



X-PAD Ultimate

Service Pack #1 2023

Spring 2023

GE  **MAX**

MISCELLANEOUS

General improvements

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



Select Service Pack to use (for support purposes)

The number of Service Packs, and the high number of improvements introduced, generates a situation in which it is sometime difficult to support our customers if they don't have a valid X-PERT subscription.

In the 1year demo licenses it is now possible to specify the service pack to be used; in this way you can align your X-PAD Ultimate to the service pack owned by the customer and provide the support on that software version.

The screenshot shows the 'X-PAD info' application interface. At the top, there are navigation tabs: ABOUT, LICENSE &..., RELEASES, DEVICE, and SUPPORT. The 'LICENSE &...' tab is active. Below the tabs, there is a 'License info' section with the following details:

EntitlementID	00109-07400-00035-16806-B5EC5
License type	DEMO
Expiration date	22-06-2023
Service Pack	Service Pack #1 - 2023
Service Pack for support	Service Pack #1 - 2023

Below the license info is an 'X-PERT' section with fields for Status and Expiration date. A modal menu is open over the 'Service Pack for support' field, titled 'Service Pack for support'. It lists several options with radio buttons:

- Service Pack #1 - 2020
- Service Pack #2 - 2020
- Service Pack #1 - 2021
- Service Pack #2 - 2021
- Service Pack #1 - 2022
- Service Pack #2 - 2022
- Service Pack #1 - 2023 (selected)

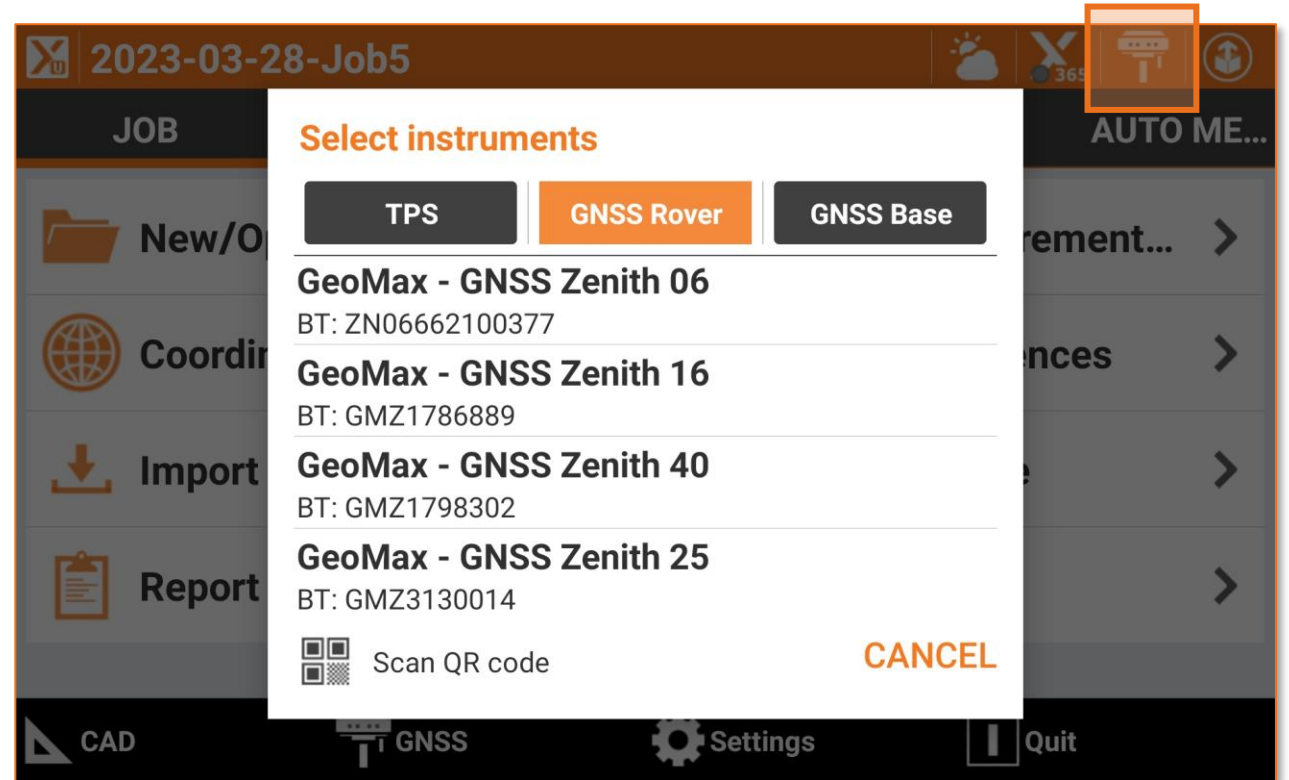
A 'CANCEL' button is located at the bottom right of the modal. The bottom of the screen shows a navigation bar with a back arrow and a 'Tools' icon.



