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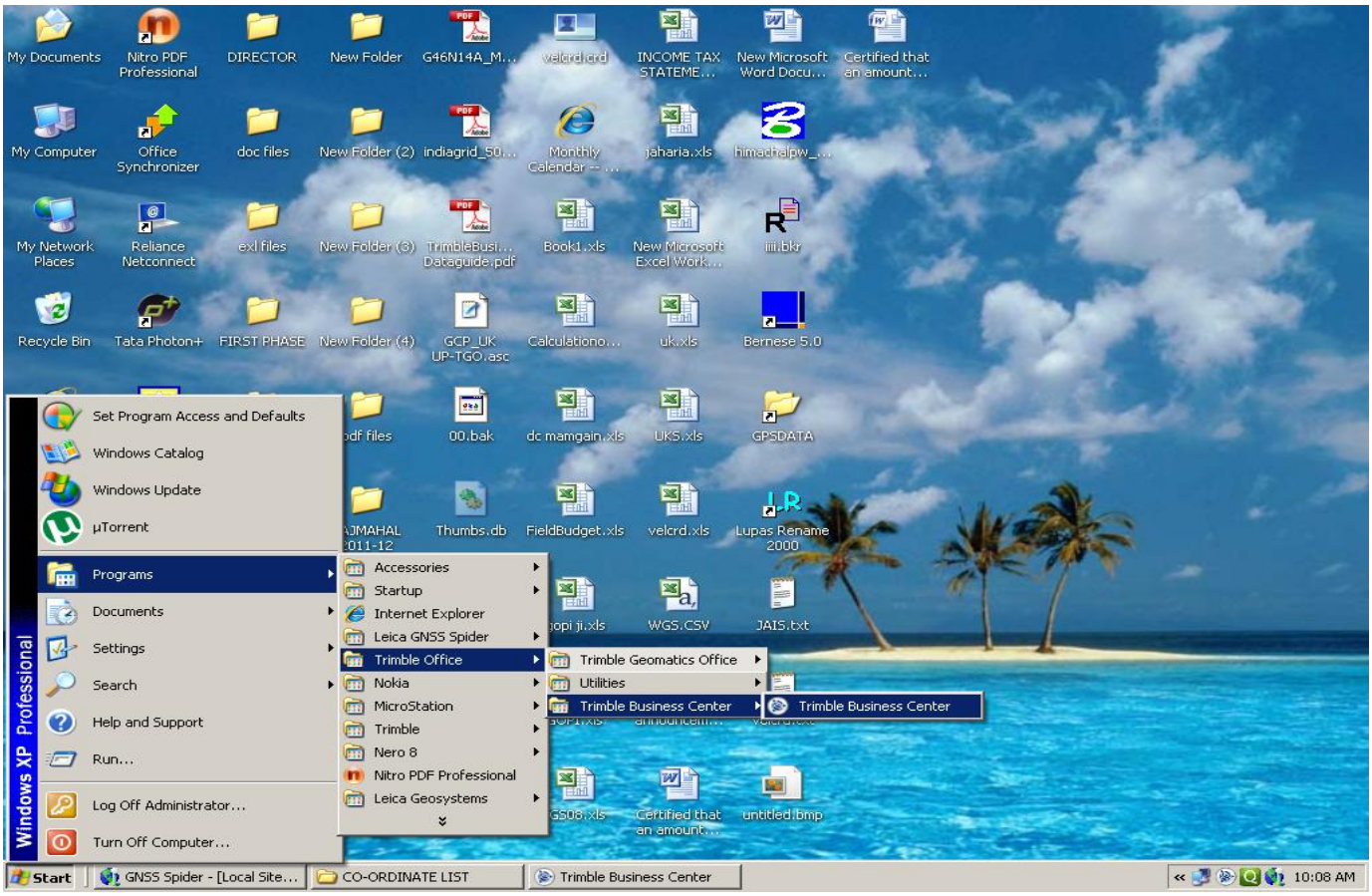
STEP -1

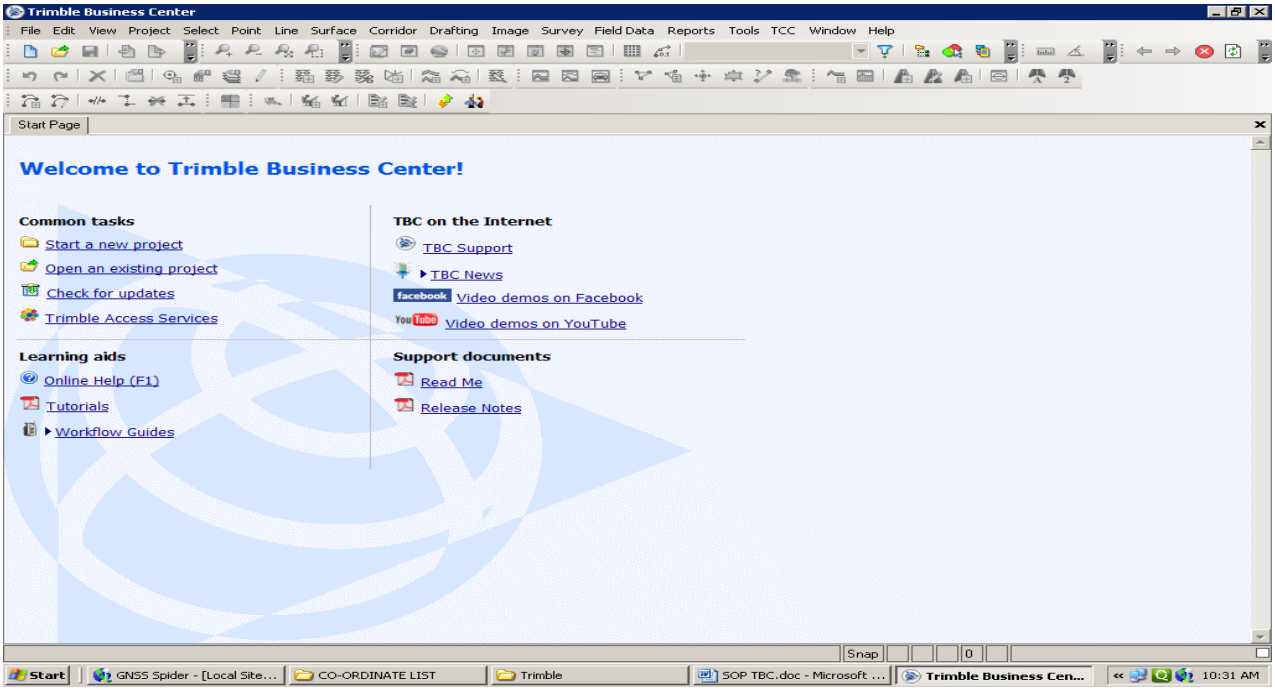
CREATING A NEW PROJECT

Open the "TRIMBLE BUSSINESS CENTRE" software.

1. Start>program files>Trimble Office> Trimble Business Centre> Trimble Business Centre

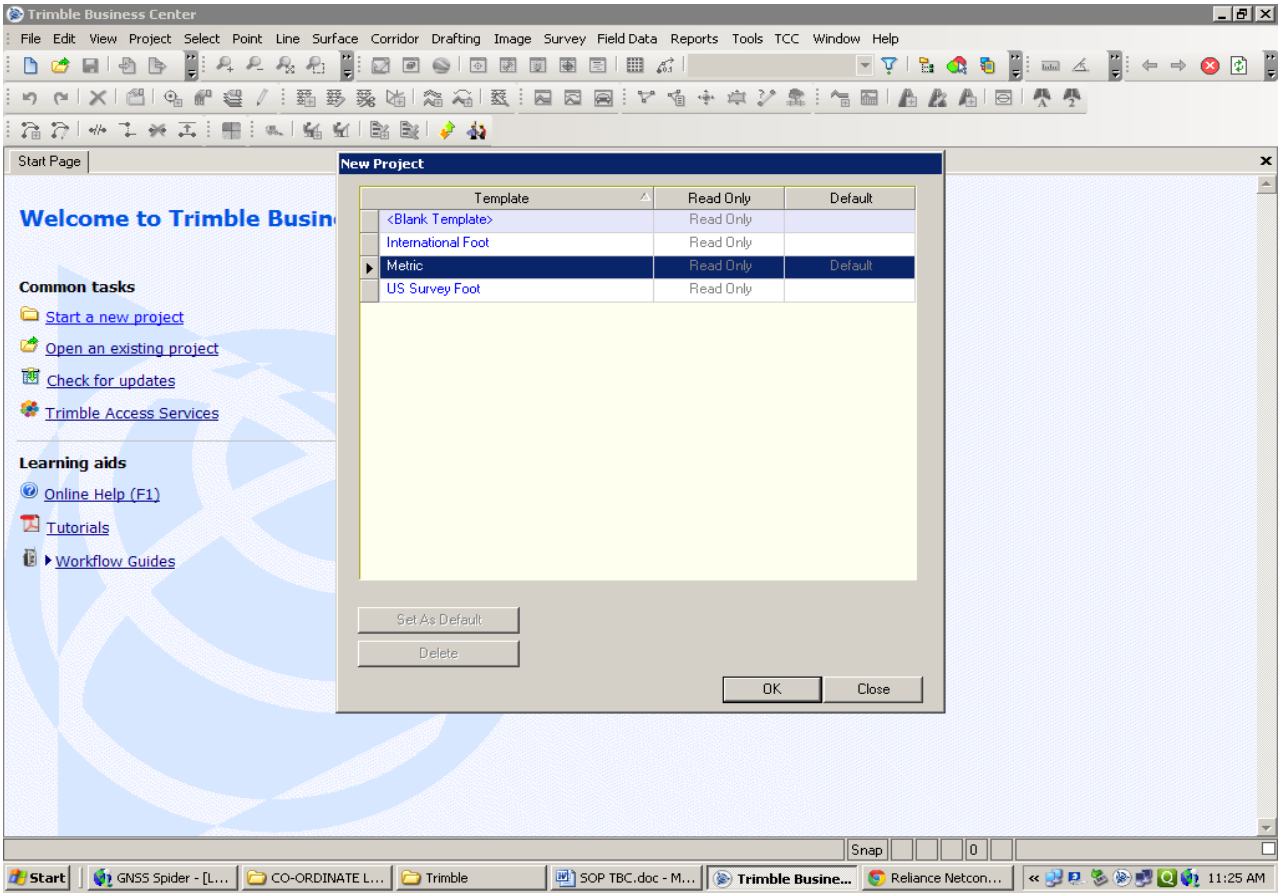


The following page will display.



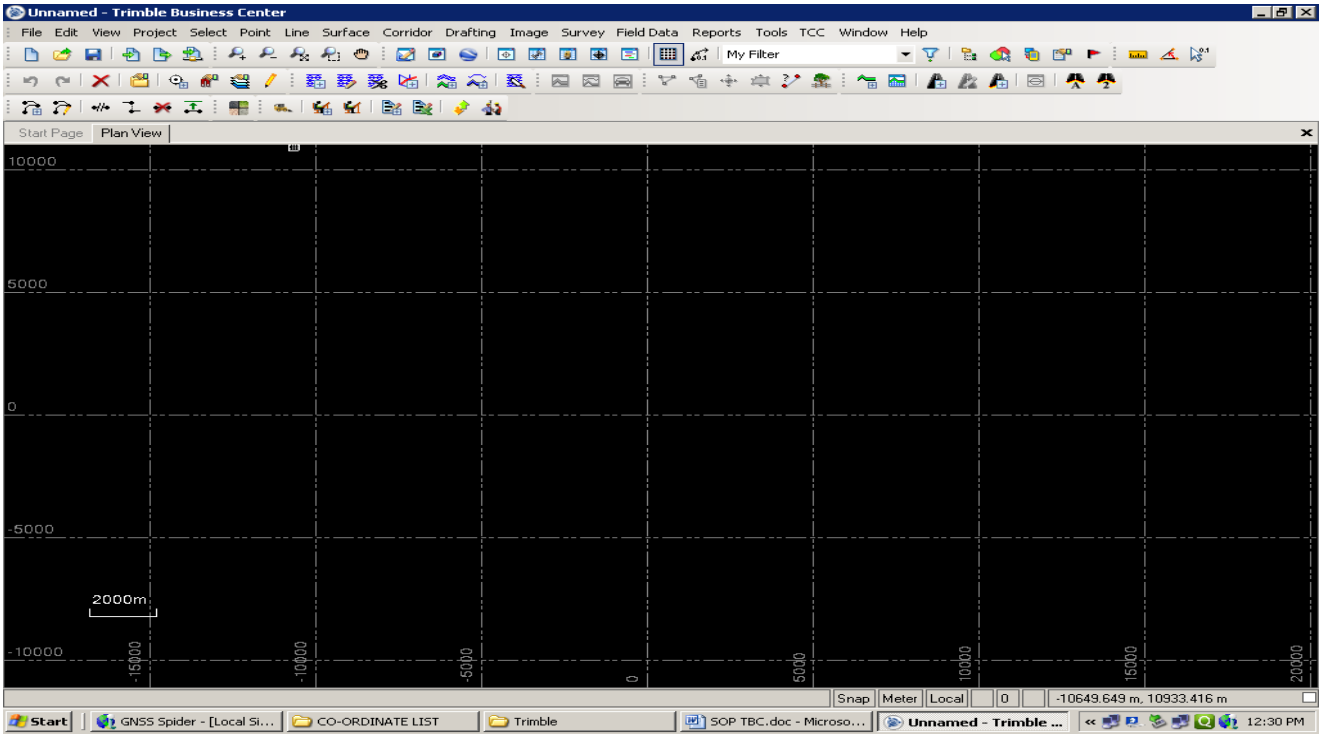
1. Click Start New Project

The following page will display.



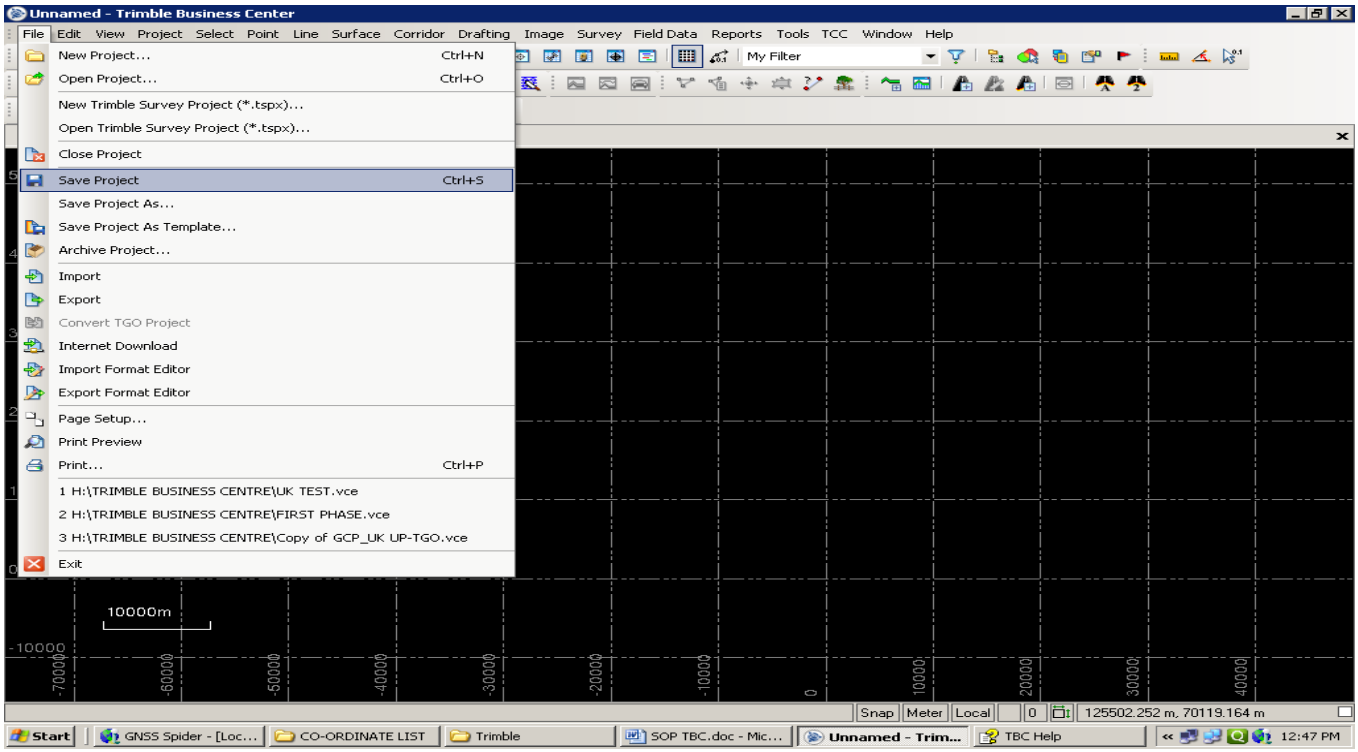
Click ok.

