



POLITECNICO DI MILANO



# Me & FOSS4G

Marco Minghini

Second Irish OSGeo Symposium | Portlaoise, Ireland, May 25<sup>th</sup> 2018



# Who I am

- Postdoctoral Research Fellow at Politecnico di Milano, Italy - GIS Team of GEOlab (Geomatics and Earth Observation laboratory)
- Research topics:
  - Volunteered Geographic Information (VGI) & OpenStreetMap
  - Land Use/Land Cover Mapping



<http://geolab.como.polimi.it>  
<http://geomobile.como.polimi.it>

# The Italian FOSS4G Community

- An active community with a long tradition on FOSS4G:
  - national conferences started in 2000...



**Primo meeting degli utenti  
italiani di GRASS**

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  - national conferences started in 2000... and continued every year!



## **Primo meeting degli utenti italiani di GRASS**

### **Secondo Meeting degli utenti italiani di GRASS**



Università degli Studi  
di Trento



Dipartimento di Ingegneria  
Civile e Ambientale

**Trento, 1-2 febbraio 2001**



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### Third Italian GRASS users Meeting

Trieste, January 31 - February 1 2002



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Genova, 23 -24 febbraio 2006



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<http://www.gfoss.it>

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  - national conferences started in 2000... and continued every year!
  - Italian chapter of OSGeo (GFOSS.it) founded in 2007
  - more and more successful annual conferences

**FOSS4G-IT** Free and Open Source Software for Geospatial Meeting di lingua italiana  
Lugano 2010 11-12 Febbraio

**XII MEETING** degli utenti italiani GRASS e GFOSS TRENTO, 9-11 FEBBRAIO 2011

**XIII Meeting GRASS e GFOSS** 15-16-17 febbraio 2012

**XV MEETING** degli utenti italiani GRASS e GFOSS PALERMO, 12-14 FEBBRAIO 2014

**XIV Meeting degli utenti italiani GRASS e GFOSS** Genova 6 - 9 Febbraio 2013

CC BY SA

POLITECNICO DI MILANO

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  - Italian chapter of OSGeo (GFOSS.it) founded in 2007
  - more and more successful annual conferences
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OSGeo Italian Chapter



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FOSS4G-IT 2017  
Genova, February 8-11, 2017





# My contribution to OSGeo

- Charter Member of OSGeo since 2015

[https://wiki.osgeo.org/wiki/Marco\\_Minghini](https://wiki.osgeo.org/wiki/Marco_Minghini)





# My contribution to OSGeo

- Charter Member of OSGeo since 2015
  - NOT a developer!
  - FOSS4G use in research & research on FOSS4G
  - FOSS4G & OpenStreetMap
  - education & training on FOSS4G
  - humanitarian applications of FOSS4G & OpenStreetMap
  - FOSS4G community building
  - FOSS4G-oriented business

[https://wiki.osgeo.org/wiki/Marco\\_Minghini](https://wiki.osgeo.org/wiki/Marco_Minghini)





