

# Can you INSPIRE me please!?

Where2B 2008 - Bonn

Jeroen Ticheler



Director



Founder and chair



Board of directors

# What will we cover?

- What is INSPIRE?
- Challenges
- Opportunities with Free and Open Source Software
- Questions & Discussion

What is INSPIRE?

# A directive from the EU

- Legislation
- Affects the Public Sector
- Into force since 15th May 2007
- Member states have to bring into force laws, regulations and administrative provisions by 15 May 2009

# The INSPIRE Concept

An initiative to create a

**European Spatial Information Infrastructure**

that delivers to the users

**Integrated Spatial Information Services**

# The INSPIRE Concept

These services should **allow** the **users to identify and access spatial or geographical information** from a wide range of sources, from the local level to the global level, **in an inter-operable way** for a variety of uses

# Users of INSPIRE

- Policy-makers
- Planners and managers at European, national and local level
- Citizens and their organisations
- Others

# Key components

- Metadata
- Interoperability of spatial data sets and services
- Network services
- Data sharing



# Challenges

# Challenges

- Existing Data & Systems
- Existing Workflow
- Local Data Format(s)
- Sensitive Data
- Running a Web Services Infrastructure compliant to INSPIRE

# Time Challenge

Metadata available for:

- Spatial data sets corresponding to Annex I and II by 15 May 2010
- Spatial data sets corresponding to Annex III by 15 May 2013

# Knowledge Challenge

- How do I know my services are INSPIRE compliant?
- What standards are involved?
- What software is on offer?

How do I manage this  
complexity?

# Opportunities with Free and Open Source Software

The acronyms 😊

# The acronyms 😊

📌 OGC - Open Geospatial Consortium



# The acronyms 😊

- 📌 OGC - Open Geospatial Consortium
- 📌 ISO - International Standards Organization

# The acronyms 😊

- 📌 OGC - Open Geospatial Consortium
- 📌 ISO - International Standards Organization
- 📌 SDI - Spatial Data Infrastructure

# The acronyms 😊

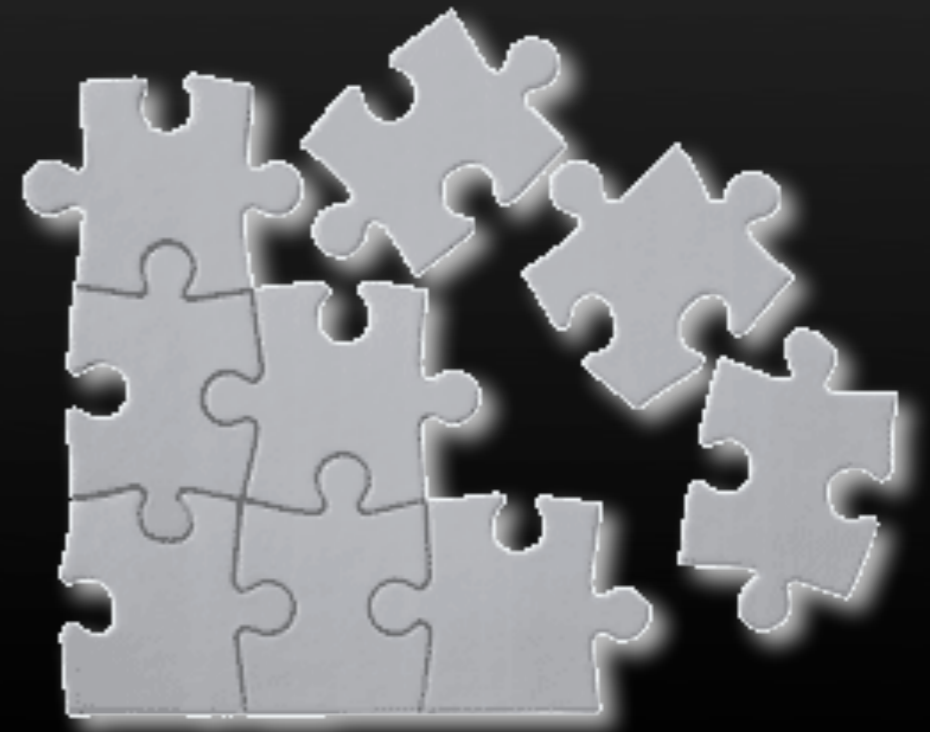
- 📌 OGC - Open Geospatial Consortium
- 📌 ISO - International Standards Organization
- 📌 SDI - Spatial Data Infrastructure
- 📌 FOSS - Free and Open Source Software

