Nottingham Geospatial Institute

The University of Nottingham

UNITED KINGDOM · CHINA · MALAYSIA

GRACE

world-changing research from The University of Nottingham

Opportunities in GIS (using open source, open data and open standards)

Suchith Anand

EMBRACE East Midlands Business and Research satellite Applications Centre of Excellence

ingenuity

HIGHER EDUCATION FUNDING COUNCIL FOR ENGLAND hefce

SABRE

EUROPEAN UNION Investing in Your Future

European Regional Development Fund 2007-13


Open Nottingham
Knowledge without borders
www.nottingham.ac.uk/open
The University of Nottingham
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There are many dimensions to “Open”

- Open source software.
- Open data.
- Open standards.
- Open access to research publications.
- Open education resources

But fundamentally it is based on Open Principles

Mission

Making Geospatial Science and education accessible to all

"Geo for All"

Why is GIS important?

Kibera , Kenya

http://www.flickr.com/photos/8485582@N07/7365580810

Dharavi, Mumbai

http://www.flickr.com/photos/56685562@N00/2340042701

GLOBAL URBAN PROBLEMS: access to water, sanitation, traffic congestions, economic sustainability, citizens' health, impact on environment …

Mapping is a critical component to help understand and develop solutions for urban growth problems

Proprietary software tools are very expensive (hence unavailable) for economically poor countries and communities worldwide

GIS tools play a key role in helping find solutions to global societal challenges

Social Responsibility

Making resources including software and data openly available offers an opportunity for knowledge to be shared widely so as to increase learning opportunities.

Example – Collaborating with educational initiatives like gvSIG Batoví

https://www.youtube.com/watch?v=orwN9K07XPo

gvSIG BATOVÍ

MTOP Dirección Nacional de Topografía · gvSIG association · Plan Ceibal

1. What is gvSIG Batoví?

Plan Ceibal

- First adoption in the world of the OLPC initiative at a National level
- Every primary school student in Uruguay has an XO, and more than 98% of all students have Internet connectivity at home, provided through Plan Ceibal
- It also includes secondary schools now

gvSIG BATOVÍ

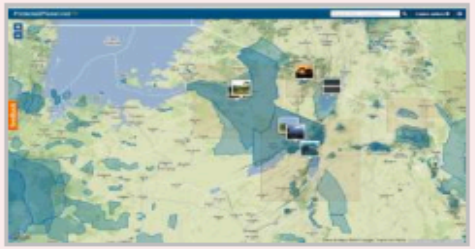
For details contact:
Sergio Acosta y Lara
sacosta@dntopografia.gub.uy
Alvaro Anguix
aanguix@gvsig.com

For teachers

- Guide "GIS in schools"
- EduGIS Working Group
- Junior high school
- High school
- EduGIS knowledge base
- Workshops
- Discussion forum

Mapzone

Protected Planet



Guide "GIS in schools"

The culmination of the project is a book EDUGIS Academy GIS in school. Guidebook for biology, geography and science teachers.

You can download a guidebook here.

Lesson plans along with work cards and other additional materials are available below:

Junior high school

High school

Download the Table "GIS Skills"

Project implements: UNEP United Nations Environment Programme GRID Warszawa Global Resource Information Database
Project partners: MSCDN Høgskolen i Gjøvik
norway grants eea grants
Project implemented with support from Iceland, Liechtenstein and Norway through the EEA Financial Mechanism of the European Economic Area and Norwegian Financial Mechanism under the Scholarship and Training Fund

Thanks to Elżbieta Wołoszyńska-Wiśniewska and colleagues at UNEP-GRID), Warsaw

"Geo for All" started from very humble beginnings

Aim – Build research and teaching infrastructure worldwide

Problem – No initial funding!

Biggest Strength – amazing support from colleagues and students

June 2010 Open Source Geospatial Lab founding meeting at UoN

OSGeo-ICA-ISPRS-International Labs

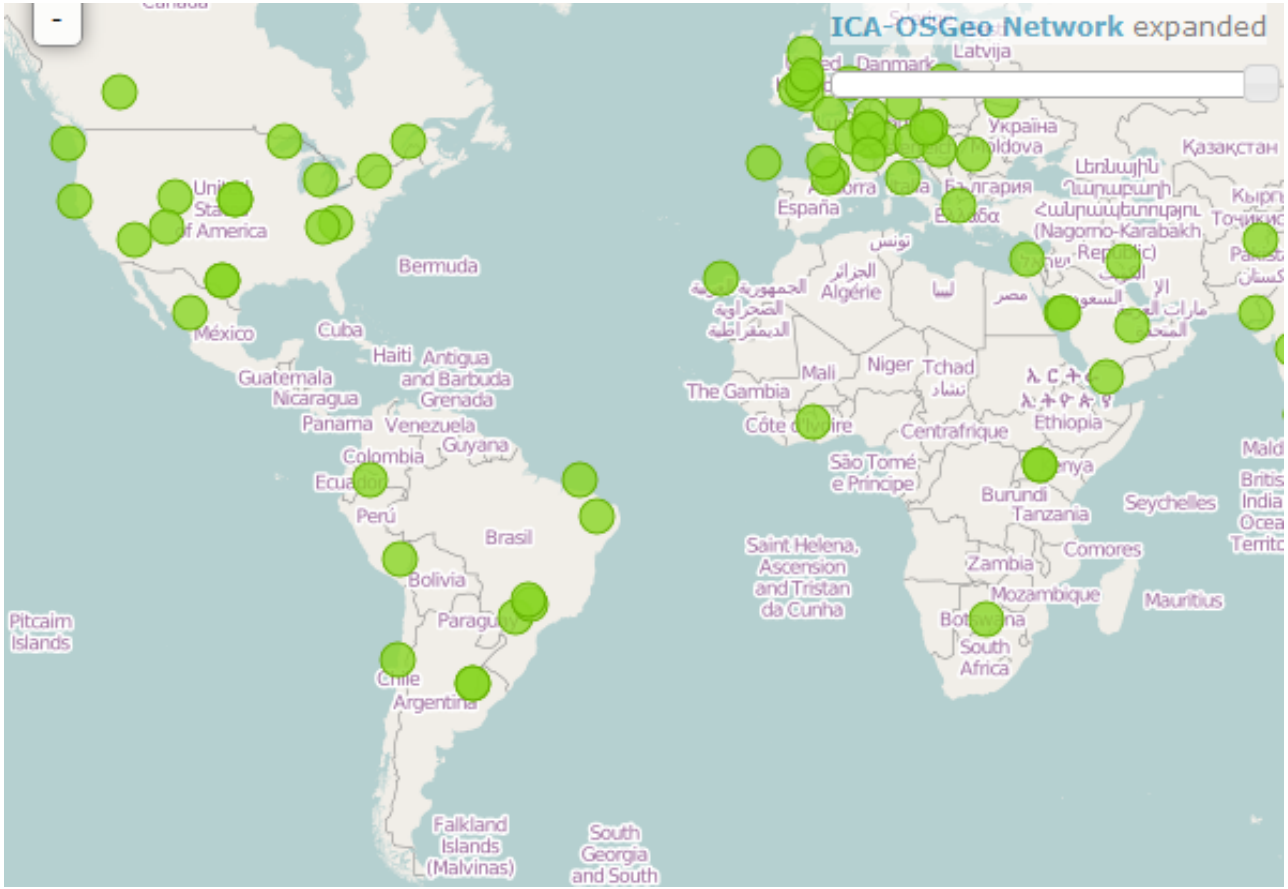
www.geoforall.org

OSGeo

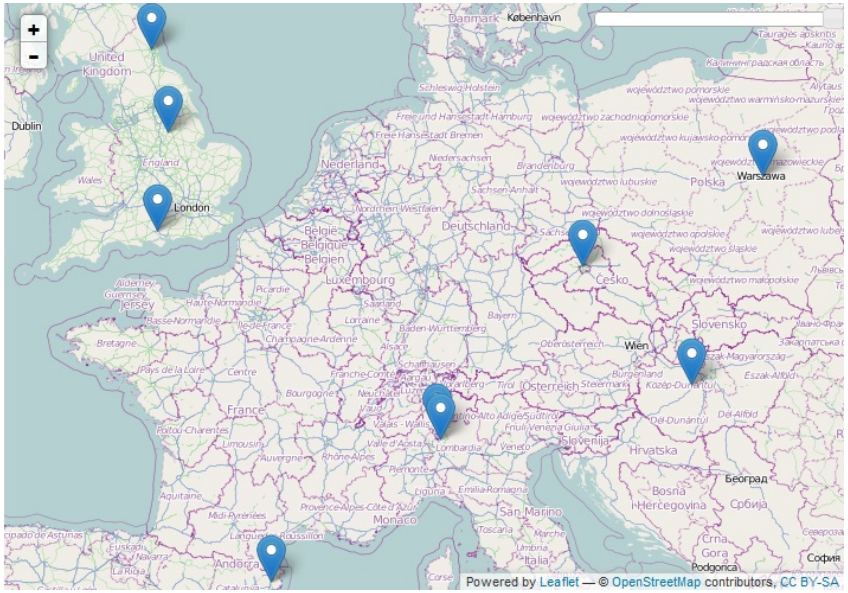
ICA ACI

ICA-OSGeo MoU

isprs
Information from Imagery



"Geo for All" Education Initiative



Distribution ICA-OSGeo labs established in Europe
Image : OSGeoREL @NCSU (6 months back)

Will be establishing over 500 labs in universities worldwide by 2018

ICA-OSGeo MoU in Sep 2011

102 labs established worldwide as of today

North America – over 20 labs
Europe – over 40 labs
South America – 9 labs
Africa – 4 labs
Asia – 15 labs
Australia - 2 lab

News
Past events
Training
Training resources
Webinars

Advisory board

The Advisory Board for the ICA-OSGeo labs initiative are as follows:

- Professor Georg Gartner (ICA President & co-chair)
- Jeff McKenna (OSGeo President & Co-chair)
- Professor Josef Strobl (Austria)
- Professor Marguerite Madden (USA)
- Professor Mike Jackson (UK)
- Sven Schade (Germany)
- Gavin Fleming (South Africa)
- Sergio Acosta y Lara (Uruguay)
- Dr Chris Pettit (Australia)
- Professor Venkatesh Raghavan (India/Japan)
- Geoff Zeiss (Canada)
- Jeroen Ticheler (Italy)
- Phillip Davis (USA)
- Arnulf Christl (Germany)
- Professor Maria Brovelli (Italy)
- Dr Rafael Moreno (USA)

78 labs worldwide
as of 25th May, 2014

OSGeo

ICA ACI

Who are we?

