

Cogo Editing (Metes and Bounds) in Simple GIS Client

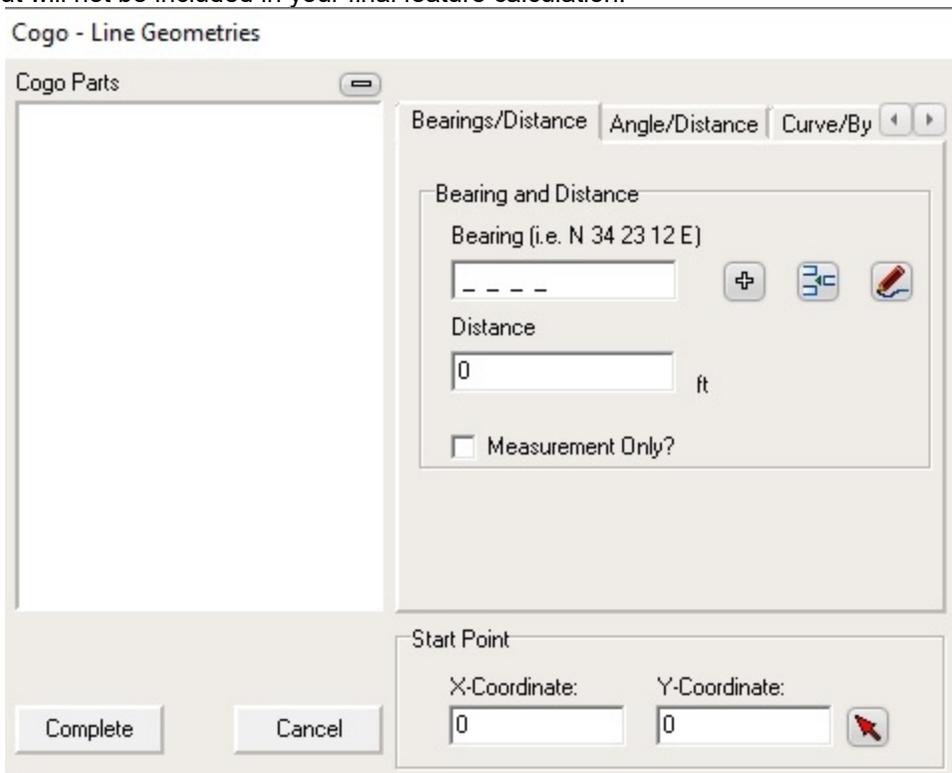
Simple GIS contains many rich editing tools to create and edit your data. One of these tools is the Cogo editing feature which allows you to enter new feature using survey or Metes & Bounds measurements. This tutorial will introduce this tool and its functionality.

To begin, make sure you have toggled editing on for the current layer in your map and then select "Add Cogo Features" from the "Layer Edit" pull down menu. If the layer you are editing is a graphic layer, you will be prompted to select the geometry type you are editing since a graphic layer can contain multiple geometry types (point, line, polygon). Otherwise, if you are editing a shapefile, the geometry type will be picked from the shapefile since a shapefile only contains a single type of geometry. Also, when you first select this feature, you will see a pop up dialog box reminding you that you must first select a starting point from your map to begin entering features by Cogo measurements. The dialog box below will appear. To enter your starting point, you can either manually

type an X-Coordinate and Y-Coordinate in the appropriate box or click the  button and then click a point on the map to use as your starting position. In addition, if you need to add measurements from a known starting point before generating your features, you can designate certain legal descriptions as "Measurement Only" which instruct Simple GIS to only use these descriptions for calculating the starting location from a known point.