The following page will display.

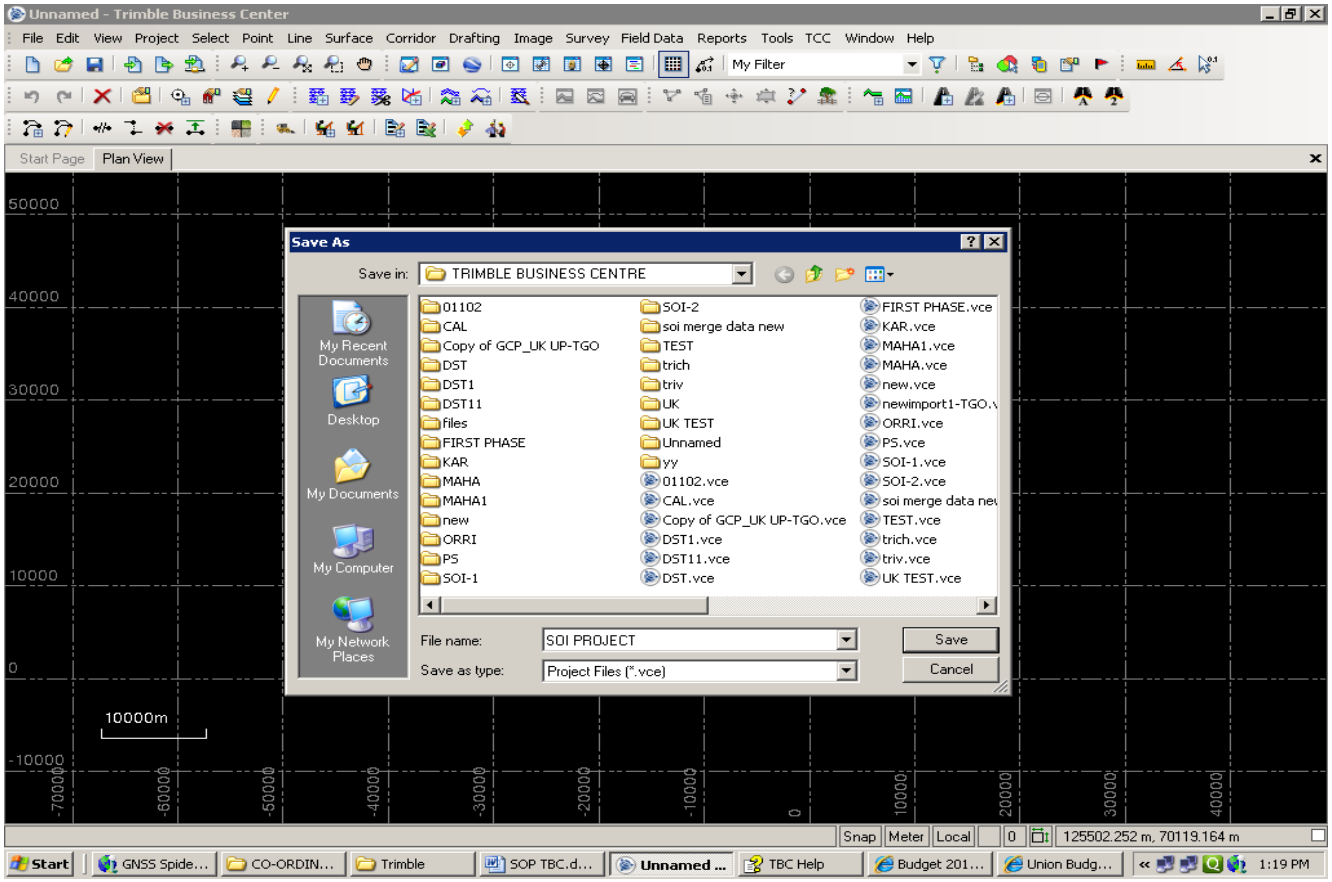


1. Select the Following Command

   Menu>File> Save Project



The following page will display.



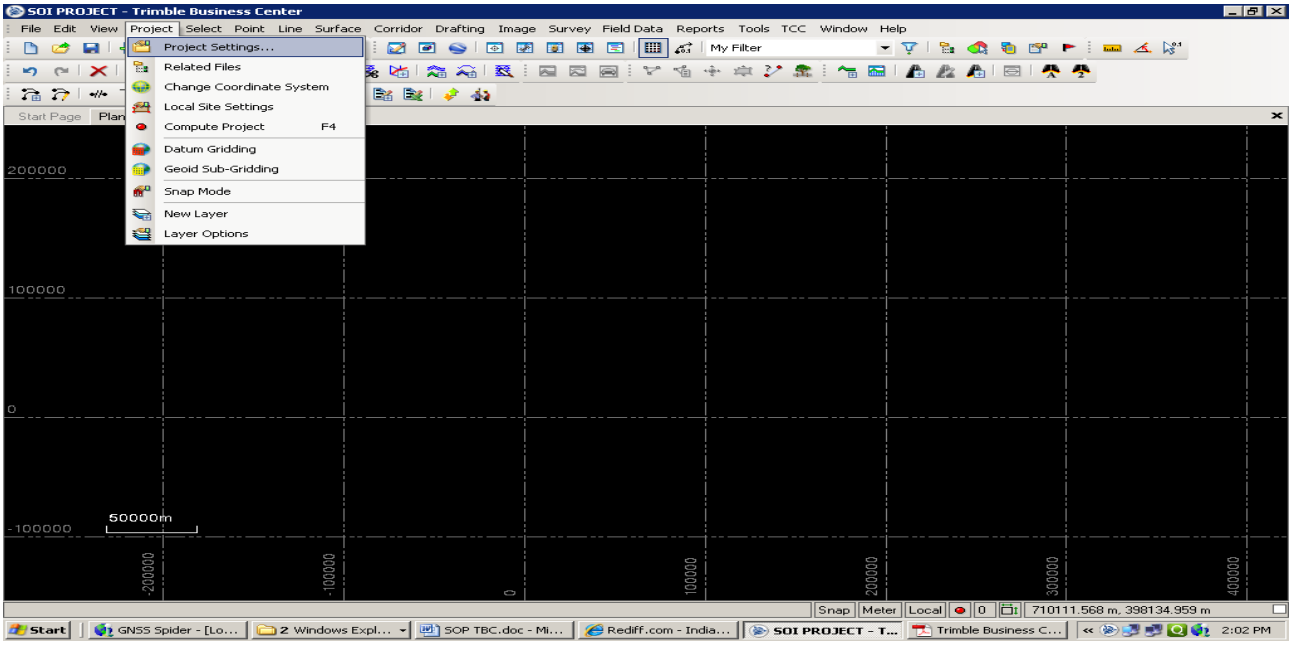
NOTE: It will save in default path: “C/Documents/Trimble Business Centre”.
User can save it to any specified required path.

THEN CLICK SAVE.

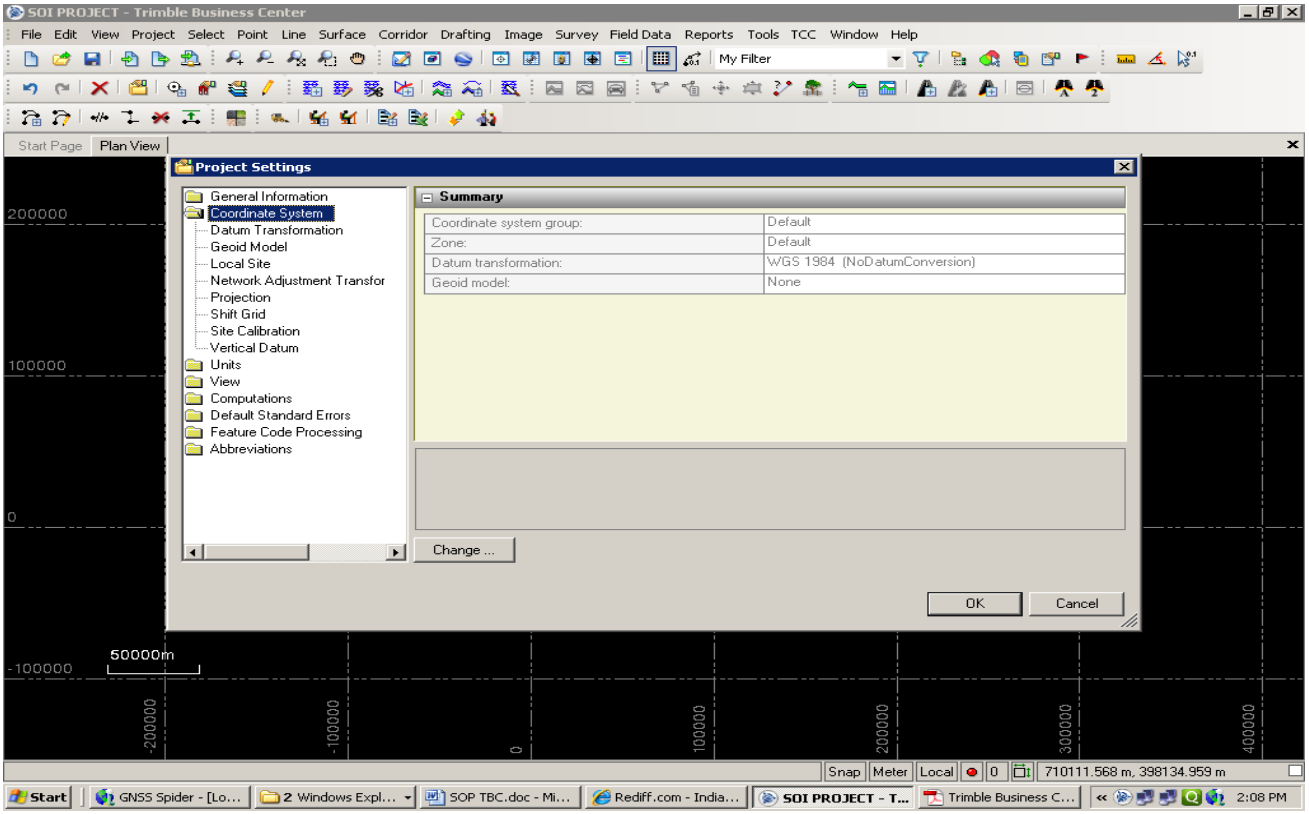
STEP 2

PROJECT SETTING

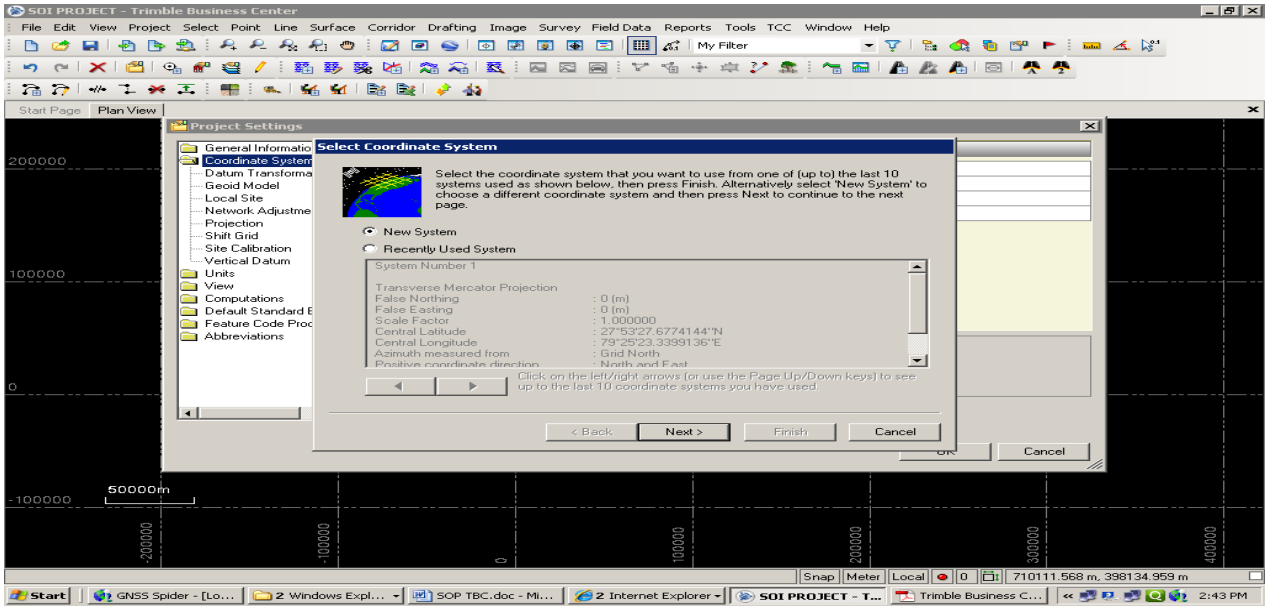
1. Menu>Project > Project Setting



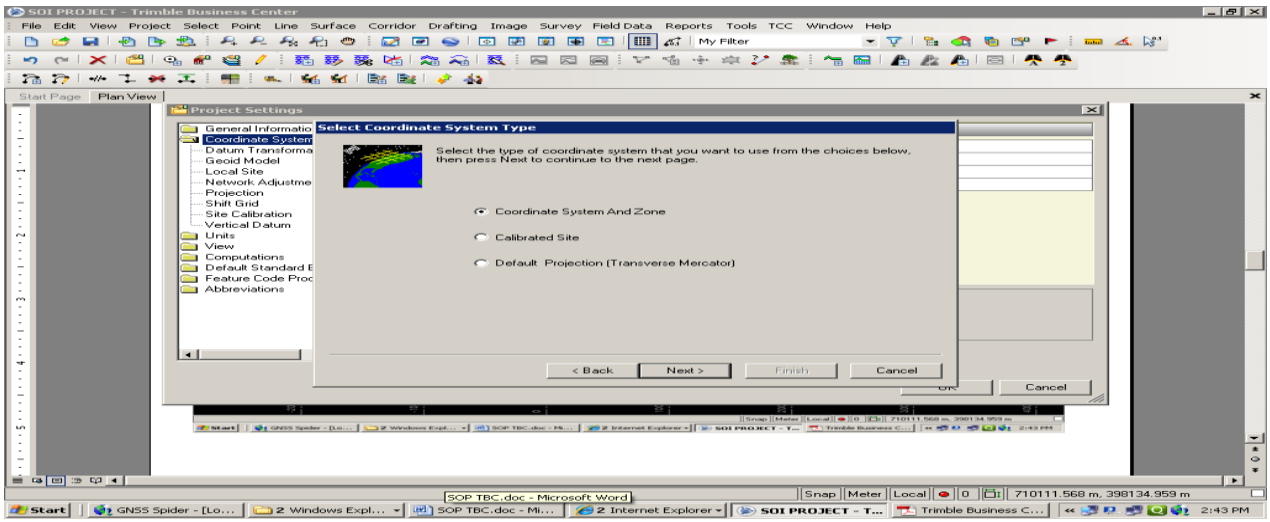
The following page will display.