Colleagues from

- Universities
- Government organisations
- Industry

Nottingham Geospatial Institute

We are Global community

The University of Nottingham

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开放地理空间实验室 Open Geospatial Laboratory of IGA

使用SRTM数据制作丝绸之路地形图

Lab News

OpenSource GIS Summer School

Zhijie Zhang
Room 443, Building 8
Dept. of Epidemiology and Biostatistics
School of Public Health
Fudan University
Shanghai, China
Tel.:+86-21-54237410
Email: epistat@gmail.com

Faculty of Architecture, Building and Planning

Open Source Geospatial Laboratory

ICA-OSGeo laboratory at University of Melbourne

The University of Melbourne is home to Australia's first Open Source Geospatial Laboratory. The international open source geospatial laboratory is a joint initiative of the International Cartographic Association (**ICA**) and the Open Source Geospatial Foundation (**OSGeo**). This Australian facility will be part of a global network of open geospatial research labs known as **ICA-OSGeo labs**. Currently there are 22 ICA-OSGeo labs operating **globally**.

"The University of Melbourne is one of the top research universities in the world and has been a pioneer in Australian geospatial science research. We are delighted to collaborate with the ICA and OSGeo to create this opportunity for our students and researchers, which will encourage open geospatial teaching and related research in other universities"

- Professor Tom Kvan, Dean of the Faculty of Architecture, Building and Planning.

Vision Statement

The ICA-OSGeo lab at the University of Melbourne will promote access and use of geospatial data for evidence-based research and decision-making. This will be achieved by the provision and sharing of data and tools supporting urban issues, with a capacity for extended collaboration across multiple disciplines.

Open Source Geospatial Lab Newcastle

Newcastle University

Open Source Geospatial Lab Newcastle

The Open Source Geospatial Research and Education Laboratory (osgeolab) is located at the School of Civil Engineering and Geosciences at Newcastle University in the North of England. The lab is run by the Geospatial Engineering Research Group but draws heavily on interactions with other research groups and partners within the University, nationally and internationally.

Our mission, as part of the OSGeo worldwide network, is to develop collaboration opportunities for academic, industrial,and government organizations in open source GIS software and data.

Find out about our Open Source Geo Research and development projects, our training and education programmes in OSGEO and relevant publications. Other resources and downloads that we release as Open Source can be found in the resources section.

OSGeo/ICA Memorandum of Understanding

Nottingham Geospatial Institute

We are Multi disciplinary

The University of Nottingham

Open source Geospatial Lab KU

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Project Documents
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Recent site activity

Recent site activity
Home
edited by Shashish Maharjan(civil)
View All

Home

Welcome to Opensource Geospatial lab Kath University

First Open Source Geospatial Laboratory in Nepal is located at Kathmandu University, Departr Engineering. Our mission is to follow OSGeo/ICA Memorandum of Understanding by supportir geospatial software technologies, training and expertise.

The lab is run by members of Civil and Geomatics Engineering.

Our goal is to provide training, education and to support development of open source geospati geospatial data. We work to create opportunities for academia, industry and government in op Labs mission "Making geospatial education and opportunities accessible to all".

Find more on OSGeo Labs mission and resources.

Tasks & Actions
Action items

Recent Updates

Calen
Import

Tutor

Geodesy and Geomatics Engineering

UNB

University of New Brunswick, Fredericton, NB, Canada

Back to Emmanuel Stefanakis' page

Geo For All

Dr. Stefanakis' research team is proud to be part of ICA-OSGeo Labs by supporting the mission: "Making geospatial education and opportunities accessible to all." This page provides access to a list of resources combining the potential of e-learning tools and open source geospatial software to strengthen education and research in GIScience.

Teaching Resources

Title	**Geospatial Web - Course Syllabus (2 courses)**
Type	Course syllabus description in paper form.
Resources	Stefanakis, E., 2013. Introducing Geographers to Web Mapping and Geospatial Web. In the Proceedings of the Annual Canadian Institute of Geomatics Conference, Toronto, Canada.

Title	**Map Mashups and Web Mapping Services (Lab Exercises)**
Type	Lab Exercises (samples)
Resources	McGrath, H., and Stefanakis, E. 2013. Map Mashups and Web Mapping Services (Lab Exercises). GGE, University of New Brunswick. Funded by UNB - TLP Fund.

GIS&T Applications

Title	**"Troy is ours – How on earth could Clytaemnestra know so fast?"**
Application URL	http://gaia.gge.unb.ca/troyisours
Resources	Tienaah, T., and Stefanakis, E., 2014. "Troy is ours – How on earth could Clytaemnestra know so fast?". In the Proceedings of the 17th AGILE Conference on Geographic Information Science, Castellon, Spain. (pdf)

Title	**Historical Maps of Grand Lake Meadows, New Brunswick, Canada**
Application URL	http://gaia.gge.unb.ca/glm/en/index_en.html
Resources	McGrath, H., 2013 (MScE): Historical Maps of Grand Lake Meadows.

Title	**Historical Maps of Fredericton, New Brunswick, Canada**
Application URL	http://gaia.gge.unb.ca/wsp/maps/index.html

Hochschule für Technik Stuttgart

deutsch | eng

Hochschule
Studienbereiche
Architektur und Gestaltung
Bauingenieurwesen
Bauphysik
Informatik
Mathematik
Vermessung
Wirtschaft
Studium
Studierendenförderung
Einrichtungen
International
Unternehmenskontakte
Forschung
Aktuell
Quicklinks

Kontakt | Impressum
Moodle | LSF | Sitemap

Webmail:
Zimbra (Oracle Beehive)
OWA (MS Exchange)

myHFT:
Studierende | Lehrende
Mitarbeiter | Externe

Bachelor-Studiengang Informationslogistik
Bachelor-Studiengang Vermessung und Geoinformatik
Master-Studiengang Photogrammetry and Geoinformatics
Beschreibung / Description
Einrichtungen und Labore
Geodätisches Messlabor
Labor für Geodätische Datenverarbeitung
Labor für Geoinformatik
Labor für Ingenieurmesstechnik
HFT ICA-OSGeo-Lab
Labor für Interpretation und Messung bildgebender Sensoren (LIMES)

Facilties and Laboratories

HFT ICA-OSGeo-Lab
Labor für interoperable, quelloffene Geoinformatikanwendungen, Open Data und Standards <<

Laborleiter:
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Telefax +49 (0)711 8926 2556
franz-josef.behr@hft-stuttgart.de
Skype / Twitter: fjbehr

Laborbeschreibung

Das Labor untersucht und fördert die Nutzung quelloffener Geoinformatikanwendungen und frei verfügbarer Geodaten und ist konzipiert als flexible Ergänzung zu den Standard-GIS-Installationen in den Räumen des Rechenzentrums und der Fakultät. Es nutzt einen zentralen Server, auf dem die Softwarepakete sowie Arbeitsumgebungen für die studentische Ausbildung sowie Forschungsaufgaben eingerichtet werden.
Für den Einsatz in studentischer Lehre und Praxis werden die vorhandenen PC-Räume des Informationszentrums als Arbeitsplätze genutzt.

Der Einsatz in der Lehre geschieht in folgenden Studiengängen und Modulen:

- Bachelor Vermessung und Geoinformatik >>
  Module Informationstechnologien für raumbezogene Daten, Ausgewählte Kapitel der Geoinformatik, Integriertes GIS-Projekt sowie Abschlussarbeiten
- Bachelor Informationslogistik >>
  Modellierung, Technisches Kommunikationsmanagement sowie Abschlussarbeiten
- Master Photogrammetry and Geoinformatics >>
  Scientific Skills and Media Competence, Customisation, Internet GIS, Visualisation, Geodata: Capture, Sources and Standards sowie Abschlussarbeiten
- Master Vermessung >>
  Masterarbeiten

SVEUČILIŠTE U ZAGREBU
GEODETSKI FAKULTET
UNIVERSITY OF ZAGREB
FACULTY OF GEODESY

You are not logged in. (Login)
English (en)

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Open Source Geospatial Lab at University of Zagreb, Faculty of Geodesy
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Education and Training
Collaboration
People
Publications
Research
Resources

Administration
Book administration
Print book
Print this chapter

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OSGL_eng
Courses

Course categories

Open Source Geospatial Lab at University of Zagreb, Faculty of Geodesy

About Us

First Open Source Geospatial Laboratory in Croatia is located at University of Zagreb, Faculty of Geodesy. Our mission is to follow OSGeo/ICA Memorandum of Understanding by supporting development of open-source geospatial software technologies, training and expertise.

The lab is run by members of Institute for Geomatics and Institute for Cartography and Photogrammetry and is strongly connected with partners (see Collaboration and People).

Our goal is to provide training, education and to support development of open source geospatial software as well as free geospatial data. We work to create opportunities for academia, industry and government in open source GIS to support OSGeo Labs mission "Making geospatial education and opportunities accessible to all".

Find more on OSGeo Labs mission and resources.

OSGeo/ICA Memorandum of Understanding

The Open Source Geospatial Foundation (OSGeo) and the International Cartographic Association (ICA) have signed a Memorandum of Understanding for developing global open source GIS software and data collaborations for academic, industrial, and government organizations. The MoU aims to provide expertise and support for the establishment of Open Source Geospatial Laboratories and Research Centres across the world for development of open-source geospatial software technologies and training. Laboratories are being established in Asia, Europe, Africa, the Americas and Australasia which will act as nodes for future expansion of the worldwide network.