Simple GIS supports entering Cogo measurements by Bearing & Distance, Decimal Degrees & Distance, Curves, or manual coordinate entry. Simply click on the appropriate tab to enter measurements in the desired form. Each entry method is described in more detail below:

Bearings/Distance: Bearings are entered in the form of "D dd mm ss D" where "D" = direction (N = North, S = South, E = East, W = West), "dd" = degrees, "mm" = minutes, and "ss" = seconds. Distance is entered in the units as designated by the suffix at the end of the "Distance" input box (ft = feet, m = meters). The units for the Cogo tool are inherited from the Measure Units specified for the MapDataView document. Therefore, if the measure units for the MapDataView document are in feet, then the units for the Cogo tool will be in feet as well. Once entered, click the  button to add the cogo measurement to the "Cogo Parts" list box on the left hand side of the Cogo dialog box. Also, as you add cogo measurements to this list box, the segments will be drawn in your MapDataView document if they are located in the current extent of your MapDataView document. If you wish to insert a cogo measurement in front of the currently selected part in the "Cogo Parts" list box, click the  button. If you wish to replace a cogo measurement, select the part from the "Cogo Parts" list box and click the  button. If you want to enter the bearing and distance only as a measurement to get to a starting location, check the "Measurement Only" checkbox. This will be placed on the map temporarily as a reference to the starting location but will not be included in your final feature calculation.



Cogo - Line Geometries

Cogo Parts

Bearings/Distance | Angle/Distance | Curve/By

Bearing and Distance

Bearing (i.e. N 34 23 12 E)

Distance

0 ft

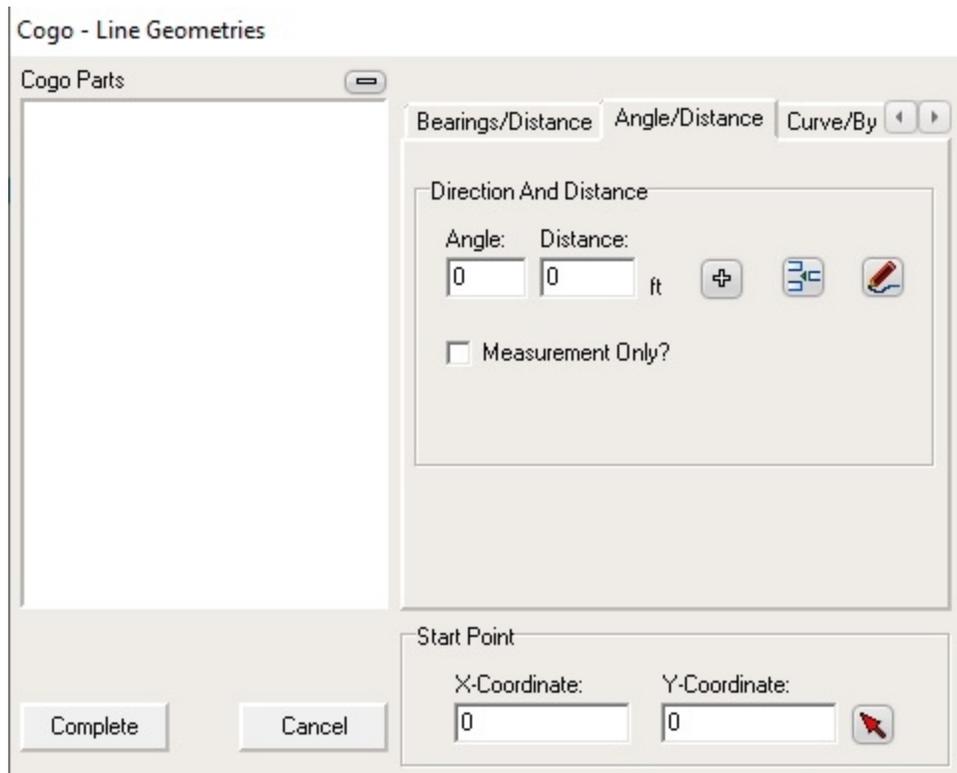
Measurement Only?

Start Point

X-Coordinate: 0 Y-Coordinate: 0

Complete Cancel

Angle/Distance: Angles can be entered as decimal degrees (DDD.dddd) and distance entered the same as for Bearings/Distance. You would add, insert, or replace an existing measurement using the same buttons as described above for the Bearings/Distance cogo measurement.



