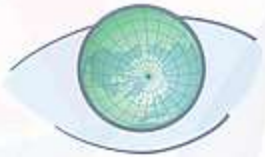


13th International Conference
GEOHERITAGE, GEOINFORMATION AND CARTOGRAPHY
Selce, Croatia, September 7–9, 2017

QUO VADIS - QGIS

Zlatko Horvat, MSc

DGU Područni ured za katastar Čakovec

Give a Basic Introduction to Free and Open Source Software (FOSS)

Give an Overview on FOSS for Geoinformatics (FOSS4G)

Talk on QGIS and Introduce the Basic Concepts of Software

A Basic Introduction to Free and Open Source Software (FOSS)

FOSS Freedoms

"Free software is a matter of the user's freedom to run, copy, distribute, study, change and improve the software. More precisely, it means that the programs's users have the four essential freedoms:

- The freedom to run the program, for any purpose (freedom 0).
- The freedom to study how the program works, and change it so it does your computing as you wish (freedom 1). Access to the source code is a precondition for this.
- The freedom to redistribute copies so you can help your neighbor (freedom 2).
- The freedom to distribute copies of your modified versions to others (freedom 3). By doing this you can give the whole community a chance to benefit from your changes. Access to the source code is a precondition for this".

-from the Free Software Definition
http://www.gnu.org/philosopy/free-sw.html

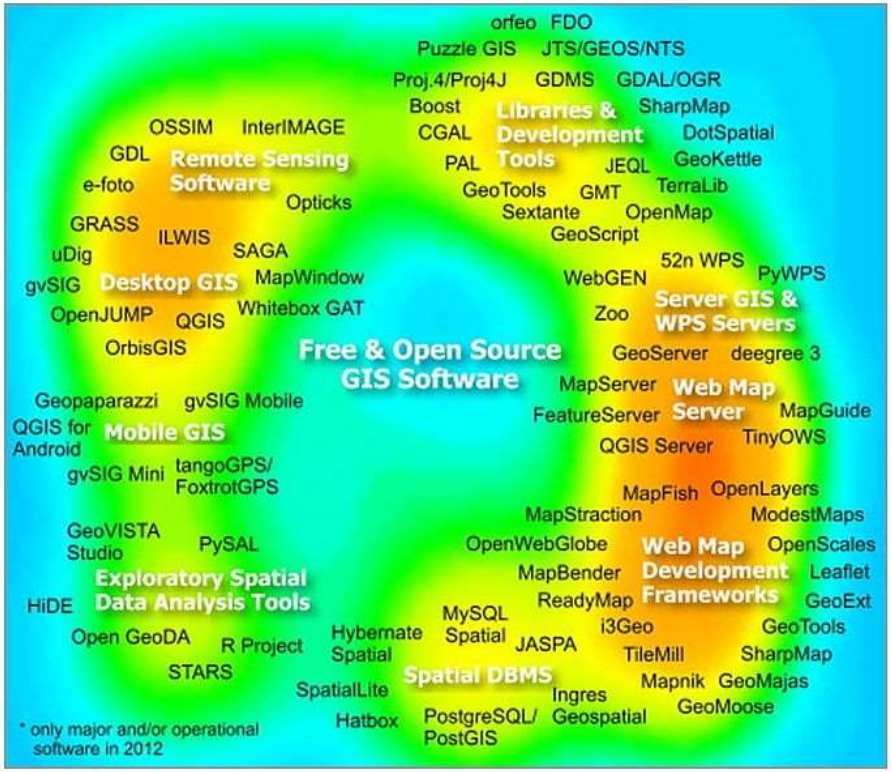
FREE DOES NOT MEAN GRATIS – BUT, SOMETHINGS IS IN THE AIR

The beauty of open source GIS is that there are thousands of hardworking individuals across the globe that are working to advance the open source projects further, faster – and go beyond the traditional boundaries of geospatial technologies.
Boundless CEO, Andy Dearing

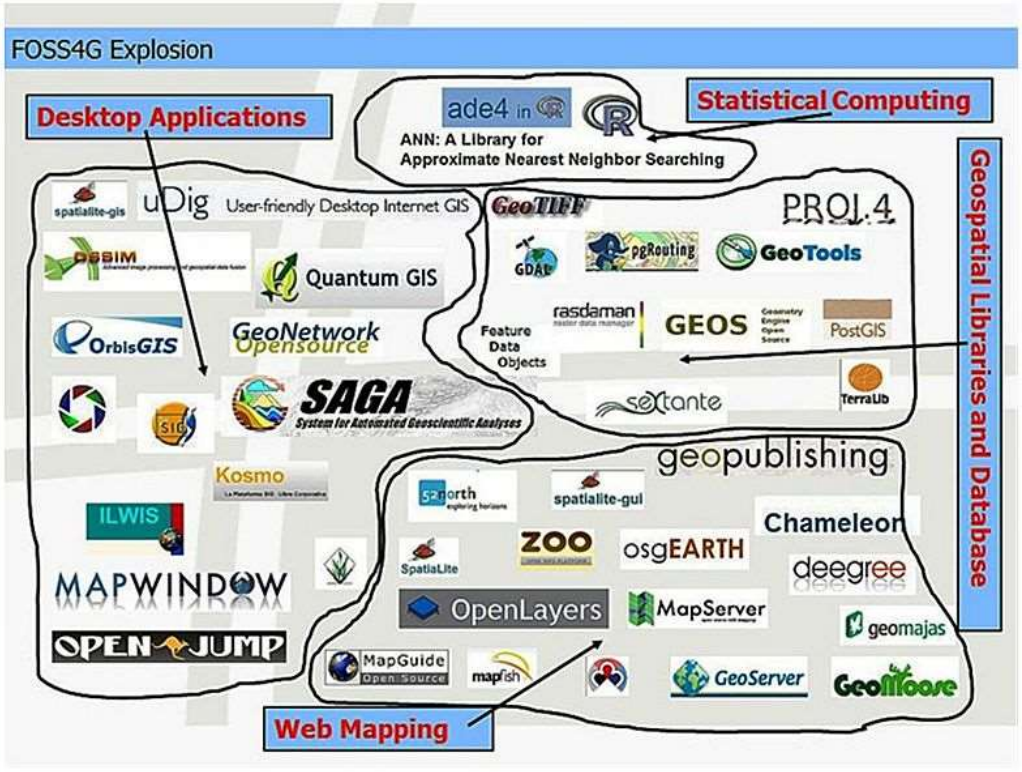
„WHY WE CODE"?
There's a lot of easy answers, which are variations of pure propaganda. They are mythic answers, emotional ones, they are easy to visualize

"Freedom!" is a *favourite*.
Software free to be read, free to modify, and free to redistribute with modifications. We code free software for idealism.
FOSS4G Keynote, 2017, Paul Ramsey

FOSS - Explosion



Source: Steinger and Hunter, 2011.