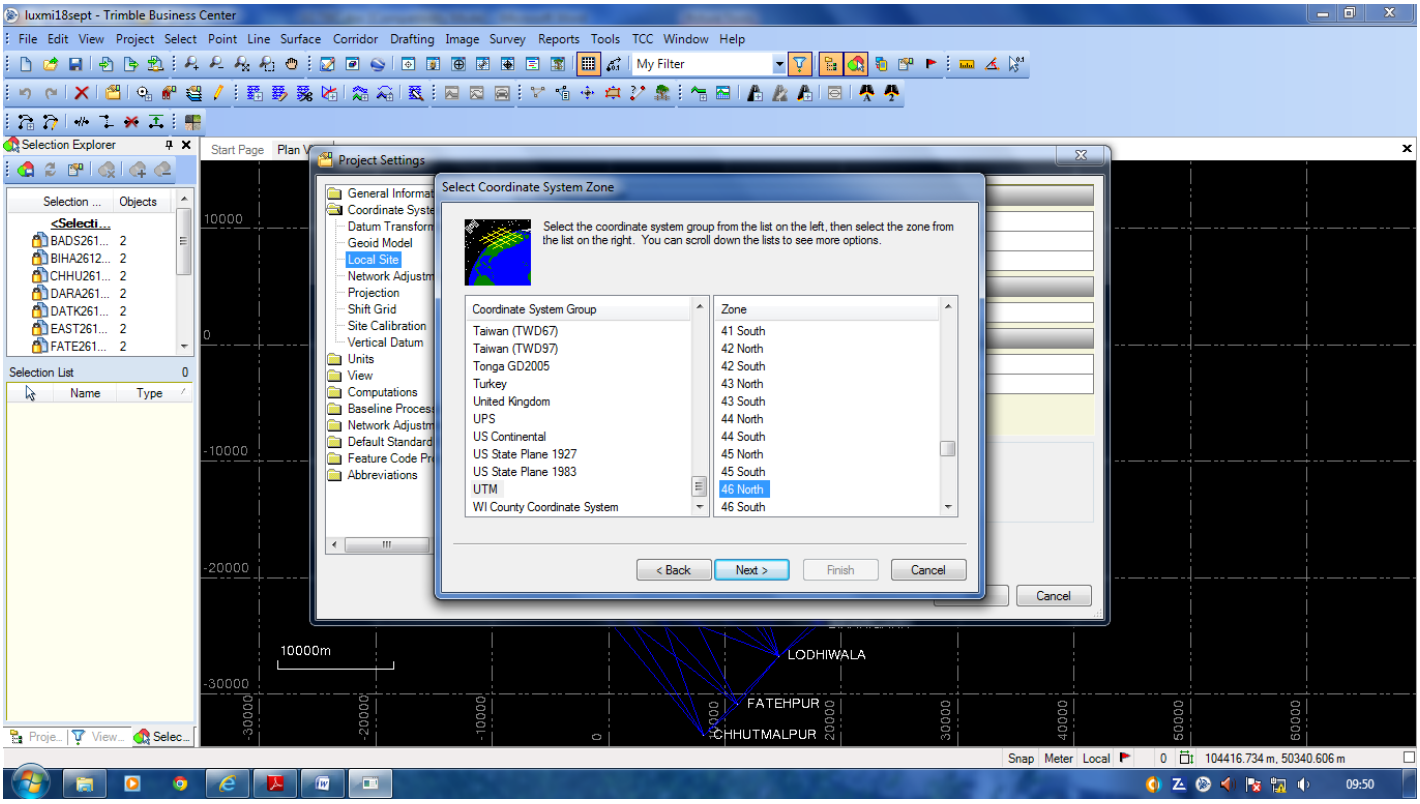
Click Change



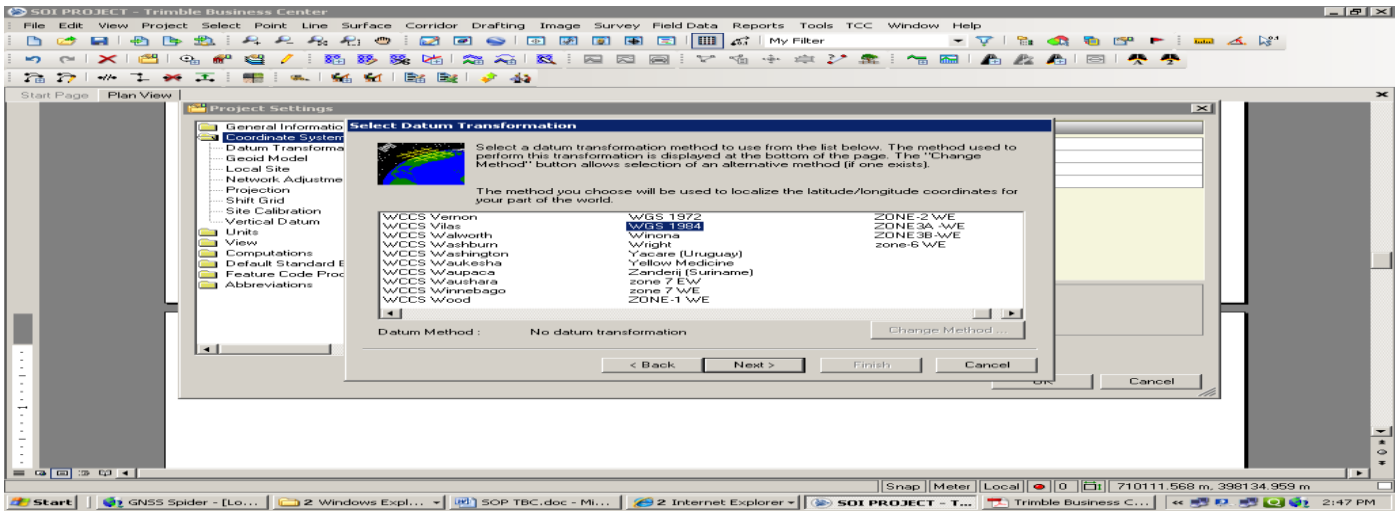
Click Next



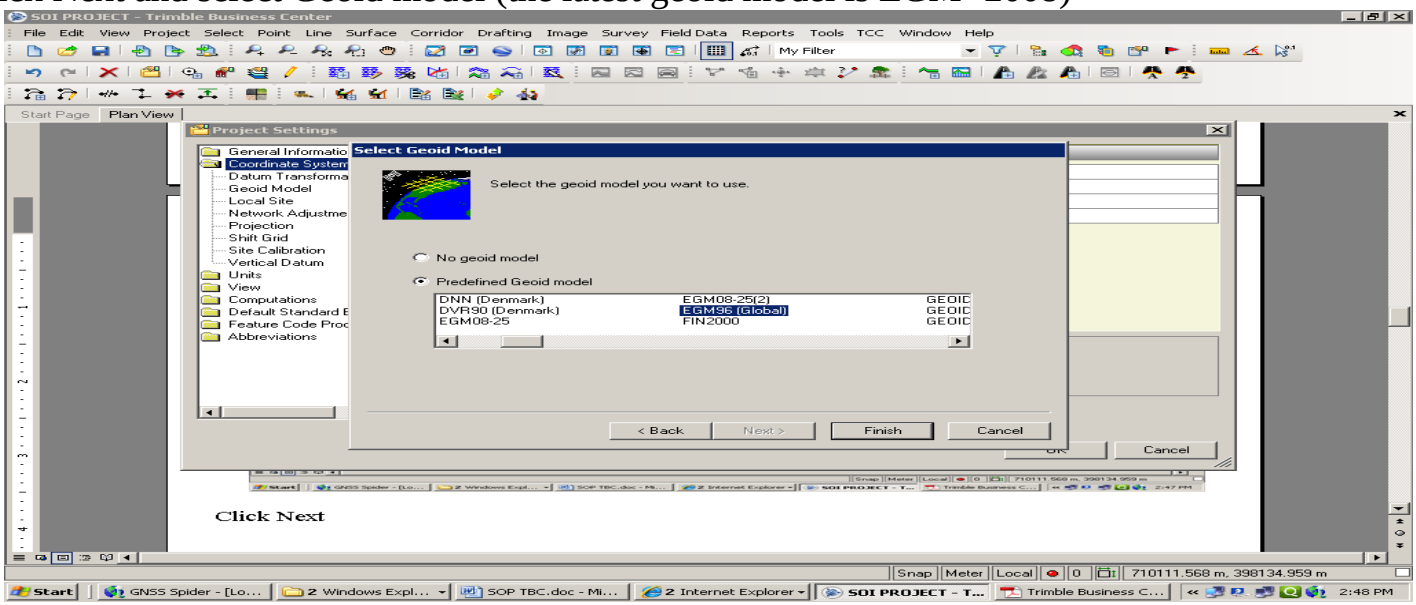
Click Next and select coordinates system as per requirement.



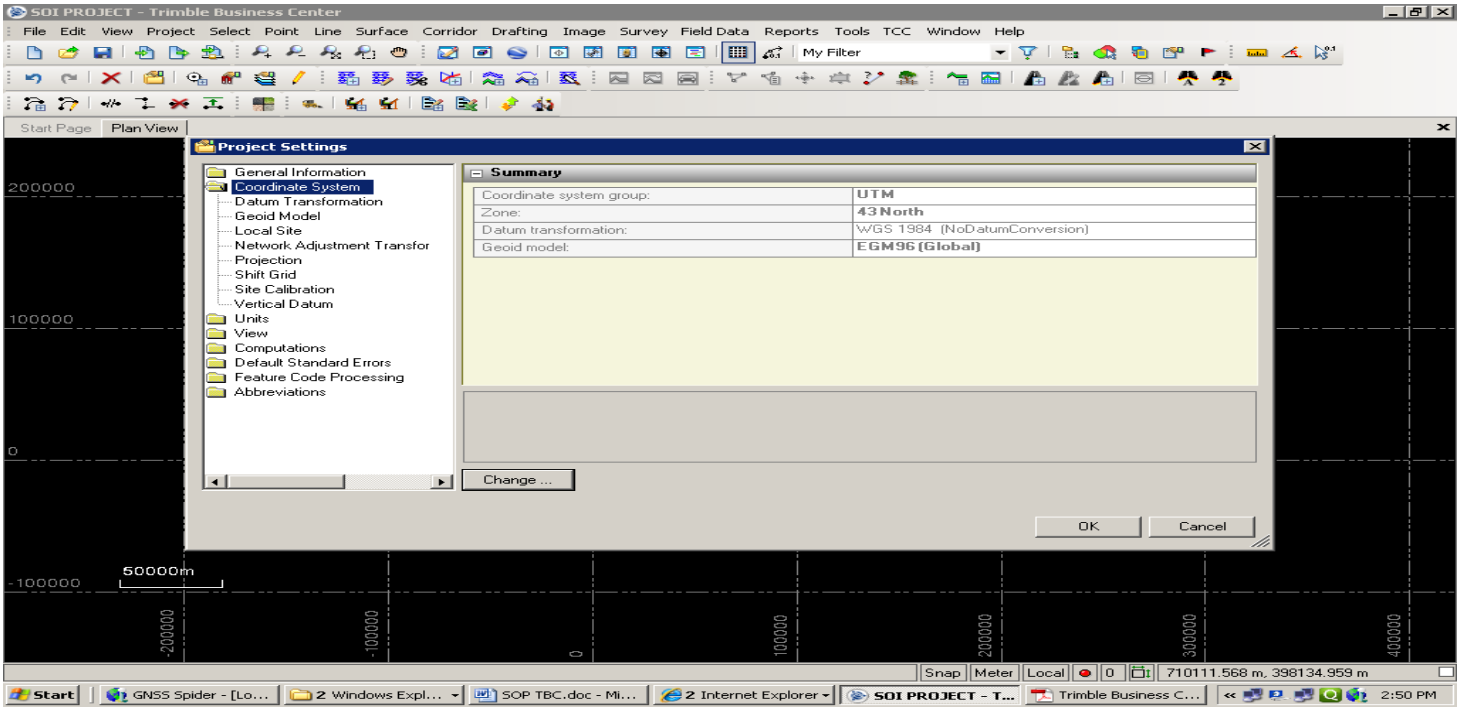
Click Next



Click Next and select Geoid model (the latest geoid model is EGM -2008)



Click Finish.



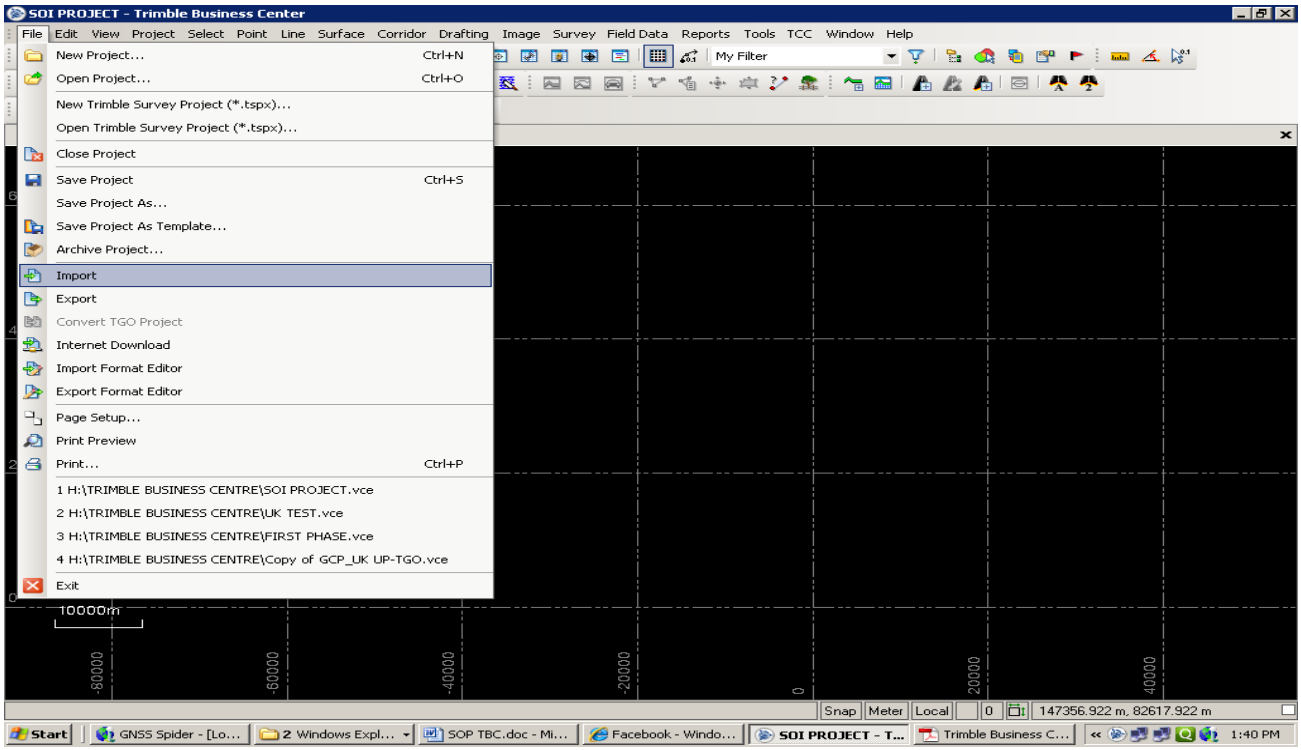
Click OK.