Global Environment, Stakeholder's Profile and Corporate Governance in Geodesy

1st International Interdisciplinary Scientific Conference
October 3-5, 2014
University of Zagreb, Faculty of Geodesy

Upcoming events

Sjednica Fakultetskog vijeća
Tomorrow, 12:00

Sjednica Fakultetskog vijeća
Thursday, 11 September, 12:00

Go to calendar...

Nottingham Geospatial Institute

We are all passionate about GIS

The University of Nottingham

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Malaysia Campus

Home | Study | Student life | Schools and departments | Research and bus

University of Nottingham, Malaysia > School of Geography > Research > Geospatial Science > OSGEO lab

School of Geography

- Welcome
- Courses
- Careers
- Research
- Water Resources
- Tropical Conservation Ecology
- Geospatial Science
- Research Students
- Student experience
- Make an enquiry
- People

OSGEO lab

The Open-Source Geospatial Research lab was established late 2011 following the MoU signed between International Cartographic Association (ICA) and OSGEO foundation. It was the first of its kind in Southeast Asia and is playing its active role in promoting the similar establishment in the region.

Activities

- Researches on development and deployment of open-source geospatial resources in various applications.
- Develop open-source geospatial material for education and training.
- Promote open-source geospatial technologies applications in Malaysia and the region.

Current projects

- Deployment of OSGEO tools in teaching and learning (on-going, School of Geog
- Remote sensing image understanding services on cloud-computing platform (or
- Remote sensing data synergy for monitoring large-scale construction projects (
- Terra SAR-X for monitoring large-scale construction projects (on-going, DLR)
- Crowd-sourcing interactive quality data assessment (on-going, CFFRC)
- Unmanned Aerial Vehicle (UAV) intercropping mapping (on-going, CFFRC)
- Urban growth monitoring with multi-scale remote sensing approach (completed
- Multi-scale remote sensing disaster recovery monitoring (completed, GeoGRID,

ICA-OSGeo OSGL at ETH Zurich

Home | Team | Training | Research | Cooperation | Contact

Welcome to ICA-OSGeo Open Source Laboratory at ETH Zurich

Quality open source training and software for Cartography and GIS

The Open Source Geospatial Laboratory (OSGL) at ETH Zurich is a joint initiative of the International Cartographic Association (ICA) and the Open Source Geospatial Foundation (OSGeo).

In September 2011, the International Cartographic Association (ICA) and the Open Source Geospatial Foundation (OSGeo) signed a Memorandum of Understanding (full text here) with the aim of developing on a global basis collaboration opportunities for academia, industry and government organizations in open source GIS software and data.

The OSGL at ETH Zurich is actively implementing this memorandum with the vision to support the development of open-source geospatial software technologies, training and expertise. It also aims to provide support for increasing the number and quality of open source teaching and training materials for Cartography and GIS. As a proud member of the ICA-OSGeo Network, the ETH Zurich OSGL is focusing on Education, Open Geodata and on Cartographic and Geospatial Research. Additionally we are participating in the the ICA Commission on Open Source Geospatial Technologies and through the Institute of Cartography and Geoinformation we are an associate member of the Open Geospatial Consortium.

Acknowledgements

The ICA-OSGeo Open Source Geospatial Laboratory is kindly integrated in the Institute of Cartography and Geoinformation.

Links

ICPAC

IGAD CLIMATE PREDICTION AND APPLICATIONS CENTER

"Fostering Climate Prediction and Applications"

Home | Products | Data Portal | WMO RCC | MESA | African Drought Monitor | Applications | About Us | Chec

ICPAC PRODUCTS AND BULLETIN

- 10 day Bulletin
- Monthly Bulletin
- Climate Watch
- Newsletter

STATUS OF THE CLIMATE

- WMO Update: Prepare for El Niño
- EL NIÑO/LA NIÑAUPDATE
- High Impact Weather
- El Nino Southern Oscillation Watch (EN)
- El Nino Southern Oscillation Watch (FR)
- Heavy Rainfall/ Flood Risk
- ITCZ/ITD
- SST Indices
- ITCZ/ITD

FORECAST

BACKGROUND

In 1989, twenty four countries in Eastern and Southern Africa established a Drought
Nairobi (the DMCN) and a sub centre in Harare (Drought Monitoring Centre Harare
weather related disasters. In October 2003, the Heads of State and Governments of th
Development (IGAD) held their 10th Summit in Kampala, Uganda, where DMCN w

NCSU OSGeoREL

Overview | Projects | Software | Courses | Publications | Contact | About

Open Source Geospatial Research and Education Laboratory

The NCSU OSGeo Research and Education Laboratory (NCSU OSGeoREL) is located at the North Carolina State University, Center for Geospatial Analytics in Raleigh, NC, USA. We are part of the worldwide network of ICA-OSGeo laboratories following the motto Geo for All. As one of the founding laboratories we are the central node for North America.

Our mission is to develop collaboration opportunities for academic, industrial, and government organizations in free and open source GIS software and data.

Follow us on Google+, YouTube and GitHub.

Offered courses

Through our GIST program we offer interdisciplinary, graduate level courses on geospatial analysis and modeling. Students are taught the fundamentals and methods in a software independent way by using both open source and proprietary tools. Go to courses and find out more.

People

Faculty:
Helena Mitasova, Laura Tateosian, Ross Meentemeyer (home page at FER)
Graduate students and visiting scholars:
Anna Petrasova, Vaclav Petras, Emily Russ, Brendan Harmon, Keren Cepero, Nathan Lyons, Paul Paris
Former graduate students and visiting scholars:
Eric Hardin, Katie Weaver, Margherita di Leo, Eva Stopkova

If you want to become a member of NCSU OSGeoREL or you feel as a part of it and you are not listed here, please do not hesitate to contact us.


FOSS4G
NOTTINGHAM 2013
17 - 21 September
OSGeo
Geo For All
Met Office
Ordnance Survey
Sopra
Google
FOSS4G


FOSS4G
NOTTINGHAM 2013
17 - 21 September
OSGeo
Geo For All
Met Office
Ordnance Survey
Sopra
Google
ENVITIA


FOSS4G
NOTTINGHAM 2013
Geo For All


FOSS4G
OSGeo
Geo For All

Nottingham Geospatial Institute

It is all about learning and sharing

The University of Nottingham

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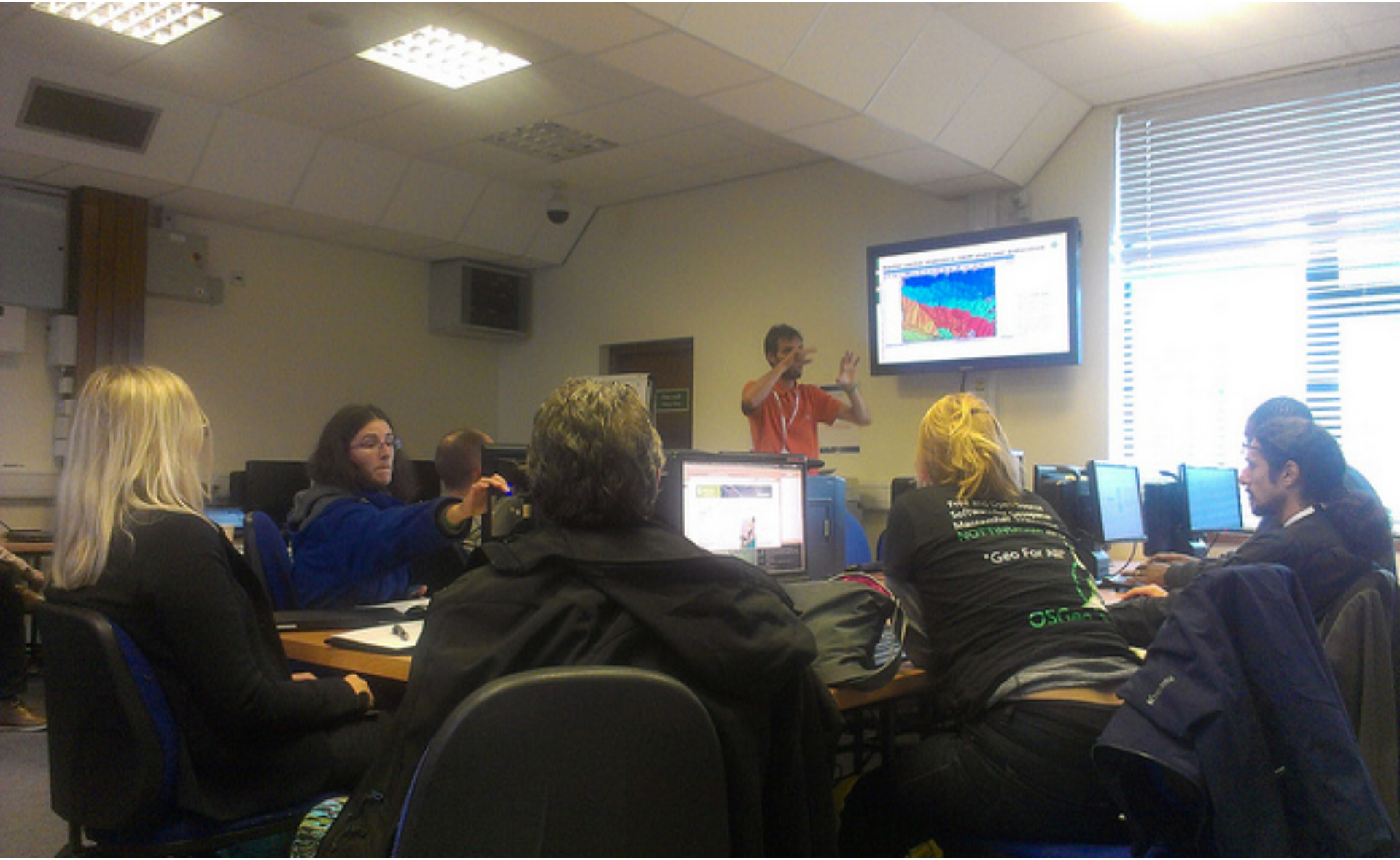

Nottingham Geospatial Institute

Open GIS Summer School in Girona

The University of Nottingham

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Nottingham Geospatial Institute

And empowering the next generation

The University of Nottingham

We also love giving certificates

Open Geospatial Education & Research

sci·ence [sahy-uhns] Show IPA
noun
1. a branch of knowledge or study dealing with a body of facts or truths systematically arranged and showing the operation of general laws: *the mathematical sciences.*
2. systematic knowledge of the physical or material world gained through observation and experimentation.
3. any of the branches of natural or physical science.
4. systematized knowledge in general.
5. knowledge, as of facts or principles; knowledge gained by systematic study.

