GEOMAX

TUTORIAL
TRAVERSE CALCULATION

TRAVERSE CALCULATION

DESCRIPTION

- Data import
- Survey Calculation
- Traverse adjustment

GOAL

- How to use survey functions when operating with TPS
- TPS Survey calculation
- Traverse adjustment

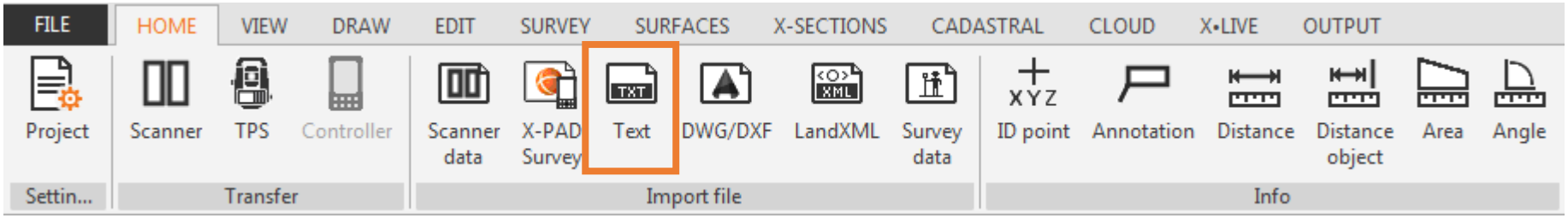
DATA

- Stadio Friuli.txt

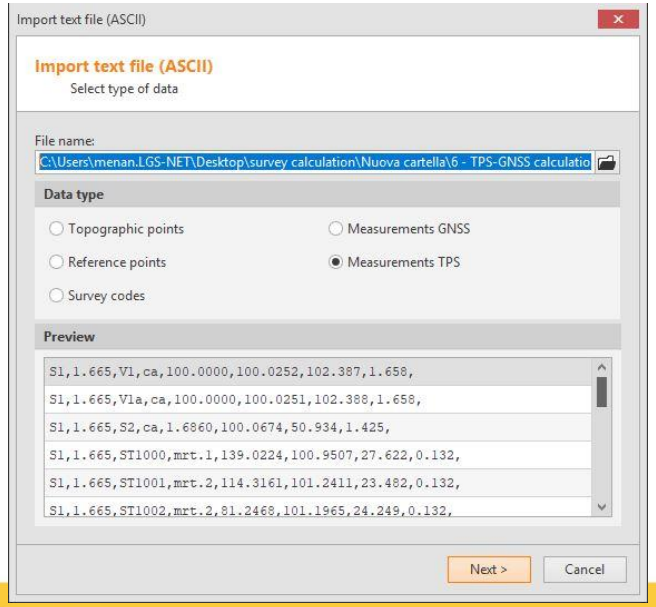
New Project

- Click on **Empty Project** to create a new empty project

Data import



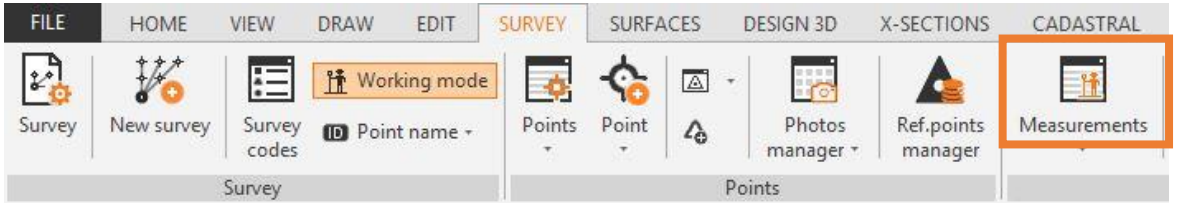
- From **HOME** menu select **TEXT** to import topographic data.



