GEOMAX

TUTORIAL
SURVEY CALCULATION

Calculation

DESCRIPTION

- GNSS Calculation; TPS Calculation; Digital Level Calculation

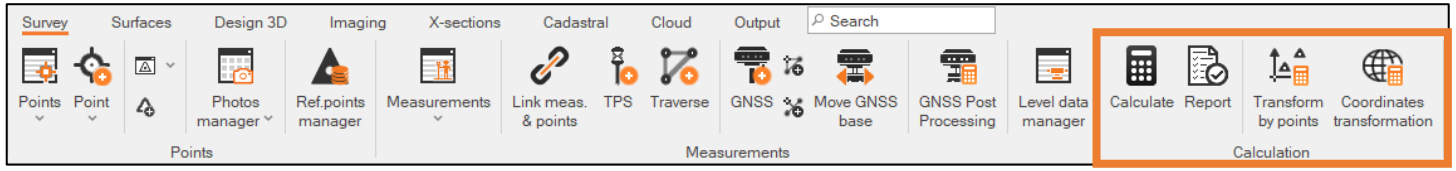
GOAL

- How to use survey functions when operating with GNSS, TPS and Digital Level data

DATA

- TPS Office.zip
- ALTO0908.GSI

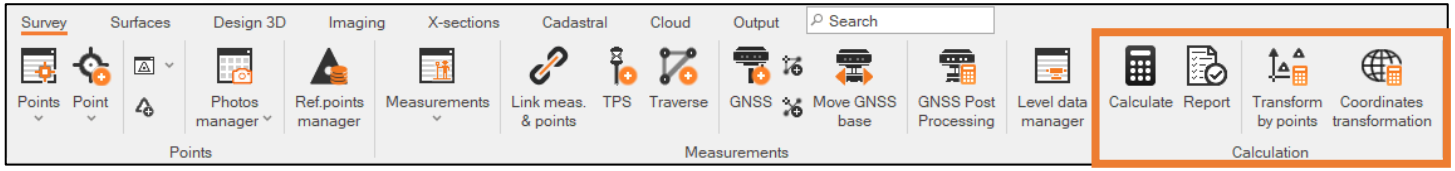
Calculation

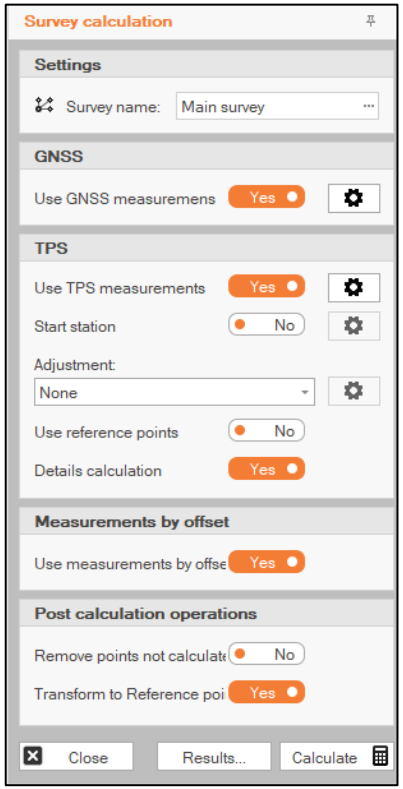


From the Survey menu it is possible to select the Calculation functions:

- Calculate: for TPS and GNSS survey calculation
- Report: to view the calculated surveys and generate reports
- Transform by points: for 2D and 3D transformations by roto-translation
- Coordinate Transformation: to transform points, projects or sub-projects on other cartographic or local coordinate systems