EXPAND

Ability for showing the operation of general laws is fundamental for scientific research

Geospatial Standards (for ex. OGC spec.)

OGC®
Open Geospatial Consortium, Inc.

Standards
- OpenGIS® Standards
  - Catalogue Service
  - CityGML
  - Coordinate Transformation
  - Filter Encoding
  - Geographic Objects
  - Geography Markup Language
  - Geospatial eXtensible Access Control Markup Language (GeoXACML)
  - GML in JPEG 2000
  - Grid Coverage Service
  - KML
  - Location Services (OpenLS)
  - Observations and Measurements
  - Sensor Model Language
  - Sensor Observation Service
  - Sensor Planning Service
  - Simple Features
  - Simple Features CORBA
  - Simple Features OLE/COM

Open Data

data.gov.uk BETA
Opening up government

OpenStreetMap
The Free Wiki World Map

Search Where am I?
Go
examples: 'Alkmaar', 'Regent Street, Cambridge', 'CB2 5AQ', or 'post offices near Lünen' more examples...

OpenStreetMap is a free worldwide map, created by people like you.

The data is free to download and use under its open license. Create a user account to improve the map.

Maturity of open source software (for ex. OSGeo stack)

OSGeo Projects

Web Mapping
- deegree
- Mapbender
- MapBuilder
- MapGuide Open Source
- MapServer
- OpenLayers

Desktop Applications
- GRASS GIS
- OSSIM
- Quantum GIS
- gvSIG

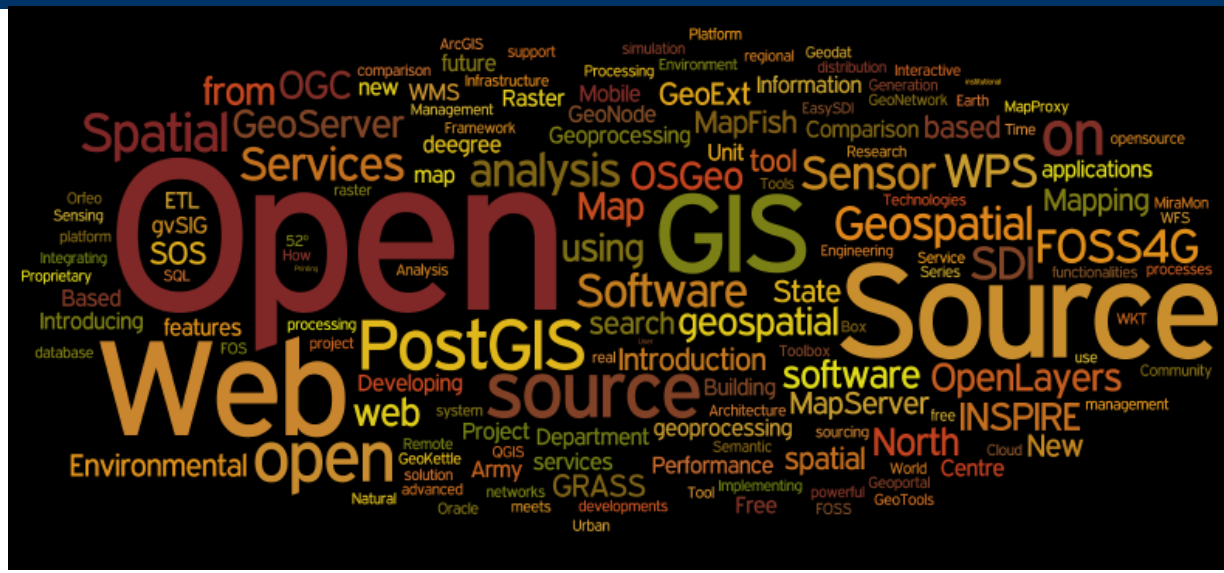
Geospatial Libraries
- FDO
- GDAL/OGR
- GEOS
- GeoTools
- MetaCRS

Metadata Catalog
- GeoNetwork

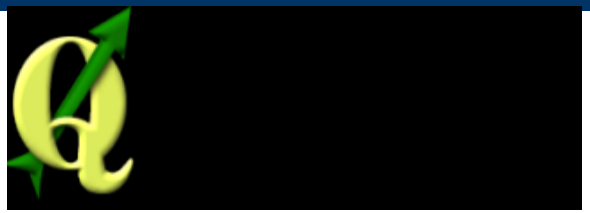
Other Projects
- Public Geospatial Data Education and Curriculum

Project in incubation

Main Message



Today the question is no longer if FOSS/FOSS4G are mature or capable, but how to take advantage of their features and development philosophy to deliver the systems and geospatial information demanded by citizens, businesses, governments, educators and researchers around the world.

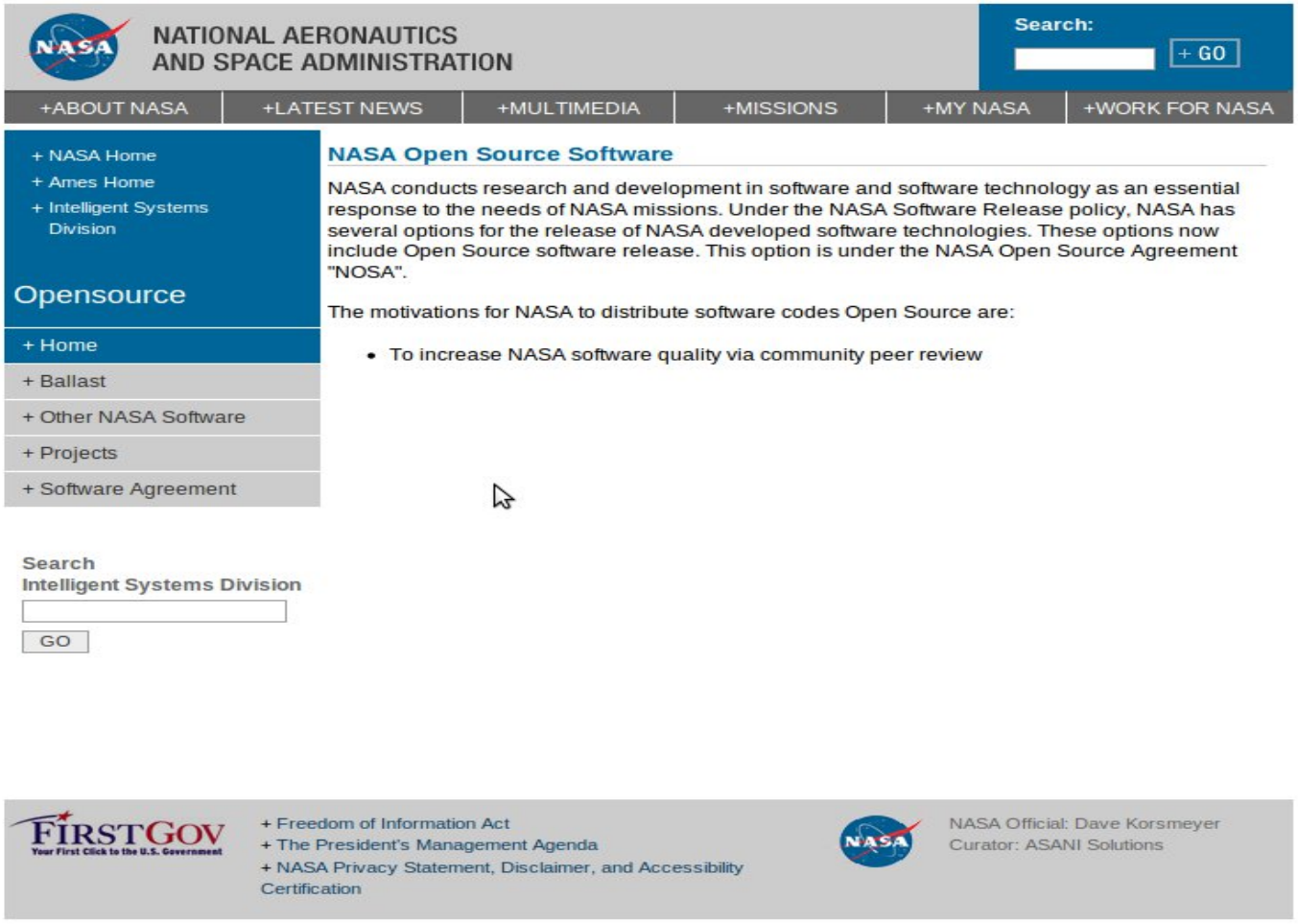


2. For almost every geospatial software need and niche (e.g. desktop GIS, spatial extensions to Database Management Systems, WebGIS, code libraries, etc…) there is at least one mature FOSS4G project with a well-documented record of successful application in diverse contexts.

. Several myths and misunderstanding about FOSS/FOSS4G are not true such as:

- "FOSS4G is not ready for the desktop/end user, it is only good for backend/developer applications"
- "There is no support" "It is difficult to learn and there are no education resources".
- "It is not good for mission-critical applications"
- "It can't be that good if it is free (no cost)"

Open Source – Increasing software quality



Open Source Software

Source code remains in the public domain free for all to use, change and (re)distribute

Development done in public usually by a community (distributed, informal team of developers)

Free and Open Source Software

- Free Software refers to freedom, not price.
- It means that the program's users have the freedom to run the program for any purpose, access the code to study how it works and change it, redistribute copies, and redistribute copies of modified versions of the software.
- Software must offer more than just access to the source code, it must comply with 10 criteria listed in the Open Source Initiative.

