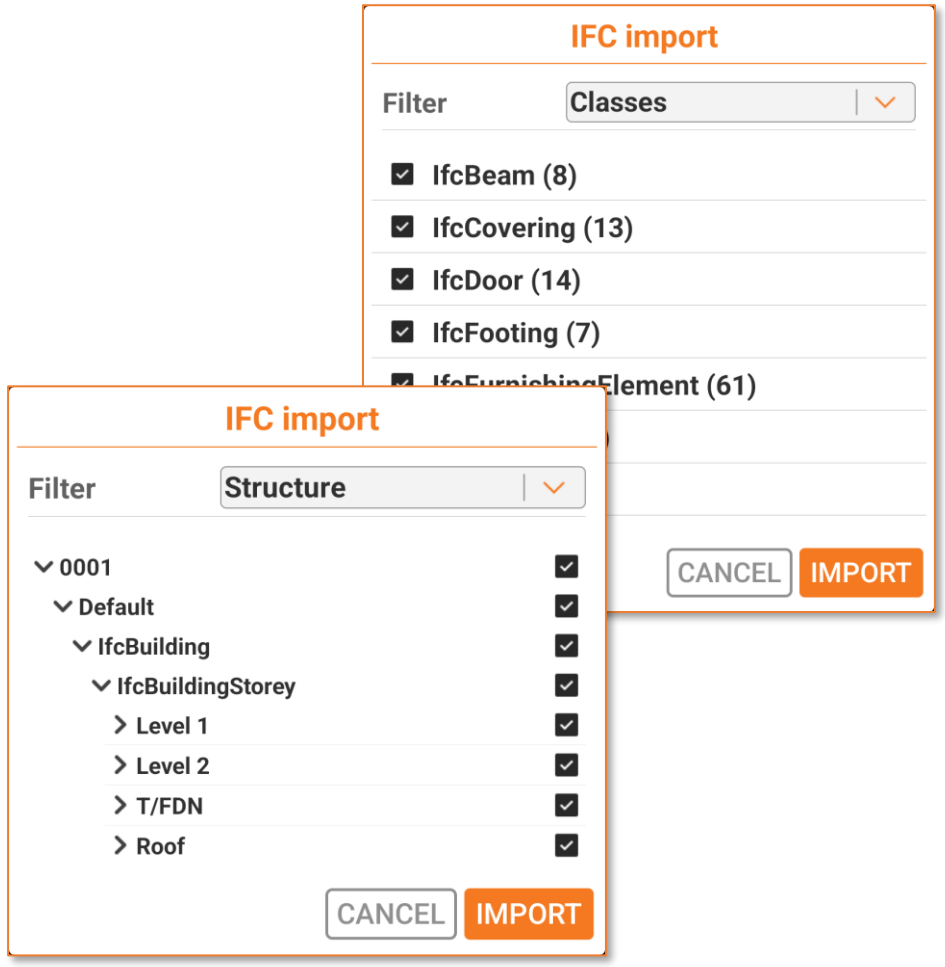


BIM & IFC models

Improvements on BIM and IFC models

In this service pack several improvements related to BIM and IFC models have been introduced.

- Import process is two time **faster** than before
- Before to proceed with the import is possible to **select the classes or the part of the structure to import**; in this way is not needed to import the complete model but only the elements or the area of interest
- Display filters have been improved and the current settings are stored for next visualizations

