

# Summer School - “Open Source Opportunities in GIS”

## Web Processing Service Practical Session (06-07-2010)

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redeveloped from a hands-on tutorial<sup>1</sup> by Rob Lemmens,  
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### Context & Learning Objectives

This practical follows the WPM lecture. Here you try the following:

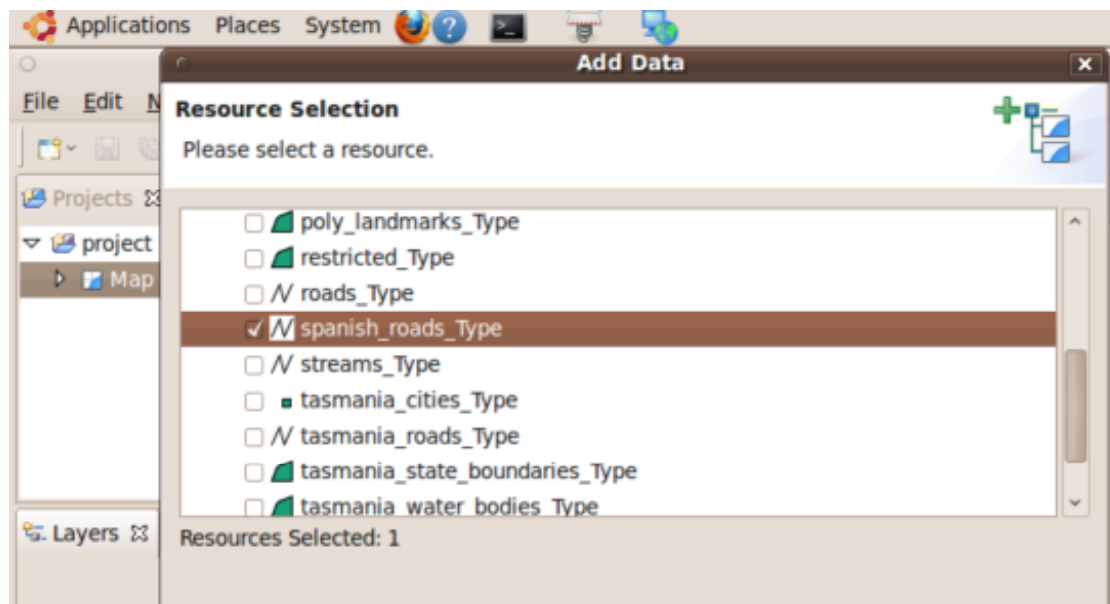
- Connecting uDig to a WFS data source;
- Passing the data source to a WPS for processing.
- Interacting with the WPS results in uDig.

The aim is to give you some practice in accessing a web processing service – access to these services from open source software is limited at present but will be of increasing future importance.

