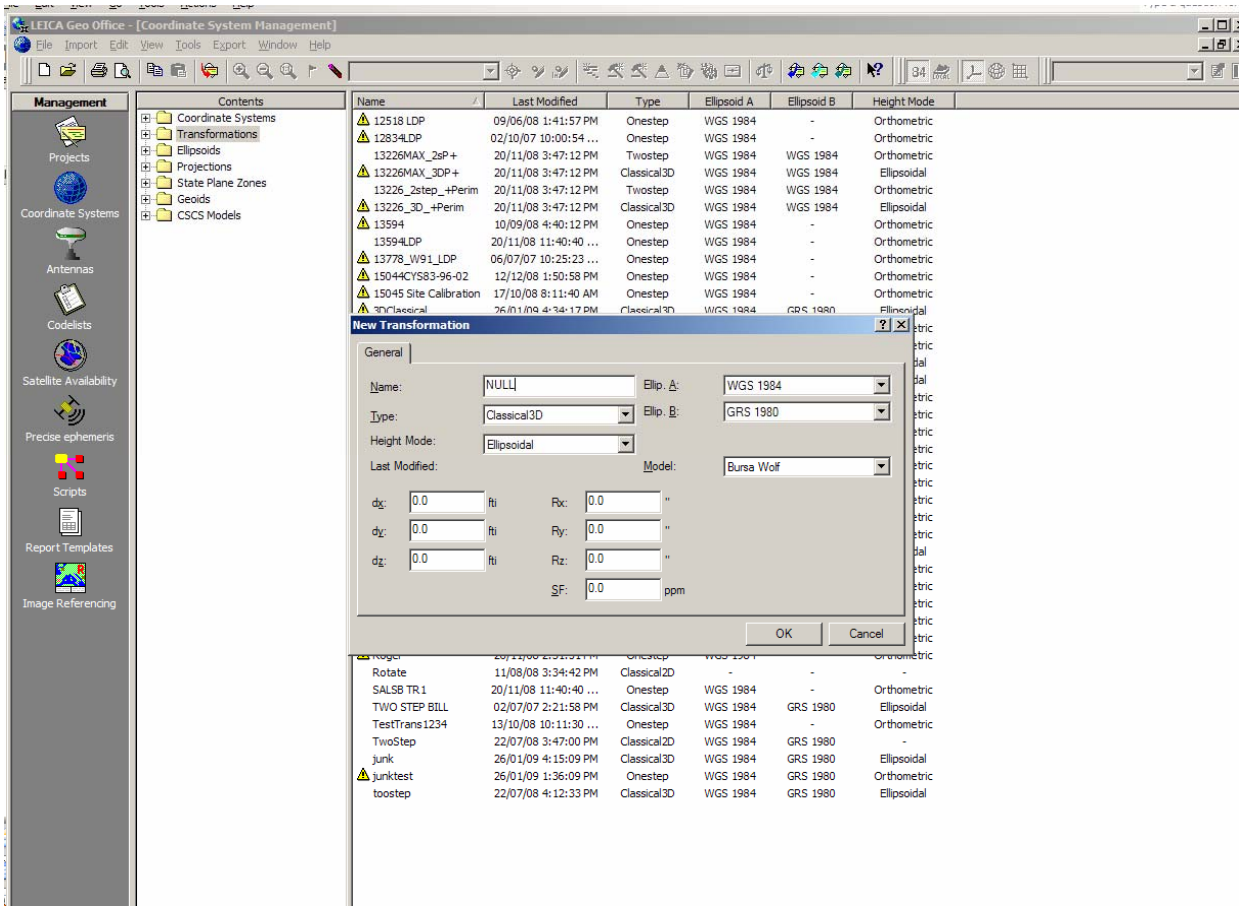
Introduction

This document is to show the process for creating a Classical 3D Pre-Transformation and a Two Step Transformation

- A 3D Classical NULL or approximate Pre-Transformation can be used.
- The NULL Transformation can be obtained from ODOT Geometronics or created as follows:

From the management tab click on Coordinate Systems, then right click on Transformations under Contents. The New Transformation dialog box will open. Populate the fields as shown below and click OK. The NULL Pre-Transformation will then be in the list of transformations and used later in the Two Step Transformation.