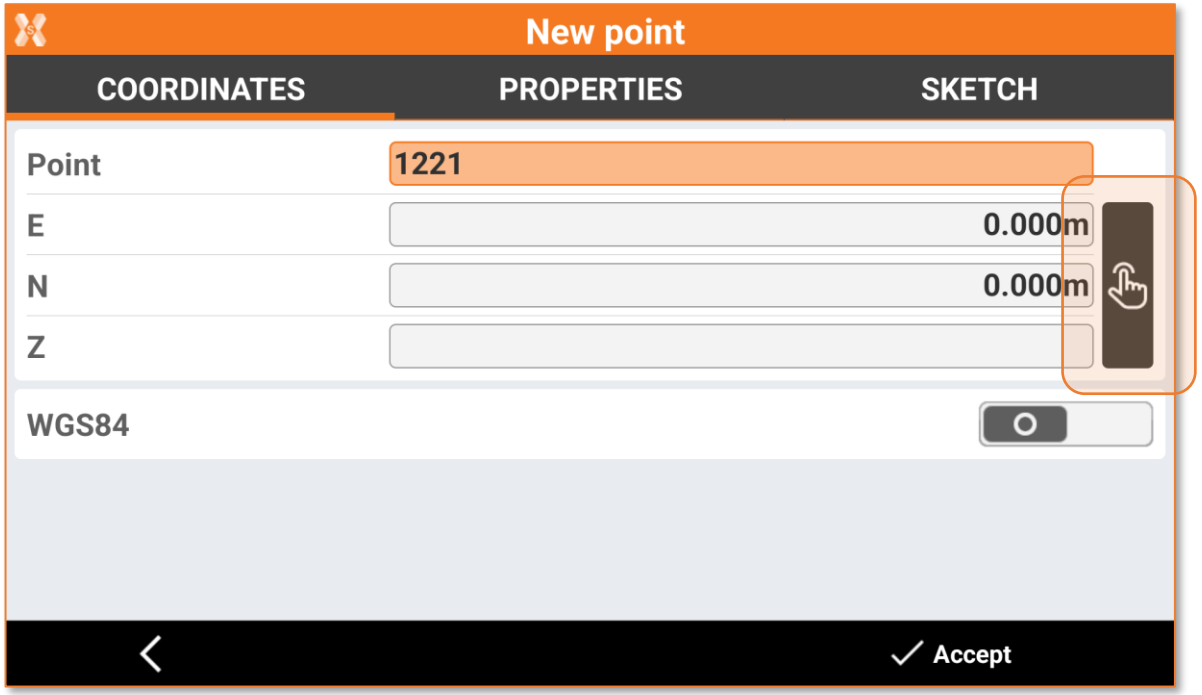


GEOMAX

CAD & MAPS

Point creation from CAD position

During the various operations and workflows available in X-PAD Ultimate, it is always possible to create a new point on the fly by entering the coordinates; now these coordinates can be defined by **selecting a position (with snap object) in the CAD view**. In this way it becomes extremely easy and fast create and use point on the fly from CAD drawings or from IFC models.

