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## ***A Friendly Hands on Survey of Popular Geospaital Services***

### **Description:**

Would you like to get started with free and open source software for geomatics? This workshop will get you started from the comfort of a desktop application! This workshop provides a survey of popular open source geospatial software allowing you to plan the rest of your week based on first hand experience. The background of each project will be provided and you will have a chance to see how the different applications perform and what they are capable of.

The User-friendly Desktop Internet GIS (uDig) application is used to provide an introduction to geospatial concepts and ideas. The uDig application is integrated with the desktop experience with drag and drop support, features an embedded internet browser, and is available on a range of platforms.

For those new to the geospatial field we will cover how Features and Projections are used to draw your information onto a Map. We will also look into your enterprise needs ranging from use of PostGIS to working with simple Shapefiles. With access to more powerful data sources we will explore the range of styling and visualisation options.

Plenty of time will be set aside for questions – welcome to FOSS4G!

### **Technical Requirements (choose one):**

Hands-on - Attendees required to bring their own laptop.

### **User Level (choose one):**

Beginner User

### **Hardware/Software recommendations:**

This year we will be making use of the Climate Change Integration Plugfest servers to ensure a responsive experience. You are welcome to either run the LiveDVD on your laptop or use the windows installers provided on the DVD; we will also have a couple of CDs available for those who wish to run the application using Mac OSX.

### **Presenter Name:**

Jody Garnett

Mark Leslie

Andrea Antonello

### **Presenter Coordinates (Country):**

Sydney, 33°51'35.9"S 151°12'40"E

Sydney, 33°51'35.9"S 151°12'40"E

Bolzano, Italy – 46.48227, 11.32868

### **Presenter Biography:**

Jody Garnett is the lead uDig architect and on the steering committee for GeoTools; GeoServer and uDig. Jody Garnett is an employee of LISAsoft with a background in training and mentoring.

Mark Leslie has broad experience at LISAsoft integrating proprietary and open source solutions. An active PostGIS committer he has developed and extended software across the Open Source Geospatial stack, including UMN MapServer, PostGIS, uDig and GeoTools.

Andrea Antonello from HydroloGIS develops geospatial open source solutions for environmental analysis. Andrea is well known as the lead developer of the JGrass project and is part of the uDig

project steering committee.

**Links to any material relevant to your tutorial submission:**

The material presented will be similar in pace to UDIG Walkthrough 1 making use of CCIP services. Slides will be based on a presentation made this year at GITA available here on slide share.

Feedback on a similar tutorials is available online here

[http://wiki.osgeo.org/wiki/FOSS4G2007\\_Workshop/Lab\\_Evaluations](http://wiki.osgeo.org/wiki/FOSS4G2007_Workshop/Lab_Evaluations) as LAB 08. Workshop evaluation forms are here (example “a REAL hands-on experience) and the feedback totals are here.

## ***Building Custom GIS Applications using MapWindow and the Microsoft .NET Framework***

### **Description:**

This workshop will be targeted to individuals interested in building custom GIS enabled software applications for the Windows operating system. The workshop will include hands-on instruction and practical programmer-focused guidance and demonstration on how to write standalone Windows-based GIS software using the MapWindow libraries (ActiveX and .NET components) and the VB.NET/C# languages. Attendees will also become familiarized with customizing the MapWindow GIS Desktop Application through configuration files and plug-ins as an alternative approach to deploying custom GIS software applications. The tutorial will demonstrate building two separate applications that serve as examples for creating custom GIS end user desktop tools following both ActiveX (i.e. totally standalone) and plug-in (i.e. extensions to the base MapWindow desktop application) paradigm/approach.

### **Technical Requirements (choose one):**

Hands-on - Attendees required to bring their own laptop

### **User Level (choose one):**

Beginner User

### **Hardware/Software recommendations:**

Attendees are encouraged to download and install Microsoft Visual Basic .NET 2008 Express Edition from this location: <http://www.microsoft.com/Express/VB/> as well as the latest version of MapWindow GIS Desktop Application from this location: <http://www.mapwindow.org/download.php> prior to the tutorial.

### **Presenter Name:**

Dan Ames and Ted Dunsford

### **Presenter Coordinates (Country):**

Idaho Falls, Idaho: Lat: 43.493, Lon: -112.035

### **Presenter Biography:**

Daniel P. Ames is an associate professor of Geosciences and Civil Engineering at Idaho State University – Idaho Falls where he directs the Geospatial Software Lab and leads the open source MapWindow GIS project. Dr. Ames has been an advocate of OSGeo since its inception and has actively participated in the OSGeo Journal effort, OSGeo Education Committee, FOSS4G 2006 (workshop presentation) and FOSS4G 2008 (booth sponsor and workshop and lab presented by Dr. Ames' students). With a primary interest in developing programmer tools Windows platform, Dr. Ames' GIS software projects have included work for many U.S. agencies and international collaborators. Ted Dunsford is a PhD Candidate in Engineering and Applied Sciences at ISU and will help deliver the workshop.