Source: Horvat, 2014.

FOSS – Desktop GIS

GIS Project (founding year)	webpage	user focus [1]	data focus[2] (raster vs. vector)	Platform	
				operating systems	language
GRASS (1982)	grass.osgeo.org	experienced,…, research	more raster	MS-Windows, Linux, MacOSX	C, Tcl/Tk, Python
Quantum GIS (2002)	qgis.org	novice,…, research	more vector	MS-Windows, Linux, MacOSX	C++, Qt4, Python
ILWIS Open (1984/5)	ilwis.org	novice,…, research	raster and vector	MS-Windows, Linux	MS Visual C
uDig (2004/5)	udig.refractions.net	novice,…, research	more vector	MS-Windows, Linux, MacOSX	JAVA
SAGA (2001/2)	saga-gis.org	novice,…, research	more raster	MS-Windows, Linux	MS Visual C
OpenJUMP (2002/3)	openjump.org	novice,…, research	vector	MS-Windows, Linux, MaxOSX	JAVA
MapWindow (1998)	mapwindow.org	novice,…, research	raster and vector	MS-Windows	MS Visual Studio .Net
gvSIG (2003)	gvsig.gva.es	novice,…, research	more vector	MS-Windows, Linux, MaxOSX	JAVA

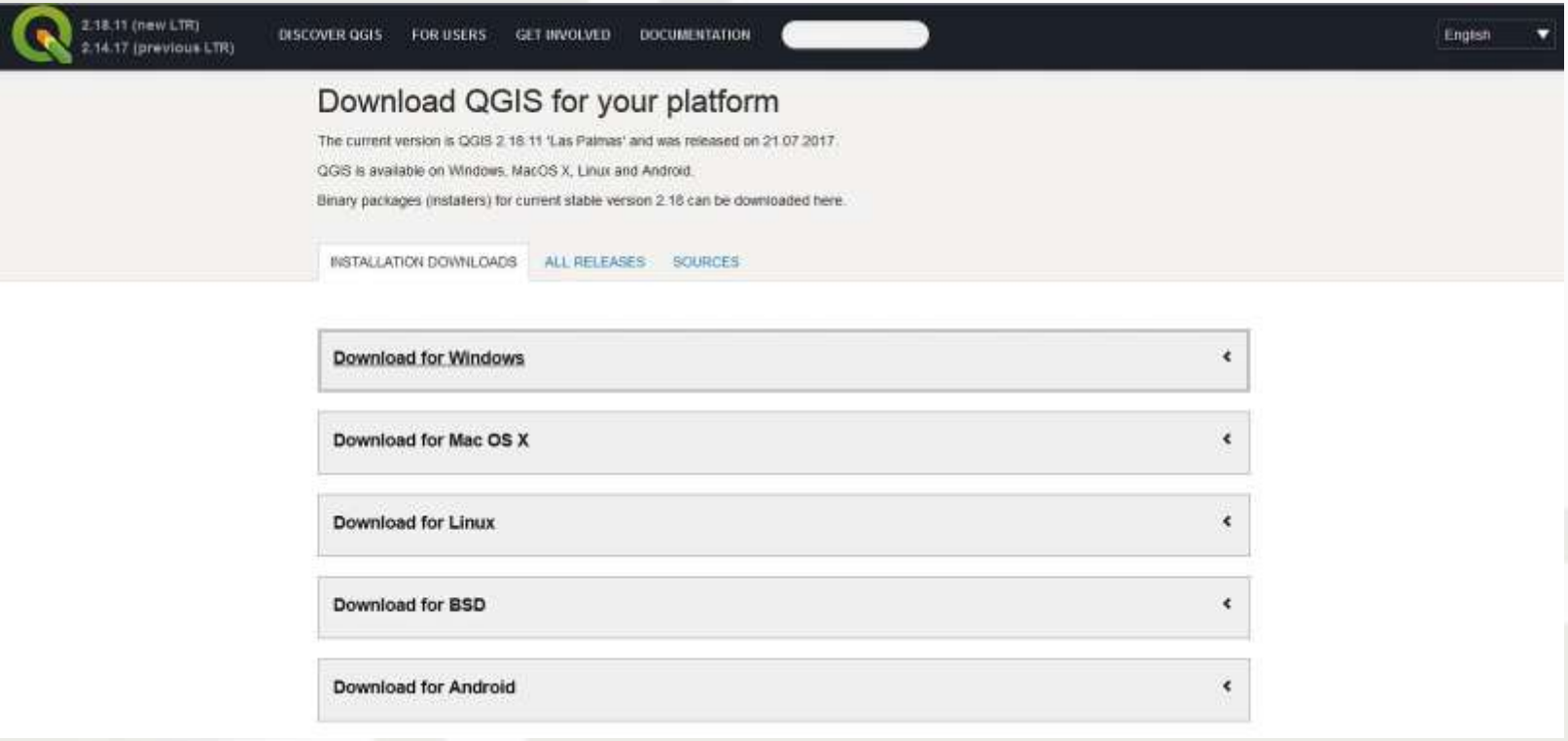
[1] user levels: (i) novice (viewing), (ii) experienced (editing, simple analysis), (iii) expert (analysis), (iv) research (scripting, programming)

[2] data focus: subjective evaluation with respect to (i) software history and (ii) number of functions for raster and vector data editing and analysis

Source: Steiniger and Hay, 2009.

