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http://blog.gisky.be
FOSDEM, Brussels 31/1/2015

- GIS/Geo/Location/OSM..
- Packaging in Debian
- Debian pure blend
- Debian packages
- Small community

- GIS/Geo/Location/OSM..
- Live Disk/USB/VM
- based on Lubuntu
- Documentation
- Workshops
- Large community (upstream, documentation, translation, ...)

My Talk

- GIS / Geo – what why how
- OSGeo Live – Debian GIS in detail

- GIS/Geo/Location/OSM..
- Packaging in Debian
- Debian pure blend
- Debian packages
- Small community

- GIS/Geo/Location/OSM..
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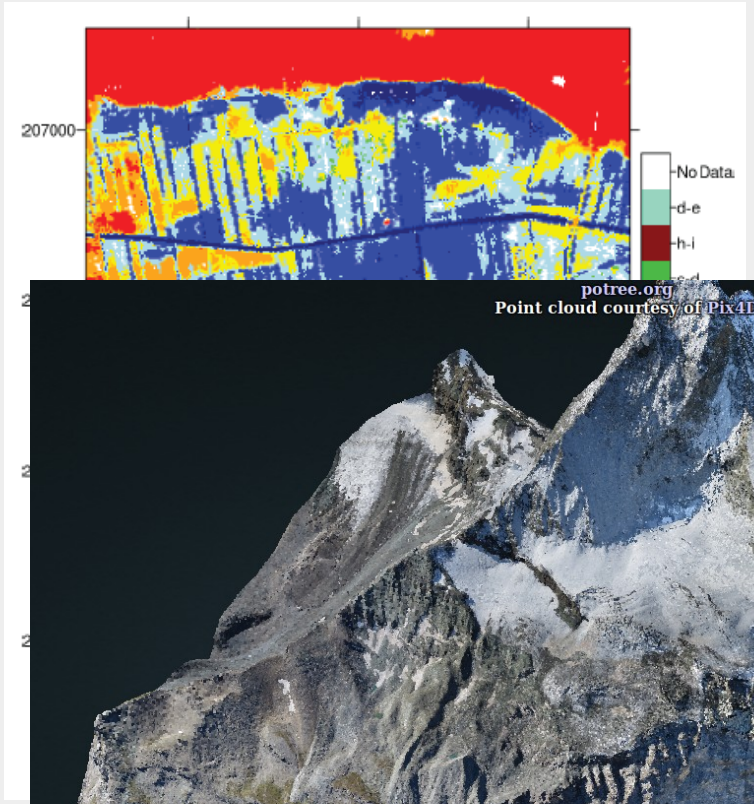
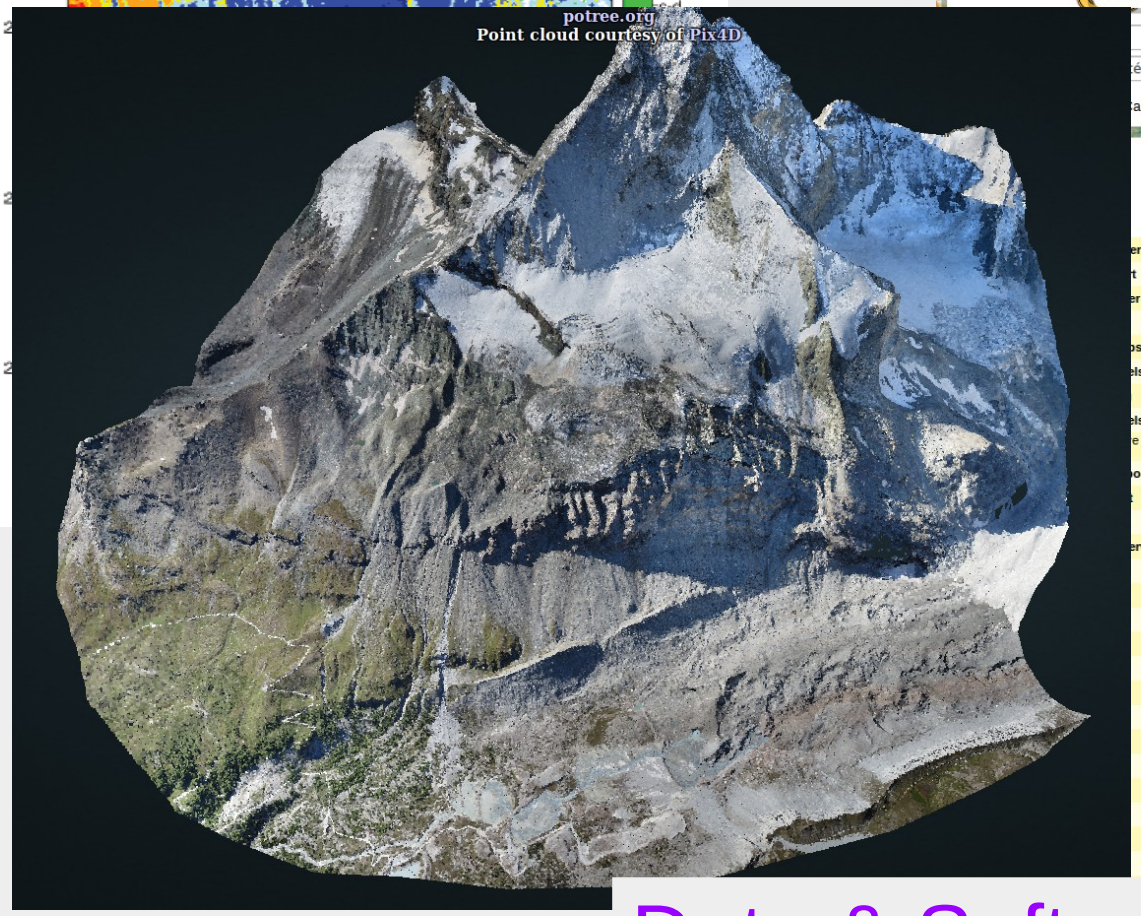
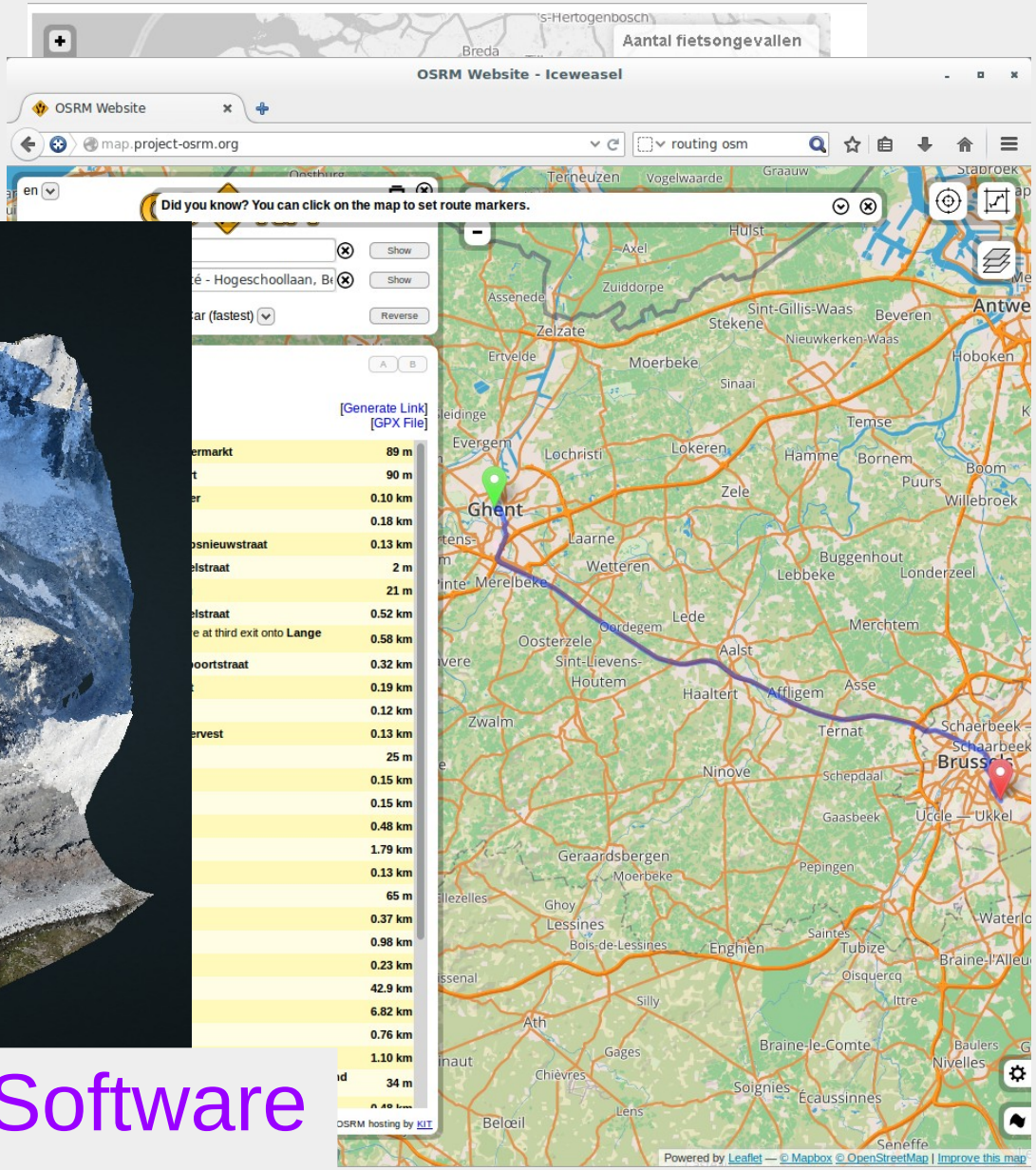
What is this GIS/geo stuff about?