Quick instrument selection

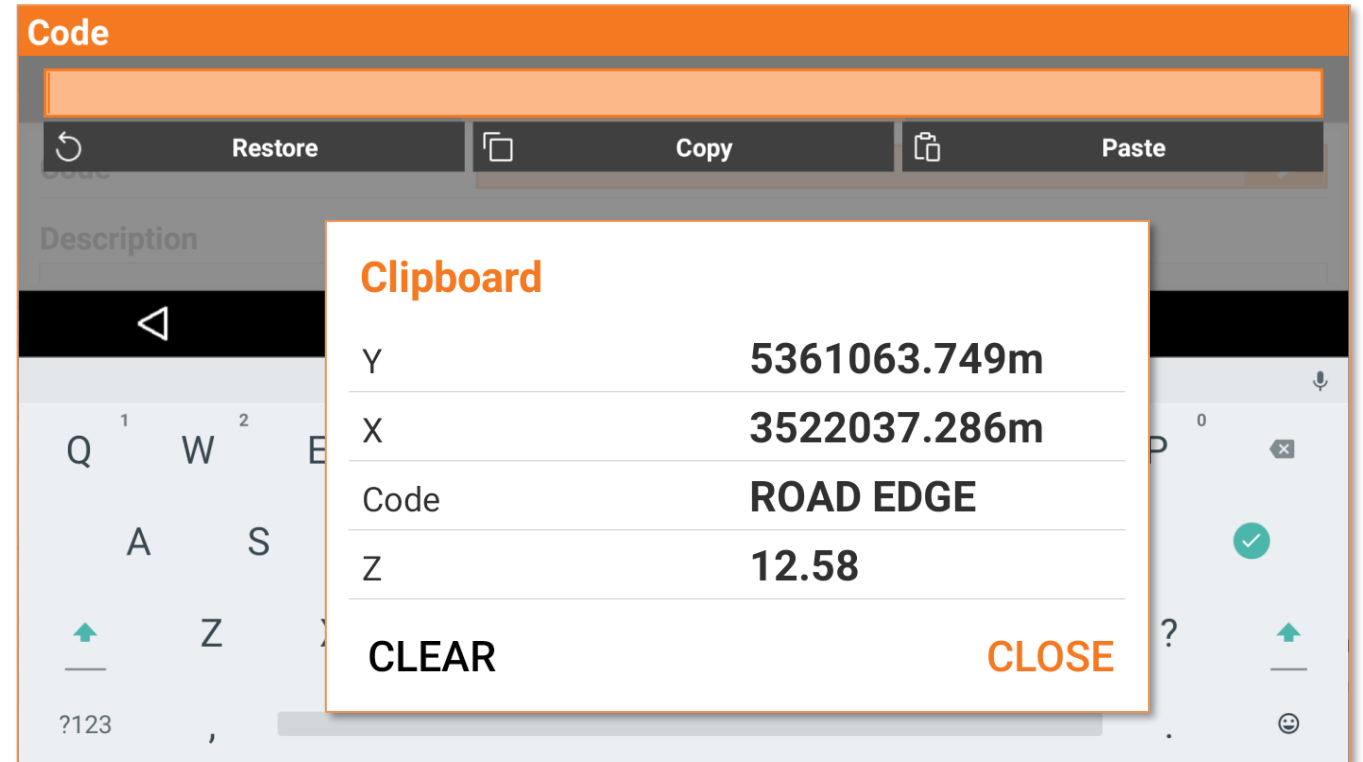
X-PAD Ultimate allows to create different instrument profiles and configurations but to switch from one instrument to another, or from one configuration to another, there are some steps and buttons to press.

Starting from this Service Pack it is possible to select another profile from top bar with one single click.



Input fields – Advanced clipboard

Advanced clipboard is a new tool always available when it is requested to enter texts or numbers; it allows to copy existing values and recall them later whenever is necessary. Not only the last value is stored but all previous stored values. In this way it is possible to temporary store values from some input fields and paste them in other input fields.



Input fields - Formulas

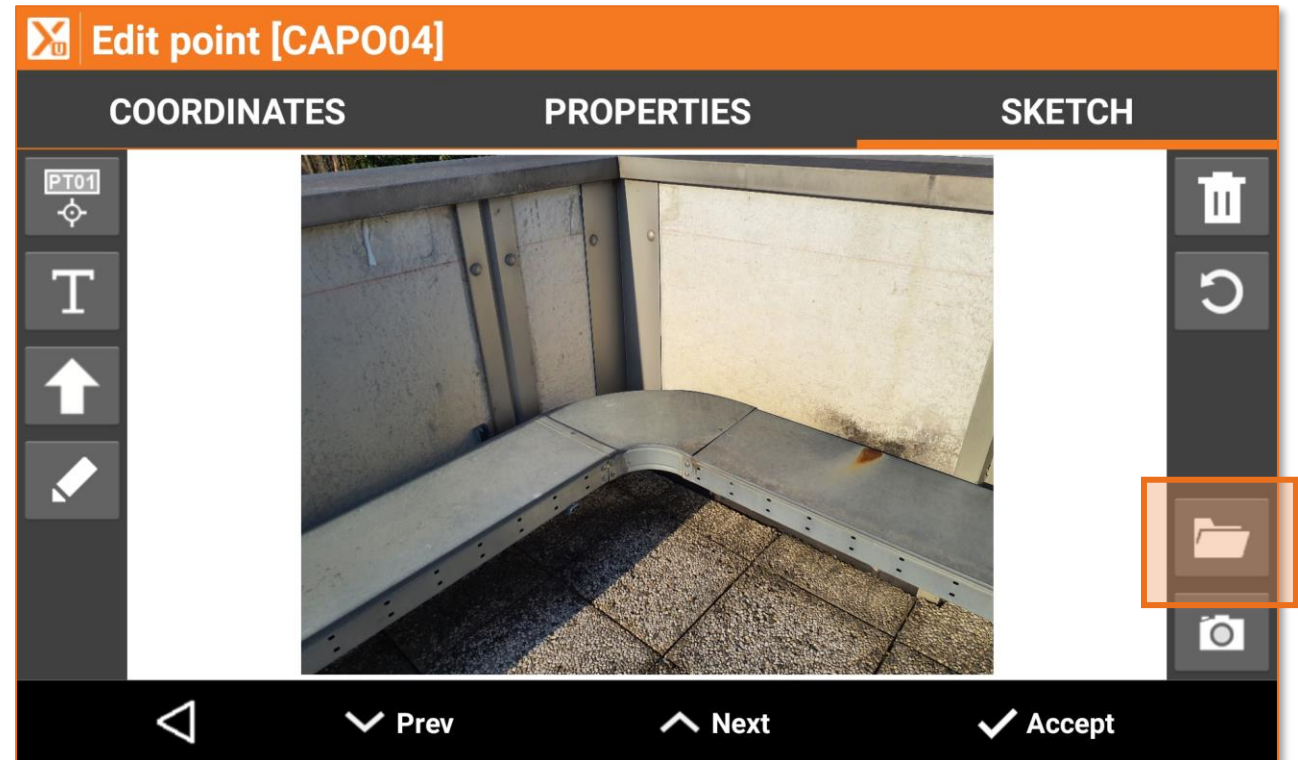
The way in which numbers can be entered in the different part of the software has been improved with the introduction of the following new features:

- **Formulas:** any numbers can be the result of a complex formula
- **Distance by points:** distance between two points can be entered by specifying the name of the points separated by a comma (e.g. 100,200 returns the horizontal distance between 100 and 200)
- **Azimuth direction by points:** azimuth between two points can be entered by specifying the name of the points separated by a comma (e.g. 100,200 returns the azimuth between 100 and 200)
- **Formulas and values by points can be mixed** (e.g. 100,200 / 2 means that distance between 100 and 200 will be divided by 2)

Load photos from gallery

Documenting the surveying activity in the field with photos is becoming more and more popular and it is an easy task in X-PAD Ultimate.

A small improvement allows to select an existing photo from the Photos gallery and store it as attachment to a point or to a generic note.



PicPoint no more supported

Starting from this Service Pack, PicPoint calculations are no more supported. Users that still are working with PicPoint have to keep the previous version.

This change was necessary for compatibility reasons.



GNSS

GNSS localization – Average plane removed

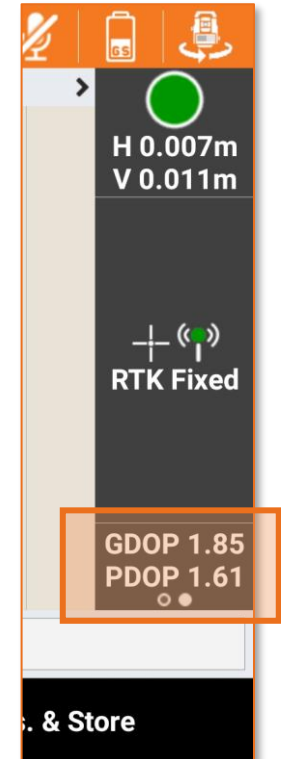
GNSS localization with multiple points allows to localize your GNSS position to a local coordinate system. Regarding the elevations, the average plane method (used when 3 or more points were defined) has been removed.

Average plane is not the best method especially when 3 points are used; if one of the 3 point has a wrong or inaccurate elevation it is hard to recognize it.

For this reason, we keep the average horizontal plane as calculation method for elevations.

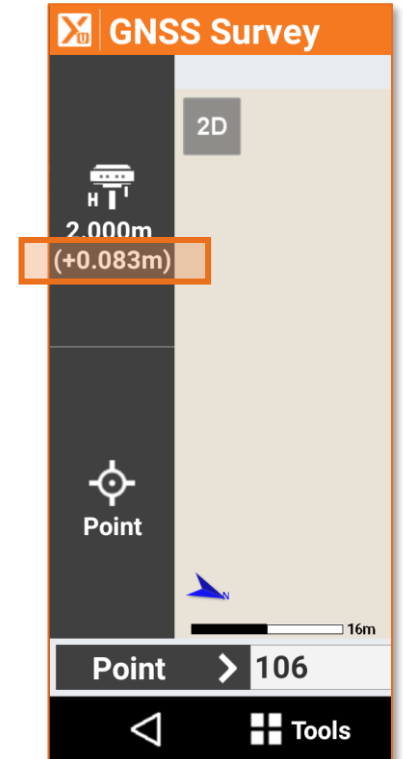
GNSS panel – DOP values

In some applications, and in some countries, it is more important have a real time information about DOP values instead of number of tracked satellites. For this reason, the panel that shows current GNSS information allows to switch from one to another with one click according to the needs.