From **Import text file** menu select:

- **Measurement TPS**
- “,” as separator
- “Station, Instrument height, Point, Code, H angle, V angle, Sloped distance, Prism height” as data fields

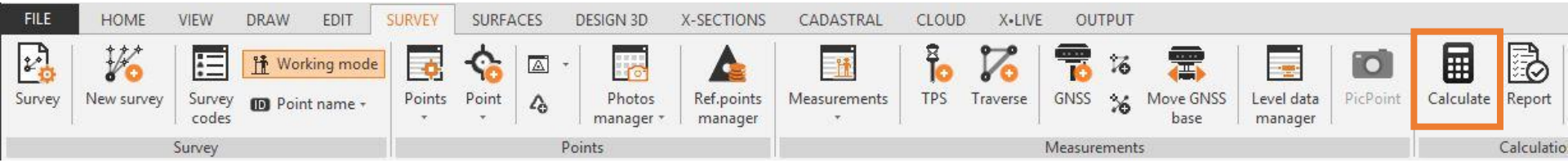
Measure table



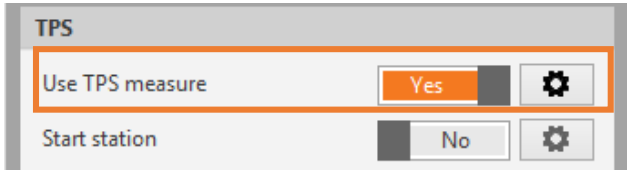
From **Survey** menu select **Measurements** table. Measures are divided by type, and by the reference BASE or TPS station, with a double click on a measure it is possible to review more information

	Type	Date/Time	Station/Base	Height Instrum./...	Name	Code	Measurement data		Height Target/Ro...	Description
1		05/11/2018 18:27	S1	1.665m	V1	CA	Horiz. Angle:	100.0000g	1.658m	
							Vert. Angle:	100.0252g		
							Slope dist.:	102.387m		
2		05/11/2018 18:27	S1	1.665m	V1A	CA	Horiz. Angle:	100.0000g	1.658m	
							Vert. Angle:	100.0251g		
							Slope dist.:	102.388m		
3		05/11/2018 18:27	S1	1.665m	S2	CA	Horiz. Angle:	1.6860g	1.425m	
							Vert. Angle:	100.0674g		
							Slope dist.:	50.934m		
4		05/11/2018 18:27	S1	1.665m	ST1000	MRT.1	Horiz. Angle:	139.0224g	0.132m	
							Vert. Angle:	100.9507g		
							Slope dist.:	27.622m		
5		05/11/2018 18:27	S1	1.665m	ST1001	MRT.2	Horiz. Angle:	114.3161g	0.132m	
							Vert. Angle:	101.2411g		
							Slope dist.:	23.482m		
6		05/11/2018 18:27	S1	1.665m	ST1002	MRT.2	Horiz. Angle:	81.2468g	0.132m	
							Vert. Angle:	101.1965g		
							Slope dist.:	24.249m		