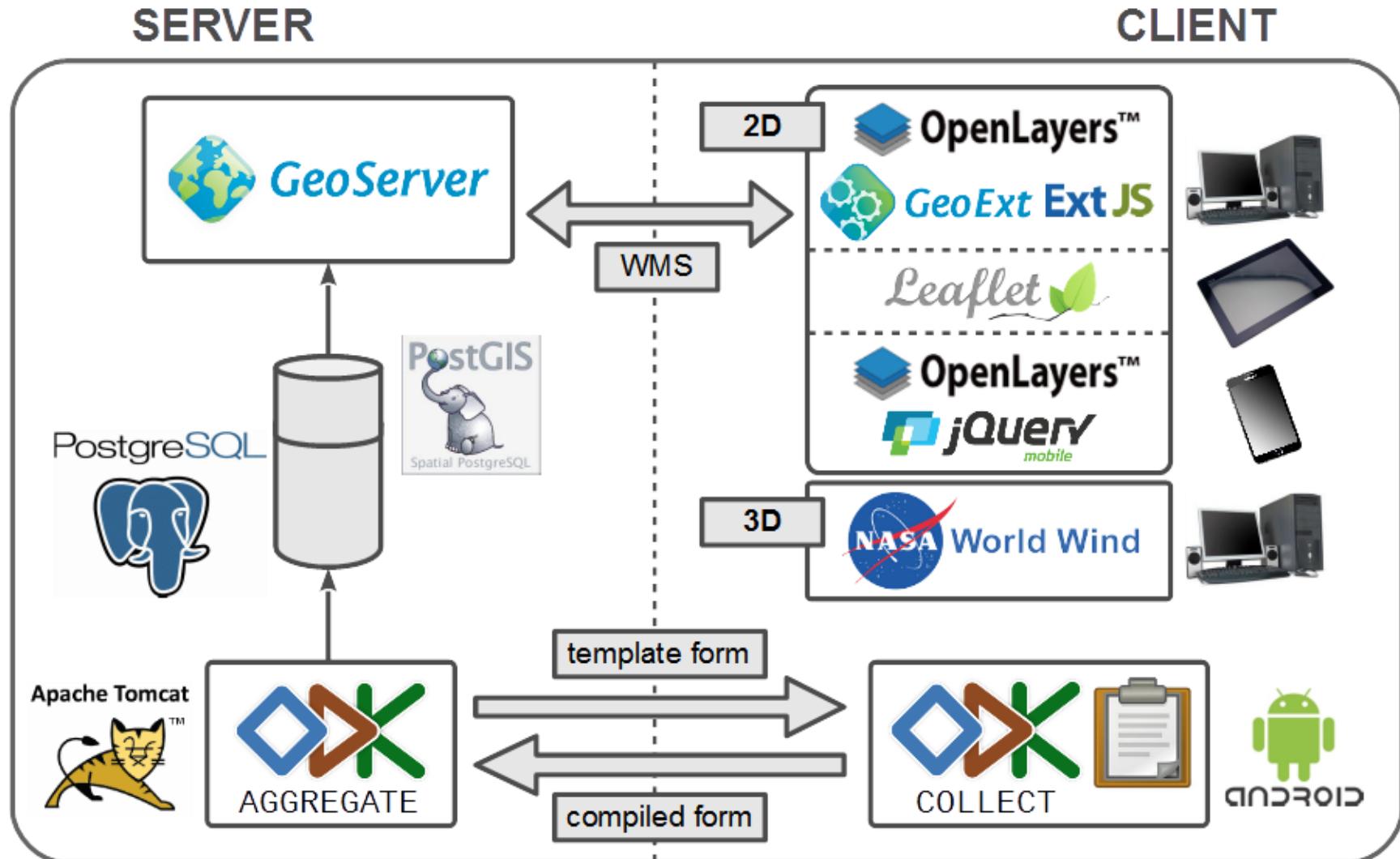
# My contribution to OSGeo



# FOSS4G in research

# FOSS4G in research

- FOSS4G architecture for field data collection, publication & geo-browsing



# FOSS4G in research

- FOSS4G architecture for field data collection, publication & geo-browsing
  - 2D visualization

The screenshot displays a FOSS4G application interface. On the left is a 'Layer menu' containing several categories of geographical features:

- Base maps: OpenStreetMap, Mapquest OpenStreetMap, Google Streets, Google Hybrid, Google Satellite, Bing Road, Bing Aerial, Bing Aerial with Labels, Ortofoto Portale Cartografico Nazionale.
- Points of interest: Points with panoramic view, Monuments (statue/sculpture, fountain, historical monument), Historical/monumental buildings (castle, villa, palace, lighthouse, bell tower, tower), Places of worship (church/basilica, baptistery, convent, cemetery), Places of artistic/cultural activities, Sports facilities, Transport stations, Events.