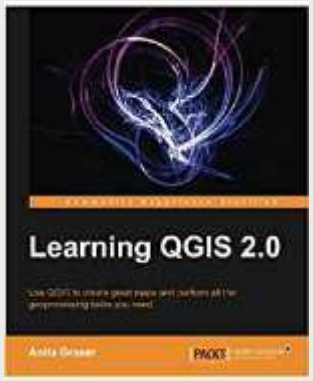
+ WHITEBOX:
http://www.uoguelph.ca/~hydrogeo/Whitebox/

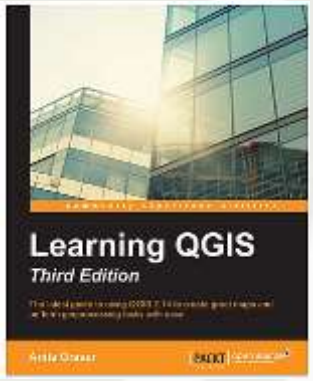
QGIS –Introduction to basic conceptes

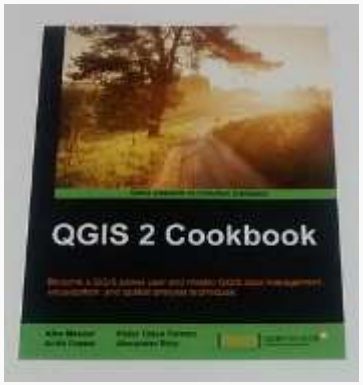


The QGIS upgrade from version 2 to version 3 brings new features. The main change is access to new versions of Qt and Python. On HiDPI screens, the QGIS 3 user interface will significantly improve. QGIS 3 is not just a step towards new

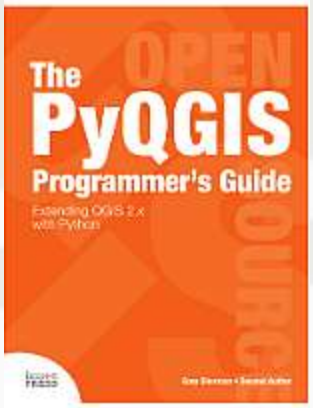
QGIS – Maual, Books...

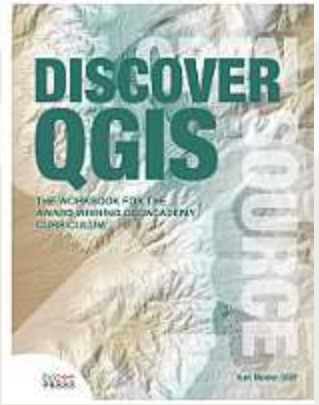






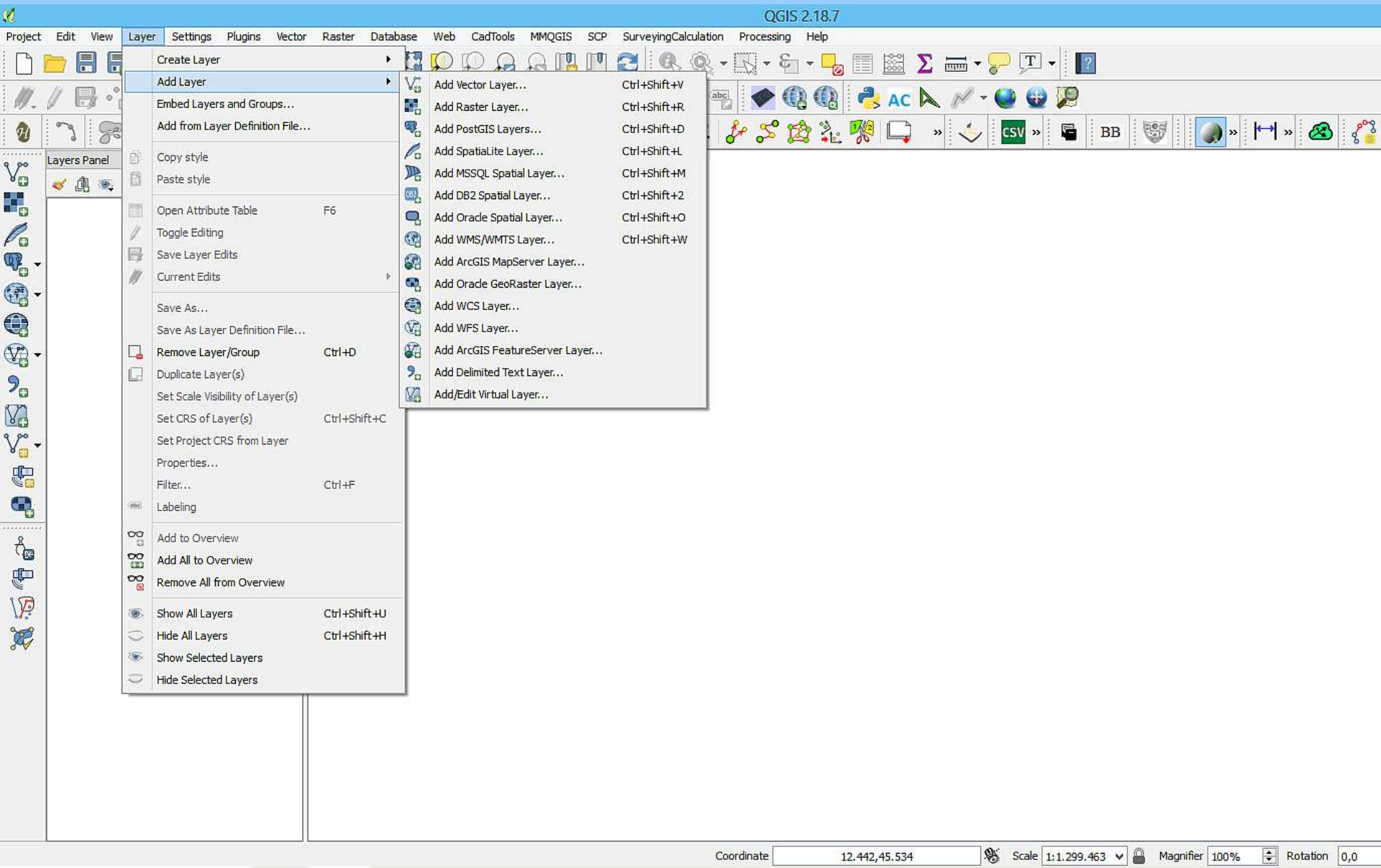
Books
- English
  - Open the Door to GIS - Student and Teacher's Edition
  - QGIS Python Programming Cookbook - Second Edition
  - QGIS:Becoming a GIS Power User
  - Mastering QGIS - Second Edition
  - Discover QGIS
  - QGIS 2 Cookbook
  - Learning QGIS - Third Edition
  - QGIS Map Design
  - Mastering QGIS
  - QGIS Blueprints
  - QGIS By Example
  - The PyQGIS Programmer's Guide - Extending QGIS with Python
  - The QGIS Training Manual - A Comprehensive Introduction to Quantum GIS