### **Links to any material relevant to your tutorial submission:**

Most of the material for the workshop is drawn from the project web-site, [www.mapwindow.org](http://www.mapwindow.org) with specific use of tutorials located here: <http://www.mapwindow.org/wiki/index.php/Tutorials>

## ***Delivering data using published application schemas: Geoserver 4 SDI***

### **Description (200 words):**

This tutorial will introduce and explain the use and configuration of Geoserver with formal application schemas, such as those underpinning Spatial Data Infrastructures.

The tutorial will provide a step-by-step explanation of the functionality and usage of the application-schemas DataAccess module, brand new to Geoserver 2.x

Attendees will be encouraged to create their own configured installation of Geoserver 2.0.

### **Technical Requirements (choose one):**

Hands-on - Attendees required to bring their own laptop.

### **User Level (choose one):**

Advanced User

### **Hardware/Software recommendations:**

Platform requirements are those required by Geoserver 2.0. Please check with

### **Presenter Name:**

Rob Atkinson

### **Presenter Coordinates (Country):**

Wollongong, Australia

### **Presenter Biography:**

Rob Atkinson is a distributed systems architecture with a long-term interest in sustainability, and the need to integrate systems across multiple application domains. He is a co-author of the original OGC Web Map Server 1.0 specification, and has been involved in numerous other OGC specifications and data standards. Rob has been driving a long-term agenda to make Geoserver capable of delivering data within a Spatial Data Infrastructure.

### **Links to any material relevant to your tutorial submission:**

Materials will be provided at the tutorial.

## ***Getting Started with MapWindow: An easy-to-install, easy-to-use free GIS for Windows***

### **Description:**

MapWindow GIS ([www.mapwindow.org](http://www.mapwindow.org)) is a widely used free GIS for the Microsoft Windows operating system. With an easy-to-use installer and a number of plug-ins for geoprocessing, data manipulation, and visualization, MapWindow is an excellent GIS for a many applications. This tutorial will introduce novice GIS users to the MapWindow GIS application and several key plug-ins. A copy of the e-Book, “A Practical Look at MapWindow” which includes several introductory exercises will be supplied to attendees. Specific exercises that make use of the data from the Climate Change Integration Plugfest (CCIP) will be used during the tutorial.

### **Technical Requirements (choose one):**

Hands-on - Attendees required to bring their own laptop

### **User Level (choose one):**

Beginner User

Advanced Developer

### **Hardware/Software recommendations:**

Attendees are encouraged to download and install the latest version of MapWindow GIS Desktop Application from the following location prior to the tutorial:

<http://www.mapwindow.org/download.php> CD's that include all required software will also be provided at the beginning of the tutorial session.

### **Presenter Name:**

Dan Ames and Ted Dunsford

### **Presenter Coordinates (Country):**

Idaho Falls, Idaho: Lat: 43.493, Lon: -112.035

### **Presenter Biography:**

Daniel P. Ames is an associate professor of Geosciences and Civil Engineering at Idaho State University – Idaho Falls where he directs the Geospatial Software Lab and leads the open source MapWindow GIS project. Dr. Ames has been an advocate of OSGeo since its inception and has actively participated in the OSGeo Journal effort, OSGeo Education Committee, FOSS4G 2006 (workshop presentation) and FOSS4G 2008 (booth sponsor and workshop and lab presented by Dr. Ames' students). With a primary interest in developing programmer tools Windows platform, Dr. Ames' GIS software projects have included work for many U.S. agencies and international collaborators. Ted Dunsford is a PhD Candidate in Engineering and Applied Sciences at ISU and will help deliver the workshop.

### **Links to any material relevant to your tutorial submission:**

MapWindow project: [www.mapwindow.org](http://www.mapwindow.org)

MapWindow end user introductory tutorials: <http://www.mapwindow.org/tutorials/>

MapWindow end user tutorial videos: <http://revver.com/find/video/?query=mapwindow>

A Practical Look at MapWindow GIS 1st Edition:

[http://www.mapwindow.org/cdimage/documentation/book\\_bw\\_2.pdf](http://www.mapwindow.org/cdimage/documentation/book_bw_2.pdf)

## ***How to Cope with GeoSpatial – Intro to GeoTools for the Java Developer***

### **Description:**

Are you new to GeoSpatial? Are you not cool enough to be a Neo-Geographer AJAX empowered meta tagging Ruby wunderkind ? Does scientific mumbo-jumbo make your head hurt? Are you (gasp!) just out to get the job done? Come to this tutorial and go home happy.

This Java tutorial is developers who are new to the GeoSpatial scene - it offers an introduction to concepts, projects, and how to avoid common pitfalls.