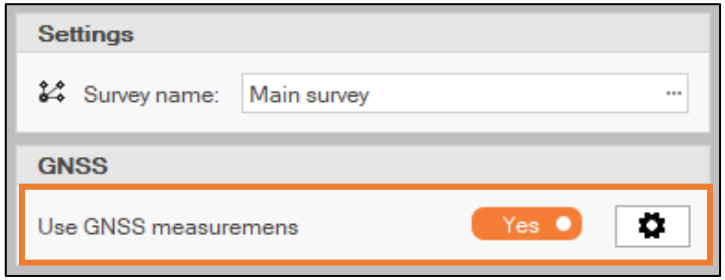
Survey Calculation

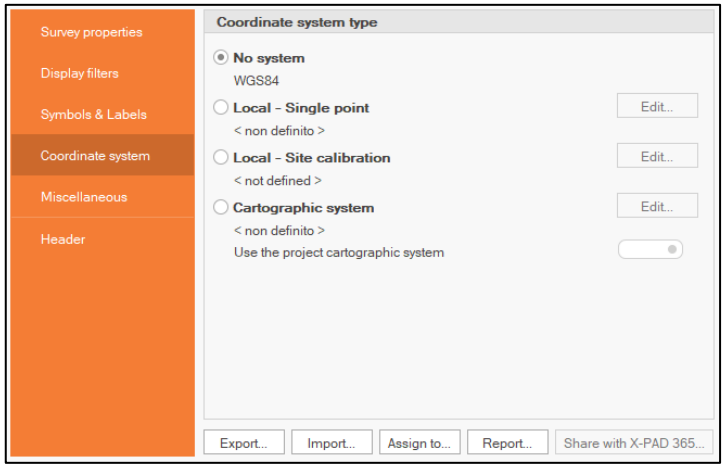


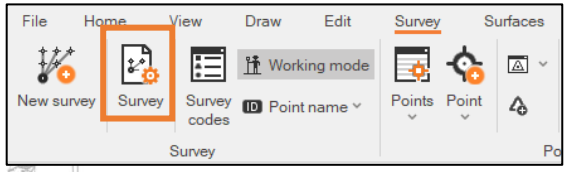


- Survey calculation is the panel that allows to use survey calculation and define it parameters

Survey Calculation





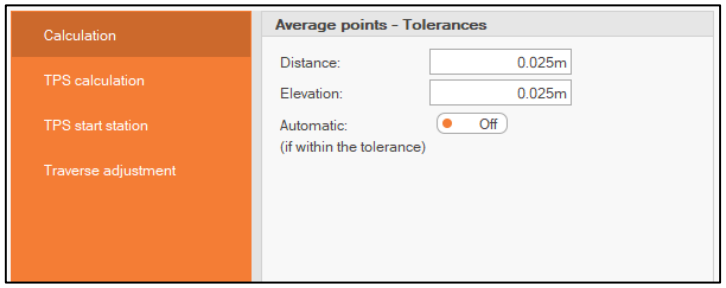


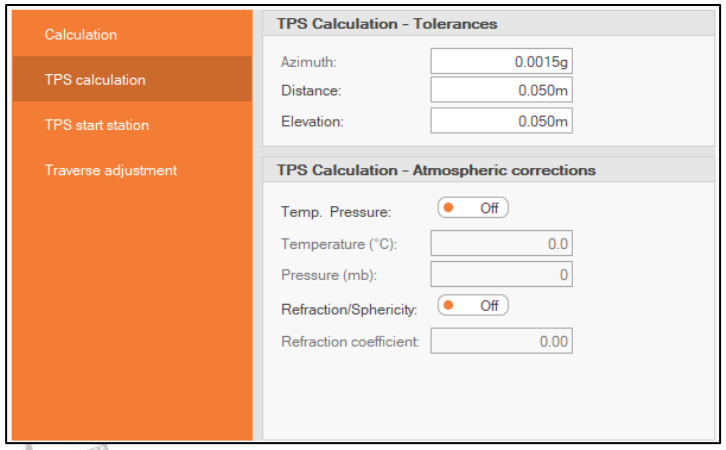
USE GNSS MEASURE

- As first step the software calculate all the GNSS baseline and coordinates, according to the coordinate system defined
- Click on the Setting page to define or change the coordinate system

The survey settings window can also be accessed from the Survey function in the Survey menu