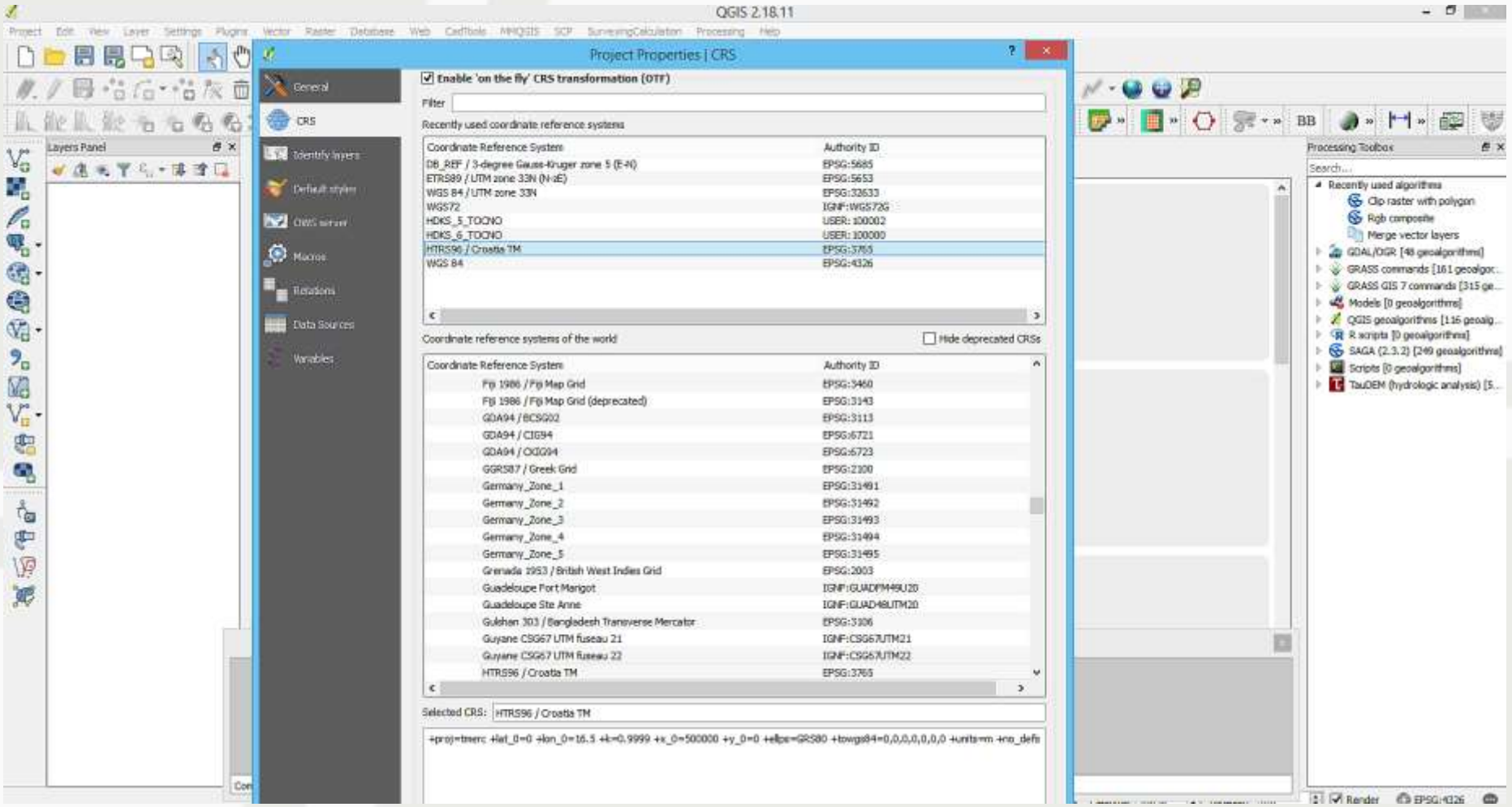


QGIS has a great online manual, case studies, training material, books and a number of „how-to”
QGIS examples written by people who use QGIS