Curve/By Tangent Bearing: If your legal description does not include a chord bearing, you use this tab to define curves defined by a radius and length or chord length assuming the curve is based on the angle tangent to the last course given. To begin, you should select the direction of the curve. In other words, is the curve curving to the left or right from the starting point of the curve. Next, enter the radius and distance or length of the curve. Just like on the Bearings/Distance tab, the units for the radius and distance inherits from the MapDataView documents Measure Units settings. Also, if the value entered for Distance is a chord length, you should make sure the "Chord?" check box is checked. Also, if you know the angle tangent to the curve is something other than the bearing of the previous course, you can enter the new bearing in the "Tangent To" box. You would then either add, insert, or replace the curve description to the cogo parts list using the same buttons as described above for the Bearings/Distance entry.

Cogo - Line Geometries

Cogo Parts

Angle/Distance Curve/By Tangent Bearing

Direction
 Left Right

Radius

Distance
 ft Chord?

Tangent To (i.e. N 34 23 12 E)

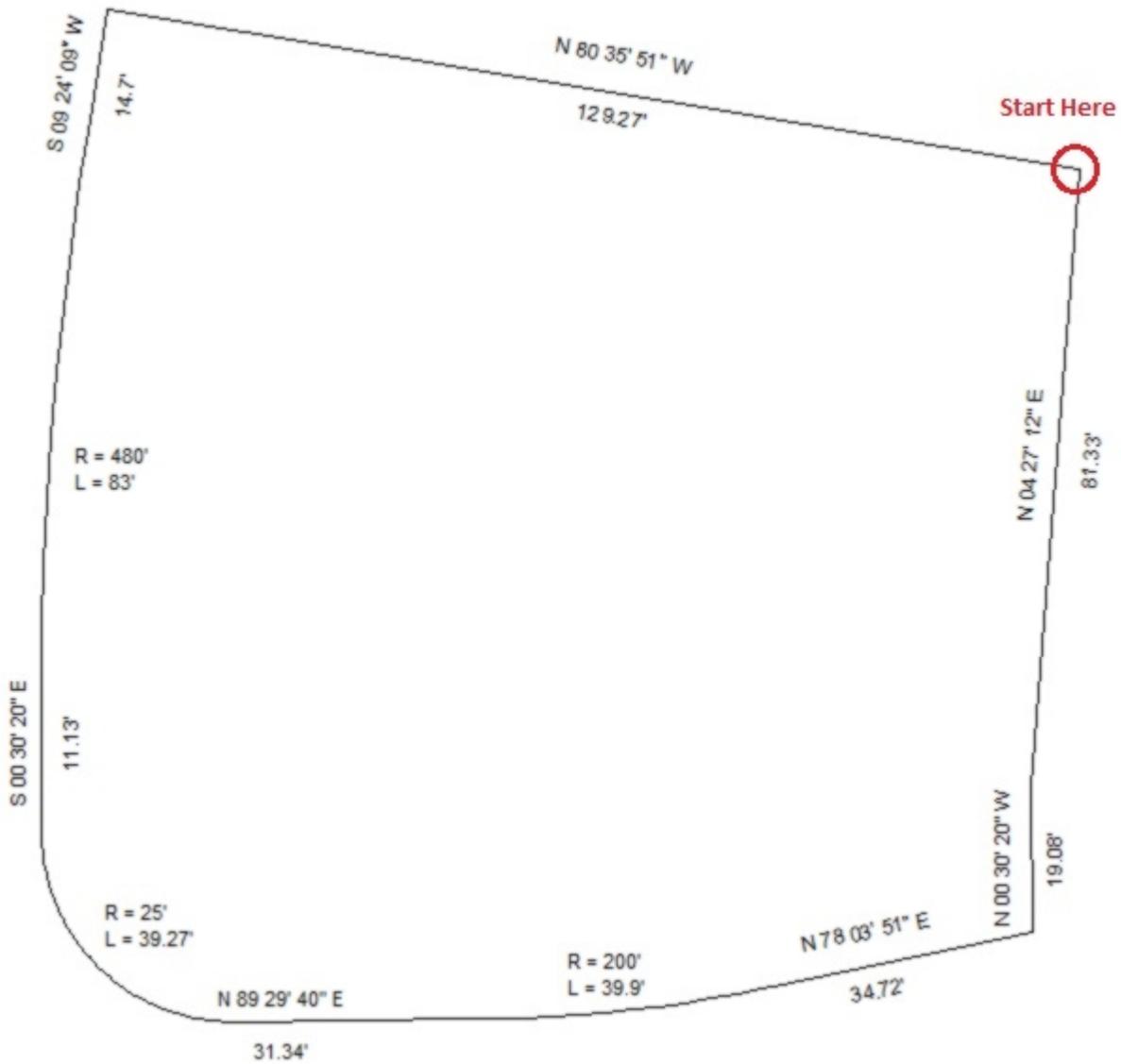
Measurement Only?