Calculate survey

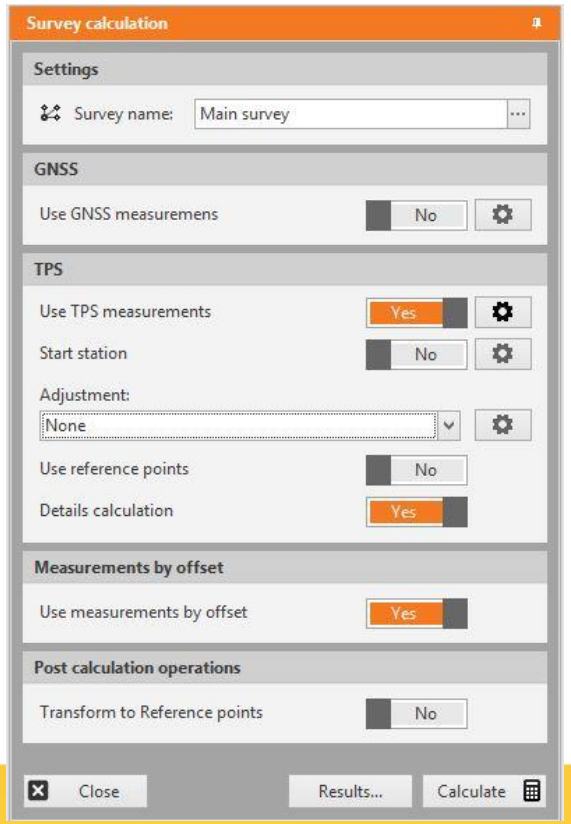


From Survey menu select **Calculate**, this function allows to use survey calculation and define parameters

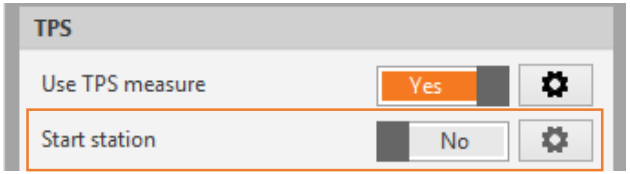


- TPS measure are used in the calculation, to calculate final TPS coordinates

- Click on the Setting to change the calculation tolerance and apply atmospheric corrections

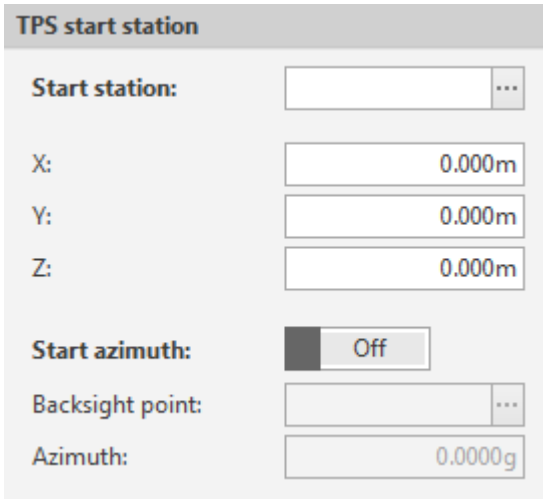


Calculate survey –TPS Settings



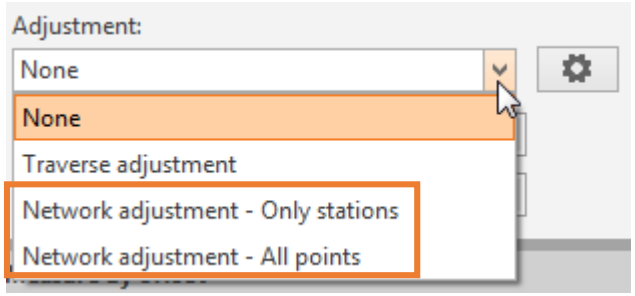
START STATION

- Used to define the coordinate and the orientation of the starting station



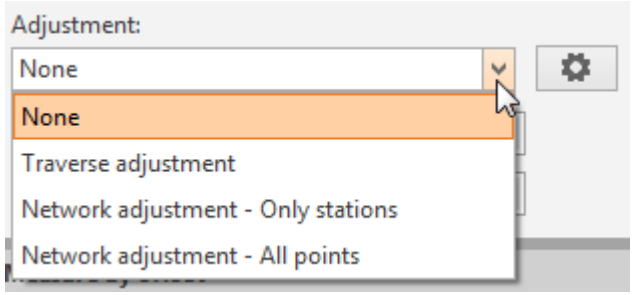
- Click on the Setting to select the start station with its coordinates, and define the backsight point or azimuth