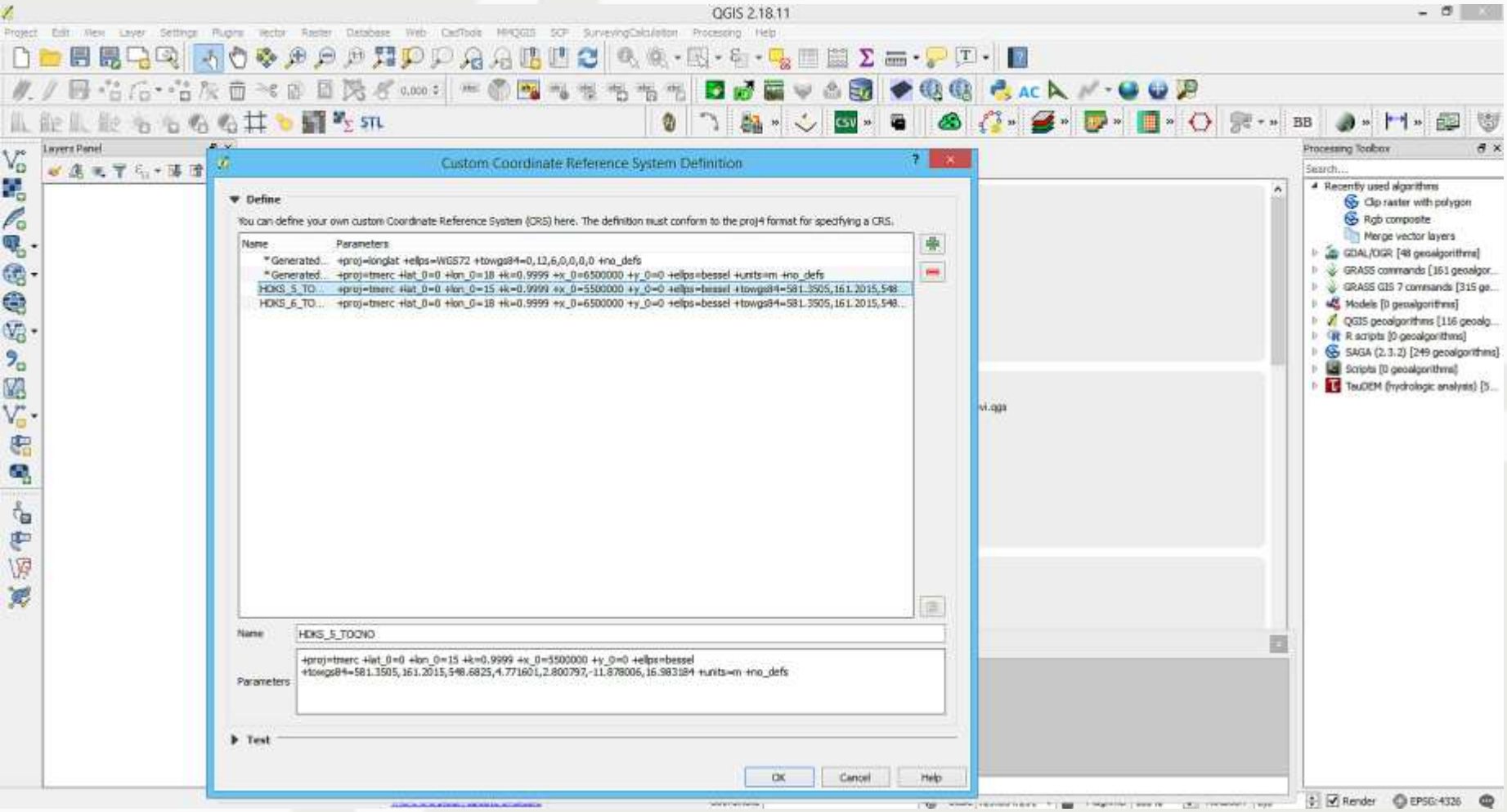
QGIS - Layers


QGIS 2.18.7
Project Edit View Layer Settings Plugins Vector Raster Database Web CadTools MMQGIS SCP SurveyingCalculation Processing Help
Create Layer
Add Layer
Embed Layers and Groups...
Add from Layer Definition File...
Copy style
Paste style
Open Attribute Table F6
Toggle Editing
Save Layer Edits
Current Edits
Save As...
Save As Layer Definition File...
Remove Layer/Group Ctrl+D
Duplicate Layer(s)
Set Scale Visibility of Layer(s)
Set CRS of Layer(s) Ctrl+Shift+C
Set Project CRS from Layer
Properties...
Filter... Ctrl+F
Labeling
Add to Overview
Add All to Overview
Remove All from Overview
Show All Layers Ctrl+Shift+U
Hide All Layers Ctrl+Shift+H
Show Selected Layers
Hide Selected Layers
Add Vector Layer... Ctrl+Shift+V
Add Raster Layer... Ctrl+Shift+R
Add PostGIS Layers... Ctrl+Shift+D
Add SpatiaLite Layer... Ctrl+Shift+L
Add MSSQL Spatial Layer... Ctrl+Shift+M
Add DB2 Spatial Layer... Ctrl+Shift+2
Add Oracle Spatial Layer... Ctrl+Shift+O
Add WMS/WMTS Layer... Ctrl+Shift+W
Add ArcGIS MapServer Layer...
Add Oracle GeoRaster Layer...
Add WCS Layer...
Add WFS Layer...
Add ArcGIS FeatureServer Layer...
Add Delimited Text Layer...
Add/Edit Virtual Layer...
Layers Panel
Coordinate 12.442,45.534
Scale 1:1.299.463
Magnifier 100%
Rotation 0,0