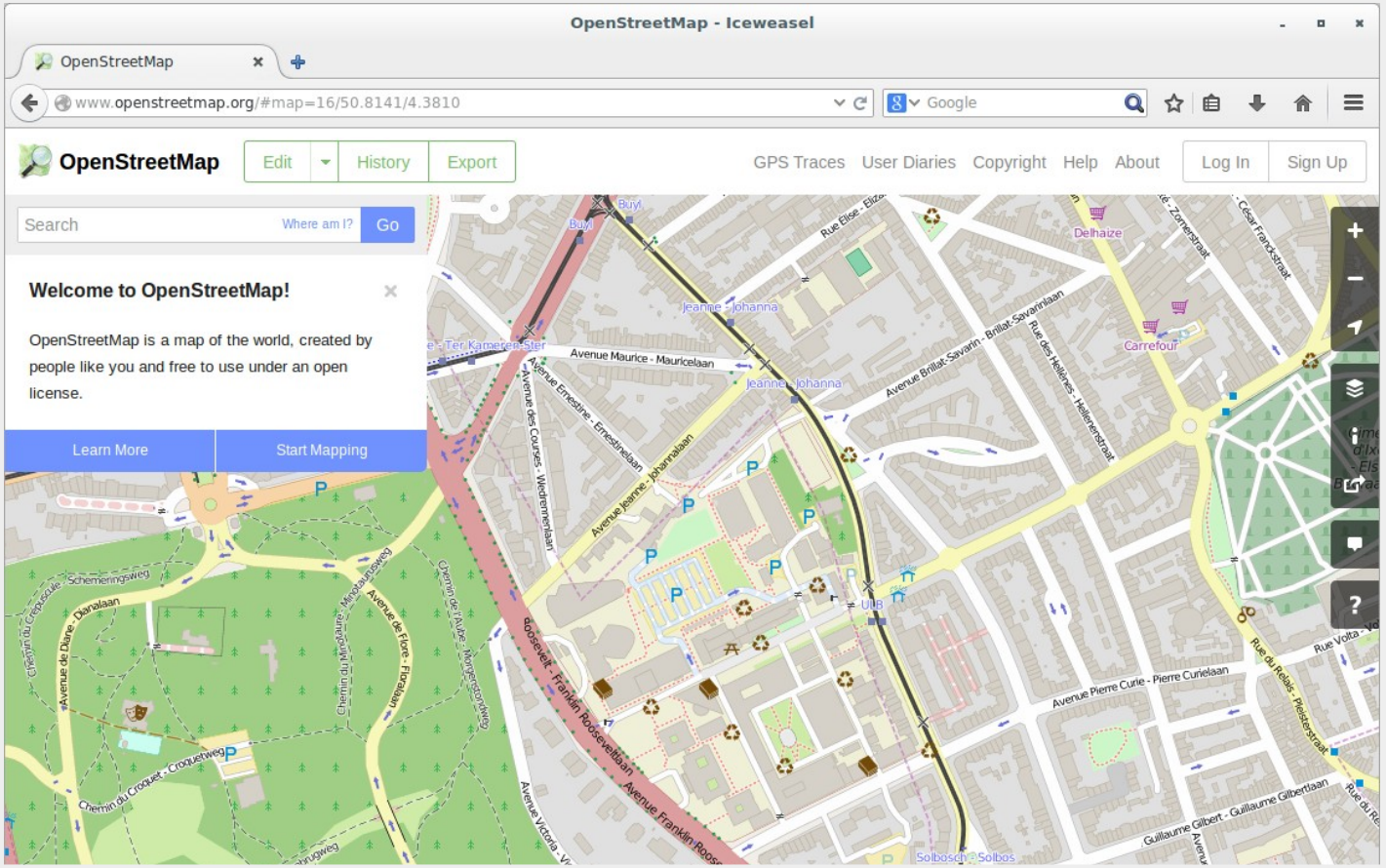






Data & Software

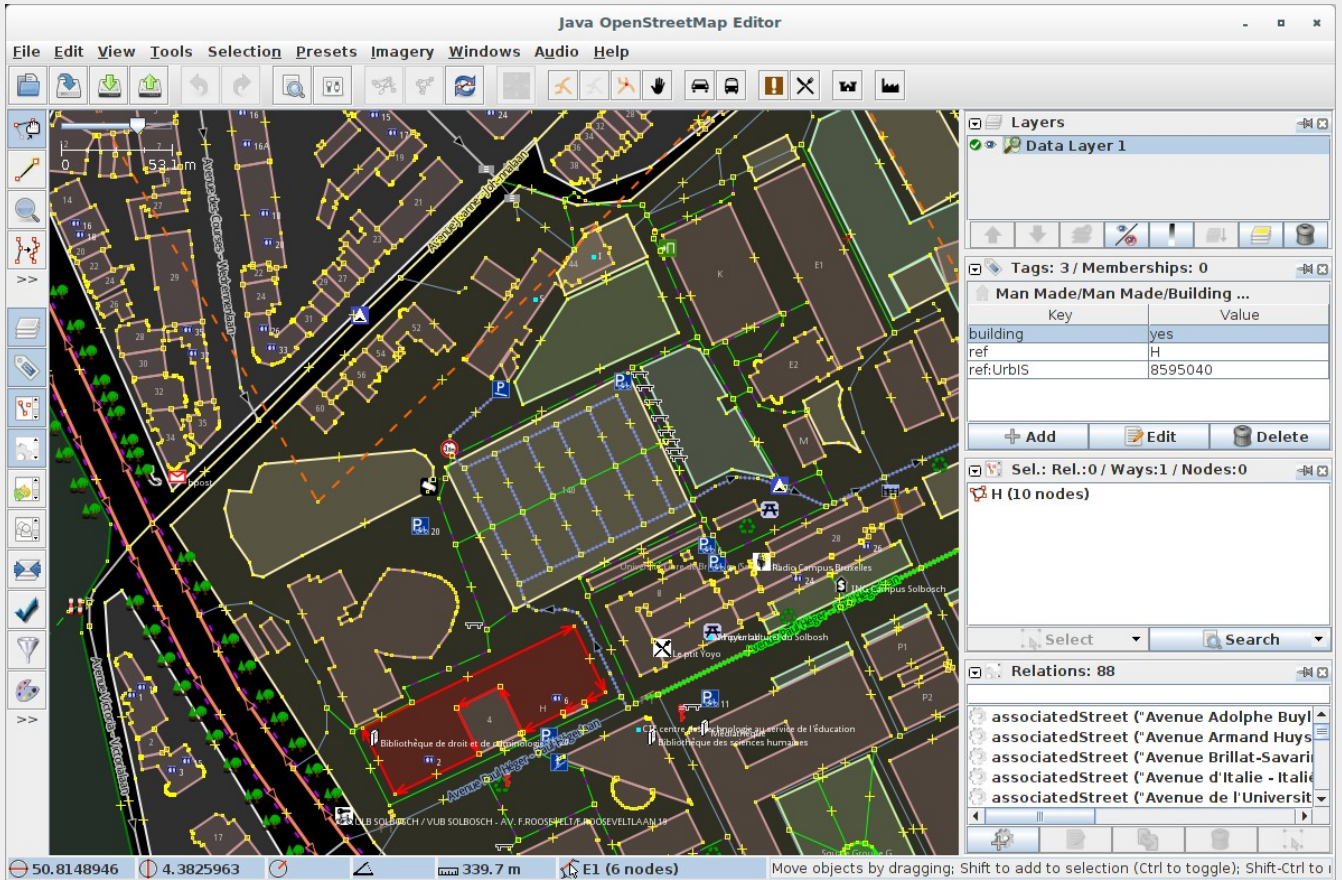
Data: Open Streetmap



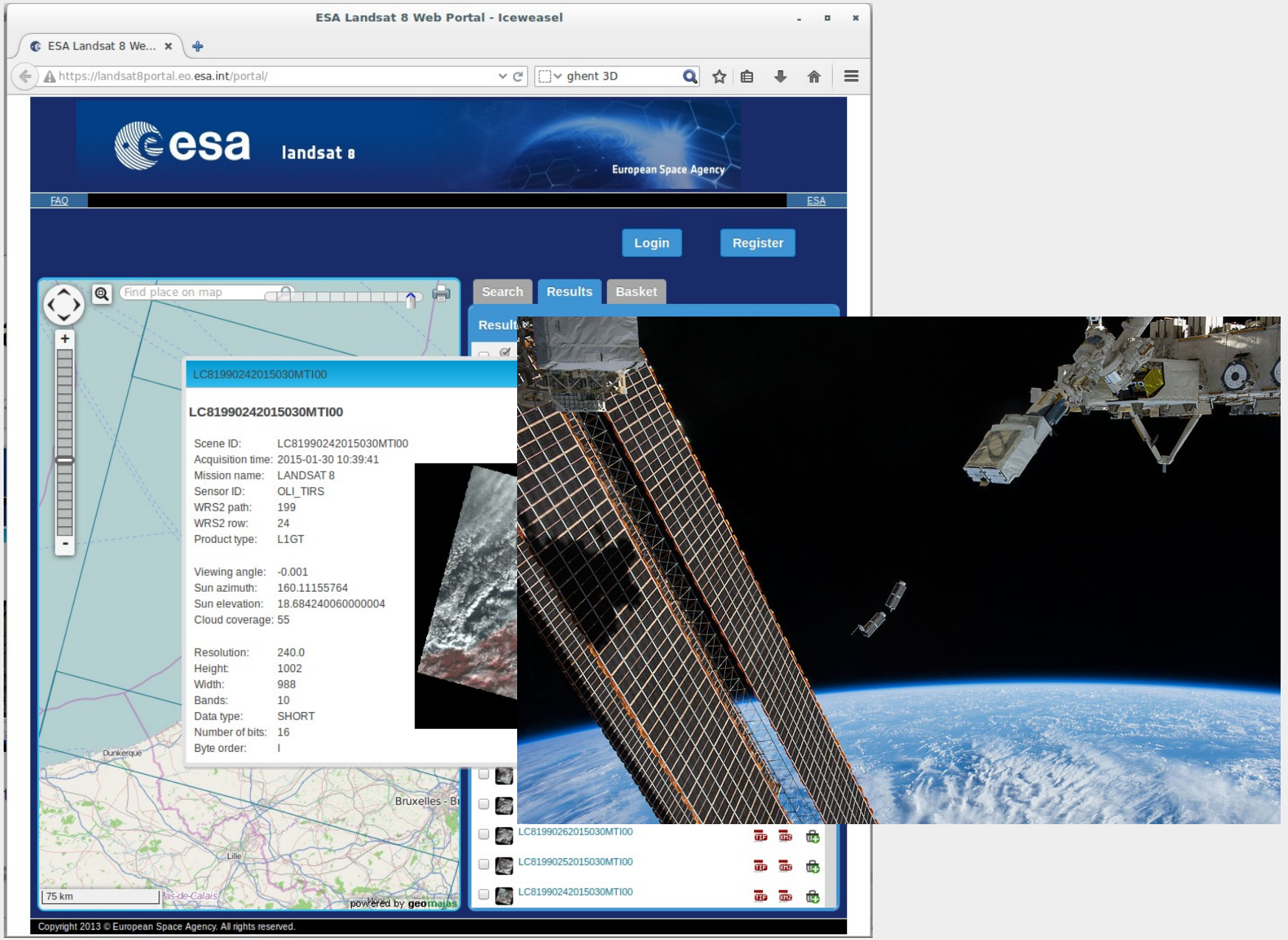
OpenStreetMap is a map of the world, created by people like you and free to use under an open license.