GNU Project (http://www.gnu.org/philosophy/free-sw.html)
Open Source Initiative (http://www.opensource.org/docs/osd)

- FOSS/FOSS4G is **not new nor rare…**
- FOSS movement has a history of 20-40 years.

1991

1995

GRASS GIS

http://grass.osgeo.org/

Early 1980's

- Up to December of 2011 the following FOSS websites contained …

  Freecode: 45,000 projects (http://freecode.com)

  Sourceforge: 326,613 projects (http://sourceforge.net)

- Sourceforge reported **4 million downloads** in one day.

- According to Sourceforge the most popular project (eMule http://sourceforge.net/projects/emule/) has been downloaded **600 million** times.

FreeGIS.org
(http://freegis.org)

Open Source GIS
(http://opensourcegis.org)

contain **355 FOSS4G projects.**

- There is a mature FOSS4G project for almost every geospatial need and niche.

FOSS4G Resources and Education

- There is an increasing number of commercial support services, on-line tutorials, books, and education resources to help FOSS/FOSS4G users to choose the right software and use it.

(Holck et al. 2005, Woods and Guliani 2005, Ven et al. 2008, **The FOSS Evaluation Center** http://foss.technologyevaluation.com/, OpenGeo http://opengeo.org/products/suite/
OSGeo Education and Curriculum http://www.osgeo.org/education http://www.osgeo.org/educational_content
OSGeo Live http://live.osgeo.org/es/index.html

OSGeo Live

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Welcome to OSGeo-Live 7.9

OSGeo-Live is a self-contained bootable DVD, USB thumb drive or Virtual Machine based on Xubuntu, that allows you to try a wide variety of open source geospatial software without installing anything. It is composed entirely of free software, allowing it to be freely distributed, duplicated and passed around.

It provides pre-configured applications for a range of geospatial use cases, including storage, publishing, viewing, analysis and manipulation of data. It also contains sample datasets and documentation.

To try out the applications, simply:

1. Insert DVD or USB thumb drive in computer or virtual machine.
2. Reboot computer. (verify boot device order if necessary)
3. Press "Enter" to startup & login.
4. Select and run applications from the "Geospatial" menu.

Many applications are also provided with installers for Apple OSX and Microsoft Windows.

Quick Starts

- Getting started with the OSGeo-Live DVD
- Change language or keyboard type
- Install OSGeo-Live on your hard disk
- Run OSGeo-Live in a Virtual Machine
- Create an OSGeo-Live bootable USB thumb drive

Presentation

http://live.osgeo.org/en/index.html

Thanks to OSGeo Live team

Credits

Developers and Translators

Activity Workshop
Alexander Kleshnin
Andry Rustanto
Assumpció Termens
Christophe Tufféry
Denis Rykov
Elena Mezzini
Frank Gasdorf
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Mario Andino
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Pasquale Di Donato
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Trevor Wekel

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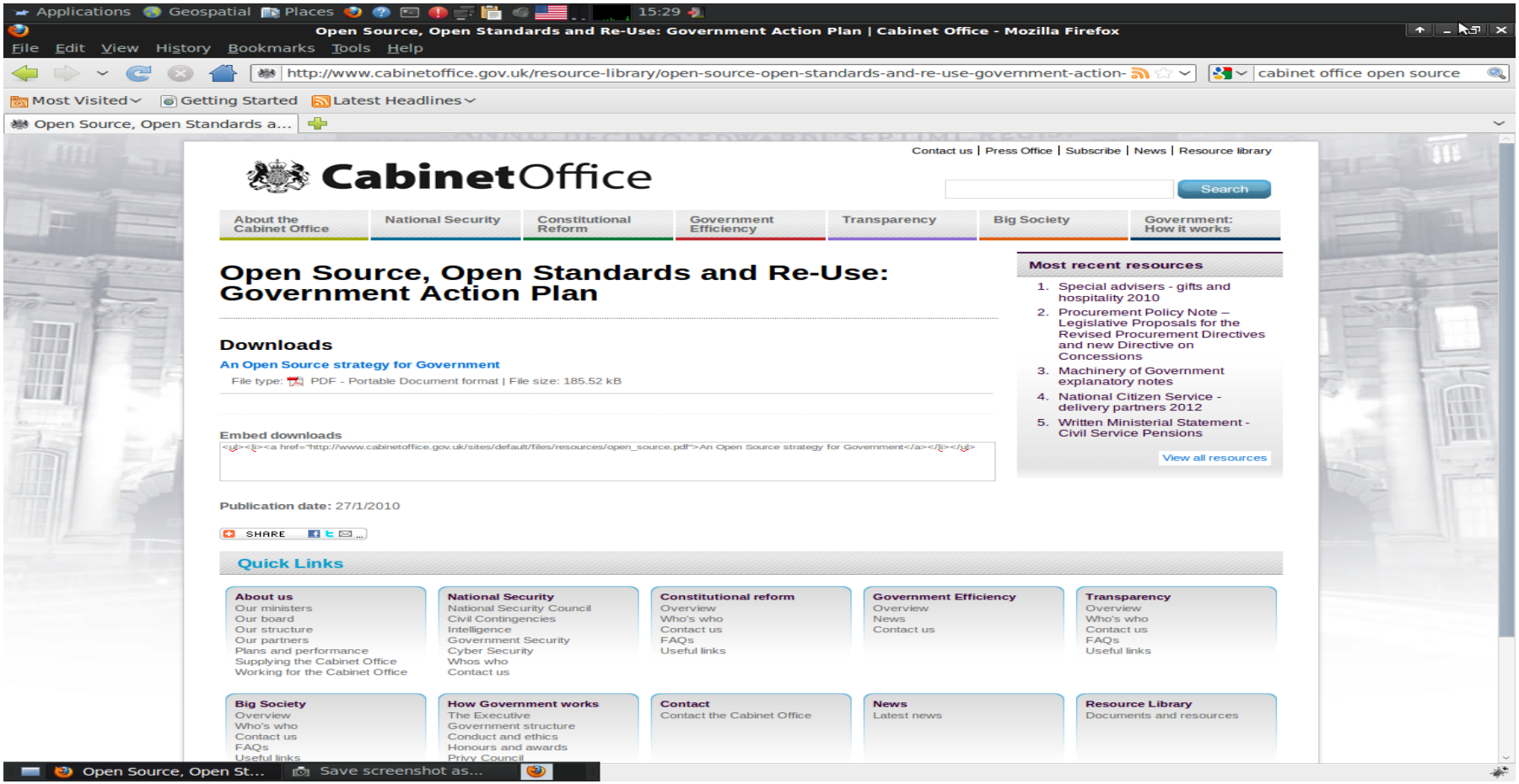
Andrea Yanza
Argyros Argyridis
Bu Kun
Daria Svidzinska
Edgar Soldin
Evgeny Nikulin
Graid Fenoy
Hyeyeong Choe
Javier Sánchez
Jorge Arévalo
Lars Lingner
Marco Curreli
Mauricio Miranda
Nacho Varela
Patric Hafner
Roald de Wit
Sergey Grachev
Steve Lime
Valenty González

Alexander Bruy
Andrey Syrokomskiy
Ariel Núñez
Cameron Shorter
David Mateos
Eike Hinderk Jürrens
Fran Boon
Grigory Rozhentsov
Ian Edwards
Jesús Gómez
Jorge Sanz
Luca Delucchi
Marco Puppin
Mauricio Pazos
Nadila Gorash
Paul Meems
Roberta Fagandini
Sergio Baños
Takayuki Nuimura
Vera

Core team: Angelos Tzotsos, Cameron Shorter, Hamish Bowman, Alex Mandel and Brian Hamlin.

Open Source strategy for the UK government (Jan 2010)



https://www.gov.uk/government/publications/open-source-open-standards-and-re-use-government-action-plan

Government bodies must comply with Open Standards Principles

1 November 2012

From today all government bodies must comply with Open Standards Principles, an agreed set of standards to make our IT more open, cheaper and better connected, Minister for Cabinet Office, Francis Maude said today.

The Open Standards Principles have been developed following the public consultation 'Open Standards: Open Opportunities – flexibility and efficiency in Government IT' which took place from February to June this year. The principles will help Government to deliver more innovative IT services and further drive savings and encourage more competition for government contracts.

There has been overwhelming support from the public and the IT community for setting an open standards policy for software interoperability, data and document formats:

- nearly 70 per cent of respondents believe the principles would improve innovation, competition and choice in the provision of government services; and
- over 70 per cent agree that they would help improve value for money.

Francis Maude said:

"We know that there are more real savings to be made in Government IT contracts – in the first half of this year, we have already saved £409 million on ICT services."

"Government must be better connected to the people it serves and partners who can work with it - especially small businesses, voluntary and community organisations. Having open information and software that can be used across government departments will result in lower licensing costs in government IT, and reduce the cost of lock-in to suppliers and products.

"It is only right that we are encouraging competition and creating a level playing field for all companies to ensure we

Related links

Francis Maude speech at an event for IT professionals

Related News and Media

Liam Maxwell engaged by Efficiency and Reform Group

ICT Strategy Strategic Implementation Plan to deliver savings of over a billion pounds

New government Chief Information Officer announced

CloudStore opens for business

Cabinet Office and Oracle sign deal to save £75 million for taxpayers

View all news

Most recent resources

1. Taking account of bidders' past performance
2. List of strategic suppliers
3. Open Standards Consultation responses
4. Open Standards Consultation documents
5. Charitable Incorporated Organisation (CIO) – Secondary Legislation before Parliament

Open principles is now implemented by the UK Government and delivering huge cost savings for government

£409 million in the first half of 2013 alone

http://www.cabinetoffice.gov.uk/news/government-bodies-must-comply-open-standards-principles

Why Geospatial Open Standards?
Benefits of Interoperability ....