We will start with something nice, fun and visual - fetching content from Web Map Servers. The focus is on you and the code you need to get the job done.

We will explore what maps are made of: Features (literally things you can draw on a Map), Geometry (what to actually draw) and details like units and coordinate reference systems. These ideas are represented as nice normal Java objects by the GeoTools and Java Topology Suite projects.

We will work with common data formats and show how to make queries and modify information. For visualisation we will use a nice Swing widget and show how to control the rendering system with style.

Attend this tutorial - it will be very much hands on – and fun.

### **Technical Requirements (choose one):**

Hands-on - Attendees required to bring their own laptop.

### **User Level (choose one):**

Advanced Developer

### **Hardware/Software recommendations:**

The workshop materials will be normal Java programs, you are expected to be a good (in your own mind) Java programmer. The materials will be presented within the comforts of the Eclipse IDE, although the source code can be used in any IDE outside of the tutorial session.

### **Presenter Name:**

Jody Garnett

Michael Bedward

### **Presenter Coordinates (Country):**

Sydney, 33°51'35.9"S 151°12'40"E

### **Presenter Biography:**

Jody Garnett is the lead architect for the uDig project; and on the steering committee for GeoTools; GeoServer and uDig. Taking the roll of geospatial consultant a bit too literally Jody has presented workshops and training courses in every continent (except Antarctica). Jody Garnett is an employee of LISAssoft.

Michael Bedward is a researcher with the NSW Department of Environment and Climate Change and an active contributor to the GeoTools users' list. He has a particularly wide grasp of all the

possible mistakes one can make using GeoTools.

**Links to any material relevant to your tutorial submission:**

Previous coverage of this material at FOSS4G 2007 (<http://www.foss4g2007.org/labs/L-13/>) was used to bootstrap the geotools user guide (<http://docs.codehaus.org/display/GEOTDOC/Home>). This user guide has been growing and I would like a chance to present this introduction again based on the experience.

Summary of how this was received

(<http://docs.codehaus.org/display/GEOTOOLS/GeoTools+at+FOSS4G+2007>), in class reviews here ([http://wiki.osgeo.org/wiki/FOSS4G2007\\_Workshop/Lab\\_Evaluations](http://wiki.osgeo.org/wiki/FOSS4G2007_Workshop/Lab_Evaluations)) summary here ([http://hypersphere.telascience.org/Workshop-Files/evaluations/2007/results/FOSS4G2007\\_Lab-13\\_Evaluation\\_Results.pdf](http://hypersphere.telascience.org/Workshop-Files/evaluations/2007/results/FOSS4G2007_Lab-13_Evaluation_Results.pdf)).

## ***How to create a web 2.0 mapping with MapFish: from the data management to the hosting.***

### **Description:**

MapFish is an open-source development framework for building web-mapping applications. MapFish is based on the GeoExt library which is a combination of ExtJS and OpenLayers, and extends the Pylons general-purpose web development framework with geo-specific functionalities. This tutorial will present the necessary steps for the creation a web mapping application based on the MapFish development framework:

- Management of GIS data with SDI. SDI is a Geospatial ETL based on Talend Studio. This tool allows the data transfer and manipulation.
- Creation of client UI with GeoExt. GeoExt is a javascript library which proposes several widgets for the creation of interactive and ergonomic user interface.
- Creation of server controlers with Python, Shapely and SQLAlchemy. MapFish server combines several technologies in order to facilitate the data access and the data manipulation on the server side. The data are accessed through REST services.
- Hosting by Amazon. The cloud computing services provided by Amazon allow a flexible and powerful hosting for the MapFish applications.

### **Technical Requirements (choose one):**

Demonstration only.

### **User Level (choose one):**

Beginner User

### **Hardware/Software recommendations:**

No requirements

Presenter Name:

Claude Philipona, Cédric Moullet, Frédéric Junod, Eric Lemoine

### **Presenter Coordinates (Country):**

Claude, Cédric and Frédéric are living in Switzerland (46°32'N,06°38'E), Camptocamp SA, Lausanne. Eric is living in France (45° 34' N, 5° 54' E), Camptocamp France SAS, Chambéry

### **Presenter Biography:**

Claude Philipona is co-founder of Camptocamp SA and professor at the University of Applied Sciences Western Switzerland (HES-SO).

Cédric Moullet is CTO Geospatial of Camptocamp SA and member of the GeoExt PSC.

Eric Lemoine is senior developer at Camptocamp France SAS and commiter for MapFish, OpenLayers and GeoExt. Member of the GeoExt and OpenLayers PSC.

Frédéric Junod is developer at Camptocamp SA and commiter for MapFish, OpenLayers and GeoExt.