Antenna height – additional offset

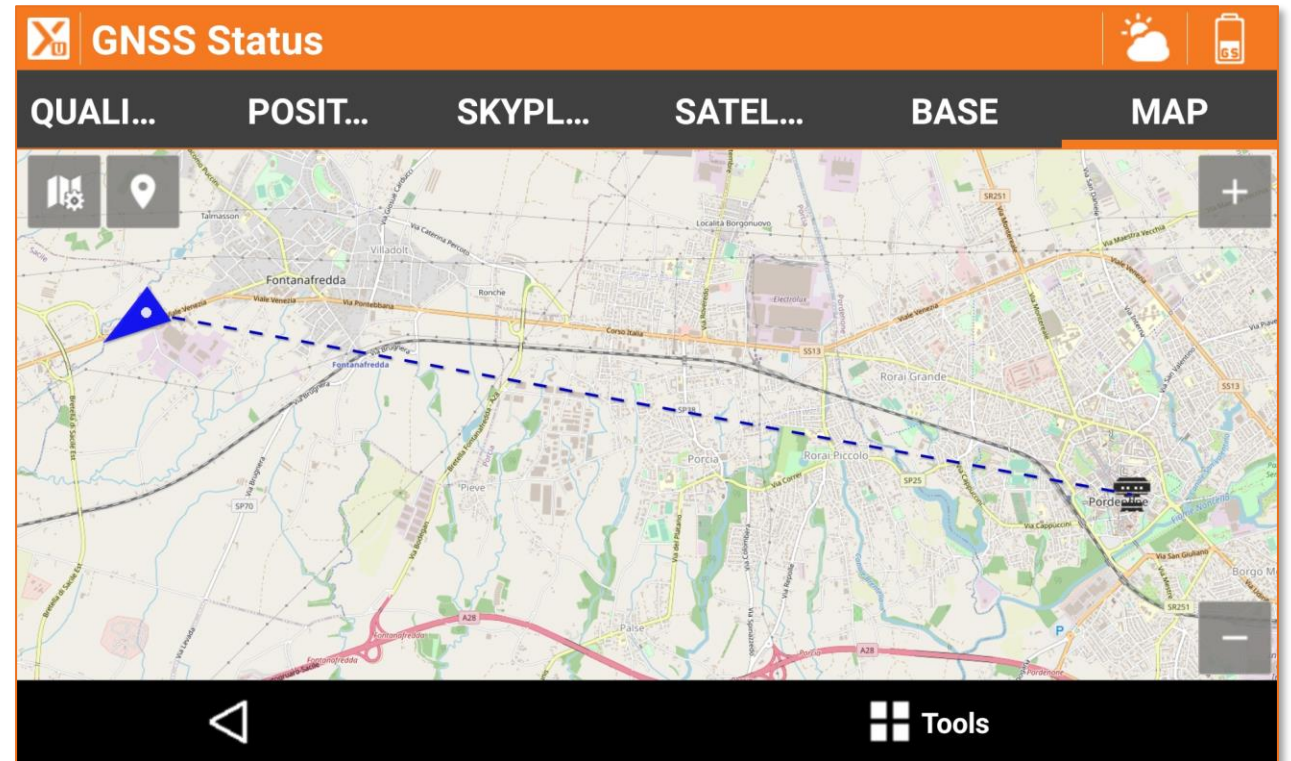
It is possible to define an additional offset for the GNSS antenna height. To be sure if this offset is applied, the value is now displayed together with the antenna height (if not zero).



Base position – visualization and store

In the Map page of the GNSS Status command, it is now displayed the position of the base.

The base position can be stored as a point in the current job file.

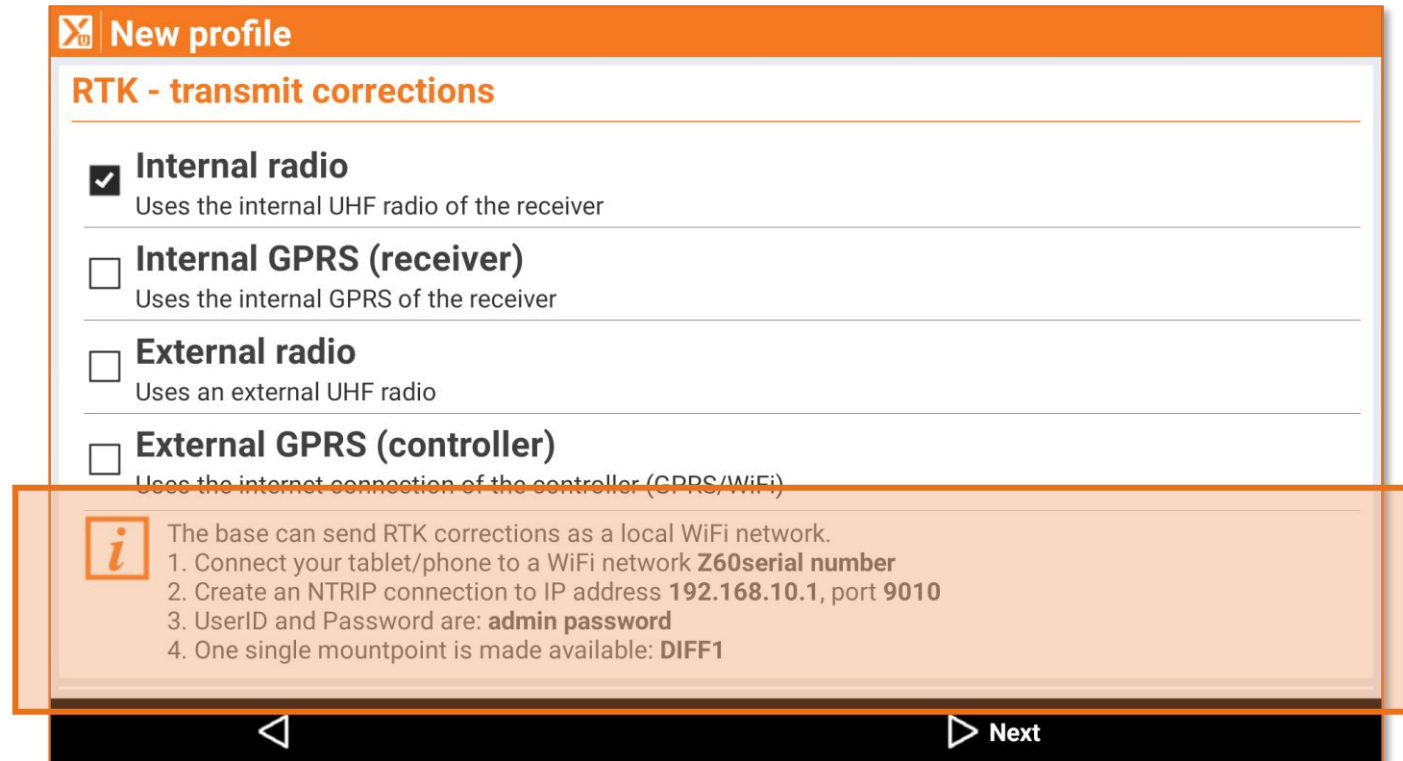


Zenith60 and base corrections through local hot-spot

When used as a base, Zenith60 has the ability to send corrections through a local Wi-Fi network; in other words, it acts as a reference station that can be accessed through Wi-Fi by any application that support NTRIP connection.