- Easier access to multiple online info and data sources and services.

- Use and reuse different vendor solutions.
- Reduce deployment costs by reusing information from other communities.
- Rapidly mobilize new capabilities (plug and play).
- Meet requirements for citizen access.
- Foundation for interoperable service networks.
- Standards reduce risk and costs.

Create a common picture of reality

OGC Standards (30+)

- **Encodings**
  - GML
  - SLD
  - SensorML
  - CityGML
  - WMC
  - O&M
  - Filter Encoding
  - KML
  - Symbology Encoding
  - GML in JPEG 2000
  - .....
- **Data Services**
  - Sensor Observation Service
    Coverage Service
  - Web Feature Service
  - Web Map Service ..
- **Catalogue Services**
  - Catalogue Service
- **Processing Services**
  - Coordinate Transformation Service
  - Web Processing Service
- **Portrayal Services ...**

OGC

Resources to Explore and Learn about OGC Open Standards

Ope nGeospatial e-Learning (https://github.com/opengeospatial/e-learning/wiki)
"The Goal of the OGC E-Learning program is to coordinate and provide educational materials that can support adoption of OGC standards and professional (skills) assessment".

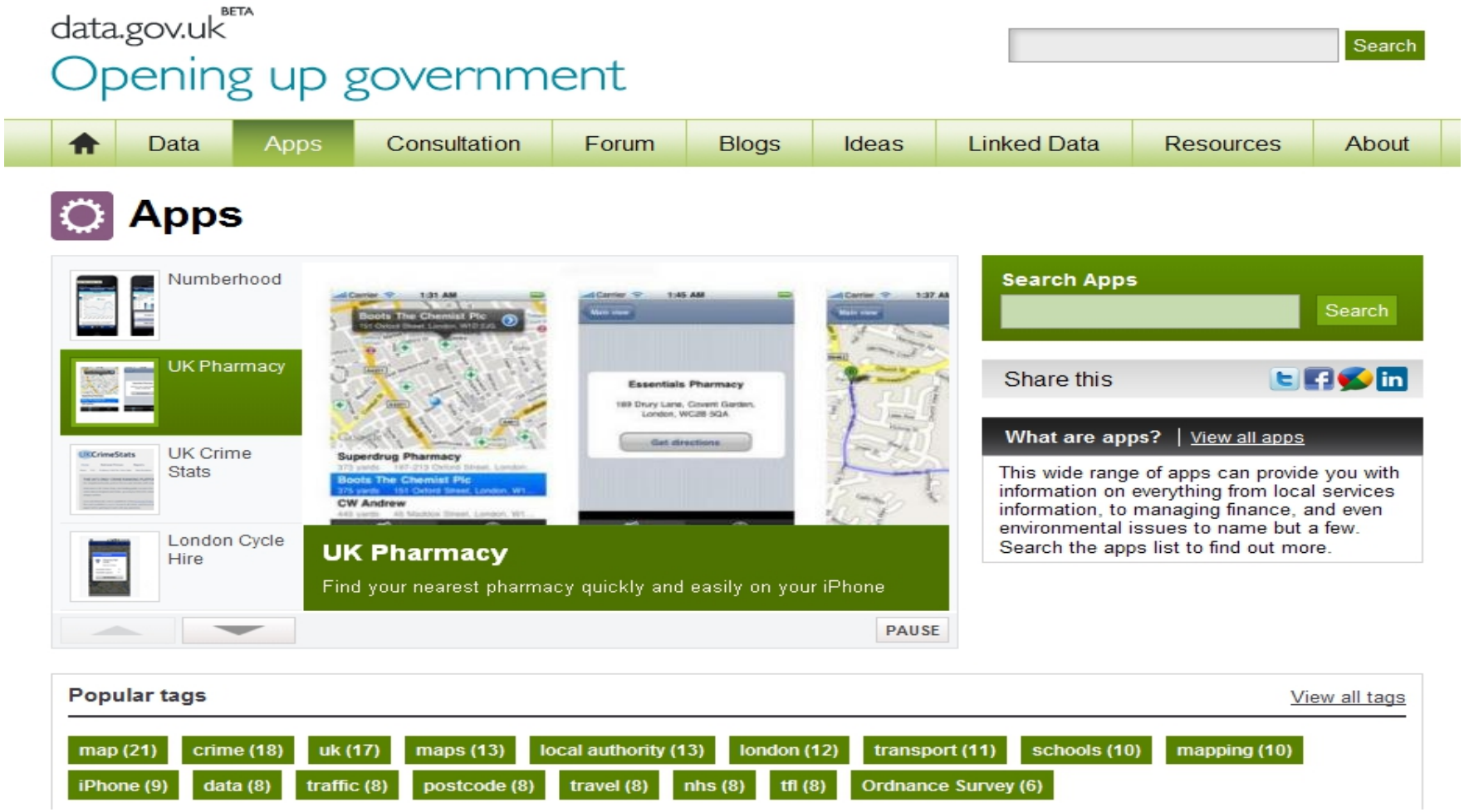
OGC White Papers
http://www.opengeospatial.org/pressroom/papers

Getting started with OGC standards for geospatial sharing
http://www.eclipse.org/community/eclipse_newsletter/2014/march/article1.php; http://live.osgeo.org/en/standards/standards.html

Communities of interest driving interoperability
(https://www.fgdc.gov/ngac/meetings/april-2012/open-geospatial-consortium-activities-reichardt.pdf)

Open Web Mapping course online
https://www.e-education.psu.edu/geog585/

Open Data – key for innovation and transparency



Increasing innovation

Economic impact of FLOSS on innovation and competitiveness of the EU ICT sector

Study on the:

Economic impact of open source software on innovation and the competitiveness of the Information and Communication Technologies (ICT) sector in the EU

Final report

Prepared on November 20, 2006

Lead contractor: UNU-MERIT, the Netherlands

Subcontractors:

Universidad Rey Juan Carlos, Spain

University of Limerick, Ireland

Society for Public Information Spaces, France

Business Innovation Centre of Alto Adige-Südtirol, Italy

Prepared by: Rishab Aiyer Ghosh, MERIT

Disclaimer

The opinions expressed in this Study are those of the authors and do not necessarily reflect the views of the European Commission. Contract ENTR/04/112.

Internet backbone is powered by OSS

Since April 1996 Apache has been the most popular HTTP server software in use. As of May 2011 Apache was estimated to serve 63% of all websites and 66% of the million busiest

"May 2011 Web Server Survey". Netcraft. May 17, 2011

http://ec.europa.eu/enterprise/ict/policy/doc/2006-11-20-flossimpact.pdf

Milestones in Open Source GIS

1982 - GRASS (Geographical Resources Analysis Support System)

1992 - Open GRASS Foundation (OGF)

1994 - OGF was re-structured as the Open Geospatial Consortium (OGC)

2006 - Open Source Geospatial Foundation established

OSGeo
Your Open Source Compass

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- Member Area
- News
- Events
- Wiki
- Mailing Lists
- Education
- Blogs
- Books
- IRC
- Service Providers
- Journal
- Sol Katz Award
- Local Chapters
- Spotlights
- Gallery
- Live DVD

Language
- English
- Български
- 简体中文
- Deutsch
- Français
- Indonesian
- Italiano
- 日本語
- 한국어
- Nederlands
- Polski

The Open Source Geospatial Foundation...

Created to support and build the highest-quality open source geospatial software. Our goal is to encourage the use and collaborative development of community-led projects. Join us by signing up to our mailing lists or check out the Getting Started page to become more involved.

News

2011-09-27 OSGeo and the International Cartographic Association (ICA) sign MoU
2011-09-07 OSGeo-Live 5.0 Released
2011-08-22 OSGeo Board Election Results
2011-07-29 OSGeo Board Election 2011

| Submit News

more

Upcoming events

2011-11-02 Jornadas SASIG 4, Guimarães, Portugal
2012-06-23 Bolsena Hacking Event 2012

| Submit Upcoming Events

more

Community Blogs

Dylan Beaudette: Experimental S4 Classes and Methods added to AQP (Algorithms for Quantitative Pedology) Package

OSGeo News: OSGeo and the International Cartographic Association (ICA) sign MoU

Jackie Ng: A screenshot to tide you over

Arnulf Christl: Two busy weeks touring Asia

Darren Cope: QGIS Topological Editing

SEXTANTE Team: Out of office

SEXTANTE Team: R

Stefano Costa: SVG Pottery: the documentation is now available

BALIZ-Media.com: Géomatique 2011: quelques faits saillants de cette semaine GÉO au Québec

Jody Garnett: Nothing to see here

Andreas Schmitz: Setting up eclipse using maven

Matt Sheehan: Offline Mobile GIS

Matt Sheehan: Q&A – Mobile App Development Planning

Sandro Santilli: PostGIS topology ISO SQL/MM complete

more

Stay Informed, Get Involved

- Stay informed by subscribing to our announcements e-mail list.
- Get involved by subscribing to our discussion e-mail list.
- Start contributing by following the instructions on the Getting Started page.

