

Grid Based Positioning Notes (TrackMaker601 V1.73 – Sep 15, 2010)

Field procedure:

1. Please do not use New Station option during data acquisition. If a break in the survey line is necessary enter new line, lines can have same name, they are indexed internally not by names.
2. Geometry setup and survey procedure is the same as conducting surveys with GPS. Sensor#1 is on the left and Sensor#2 is on the right while facing direction of movement and this must be kept during entire survey whether the system moves South or North. This procedure is necessary for the program in order to apply properly sensor offsets.
3. Geometry is described by Line Names as one coordinate, and Station numbers as another coordinate. For example if survey is oriented S-N then Lines will indicate X coordinate and stations will represent Y coordinate. Please use properly Line Names and Start Station as much as possible to minimize editing during data processing. Unfortunately there is no way to specify Final Station in the NAV601 (GPS oriented software) therefore this parameter will have to be entered during data processing. Next version of NAV601 will contain Final Station option and TrackMaker will read this automatically.

Data Processing:

Data must be loaded the same way as with GPS based file and then select the Position Readings Using Grid Based Data File in Position Readings menu. Following window will appear.

Position Readings Using NAV601 Grid Based File

OutputXYZ File: _____

Type of Output File:
 Generic
 Geosoft
 Line

Created XYZ File Options:
 One File Separate Files
Original Units in Data File: meters
Units in XYZ File: meters

Select Grad601 Data in XYZ File:
 Probe#1 Offset: -0.5 m
 Probe#2 Offset: 0.5 m

Survey Layout: Lines Along W-E

List of Lines (click to edit):
169.00 N 0
170.00 S
171.00 N
172.00 S
173.00 N 0
174.00 S
175.00 N
176.00 S
177.00 N 0
178.00 S
179.00 N 0
180.00 S
181.00 N 0
182.00 S
183.00 N 0

Edit Line: 174.00 (shown in red)
of Stn.: 889
Line: 174.00
Start Stn.: 50
End Stn.: 28
Stn Inc: -2.477477477

Update Line
Apply to All w/Neg Inc
Reverse Line
Remove Line

Current 2-D Layout (Start-Green, End-Red)

Set Parameters and Specify Output File Name

Cancel Exit Proceed

List of survey lines is displayed on the left. Direction (only informative meaning) follows line name. In case zero follows it means the line has no stations. Clicking on any line will display its parameters in Edit Line section and will mark the line by red in map diagram. The diagram may display awkward layout at the beginning when there are few lines with "long" lines because of automatic readings. It will become more reliable when the survey (mainly end stations) will be even roughly edited. Green dots indicate start of the line and red ends of lines.

Line name can be changed, this will reflect Y coordinate on the above diagram (and X coordinate on the Figure below). Changing Start Stn will shift the line without changing its length while changing End Stn will not affect Start Station and line will be squeezed or expanded.

To apply above three parameters (Line, Start and End Stations) click on the Update Line button. This will affect only the current line settings, diagram will reflect change.

To apply settings to all lines surveyed in the same direction please use button labeled Apply to All w/Neg Inc. (with negative increment, if selected line will have positive increment then the button will be labeled ... w/Pos Inc.). If lines are of the same length

and surveyed in both directions then using this option editing can be completed in two steps. Obviously specific variations can be applied later to single lines.

The button Reverse Line will reverse all stations, the Update Line button must be used to apply changes and update diagram.

The Remove Line button can be used to remove the line from created XYZ file. The line is displayed with label Rem and it will be removed from diagram. The affected line is not removed from data set and the Removal can be Undone when line is selected later. If line has no stations it will not be written to the file.

Remaining parameters located in the top of the window are similar to parameters in GPS Positioning windows.

Units in XYZ file are introduced during writing XYZ file, during editing original units (as in the file) are used.

There is no Save option for performed editing in this version (1.73) and no option for placing comments, headers, and time stamp in the created XYZ file. Save option will be introduced after NAV601 will have Final Station option.

After file is created the label Done is displayed at the window bottom. There is no map with 2D layout as in the GPS Positioning.

When two sensors are used then for each line two lines (for each sensor) will be created. For example for line 184 which goes South and has negative increment (see Figure below) the XYZ file will contain Line 184.5 (offset for Sensor#1) and Line 183.5 (offset for Sensor#2). Should this line was oriented North then Sensor#1 would be placed on Line 183.5 and Sensor#2 on Line 184.5.