Survey Calculation

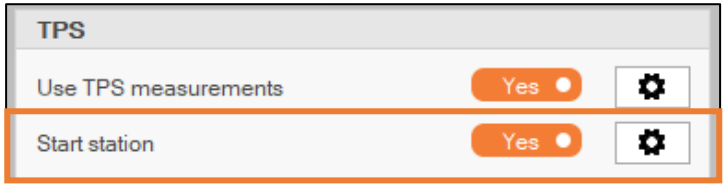


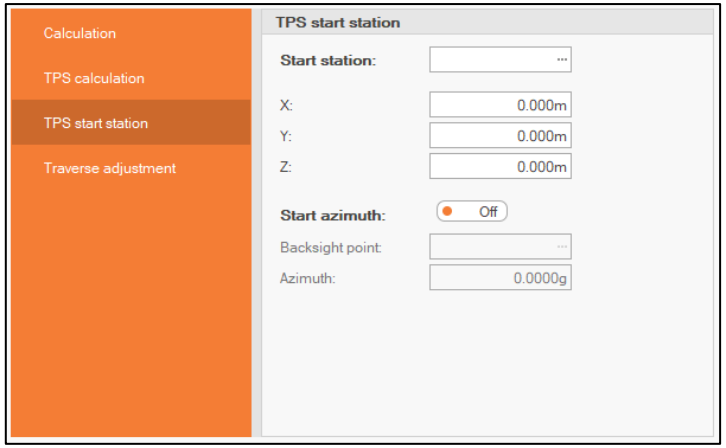


USE TPS MEASURE

- TPS measure are used in the calculation, to calculate final TPS coordinates
- Click on the Setting to change the average points and calculation tolerance or apply atmospheric corrections

Survey Calculation

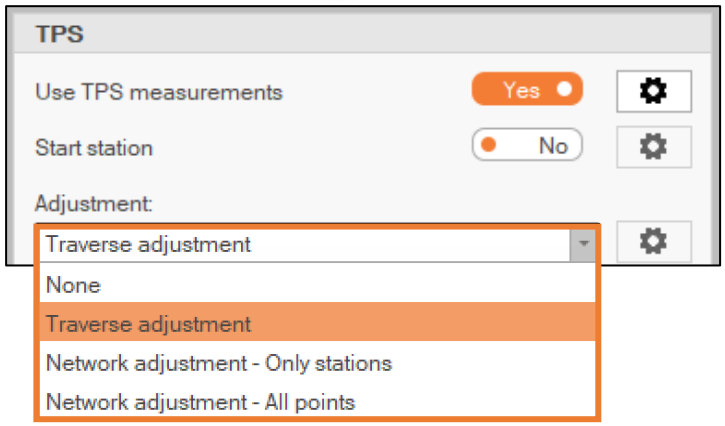


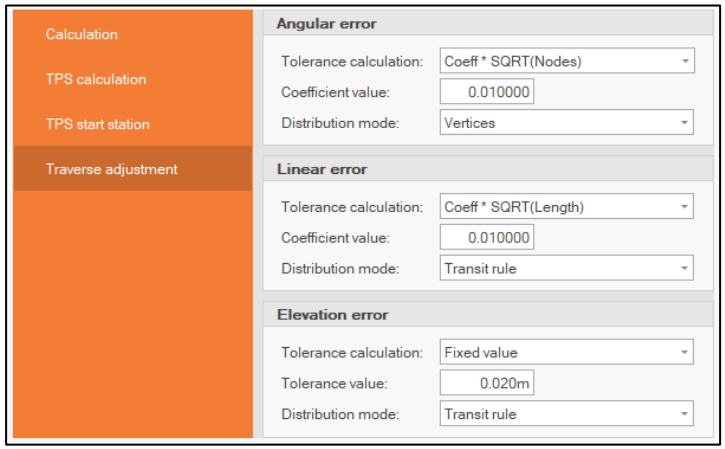


START STATION

- Used to define the coordinate and the orientation of the starting station
- Click on the Setting to select the start station with its coordinates, and define the backsight point or azimuth
- It is also possible to operating the Traverse adjustment