QGIS- On the fly reprojection



QGIS- On the fly reprojection

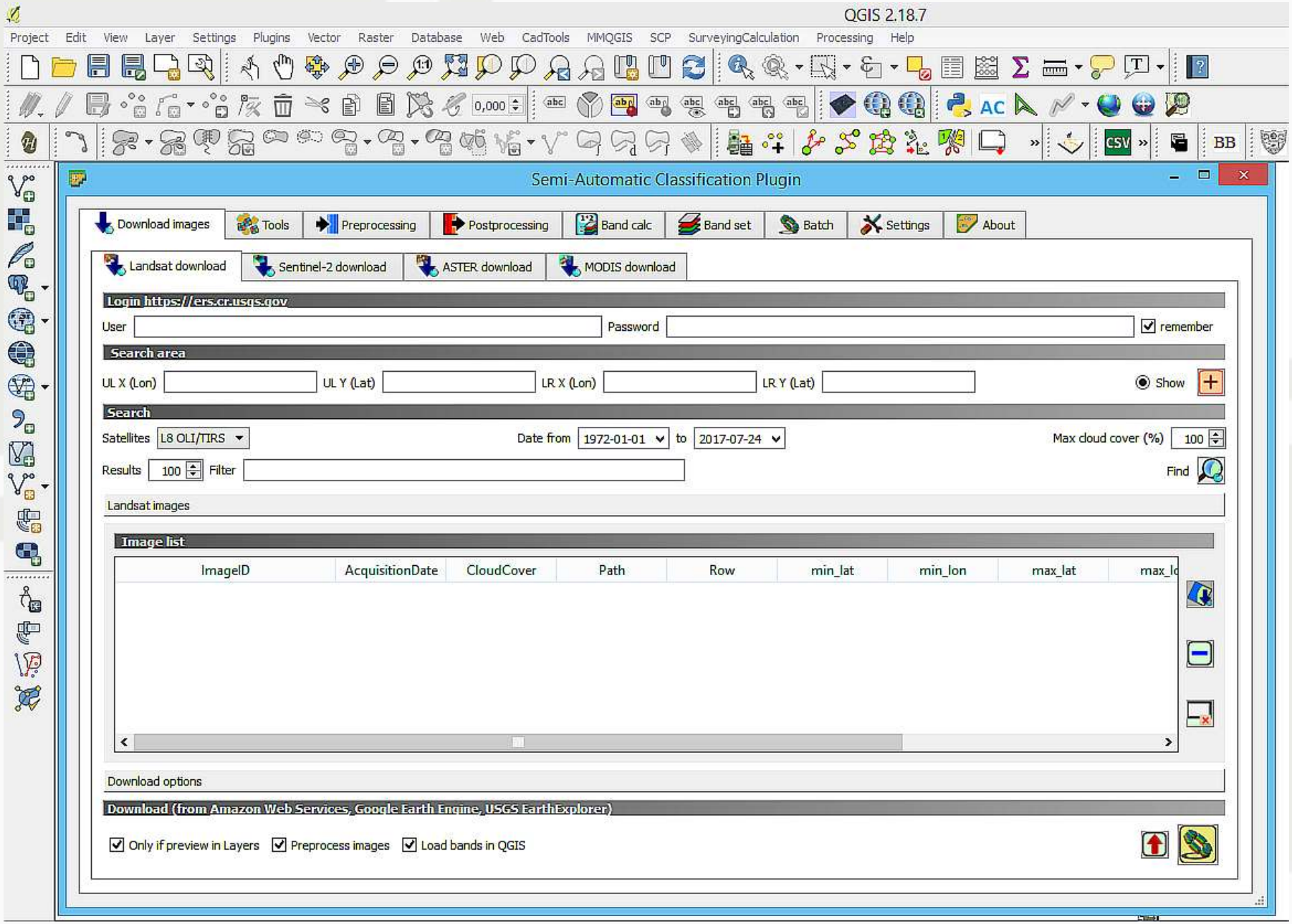


The QGIS provides a number of plugins.

There are hundreds of plugins available as additional add-ons.

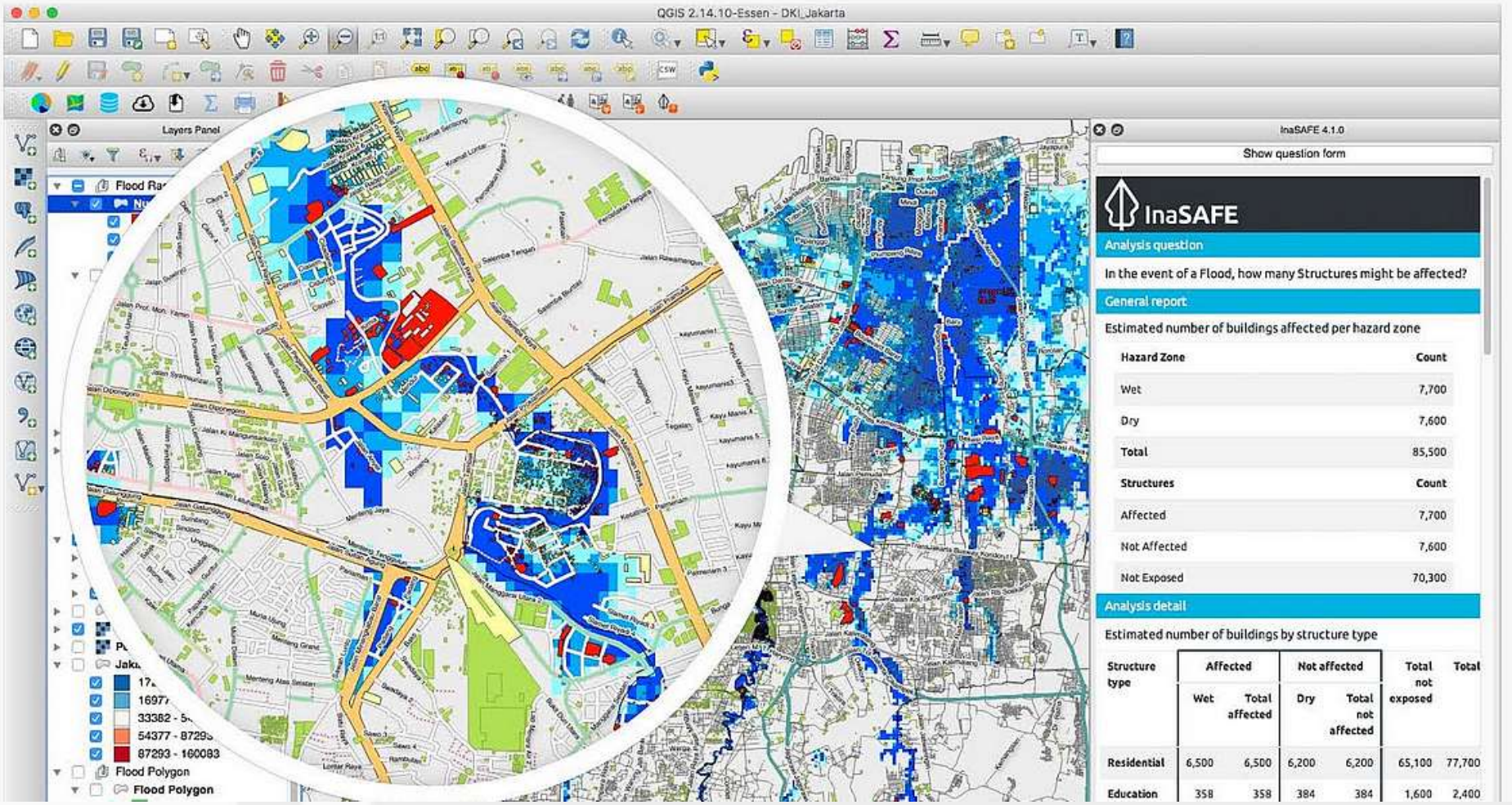
Some plugins are not just accessories but complete programs

