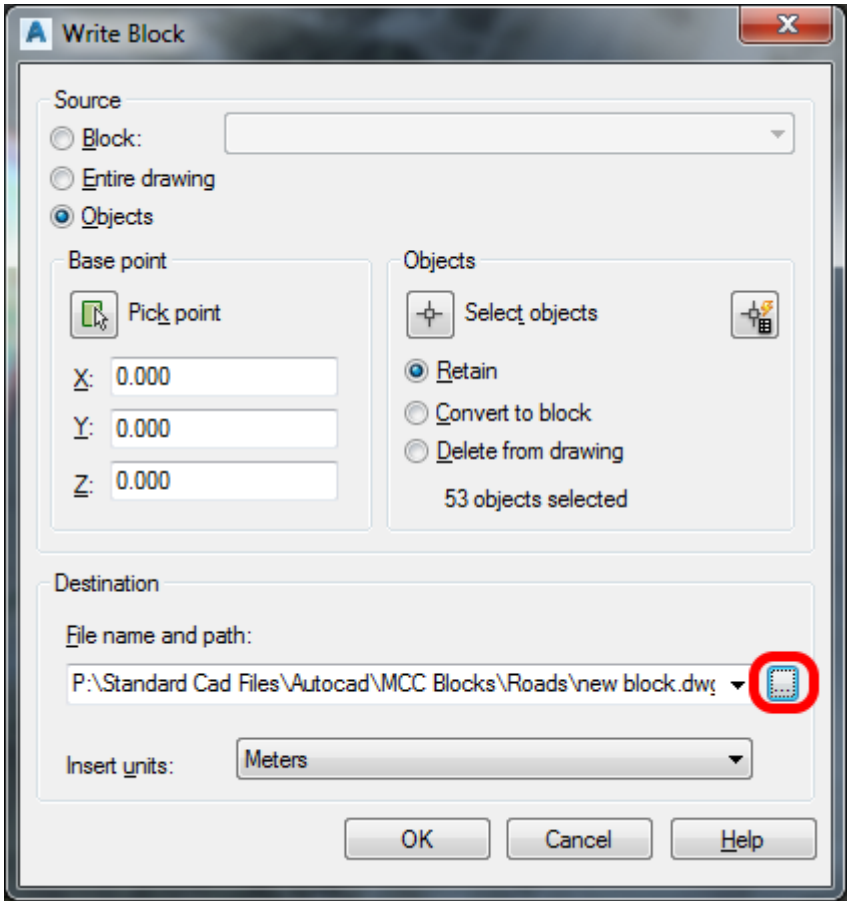
To create files suitable for Topcon GPS I use the following procedure from Civil 3d.

Export the Components from Civil 3d

Export the linework

1. Select the line work objects that you want to export for the Machine operator to see. (select one object from each layer, right click and choose select similar – check that there is only objects in the area of works selected – hold the shift key and click on an object to deselect it)
2. Type wblock on the command line and hit enter – this runs the write block command
    a. Make sure the Objects options is selected
    b. The base point should be 0,0,0
    c. The Objects option should be set to retain
    d. Next to the File name and path: textbox click on the ellipsis button to set the output location and file type



    e. Choose the output location
    f. Click on the files of type drop down box and select AutoCAD 2000/LT 2000 DXF (*.dxf)
    g. Click save and the dxf file should be saved

Export the Surface model (.DXF for the surface mesh triangles)

1. Turn on the surface triangles for your design surface
2. Turn on the layer for the surface
3. Select the design surface
4. On the ribbon select Extract Objects from the Tools panel on the Tin Surface: context ribbon tab.
5. Ensure the Triangles object is checked and any other objects are unticked.
6. Click the OK button
7. Turn on and unfreeze layer 0
8. Select one of the triangles on layer 0
9. Right click and choose select similar
10. Type wblock on the command line and hit enter – this runs the write block command
    a. Make sure the Objects options is selected
    b. The base point should be 0,0,0
    c. The Objects option should be set to retain
    d. Next to the File name and path: textbox click on the ellipsis button to set the output location and file type
    e. Choose the output location
    f. Click on the files of type drop down box and select AutoCAD 2000/LT 2000 DXF (*.dxf)
    g. Click save and the dxf file should be saved

Create the Survey Control file

1. Open the Toolspace if it is not open
2. Select the point group Survey Control
3. Right click and select Export Points…
4. In the Export Points dialogue –
    a. Set the Format: to PENZD (comma delimited)
    b. Set the Destination File:
    c. Limit to Points in Point Group should be checked and Survey Control should be select in the drop down
    d. All three advanced options should be unchecked.
5. Click the ok button.