Survey Calculation





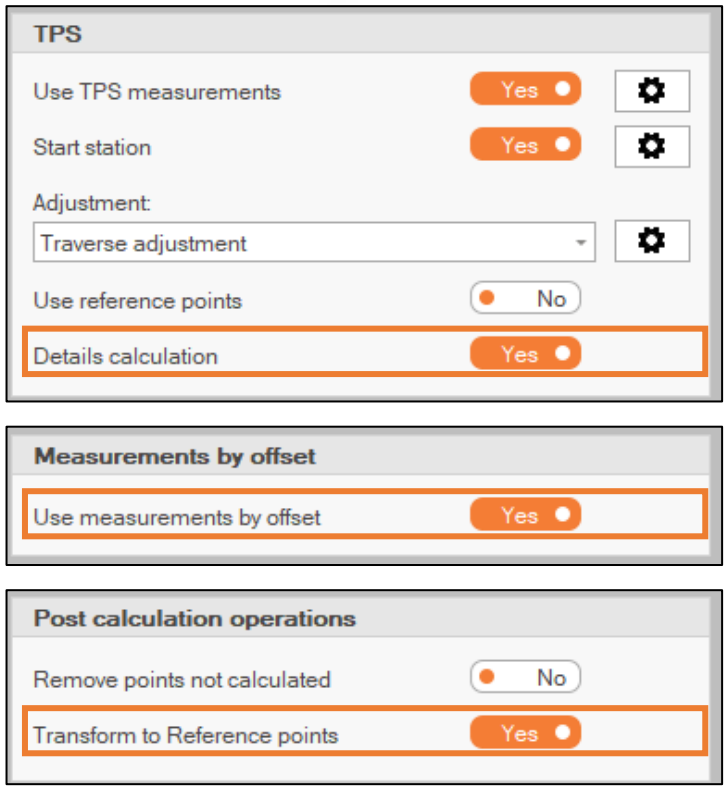
NETWORK ADJUSTMENT

- If a network has been defined, using Adjustment function is possible to calculate the adjusted coordinates of the stations (*Only stations*) or of all points (*All points*)

TRAVERSE ADJUSTMENT

- Used to calculate a traverse
- Traverse can be defined using the dedicated function in the Measures menu
- Traverse is defined selecting the stations used in the traverse