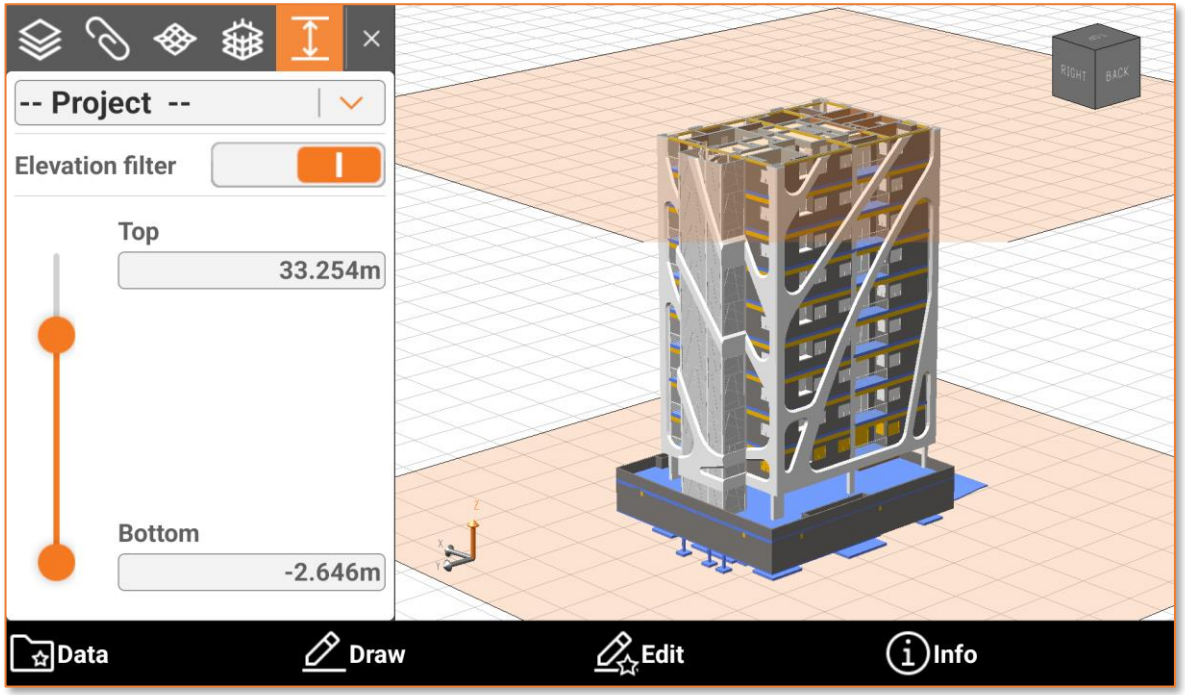


Cut planes at elevations

To offer more control in the visualization of IFC models and surfaces, this new X-PAD release introduces **cut planes on elevations**.

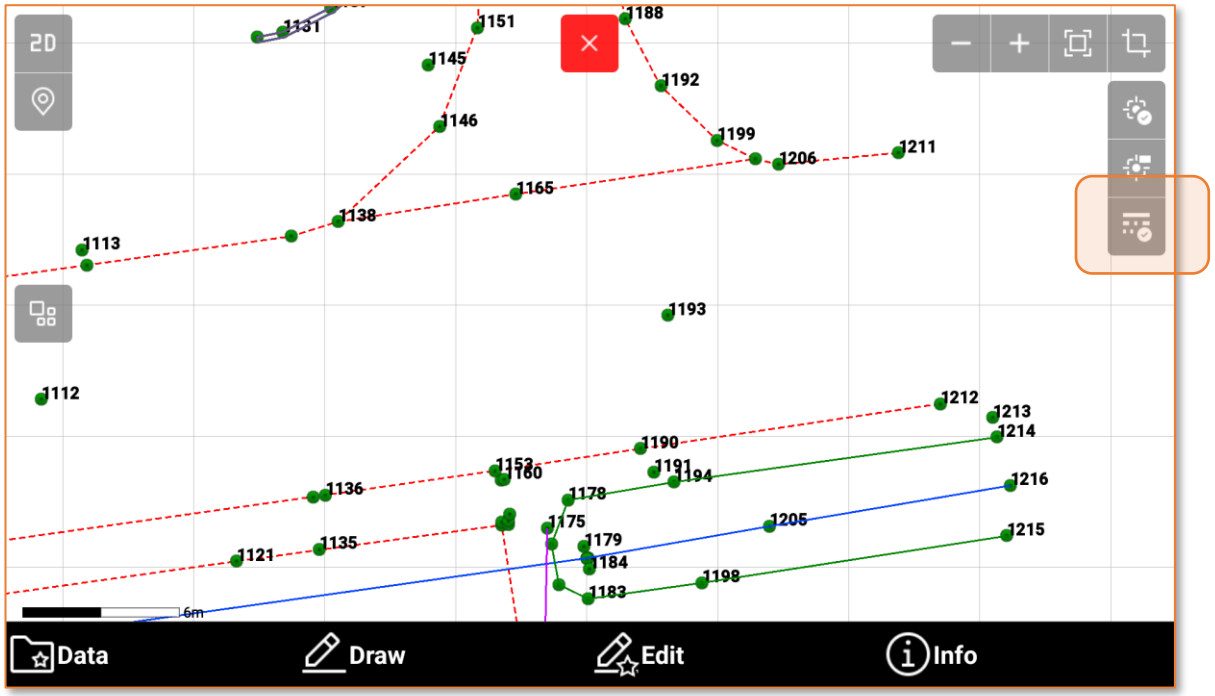
With this tool is possible to limit the visualization of 3D models, drawings and surfaces to a specific range of elevations; everything else outside the defined range is not visible.

The elevation range can be defined for the complete drawing or for each single 3D model, surface and drawings.