STEP-3

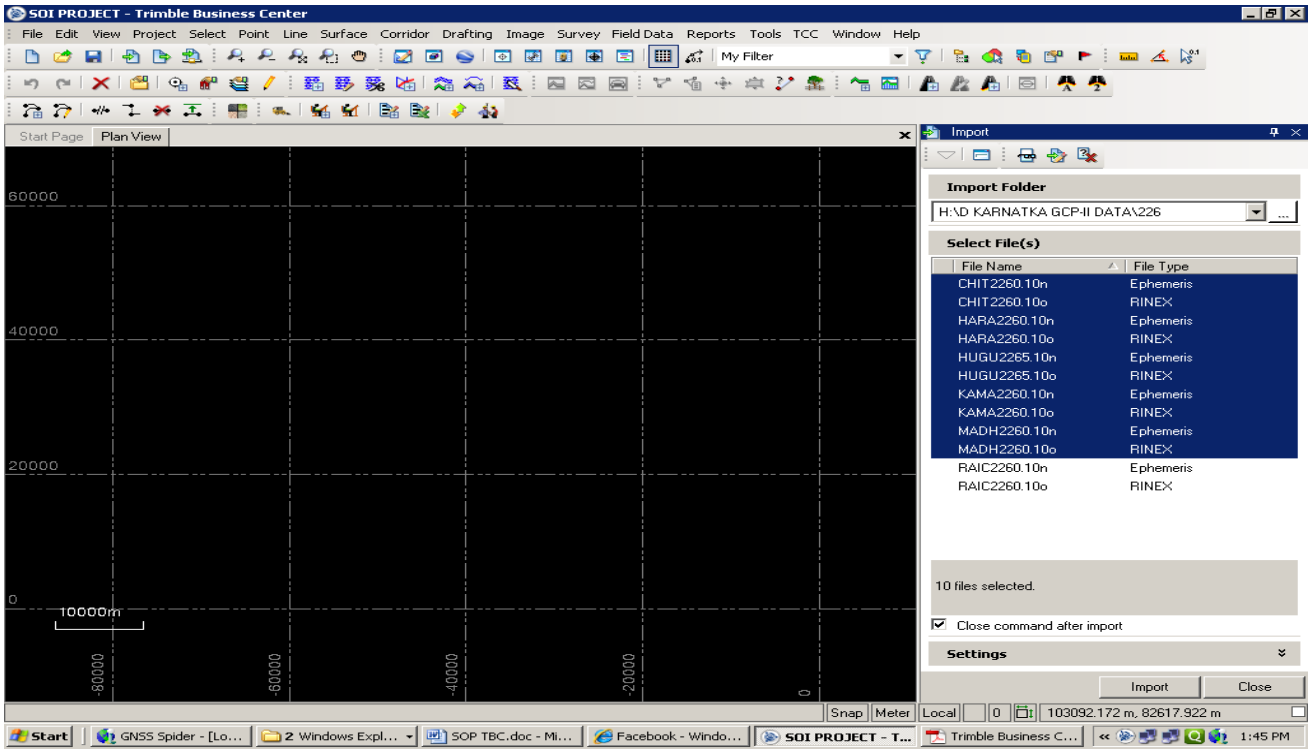
DATA IMPORT

*"TBC can import data in its raw (*dat,*.T01,*.T02) as well as in RINEX format"*

1. Menu>File>Import

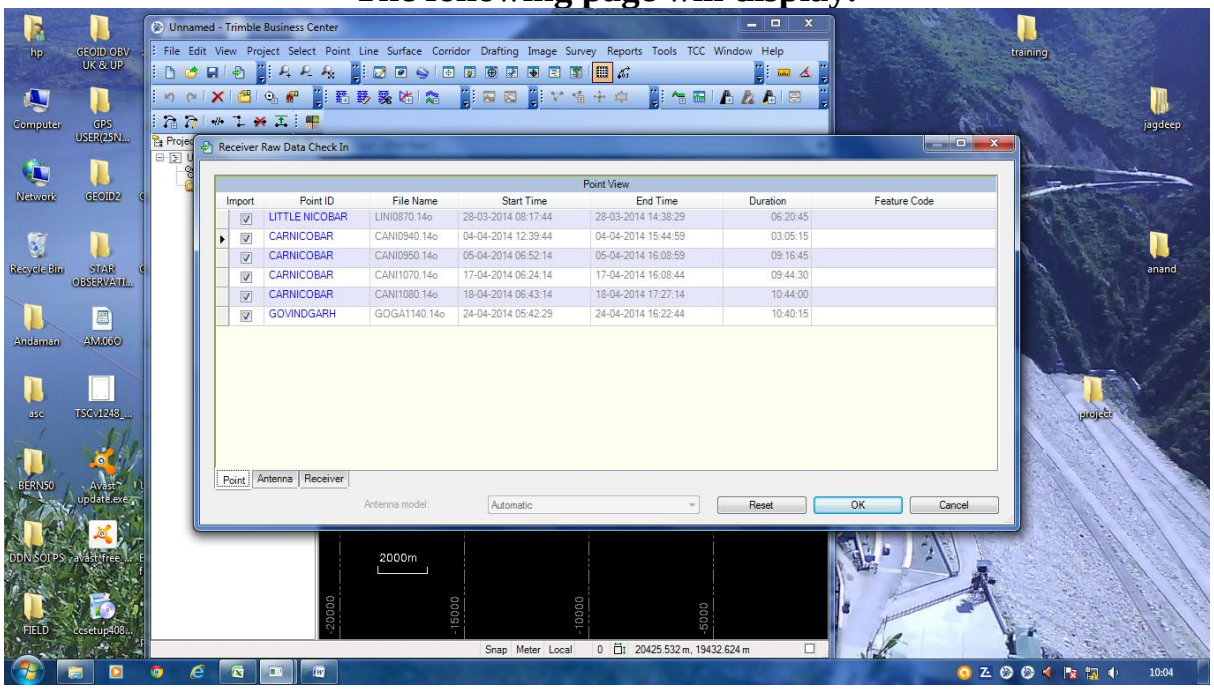


The following page will display.



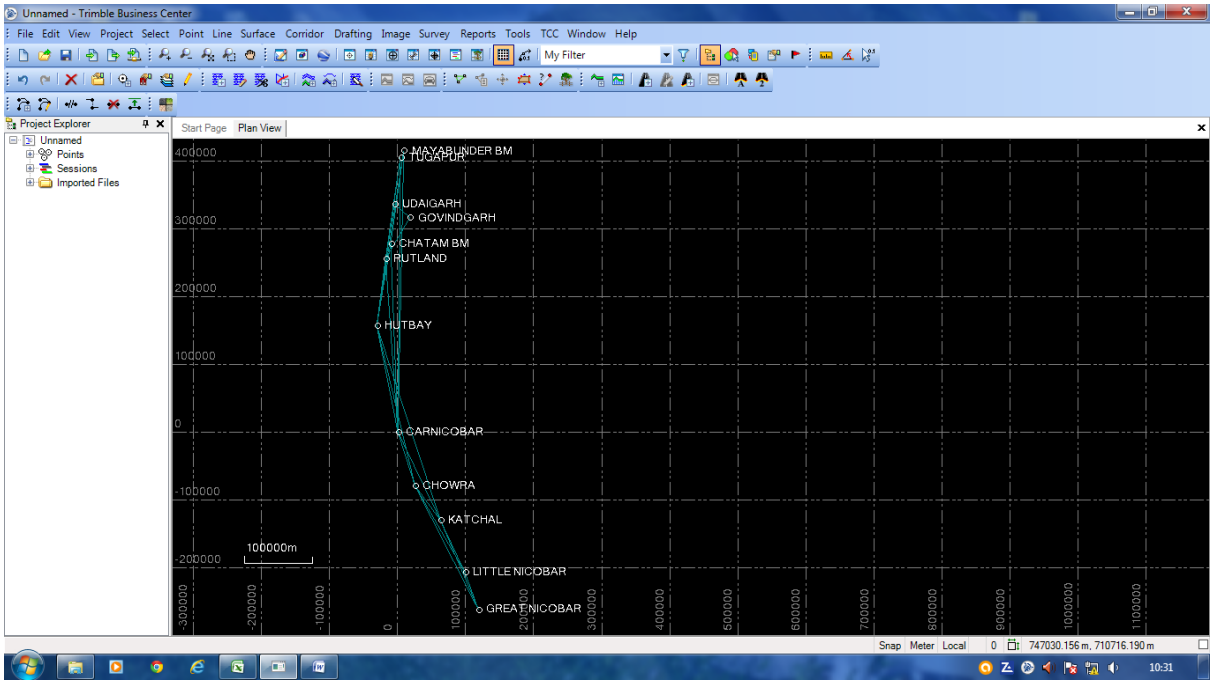
Select Your Data and Then Click Import

The following page will display.



"Here we can edit the point id & instrument height if required and details regarding the field observation can be checked."

THEN CLICK OK.



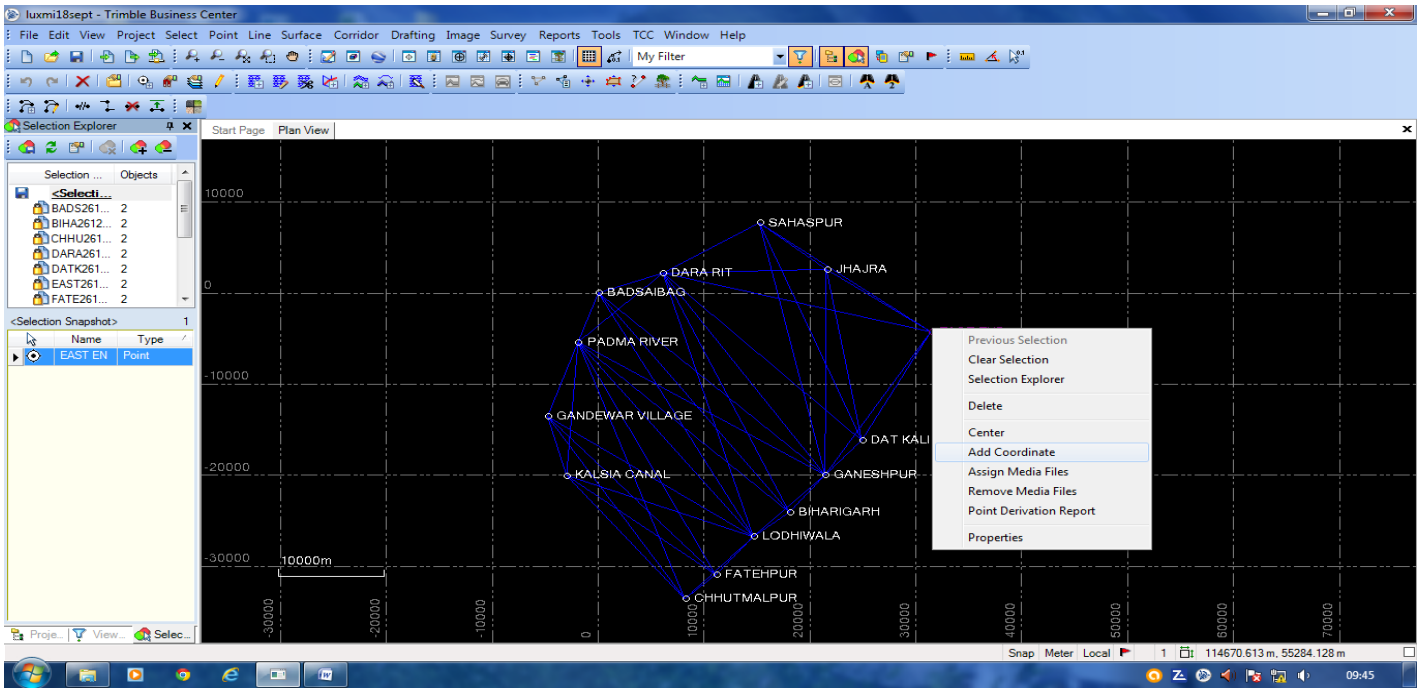
(After the raw data files are imported, the plan view shows all potential baselines (unprocessed base lines) in green color in the survey network. Because the data is raw static data, the baselines must still be processed.)

STEP-4

PROCESSING OF BASELINE

1. **Click Add co-ordinate button**

Note: "It can be done also by selecting the point and then "right click>Add-coordinate" command"



Add the known coordinates

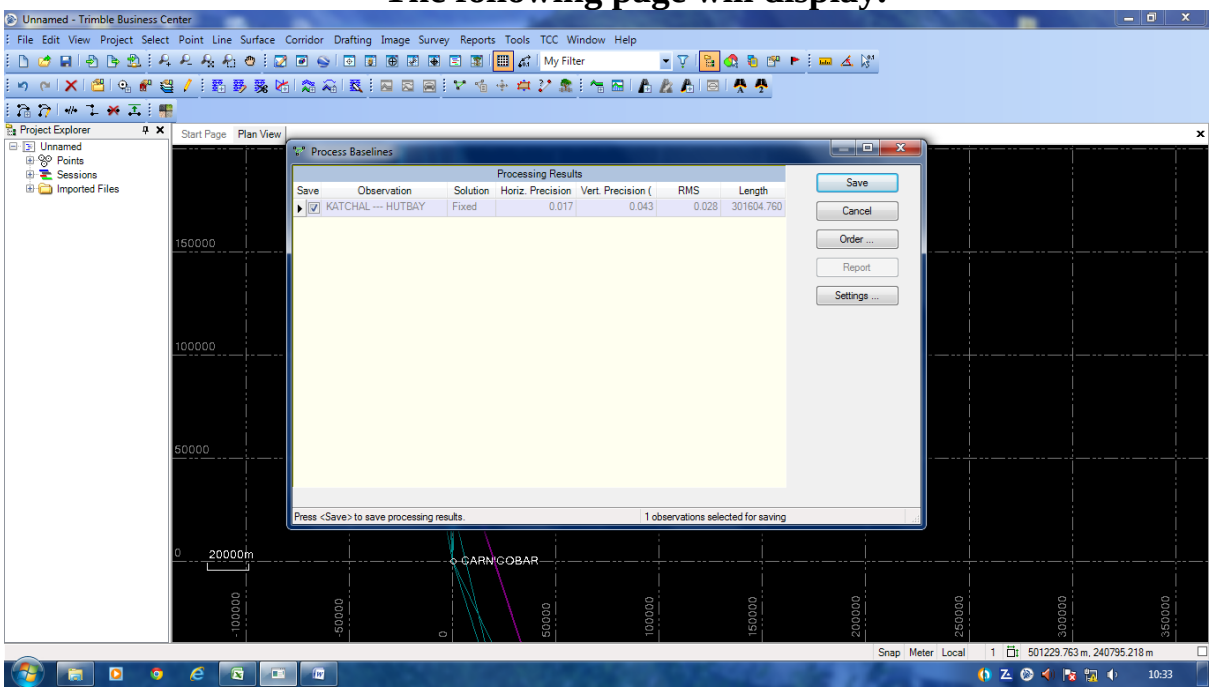
Select Co-ordinate Type ➔ Global

Key in your "Latitude, Longitude & Height" and assign it as Control Quality.