Survey Calculation



DETAILS CALCULATION

- All points coordinates are recalculated

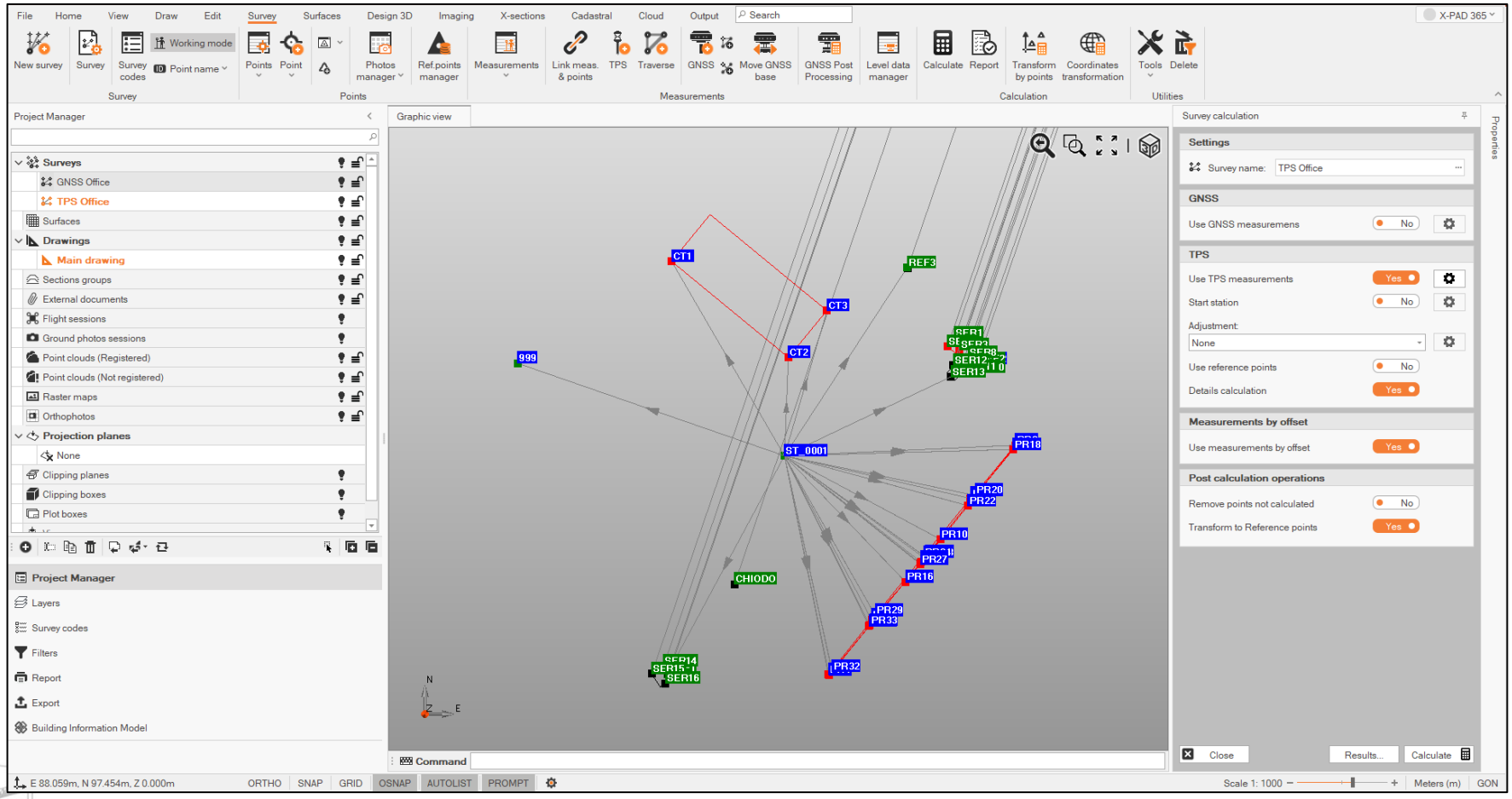
USE MEASURE BY OFFSET

- Measures done by offset are recalculated (for example hidden points)

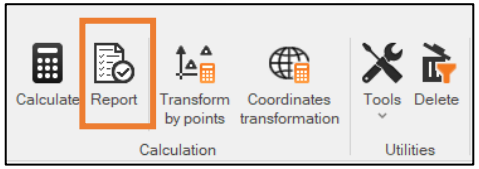
TRANSFORM TO REFERENCE POINT

- If a point ID is found in the point list and in the reference list, at the end of all calculations the survey is transformed to fit the reference points