Show/Hide linetypes

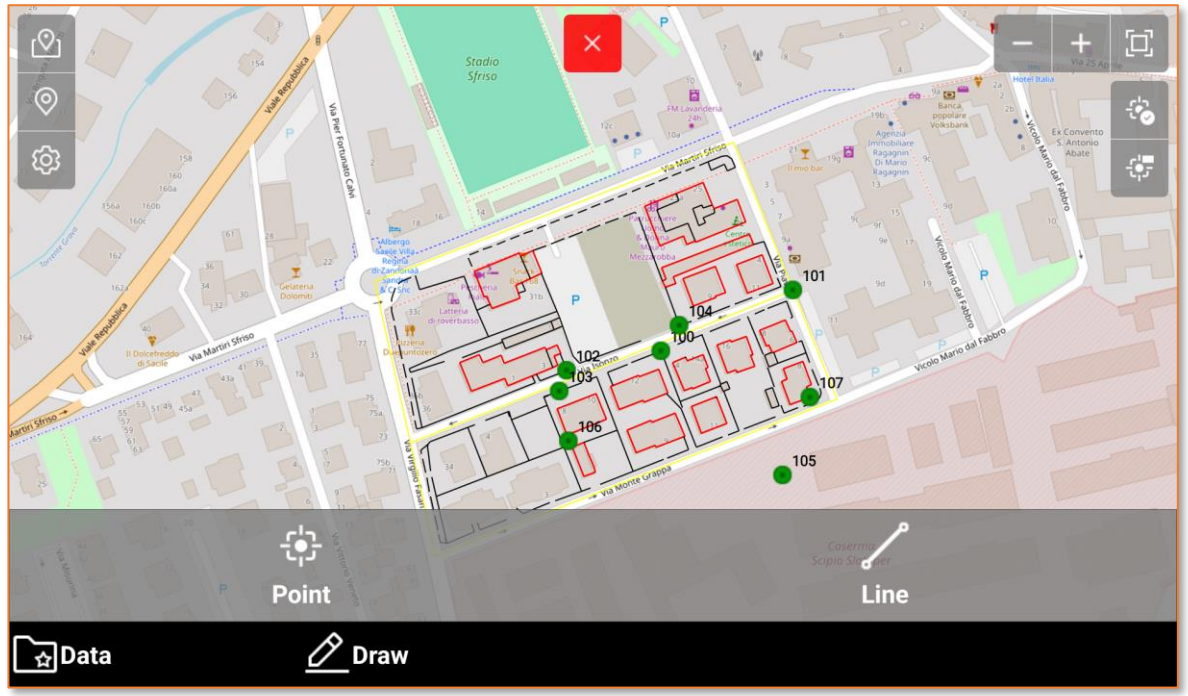
Linetypes can be extended with visualization of symbols. In some situations is preferable to have a clear visualization without many details. A new button in the main graphic visualization allows to switch quickly from a detailed visualization with linetypes to a fast and clean visualization in which continuous lines are used.



Maps – points creation

In some applications the possibility to use maps as background is essential. For these applications it is now possible to **create and edit topographic points, and lines, directly on the map**. Even if the accuracy is of course not the best possible, it is good enough for some purposes.

With this tool it is possible, for example, create a point on a map and proceed with the stakeout to find the position in the field.



Fonts

The visualization of labels on the graphic view has been enhanced. Texts now appear clearer, cleaner and more readable, improving the overall viewing experience.

IMPORT & EXPORT

LandXML - HeXML

LandXML and HeXML exported formats have been extended with the export of TPS and GNSS measurements.

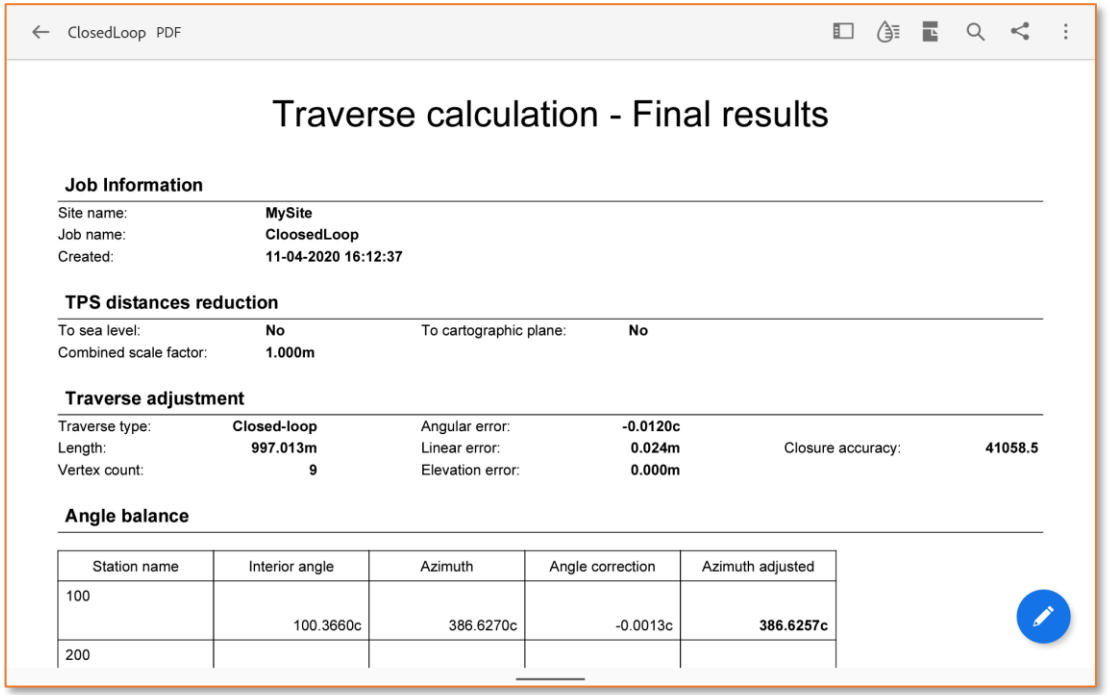
In this way, we increase the level of compatibility with other third-party applications.