### **Links to any material relevant to your tutorial submission:**

[www.mapfish.org](http://www.mapfish.org)

## ***Introduction to deegree iGeoDesktop***

### **Description:**

iGeoDesktop is the brand-new desktop GIS component in the deegree project (<http://deegree.org>). It is based on established deegree technology and modular by design to allow for

- flexible and use-case dependend configuration,
- standards-based SDI integration,
- integration with other third-party desktop components.

In this hands-on tutorial participants will get to know basic usage patterns of the tool, along with an insight to configuration. Based on services and data which are being made available within the Climate Change Integration Plugfest, participants will learn how to use iGeoDesktop in order to integrate SDI resources from various sources (local data and OGC services like WCS, WFS and WMS), including resource metadata, map layout and basic analysis issues. The concept of an iGeoDesktop project will be introduced as a combined definition of geospatial contents, functions and tools available to the user, and overall layout.

### **Technical Requirements (choose one):**

Hands-on - Attendees required to bring their own laptop.

### **User Level (choose one):**

Beginner User

### **Hardware/Software recommendations:**

min 1 GB memory, min 1.5GHz CPU, Java 1.6, screen resolution 1024x768 or higher

### **Presenter Name:**

Hanko Rubach

### **Presenter Coordinates (Country):**

Bonn, Germany

50° 41' 12"N, 7° 8' 55"E

### **Presenter Biography:**

Hanko Rubach holds a university degree in environmental sciences (University of Lüneburg, Germany, <http://www.uni-lueneburg.de/fb4/>). Since 2006 he is working as consultant with lat/lon GmbH in Bonn, Germany. Hanko is deeply involved in SDI projects where deegree components play an important role. Within the deegree project he was involved with preparing the 2.x releases where he made significant contributions to the quality management within the whole project. More specifically, he has been managing the demo packages production.

Please provide a short bio of the presenter, including affiliations, experience in FOSS4G efforts and current interests in geospatial technology.

### **Links to any material relevant to your tutorial submission:**

This could include things such as slides used in this or similar tutorials that you have previously presented, additional biographical material, etc.

## ***Introducing MapWindow 6: Extensible .NET Libraries Incorporating GDAL and Net Topology Suite***

### **Description:**

This tutorial will be a live demo and hands-on instruction session introducing GIS developers at all levels to the new MapWindow 6 .NET libraries which are extensible through a set of comprehensive plug-in interfaces and inheritable classes for data manipulation, visualization, and geoprocessing. MapWindow 6 is an entirely new code base that builds on Net Topology Suite, GDAL, and a powerful extensibility architecture included in the Microsoft .NET 3.0 Framework. This project is unique in that it is completely .NET compliant and hence can be compiled under Mono for non-Microsoft platforms, as well as for handheld computers running Windows Mobile and for ASP.NET web development efforts. Anyone interested in participating in or learning about this project is encouraged to attend. In particular, anyone developing for the Windows platform using .NET should find this tutorial very interesting (maybe even a little exciting). Note that the focus of this tutorial is not necessarily on Windows desktop applications, but rather development, extension, and use of the classes and libraries.

### **Technical Requirements (choose one):**

Hands-on - Attendees required to bring their own laptop

### **User Level (choose one):**

(very) Advanced Developer

### **Hardware/Software recommendations:**

Attendees are encouraged to download and install Microsoft Visual C# 2008 Express Edition from the following location prior to the tutorial: <http://www.microsoft.com/express/vcsharp/> DLL's and source code objects associated with the tutorial will be provided on a CD to all participants at the beginning of the tutorial.

### **Presenter Name:**

Ted Dunsford with support from Dan Ames

### **Presenter Coordinates (Country):**

Idaho Falls, Idaho: Lat: 43.493, Lon: -112.035

### **Presenter Biography:**

Ted Dunsford is a PhD Candidate in the Engineering and Applied Sciences program at Idaho State University and is also the lead programmer and software architect for the new MapWindow GIS 6.0 libraries. Ted has several years of experience working with and developing applications using various open source GIS software tools and was a presenter at a workshop and laboratory at FOSS4G 2008 where he also helped manage a sponsor booth for the MapWindow project.

### **Links to any material relevant to your tutorial submission:**

MapWindow project: [www.mapwindow.org](http://www.mapwindow.org)

MapWindow 6.0 development discussion forum: <http://www.mapwindow.org/phorum/list.php?13>

MapWindow 6.0 tutorial videos on YouTube: <http://www.youtube.com/user/TedDunsford>

## **Leveraging OGC Services with GeoExt**

### **Description:**

GeoExt is a pure JavaScript toolkit for building rich web-based GIS applications. Built upon ExtJS and OpenLayers, it supports all common proprietary and open data formats and maps, including many of the Open Geospatial Consortium's (OGC) specifications like Web Mapping (WMS), Web Feature (WFS) services, and Styled Layer Descriptor (SLD).

