

## Survey procedures for MOVE3 Trimble Total Station

### Corrections

Everything that will make a difference for the quality of the network will naturally be taken into account make sure you are aware of the Temperature Atmospheric Corrections etc. These will have a influence on the distances.

Trimble Access

10:18 19/08	71% 59%	S 0.000	+10 2.000	HA:328.6343gon VA:99.9363gon
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### Corrections

Pressure (instrument) 1009.30mbar	Temperature 23.0°C
PPM (Computed) 4	Curvature correction <input checked="" type="checkbox"/>
Refraction correction <input checked="" type="checkbox"/> Yes	Refraction const. 0.142

Show corrections on startup  
☒

### Measurement Settings

Settings should also to be taken into account. Measurement methods to fixed stations such as 1<sup>st</sup> and 2<sup>nd</sup> face, and the settings for methods to stations. Correct Prism Constant is important. The Prism constant will be provided in the observation listing of MOVE3 on the far right of the column under **source**

Trimble Access

### Instrument

Manufacturer Trimble	Model VX/S Series
Measurement mode STD	Averaged observations 5

#### Auto F1/F2

Topo point <input type="checkbox"/>	Stake out point <input type="checkbox"/>
Station setup <input checked="" type="checkbox"/>	

Measure dist on face 2 <input checked="" type="checkbox"/>	Autolock off for offsets <input checked="" type="checkbox"/>
Set backsight Azimuth	Servo auto turn HA & VA

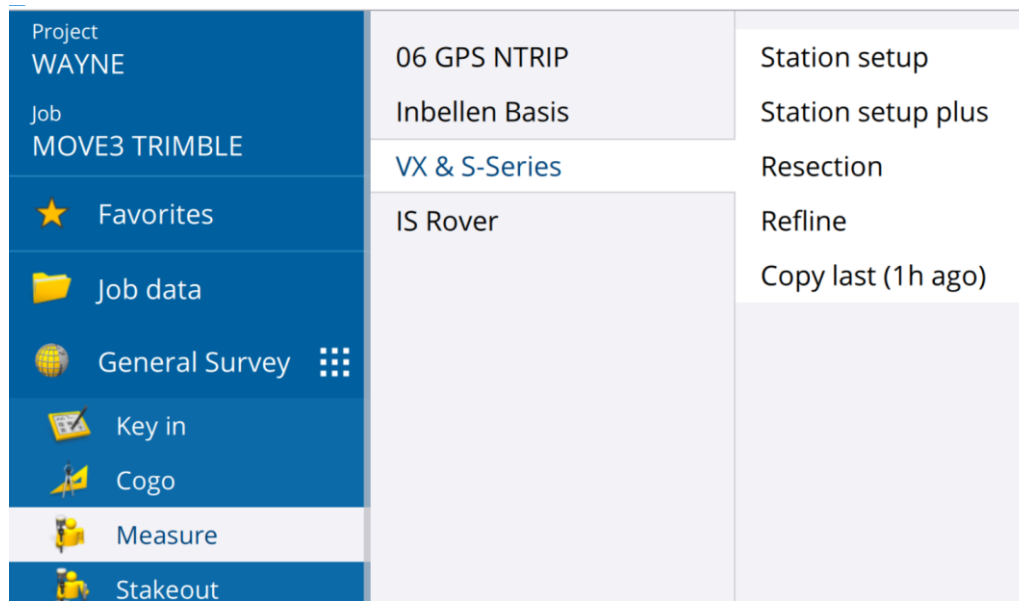
example

## Setup Details

If you are measuring from a free station instrument height is 0 or setting up over known station place instrument height in.

## Resections

Resections go through beautifully with MOVE3 as well as “Measure rounds” under Station setup plus. So you are very flexible.