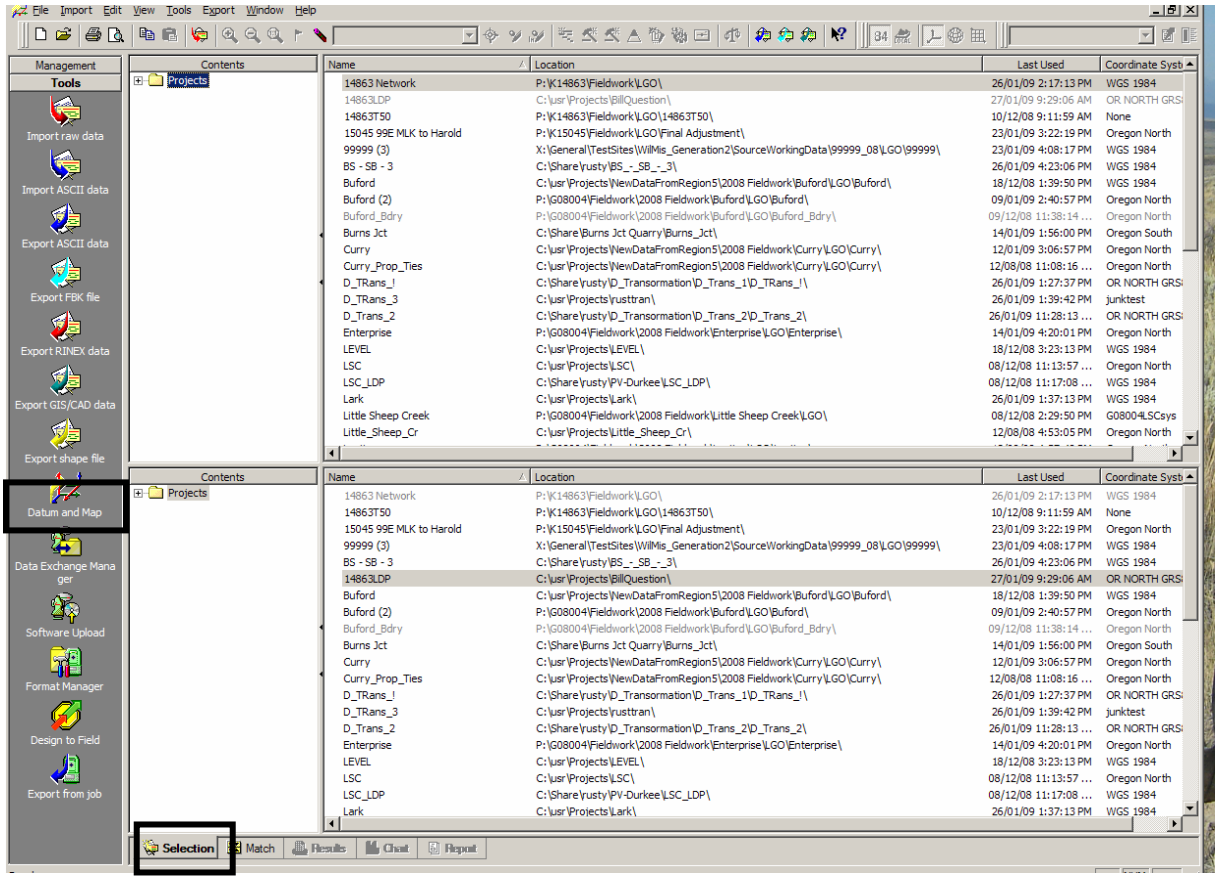
The NULL transformation will be used for all of the Two Step Transformations that are done in the future.



The Two-Step transformation consists of computing transformation parameters between WGS84 and Mapping Grid coordinates based on a Local Geodetic system.

A Local Ellipsoid, a Map Projection and a Pre-Transformation between WGS84 and Local Mapping Plane are required