This tutorial will walk participants through the usage of the GeoExt widgets of a simple GIS application entirely based on OGC services. Available widgets include functionality for adding layers from arbitrary WMS servers, editing layer styles based on the SLD standard, and querying data using the WFS protocol. On-site data from the Climate Change Integration Plugfest (CCIP) will be used.

The target audience for this tutorial are decision makers and users interested in the state of the art of web-based GIS applications using open standards. In addition to seeing GeoExt in action, participants will gain an understanding of its modular design by browsing code snippets and making configuration changes. To make the latter a fun experience, some basic knowledge of JavaScript and/or JSON is beneficial.

### **Technical Requirements (choose one):**

Hands-on - Attendees required to bring their own laptop.

### **User Level (choose one):**

Beginner User

### **Hardware/Software recommendations:**

Participant should have internet access and a FOSS4G LiveDVD running on their machines. A local copy of GeoServer will be used to host the demo application and serve data in OGC formats.

### **Presenter Name:**

Andreas Hocevar

### **Presenter Coordinates (Country):**

Graz, Austria (lat: 47° 4' N, lon: 15° 26' E)

### **Presenter Biography:**

Andreas is a core committer to MapBuilder, OpenLayers and GeoExt. Coming from an urban and regional planning background, he knows the requirements of maps and mapping applications for planners and governments. Improving the way users can apply design principles and good practices of cartography to open maps has been the driving force behind his efforts in FOSS4G, especially in building SLD support into OpenLayers and GeoExt. As a consultant for OpenGeo, he enjoys being part of an international team of experienced FOSS4G developers devoted to well established projects like GeoServer, PostGIS and OpenLayers.

### **Links to any material relevant to your tutorial submission:**

<http://opengeo.org/>

<http://geoext.org/>

## ***Leveraging Open Geospatial Consortium (OGC) Services.***

### **Description:**

This presentation will provide an extensive overview of OGC Web Services and will include a demonstration of creating these services using ArcGIS Server. The discussions will also include some detailed look at the current state of some of these OGC web services specifications. The demonstration will focus on how the services can be consumed and leveraged using open source web API's like Openlayers. The presentation will also delve into ArcGIS server's support for SOAP and REST interfaces which make it easy for consumers to write thick clients using soap or create web applications using scripting languages. The emphasis of this presentation will be on the relevance of standards towards achieving "interoperability". Products and specific technologies used as part of the tutorial demonstration are solely there to provide a practical/hands-on understanding of "real world GIS interoperability".

Attendees can expect to get a full briefing on current status of OGC web service specifications and some useful information on what they can do with commercial, open source and mass market technology tools to further leverage server environments within their enterprise.

### **Technical Requirements (choose one):**

Demonstration only.

### **User Level (choose one):**

Beginner User

### **Hardware/Software recommendations:**

Demonstration only, so users are not required to work on any examples during tutorial.

### **Presenter Name:**

Satish Sankaran

### **Presenter Coordinates (Country):**

Redlands, California

### **Presenter Biography:**

Dr. Satish Sankaran is a Product Manager at ESRI. His primary responsibility is in the areas of Interoperability and Standards. Apart from working on implementation development issues at ESRI, he is also a member of the Technical Committee at OGC and ISO. He currently serves as the chair of the OGC WMS Standards Working Group and is also an elected member of the OGC Architecture Board.

### **Links to any material relevant to your tutorial submission:**

## ***Making Maps Fast - Performance tuning and Tile Caching.***

### **Description:**

Speed of response is critical to a user experience. While hardware and platform considerations are briefly discussed, the focus of this tutorial is on what can be done at the data level, the service level and especially caching. Participants will see how small changes in design and implementation can reap big benefits. The topics of the tutorial include:

The Data: Spatial data stores. Attribute and spatial indexes.

The Map: Limiting what gets rendered. Image size vs quality.

The Cache: Google does it, so can you.

The OS: Scalability and concurrency.

Once we have data loaded into PostGIS and served by GeoServer we will move on to the main focus of the workshop: tile caching.

Installing TileCache.

Setting up your layer.

Configuring GeoWebCache in GeoServer.

Metatiling.

How it works with HTTP, caching proxies and caching clients.

OpenLayers will be used throughout the workshop to verify the effects of our changes.

### **Technical Requirements (choose one):**

Hands-on - Attendees required to bring their own laptop.

### **User Level (choose one):**

Advanced Developer

### **Hardware/Software recommendations:**

Hands-on components of the tutorial will require a laptop. The focus of the tutorial is mainly on spatial software configuration and installation. Installation of Java, PostGIS and Python before the tutorial is recommended. A cursory understanding of spatial concepts would be helpful, though no knowledge of specific packages is assumed.

