

## PROGRAMME'S DETAIL

Session : 02	Presentation Date : 14 July 2006
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## BIODATA

**Name** : DR. GEOFF ZEISS  
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### ACADEMIC AND PROFESSIONAL QUALIFICATION :

- PhD McGill University
- BA Cornell University

### PROFESION EXPERIENCE :

- Director of Technology at Autodesk - since 2001
- Director of Software Engineering at MCI VISION\* Solutions – 1999
- Vice President of Product Development at TYDAC Technologies -1993

### OTHER EXPERIENCE :

- 20 years experience in the geospatial software industry and more than 10 years experience working with utilities, communications, and public works in enterprise geospatial IT around the world
- Received one of ten annual global technology awards from Oracle Corporation for his technical innovation and leadership in the use of Oracle
- Frequent speaker at GITA events in North America, Australia, and Japan as well as other geospatial industry events around the world including GeoBrazil, GeoTec, MapAsia, and MapIndia

## PRESENTATION BRIEF

### **TITLE : Implementing Open Source Solutions in a Geospatial Environment**

The geospatial industry is undergoing an unprecedented transformation because of the widespread recognition that geospatial is no longer special and has joined the IT mainstream. One of the dimensions of this phenomenon is the maturing of the open source geospatial community to a point that is reminiscent of the early days of the internet, when major IT vendors like IBM decided that it made more business sense to support the Apache Foundation's web server instead of developing their own. Last year people active in the open source geospatial community decided that the community needed to make some major organizational decisions to move to the next stage in the development of open source geospatial software. This recognition culminated in the formation of the Open Source Geospatial Foundation ([www.osgeo.org](http://www.osgeo.org)) in February of this year. This was driven not only by the realization that open source geospatial technology was widely used around the world, but more importantly that companies around the world have developed profitable businesses based on open source geospatial technology. In this presentation we will review open source geospatial software and

present examples of commercial solutions developed based on open source geospatial software.

# Implementing Open Source Solutions in a Geospatial Environment

*Geoff Zeiss, Director of Technology, Autodesk, Inc.*

## **Abstract:**

The geospatial industry is undergoing an unprecedented transformation because of the widespread recognition that geospatial is no longer special and has joined the IT mainstream. One of the dimensions of this phenomenon is the maturing of the open source geospatial community to a point that is reminiscent of the early days of the internet, when major IT vendors like IBM decided that it made more business sense to support the Apache Foundation's web server instead of developing their own. Last year people active in the open source geospatial community decided that the community needed to make some major organizational decisions to move to the next stage in the development of open source geospatial software. This recognition culminated in the formation of the Open Source Geospatial Foundation ([www.osgeo.org](http://www.osgeo.org)) in February of this year. This was driven not only by the realization that open source geospatial technology was widely used around the world, but more importantly that companies around the world have developed profitable businesses based on open source geospatial technology. In this presentation we will review open source geospatial software and present examples of commercial solutions developed based on open source geospatial software.

## **Introduction**

Feb 4, 2006 was a major milestone for the geospatial IT community, because on that day the geospatial open source community met in Chicago and formed the Open Source Geospatial Foundation ( <http://osgeo.org> .)

There are several reasons why this is an important milestone for the geospatial IT community. First the formation of the Open Source Geospatial Foundation (OSGEO) realizes an important milestone in the maturity of the open source geospatial community. Secondly, shortly after the formation of the open source geospatial foundation, Autodesk released the source of MapGuide Open Source (MGOS) to the OSGEO community. This represents a serious commitment by a major geospatial vendor to the OSGEO and to the wider open source community.

## **Why should you care about open source geospatial ?**

The formation of the open source geospatial foundation is important for everyone in the IT industry for several reasons.

**Open source geospatial software is the basis for successful business**

There are two key requirements for successful open source projects, a grass roots developer community and a thriving business sector which relies on the technology. Both of these realities have been realized by the open source geospatial community. Before February 4, open source geospatial was a "quiet reality". Most people would be quite surprised at how extensive and widespread the use of open source geospatial software is. The formation of the Open Source Geospatial Foundation with the support of a major geospatial vendor reflects the maturity of open source geospatial software and is contributing to bringing open source geospatial software into markets where it has had limited penetration in the past.