Start Point
 X-Coordinate: Y-Coordinate:

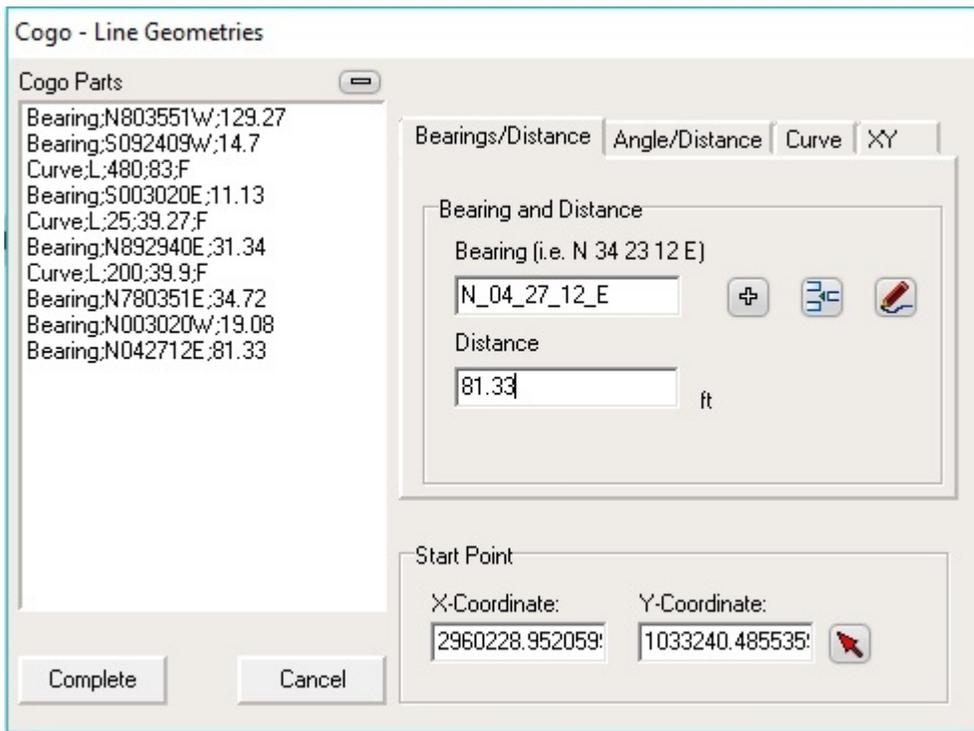
Curve/By Chord Bearing: When given a course defined by a chord bearing, radius, and arc length or chord length, you should use this tab to enter the description. To begin, as described above, you should select the direction of the curve. Next, enter the radius of the curve and the distance. If the distance is given as a chord distance rather than arc distance, be sure to check the "Chord Length?" check box. You would then either add, insert, or replace the curve description to the cogo parts list using the same buttons as described above for the Bearings/Distance entry.

XY: Select this tab to manually enter X and Y coordinates. Alternatively, rather than manually typing the X coordinate and Y coordinate, you can select a point from the map by clicking the tool and then clicking on a point in your map.

Now consider we had a plat with the Cogo measurements as shown below:



We could start at any point as long as we proceed in the same direction adding each segment as we go from one end to the next. In our example above, if we started at the upper right corner and worked our way around in a counter clockwise direction, our Cogo Parts list in the Cogo dialog box would look like that shown below:



As you add each cogo measurement you would see that segment drawn in your map document. When you have completed entering all measurements, click the “Complete” button to dismiss the Cogo dialog box and commit the new features to your layer.