This service becomes useful, for example, in drone applications in which the drone's control software requires corrections to work in RTK mode.

Instructions on how to connect the external application to the Zenith base are reported directly in X-PAD Ultimate software.





TPS



Pressure on sea-level

Measurements are affected by atmospheric parameters as temperature and pressure. Pressure value to use can be calculated by entering the altitude or by entering the pressure at sea level.

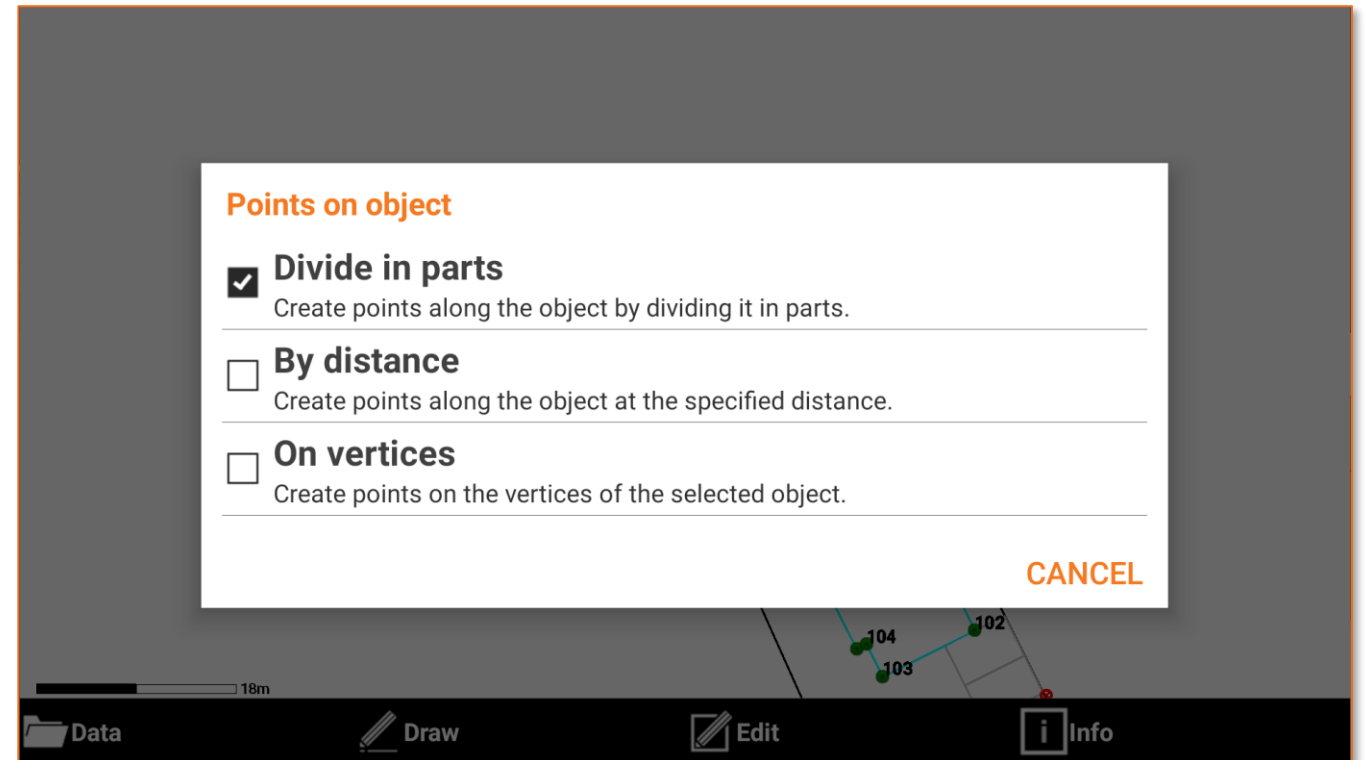
The screenshot shows the 'TPS Coefficients' application interface. A dialog box titled 'Calculate pressure' is overlaid on the main screen. The dialog box contains two input fields: 'Altitude' with a value of '100.000m' and 'Pressure - sea level (mb)' with a value of '1013'. Below the input fields are two buttons: 'CANCEL' and 'CALCULATE'. The background interface shows the 'Temperature and Pressure' section with various parameters and their values: Atmospheric correction (1), Temperature (80), Pressure (m) (10.3), Humidity (%) (80), and Atmospheric (10.3). The 'Refraction & Sphericity' section is also visible with a 'Refractive/Sphericity' parameter set to 0. The bottom navigation bar includes a back arrow, a 'Tools' icon, and an 'Accept' button.