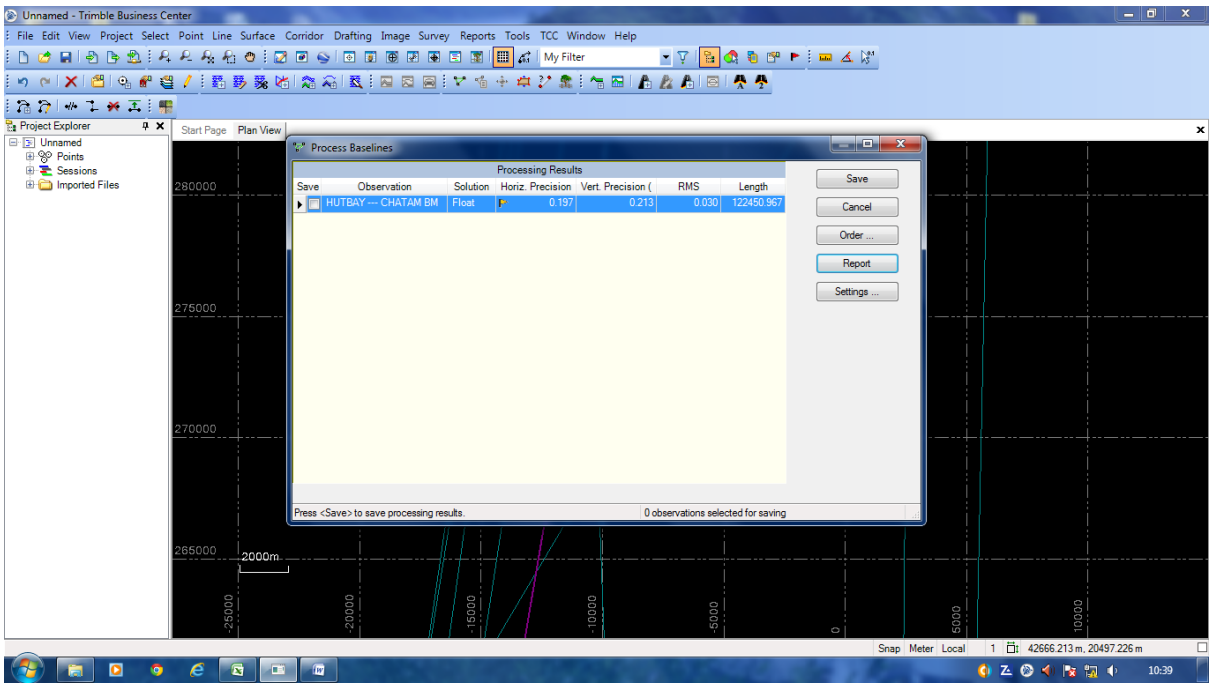
Click ➔ Ok

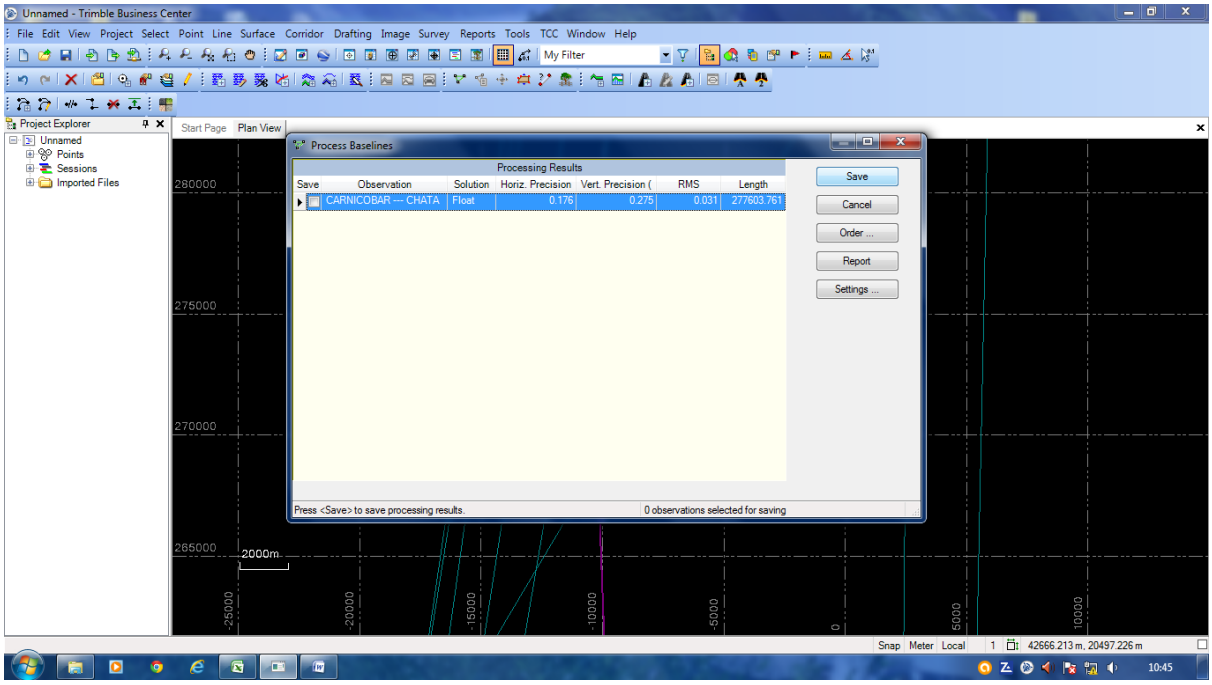
2. Menu>Survey>Processing Baselines

The following page will display.



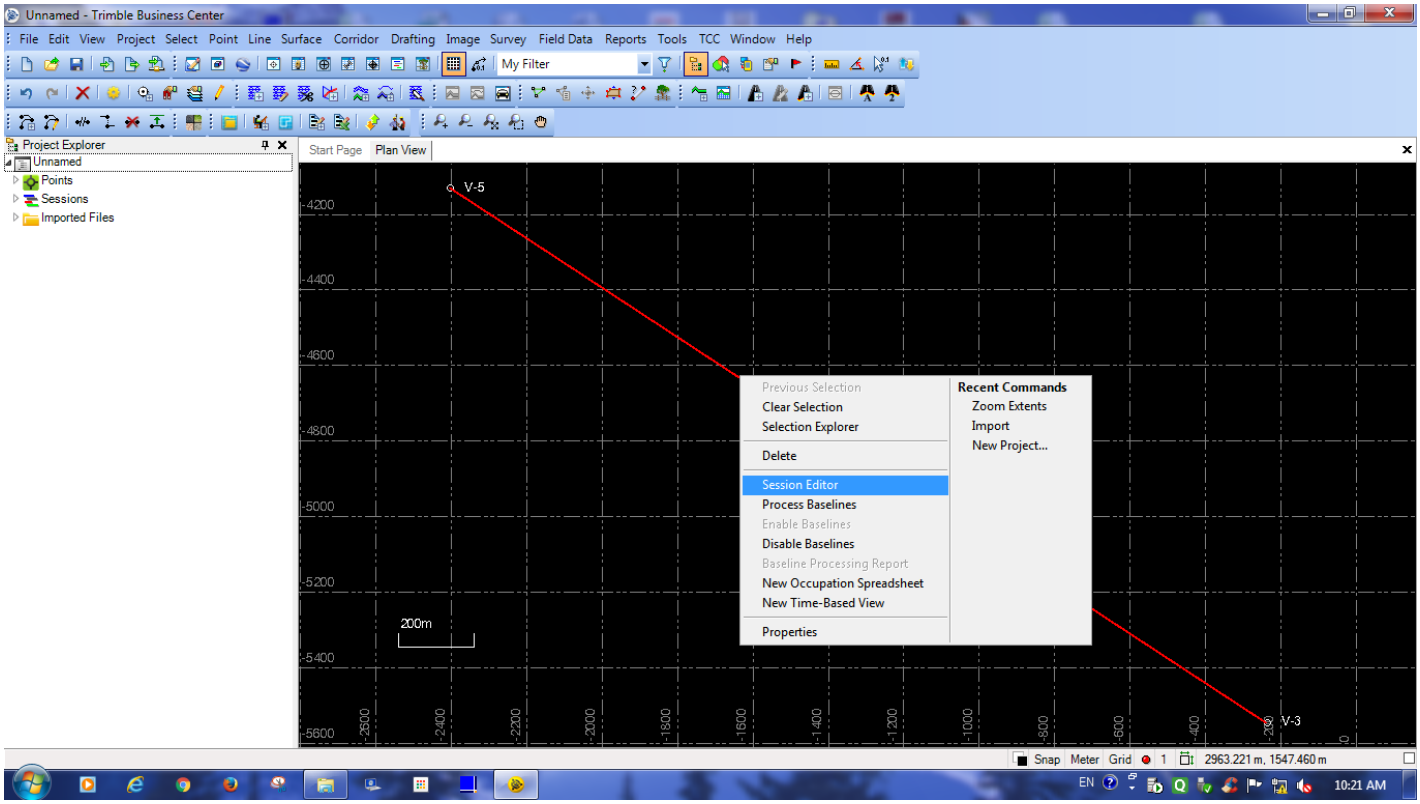
Click Save.
Go to next line





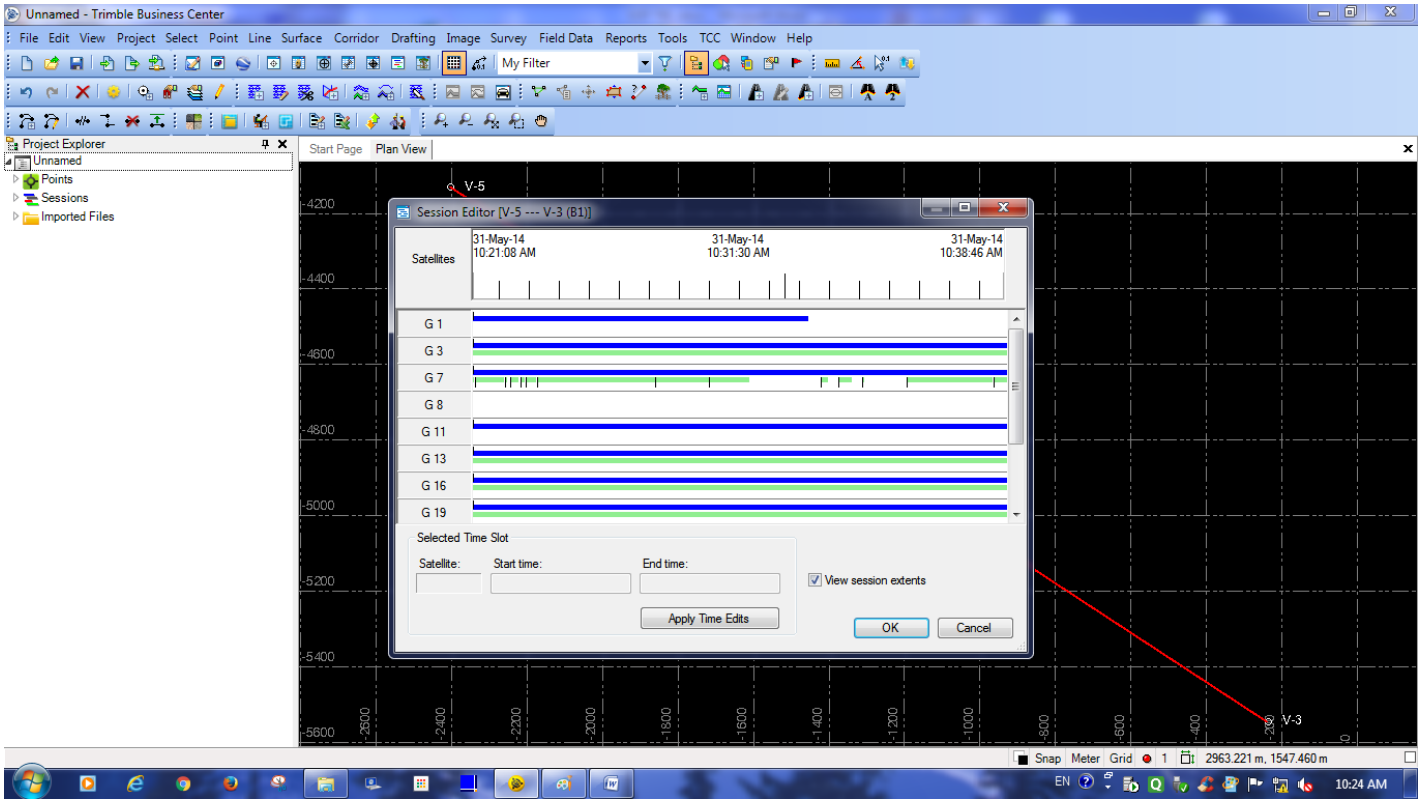
If the solution is fixed and there is not any flag symbol on the baseline save the line , otherwise rectify it with the help of elevation mask and session editor.
NOTE: The blue potential vector showed that the unprocessed base line is processed now.

To open session editor >select baseline>right click the selected baseline>click on session editor



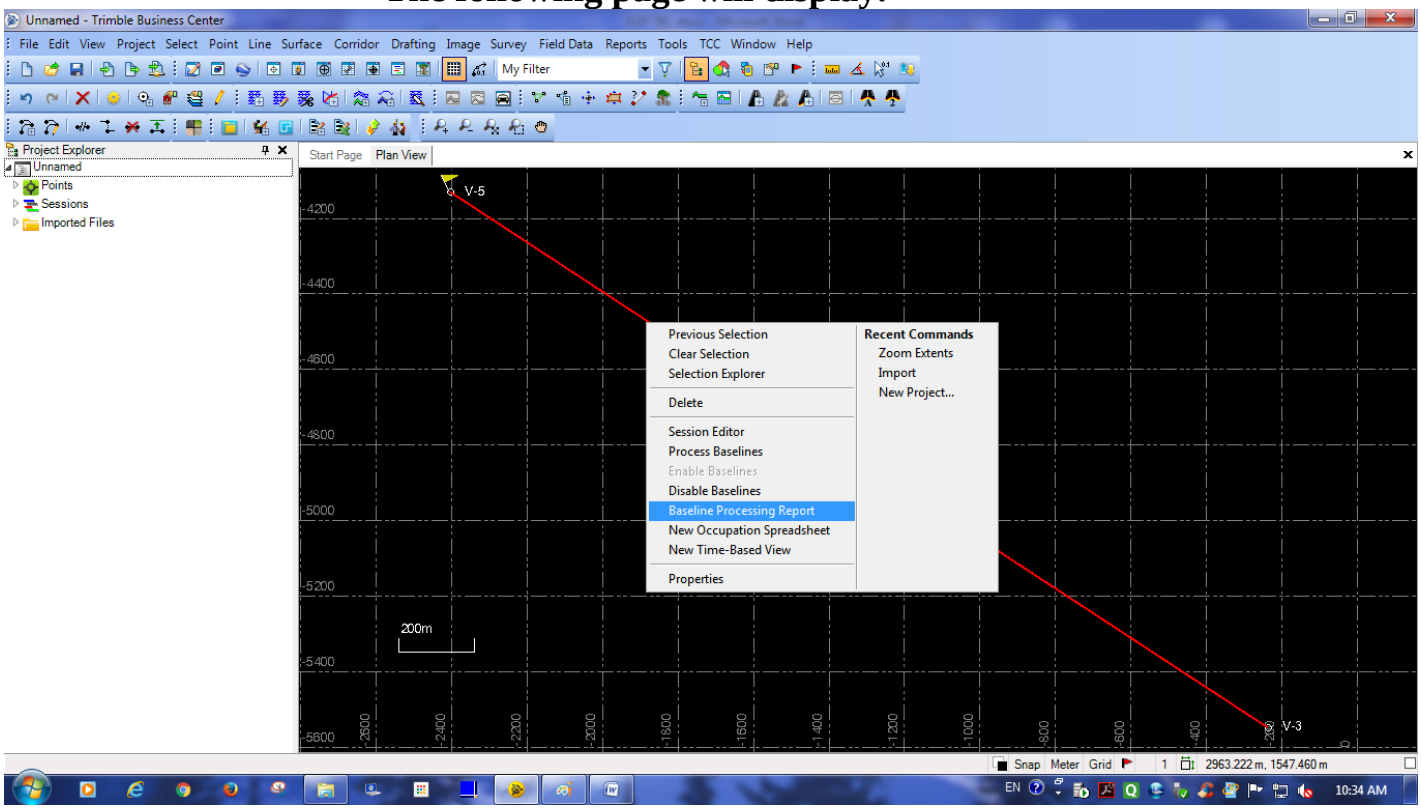
The following page will display.