# The acronyms 😊

- 📌 OGC - Open Geospatial Consortium
- 📌 ISO - International Standards Organization
- 📌 SDI - Spatial Data Infrastructure
- 📌 FOSS - Free and Open Source Software
- 📌 GEOFOSS - GeoSpatial FOSS ;-)

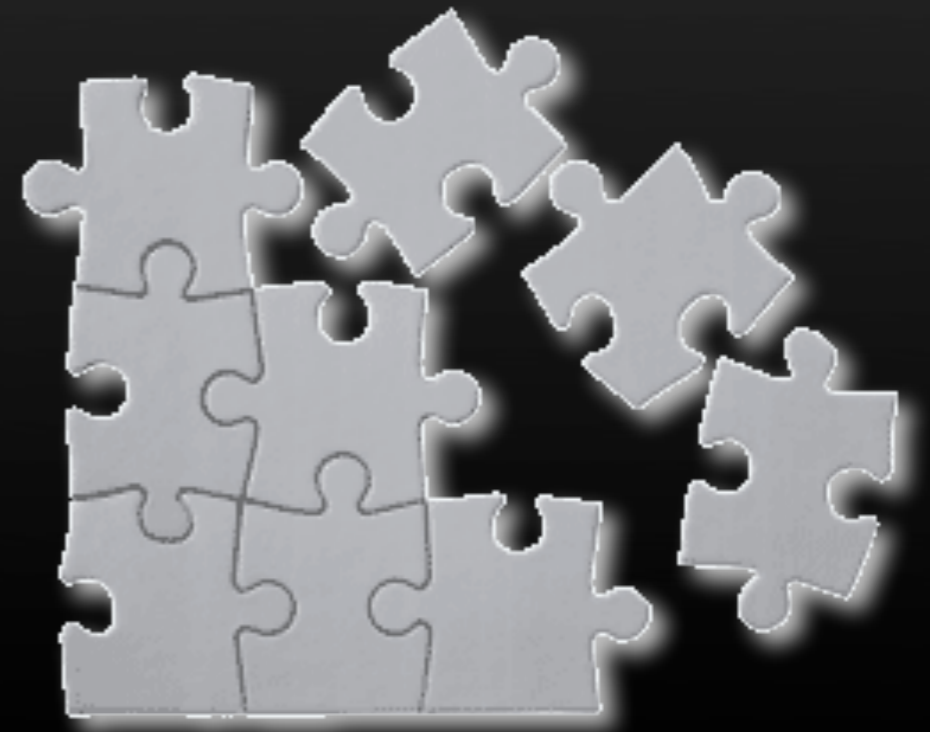
# What is Free and Open Source Software?

# What is Software?



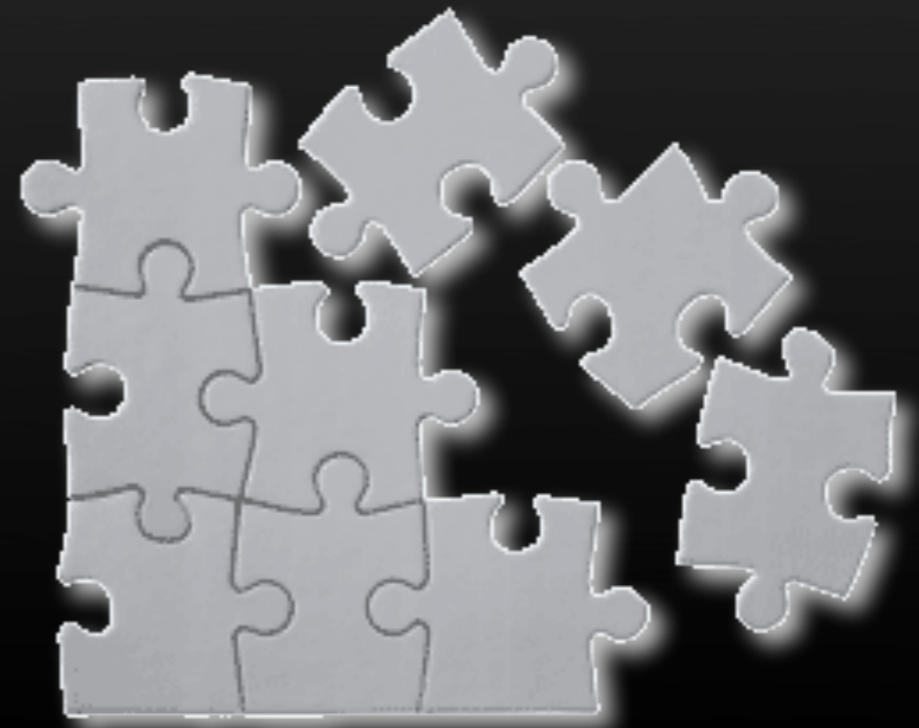
# What is Software?