CAD & MAPS

Points on object

CAD commands DIVIDE and MEASURE have been moved from EDIT menu to DRAW menu under the command POINTS ON OBJECT. This command allows to create points along the selected objects in 3 different ways:

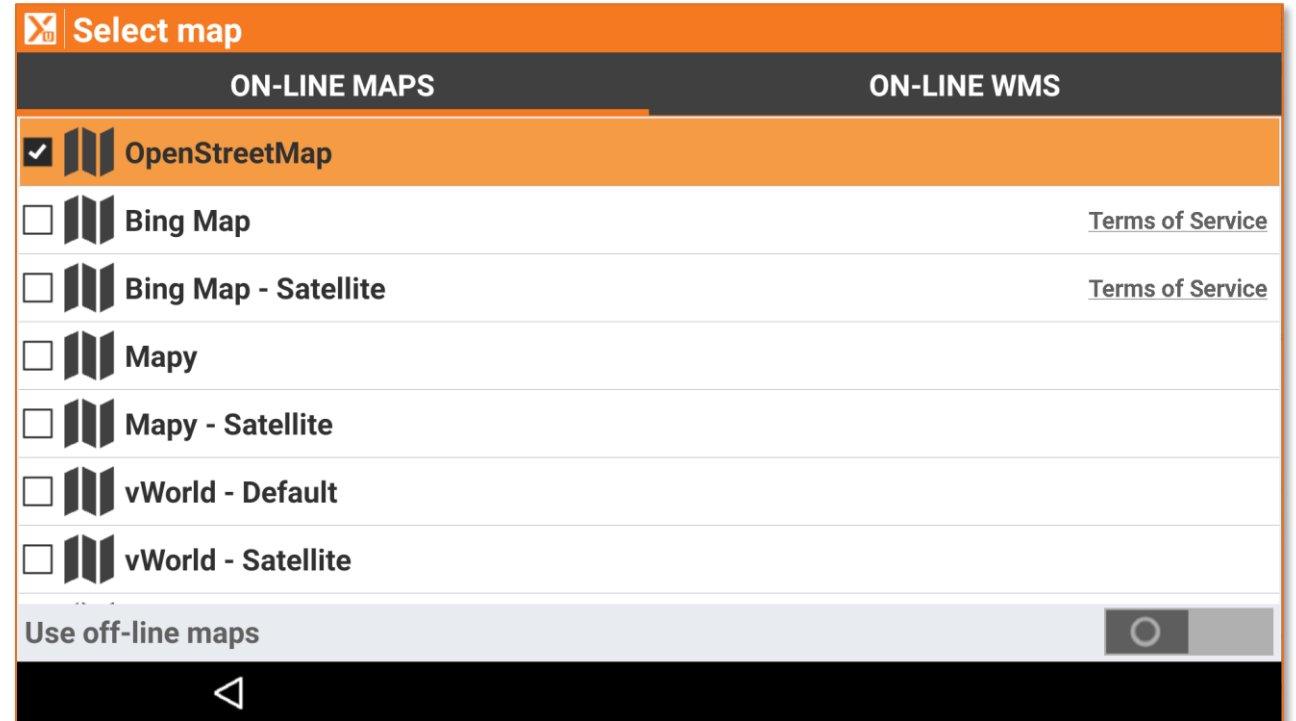
- **By number of parts:** points are placed along the object dividing it in parts.
- **By distance:** points are placed along the object at fixed distance.
- **On vertices:** points are placed on the vertices of the object



Maps

Maps visualization have received some important changes.

- **Google Maps have been removed:** due to changes in the Google Map policies we have decided to don't use it in our applications. Default map view has been replaced by Open Street Map and Bing Maps can be used for satellite maps.
- **Performance:** visualization speed has been improved
- **WMS:** it is possible to save WMS map settings as default maps for new jobs.





X-PAD 365

Collaborative site – Open to Professional licenses

Collaborative sites and Collaborative jobs allows to manage the data synchronization of the field jobs and files. This collaborative tool has been extended also to X-PAD 365 users with a Professional license (before it was available only to users with Enterprise license).

NAME	POSITION	PHOTO
Site name	Barcellona2022	
Annotation		
Collaborative site (X-PAD 365)		<input type="checkbox"/>

Collaborative site – External references

In the path to improve the collaboration, External reference files have been included in the synchronization process; a typical workflow now supported:

- Manager in the office upload external reference files to the Site folder using X-PAD 365 web app;
- Team in the field receive the notification of the updated files
- If an X-PAD Ultimate job with external references is opened, the most updated external referenced files are downloaded and ready to be used.
- If a new X-PAD Ultimate job is created, all the external reference files are downloaded, and they are ready to be included in the new job file