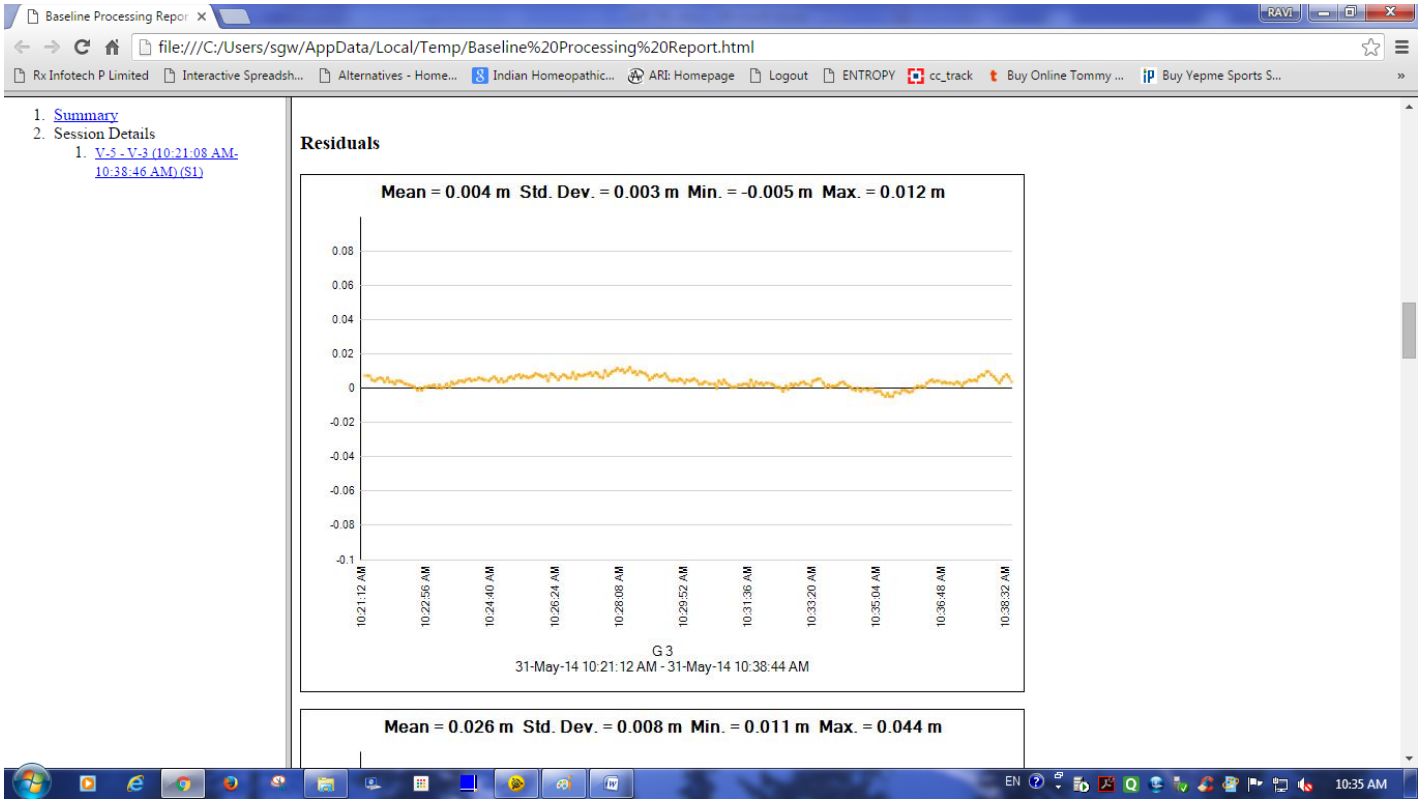
Here ,satellite for complete duration of observation or part of it can be disabled



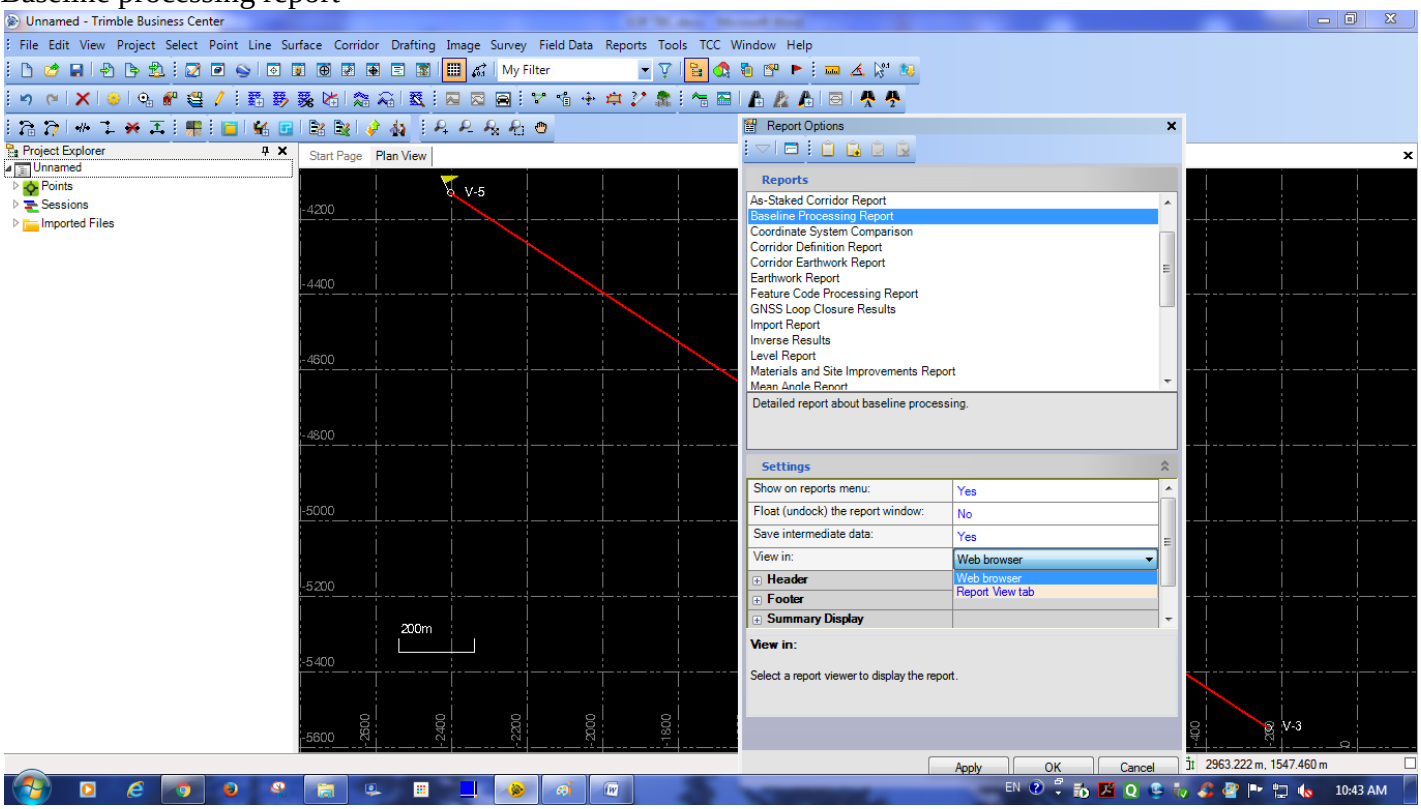
To chose which satellite or part of it to be disabled> select baseline>right click the selected baseline> click on baseline processing report

The following page will display.



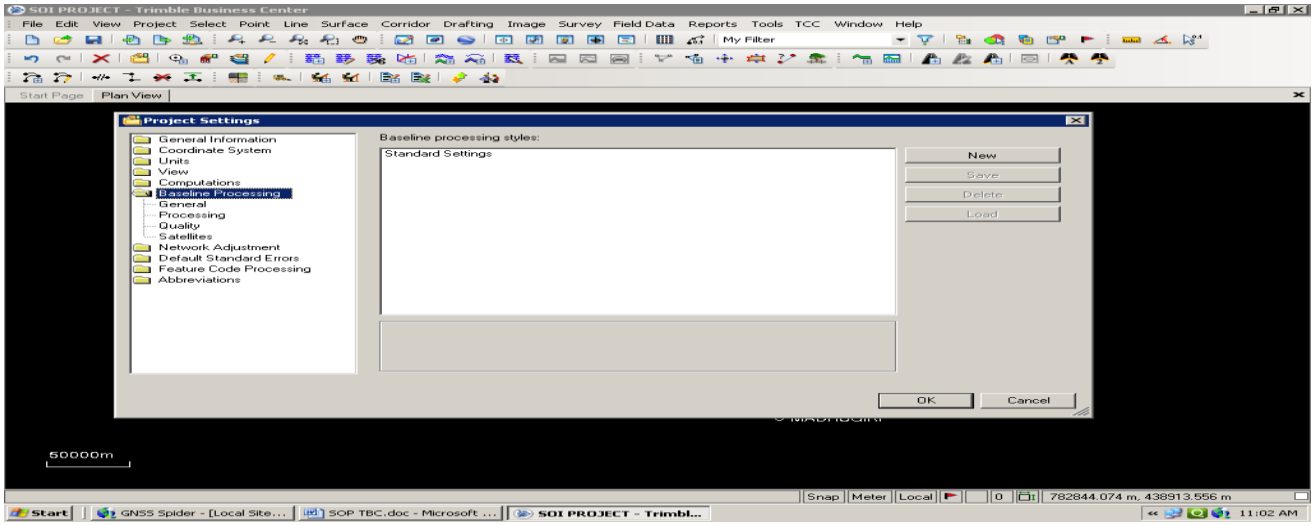


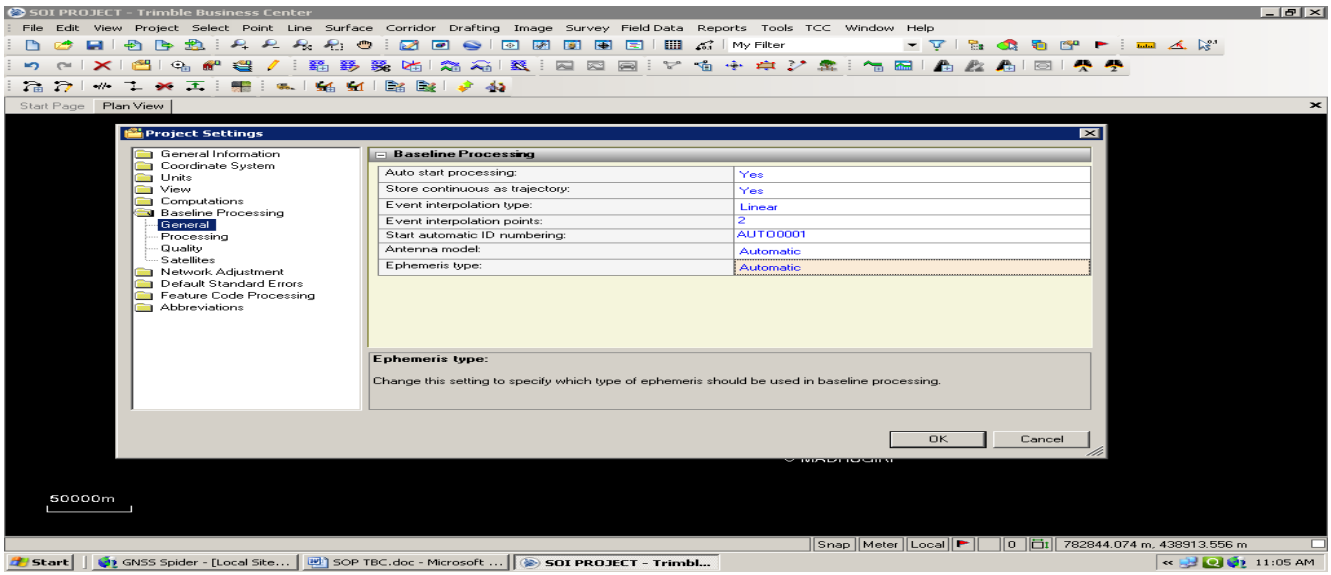
Here, the time for which residuals are not near the zero line has to be disabled in session editor.
The baseline processing report can be opened in web view or tab view >Reports(in main menu)>Report options> Baseline processing report



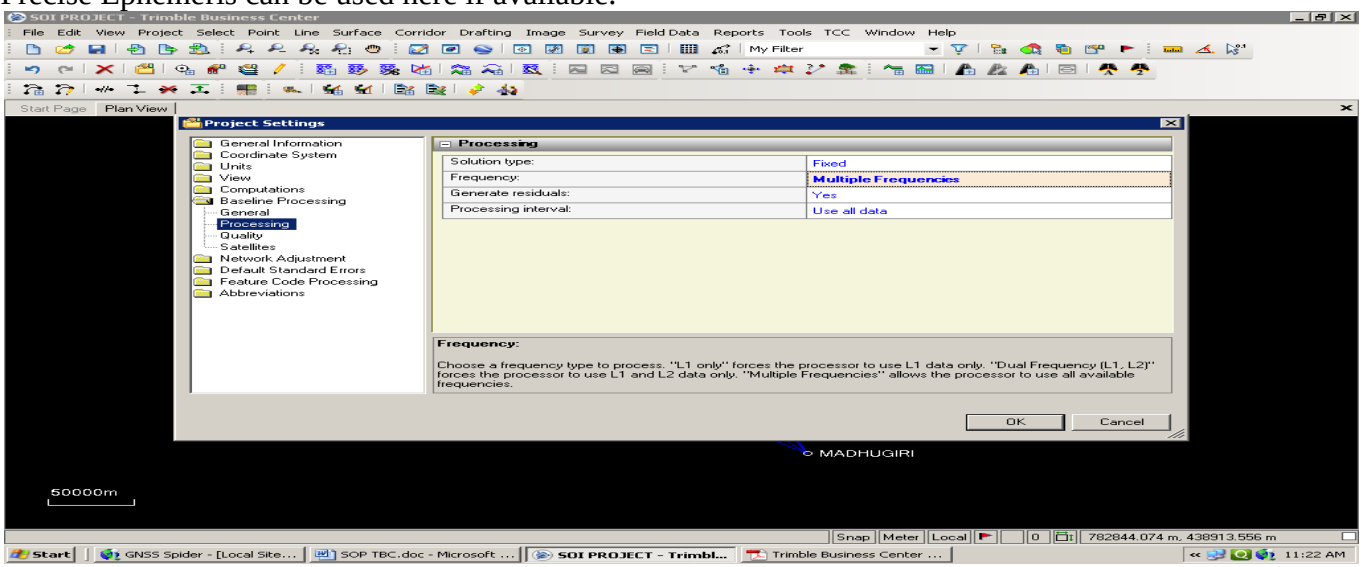
NOTE: The blue potential vector showed that the unprocessed base line is processed now.

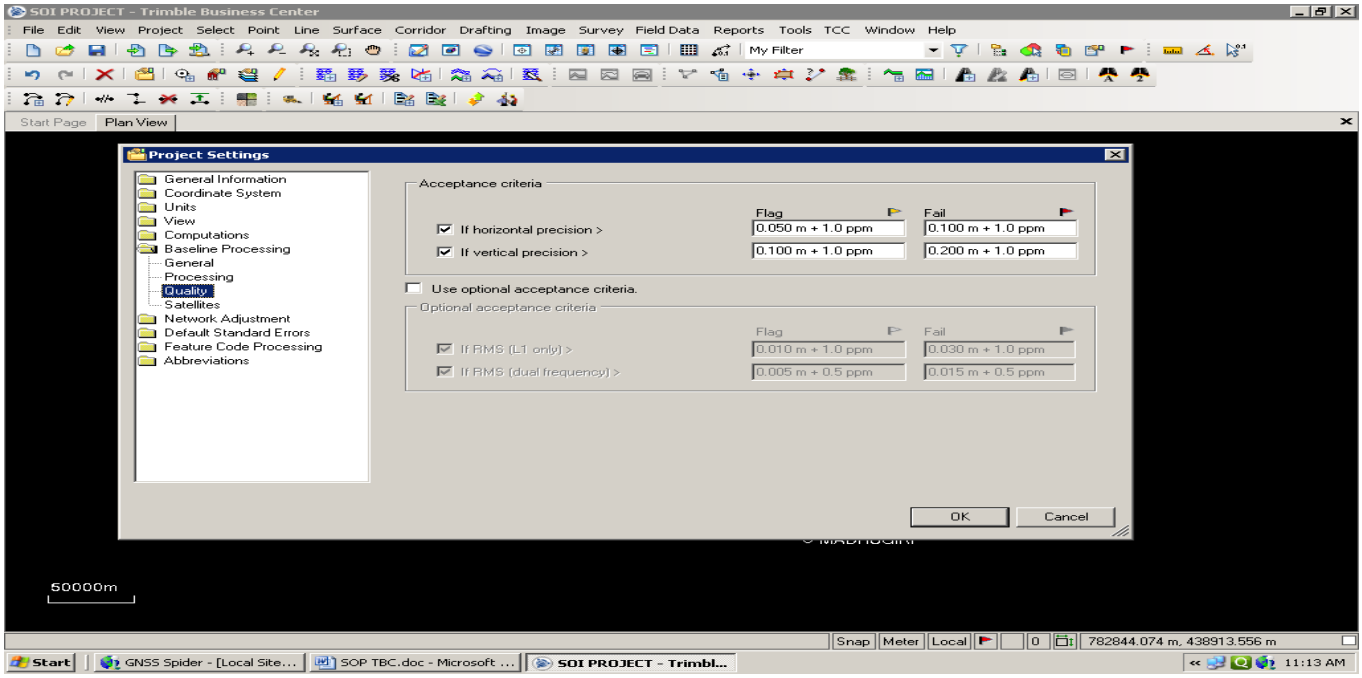
*Select types of ephemeries through which you want to process ,e.g. broadcast and precise.