### **Presenter Name:**

Arne Kepp, OpenGeo

Jim Groffen, LISAsoft

### **Presenter Coordinates (Country):**

Arne Kepp: Asker, Norway, 59.85,10.45

Offices: 349 West 12th Street, New York, NY, 40.74,-74.01

Jim Groffen: Adelaide, South Australia.-34.93,138.6

Offices: Level 1, 30 Currie Street Adelaide, SA. -34.924434,138.598752

### **Presenter Biography:**

Jim Groffen is a Senior Software Engineer at LISAsoft. Working in IT since 1998, Jim has been with LISAsoft since 2005 working on various Spatial projects. Jim participated in OGC projects such as CGDI-IP and OWS-6. As part of OWS-6 Jim will be contributing updated WMTS support to the TileCache open source project. Other relevant areas of interest include spatial catalogues and

registries, OpenLS and all things Python.

Arne Kepp is a Software Engineer at OpenGeo and lead developer of GeoWebCache. He became a user and proponent of Open Source software while filling the role as system administrator for a GIS consulting firm in 2000. Since then he has been studying hardware architecture and used his experience to improve the performance and reliability of several web services.

**Instructor Experience (100 words):**

Jim has performed various presentations for CentricMinds content management software, and held workshop style training sessions for North Western Adelaide Health Service and ClubsNSW private organisations.

Arne interacts with users of GeoWebCache and GeoServer on a daily basis through the mailing lists. He has previously done presentations on a wide variety of topics, including workshops on Linux Apache MySQL PHP (LAMP) performance and scalability.

**Links to any material relevant to your tutorial submission:**

This tutorial will make extensive use of the WMS Performance Tests - MapServer vs GeoServer presentation delivered by Andrea Aaime and Justin Deoliveira for FOSS4G 2008:

[http://presentations.opengeo.org/2008\\_FOSS4G/WebMapServerPerformance-FOSS4G2008.pdf](http://presentations.opengeo.org/2008_FOSS4G/WebMapServerPerformance-FOSS4G2008.pdf)  
Guide to TileCache: <http://geoserver.org/display/GEOSDOC/TileCache+Tutorial>

## ***Making Maps Pretty with Style Layer Descriptor***

### **Description:**

Tips and tricks to get your maps looking great. Supported by many GIS packages today, Styled Layer Descriptor (SLD) uncouples map styling from the mapping services. Learn how to make and apply SLD using freely available tools.

SLD is an OGC standard that allow users to define symbolisation and colouring of spatial data. During the tutorial participants learn the basics of SLD, and some tips and tricks:

SLD editing with uDig.

The GeoExt based SLD editor in GeoServer.

What you can do with SLD rules.

How filters control what gets styled.

Styling tricks.

Performance considerations.

The exercises performed build up a case for the benefits of SLD and the best practices for using it. There will also be an opportunity to compare SLD support in OpenJUMP, OpenLayers and other open source packages.

An information sheet on SLD support in existing GIS packages and a quick reference guide for both SLD and the Filter Encoding Specification will be provided.

### **Technical Requirements (choose one):**

Hands-on - Attendees required to bring their own laptop.

### **User Level (choose one):**

Advanced User

### **Hardware/Software recommendations:**

uDig and GeoServer will be used during hands-on portions of the tutorial. All exercises to be performed during the presentation will be tested against LiveDVD.

### **Presenter Name:**

Andrea Aaime, OpenGeo

Jim Groffen, LISAsoft

### **Presenter Coordinates (Country):**

Andrea Aaime, Offices: 349 West 12th Street, New York, NY, 40.74,-74.01

Jim Groffen Adelaide, South Australia.-34.93,138.6

Offices: Level 1, 30 Currie Street Adelaide, SA. -34.924434,138.598752

### **Presenter Biography:**

Jim Groffen is a Senior Software Engineer at LISAsoft. Working in IT since 1998, Jim has been with LISAsoft since 2005 working on various Spatial projects. Jim participated in OGC projects such as CGDI-IP and OWS-6. As part of OWS-6 Jim will be contributing updated WMTS support to the TileCache open source project. Other relevant areas of interest include spatial catalogues and registries, OpenLS and all things Python.

**Links to any material relevant to your tutorial submission:**

The following are links to relevant technologies but not specific to this workshop submission.

<http://www.opengeospatial.org/standards/sld>

<http://geoserver.org/display/GEOSDOC/SLD+Intro+Tutorial>

# ***Protecting OGC Web Services with the 52°North Security System***

## **Short Description:**

This workshop demonstrates how to add authentication and authorization capabilities to spatial data infrastructures with the services of the 52°North security system. The participants will be guided to set up and configure the necessary access control services to protect an OGC Web Map Service and load it into an OGC WMS client.