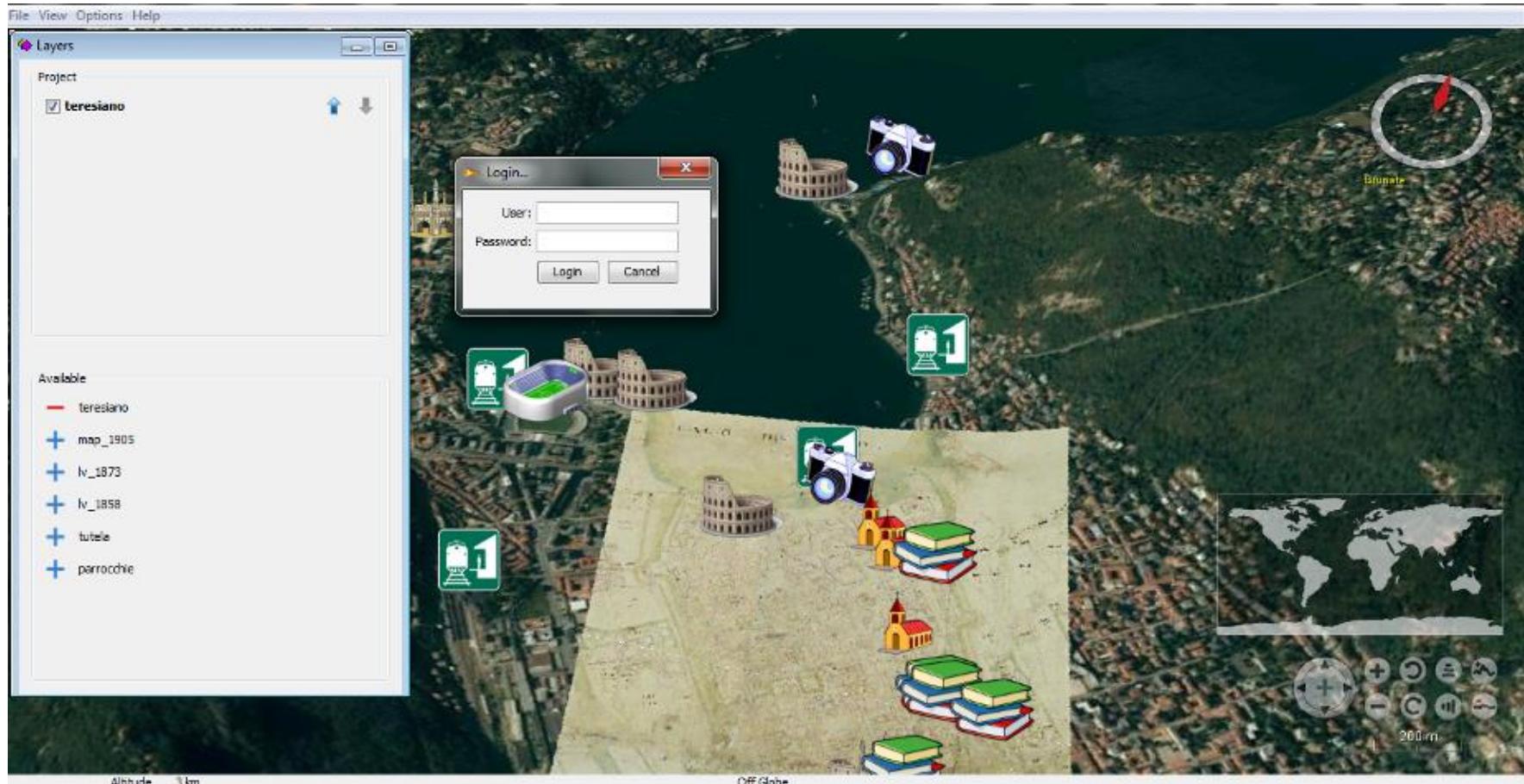
The main area shows a map of a park-like area with roads labeled 'Via Filippo Caronni', 'Via per Cernobbio', and 'SS340'. A specific location is highlighted with a green polygon and labeled 'Villa Olmo'. A callout bubble provides detailed information about this point of interest:

DATA	15/05/2013
USER	tourist from Italy
POI	historical/monumental building
CLASSIFICATION	villa
NAME	Villa Olmo
DESCRIPTION	<a href="#">view the wiki page</a>
IMAGE	

At the bottom of the map, there is a scale bar (100 m / 200 ft), a coordinate display (lon: 9.0699, lat: 45.8216), and a copyright notice: 'Data, Imagery and map information provided by MapQuest, Open Street Map and contributors, CC-BY-SA'.

# FOSS4G in research

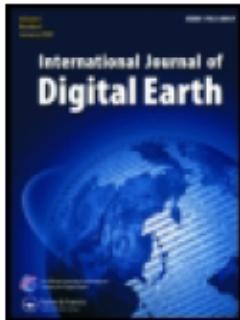
- FOSS4G architecture for field data collection, publication & geo-browsing
  - 3D collaborative platform



<http://geomobile.como.polimi.it/policrowd>

# FOSS4G in research

- FOSS4G architecture for field data collection, publication & geo-browsing



## International Journal of Digital Earth

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/tjde20>

## Public Participation GIS: a FOSS architecture enabling field-data collection

Maria Antonia Brovelli<sup>a</sup>, Marco Minghini<sup>a</sup> & Giorgio Zamboni<sup>a</sup>

<sup>a</sup> DICA, Politecnico di Milano, Como, Italy

Published online: 18 Feb 2014.

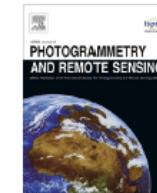
ISPRS Journal of Photogrammetry and Remote Sensing 114 (2016) 306–315



Contents lists available at ScienceDirect

## ISPRS Journal of Photogrammetry and Remote Sensing

journal homepage: [www.elsevier.com/locate/isprsjprs](http://www.elsevier.com/locate/isprsjprs)



## Public participation in GIS via mobile applications

Maria Antonia Brovelli <sup>1</sup>, Marco Minghini <sup>\*</sup>, Giorgio Zamboni <sup>2</sup>