OSM in Debian GIS

- JOSM is an extensible editor for OpenStreetMap (OSM) written in Java 7.
- Others: osmosis, routino, ...



Aerial photographs/satellite imagery



Data → libraries

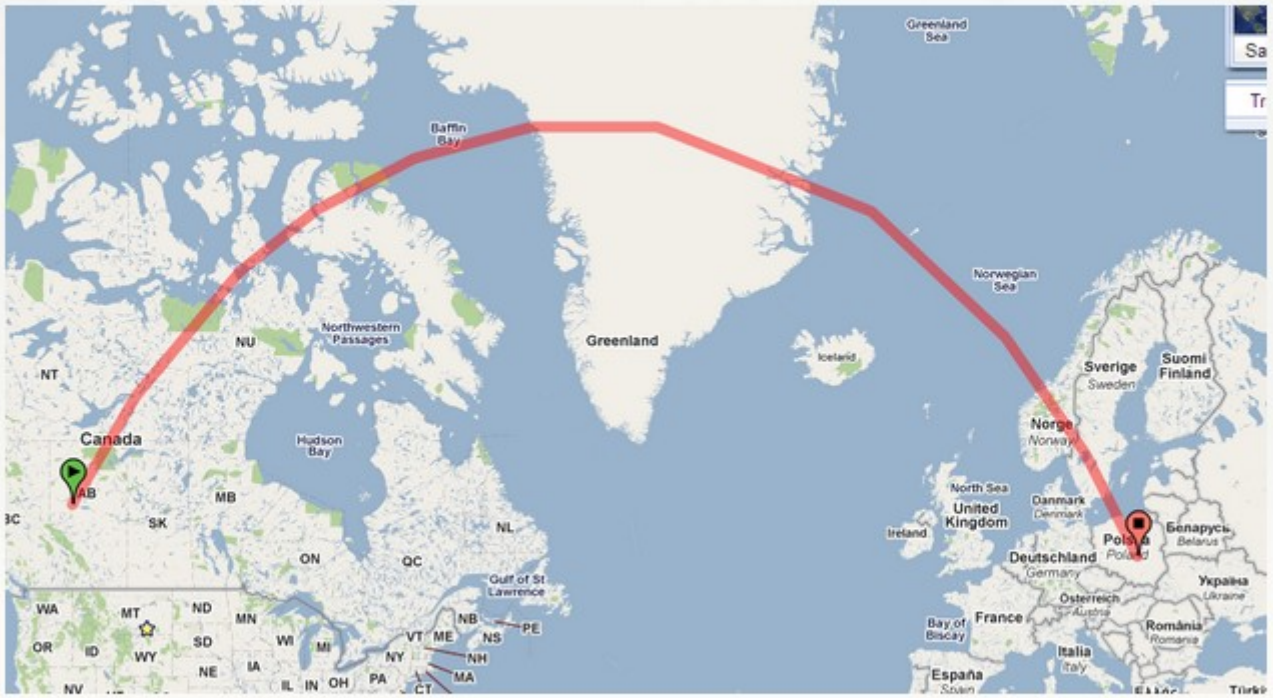
Why is the 'straight line' path across continent so curved?

38

10

This is the result of mapping the straight line path from a point in US to Poland using Distance Measurement Tool.

Also, planes from Asia to US would travel almost over North Pole.



Why is the path so curved? I agree that this is a flat representation of a sphere, so I do expect some arc, but I don't think earth has this much curvature.

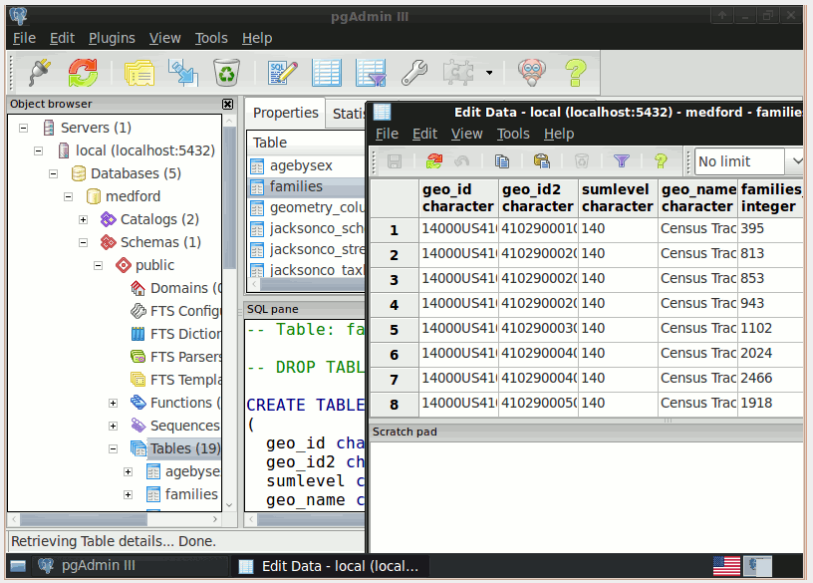
What am I missing here?

Spatial Database

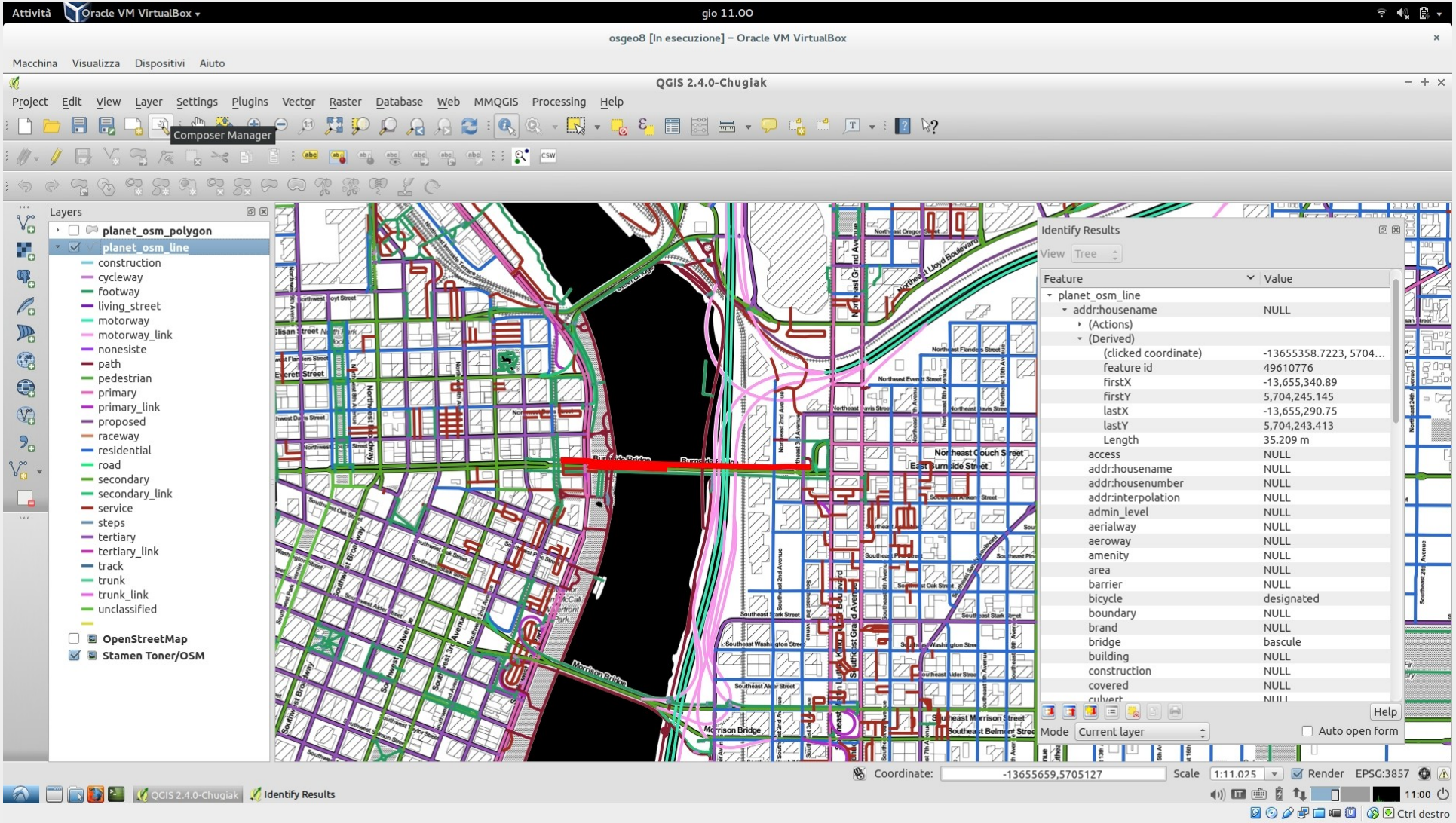
- PostGIS – spatially enabled database
  - SELECT census.*, customers.*

    FROM census JOIN customers ON

    ST_Contains(census.geom,customers.geom);