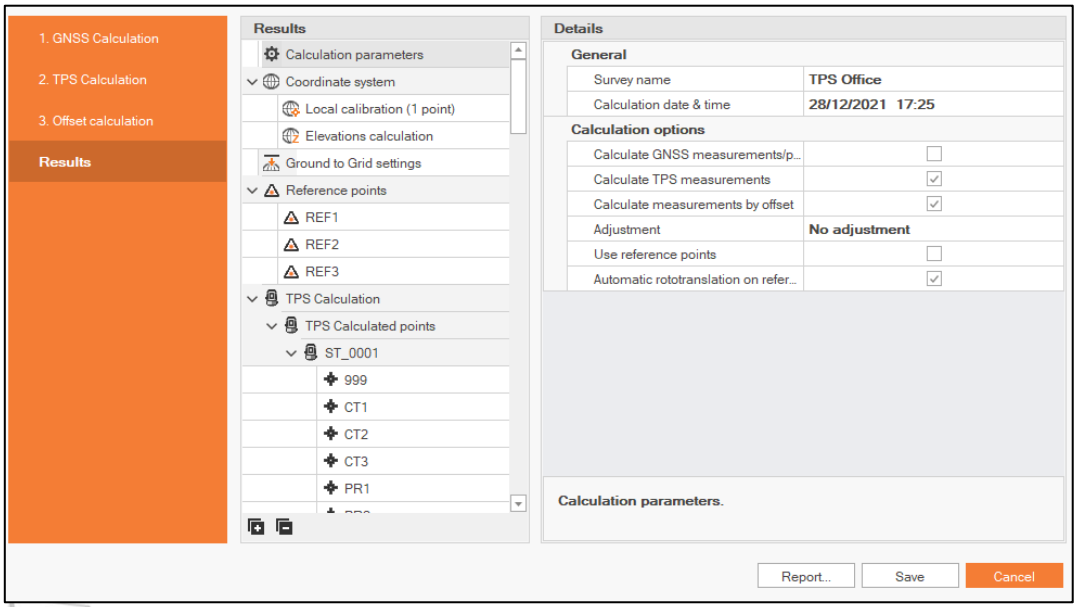
Survey Calculation

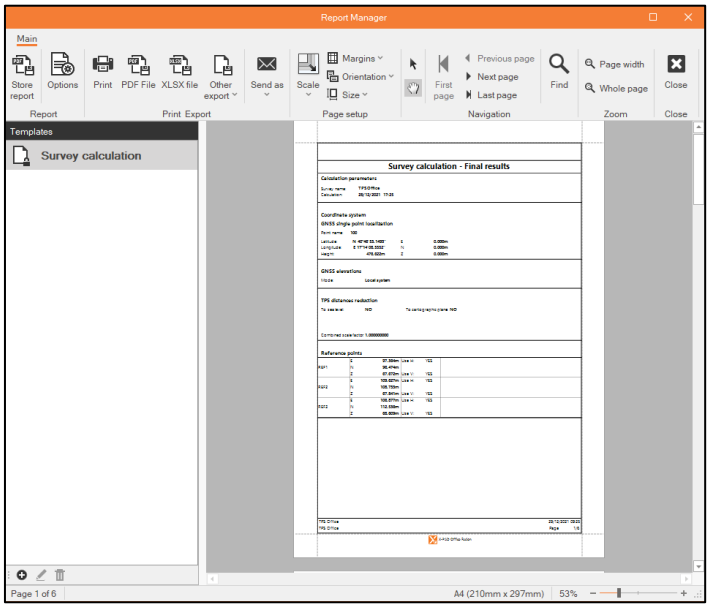


Survey Report

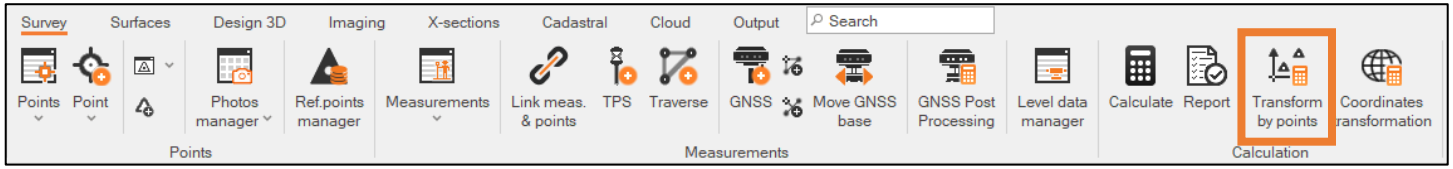


- At the end of each survey calculation, the detailed report is created
- It is possible to check the results after each single step and customize each report