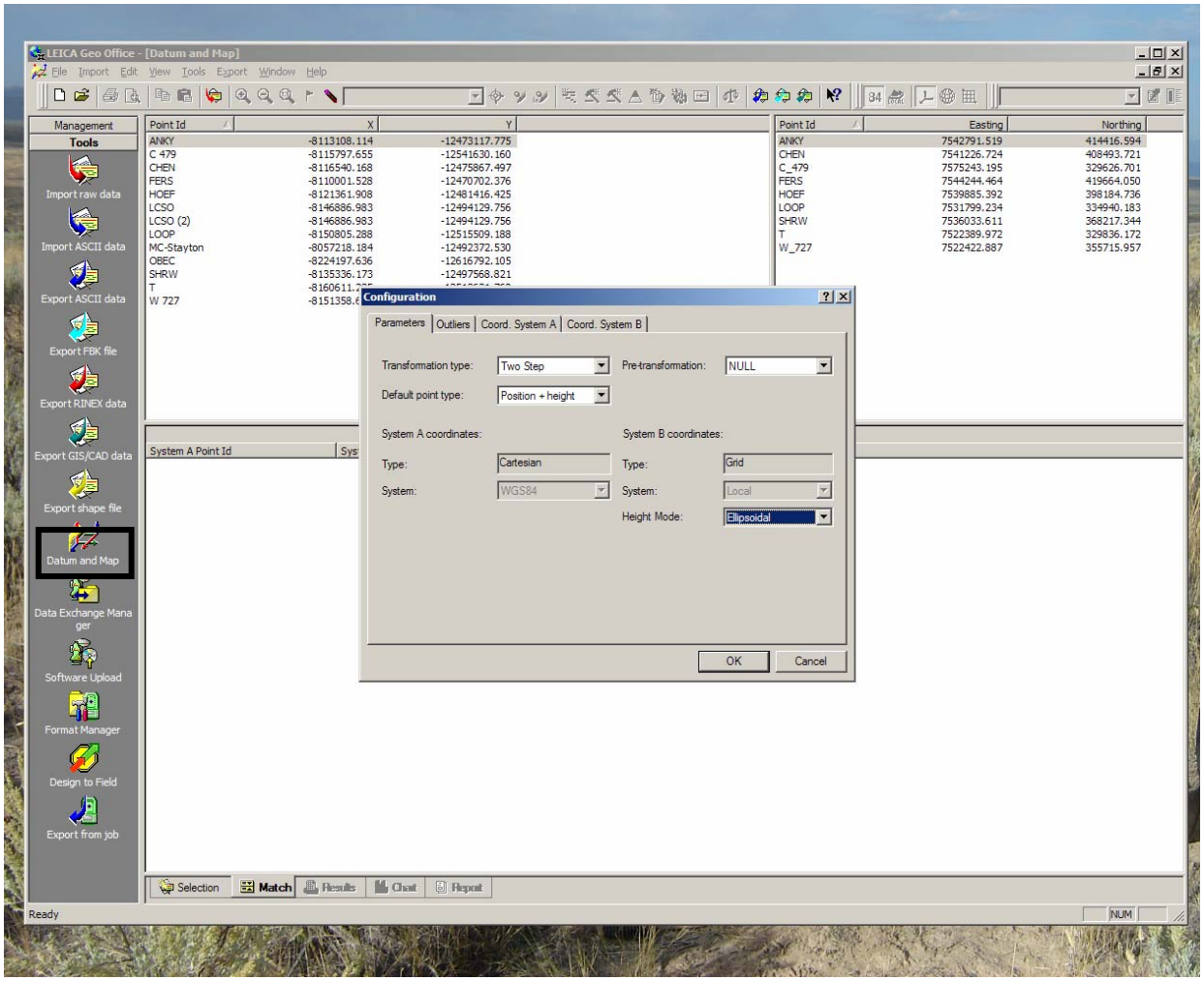
It determines horizontal and vertical transformation parameters separately so that horizontal transformation parameters will not affect the vertical transformation parameters and vise-versa.



Two LGO projects are needed, containing the WGS84 (Coord. Sys. A) coordinates and one containing the LDP coordinates (Coord. Sys. B).

Click on Datum and Map and then on the Selection Tab. Click on the project that is Coord, Sys. A in the top section and click on Coord. Sys. B in the bottom section.

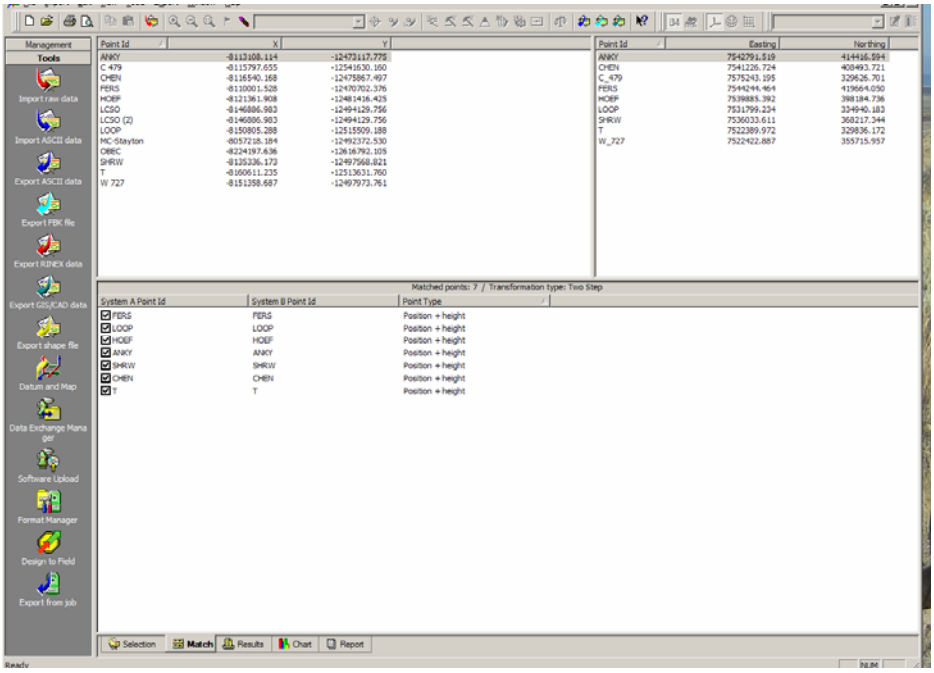
The project for Coordinate System A needs to have a WGS84 coordinate system attached and the project for Coordinate System B needs to have the appropriate Oregon North or South Zone State Plane Projection attached.