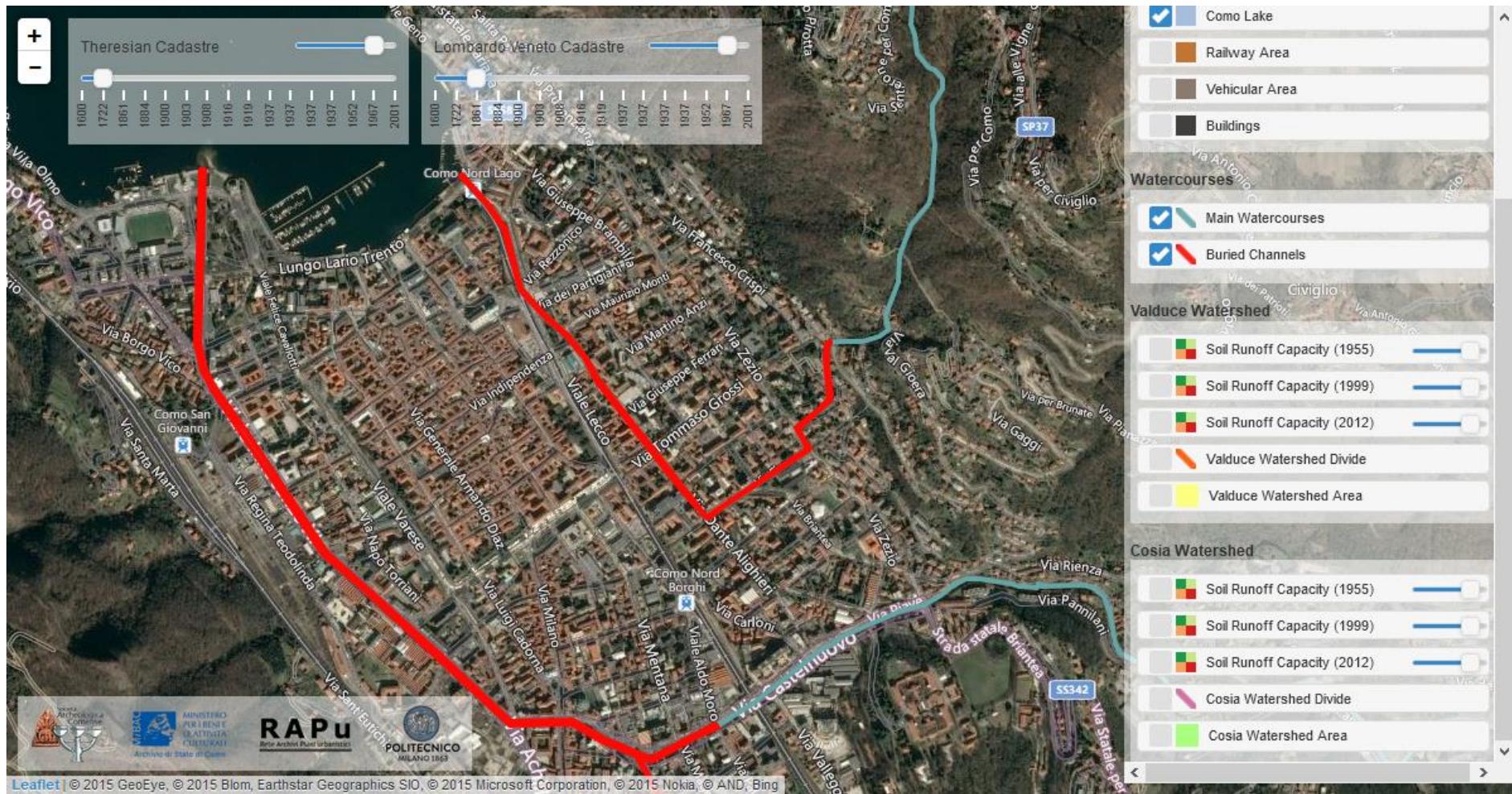
Politecnico di Milano, DICA, GEO Laboratory, Como Campus, via Valleggio 11, 22100 Como, Italy





