The map is by motor in the Profile's directory

Motor_0_Map.dat
Motor_1_Map.dat
Motor_2_Map.dat, etc...

It is a comma separated file: Start, Length of screw, Number of points, point 1 error, point 2 error, point 3 error, etc...

The file format, again, is this:

[start pos], [length of screw], [number of points mapped], [point 1 error], [point 2 error], [point 3 error], etc...

All positions are in counts. The error is the actual error, in counts. A negative or positive number.

For example, say you have a screw that is 10000 counts per inch and you measure the table every inch and the axis is 20 inches. Start would be 0, length would be 200000 (10000 * 20), number of points would be 20 (200000 / 10000). You would start at zero and move the X axis precisely 1 inch (this is where the precise measurement comes in). Then you look at your screws encoder counts. Say it reads 10001. That means the error is 1 count positive. If the encoder read 9999, then the error would be 1 count negative (-1).

In the core, we always "add to take the error out". So when we move to a virtual position, we look up the error for that position in the map and ADD the error value. A planner position of 10000 would output 100001 as the destination point.

If the point is between two mapped points, we interpolate between the two points. This is why the granularity you choose is important. It determines the "acceptable" amount of error. It they want 1/2 degree accuracy, you will need 720 points per turn. Anything in between a 1/2 degree will be interpolated. But, as you can imagine, it is going to be pretty close at that point. I'm thinking a point every degree is probably going to be fine. So 360 points per turn.

It is a painstaking process to do it right. Super accurate glass scales can be purchased. They are made for this stuff. It is magnetic and just sticks to the table. The scale alone cost around $3K. As you can imagine, it only works for linear applications.