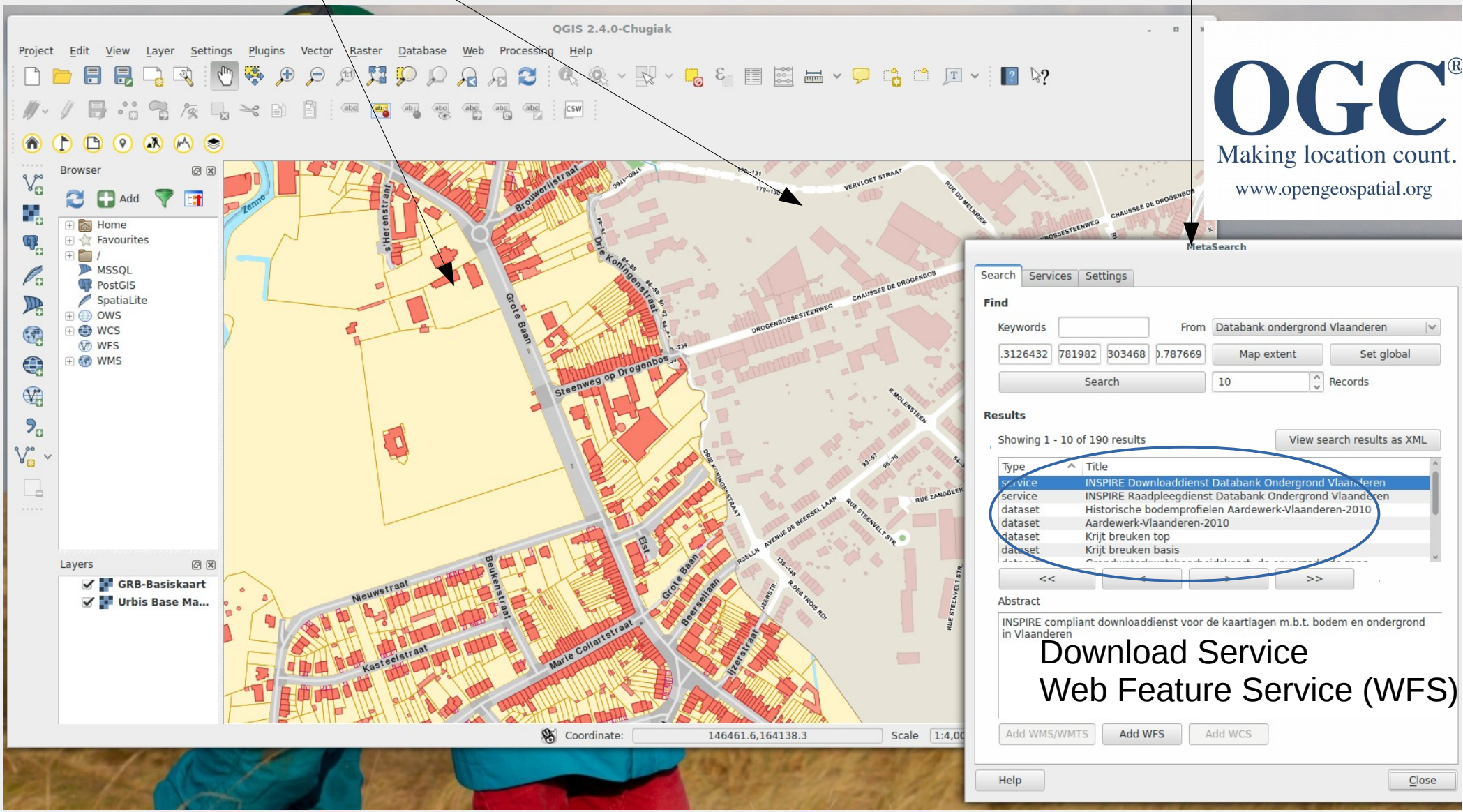
Desktop GIS: QGis



Standard Services

Show rendered maps
Web Mapping Services (WMS)
Geoserver
Mapserver (d)
TinyWMS (d)

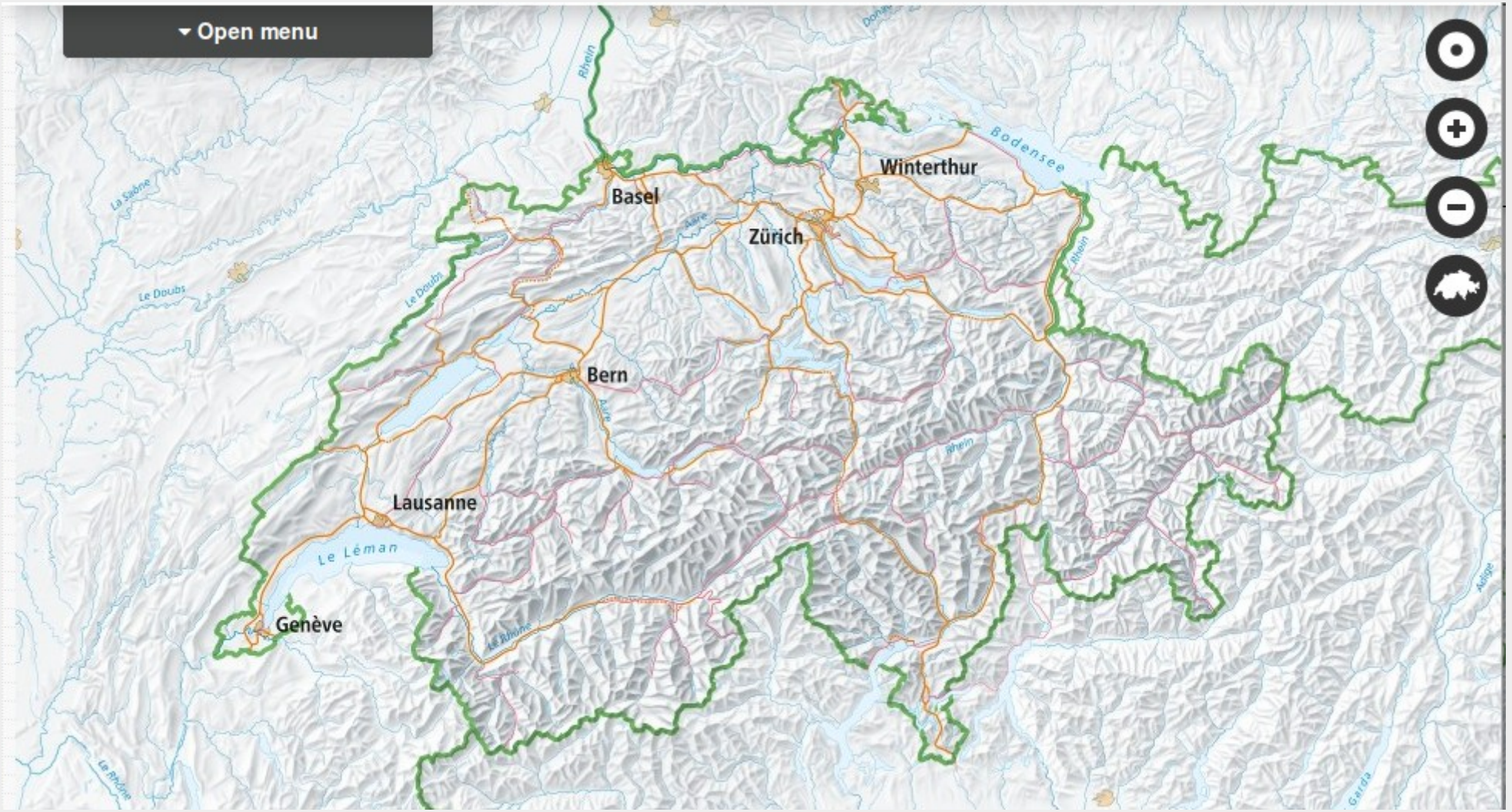
Search for data/metadata
Catalog Service for Web (CSW)
Geonetwork
PyCSW (d)



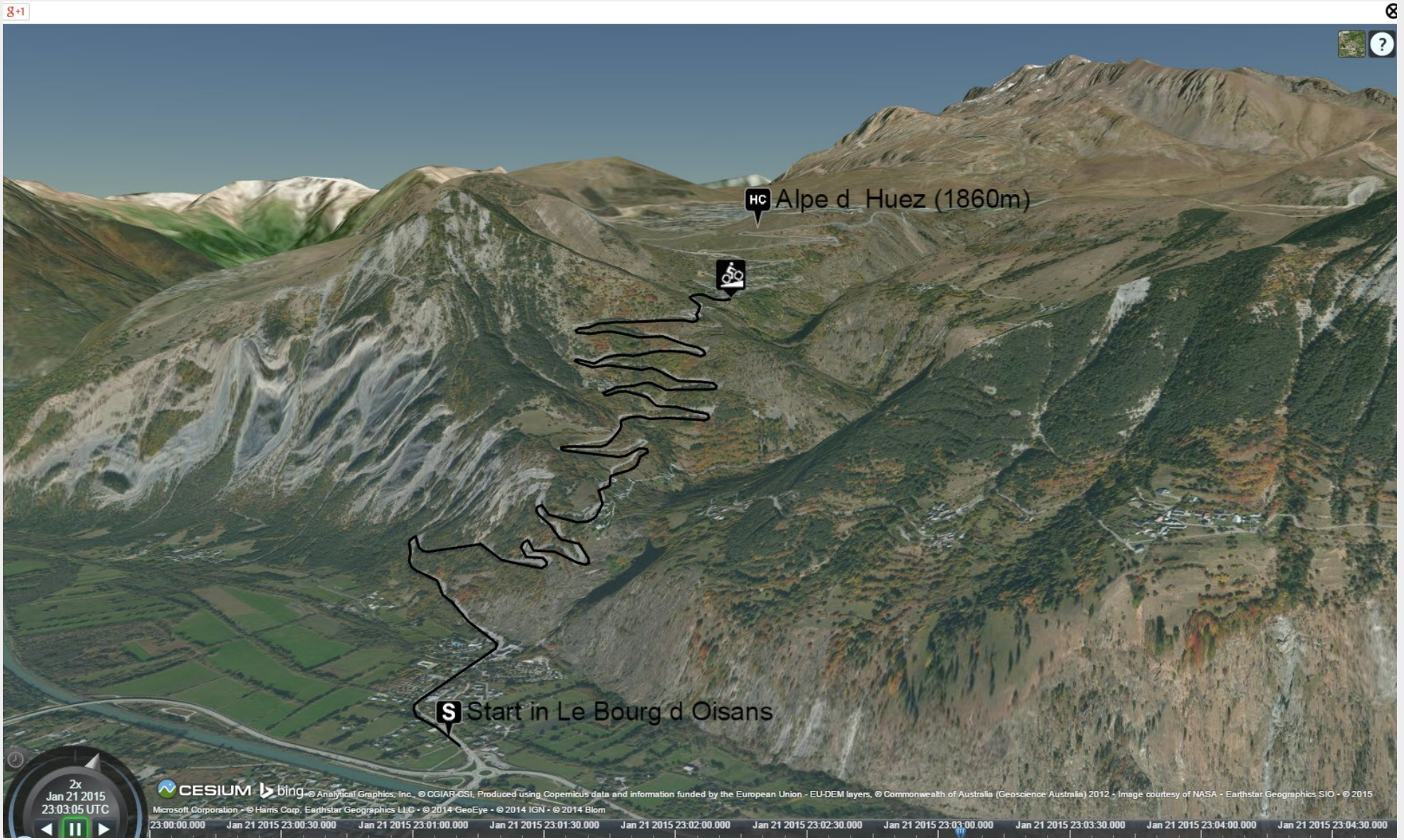
OGC®
Making location count.
www.opengeospatial.org

Web mapping (javascript)

- Leaflet, OpenLayers and Cesium (3D)