### **Open standards and open source**

One of the important things to recognize is the difference between open standards such as HTTP, XML, SOAP, WSDL, WMS, WFS, and GML, that are supported by both closed source or proprietary software and open source software. Open standards ensure that the pieces fit together but say nothing about how each component is implemented. For example, the WS-I is an organization dedicated to ensuring that Microsoft and J2EE web services interoperate based on the W3C standards for web services.

There is a close relationship between open standards and open source software. Open source is most successful at commodity software. For those familiar with Geoffrey Moore's core and context model, open source is best at context, as the Linux operating system and the Apache web server experiences have shown. As a rule of thumb where you find well-developed standards, you are usually dealing with context, and open source is a good place to look for standards-compliant software. For example, MapServer has been among the leaders in supporting Open Geospatial Consortium (OGC) standards.

### **Common Misconceptions about Open Source Software**

Open source is a relatively new concept for many people in IT, so it is worthwhile discussing some common misconceptions about open source.

**Misconception 1.** Open source is only a small part of the software industry.

There are over 100,000 projects hosted by Source Forge, which is only one of many sites hosting open source projects. Over 70% of the world's web sites run the Apache Foundation's web server software. Most of the Fortune 500 companies have deployed open source software including Linux, Apache, MySQL, PHP, Perl, Python, Sendmail, and others. As another example, the latest data from IDC show that worldwide server revenue for Linux servers was \$5.7 billion in 2005, a 20.8% increase year over year. This represents the 14th consecutive quarter of double digit growth for Linux servers. The reality is that open source represents a large and increasing share of the software market.

**Misconception 2.** The opposite of open source software is commercial software.

The reality is that there are two types of commercial software, open source and closed source (often called proprietary). Many commercial companies base their business entirely around open source software. Commercial open source companies include Red Hat and MySQL, which are internationally well-known examples. In the geospatial realm, DMSolutions (Canada) and Orkney (Japan) are examples of companies that have based a very successful business entirely around open source geospatial software. Some companies support both closed and open source software, for example, Novell (who acquired SUSE), Oracle (who just acquired Innodb and Sleepycat), Sun ( who sell Star Office which is based on Open Office), IBM (who distribute Apache web server and Eclipse), Autodesk (who developed MapGuide Open Source), and others.

A simple way to summarize the situation is that the commercial software industry uses two models, closed and open source, and that both play an important role in delivering solutions to the IT industry. Some software companies prefer the closed source model, some the open, and some rely on both.

**Misconception 3.** Also common is the misconception that all open source projects are comprised of volunteers working at home in the evenings or on weekends. The implication is that the quality of open source software is not up to the standards of closed source software.

At the last MapServer User Meeting in Minneapolis, Dirk-Willem van Gulik, President of the Apache Foundation presented a fascinating overview of the Apache Foundation. One of the things he mentioned is that of the more than one thousand Apache committers (developers who can create and modify Apache code), only one of them is a volunteer. The rest are full-time developers employed by major corporations to work full or part-time on Apache. In the geospatial arena Autodesk's contribution to the Open Source Geospatial Foundation was developed, and will continue to be maintained, by full-time, professional Autodesk developers.

With respect to quality, as I alluded to earlier, many of the world's major corporations have deployed open source software. Open source proponents like Eric Raymond argue plausibly that open source is capable of achieving higher standards of quality because more developers look at the code. The reality is that, like closed source software, each open source project or product has to be assessed based on its own merits.

### ***Examples of open source geospatial applications***

Finally I would like to demonstrate some examples of open source geospatial software. These are examples of public web sites developed using open source software.

#### **Nanaimo, British Columbia, Canada**

Jason Birch - <http://earth.nanaimo.ca/data.html>

#### **Spokane, Washington, USA**

Andy Morsell - <http://mapguide.spatialgis.com/mapguide/spokanemaps/>

## **International**

Holland <http://mapserver.gisnet.nl/sites/viewer/index.php>

## ***Conclusion***

2005/2006 saw the recognition that the open source geospatial community had reached a level of maturity, especially in the area of web mapping, where in order to move forward the community decided to form the Open Source Geospatial Foundation. This enabled a major geospatial technology vendor to announce support for the foundation and at the beginning of March 2006 to contribute a major code donation, MapGuide Open Source, to the Foundation. The impact of the Open Source Geospatial Foundation is significant because it will enable a large worldwide community of open source developers to integrate geospatial technology into their applications.