- 📌 Instructions that make hardware work



# What is Software?

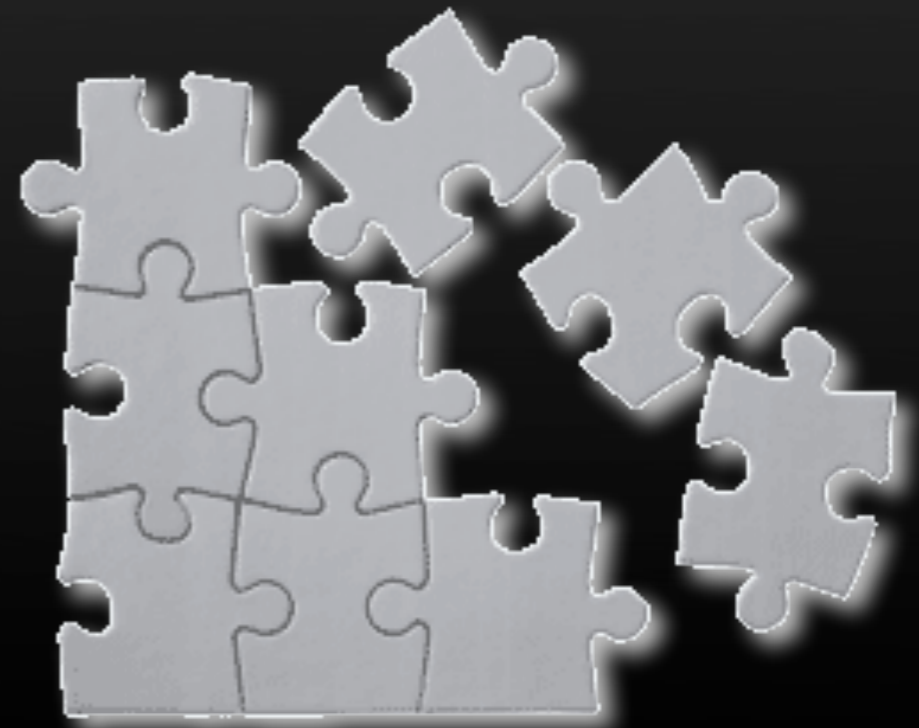
- 📌 Instructions that make hardware work
- 📌 Programmers write scripts that can be understood by people and by compilers:  
the source code





# What is Software?

- 📌 Instructions that make hardware work
- 📌 Programmers write scripts that can be understood by people and by compilers:  
the source code
- 📌 Compiled software can not be fixed or adapted to user needs



# What is Software?



A key property is that it can be infinitely copied without any loss

# What is FOSS?

# What is FOSS?

- 📌 FOSS provides access to the source code of an application

# What is FOSS?

- 📌 FOSS provides access to the source code of an application
- 📌 You are *Free* to use software and modify the source code to suit your needs

# What is FOSS?



FOSS



Closed Source

The most prominent examples

# What is FOSS?



FOSS



Closed Source

The most prominent examples

# What FOSS is not!

- 📌 FOSS does not come for free
- 📌 FOSS is not the same as Open Standards!  
(although there is a strong tendency towards full compliance with international standards)





Do you use FOSS?

YES!

# Do you use FOSS?

**YES!**

 With every single  
browse on the  
Internet

 With almost every  
email you send

# Complexity of a Spatial Data Infrastructure



Standards are required!

- Open Geospatial Consortium
- ISO-TC211

Standards are required!

Web Map Service - Style Layer Descripto  
- Filter Encoding - Controlled vocabularie  
- Web Feature Service - RSS - Semantics  
EPSG - Geography Markup Language  
WSDL - Catalog Services for the Web  
HTTP - Open Archive Initiative - FGDC  
- Web Coverage Service - SOAP - Web  
Map Context - GeoTIFF - Web  
Coordinate Transformation Service  
Z39.50 - Web Pricing and Ordering  
Service - ISO 19115 - XML/XSL/XSD  
CSS - Web Processing Service - HTML

# Expert Communities

This Rail-track was a really cool driving experience!!!

Only one exploded suspension in the middle of nowhere!