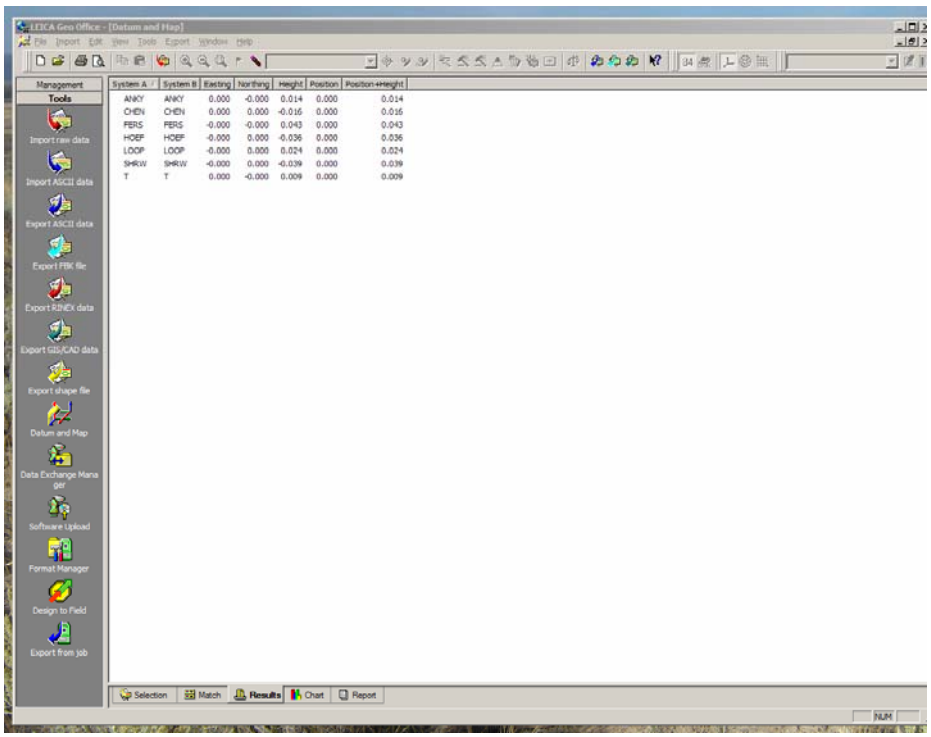
Click on the Match tab and Right click on the white space and select Configuration. The dialog box shown above will open. Populate the fields as shown and click OK.

Right click on the white space again and click auto match. The points from System A and B will be matched up as shown on the following page.

The Two Step is to be used for projects that are more than a few miles long. It can be used to cover a 30 X 30 mile area where a One Step Transformation is limited to about 6.5 miles.

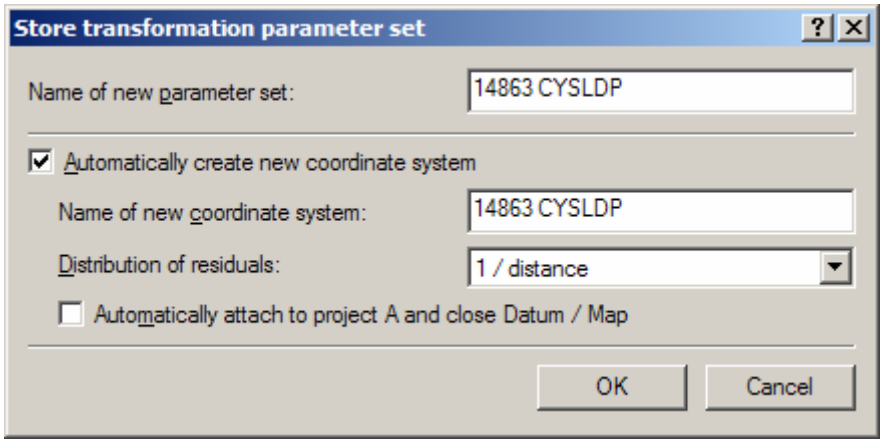


The Two Step Transformation is done. Next click on the Results Tab to view the residual values and evaluate the quality of the transformation.



In addition there is a Chart tab and a Report tab. Review and save the report.

Finally, Right Click in the white space and click Store.



Give the parameter set a name as per convention. The name of the new coordinate system will be the same as that of the new parameter set unless you enter a different name.

Distribution of Residuals should be 1/Distance.