OSGeo Projects

Web Mapping
- deegree
- geomajas
- GeoServer
- Mapbender
- MapBuilder
- MapFish
- MapGuide Open Source
- MapServer
- OpenLayers

Desktop Applications
- GRASS GIS
- Quantum GIS
- gvSIG

Geospatial Libraries
- FDO
- GDAL/OGR

OSGeo is:

13 + 7

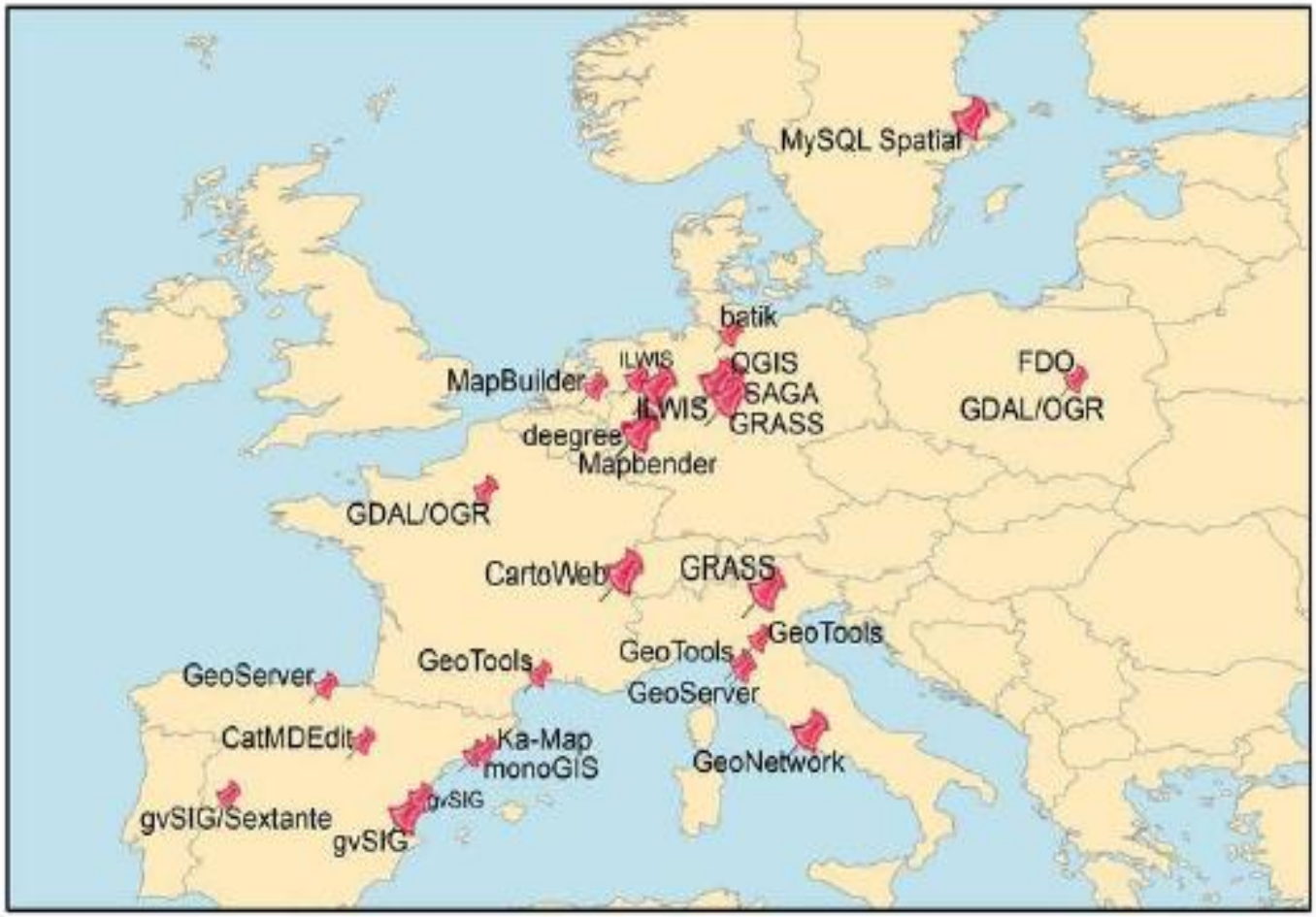
Community of Communities

Common voice

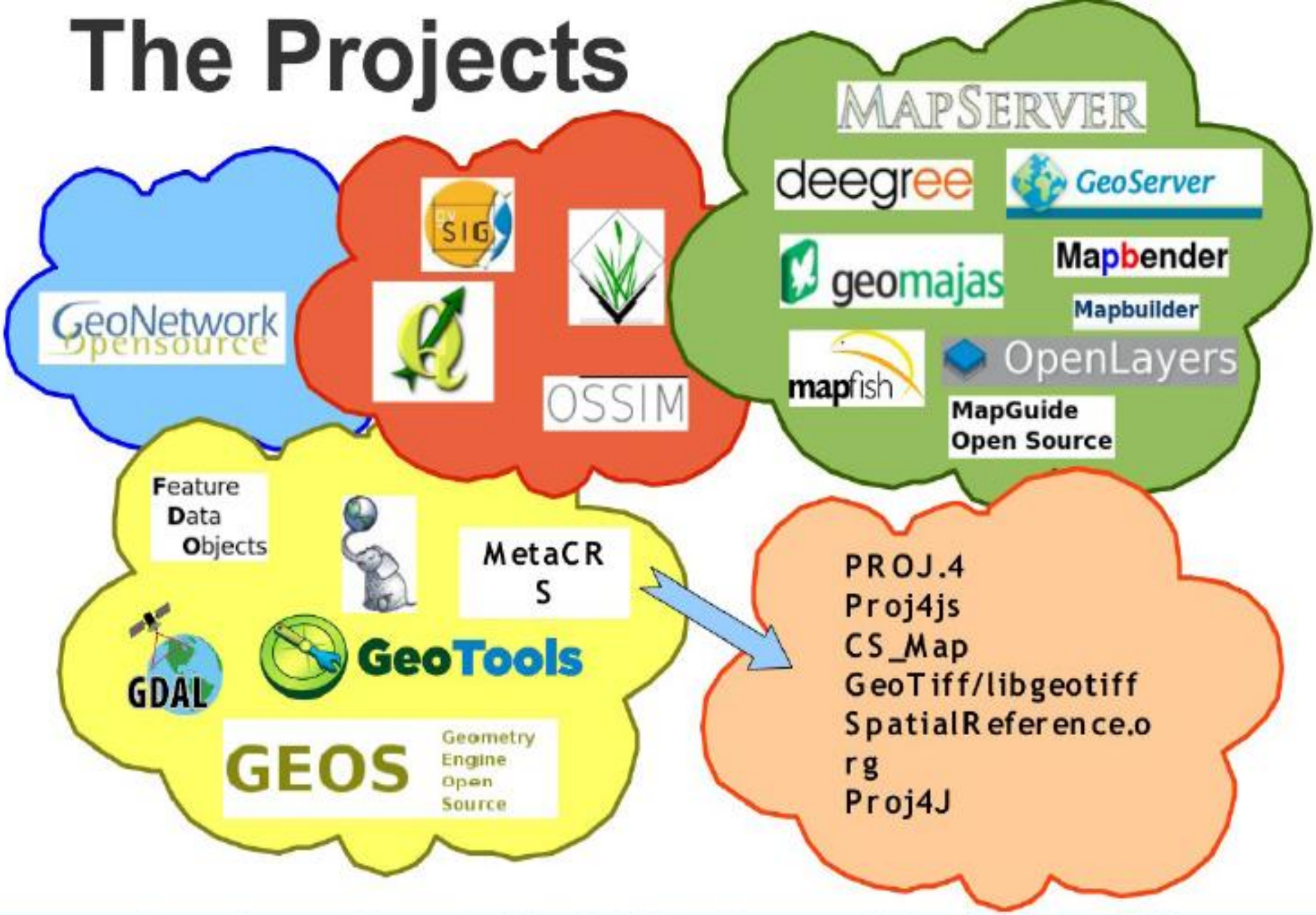
Share ideas, experiences & knowledge, increase visibility, ...

Projects locations:

Projects locations:

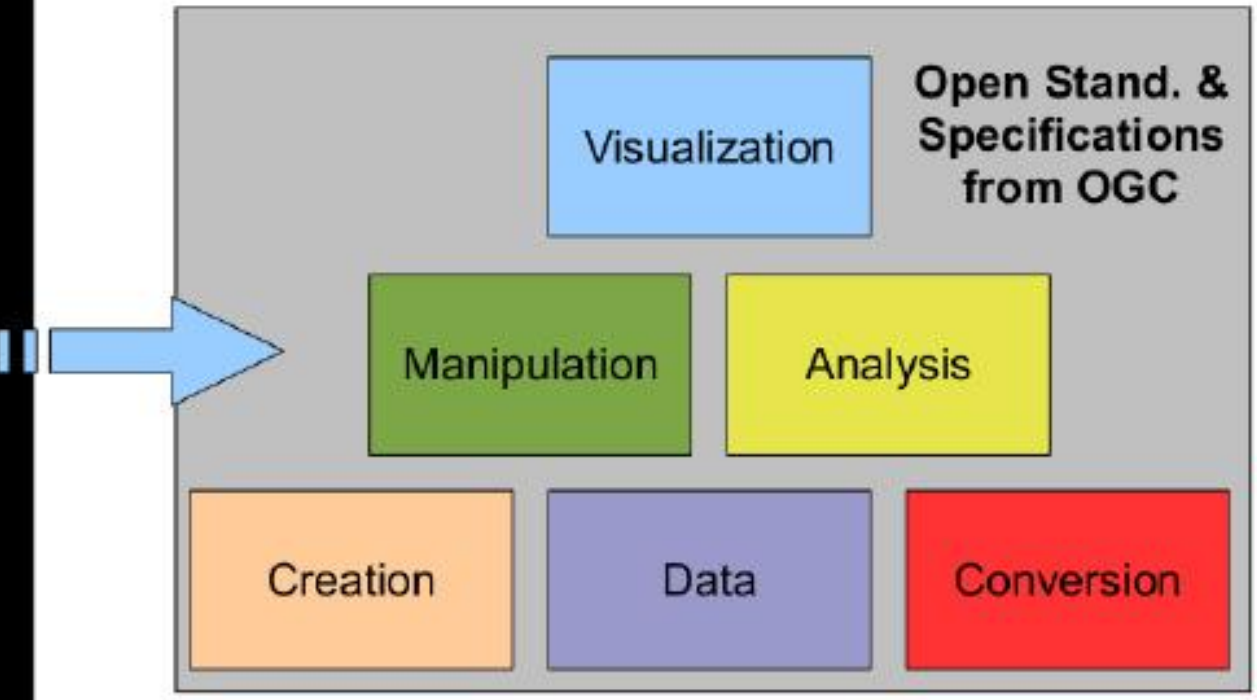


The Projects



Today's Toolkit

Monolithic Black Box



OS Geo Product development statistics 2008

Project Development Statistics
Updated: 2-Nov-2008

Project (link to stats page)	Codebase Lines of code	Contributors	Effort (person years)	Est. cost $USD
deegree	475,756	20	125	6,880,114
gvSIG	1,797,359	62	506	27,804,278
GEOS	93,369	14	23	1,252,806
Feature Data Objects (FDO)	770,748	22	212	11,679,154
GeoNetwork opensource	359,225	11	93	5,122,974
GeoTools	1,472,845	46	410	22,548,581
GDAL	619,706	26	170	9,357,931
Quantum GIS	193,174	34	50	2,761,972
OSSIM	525,942	21	143	7,846,712
GRASS GIS	518,049	61	140	7,682,948
OpenLayers	68,695	12	17	913,757
MapServer	108,306	32	27	1,499,454
MapGuide Open Source	360,959	34	95	5,240,110
Community MapBuilder	141,198	24	35	1,921,633
Mapbender	261,029	23	68	3,713,822
Total	**7,766,360**	**442**	**2,114**	**116,226,246**

