Shifting Coordinates Shifting Coordinates To Local Plane (XYZ Translation)

Our objective is to shift the coordinate (Northing, Easting) that is relative to the Master (Green) station to coordinate relative to the Known Point (pink).
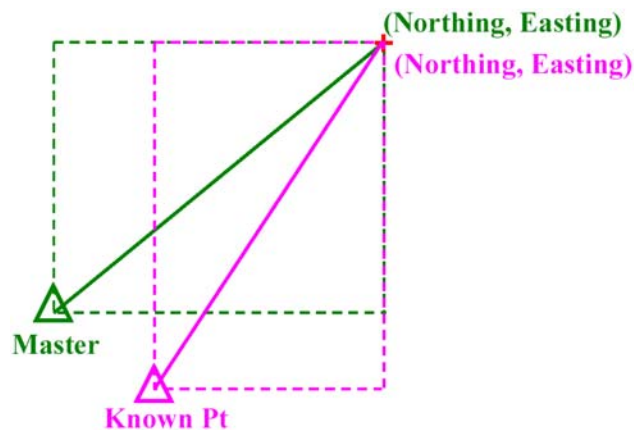

Figure 1. Master to Known Point

Step 1: Create and Define Transformation

1) First we need to define the transformation. This can be done under the 'Tools' menu, select 'Grid/Map Projection' and then 'Define', refer to Figure 2.
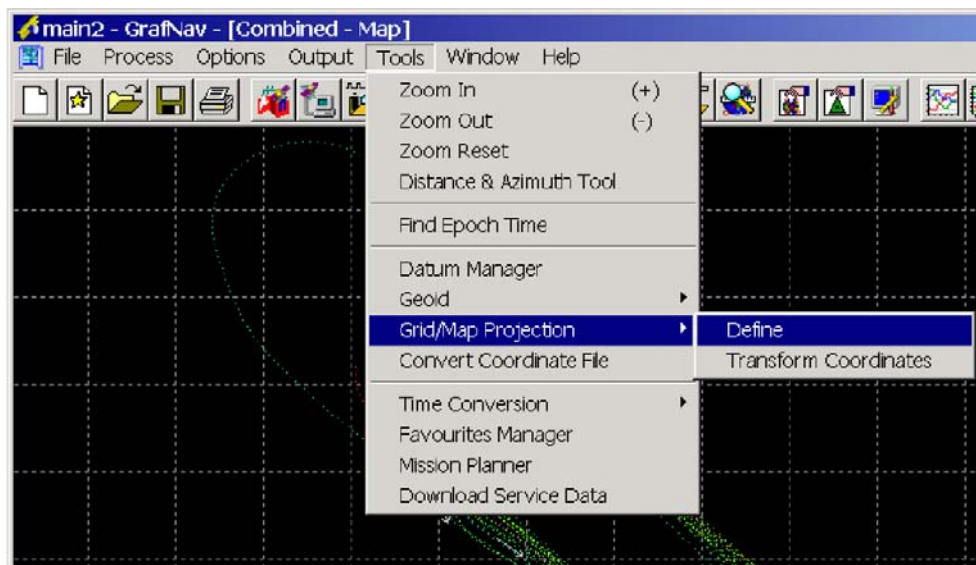

Figure 2. Tools Menu

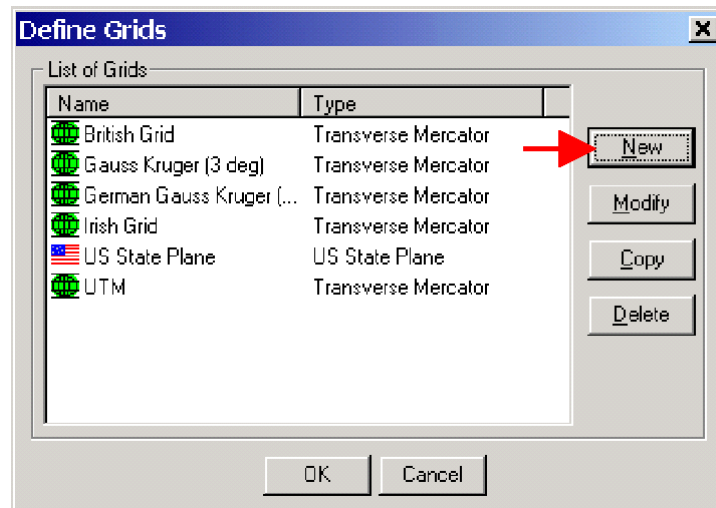2) You will come to the following screen, click 'New':