Reports for traverse calculation

The traverse calculation command has been completed with the possibility to generate a full report containing all calculation results.

In the report it is possible to find not just the linear, angular and elevation errors but also how these errors have been distributed along the vertices of the traverse.

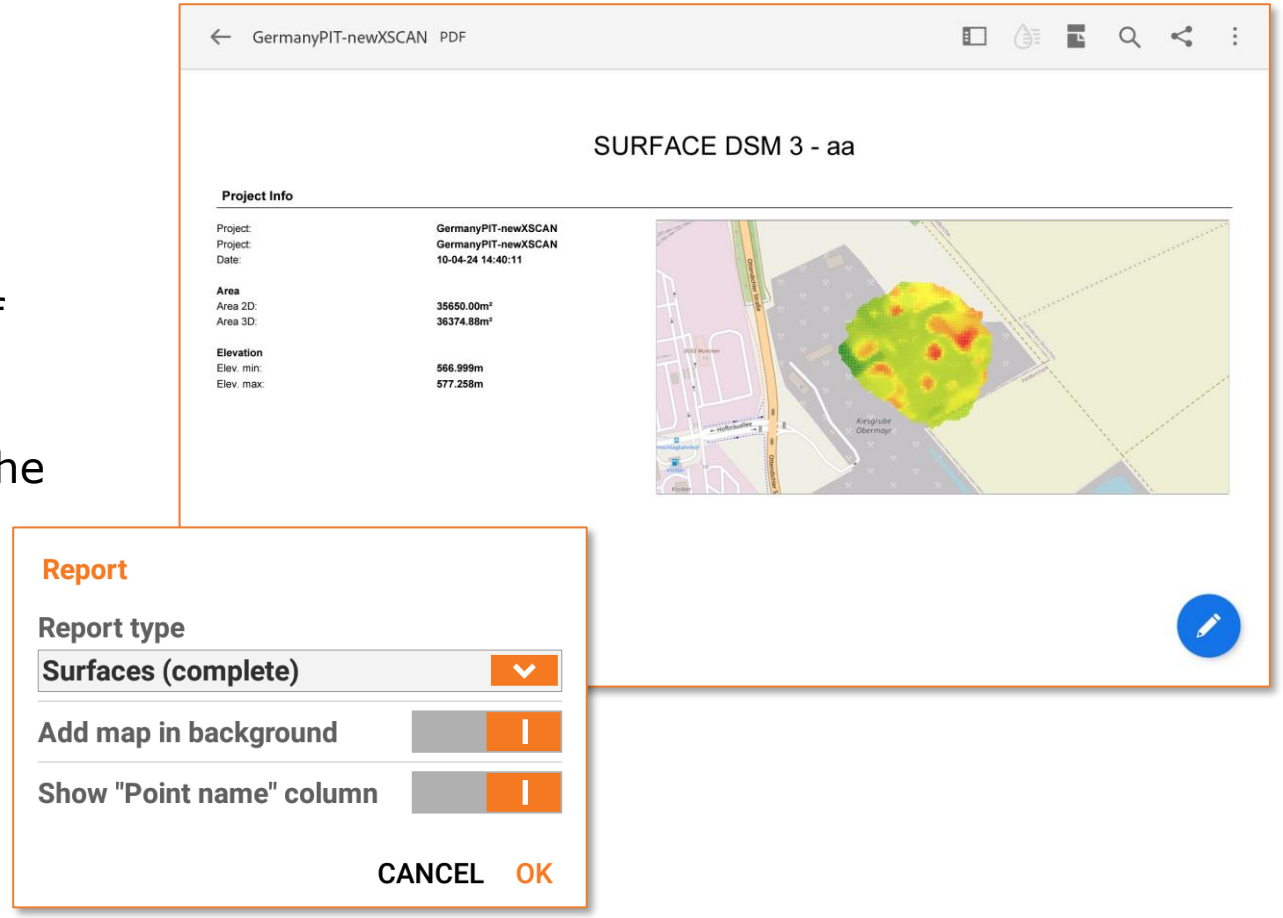
This reporting offers users a deeper understanding of the traverse calculations and their accuracy.