http://wiki.osgeo.org/wiki/Project_Stats

OS Geo Product development statistics 2010

Project Development Statistics
Updated: 30-Aug-2010

Project (link to stats page)	Last ohloh analysis date	Contributors (last 12mos)	Contributors (total)	Lines of code
GeoServer	2010-08-28T12:13:45Z	26	53	511153
Geomajas	2010-08-30T14:55:22Z	9	15	227598
MapFish	2010-03-27T03:41:32Z	10	17	153555
Mapbender	2010-08-30T22:22:30Z	17	37	873482
Community MapBuilder	2008-06-17T18:24:57Z	9	24	141198
MapGuide Open Source	2009-12-02T20:58:08Z	19	42	377020
MapServer	2010-08-29T03:12:52Z	12	34	176972
OpenLayers	2010-08-30T10:46:42Z	9	14	114389
GRASS GIS	2010-08-31T01:01:09Z	18	64	547834
OSSIM	2010-08-29T07:51:16Z	8	26	979165
Quantum GIS	2010-08-28T15:30:45Z	23	43	1594355
GDAL	2010-08-28T07:40:21Z	21	36	690593
GeoTools	2010-08-29T07:47:06Z	29	78	1672369
GeoNetwork opensource	2010-06-04T16:18:22Z	7	19	830470
Feature Data Objects (FDO)	2010-08-28T23:32:07Z	16	32	1106885
GEOS	2010-08-29T03:46:39Z	6	17	134482
gvSIG Desktop	2008-09-17T22:22:32Z	42	61	1797359
deegree	2010-03-14T10:43:46Z	12	27	664726
PostGIS	2010-08-29T09:02:22Z	8	18	173982
Total	2010-08-30	301	657	12767587

http://wiki.osgeo.org/wiki/Project_Stats

Mapping Collaboration in Open Source Geospatial Ecosystem

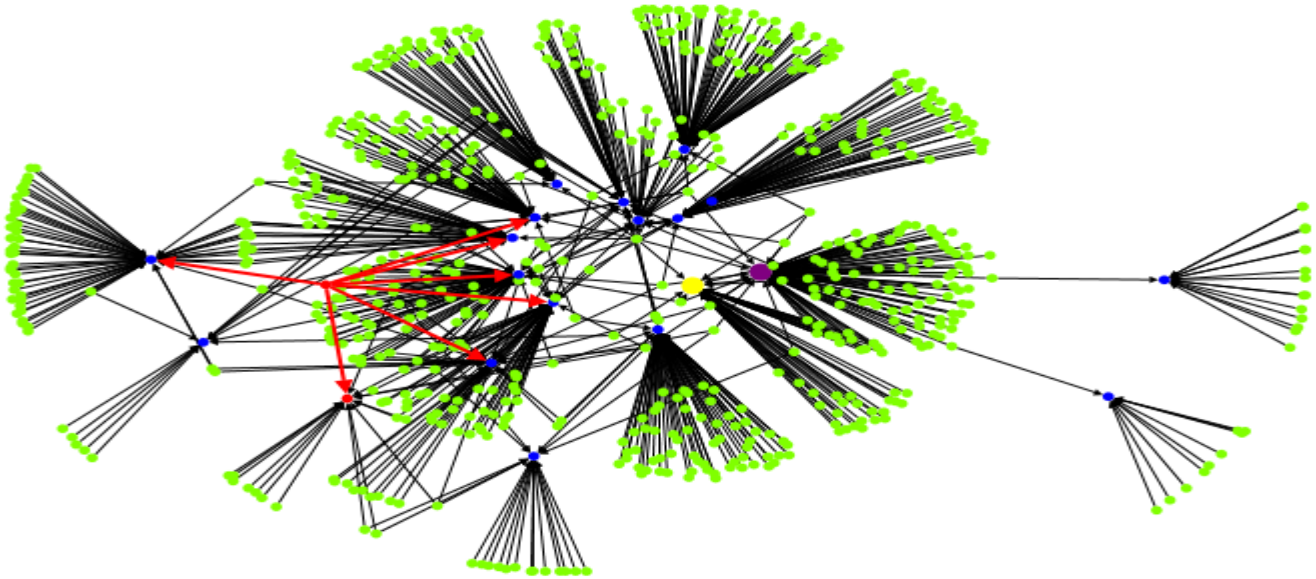


Diagram to show the relationship between contributor and projects. Each green dot represents a developer who contributes to the source code in one project and blue dot means each individual OSGeo project. Red arrows are a sample relationship that one developer contributes on seven different projects Yellow and purple dots identify two projects, *GeoTools* and *GeoServer*. Because they have dependency relationships, we find many contributors boundary spans both projects.

Shao et al, TGIS 2012

Educating 21st century geospatial technology workers

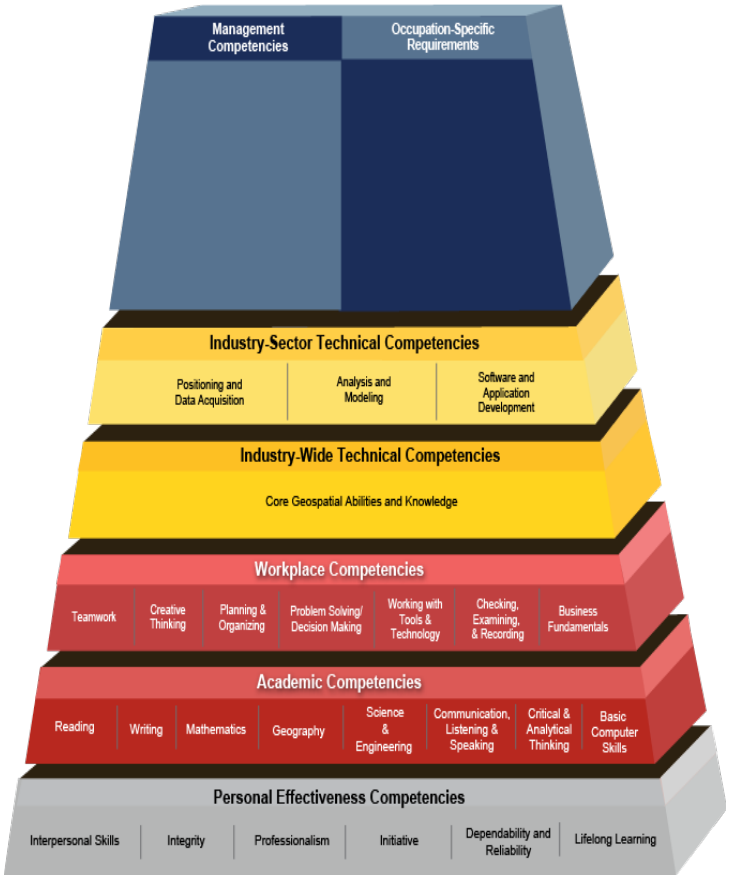
Phillip Davis| Kurt Menke| John Van Hosen |
Richard Smith

Goals of the QGIS academy

- Provide educational resources infrastructure for educators and trainers
- Promote the adoption of open source for undergraduate programs
- Prepare graduates for lifelong earning skills
- Increase the use of open source tools in college GIS programs

Geospatial Technology Competency model (GTCM)

- US Dept. of Labor national clearinghouse model
- Published in 2010, revised in 2015
- Describes the complete set of knowledge, skills, and abilities required by industry workers
- Built on hierarchical tiered model of knowledge
- Promotes use of open source technology



Consist of 5 Core Courses:

- GST 101 Introduction GIS
- GST 102 Spatial Analysis
- GST 103 Data Management
- GST 104 Cartography
- GST 105 Remote Sensing

Why create openness in Geo Education?

- helps in empowerment of staff and students
- capacity building
- developing creative and open minds in students which is critical for building open innovation
- contributes to building up Open Knowledge for the benefit of the whole society and for our future generations.

Summary

Advantages for open source, open standards, open data geospatial research and teaching

Represents the individual content creator on the World Wide Web

Key advantages

- High quality and impact for research
- Scalable
- Interoperability
- Low costs
- Benefits wider community

Open software
Open data
and
Open standard

Providing to an open geospatial ecosystem for education, research and business

Acknowledgements

Dr Mark Ware, University of Glamorgan
SIGTE, University of Girona
GIS Summer School Staff
GeoAcademy
Geo for All colleagues

Several of the resources used in this presentation can be found in:

- **Moreno-Sanchez**, R. 2012. Free and Open Source Software for Geospatial applications (FOSS4G): A mature alternative in the geospatial technologies arena. *Transactions in GIS* 16(2): 81-88

- FOSS4G application examples from the Geomatics Laboratory in the Politecnico di Milano, Como campus, Italy. h ttp://geomatica.como.polimi.it/

- Article references at the end of these slides.

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