Web Mapping


HC Alpe d Huez (1860m)
S Start in Le Bourg d Oisans
2x
Jan 21 2015
23:03:05 UTC
CESIUM
bing
© Analytical Graphics, Inc., © CGIAR-CSI, Produced using Copernicus data and information funded by the European Union - EU-DEM layers, © Commonwealth of Australia (Geoscience Australia) 2012 - Image courtesy of NASA - Earthstar Geographics SIO - © 2015 Microsoft Corporation - © Harris Corp, Earthstar Geographics LLC - © 2014 GeoEye - © 2014 IGN - © 2014 Blom
23:00:00.000
Jan 21 2015 23:00:30.000
Jan 21 2015 23:01:00.000
Jan 21 2015 23:01:30.000
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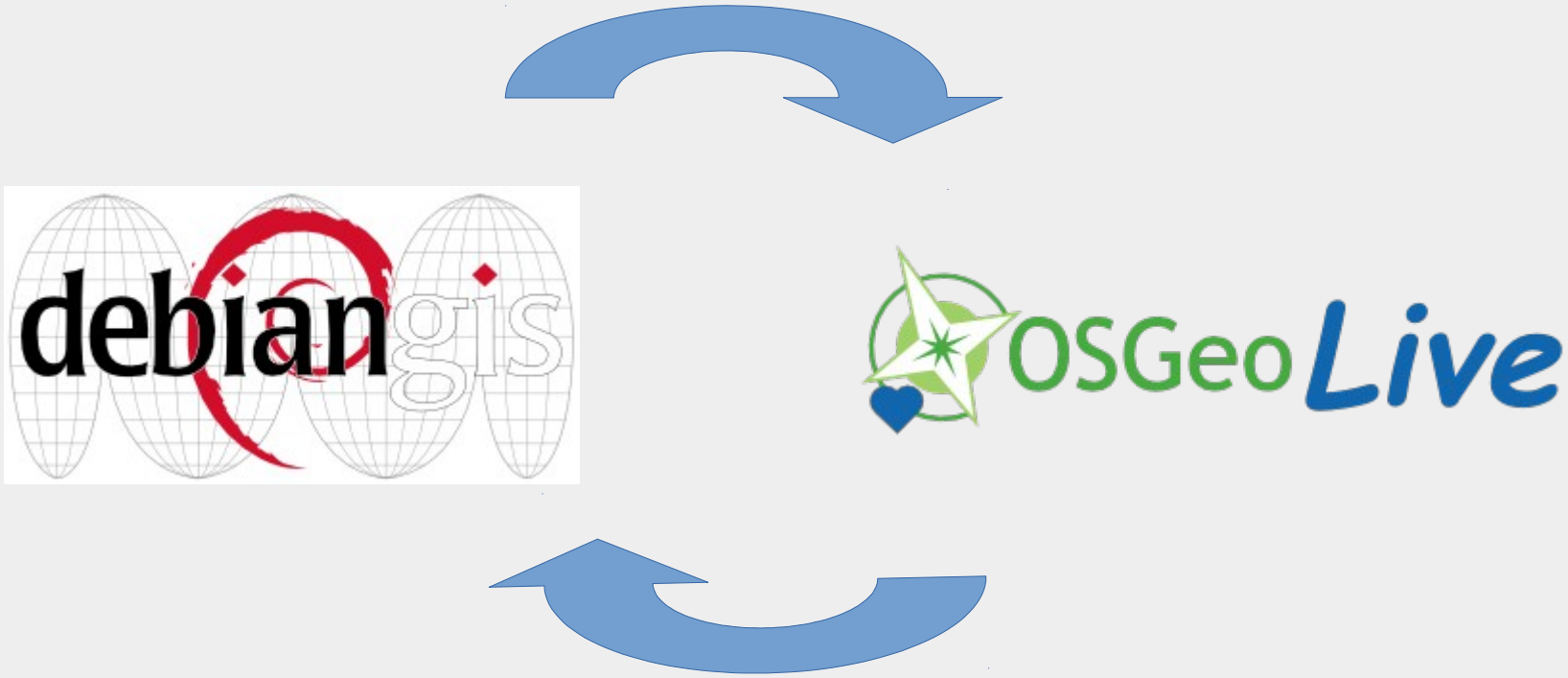
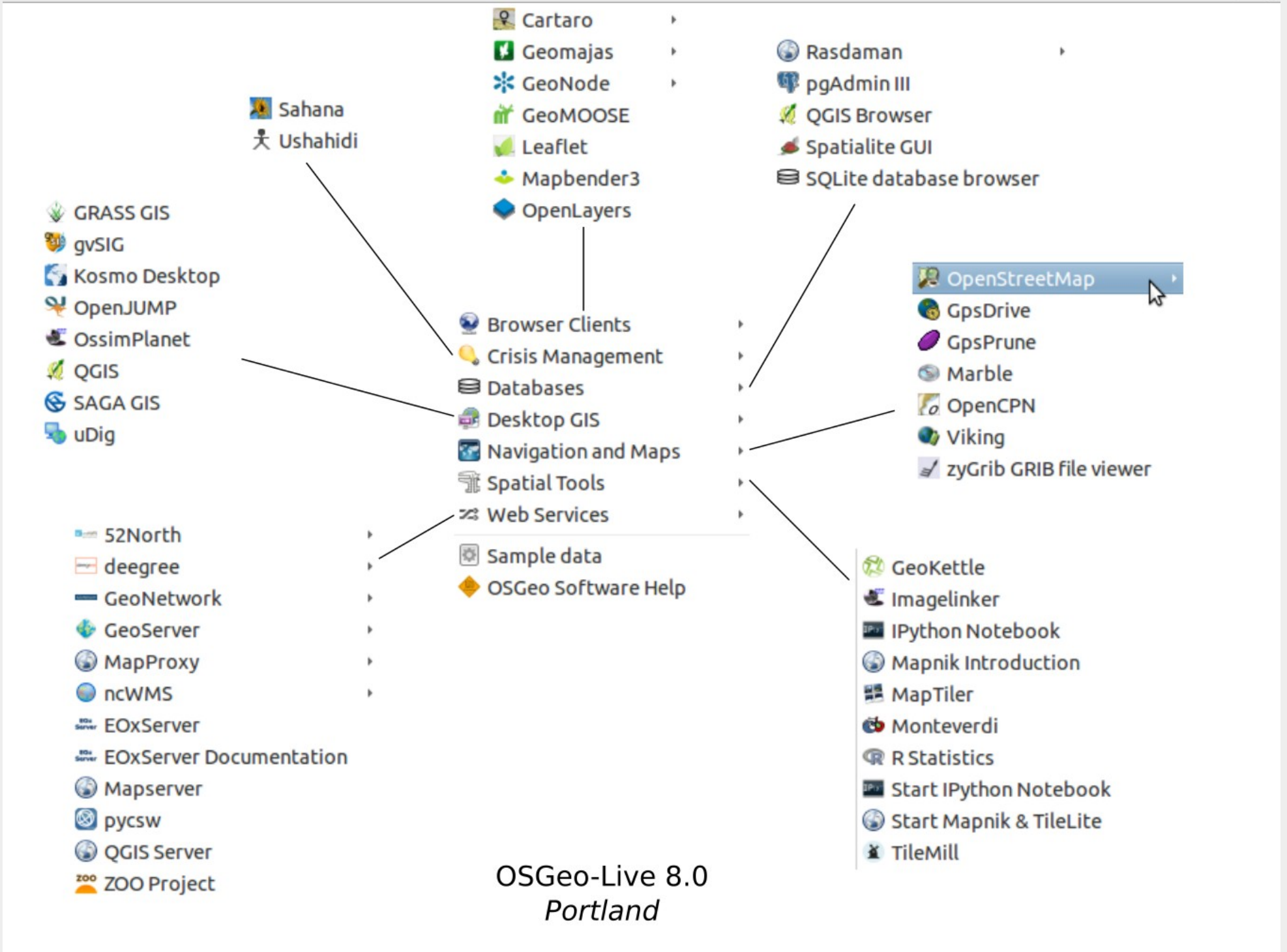
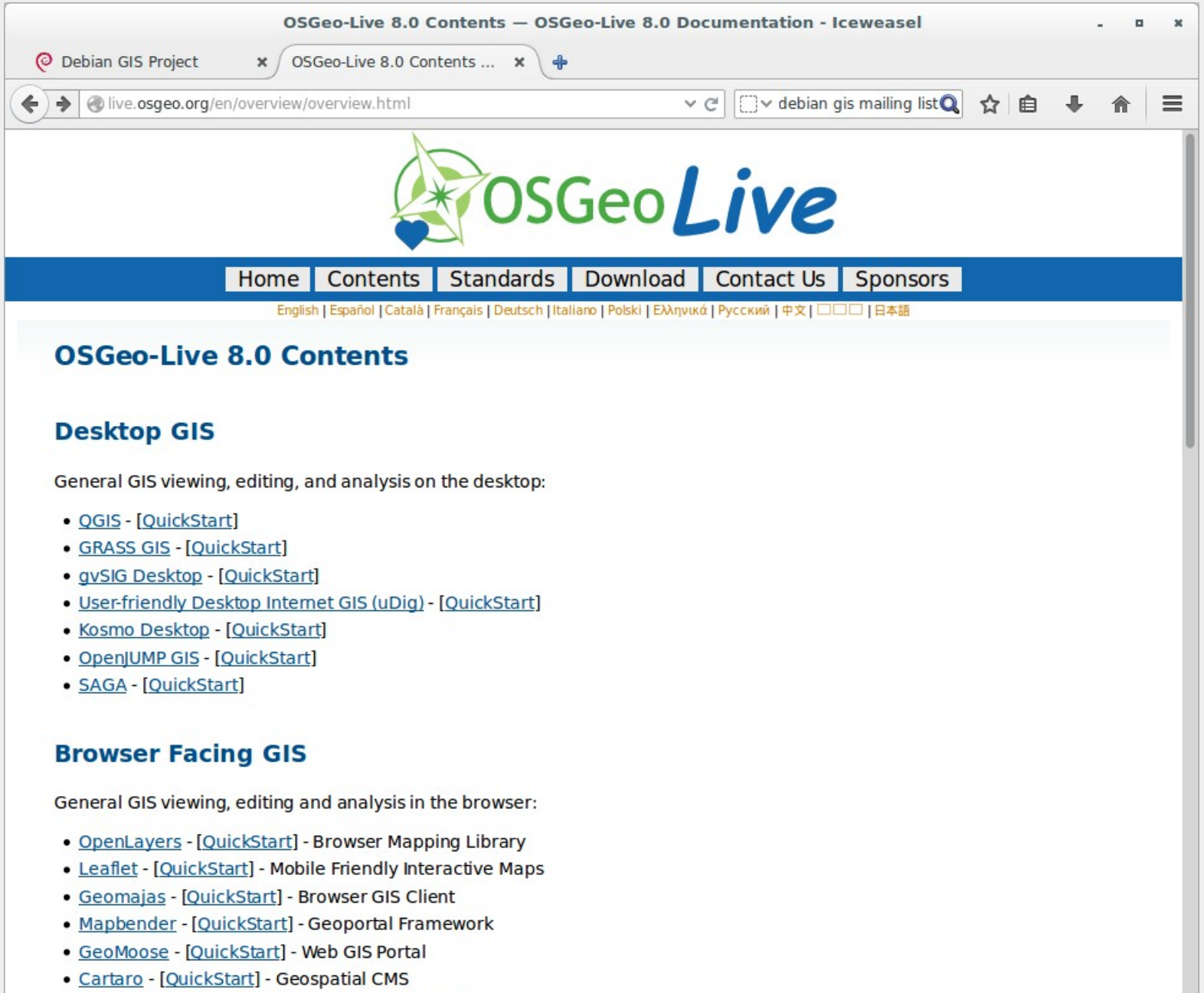

