

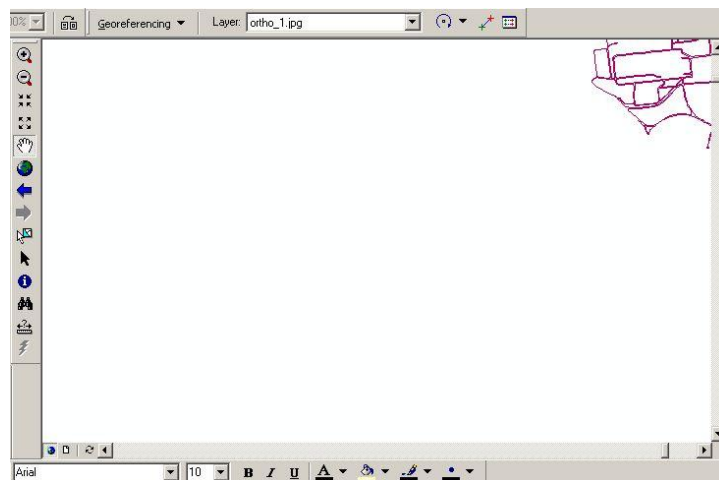
What is root mean square error? (RMSE)

According to ESRI:

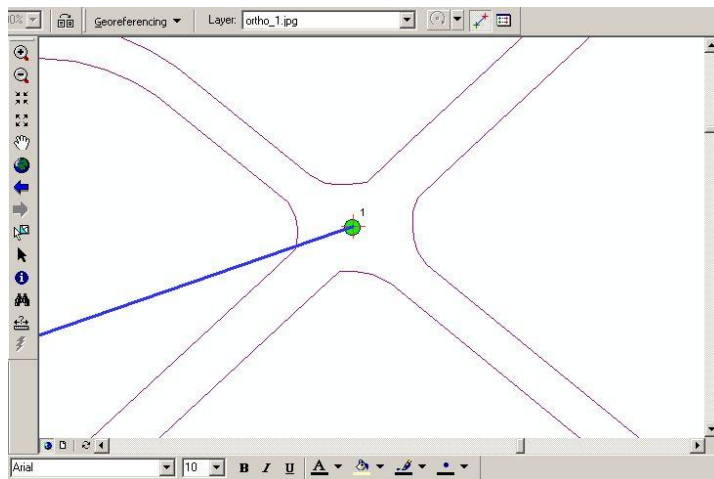
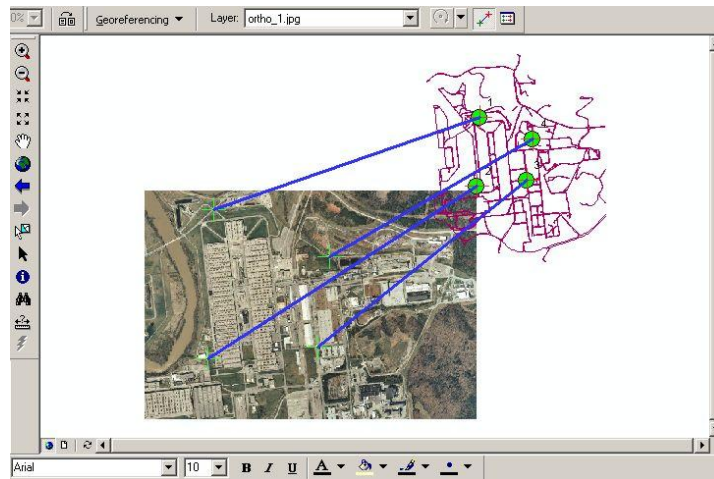
RMS error [STATISTICS] *Acronym for root mean square error.* A measure of the difference between locations that are known and locations that have been interpolated or digitized. RMS error is derived by squaring the differences between known and unknown points, adding those together, dividing that by the number of test points, and then taking the square root of that result.

$$\text{RMS error} = \sqrt{\frac{e_1^2 + e_2^2 + e_3^2 + \dots + e_n^2}{n}}$$

Georeferencing Tool



GCPs



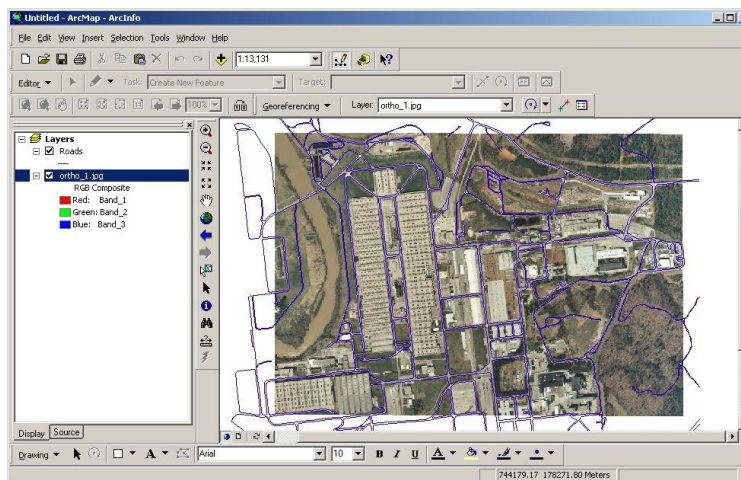
Lets do some math!

Link Table

Link	X Source	Y Source	X Map	Y Map	Residual
1	175.945158	-47.223531	744688.638353	179473.025021	0.59922
2	158.940543	-428.597345	744652.917029	178632.621686	0.68811
3	439.845731	-396.748834	745268.266373	178701.062055	1.09375
4	473.526861	-166.090569	745344.003476	179208.266379	1.00486

Auto Adjust Transformation: 1st Order Polynomial (Affine) Total RMS Error: 0.87158

Load... Save... OK





Sources:

- <http://webhelp.esri.com/arcgisdesktop/9.2/body.cfm?tocVisible=1&ID=555&TopicName=An%20overview%20of%20spatial%20adjustment>
- http://www.esricanada.com/EN_support/1243_6051.asp?QCount=26
- http://webhelp.esri.com/arcgisdesktop/9.2/index.cfm?id=2710&pid=2701&topicname=Georeferencing_a_raster_dataset
- Sommer, Shelly, and Tasha Wade, eds. A to Z GIS. Redlands, CA: ESRI Press 2006.