



## **ReGIS - Visualization and Simulation of GIS data made easy**

Berend Weel (1), Carlos Martinez (1), Joris Borgdorff (1), Maarten van Meersbergen (1), and Mike Lees (2)

(1) Netherlands eScience Center, Amsterdam, Netherlands (b.weel@esciencecenter.nl), (2) Computational Science Lab, University of Amsterdam, Amsterdam, Netherlands (m.h.lees@uva.nl)

The goal of the Research Environment for Geo Information Systems (ReGIS) is to facilitate the exploration and simulation of GIS data. ReGIS is a web-based application that allows a user to explore GIS data from a wide range of sources. Layers created from the data sources are displayed on an interactive map where individual features can be styled and filtered through the user interface.

In addition to data exploration ReGIS aims to facilitate scenario exploration by allowing users to visually configure GIS simulations and run them on compute infrastructure. Geo-spatial input, in the form of map coordinates, can be specified by dragging and dropping items onto the map. Other parameters of the scenario can be specified using a form. Simulations can be set up to run on any available computing resource, including super computers. Results from these simulations are then loaded back into the application to be further analysed.

Embedding a simulation in the web-application involves describing the required inputs to the simulation and setting up how and where to run it. Additionally the output of the simulation needs to be described for optimal display in the application.

Further development of ReGIS will focus in making it easier to add new simulations to the system by using standards for running applications through Common Workflow Language (CWL) or Web Processing Services (WPS). As well as the addition of a system for tracking user input provenance and Visual Storytelling capabilities