debian gis
OSGeo Live


Cartaro
Geomajas
GeoNode
GeoMOOSE
Leaflet
Mapbender3
OpenLayers
Rasdaman
pgAdmin III
QGIS Browser
Spatialite GUI
SQLite database browser
Sahana
Ushahidi
GRASS GIS
gvSIG
Kosmo Desktop
OpenJUMP
OssimPlanet
QGIS
SAGA GIS
uDig
Browser Clients
Crisis Management
Databases
Desktop GIS
Navigation and Maps
Spatial Tools
Web Services
Sample data
OSGeo Software Help
OpenStreetMap
GpsDrive
GpsPrune
Marble
OpenCPN
Viking
zyGrib GRIB file viewer
52North
deegree
GeoNetwork
GeoServer
MapProxy
ncWMS
EOxServer
EOxServer Documentation
Mapserver
pycsw
QGIS Server
ZOO Project
GeoKettle
Imagelinker
IPython Notebook
Mapnik Introduction
MapTiler
Monteverdi
R Statistics
Start IPython Notebook
Start Mapnik & TileLite
TileMill
OSGeo-Live 8.0
Portland

Documention



beOpenGISfr

OSGeo live

- Live disk
  - Demo datasets
  - Quickstarts
  - Applications
- Education
- Handed out as Open Source GIS events
  - >25 in 2014
- Often used in workshops
- 68% of downloads are Windows users

OSGeo live under the hood

- Based on Lubuntu LTS
- 2 releases /year
- Coordination
  - Weekly meetings on IRC
  - Project Manager
- Documentation using Sphinx
- Packaging in a PPA
- Install scripts

http://trac.osgeo.org/osgeo/browser/livedvd/gisvm/trunk

```
svn checkout https://svn.osgeo.org/osgeo/livedvd/gisvm/trunk
```

Install scripts

```
if [ "$FULL" -eq 1 ] ; then

  apt-get -q update
  apt-key update
  apt-get install --no-install-recommends --assume-yes $PACKA

  if [ $? -ne 0 ] ; then
     echo "ERROR: package install failed."
     exit 1
  fi

  # download and install rasdaman
  if [ ! -d rasdaman ] ; then
    git clone git://kahlua.eecs.jacobs-university.de/rasdamar
  fi

  cd "rasdaman"

  # switch to current osgeo live tag
  git checkout "$OSGEOLIVE_TAG"

  mkdir -p "$RASDAMAN_HOME/log"
  chgrp users "$RASDAMAN_HOME/log/" -R
  chmod g+w "$RASDAMAN_HOME/log/" -R
  adduser "$USER_NAME" users
  autoreconf -fi

  ./configure --with-logdir="$RASDAMAN_HOME"/log \
      --prefix="$RASDAMAN_HOME" --with-wardir="$WARDIR" \
      --with-netcdf

  if [ $? -ne 0 ] ; then
     echo "ERROR: configure failed."
     pkg_cleanup
     exit 1
  fi

  make version
  make
  if [ $? -ne 0 ] ; then
     echo "ERROR: compilation failed."
     pkg_cleanup
```

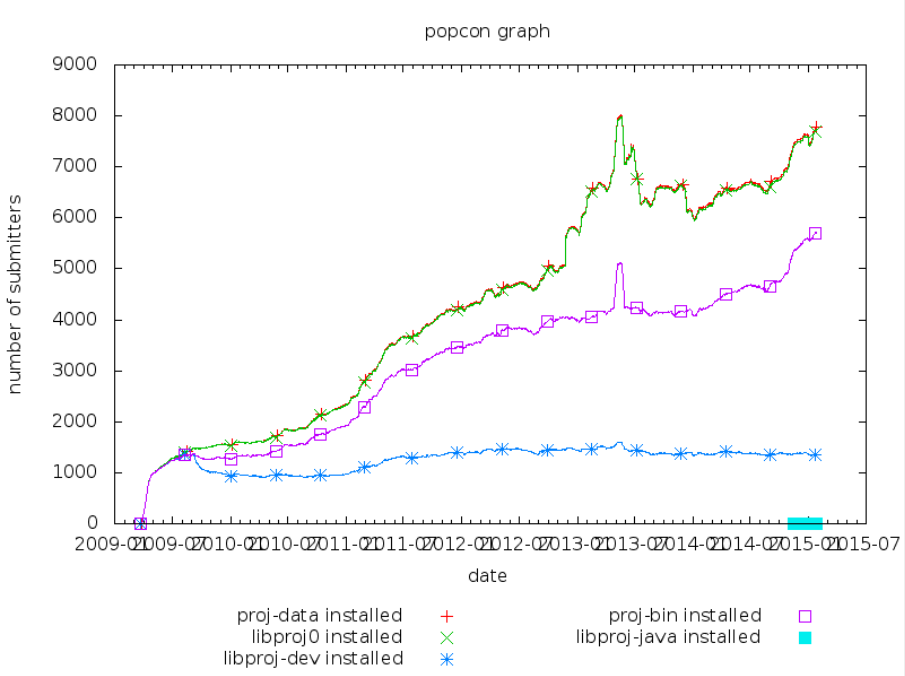
```
TMP_DIR=/tmp/build_mapserver
mkdir "$TMP_DIR"
cd "$TMP_DIR"

# Install MapServer and its php, python bindings.
apt-get install --yes cgi-mapserver mapserver-bin php5-mapscript \
   python-mapscript


# Download MapServer data
wget -c --progress=dot:mega \
   "http://download.osgeo.org/livedvd/data/mapserver/mapserver-6-2-html-docs.zip
"
wget -c --progress=dot:mega \
   "http://download.osgeo.org/livedvd/data/mapserver/mapserver-itasca-ms60.zip"


# Install docs and demos
if [ ! -d "$MAPSERVER_DATA" ] ; then
    mkdir -p "$MAPSERVER_DATA"/demos

    echo -n "Extracting MapServer html doc in $MAPSERVER_DATA/..."
    unzip -q "$TMP_DIR/mapserver-6-2-html-docs.zip" -d "$MAPSERVER_DATA"/
    echo -n "Done\nExtracting MapServer itasca demo in $MAPSERVER_DATA/demos/...
"
    unzip -q "$TMP_DIR/mapserver-itasca-ms60.zip" -d "$MAPSERVER_DATA"/demos/
    echo "Done"

    mv "$MAPSERVER_DATA/demos/workshop" "$MAPSERVER_DATA/demos/itasca"
    mv "$MAPSERVER_DATA/mapserver-6-2-docs" "$MAPSERVER_DATA/doc"
    rm -rf "$MAPSERVER_DATA/demos/ms4w"

    echo "Configuring the system..."
    # Itasca Demo hacks
    mkdir -p /usr/local/www/docs_maps/
    ln -s "$MAPSERVER_DATA"/demos/itasca "$MAPSERVER_DATA"/demos/workshop
    ln -s /usr/local/share/mapserver/demos /usr/local/www/docs_maps/mapserver_de
mos
```

People Do install OsGeo Live on Desktops and Servers

Packaging in UbuntuGIS

- UbuntuGIS/Unstable
  - 30000+ downloads of GDAL library
- Up to one year ago more up-to-date than Debian unstable + with more contributors

- The goal of the DebianGis project is about improving Debian to make it the best distribution for Geographical Information Systems applications and users.
- Most important libraries packaged
- Many important applications packaged



Why is xxx not in Debian (GIS)

- Often Non-free files
  - Typical for scientific software (free for non-commercial use)
  - OGC documents
  - Projection definitions

Suggestions for different licenses?

- Nobody answered my questions
- Hard to find a sponsor
- New processing / freeze takes a long time
- Transitions take a long time
  - GDAL
- Many packaging guides/styles out there – not easy to pick the right one
- Dependencies are missing
  - Java
- ==>It takes time
  - ==> Often too much time for upstream

Debian GIS blend

- Typical issues also encountered in Debian Med and Debian Science
- Specialised software has a comparatively small user base
- Non-programmers
- https://wiki.debian.org/DebianPureBlends

> A Debian Pure Blend is a Debian *internal* project which assembles a set of packages that might help users to solve certain tasks of their work.

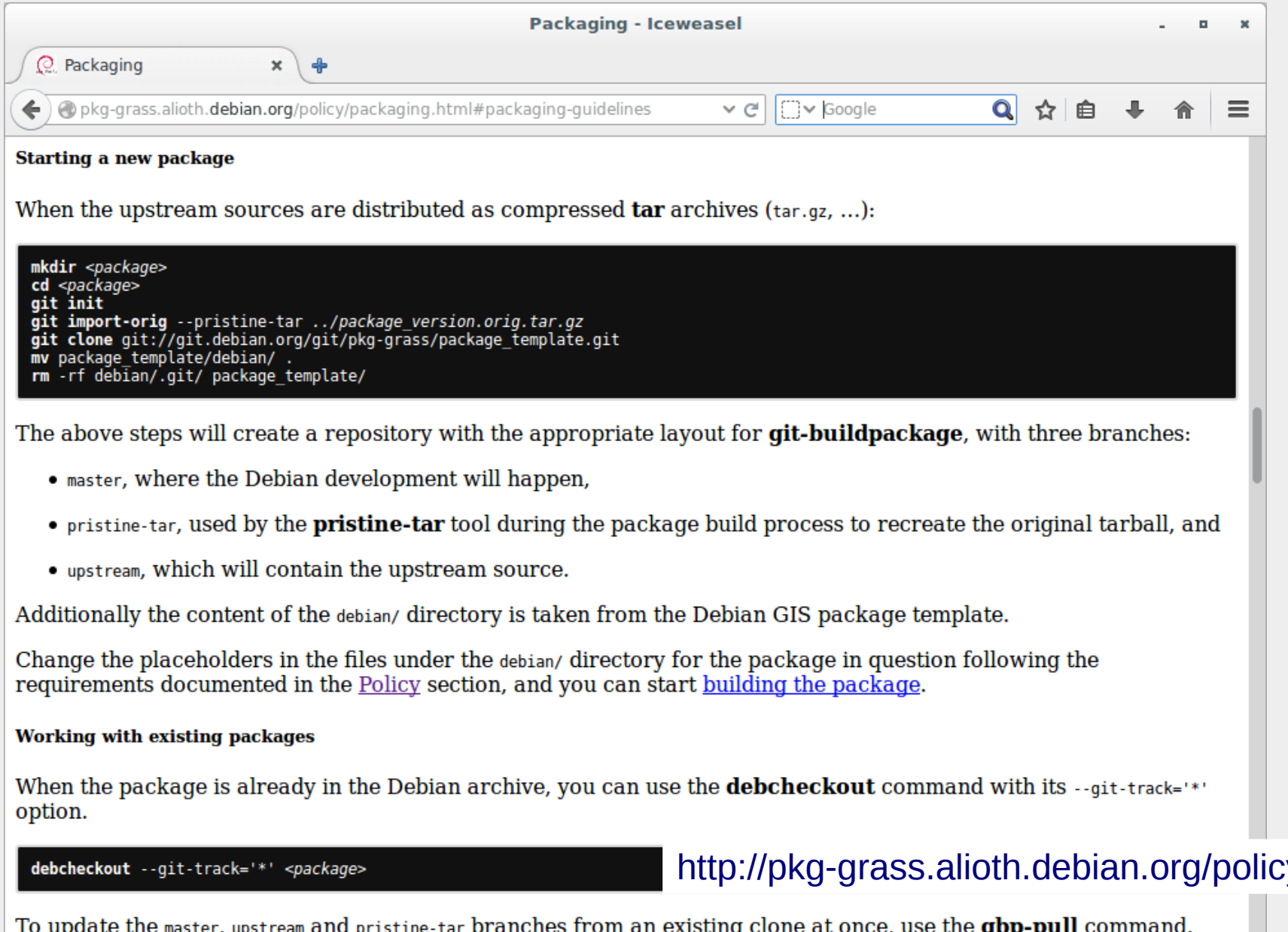
Issues of Debian (GIS)

