

7.3 Tools That Use OSGi and/or CShell

Recently, a number of other efforts adopted OSGi and/or CShell. Among them are:

Cytoscape (<http://www.cytoscape.org>) lead by Trey Ideker, UCSD is an open source bioinformatics software platform for visualizing molecular interaction networks and integrating these interactions with gene expression profiles and other state data (Shannon, Markiel et al. 2002).

Taverna Workbench (<http://taverna.sourceforge.net>) lead by Carol Goble, University of Manchester, UK is a free software tool for designing and executing workflows (Hull, Wolstencroft et al. 2006). Taverna allows users to integrate many different software tools, including over 30,000 web services from many different domains, such as chemistry, music and social sciences. The myExperiment (<http://www.myexperiment.org>) social web site supports finding and sharing of workflows and has special support for Taverna workflows (De Roure, Goble et al. 2009). Currently, Taverna uses Raven at its core but a reimplementing using OSGi is underway.

MAEviz (<https://wiki.ncsa.uiuc.edu/display/MAE/Home>) managed by Shawn Hampton, NCSA is an open-source, extensible software platform which supports seismic risk assessment based on the Mid-America Earthquake (MAE) Center research in the Consequence-Based Risk Management (CRM) framework (Elnashai, Spencer et al. 2008). It uses the Eclipse Rich Client Platform (RCP) that includes Equinox, a component framework based on the OSGi standard. The 125 MAEvis plugins consist of 6 core plugins, 7 plugins related to the display of hazard, building, and bridges, and lifeline data, 11 network and social science plugins, and 2 report visualization plugins. Bard (previously NCSA-GIS) has 11 in core plugins, 2 relevant for networks and 10 for visualization. The analysis framework has 6 core plugins. Ogrescript has 14 core plugins. A total of 54 core Eclipse OSGi plugins are used such as org.eclipse.core*, org.eclipse.equinox*, org.eclipse.help*, org.eclipse.osgi*, org.eclipse.ui*, and org.eclipse.update* (<https://wiki.ncsa.uiuc.edu/display/MAE/OSGi+Plugins>).

TEXTrend (<http://www.textrend.org>) lead by George Kampis, Eötvös University, Hungary develops a framework for the easy and flexible integration, configuration, and extension of plugin-based components in support of natural language processing (NLP), classification/mining, and graph algorithms for the analysis of business and governmental text corpuses with an inherently temporal component (Kampis, Gulyas et al. 2009). TEXTrends recently adopted OSGi/CShell for the core architecture and the first seven plugins are IBMs Unstructured Information Management Architecture (UIMA) (<http://incubator.apache.org/uima>), the data mining, machine learning, classification and visualization toolset WEKA (<http://www.cs.waikato.ac.nz/ml/weka>), Cytoscape, Arff2xgmm1 converter, R (<http://www.r-project.org>) via iGgraph and scripts (<http://igraph.sourceforge.net>), and yEd. Upcoming work will focus on integrating the Cfindex clique percolation analysis and visualization tool (<http://www.cfindex.org>), workflow support, and web services.

Note that the Sci2 Tool uses plugins from several other efforts/tools such as the Information Visualization cyberinfrastructure (<http://iv.cns.iu.edu>), the Network Workbench (<http://nwb.cns.iu.edu>), and TEXTrend. As the functionality of OSGi/CShell-based software frameworks improves and the number and diversity of dataset and algorithm plugins increases, the capabilities of custom tools will expand.