📌 Interpretation of standards can prevent things to nicely work together





Experts required!

 Research institutes

 Universities

 Government

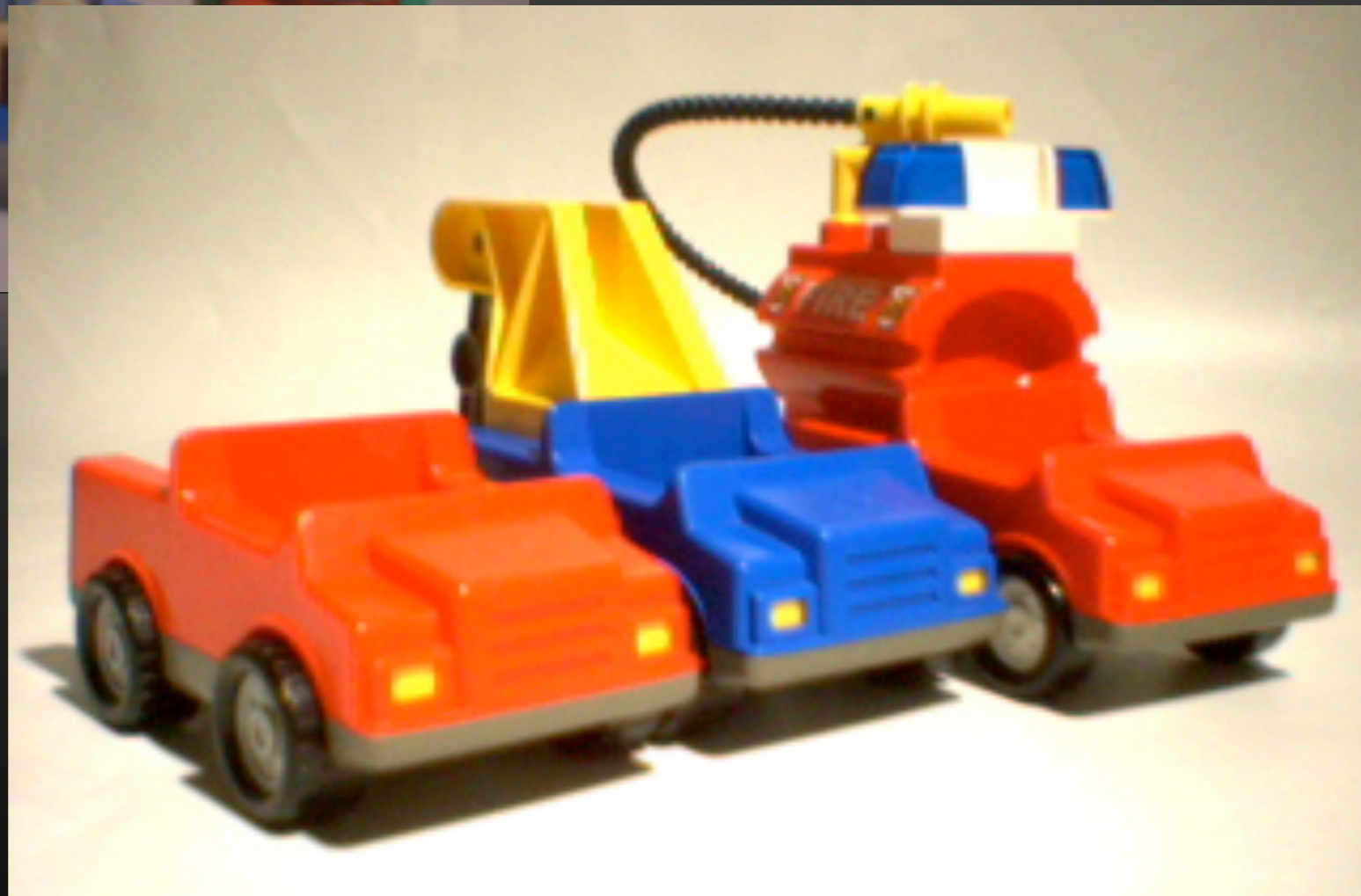
 Business

 Communities

**Experts required!**

Expert communities can be formed around FOSS projects to solve common problems

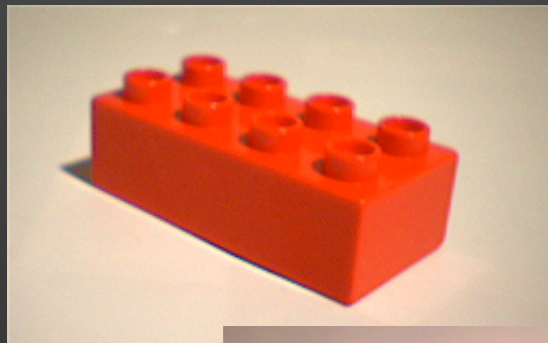




Each participant has specific needs



Jointly participants agree on how the standard building blocks are developed...



