OrbisGIS : From GIS to connected geoservices

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OrbisGIS (http://www.orbisgis.org) is a geographical information system dedicated to scientific modelling and experimenting. OrbisGIS has been developed at the Institute for Research in Urban Science and Techniques (IRSTV FR CNRS-2488) (http://www.irstv.fr) since April 2007, within the Atelier SIG framework whose goal is to provide methods and tools to grasp the challenges of urban environments.

Distributed under a GPL 3 licence, OrbisGIS is a federating tool within a Spatial Data Infrastructure (SDI), gathering amongst the research units of the IRSTV all the methods and processed data linked to geographical information, irrespective of the research field they come from (sociology, civil engineering, urban architecture, geography, economy, environment...). Based on OGC standards, OrbisGIS tries to reduce the gap between GIS software and SDIs:

→ on the one hand by making data consumption easy, using geospatial web services

→ on the other hand by sharing data, thematic maps and processing chains

This workshop will be organised in 3 sections.

Part 1 : Discover the platform

This section will introduce some basic concepts and uses of the GIS platform. User will learn how to:

→ install OrbisGIS and where to find documentation and help

→ use OrbisGIS's UI: create a workspace and customize the user interface

→ load flat files and DBMS tables

→ connect to a set of WMS services

→ use navigation tools and information tools

→ query data, display attributes in or out of spatial context

→ edit, create a spatial data source

→ deal with styles and create simple thematic maps

Part 2 : From collaborative authoring to polypublication of cartographic content

At first, this part of the workshop aims at showing how a collaborative authoring environment can run thanks to common standards like OGC Map Context and OGC Symbology Encoding specifications. Attendees will experiment a multi-actor for authoring a common cartographic project through a shared remote repository.

Secondly, a new user role for the authoring process will be introduced : the «cartopublisher». Attendees will experiment a dedicated user interface to control and moderate through validation rules the cartographic content authored by the several actors. Also, attendees will experiment how the cartopublisher is able to enrich the content with supplemental items like text, images, diagrams, ... so as to stress the cartographic message.

Finally, attendees will discover a platform dedicated to the polypublication of cartographic content. Polypublication stands for multi-targets/

multi-channels publication. Multi-target concerns the configuration of the publication so as to fill the need of a final user according to a user profile and user skills. Multi-channel concerns the adaptation to the final channel of visualisation (webmapping, mobile, pdf, geopdf, ...). Attendees will experiment an integrated approach to configure such a multi-target/multi-channel publication engine.

Part 3 : From Spatial SQL to WPS

One of the main interests of OrbisGIS is its spatial SQL engine that allows building both simple and advanced spatial analysis. In this section we will show how to transform an SQL script and expose it as a WPS.

First of all, we will present the enhancements that have been made to this language. These improvements over the original Spatial SQL are the result of research funded by the french regional program GeoPAL (http://www.geopal.org) and ANR VegDUD. They cover performance improvements, mixed spatial-raster processing, improved syntax, and more.

Secondly we will introduce a simple meta-language to describe an SQL Script, and a way to publish the script as a WPS process directly from OrbisGIS. WPS provides a way to expose on-demand spatial processes as web services through a standard interface defined by the OGC. Attendees will experiment with the meta-language and the publishing interface with several kinds of script, from simple processes to advanced analysis.

Finally, attendees will discover how to seamlessly consume these WPS processes from OrbisGIS with various input and output types.