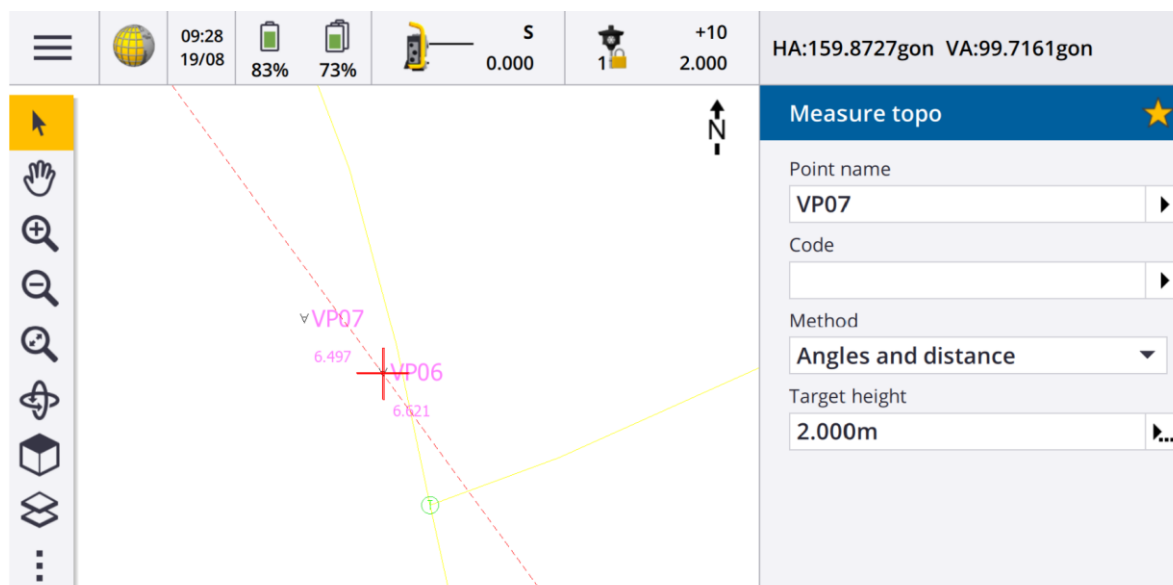


Measure to your known stations preferably minimal 3x if possible. At the heart of any Least Square solution are redundant observations. This provides the necessary statistical basis to check & defend your survey network

- Measure to your fix stations 1 & 2 face (that's up to you naturally 2<sup>nd</sup> face will bring more redundancy & accuracy which is a good thing)
- check your residuals then measure the fix stations again for more redundancy. Also measure the new stations which you maybe adding further down the line. The network has to be connected if you want a traverse as one.  
It's up to you how you connect all the bits the order of survey for MOVE3 is not important as long as you have a joined traverse in the end with the correct survey point.
- Measure to each station minimal 2x better 3x 4x...  
10x is over the top and isn't necessary!
- You can use the “measure rounds” program they will be exported also into MOVE3.

- Any errors you make in the field and erase will also be recorded in MOVE3 so you will have original data # symbol will be placed in the observations this will tell you this observation won't be used in the adjustment but it will give clearly what has been done in the field. Perhaps this erased information is in the end important to you.

The most important thing throughout the traverse is that stations names are kept the same if you measure to a station 07 then for the next set up if you have to measure station 07 again then keep to that same station name. This is the same for setup over a known station.



Accept store another

09:30  
19/08

82%

73%

S  
0.000

1

+10  
2.000

HA:160.8606gon VA:99.7556gon

Dupl. point : Out of tolerance

Point name

VP07

Action

Store another

Code

?