Calculate survey –TPS Settings



NETWORK ADJUSTMENT

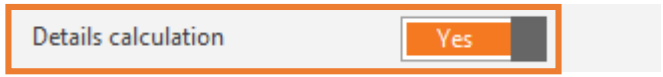
- If a network has been defined, using Adjustment function is possible to calculate the adjusted coordinates of the stations (*Only stations*) or of all points (*All points*)



TRAVERSE ADJUSTMENT

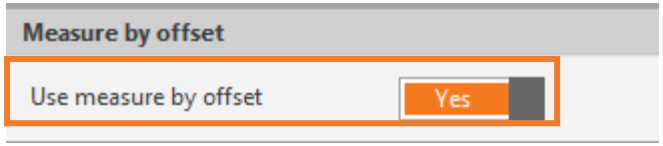
- Used to calculate a traverse
- Traverse can be defined using the dedicated function in the Measures menu
- Traverse is defined selecting the stations used in the traverse

Calculate survey –TPS Settings



DETAILS CALCULATION

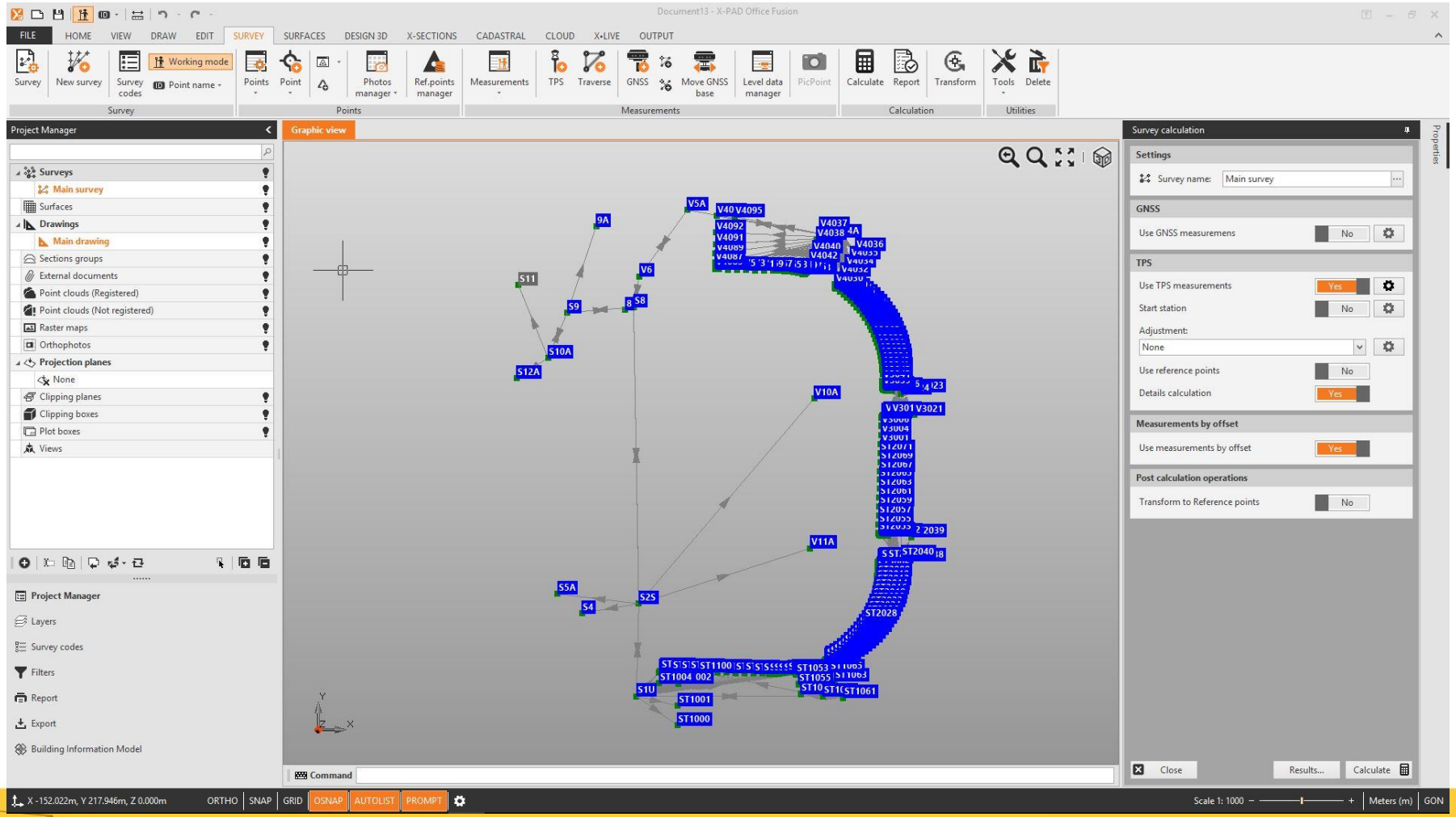
- All points coordinates are recalculated