- Often Non-free files
  - Typical for scientific software (free for non-commercial use)
  - OGC documents
  - Projection definitions

Suggestions for different licenses?

- ~~Nobody answered my questions~~ ==> Responsive team
- ~~Hard to find a sponsor~~ ==> Sponsoring of Blends (Andreas Tille)
- New processing / freeze takes a long time
- Transitions
  - GDAL
- ~~Many packaging guides/styles out there~~ ==> Debian GIS policy
- It takes time
- ==> Too much work for upstream

Debian GIS policy



Starting a new package

When the upstream sources are distributed as compressed **tar** archives (`tar.gz`, ...):

```
mkdir <package>
cd <package>
git init
git import-orig --pristine-tar ../package_version.orig.tar.gz
git clone git://git.debian.org/git/pkg-grass/package_template.git
mv package_template/debian/ .
rm -rf debian/.git/ package_template/
```

The above steps will create a repository with the appropriate layout for **git-buildpackage**, with three branches:

- `master`, where the Debian development will happen,
- `pristine-tar`, used by the **pristine-tar** tool during the package build process to recreate the original tarball, and
- `upstream`, which will contain the upstream source.

Additionally the content of the `debian/` directory is taken from the Debian GIS package template.

Change the placeholders in the files under the `debian/` directory for the package in question following the requirements documented in the Policy section, and you can start building the package.

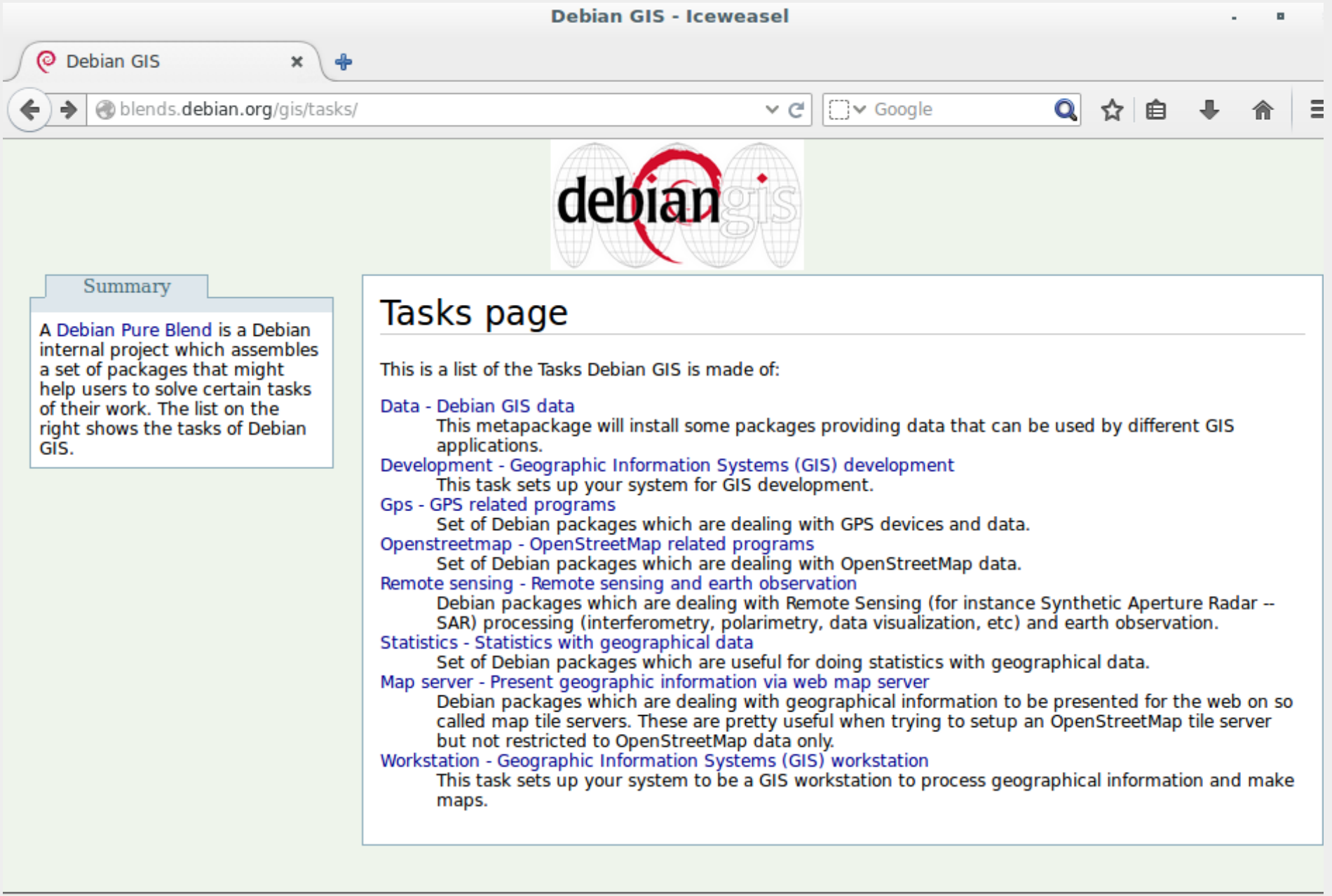
Working with existing packages

When the package is already in the Debian archive, you can use the **debcheckout** command with its `--git-track='*'` option.

```
debcheckout --git-track='*' <package>
```

http://pkg-grass.alioth.debian.org/policy/index.html

To update the `master`, `upstream` and `pristine-tar` branches from an existing clone at once, use the **gbp-pull** command.



Summary

A Debian Pure Blend is a Debian internal project which assembles a set of packages that might help users to solve certain tasks of their work. The list on the right shows the tasks of Debian GIS.

Tasks page

This is a list of the Tasks Debian GIS is made of:

Data - Debian GIS data
: This metapackage will install some packages providing data that can be used by different GIS applications.

Development - Geographic Information Systems (GIS) development
: This task sets up your system for GIS development.

Gps - GPS related programs
: Set of Debian packages which are dealing with GPS devices and data.

Openstreetmap - OpenStreetMap related programs
: Set of Debian packages which are dealing with OpenStreetMap data.

Remote sensing - Remote sensing and earth observation
: Debian packages which are dealing with Remote Sensing (for instance Synthetic Aperture Radar -- SAR) processing (interferometry, polarimetry, data visualization, etc) and earth observation.

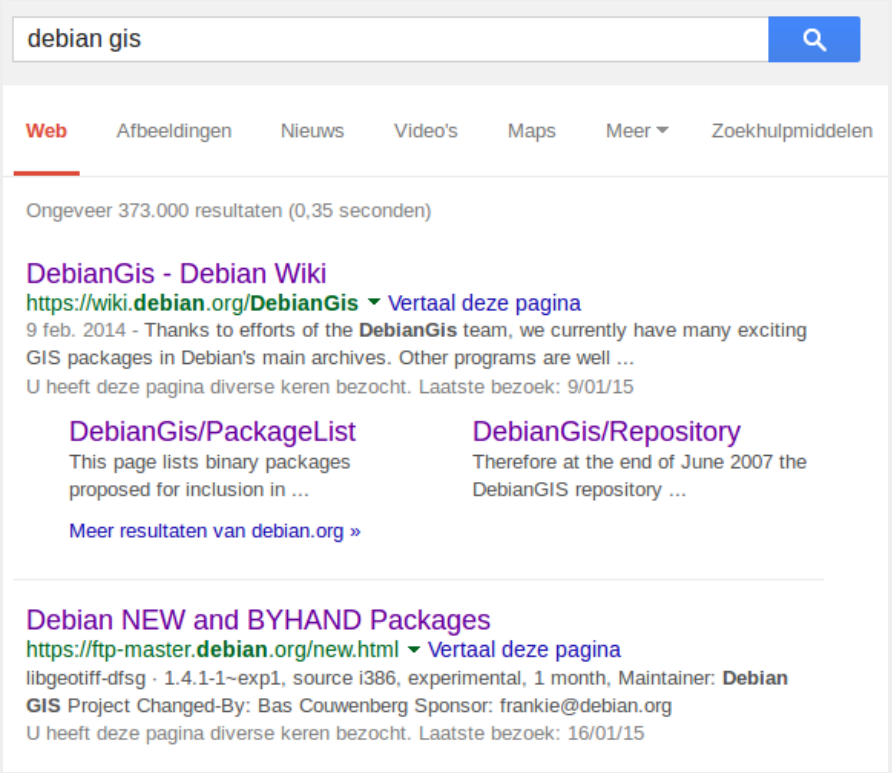
Statistics - Statistics with geographical data
: Set of Debian packages which are useful for doing statistics with geographical data.

Map server - Present geographic information via web map server
: Debian packages which are dealing with geographical information to be presented for the web on so called map tile servers. These are pretty useful when trying to setup an OpenStreetMap tile server but not restricted to OpenStreetMap data only.