Δ H.Angle

-0.0209gon

Δ V.Angle

-0.0146gon

Δ S.Distance

0.005m

Δ H.Distance

0.049m

Δ V.Distance

0.034m

Resection - Residuals

Point	ΔE	ΔN	ΔElev
VP08	-0.002m	-0.001m	-0.003m
VP09	0.002m	0.002m	0.003m

Δ Grid

## Exporting Data to MOVE3

Jxl file

Export

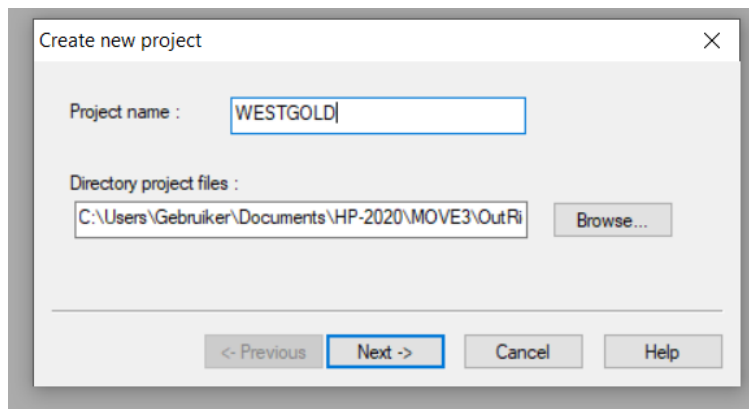
File format

Trimble JobXML

View created file

## MOVE3 Import Data

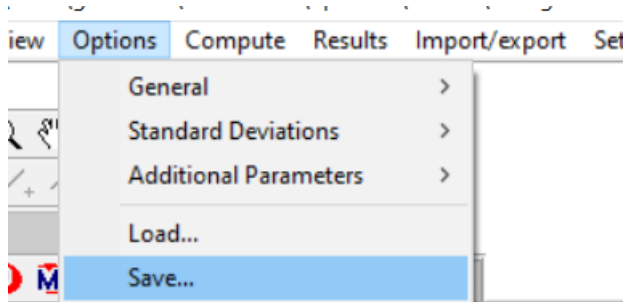
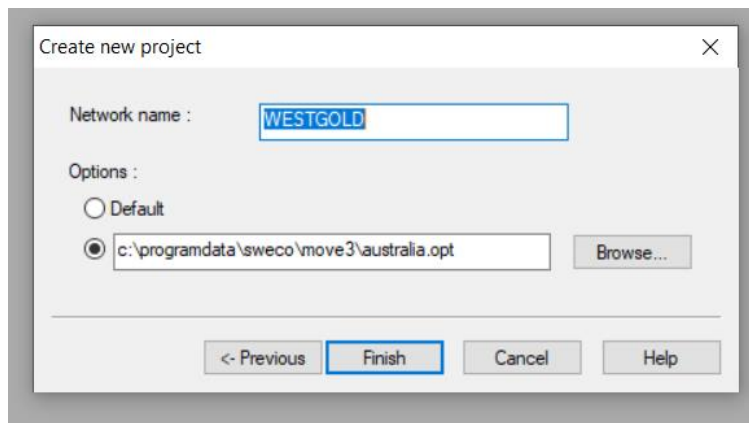
Create new project



Go to browse and select Australia.opt file if you wish here is the Australian SP attached.

Or just choose default and you can change the settings latter in MOVE3.

You can make yourself .opt files for saved settings for next jobs in MOVE3 options Save or to selected previously saved settings choose load.



## Select a projection

Under the **More** here you will find the Australian GDA projections.

If you are just working from a local choose the setting under

General options

Project Geometry Adjustment MOVE3 output selection Units Datasnooping

Dimension 3D

Projection None More...

Projection name

Longitude of origin/CM

Latitude of origin

Standard parallel 1

Standard parallel 2

Skew Azimuth

Scalefactor

False Easting m

False Northing m

Ellipsoid GRS 1980

Semi major axis 6378137.0000 m

Inverse flattening 298.257222101

Transformation None

GPS coordinate type XYZ

General options



Project Geometry Adjustment MOVE3 output selection Units Datasnooping

Dimension 3D

Projection Local (stereographic)

More...