QGIS – Plugins - SCP



QGIS – Plugins - InaSAFE

InaSAFE is free software that produces realistic natural hazard impact scenarios for better planning, preparedness and response activities. It provides a simple but rigorous way to combine data from scientists, local governments and communities to provide insights into the likely impacts of future disaster events.



http://inasafe.org/

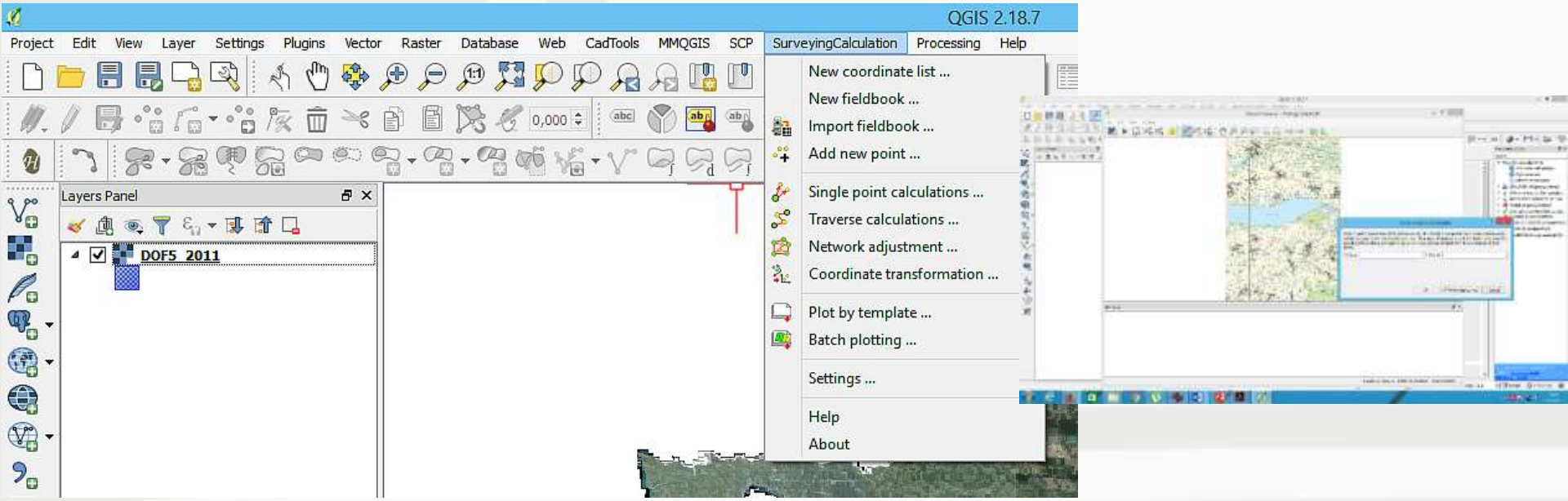
QGIS - Basemaps

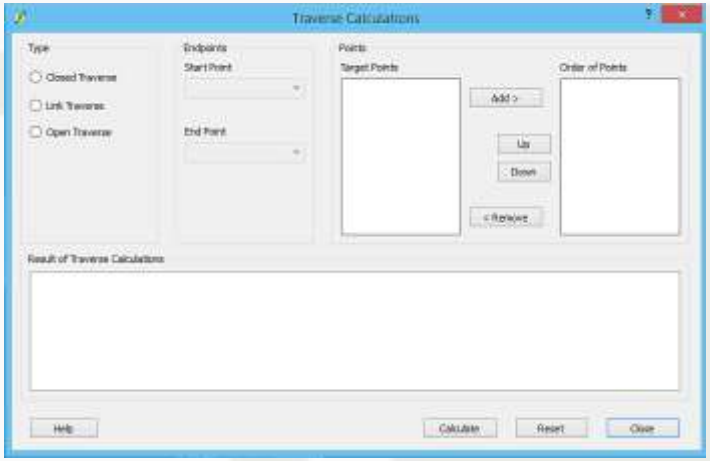
Basemaps refers to a collection of GIS data and/or orthorectified imagery that form the background setting for a map. The function of the basemap is to provide background detail necessary to orient the location of the map and edit vector data. Basemaps also add to the aesthetic appeal of a map.

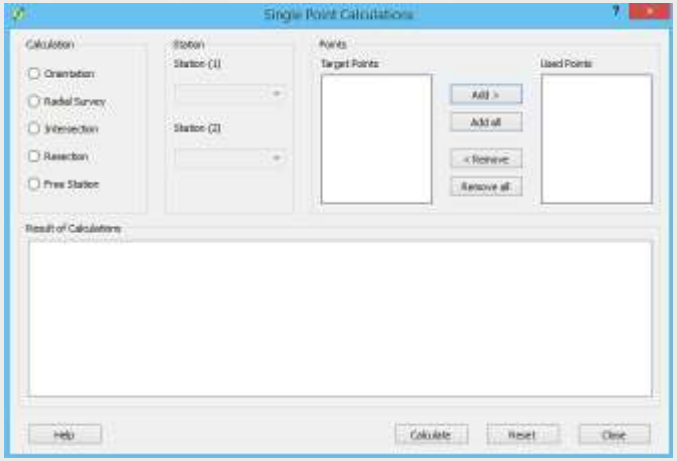
The OpenLayers Plugin gets number one because it allows to add a number of basemap services to your map canvas:

- Google
  - Physical
  - Streets
  - Hybrid
  - Satellite
- OpenStreetMap
- Yahoo
  - Street
  - Hybrid
  - Satellite
- Bing
  - Road
  - Aerial
  - Aerial with labels
- MapQuest
- Apple Maps