## **Long Description:**

### **Background**

The Open Source Software Initiative 52°North provides services and applications that enable OGC Web Service providers to protect their services from unrestricted access. The building blocks of this security system are Web Authentication Service (WAS) and Web Security Service (WSS). On success authentication by username and password a WAS issues an identity token compliant to the OASIS Security Assertions Markup Language (SAML). The WSS acts as a gateway to the protected OGC Web Service and receives the initial service request (e. g. GetMap) together with the SAML token. Based on this information the WSS performs access control by looking up the user's rights and reacting accordingly: If the user has sufficient rights, it forwards the request to the protected service, otherwise the service request is rejected or modified to fit the user permissions. Because the WSS defines a new protocol, standard OGC Web Service clients are not able to interact with the protected service via the WSS. To overcome this issue, we introduced a proxy component, the Web Security Client (WSC) that provides the interface of the protected service plus the capability to enter authentication information (e.g. username & password) as well as the desired WSS gateway URL. With this information the WSC handles the security communication with WAS and WSS transparently for the client, which just uses a WSC-provided specific proxy URL.

### **Workshop Contents**

After a brief introduction into the basic concepts of the 52°North security system solution, the participants will set up a scenario installation of the system to restrict access to an example Web Map Service.

Setting up the scenario implies:

- Deployment and configuration of the WAS web application on an Apache Tomcat server
- Deployment and configuration of the WSS web application on an Apache Tomcat server
- Installation and configuration of the WSC desktop application

As part of the service configuration the participants will add users to the user repository for the WAS as well as define access policies for layers and/or operations of the protected WMS for the WSS.

After successful deployment and installation the protected service will be loaded into a web map client using different user profiles to visualize the effect of policy enforcement.

## **User Level (choose one):**

Advanced User

## **User Prerequisites (platform, applications, development languages, etc.):**

- Installed software (depending on pending technical requirements decision)
  - Java 1.5 or higher
  - local OGC WMS client
  - Apache Tomcat 5.5 or higher
  - Text/XML editor
- Internet connection
- Knowledge about

- (simple) XML editing
- Apache Tomcat web application deployment
- OGC Web Map Service

**Instructor Name:**

Jan Drewnak

**Instructor Coordinates:**

52°North Initiative for Geospatial Open Source Software GmbH  
Martin-Luther-King-Weg 24  
48155 Muenster  
Germany

**Instructor Biography:**

From March 2003 until October 2005 Jan Drewnak worked as a research associate at the Institute for Geoinformatics, Muenster, Germany. He is engaged in the German regional initiative “Spatial Data Infrastructure North Rhine-Westfalia” (GDI NRW) as a security architect and engineer. Since May 2005 he works as software consultant and engineer for the con terra GmbH, Muenster, with focus on security in spatial data infrastructures. He also heads the 52°North Open Source Initiative’s “Security Community”.

**Instructor Experience:**

Similar tutorial at the FOSS4G 2007 (<http://www.foss4g2007.org/labs/L-11/>)

**Links to any material relevant to your workshop submission:**

52°North general site: <http://www.52north.org>

52°North Security Community site: <http://www.52north.org/security>

## **Sensor Web Enablement - Bringing Sensors into SDIs**

### **Description:**

This tutorial gives an introduction to the specification framework of OGC's Sensor Web Enablement (SWE) initiative. The SWE framework offers a well-defined set of specifications which provide data models and corresponding data encodings as well as service interfaces to make use of the sensors. These interface specifications include services which can be utilized for example to access sensor data, to task sensors and to register for alerts in case of certain events.

Firstly, the tutorial will consist of a presentation to give an overview of the different SWE specifications. Afterwards, practical SWE use-cases and applications will be shown to demonstrate how SWE technology can be utilized. These demonstration scenarios range from water management, pollution monitoring, early warning systems to fire fighting applications. Finally, we will demonstrate the 52° North suite of SWE service and client implementations to show the current state of art in SWE software development. It is planned to demonstrate a set of existing SWE applications that are available on the Web. For the demonstration part it is recommended (although not necessary) to bring a laptop so that the participant will be able to make hands-on experiences with the presented SWE applications.

### **Technical Requirements (choose one):**

Hands-on - Attendees required to bring their own laptop.

### **User Level (choose one):**

Beginner User

### **Hardware/Software recommendations:**

It is recommended that attendees bring their laptop computer with a common browser and internet connection as well as a Java RE installation.

### **Presenter Name:**

Arne Broering1 (broering@52north.org)

Simon Jirka1 (jirka@52north.org)

Christoph Stasch2 (staschc@uni-muenster.de)

Thomas Everding2 (everdingt@uni-muenster.de)

### **Presenter Coordinates (Country):**

1: 52°North Initiative for Geospatial Open Source Software GmbH  
Martin-Luther-King-Weg 24  
48155 Muenster  
Germany

2: University Muenster, Institute for Geoinformatics  
Weseler Strasse 253  
48151 Muenster  
Germany

### **Presenter Biography:**

Arne is working as a research associate for the Sensor Web and Simulation Lab (<http://swsl.uni-muenster.de>) at the University of Muenster. His research interests include middleware concepts for the Sensor Web, visualization of geodata (and especially sensor data) as well as the Human Sensor Web. He is as well an associated software developer of the open source initiative 52°North, an international R&D consortium based in Germany. Further on, Arne is strongly involved in the

development of OGC's Sensor Web Enablement standards. He is the current chair of the Sensor Observation Service working group.