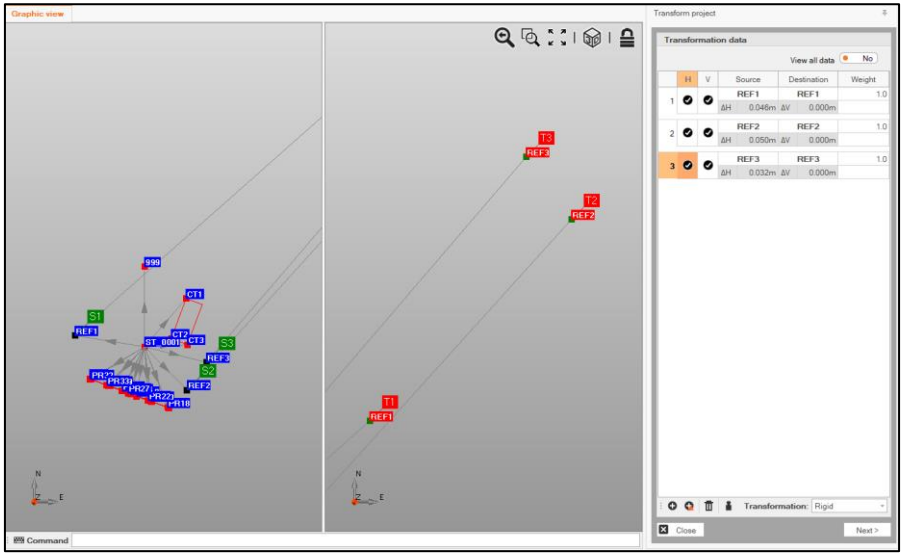




Transform by points Calculation

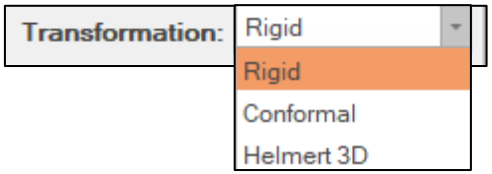


- Transform by points: for 2D and 3D transformations by roto-translation

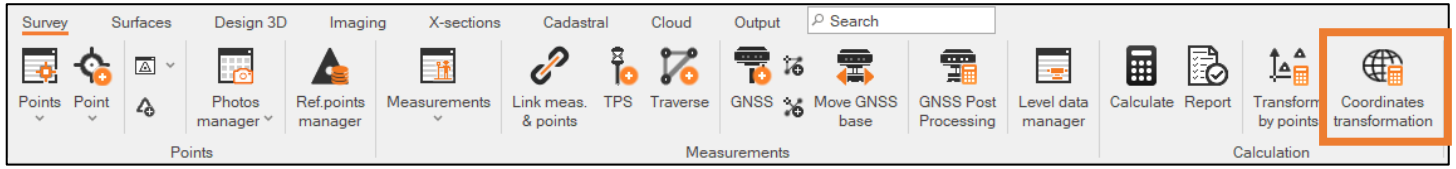


- It is possible to add manually the Source and Destination Points or automatically select the Reference Points

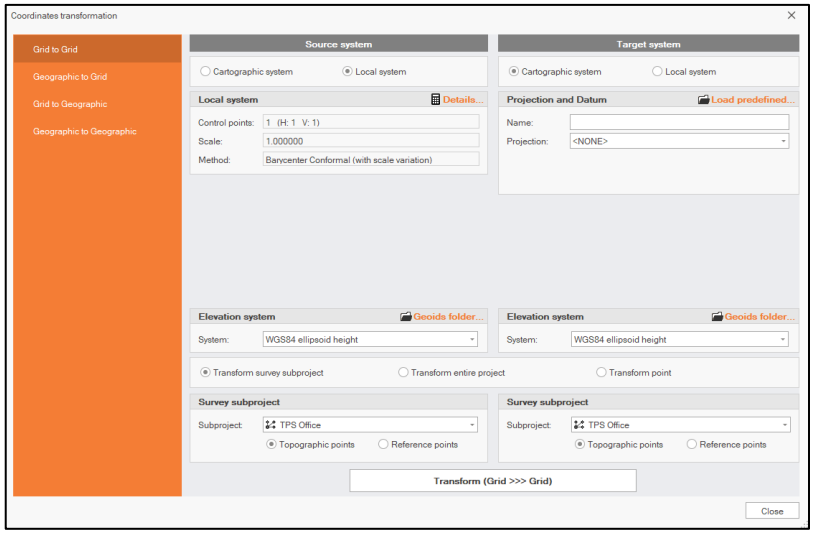
- Three different types of transformations are available



Coordinate transformation



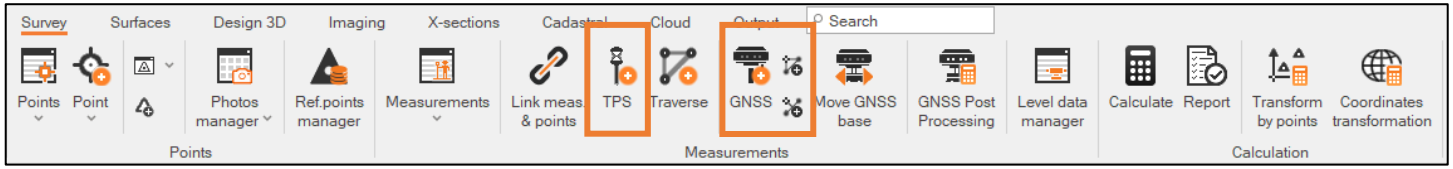
- This command allows to transform a single point, part or the whole project from one coordinate system (cartographic or local) to another coordinate



Possible transformations are:

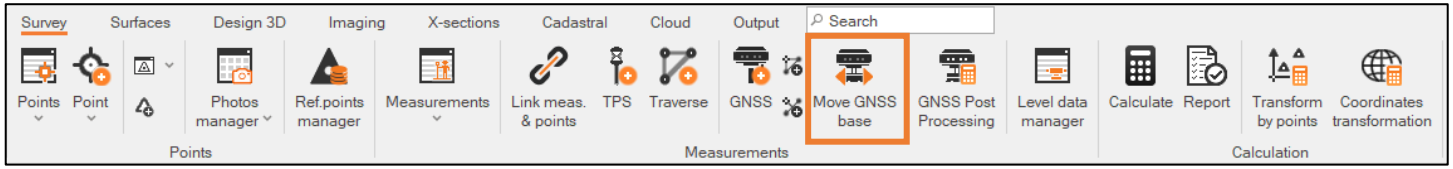
- Grid to Grid
- Geographic to Grid
- Grid to Geographic
- Geographic to Geographic

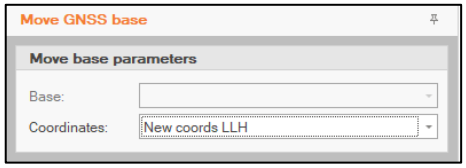
Add manual GNSS/TPS measure

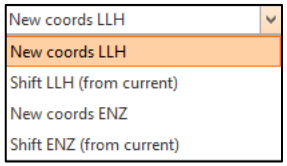


- It is possible to add manual TPS/GNSS measure entering the requested information
- A manually created observation has all the properties as an observation taken in the field

Move GNSS base

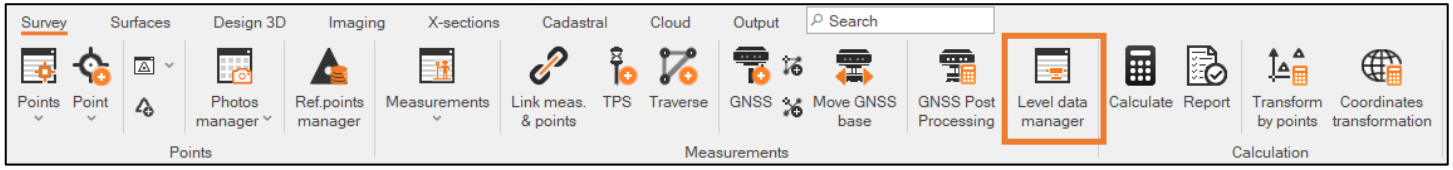




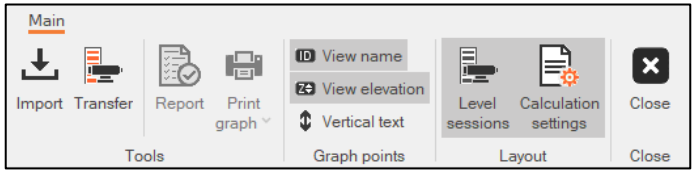


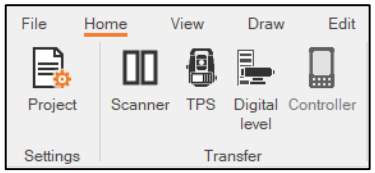
- Function to define the new GNSS base coordinates
- Base can be moved entering or selecting the new LLH or ENZ coordinates
- All baselines from this base are recalculated

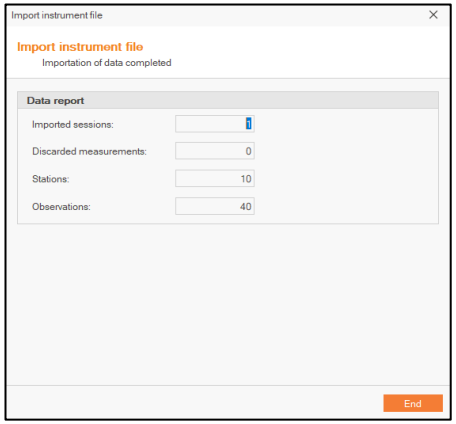
Level data manager



- Level Data Manager is the tool to import and manage data from digital level
- It is possible to transfer digital level data from Home menu or import the data from Survey menu







Level data manager