QGIS – Plugins and Surveying





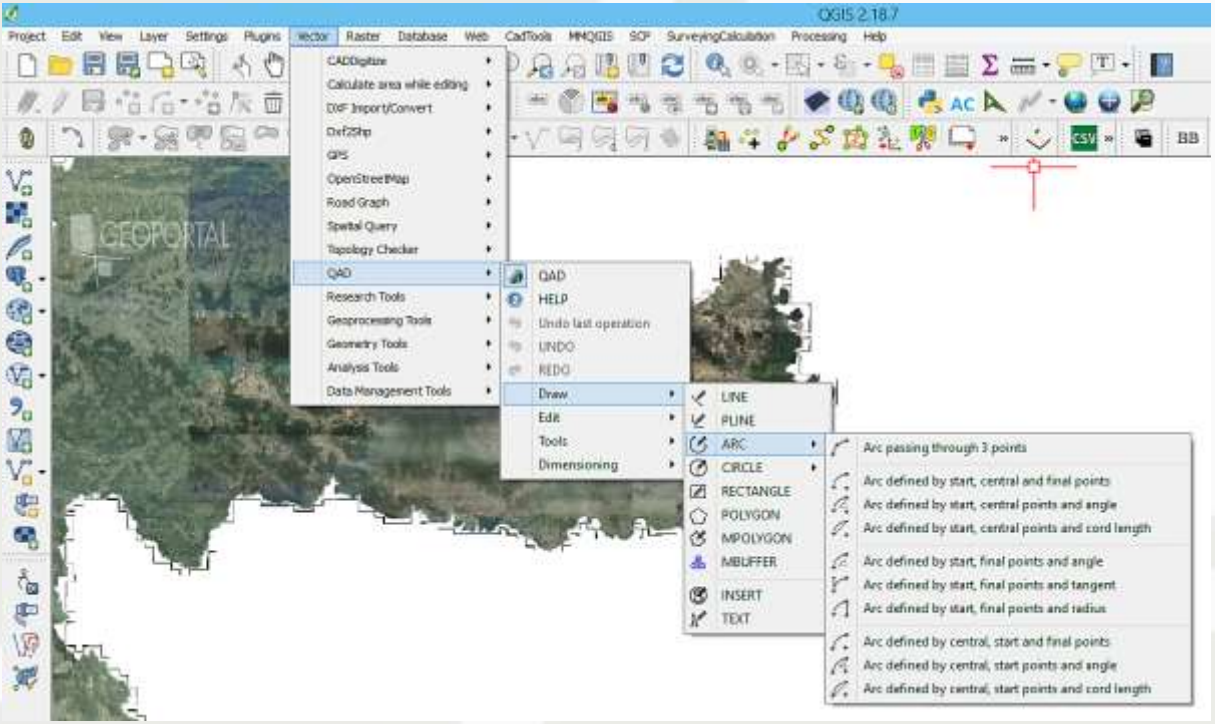


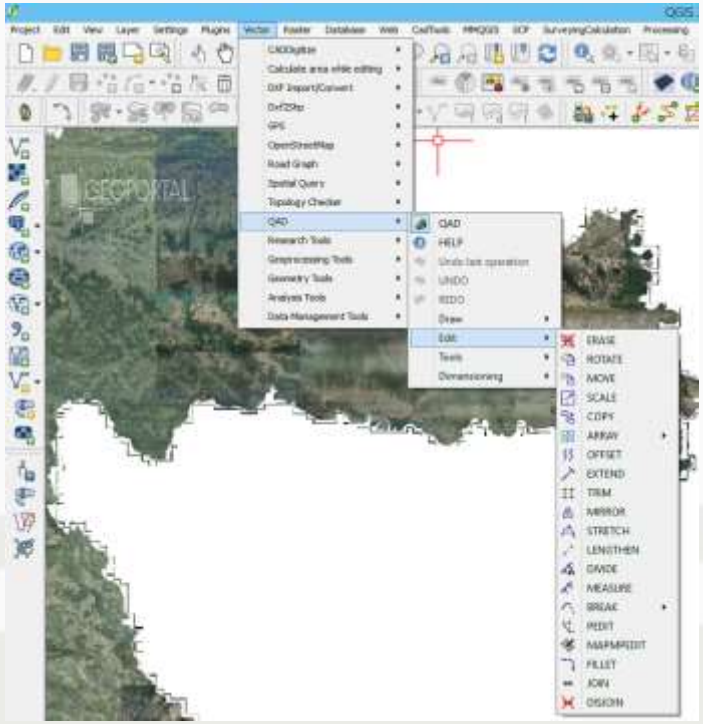
The cartographic capabilities of QGIS are sufficient to produce almost all the common map layout components with an adequate amount of advanced capabilities and even some options.

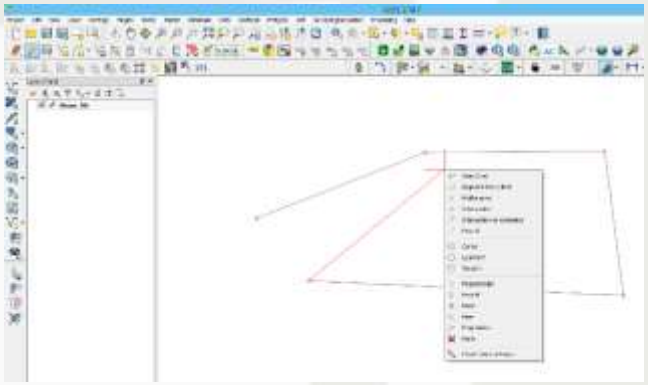
Cartography is where many people think that QGIS falls short (AutoCAD???).

But, the fact is that QGIS has seen remarkable growth in the cartographic capabilities in recent years

QGIS and Cartography







Over the last decade there has been an explosion in the numbers of users and developers of FOSS for Geoinformatics.

FOSS4G is increasingly gaining in importance, and has become a kind of alternative to the proprietary (closed) software.

Try FOSS4G (any), use them, make changes to the software, share your new knowledge with OSS community, solve your GIS tasks, make money with FOSS.

QGIS 3.0 - **the new kid on the block**

Thank you for your attention!

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