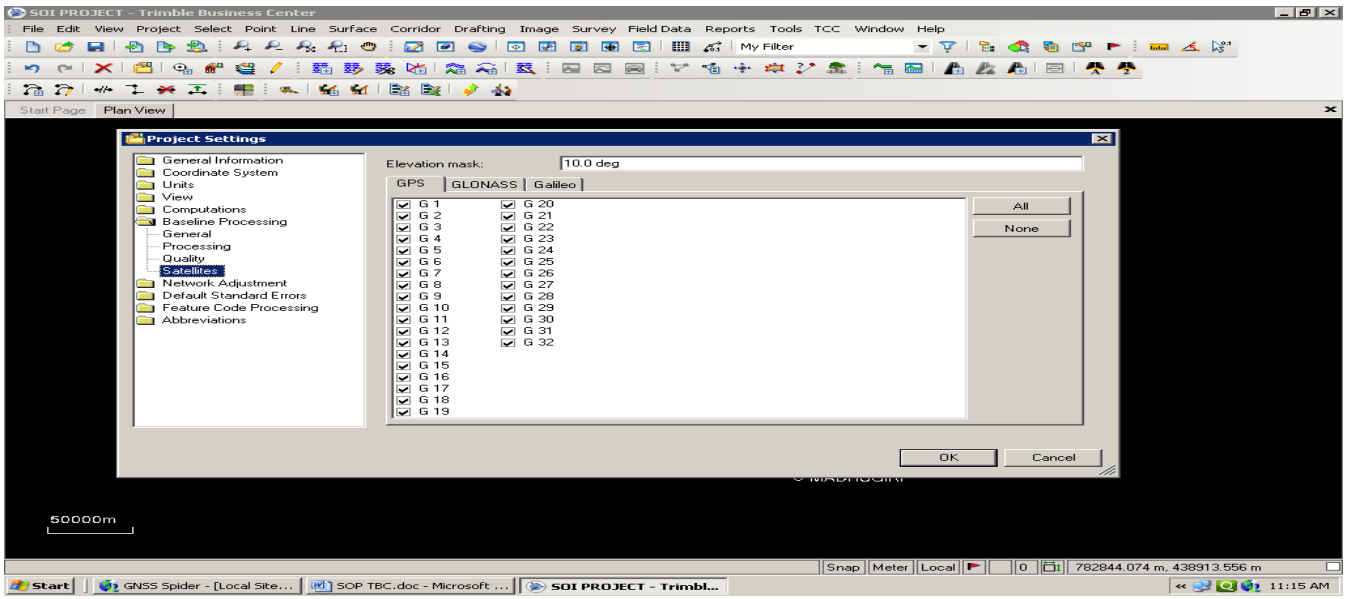




Precise Ephemeris can be used here if available.







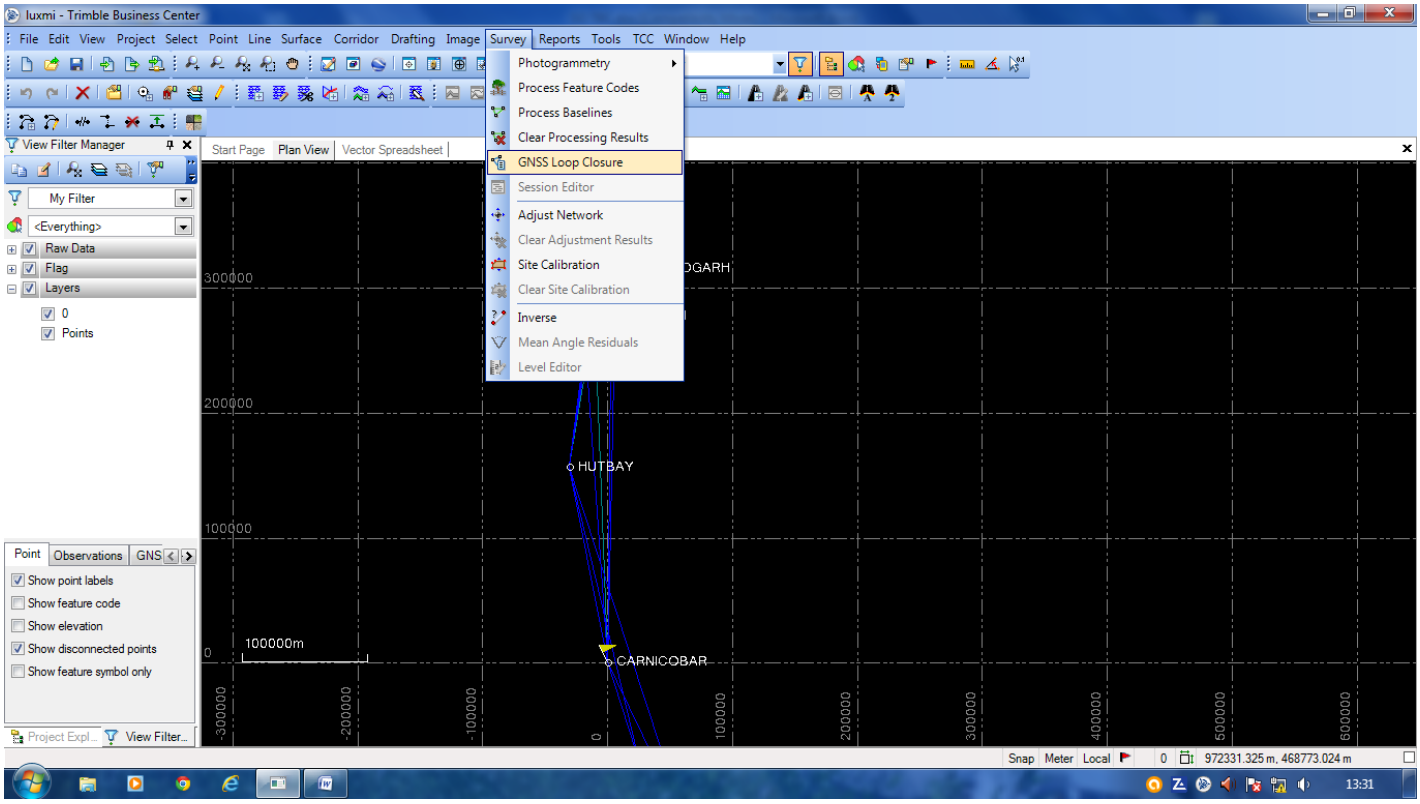
Elevation mask can be changed here, if required.

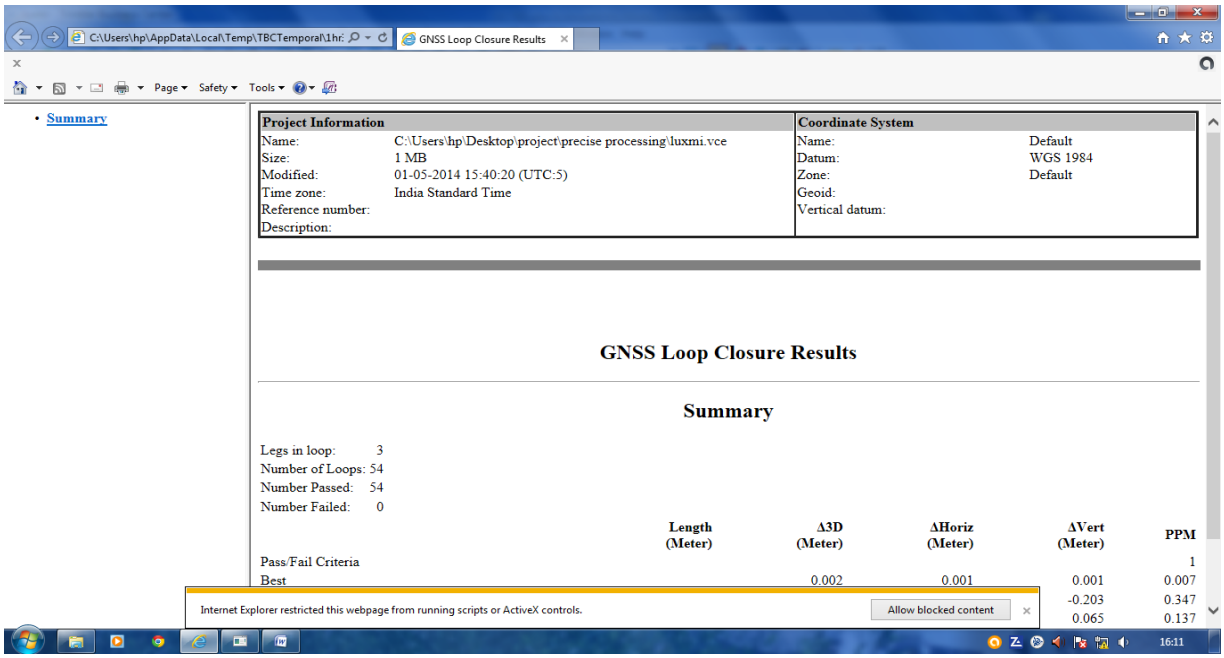
Loop Closure

Now before going for the adjustment the loop closure must be checked. The Loop Closure Results report is a useful way to find large blunders in the data set, Such as errors with antenna heights, one point with different name or different point with same name.**However,loop closure can only be checked in case of close figure For this select the command**

Menu> Survey> GNSS loop closure

The following page will display.





STEP-5

NETWORK ADJUSTMENT

"Once all baselines in the control network have been processed and reviewed, you can adjust your survey network"

SURVEY> ADJUST NETWORK

Note:
If the elevation (MSL height) of a station (Bench Mark) is available, then the adjusted vertical control can be obtained from the network up to sub metre level accuracy.

Click Add co-ordinate button

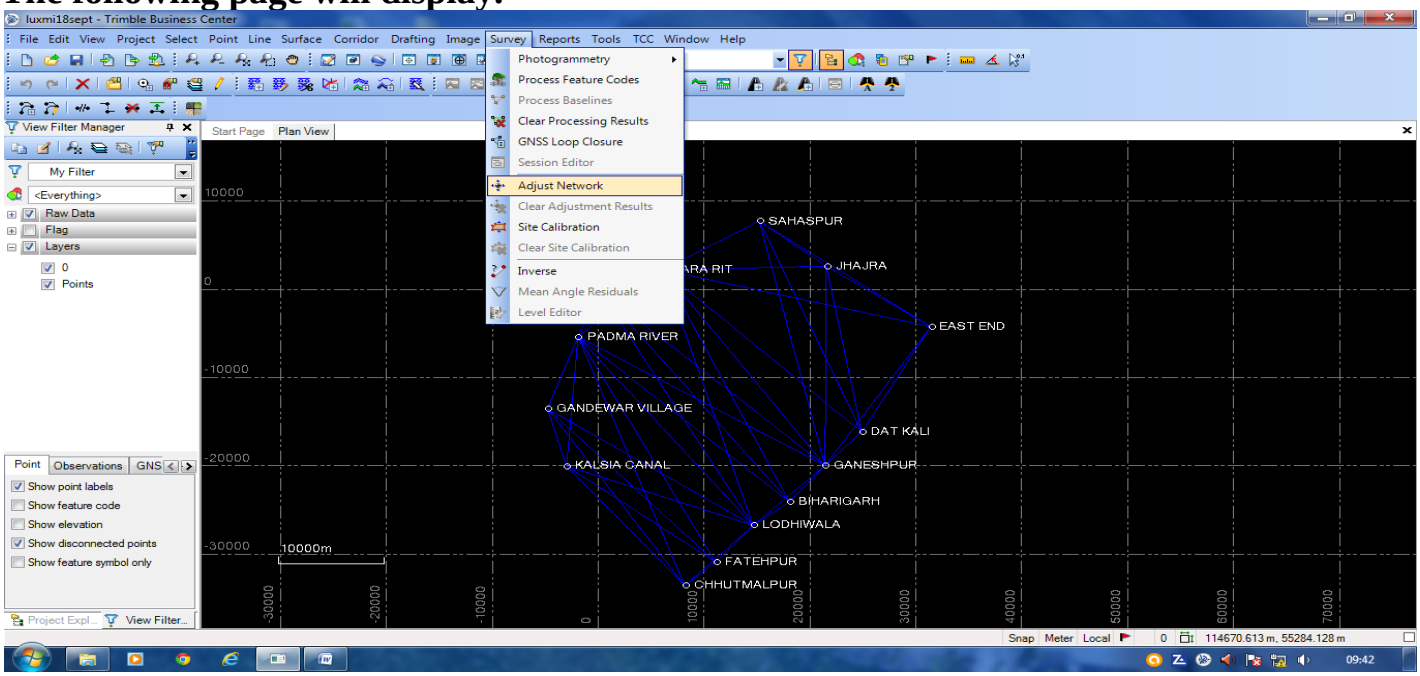
Note: "It can be done by selecting the point and then "right click>Add-coordinate" command"

Select Co-ordinate Type ➔ Gird

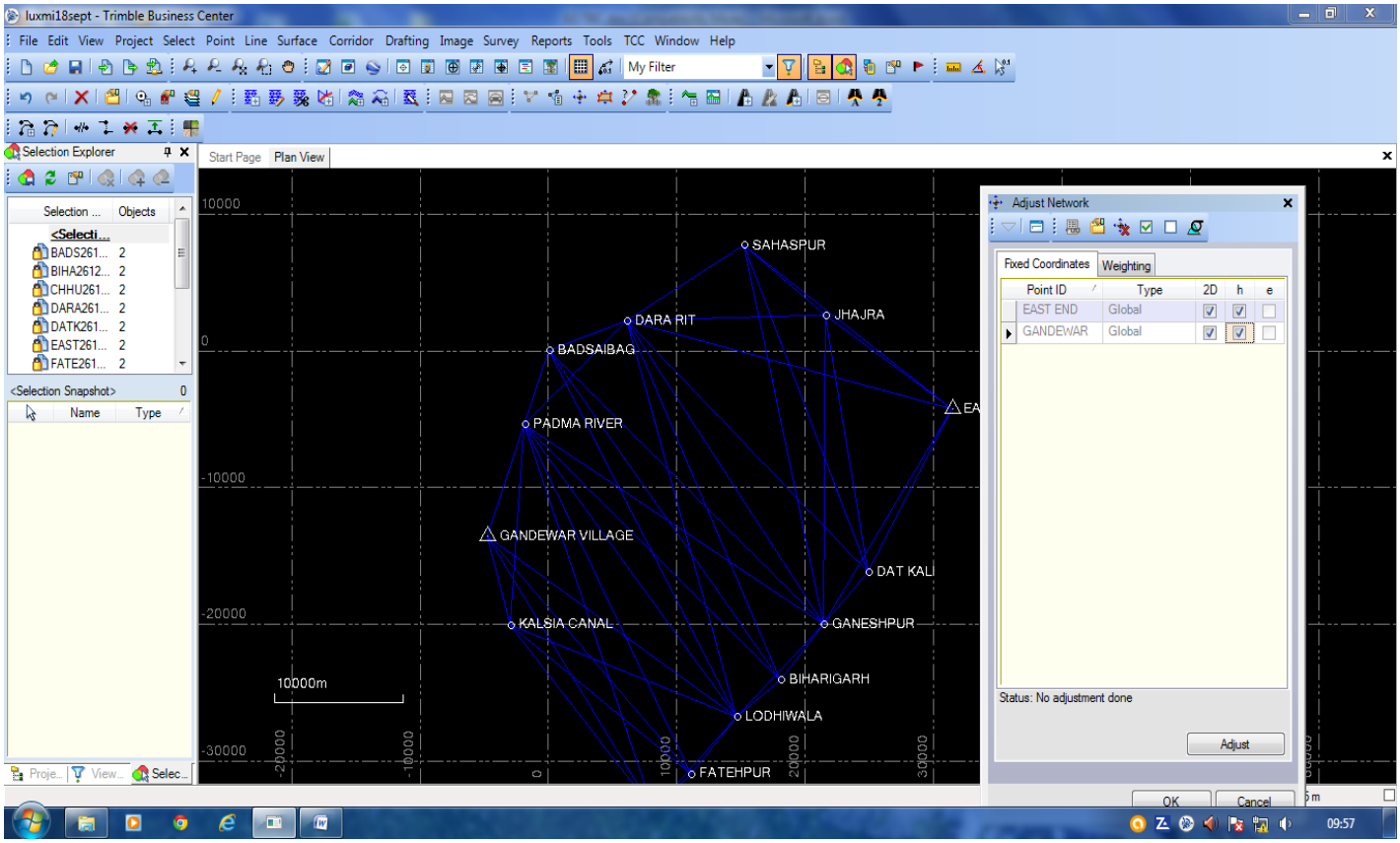
Key in your "MSL Height" and assign it as Control Quality.

Click ➔ Ok

Select the following command
Menu>Survey>Adjust Network
The following page will display.