Hi!  
Speak OGC?

Hi!  
Sure!



... and ensure that each component will fit within the broader system architecture

This has resulted in...

# The Open Source Geospatial Foundation - osgeo.org



## 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

(\* in incubation)



# Some OSGeo Application Examples

# GeoNetwork opensource

GeoNetwork- The portal to spatial data and information

GeoNetwork™  
Opensource  
Geographic data sharing for everyone

Home | Last results | Contact us | Links | About | Help

English | Français | Español | 中文

Username  Password  Login

FIND INTERACTIVE MAPS, GIS DATASETS, SATELLITE IMAGERY AND RELATED APPLICATIONS

What?

Where? 

Reset Advanced Options

**CATEGORIES**

- Applications
- Audio/Video
- Case studies, best practices
- Conference proceedings
- Datasets
- Directories
- Interactive resources
- Maps & graphics
- Other information resources
- Photo

**RECENT CHANGES**  [GeoRSS](#)

- Hydrological Basins in Africa
- Vector Grid 5x5 Degrees Resolution
- Sea Area Delimitations - ASFA Geographic References
- Large Marine Ecosystems of the



1:82,445,704

**Layers**

- Active Fires (1 month - Terra/MODIS)
- Sea Surface Temperature (1 month - Aqua/MODIS)
- Country boundaries
- Blue Marble world image

**GEONETWORK'S PURPOSE IS:**

- To improve access to and integrated use of spatial data and information
- To support decision making
- To promote multidisciplinary approaches to sustainable development
- To enhance understanding of the benefits of geographic information

GeoNetwork opensource allows to easily share geographically referenced thematic information between different organizations. For more information please contact

Jeroen.Ticheler@fao.org

**Featured map**

- GEOLOGICAL MAP OF THE DABAN BASIN 1:100,000**

Geological map of the Daban Basin at scale 1:100,000. Authors: P. Bruni, E. Abbate, AS Hussein, M. Fazzuoli & M. Sagri Florence University and Somali National University, Mogadishu. Additions fro

- ...more...



# GeoNetwork opensource

GeoNetwork- The portal to spatial data and information

UN Home | OCHA Home | Search | Contact Us | Log In

**OCHA** United Nations Office for the Coordination of Humanitarian Affairs

**OCHA GeoNetwork**

About OCHA | News | Humanitarian Issues | Funding & Finance | Tools & Services | Geographic | Coordination

Home | Help English | Français | Español | 中文

Find Interactive Maps, GIS datasets, Satellite Imagery and Related Applications Username ticheler Password \*\*\*\*\* Login

What? Earthquake

Where? Asia

Open Map Viewer

Search

Reset Advanced Options

**CATEGORIES**

- Applications
- Audio/Video
- Case studies, best practices
- Conference proceedings
- Datasets
- Directories
- Interactive resources
- Maps & graphics
- Other information resources
- Photo

Aggregate Results matching search criteria : 11-16/16 (page 2/2), Sort by Relevance

**ELEVATION MAP ACEH PROVINCE**

Abstract The map illustrates coastal areas under 20 meters in elevation, as well as towns which fall within this zone. The 20 m value was selected to account for the margin of vertical error with the...

Keywords tsunami, earthquake, Aceh Province, Asia

Rate It

**WORLD-EARTHQUAKE INTENSITY ZONES**

Abstract The coverage as produced by the United Nations Environmental Programme/Global Resource Information Database (UNEP/GRID) shows earthquake intensity zones in accordance with the 1956 version o...

Keywords Hazard Map Data, World

Rate It

**WORLD-EARTHQUAKE INTENSITY ZONES**

Abstract The coverage as produced by the United Nations Environmental Programme/Global Resource Information Database (UNEP/GRID) shows earthquake intensity zones in accordance with the 1956 version o...