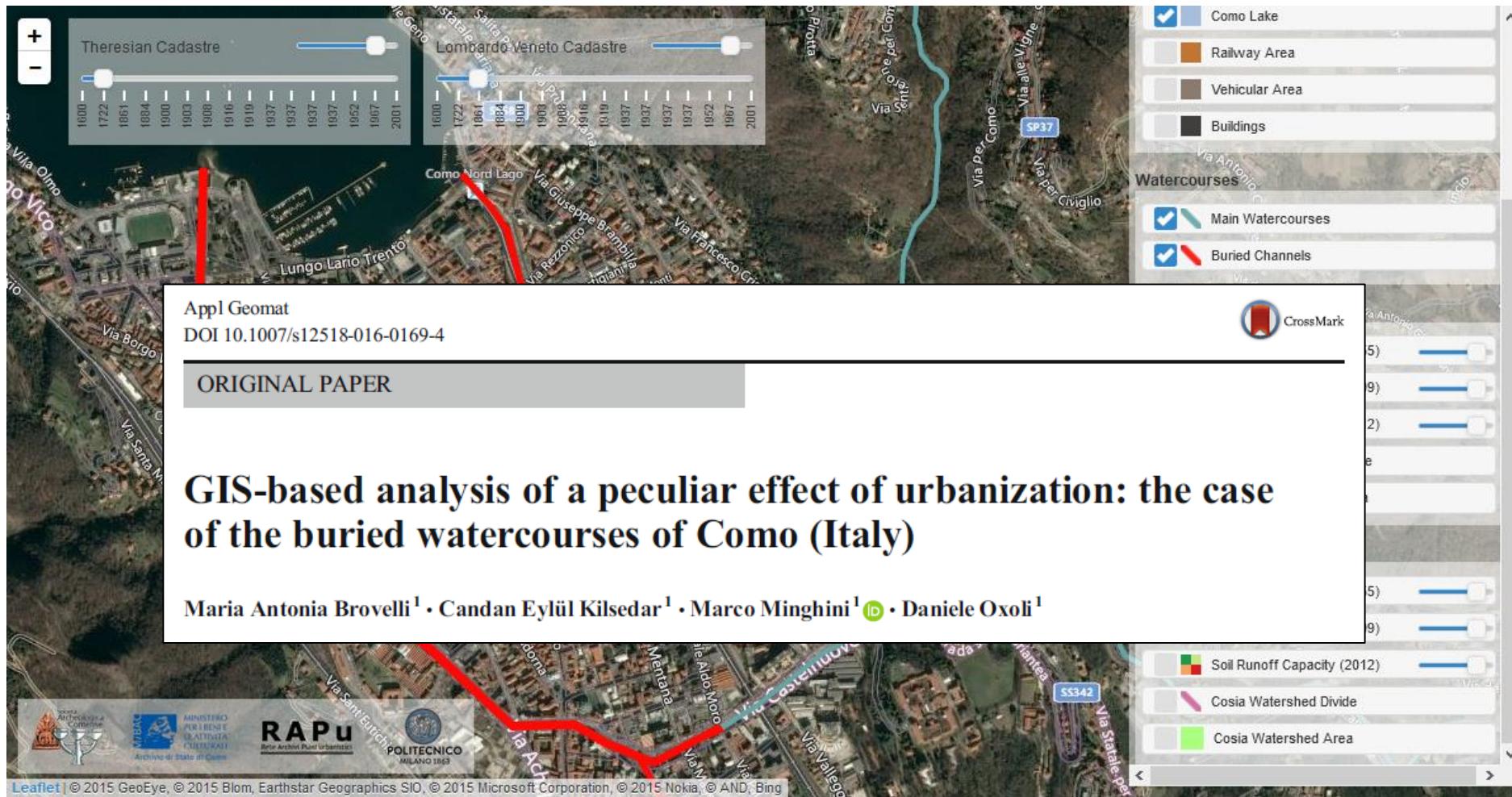
# FOSS4G in research

- Visualization of the buried rivers in Como and their historical evolution



<http://geomobile.como.polimi.it/buriedtorrents>

- Visualization of the buried rivers in Como and their historical evolution



<http://geomobile.como.polimi.it/buriedtorrents>

# FOSS4G in research

- Gamification to educate and raise awareness about migration in Europe

The screenshot shows a map of Europe and North Africa. A red outline highlights the coastline of Spain and Portugal. A green outline highlights the coastline of Italy and Greece. A blue outline highlights the coastline of Turkey. The Mediterranean Sea is labeled "Mediterranean Sea". The Atlantic Ocean is labeled "Ocean". The Black Sea is labeled "Black Sea". The map includes labels for various countries: UNITED KINGDOM, AMSTERDAM, LONDON, BELGIUM, PARIS, CZECH REPUBLIC, AUSTRIA, SLOVENIA, BOSNIA AND HERZEGOVINA, MOLDOVA, UKRAINE, KIEV, BELARUS, WARSAW, MILANO, BARCELONA, MADRID, ALBANIA, GRECE, TUNIS, ALGIERS, CASABLANCA, MOROCCO, MAURITANIA, LIBYA, EGYPT, TEL AVIV, CAIRO, BAGHDAD, ISTANBUL, LEBANON, and TURKEY. There are also icons for "User profile" and "Log out" in the top right corner. At the bottom, there are buttons for "About", "Game", "Team", and "Data".

During the second quarter (April-June) of 2016, in which of these European countries did most of the migrants arrive by sea?

Select one of the countries *Italy, Cyprus, Spain, Greece* on the map, then press the *Submit* button.

!