Projection name Local (stereographic)

Longitude of origin/CM 0 00 00.00000

Latitude of origin 0 00 00.00000

Standard parallel 1

Standard parallel 2

Skew Azimuth

Scalefactor 1.000000000

False Easting 0.0000 m

False Northing 0.0000 m

Ellipsoid GRS 1980

Semi major axis 6378137.0000 m

Inverse flattening 298.257222101

Transformation None

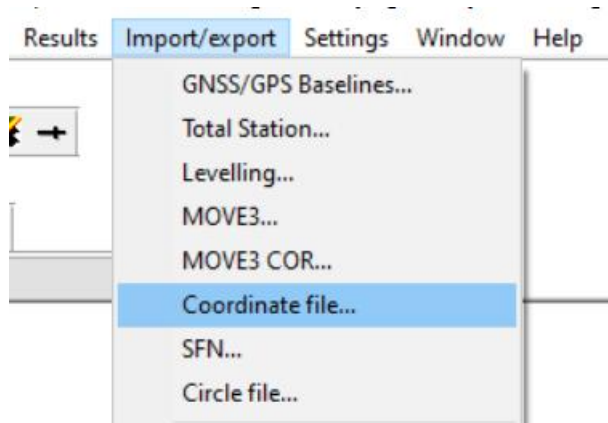
GPS coordinate type XYZ

## Importing fixed station data

You import fixed station before or latter after importing your observations there is no fixed order.

### Import-Coordinate file

IMPORT any fixed station file: if you have a list of fixed station coordinates you can import these if they are in they are from the Total Station these should will be automatically imported (latter you need to check these to make them fixed. You will see \* symbol next to the station in the **stations** in MOVE3, you can double click the station to bring up the station editor (or direct on the screen selecting the station will bring up the station editor here you can tick to make the coordinates fixed XY or Height.



It's up to you how you want to import from csv excel or notepad. I prefer note pad.



Import Coordinate file

Added :  
 Observations 0  
 Stations 0

Import

Close

Add as: Known Station

☐ Update existing only

Format: Separator Comma

	Begin	Length	Field
Station name	0	0	1
X East	0	0	2
Y North	0	0	3
Height	0	0	4
St dev X East	0	0	0
St dev Y North	0	0	0
St dev Height	0	0	0
Feature code	0	0	0
Geoid Height	0	0	0

Help

```
1,259742.1821,544354.6196
2,259768.0754,544376.7149
3,259725.2213,544363.1753
4,259723.9216,544367.3789
5,259748.1704,544388.2318
6,259753.5355,544388.1307
7,259756.3674,544390.5583
8,259768.0754,544376.7149
```

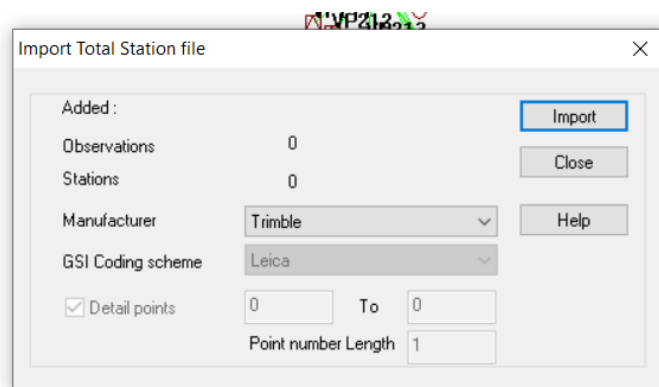
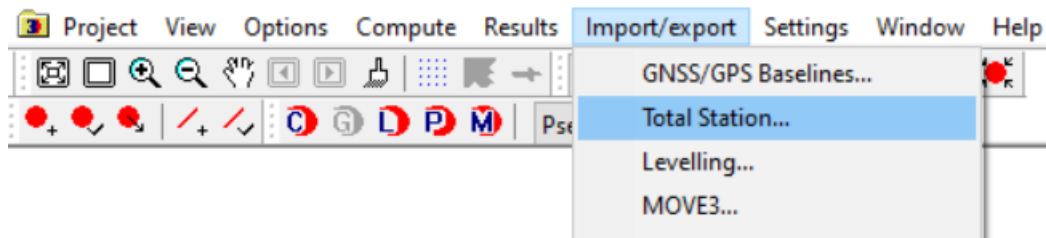
Example: station number field1, EastX field2,North field3,Height field4

