J Rectifier - Documentation

1. About

The tool is created by Jan Mądrzyk (janmadrzyk@gmail.com)

J Rectifier is the plugin made for people who often georeference raster files using QGIS for that purpose. The tool does exactly the same thing as GDAL Georeferencer does, but presents different workflow which is (in the author's opinion) more efficient and allows to receive the same results much quicker.

The main difference between the tools is approach to adding Ground Control Points (GCPs). J Rectifier plugin is much more flexible in this subject. When GDAL Georeferencer forces user to pick GCPs in a strict order (first – show the point on the rastere, then – show it on map, or type values), J Rectifier allows to pick points in any order, for example – user can show 10 points on a Map, and then find analogous 10 points on the raster that he/she wants to georeference. Moreover, J Rectifier plugin doesn't ask user to confirm the coordinates every time he/she pick the point from canvas, what makes georeferencing quicker and lets avoid unnecessary 'clicking'.
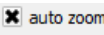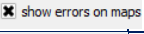
Another feature that makes a great difference between the plugins is *auto zooming*. After clicking the first from pair of analogical points, the feature moves the view in the other canvas to the area where the next point will probably occur. User doesn't need to spend time on searching the spot all over the raster.

2. Tutorial

▶ Click here to watch video tutorial.

3. Features

Icon	Shortcut	What it does?
	Ctrl + R	Loads raster file into plugin window
	Ctrl + F	Zooms to full extent in plugin map canvas
	Ctrl + Z	Zooms to selected feature in plugin and QGIS map canvas **Note:** User can also zoom to selected point by double clicking on it in GCP table
	-	Zooms to next extent in plugin map canvas
	-	Zooms to previous extent in plugin map canvas
	Ctrl + H	Highlights points (change their style) in both QGIS and plugin canvases
	Ctrl + W	When it's clicked user's picking GCPs' coordinates by clicking in QGIS or plugin canvas. **Note:** By default, the coordinates are handled to the first empty row in table. When the table is full, it creates new row. However, when the user keep **Shift button** pressed, clicking always create new row, rather than filling in existing empty rows.
	Ctrl + D	Deletes selected points (to avoid 'misclicks' – the whole table row needs to be selected, not just a cell)
	Ctrl + E	When it's clicked, you set new coordinates for selected GCP, by clicking in canvases.

(calculator icon)	Ctrl + T	Allows you to type the accurate coordinates, rather than show them on canvases.	
(save icon)	Ctrl + S	Saves current GCP table to '.points' file. **Note:** Saved file is also compatible with GDAL Georeferencer	
(folder icon)	-	Filling in the GCP table using '.points' file	
(red play icon)	-	Georeferences/Rectifies the raster file using the current GCP table and current settings (such as transformation type, resampling…)	
☒ auto zoom	-	When checked – if user picked 2 or more points on both canvases, the plugin 'predict' the spot where the other from a pair of points is going to occur, and moves canvas extend to this area.	
☒ show errors on maps	-	When checked – show error lines on both canvases.	
Transformation: Helmert ▼	-	Determines transformation methods (Helmert, Polynomial 1/2/3, Spline)	
Resampling: Nearest ▼	-	Determines resampling methods (Nearest, Bilinear, Cubic, Cubic Spline, Lanczos)	
Compression: NONE ▼	-	Determines compression methods (None, LZW, PACKBIT, DEFLATE)	
m XY = 10.4543550845 m X = 5.6841579917 m Y = 8.77404628191 Destination EPSG: 4326	-	Shows the EPSG of Coordinate Reference System (CRS) of output file and average X, Y and XY errors. **Note:** The CRS is taken from QGIS canvas when user reads the raster and CAN NOT be changed during adding GCPs. If you want to change it – #1 open plugin once again, #2 set for the QIS project the CRS you want for your georeferenced image, #3 and loge image into plugin once again. **DO NOT change CRS in QGIS canvas during rectification**. It will lead you nowhere.	

4. GCP table

	Accept	x	y	X	Y	d X	d Y	d XY
1	Yes	2587.68656716	-1426.5391791	7424046.33815	5547860.54967	6.612056665…	3.811126107…	7.631774076…
2	No	1957.39272388	-1256.11007463	7423936.02239	5547696.91648	2.822028731…	-34.1885805…	34.30485219…
3	Yes	2133.69869403	-703.684701493	7423780.7352	5547784.57542	2.4059334686	-0.17888105…	2.412574203…
4	No	2674.37033582	-887.336753731	7423885.57039	5547946.06835	7.162484982…	7.216835369…	10.16778756…
5	Yes	2865.36847015	-1213.50279851	7424010.35536	5547987.31066	2.784154741…	-2.78202880…	3.935886420…
6	Yes	1842.79384328	-954.920708955	7423832.74928	5547658.84837	0.869718530…	-3.39326535…	3.502950196…
7	No	1301.38759328	-1497.79617537	7423956.98334	5547427.46996	-5.87766253…	-20.1786792…	21.01727888…
8	Yes	2350.50632385	-1036.54595544	7423917.94339	5547819.65421	-9.81183470…	4.273152978…	10.70195947…
9	No	2220.69617438	-1615.60275801	7424081.04248	5547727.22378	-4.39463139…	-11.6200026…	12.42325430…
10	Yes	3063.26610445	-1805.59401675	7424220.21364	5547990.98971	-2.86002866…	-1.73010384…	3.342607254…

The GCP table is the place where all the points the user picked are stored, and errors values are computed, so the user know the coordinates and the quality of all points. The error values are computed only when the minimum points number for specific method is reached.

The last 3 columns shows X/Y/XY errors for the destination file, NOT for the current rasterfile. That means that they are expressed in map units (meters, feets, etc. depends on destination CRS) instead of pixels.

Calculating errors for Spline method is not supported.

The errors are computed using *least square method* and might be a slightly different then errors for the same datasets in GDAL Georeferencer.

By clicking in *Accept* column you can **accept** or **dismiss** specific point, so it won't take part in transformation.

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