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OSGeo
Your Open Source Compass

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Welcome from the Conference Chair

Welcome to this special edition of the OSGeo Journal, featuring selected papers from the academic track that were presented at the FOSS4G (Free and Open Source Software for Geospatial) 2011 conference in Denver.[1] The conference was the largest FOSS4G yet, with 914 attendees from 42 countries. Feedback from attendees was very positive, with the post-conference survey giving it an overall rating of 4.32 out 5. The attendance reflects the strong growth in interest in open source software that we are currently seeing in the geospatial industry.

We made a conscious effort in 2011 to enhance the academic track at the conference by providing improved publishing opportunities. We did this through publishing papers both in "Transactions in GIS" and in this edition of the OSGeo Journal. I would like to thank Rafael Moreno for leading this effort, as well as the rest of the organizers of the academic track who Rafael recognizes below.

Peter Batty, Ubisense
FOSS4G 2011 Conference Chair

[1] FOSS4G: http://foss4g.org

FOSS4G 2011 Conference Proceedings

Editorial - FOSS4G 2011 Academic Chair

Rafael Moreno
University of Colorado Denver
Department of Geography and Environmental Sciences

The growing interest in Free and Open Source Software for Geospatial applications (FOSS4G) requires specialized publication venues.

The FOSS/FOSS4G movement is attracting increasing attention from end users, developers, businesses, governments, educators and researchers around the world (e.g. Weber 2004, CRM-Reviews 2006, Faber 2007, Garbin and Fisher 2010). This attention is in part sparked by (and in turn it demands) more access to information about FOSS4G and its applications. Specialized high quality publication venues like the OSGeo Journal are critical to providing access to the latest developments, to enhancing communication, and to advancing the state of the art of FOSS4G. The importance of this role cannot be emphasized enough. Applications and studies that are not properly documented and analyzed have little or no impact on highlighting current challenges and needs for improvement, pointing to promising directions for future developments, disseminate the benefits and challenges of using FOSS4G, and promoting the use of FOSS4G in suitable applications and contexts. The FOSS4G community must keep this need in the forefront of its priorities and avoid the mistake of developing outstanding software and applications that are "best kept secrets" to most of the end users, developers, businesses, governments, educators, and researchers that can benefit from their features and development philosophy.

FOSS and FOSS4G under certain circumstances can be superior alternatives to their proprietary counterparts (Moreno-Sanchez et al. 2007, Wheeler 2007). The reasons for FOSS adoption should be based not only on their no-cost feature or the access to the source code. FOSS and FOSS4G should be evaluated on par with commercial off-the-shelf (COTS) software following the criteria suggested by Wang and Wang (2001) and Ven et al. (2008). A growing number of commercial services, studies, and resources are available to assist potential users in choosing and deploying the best FOSS/FOSS4G for their specific informational needs (e.g. Holck et al. 2005, Woods and Guliani 2005, Ven et al. 2008, The FOSS Evaluation Center[2], OpenGeo[3]). Though findings are varied as to the strengths and weaknesses of FOSS for specific contexts and purposes (Erlich and Aviv 2007, Ven et al. 2008), today it is clear that FOSS/FOSS4G not only provide healthy competition for proprietary solutions but also opportunities for mutual benefit and complementarity. There is a need to study and discuss the impacts of these interactions on advancing the current state of geospatial software, as well as on enhancing the delivery of the systems and geospatial information demanded by citizens, businesses, governments, educators and researchers around the world.

The interest in FOSS4G is reflected in the growing number of presentations and increased attendance at the annual FOSS4G international conference. The 2011 event held in Denver had over 900 participants from 42 countries, 24 workshops, and 150 presentations. The presentations and discussions made evident the speed of progress, high level of maturity and advanced capabilities of many FOSS4G projects. This issue is dedicated to papers selected from the Academic Track of this conference. These papers were reviewed and chosen for this issue by the 2011 International Scientific Committee of this track (See closing section Appendix 1).