## Gyro Measurements

\*If you have gyro measurement these values can latter added into MOVE3

## Import Total Station data

Jxl or DC



DROUWENERVEEN.jxl

19-8-2020 10:35

JXL-bestand



Projection Settings will appear

### Select a projection

Under the **More** here you will find the Australian GDA projections.

If you are just working from a local choose local stereographic setting.

General options

Project Geometry Adjustment MOVE3 output selection Units Datasnooping

Dimension 3D

Projection None More...

Projection name

Longitude of origin/CM

Latitude of origin

Standard parallel 1

Standard parallel 2

Skew Azimuth

Scalefactor

False Easting m

False Northing m

Ellipsoid GRS 1980

Semi major axis 6378137.0000 m

Inverse flattening 298.257222101

Transformation None

GPS coordinate type XYZ

General options

Project Geometry Adjustment MOVE3 output selection Units Datasnooping

Dimension 3D

Projection Local (stereographic) More...

Projection name Local (stereographic)

Longitude of origin/CM 0 00 00.00000

Latitude of origin 0 00 00.00000

Standard parallel 1

Standard parallel 2

Skew Azimuth

Scalefactor 1.000000000

False Easting 0.0000 m

False Northing 0.0000 m

Ellipsoid GRS 1980

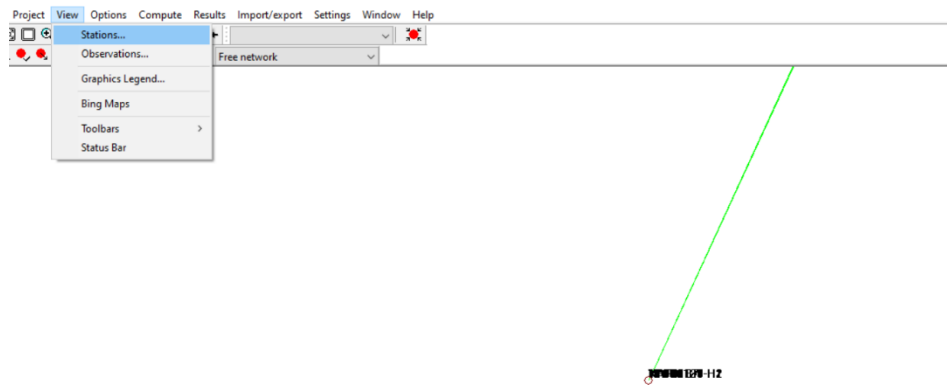
Semi major axis 6378137.0000 m

Inverse flattening 298.257222101

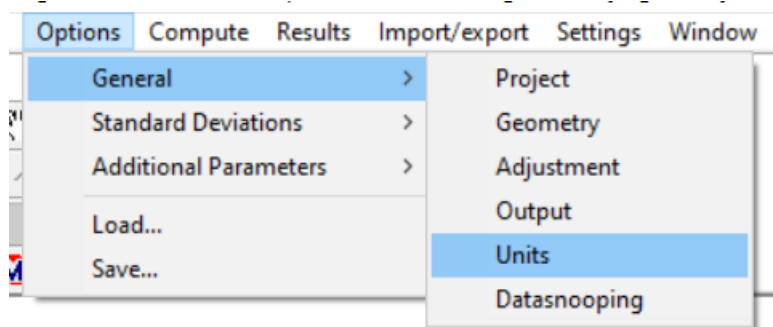
Transformation None

GPS coordinate type XYZ

Go to **View** Stations Observations and see data



To Change to Degrees Minutes Second format



Wayne Pappas

MOVE3 Australia September 2020