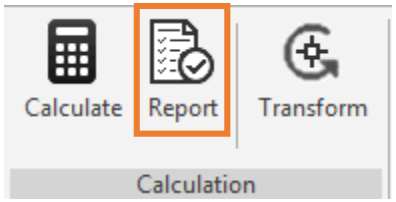
USE MEASURE BY OFFSET

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

Graphic view



Survey Calculation Report



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

Results

- TPS Calculation
  - TPS Calculated points
    - S1
      - V1
      - V1A
      - ST1000
      - ST1001
      - ST1002
      - ST1003
      - ST1004
      - ST1005
      - ST1006
      - ST1007
      - ST1008
      - ST1009
      - ST1010
      - ST1011
      - ST1012
      - ST1013

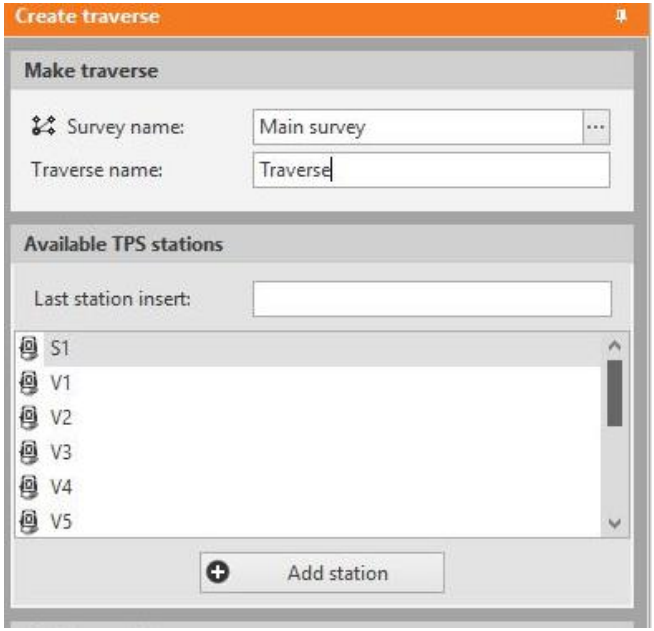
Details

Point data	
Name	ST1006
Code	MRT.2
Description	
Coordinate	
X	12.548m
Y	13.193m
Z	1.179m
Measure data	
Measure type	Standard
Station name	S1
Instrument Height	1.665m
Horizontal angle	48.4063g
Vertical angle	101.2381g
Sloped distance	18.211m
Target Height	0.132m
Target type	Prism

TPS calculated point.