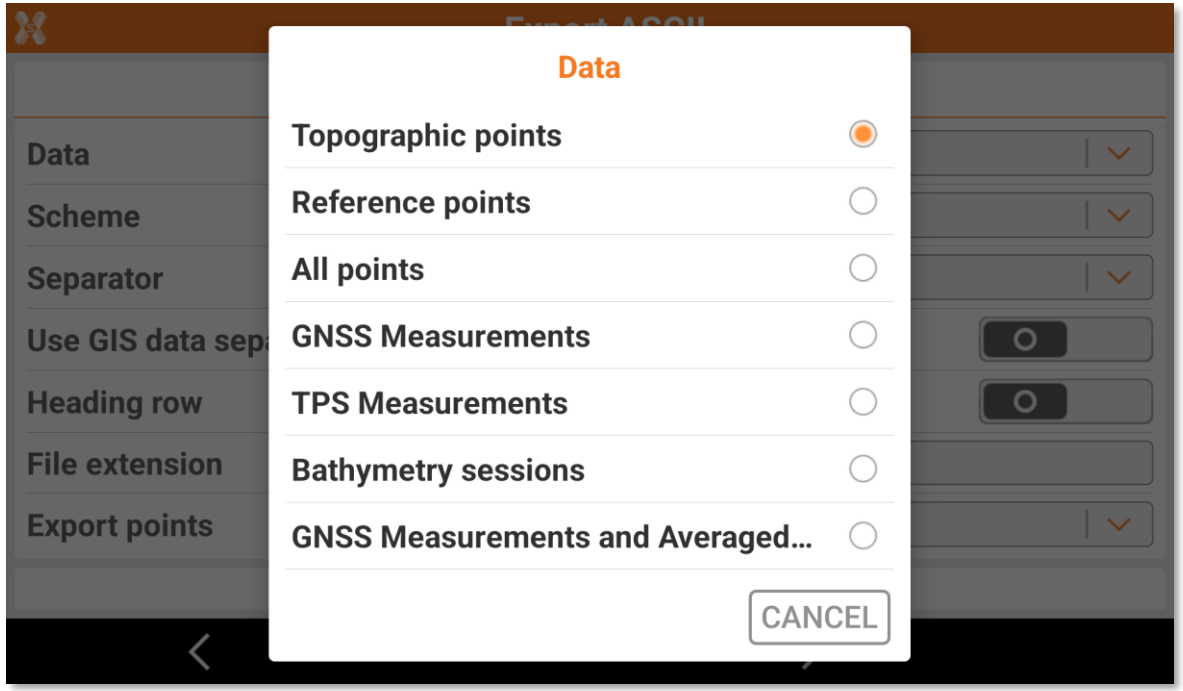
Improved reports for Surface & Volume

In the surface and volume reports, users can now include an image displaying the calculated surface or volume.

With this service pack, users gain full control of how this image is captured. Specifically, users can select from 2D, 3D or map view, tailoring the image representation to their specific needs.



GNSS Average measurements

With this specific command, users can now store multiple measurement sessions on a point, enabling data analysis through various analytical and graphical methods.

With this release, each individual measurement epoch can be exported in ASCII format.