Keywords Hazard Map Data, World

Rate It

**GEOSPATIAL INFORMATION IN OCHA**

- Core Products
- GIS Gateway
- Tools
- Links and Partners
- Contacts
- Feedback
- About this site

**RECENT CHANGES** GeoRSS

- Rainfall Monitoring by Region for the African Continent: Western Africa
- Rainfall Monitoring by Region for the African Continent: Northern Africa
- Rainfall Monitoring for the African Continent
- Rainfall Monitoring by Region for the African Continent: Southern Africa
- Rainfall Monitoring by Region for the African Continent: Eastern Africa
- GLIpha: Global Livestock Production and Health Atlas
- Global Administrative Unit Layers (GAUL)

# MapBender

**radwanderland.de** Eine Initiative des Ministeriums für Wirtschaft, Verkehr, Landwirtschaft und Weinbau des Landes Rheinland-Pfalz

Radfernwege Themenrouten Navigation Routenplanung Karteninhalte

### Themenrouten

Amiche-Radweg

**Gesamtlänge:** 33 km, Rundfahrt bei Bodenheim

**Routendetails**

- Radweg
- Streckenverlauf auf Straßen
- Streckenverlauf außerhalb von Rheinland-Pfalz

**Infos zur Strecke**

**Drucken**

**Downloads**

33 km, Rundfahrt bei Bodenheim

Eine einfache, bahntrasseleichte Rundfahrt vom Rhein zu den ersten Ausläufern der rheinhessischen Hügel mit einer abwechslungsreichen Streckenführung. Als im vorletzten Jahrhundert die Eisenbahnen das Land erschlossen, bekamen auch die Dörfer im östlichen Rheinhessen ihre eigenen Bahnlinien, die mit dem Kosenamen wie »Amiche« bedacht wurden und heute vielfach Radweg sind.