Next

Data source: UNHCR - The UN Refugee Agency  
The country where most of the migrants arrived in Europe by sea during the second quarter of 2016 was Italy (51445 arrivals), followed by Greece (6925 arrivals).

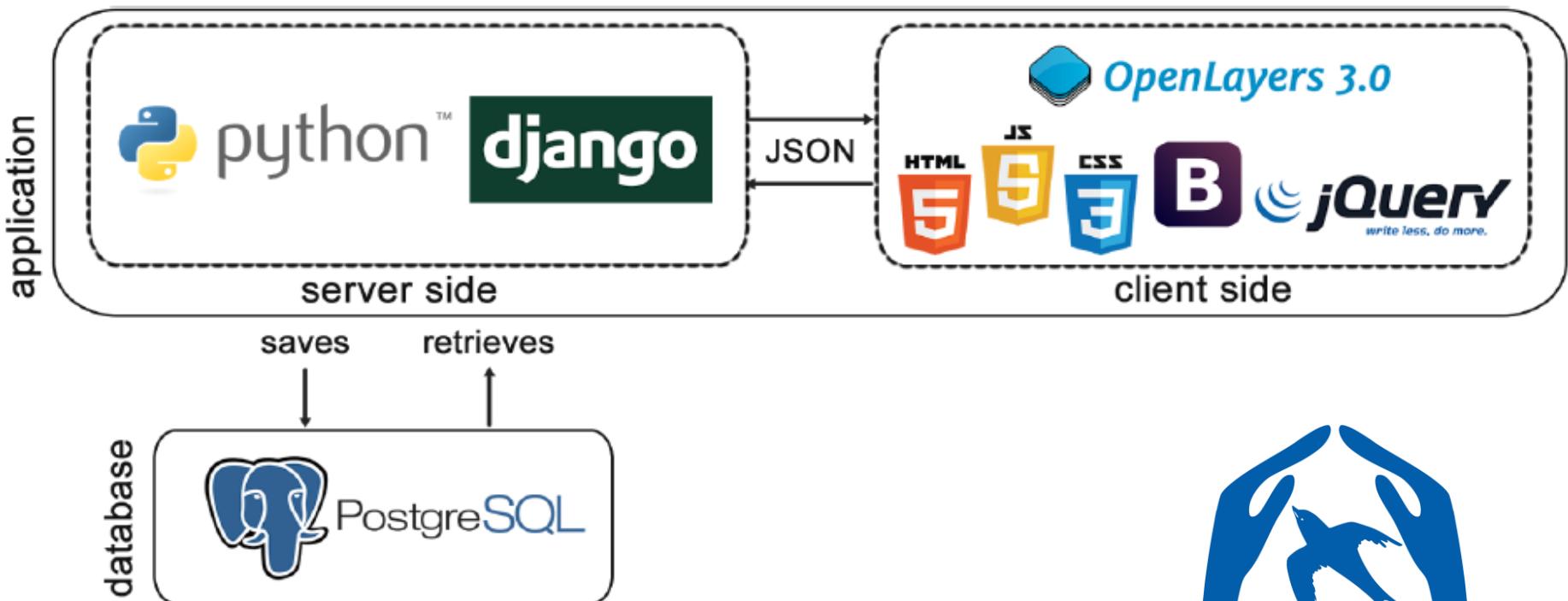
500 km

Copyright MIGRATE 2016 © - Contact the webmaster

<http://geomobile.como.polimi.it/migrate>

# FOSS4G in research

- Gamification to educate and raise awareness about migration in Europe
  - fully open source architecture



<https://github.com/kilsedar/migrate>  
<http://geomobile.como.polimi.it/migrate>

- Gamification to educate and raise awareness about migration in Europe

The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Volume XLII-4/W2, 2017  
FOSS4G-Europe 2017 – Academic Track, 18–22 July 2017, Marne La Vallée, France