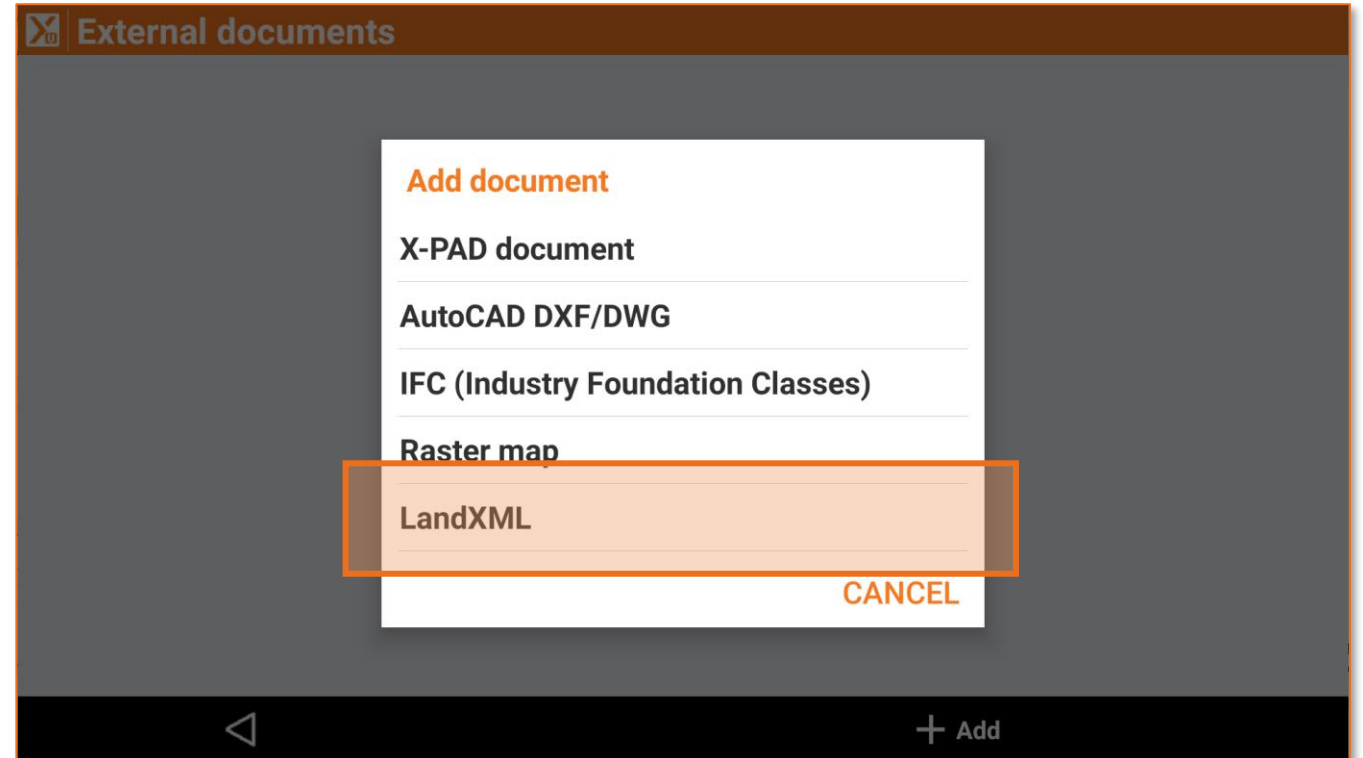
IMPORT & EXPORT

External reference: LandXML

External reference are project files that are linked to an X-PAD job file and that are loaded dynamically when the job is open.

Supported project files are DXF/DWG, IFC models, raster maps, other X-PAD jobs and now LandXML has been added to the list.

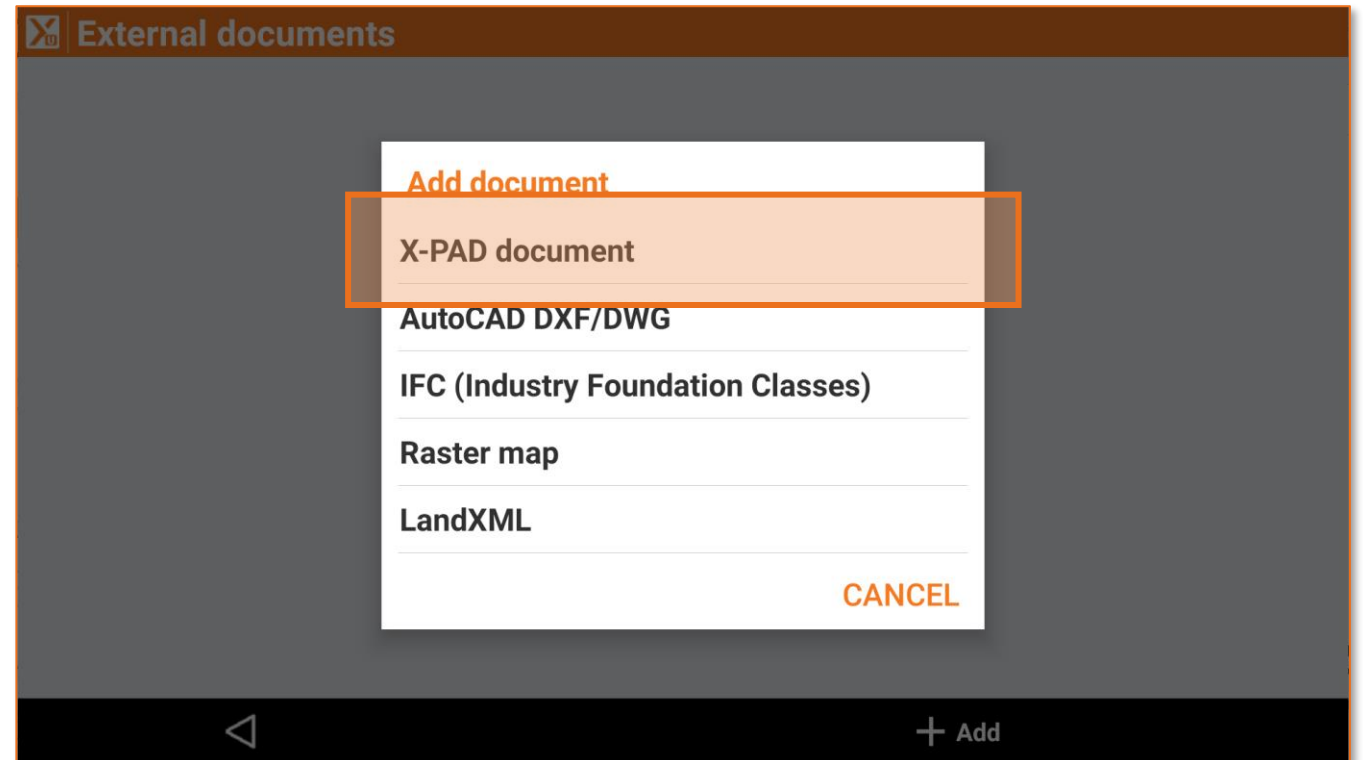
Points, surfaces and roads stored in LandXML files can be dynamically loaded as external reference and can be used for further operations as stakeout.



External reference: X-PAD job with Surfaces and Roads

If an X-PAD job is used as an external reference, now its surfaces and roads are made available and not just points and drawings.

This new feature allows to improve the data management and data organization across different jobs.