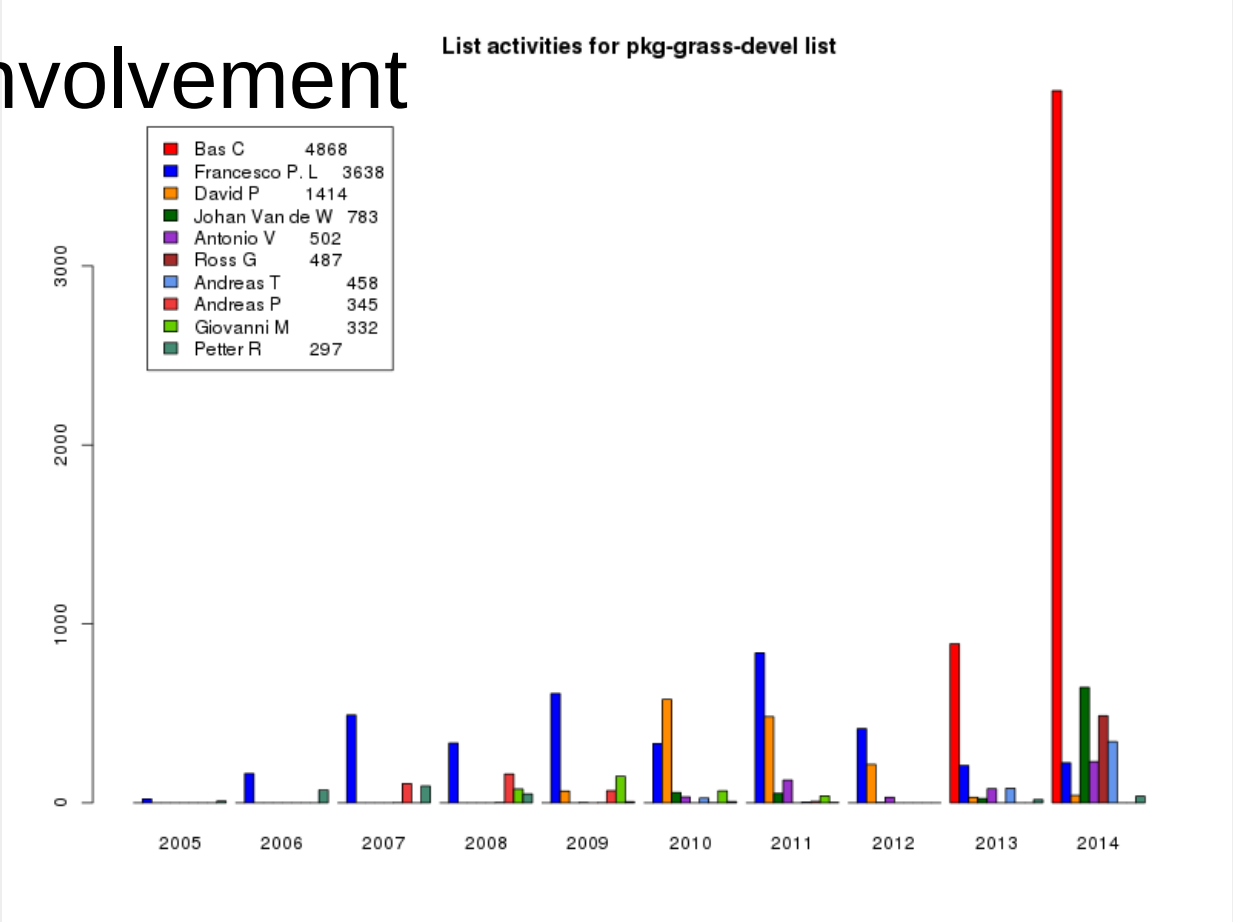
Workstation - Geographic Information Systems (GIS) workstation
: This task sets up your system to be a GIS workstation to process geographical information and make maps.

This page is also available in the following languages:
česky dansk Deutsch español suomi français magyar Italiano 日本語 (Nihongo) (Hangul) Nederlands polski Português Русский (Russkij) slovensky српски(srpski) svenska українська (ukrajins'ka) 中文(简) 中文(正)
How to set the default document language
Last update: Fri, 30 Jan 2015 15:30:06 -0000

- Since last year: many new contributions
- Many packages updated – also old packages
  - Qgis, GDAL, GRASS have recent version in jessie
- Many NEW packages



- Still we could use help....
- Still Few DD's and uploaders
- More upstream involvement
- Documentation
- Java



Iceweasel

http://blen...workstation

blends.debian.org/gis/tasks/workstation

osgeo live

debian gis

Summary

Workstation
Geographic Information Systems (GIS) workstation
This task sets up your system to be a GIS workstation to process geographical information and make maps.

The list to the right includes various software projects which are of some interest to the Debian GIS Project. Currently, only a few of them are available as Debian packages. It is our goal, however, to include all software in Debian GIS which can sensibly add to a high quality Debian Pure Blend.
For a better overview of the project's availability as a Debian package, each head row has a color code according to this scheme:

- Official Debian packages with high relevance
- Official Debian packages with lower relevance
- Debian packages in contrib or non-free
- Debian packages in experimental
- Debian packages in New queue (hopefully available soon)
- Packaging has started and developers might try the packaging code in VCS
- No known packages available but some record of interest (WNPP bug)
- No known packages available

If you discover a project which

Debian GIS Workstation packages

Official Debian packages with high relevance

Avce00
Conversion of ESRI Arcinfo Vector Coverage in E00 format
http://avce00.maptools.org/avce00/
Maintainer: Debian GIS Project (Johan Van de Wauw)

Popcon: 24 users (7 upd.)*
Versions and Archs
Edit Debtags

License: DFSG free
Official Debian package
Git

AVCE00 is a C library and group of tools that makes Arcinfo (binary) Vector Coverages appear as E00. It allows you to read and write binary coverages just as if they were E00 files.

Upload screenshot

E00compr
A program to read/write Arcinfo compressed E00 files
http://avce00.maptools.org/e00compr/
Maintainer: Debian GIS Project (Francesco Paolo Lovergine)

Popcon: 25 users (6 upd.)*
Versions and Archs
Edit Debtags

License: DFSG free
Official Debian package
Git

E00compr is an ANSI C library that reads and writes Arcinfo compressed E00 files. Both "PARTIAL" and "FULL" compression levels are supported. E00 files are the vector import/export format for Arcinfo. It is plain ASCII and is meant as an interchange format. ESRI considers the format to be proprietary, so this package may not read all E00 files as ESRI may change the format.
This package is useful for importing E00 files into the grass GIS system. It contains the e00conv command-line program, which takes a E00 file as input (compressed or not) and copies it to a new file with the requested compression level (NONE, PARTIAL or FULL). The library is not included at this stage.

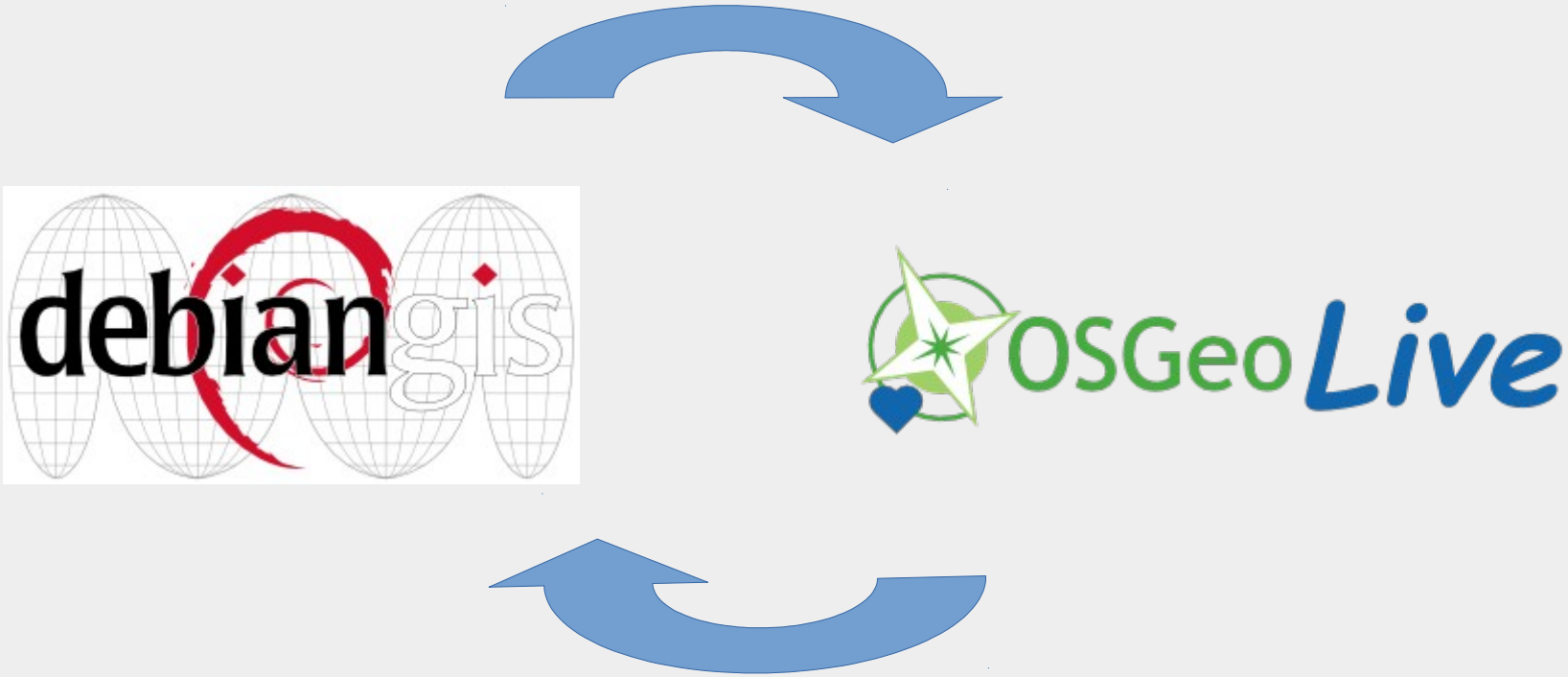
Upload screenshot

Earth3d
Map client displaying a 3D model of the world
Maintainer: Petter Reinholdtsen (Luk Claes)

Popcon: 15 users (1 upd.)*
Versions and Archs
Edit Debtags

License: DFSG free
Official Debian package

The map data is fetched from a server on the net, and the client will display recent satellite images and map data.



- OsGeo live test sprint: next weekend 5-7/2
- Debian GIS meeting *after this talk*

Debian-gis@lists.debian.org
https://wiki.debian.org/DebianGis

live-demo@lists.osgeo.org
http://live.osgeo.org/