Figure 3. Define Grids

3) You will be asked to provide a name; in our case we will call it "TM_Custom". Select 'Local Cartesian (ECEF rotated to local level)' then click 'Next'.
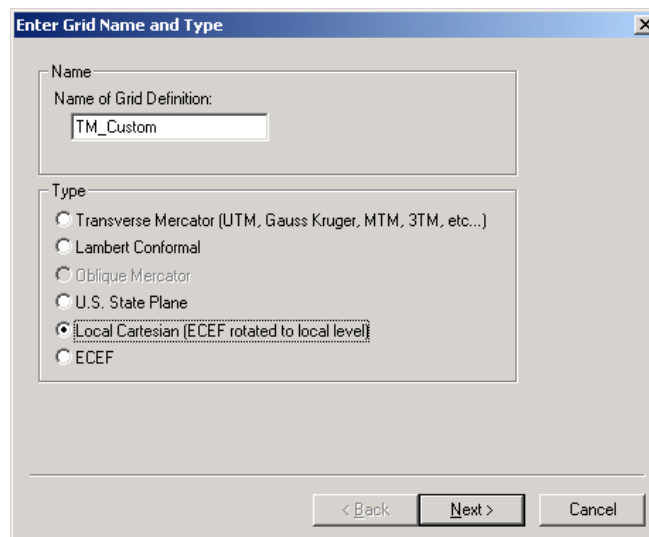

Figure 4. Enter Grid Name and Type

4) You will then come to the 'Transverse Cartesian Settings' dialog box (Figure 5).
    a. Enter Latitude of the known point
    b. Enter Longitude of the known point
    c. Enter the Ellipsoidal Height of the known point
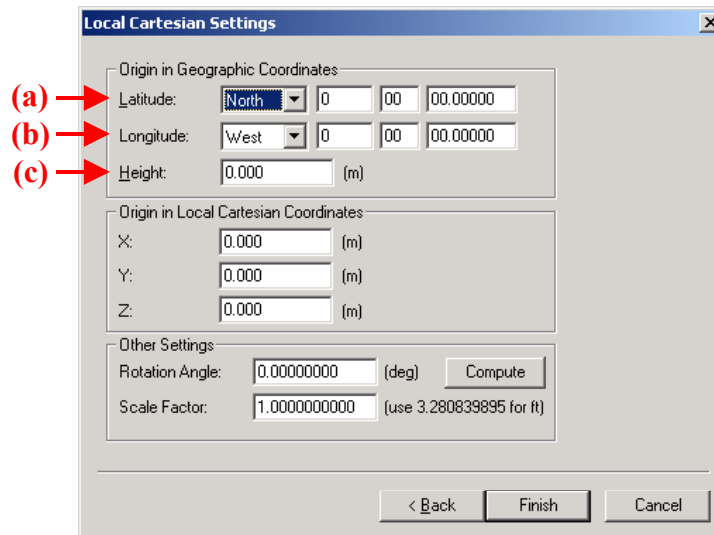 Click Finish.

Figure 5. Local Cartesian Settings

Step 2: Export Wizard/Output

You may output the shifted coordinates (easting, northing) using 'Export Wizard'. The coordinates can be found under the variables are named 'Selectable Grid-East' and 'Selectable Grid-North'.
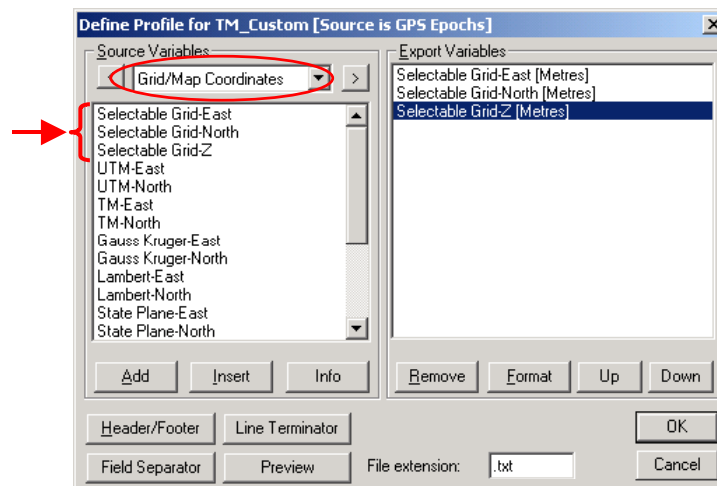
Figure 6. Export Wizard

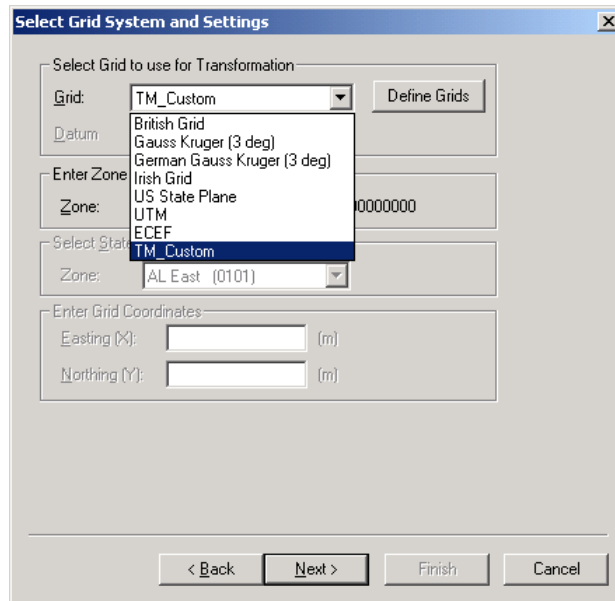When you reach the 'Select Grid System and Settings', make sure you select the transformation grid that you created in Step 1.

Figure 7. Select Grid System and Settings