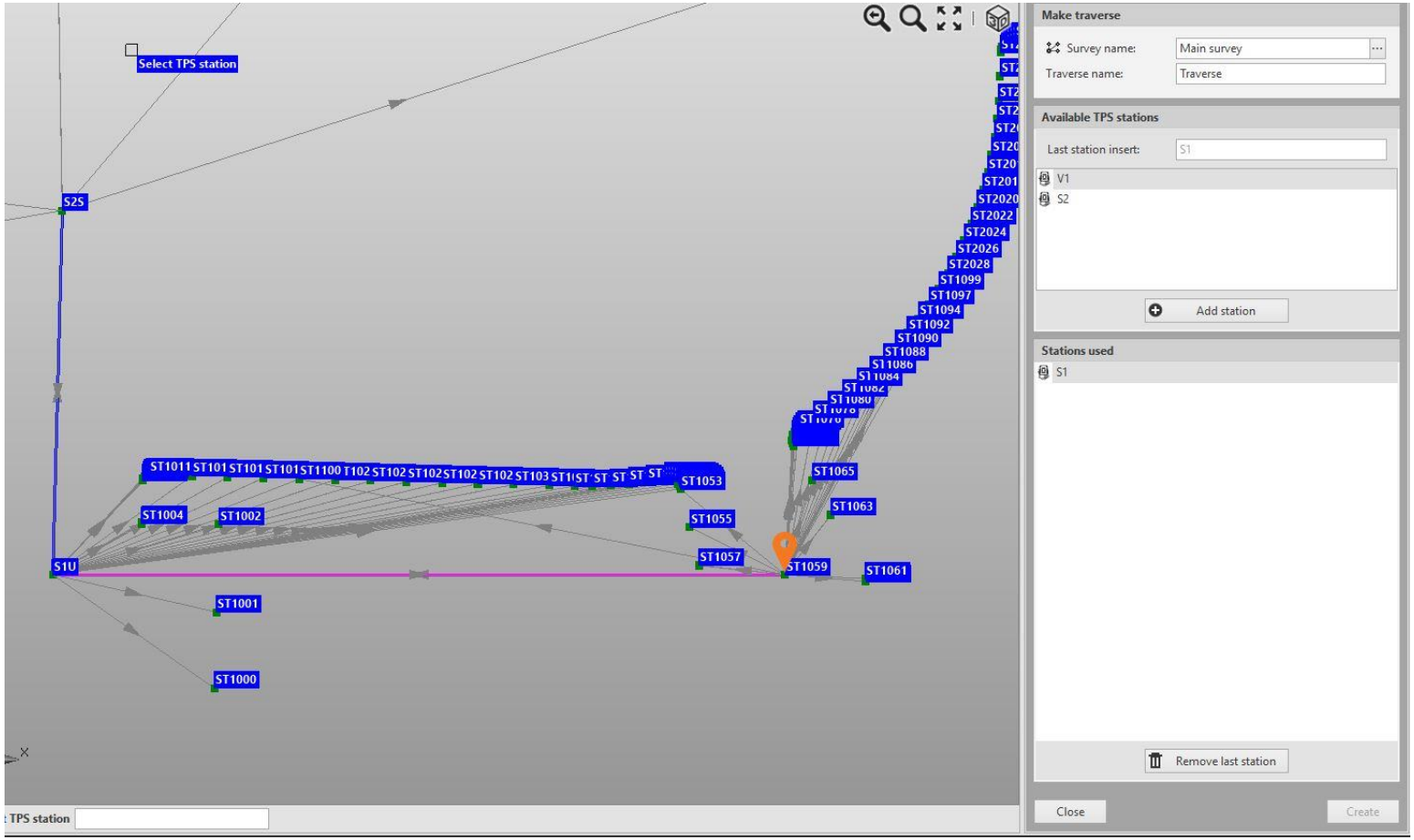
Traverse adjustment

- X-PAD Fusion allows to create and calculate traverses
- The first step is to create a traverse using observations



- Select the Traverse function to start to define the traverse
- The software automatically recognizes the stations in the project. Select the starting and following stations, and the traverse will be automatically completed

Traverse adjustment



Traverse adjustment

- After that a traverse has been created, it is possible to calculate it using the CALCULATE function

- Select Traverse Adjustment as Adjustment method in the calculation