**Höhenprofil** **Detailansicht**

Meter ü. NN

0 50 100 150

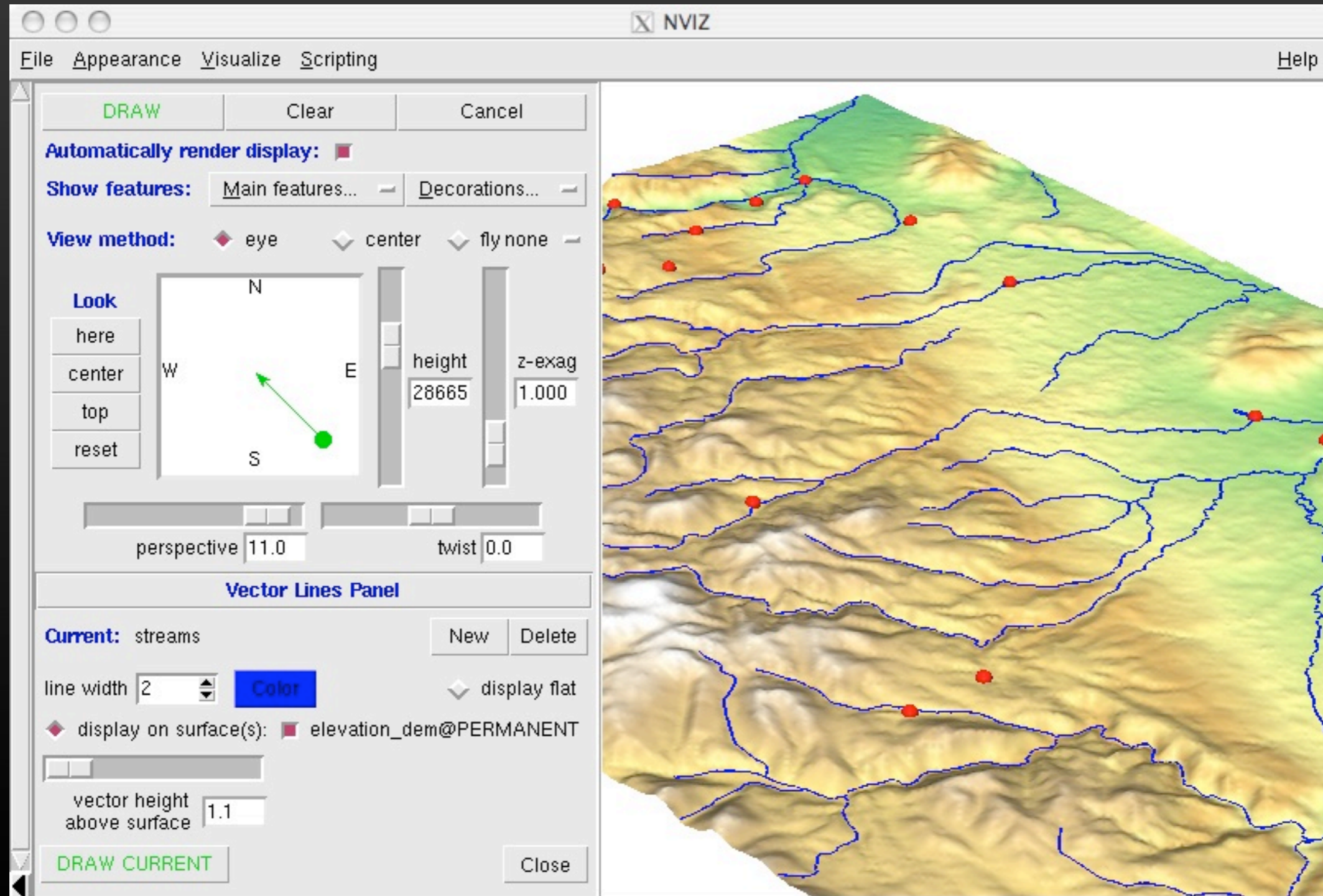
8 km 16 km 24 km 33.5 km

**MapBender**

1: 74128

Impressum | Kontakt | Hilfe

# GRASS



New center of view has been set

New center of view has been set

DRAW CURRENT

Close

# gvSIG

gvSIG: Gaceta Tecnologica.gvp

Archivo Ver Capa Ventana Vista Tabla Ayuda

Vista: Topografico

cons\_sup.shp

- Casetas, cobertizos
- Cementerio
- Edificio aislado
- Edificio aislado singular
- Edificio en urbanización
- Edificio en zona urbana
- Edificio religioso
- Edificio singular en zona urbana
- Estación de servicio
- Instalaciones de recreo
- Instalaciones deportivas
- Nave agroindustrial o fábrica
- Parque o jardín
- Patio
- Piscina, balsa
- Silo a escala

Vista: Ortofoto

manza.shp

- 0 - 72
- 73 - 229
- 230 - 445
- 446 - 782
- 790 - 2.15

valencia2002.e

Hiperenlace

Tabla: Tabla de atributos: cons\_sup.shp

ID	NIV...	C...	TIPO	SUPERFICIE
0.0	40.0	3.0	Edificio en zona urbana	11896.7
0.0	40.0	3.0	Edificio en zona urbana	13976.7
0.0	40.0	3.0	Edificio en zona urbana	12847.7
0.0	40.0	3.0	Edificio en zona urbana	12891.7
0.0	40.0	3.0	Edificio en zona urbana	13790.4
0.0	40.0	3.0	Edificio en zona urbana	13471.0
0.0	40.0	3.0	Edificio en zona urbana	6660.1
0.0	40.0	3.0	Edificio en zona urbana	13289.0
0.0	40.0	3.0	Edificio en zona urbana	12183.2
0.0	40.0	3.0	Edificio en zona urbana	11710.4
0.0	40.0	3.0	Edificio en zona urbana	11328.9
0.0	40.0	3.0	Edificio en zona urbana	10227.6
0.0	40.0	3.0	Edificio en zona urbana	8171.5
0.0	40.0	3.0	Edificio en zona urbana	8881.5
0.0	57.0	0.0	Instalaciones deportivas	2492.9
0.0	57.0	0.0	Instalaciones deportivas	1155.9
0.0	57.0	0.0	Instalaciones deportivas	814.1
0.0	39.0	54.0	Casetas, cobertizos	9186.6
0.0	39.0	54.0	Casetas, cobertizos	7717.8
0.0	39.0	54.0	Casetas, cobertizos	7920.4
0.0	39.0	54.0	Casetas, cobertizos	6627.5
0.0	39.0	54.0	Casetas, cobertizos	6239.4
0.0	57.0	11...	Parque o jardín	442.4
0.0	57.0	11...	Parque o jardín	352.0
0.0	57.0	11...	Parque o jardín	928.4
0.0	57.0	11...	Parque o jardín	144.0
0.0	57.0	11...	Parque o jardín	52.7

14 / 14635 Total registros seleccionados.