### Generalise large-scale road data

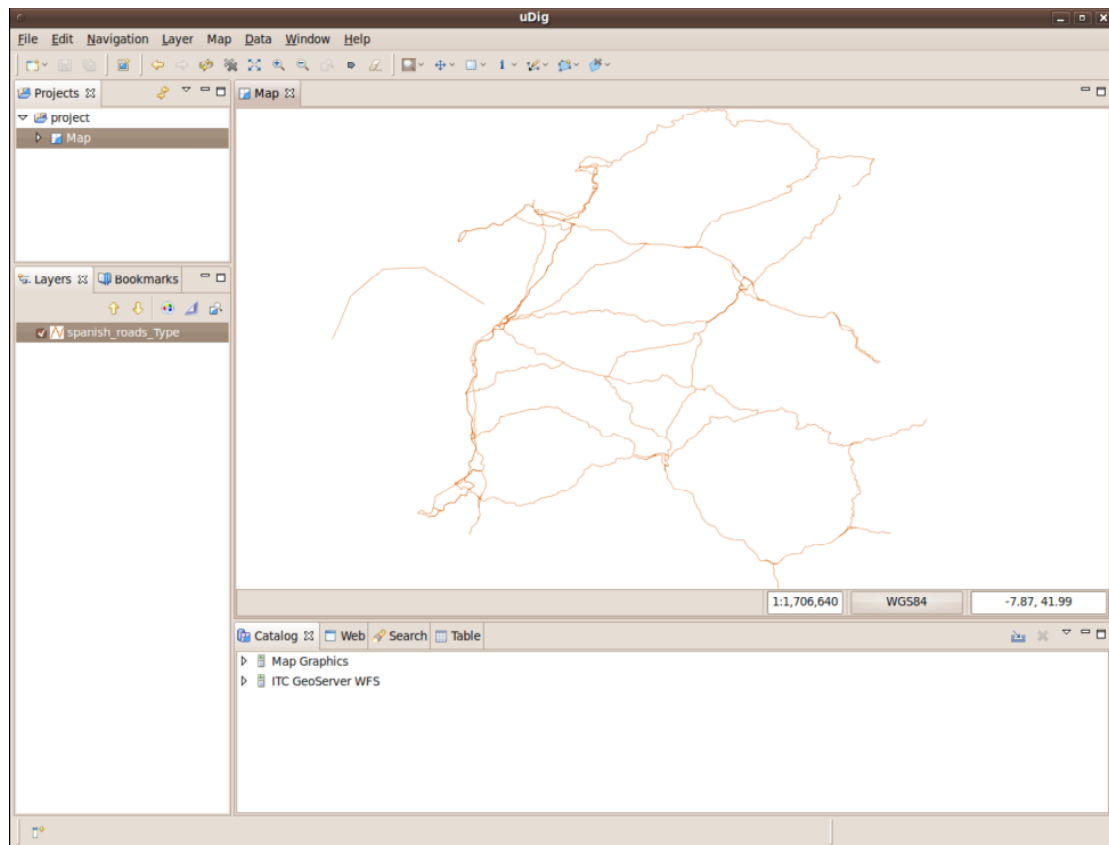
First add a Map in uDig via File -> New -> New Map. Then add a Web Feature Service to the map. The URL for the service is <http://geoserver.itc.nl:8080/geoserver/wfs>

Choose the “spanish\_roads” feature layer (these are in NW Spain!) and click Finish.



<sup>1</sup> [https://52north.org/twiki/pub/Processing/52nUdigWPSClient/52n\\_WPS\\_hands-on\\_tutorial.pdf](https://52north.org/twiki/pub/Processing/52nUdigWPSClient/52n_WPS_hands-on_tutorial.pdf)

You should see something like the following:

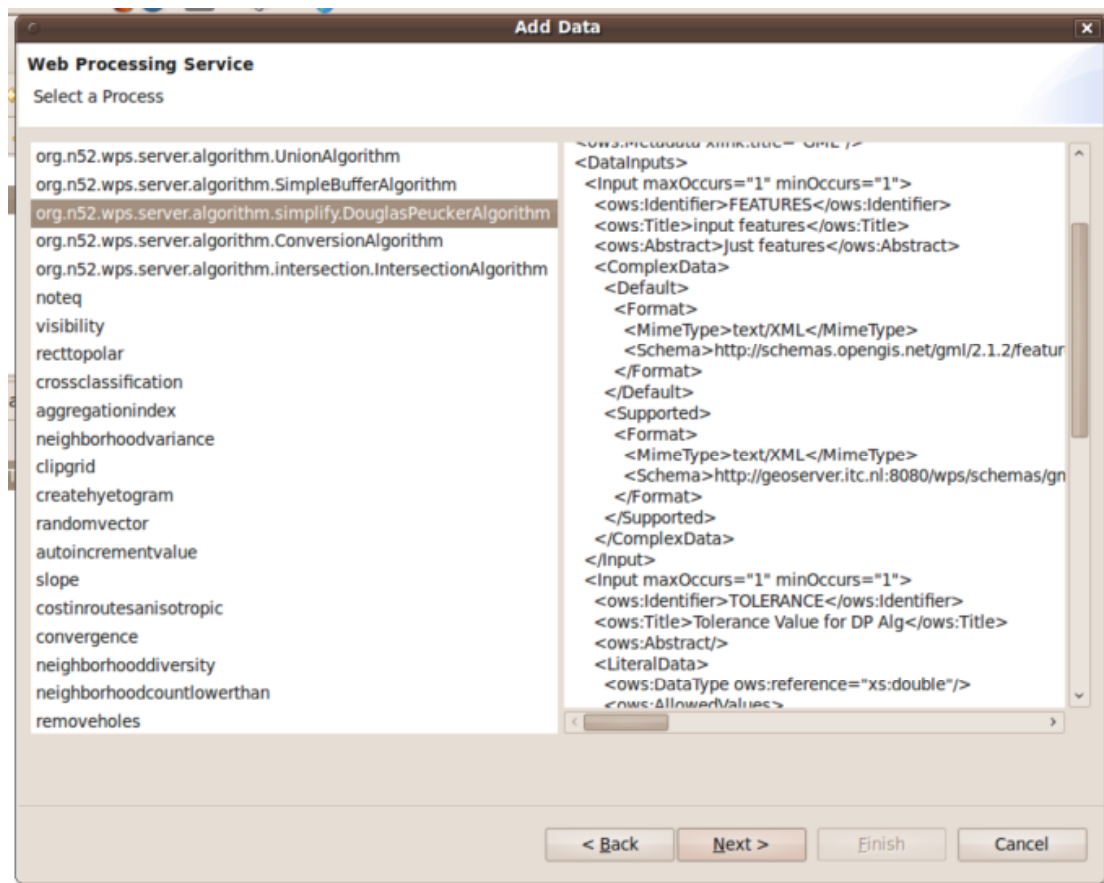


As the roads are too detailed, they have to be simplified. Thus we will use a WPS function which simplifies the geometries of such features. The features are sent by reference to the process.

To do this, add a Web Processing Service to the map (the 52North WPS plug-in for uDig has been installed in the virtual machine for you but is limited to a previous version (1.1) of uDig). The URL for the WPS (the “end-point”) is <http://giv-wps.uni-muenster.de:8080/wps/WebProcessingService>

The uDig plug-in contacts the WPS and parses the GetCapabilities response to find the functions offered by the WPS. A list is then presented to choose from – in this case choose the

org.n52.wps.server.algorithm.simplifyDouglasPeuckerAlgorithm service – on the right you’ll see the service description (including the Input and Output elements in particular).



Click on Next. You can enter the required input parameters for the function on the following dialogue – in this case the uDig layer to process, and the Douglas-Peucker smoothing tolerance. In this case enter 0.01 (the units are degrees since the data are in lat, long co-ordinates (geographic projection). Why is this not a good choice?..). Then click Finish to start the processing. This can take a minute or two.

Examine the resulting additional layer in uDig – has the smoothing algorithm worked?

## Further work

Try interacting manually with the WPS – try the GetCapabilities, and DescribeProcess requests. Can you find the Input & Output parameters for some of the other 52North functions?

Unfortunately the JRC data service in the original tutorial no longer exists, so we can't explore the full scenario. One option for further experiments with WPS is to explore some of the other functions available from the IFGI (Uni. Muenster) WPS. You could also repeat the Douglas-Peucker analysis with projected data.

In particular, can you extract DEM data from ICEDS ([iceds.ge.ucl.ac.uk/cgi-bin/icedswcs](http://iceds.ge.ucl.ac.uk/cgi-bin/icedswcs)) to feed to the "slope" function? (There may be problems here because uDig 1.1 doesn't handle rasters well, and version 1.2 may not work

with the 52Noth plug-in). Are any of the other functions useful in your project analysis? Can you supply suitable data to them from uDig?