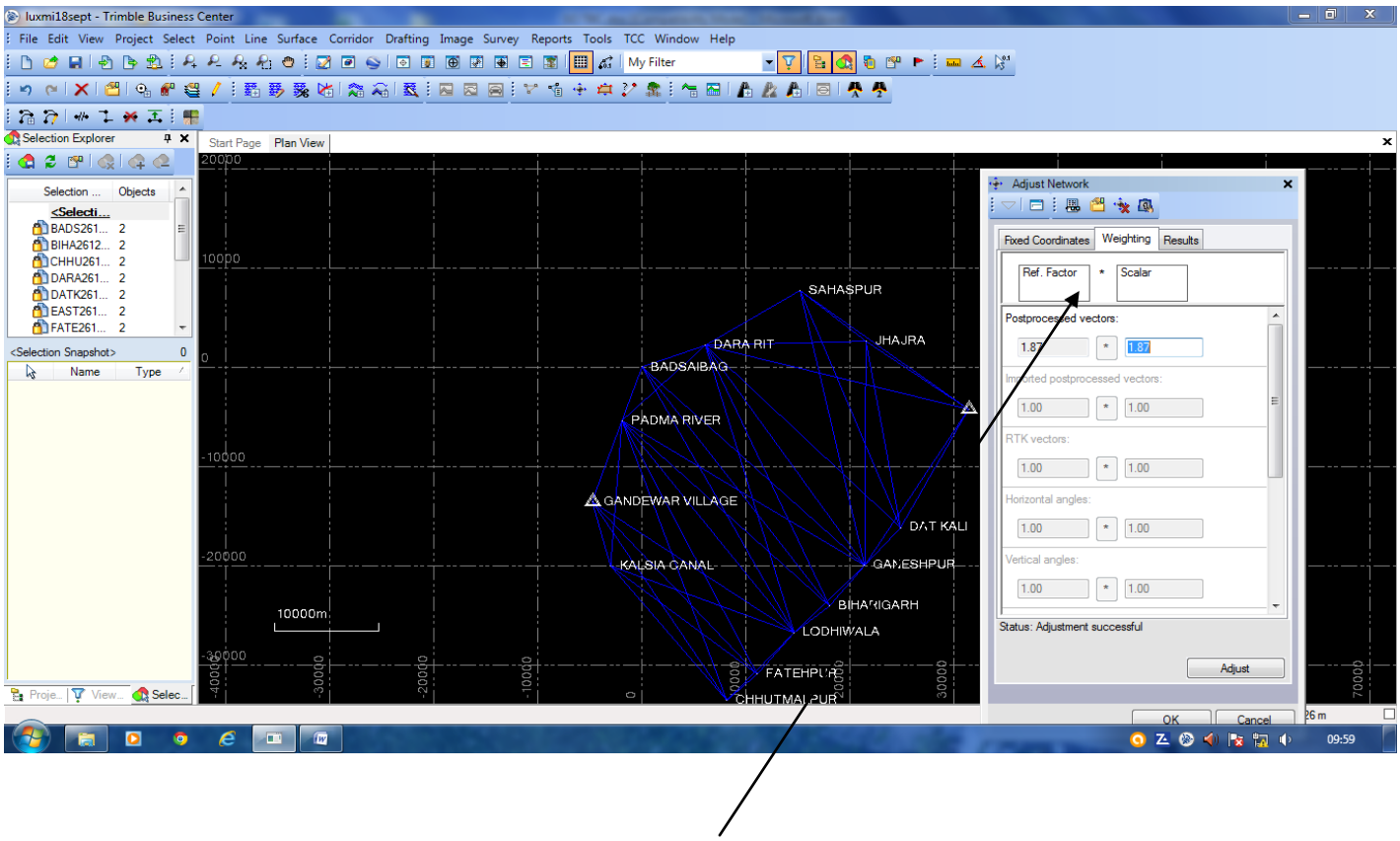


The following page will display.



Check on ➔ "2D & h" box if MSL Height to be fixed then check on "2D & e" box
Click ➔ Adjust

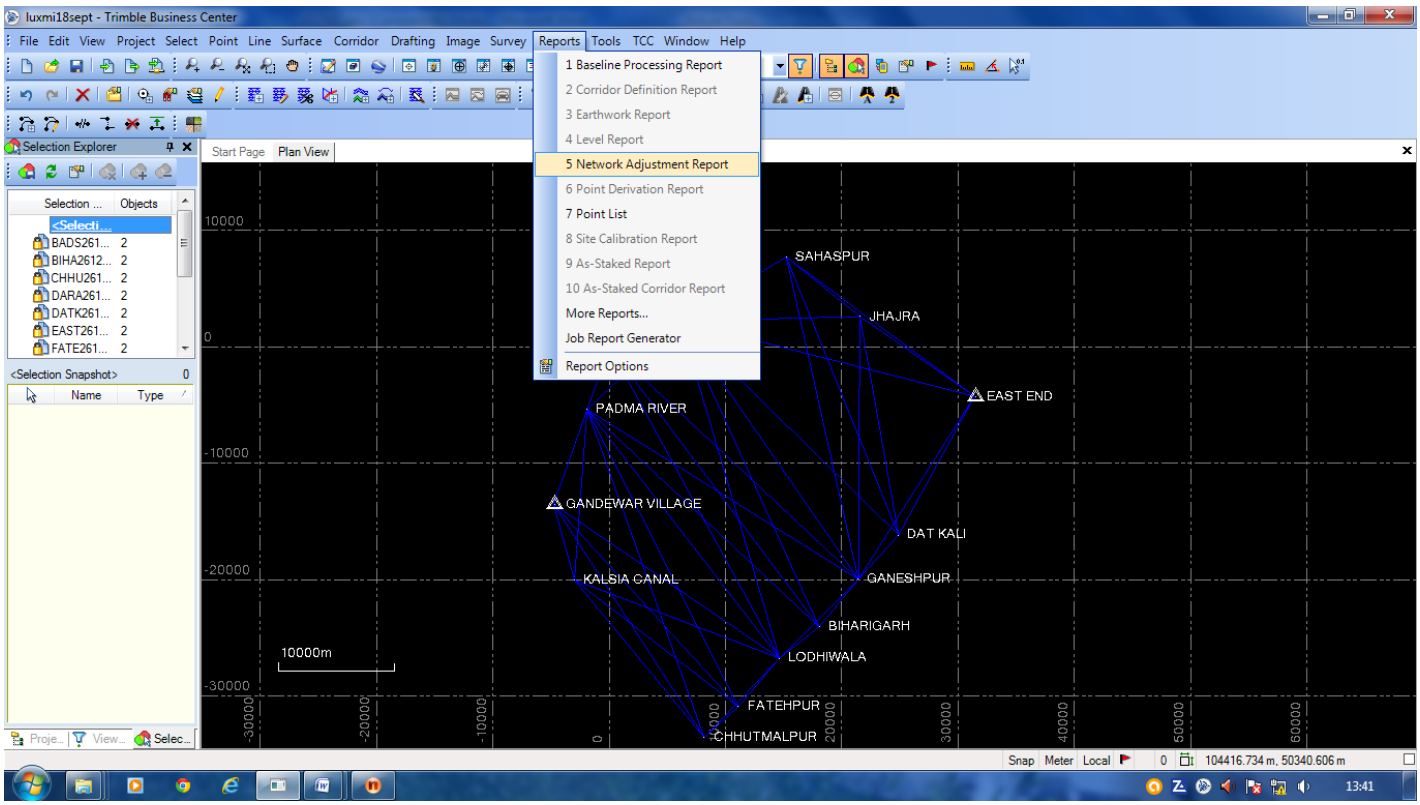
NOW Click ➔ Weighting This step is required if the value shown below the Postprocessed vector (1.87 in this case) is not coming near about 1



Make a click on * in Post processed vectors tab:

Now again “Adjust” the data

Note: For Adjustment Report



Point to be checked in Network Adjustment Report

Network Reference Factor must be one or near to one

Chi Square Test must be passed

Horizontal and vertical error must be in reasonable limit

All vector must be in black colour under Adjusted GNSS Observations

C:\Users\hp\AppData\Local\Temp\TBCTemporal\y2p

Network Adjustment Report

Page Safety Tools

- Adjustment Settings
- Adjustment Statistics
- Control Point Constraints
- Adjusted Grid Coordinates
- Adjusted Geodetic Coordinates
- Adjusted ECEF Coordinates
- Error Ellipse Components
- Adjusted GPS Observations
- Covariance Terms

Network Adjustment Report

Adjustment Settings

Set-Up Errors

GNSS

Error in Height of Antenna: 0.000 m

Centering Error: 0.000 m

Covariance Display

Horizontal:

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Three-Dimensional

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Adjustment Statistics

Number of Iterations for Successful Adjustment: 2

Network Reference Factor: 1.00

Chi Square Test (95%): Passed

Precision Confidence Level: 95%

13:42

C:\Users\hp\AppData\Local\Temp\TBCTemporal\301

Network Adjustment Report

Page Safety Tools

- Adjustment Settings
- Adjustment Statistics
- Control Point Constraints
- Adjusted Grid Coordinates
- Adjusted Geodetic Coordinates
- Adjusted ECEF Coordinates
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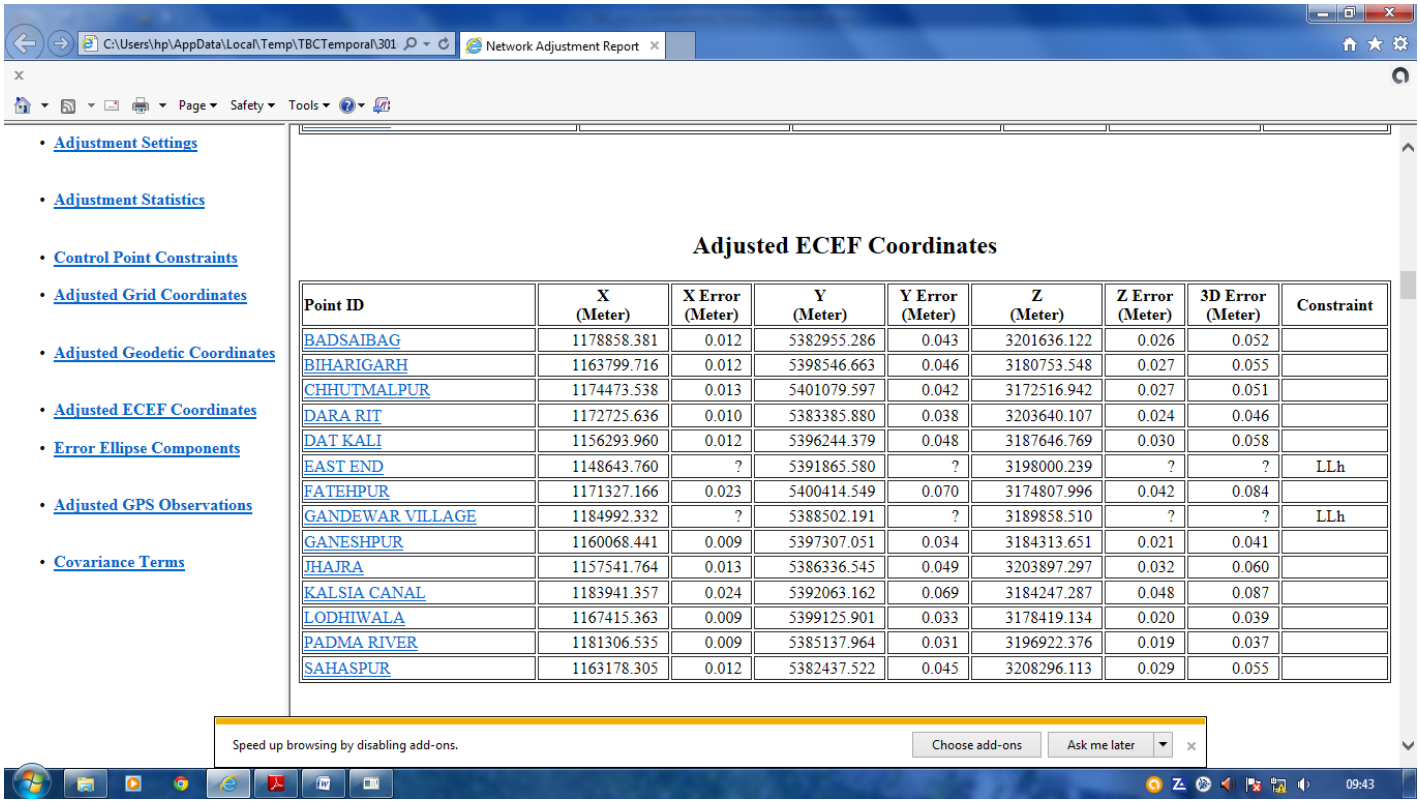
- Adjusted GPS Observations
- Covariance Terms

Adjusted Geodetic Coordinates

Point ID	Latitude	Longitude	Height (Meter)	Height Error (Meter)	Constraint
BADSAIBAG	N30°19'27.03318"	E77°38'50.39976"	379.085	0.051	
BIHARIGARH	N30°06'24.31225"	E77°50'04.38991"	272.743	0.054	
CHHUTMALPUR	N30°01'15.80241"	E77°43'54.93407"	243.841	0.050	
DARA RIT	N30°20'37.75905"	E77°42'38.12520"	624.762	0.045	
DAT KALI	N30°10'40.31027"	E77°54'20.48698"	423.740	0.057	
EAST END	N30°17'06.92861"	E77°58'26.04106"	555.861	?	LLh
FATEHPUR	N30°02'41.62938"	E77°45'44.42007"	249.778	0.083	
GANDEWAR VILLAGE	N30°12'06.51835"	E77°35'50.75162"	258.795	?	LLh
GANESHPUR	N30°08'36.85398"	E77°52'10.91034"	332.216	0.040	
JHAJRA	N30°20'50.33267"	E77°52'17.08659"	472.385	0.059	
KALSIA CANAL	N30°08'35.90592"	E77°36'57.67944"	250.337	0.085	
LODHIWALA	N30°04'57.07964"	E77°47'56.96987"	252.244	0.039	
PADMA RIVER	N30°16'31.35878"	E77°37'38.39688"	294.254	0.036	
SAHASPUR	N30°23'36.64796"	E77°48'19.98528"	432.386	0.054	

Speed up browsing by disabling add-ons. Choose add-ons Ask me later

09:43



- Adjustment Settings
- Adjustment Statistics
- Control Point Constraints
- Adjusted Grid Coordinates
- Adjusted Geodetic Coordinates
- Adjusted ECEF Coordinates
- Error Ellipse Components
- Adjusted GPS Observations
- Covariance Terms

Adjusted ECEF Coordinates

Point ID	X (Meter)	X Error (Meter)	Y (Meter)	Y Error (Meter)	Z (Meter)	Z Error (Meter)	3D Error (Meter)	Constraint
BADSAIBAG	1178858.381	0.012	5382955.286	0.043	3201636.122	0.026	0.052	
BIHARIGARH	1163799.716	0.012	5398546.663	0.046	3180753.548	0.027	0.055	
CHHUTMALPUR	1174473.538	0.013	5401079.597	0.042	3172516.942	0.027	0.051	
DARA RIT	1172725.636	0.010	5383385.880	0.038	3203640.107	0.024	0.046	
DAT KALI	1156293.960	0.012	5396244.379	0.048	3187646.769	0.030	0.058	
EAST END	1148643.760	?	5391865.580	?	3198000.239	?	?	LLh
FATEHPUR	1171327.166	0.023	5400414.549	0.070	3174807.996	0.042	0.084	
GANDEWAR VILLAGE	1184992.332	?	5388502.191	?	3189858.510	?	?	LLh
GANESHPUR	1160068.441	0.009	5397307.051	0.034	3184313.651	0.021	0.041	
JHAJRA	1157541.764	0.013	5386336.545	0.049	3203897.297	0.032	0.060	
KALSIA CANAL	1183941.357	0.024	5392063.162	0.069	3184247.287	0.048	0.087	
LODHIWALA	1167415.363	0.009	5399125.901	0.033	3178419.134	0.020	0.039	
PADMA RIVER	1181306.535	0.009	5385137.964	0.031	3196922.376	0.019	0.037	
SAHASPUR	1163178.305	0.012	5382437.522	0.045	3208296.113	0.029	0.055	

Disclaimer

This SOP is made assuming that user has some previous knowledge of GPS data processing ,However for user with no previous knowledge of GPS data processing ,hands on training is recommended.