Mapa de población de la ciudad de Valencia Zona centro

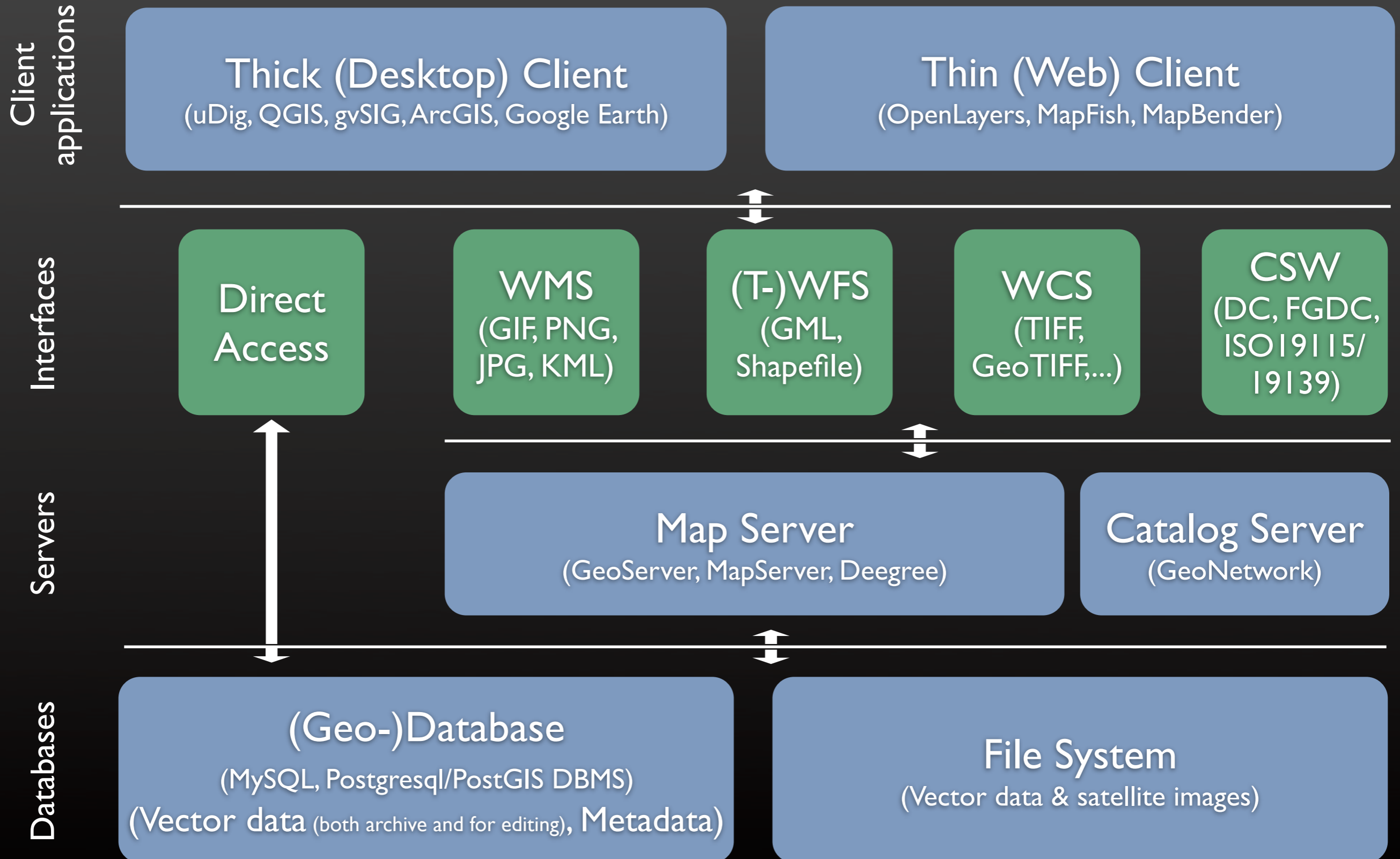
LEYENDA

- 0 - 72
- 73 - 229
- 230 - 445
- 446 - 782
- 790 - 2.194

1: 318.730 Metros X = 725.969,73 Y = 4.372.046,82 EPSG:23030

Hiper3 : /home/fjlopez/D... Cerrar

# GeoFOSS based SDI Software Architecture



The future



# The future with (Geo)FOSS

- 📌 Shift from license to services based business model
  - ◉ Support contracts for who needs them
  - ◉ Add-on services & tools
  - ◉ Competition
  - ◉ Local capacity building
  - ◉ Strong uptake at a global, non-exclusive scale

# The future of OSGeo

- Community building
- Further tool integration
- Need for more complex and innovative information systems
  - Architecture development
  - Web semantics
  - Scalable from the local community to global level



# Conclusions

The OSGeo initiative supports:

- Effective system development
- Effective data and information sharing
- Sustainable development and sustainable management of scarce resources
- And ultimately...



We can all comply with INSPIRE in different ways ...  
... while we developed the basis only once