**Links to any material relevant to your tutorial submission:**

Please find information about our research on our working group's homepage:  
<http://swsl.uni-muenster.de>

Here, you can find information about our software developments:  
<http://52north.org/swe>

## ***Using ILWIS with its PostGIS plug-in for raster-vector applications.***

### **Description:**

Tutorial objective: To provide participants a hands-on insight into the power of combining functionality of our user-friendly and highly functional GIS software with PostGIS.

Our GIS software is ILWIS which has been developed over 15 years by ITC as closed source software and has a large user community in developing countries, and recently has been migrated to open source software. ILWIS comprises a complete package of image processing, spatial analysis and digital mapping. It is easy to learn and use; it has full on-line help, and has extensive tutorials for direct use in various disciplines.

Recent project efforts have migrated ILWIS into a modular, plug-in-based software, providing web-service support for OGC-based web mapping and links with other software such as PostGIS.

ILWIS is being developed as a versatile geosoftware which is interoperable with other state-of-the-art open sources platforms. The development of this framework is done since 2007 in the context of 52°North (<http://52north.org/>).

We will demonstrate the software's functionality with the help of a use case. The tutorial will take the participant on a comprehensive tour through an application developed for UN-Habitat, which enables local governments to register land ownership on the basis of satellite images and simple field sketches.

### **Technical Requirements (choose one):**

Hands-on - Attendees required to bring their own laptop.

Note: Our tutorial could also be offered in demo mode if needed.

### **User Level (choose one):**

Beginner User

### **Hardware/Software recommendations:**

The tutorial will run on Windows XP or Vista. A working installation (version...) of PostGIS on your laptop is recommended. ILWIS software, hand-outs and data will be available on CD or download at <http://52north.org/ilwis>. We will investigate whether scenarios and on-site data from CCIP can be used as well.

### **Presenter Name:**

Rob Lemmens

### **Presenter Coordinates (Country):**

Dr. Ir. Rob Lemmens

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Coordinates: Latitude N 52.223, Longitude E 6.885

### **Presenter Biography:**

Rob Lemmens is Assistant Professor Applied Computer Science in the Department of

Geoinformation Processing at ITC. He has expertise and a publication record on GI open source projects, Internet GIS, Spatial Data Infrastructures and semantic modelling of distributed geoservices and ontology-based geo-information. Rob is ITC's representative for the Open Geospatial Consortium (OGC) and community leader of the ILWIS open source GIS software at 52°North, where he coordinates project-based open source software development. He has initiated and participated in courses on interoperable web mapping around the world. He is project participant in the GEOSS open source for capacity building work package.

**Links to any material relevant to your tutorial submission:**

Lab presented at FOSS4G 2008 in Cape Town:

<http://conference.osgeo.org/index.php/foss4g/2008/paper/view/326>

Presentation held at FOSS4G 2008 in Cape Town:

<http://www.osgeo.org/ocs/index.php/foss4g/2008/paper/view/346>

## ***Working with Grass-GIS Vectors and Databases***

### **Description:**

The demonstrations will cover:

A brief outline of Grass-GIS  
Basics of Grass-GIS vector-database connections  
Buffering in Grass-GIS – producing border-constrained buffers  
Simple command-line looping for bulk vector processing  
Grass-GIS georectification processes.

This is the description of the tutorial as it will appear in the program. This is also the primary resource used to evaluate the tutorial for inclusion in the conference or for determining attendee interest.

### **Technical Requirements (choose one):**

Hands-on - Attendees required to bring their own laptop.

### **User Level (choose one):**

Beginner User

### **Hardware/Software recommendations:**

Use this section to indicate any software recommendations attendees should be aware of for hands-on tutorials. Tutorial presenters must be aware that attendees are not required to meet these are not requirements and all attendees are expected to gain value from the tutorials whether these recommendations are met or not.

### **Presenter Name:**

Richard Chirgwin

### **Presenter Coordinates (Country):**

Sydney, Australia: -33.873 151.210

### **Presenter Biography:**

Richard Chirgwin is a telecommunications journalist and analyst, and is an associate consultant at Market Clarity. He has developed a strong interest in FOSS4G since 2006 when he first started working with Grass-GIS. In that time, Richard has applied Grass-GIS to a range of telecommunications infrastructure analysis problems, and in teaching colleagues the applications of Grass-GIS, he has become familiar with common problems and errors confronting the new user.

### **Links to any material relevant to your tutorial submission:**