Export DXF – Layer labels by code

To satisfy the different needs and different preferences a new option has been added to the DXF export: labels of the points can be saved on a layer linked to the layer of the point to which they belong.

Labels are usually stored in fixed layers called POINT-NAME, POINT-ELEV, ...; now it is possible to store them in a layer in which the first part is the layer of the point to which they belong. If the layer of the point is "ROAD EDGE" then the labels are store in "ROAD EDGE – POINT-NAME", "ROAD EDGE – POINT-ELEV", ...

In this way it is possible to customize final drawing in a better way by hiding or showing labels and by assigning them different colors.

Layer of labels

Pre-defined layers

Layer of point (same for all)

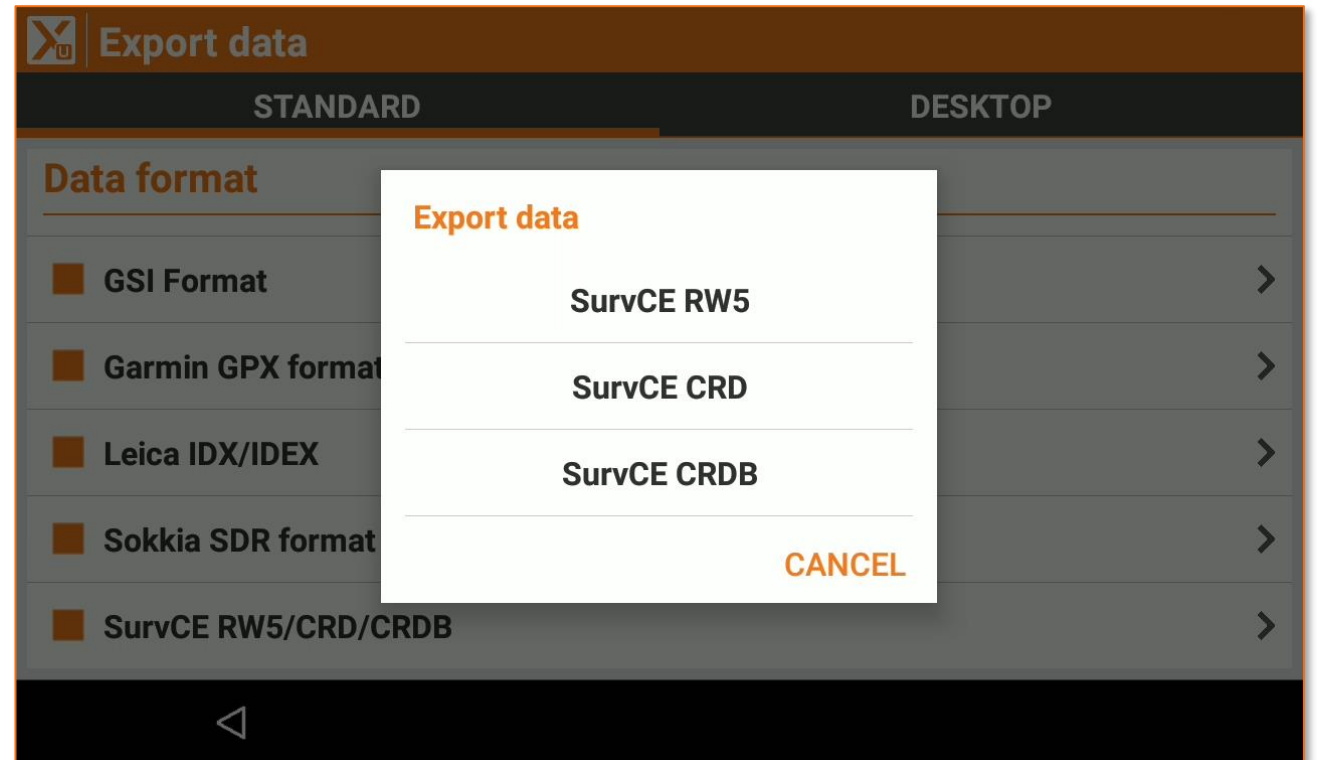
Layer of point (specific)

CANCEL

Carlson SurvCE CRD files

With this Service Pack, X-PAD Ultimate now support, among the other data formats, the Carlson SurvCE CRD and CRDB data format for topographic points.

Topographic points can be imported from CRD/CRDB or can be exported into these formats assuring a compatibility and an integration with users that are working with a different equipment.



Reports improved

Some reports have been improved with the introduction of missing information:

- Job's report: ground to grid scale factor values have been added
- Stakeout surface report: offset value

Google Earth KML - line name

Google Earth export (KML) has been improved by exporting, for each drawing element, the survey code (or the layer). In this way the result displayed in Google Earth is more complete and understandable by everyone.



AUTOMEASURING

Upload data to X-PAD 365

The automatic measurement process in the Automeasuring module allows to send and upload results of the measurements in different ways: by mail, by ...

With the introduction of X-PAD 365, is now possible to upload results in a specific folder of the storage area.

The screenshot shows the 'Settings' application with the 'SEND DATA' tab selected. The interface is organized into several sections:

- Sessions to export:** A dropdown menu set to 'Last sessions' and a numeric input field set to '1'.
- Servers:** A section containing:
 - X-PAD 365:** A toggle switch that is currently turned on.
 - Folder:** A text input field containing '/Sites/Barcellona2022'.
 - FTP Server 1:** A toggle switch that is currently turned off, with a gear icon for settings.
 - FTP Server 2:** A toggle switch that is currently turned off, with a gear icon for settings.

At the bottom of the screen, there is a navigation bar with a back arrow on the left and a 'Save' button with a checkmark on the right.

Telescope down

At the end of the Automeasuring process the telescope is rotated towards down to protect the lens from dust and rain.