Export the alignments

1. From the Export panel of the Output tab of the ribbon, select the Export LandXML button. (or select the Alignments node in the Toolspace, right click and choose Export LandXML…)
2. Select the alignments you wish to export
3. Leave the LandXML version at 1.2
4. Click the OK button
5. Choose an export location and file name then click the Save button

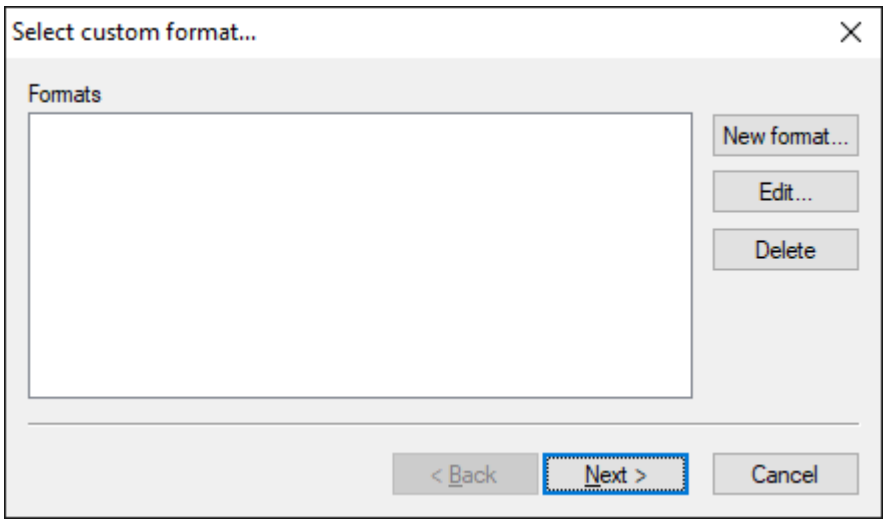
Assemble the GPS file in 3D Office

Set the project units

1. From the Project menu click Options
    a. Set the distances units
    b. Decimal places
    c. Angles
    d. Grade
    e. Areas
    f. Volumes
    g. Coordinate Configuration
    h. Stationing configuration
2. Click the Ok button to close the Project Options dialogue

Import the Survey Control

1. From the Project menu, click Import control points -> From text file…
2. When you first run the import from text file command there are no file formats set up so one needs to be created. (see dialogue below) This is done by Clicking the New format… button.



3. Give the file format a name, e.g. PENZD
4. Set the File extension to TXT (or CSV to match the export format above)
5. Click the Add… button to add an item
    a. Set the Type to Point name
    b. Set the Append value to Trailing comma
    c. Click the Ok button
    d. Repeat the above for
        i. Point easting
        ii. Point northing
        iii. Point elevation
        iv. Point Description – Except set the append value to Nothing
    e. Click the OK button to save the File format.

6. Back in the Import dialogue, click the Next button
7. Click the Browse… button and select the file exported above
8. Click the Finish button

Import the Linework

1. From the Linework menu, click Import Linework -> From Autocad file…
2. Select the dxf containing the linework exported above and click the Open button

Import the Design Surface

1. From the TIN menu, click Import TIN -> From Autocad file…
2. Select the dxf containing the surface triangles exported above and click the Open button

Import the Alignments

1. From the Alignment menu, click Import alignment -> From LandXML file…
2. Select the XML file containing the alignment/s exported above and click the Open button
3. Select the alignment/s from the list you wish to import and click the OK button

Depending on the site/control setup, you can set the Coordinate System or use a Localization.

To set the Coordinate System

1. From the Project menu, click Control points…
2. In the Control points dialogue, select the Coord. System tab
3. Click the Use predefined projection radio button
4. Expand the Country, then the Region/Projection
5. Select the correct Projection for the site area.

Save the project file.

Close 3D Office.
Copy the .tp3 project file to the GPS Rover Tablet or Machine control unit.