In the first paper Butt and Li present a system that incorporates FOSS groupware and the delivery of maps in real time over the Web for enhancing public involvement in decision making in Canada.

In the second paper, Cavner et al. from Kansas in the USA describe their plans and ongoing development efforts for producing macroecology and biogeography tools dealing with large species presence data structures using the Open Geospatial Consortium Web Processing Service (WPS) specification and Quantum GIS (QGIS) as a WPS client.

In the third paper, Hollander describes how a non-hierarchical clustering algorithm (Partitioning around medoids or PAM) is used in California USA for landscape regionalization making use of GRASS[4] and R[5].

Next, Donchyts et al. from the Netherlands developed a new Application Programming Interface (API) which simplifies working with geospatial coverages as well as other data structures of multi-dimensional nature. The API is made available as a set of Open Source code libraries in C#.

In the fifth paper, Jennings describes how difficult economic times in California USA forced a community college to explore options and choose FOSS4G Remote Sensing (RS) software, Optiks[6], to teach their RS course successfully without reducing the breadth and depth of the knowledge and skills imparted in the course.

In the next paper Boerboom from the Netherlands presents the challenges and future directions for integrating web-based services from the GIS and decision sciences domains. He uses as case study the development of forest management plans for adaptation to climate change in Europe. The formulation of these plans takes place in multiple regions and requires multi-criteria evaluation of vulnerability and adaptive options.

Finally, Knudsen et al. from the Danish National Survey and Cadastre describe the geographic transformation system

[2]The FOSS Evaluation Center http://foss.technologyevaluation.com/
[3]OpenGeo: http://opengeo.org/products/suite/
[4]GRASS GIS: http://grass.osgeo.org/
[5]R Project: http://www.r-project.org/
[6]Optiks: http://opticks.org/confluence/display/opticks/Welcome+To+Opticks

used in this agency to transform Danish map projections and datums, and how it has been recently integrated into PROJ[7] the leading Open Source cartographic projections library.

The papers in this issue are part of the exponential growth in the number of studies and publications documenting applications of FOSS/FOSS4G in diverse areas of expertise and in varied technological, institutional, economic and sociocultural contexts around the world. The FOSS4G community must continue its efforts to document and give wide dissemination to these experiences and developments to advance the state of the art of FOSS4G and to help it attain the recognition and place it deserves in the Information Technology and geospatial technologies world. The existence of the OSGeo Journal plays a major role in achieving these goals.

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Appendix 1: Members of the 2011 FOSS4G Conference Academic Track (in no particular order)

Tyler Erickson Michigan Tech Research Institute, USA
Serena Coetzee University of Pretoria, South Africa
Maria Brovelli Politecnico di Milano campus Como, Italy
Helena Mitasova North Carolina State University, USA
Thierry Badard Laval University, Canada
Venkatesh Raghavan Osaka City University, Japan
Songnian Li Ryerson University, Canada
Jeff McKenna Geteway Geomatics, Canada
Rafael Moreno University of Colorado Denver, USA

[7] PROJ: http://trac.osgeo.org/proj/
[8] CRM-Reviews 2006: http://www.crm-reviews.com/50-open-source-success-stories-in-business-education-and-government
[9] Geoserver and Open Standards: http://2007.foss4g.org/presentations/view.php?abstract_id=8
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[12] Why Open Source...: http://www.dwheeler.com/oss_fs_why.html

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http://osgeo.org/journal

and ready for the future. TRLIB was only recently released under an open source license (and made available through https://bitbucket.org/KMS/trlib), but in the near future we hope to implement means for better interoperability with the more well established libraries in the open source geomatics field.

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Thomas Knudsen
National Survey and Cadastre
kms.dk
thokn AT kms DOT dk

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Proceedings Editor:
Gary Sherman, GeoApt LLC - gsherman@geoapt.com

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