## MIGRATE: A FOSS WEB MAPPING APPLICATION FOR EDUCATING AND RAISING AWARENESS ABOUT MIGRATION FLOWS IN EUROPE

M. A. Brovelli <sup>a</sup>, M. Minghini <sup>a</sup>, C.E. Kilsedar <sup>a</sup>, M. Zurbarán <sup>b</sup>, M. Aiello <sup>c</sup>, M. Gianinetto <sup>c,\*</sup>

<sup>a</sup> Dept. of Civil and Environmental Engineering, Politecnico di Milano, Piazza Leonardo da Vinci 32, 20133 Milano Italy -  
(maria.brovelli, marco.minghini, candaneyul.kilsedar)@polimi.it

<sup>b</sup> Dept. of Systems Engineering, Universidad del Norte, Km 5 Via Pto. Colombia, Barranquilla Colombia -  
mzurbaran@uninorte.edu.co

<sup>c</sup> Dept. Of Architecture, Built Environment and Construction engineering, Politecnico di Milano, Via Ponzio 31, 20133 Milano Italy  
- (martina.aiello, marco.gianinetto)@polimi.it



***MIGRation pATterns in Europe: Geomatics and gamification techniques to raise the awareness of European citizens on migration flows***

M. Aiello\*  
M.A. Brovelli\*\*  
C.E. Kilsedar\*\*  
M.A. Zurbarán Nucci\*\*\*  
M. Minghini\*\*  
M. Gianinetto\*

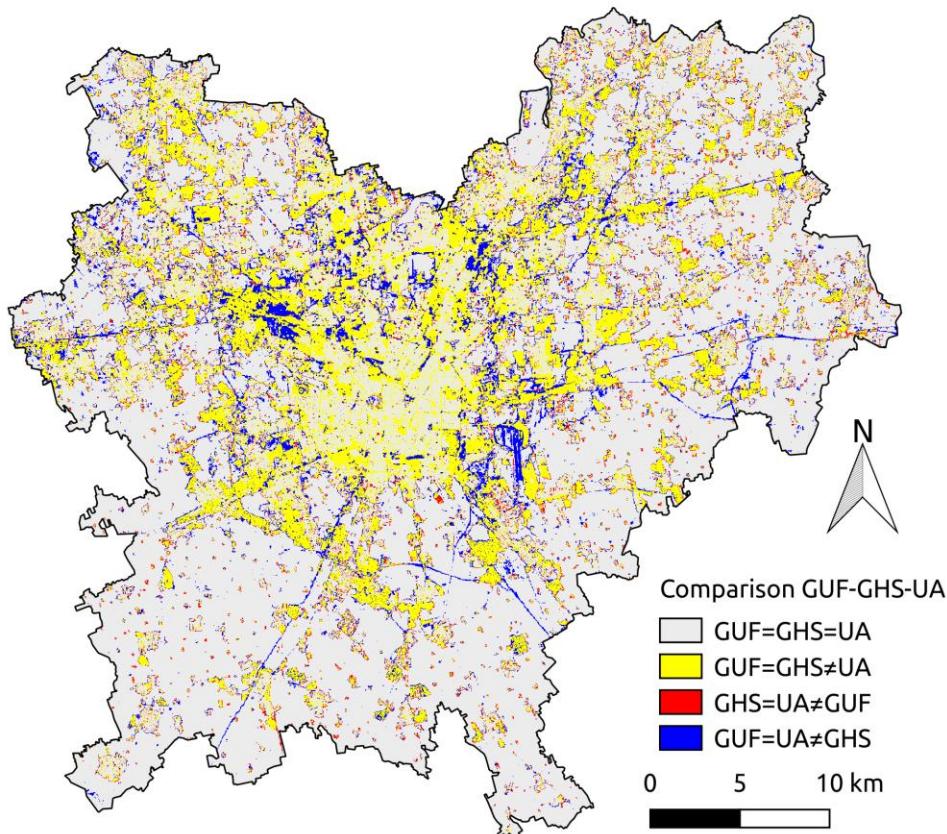
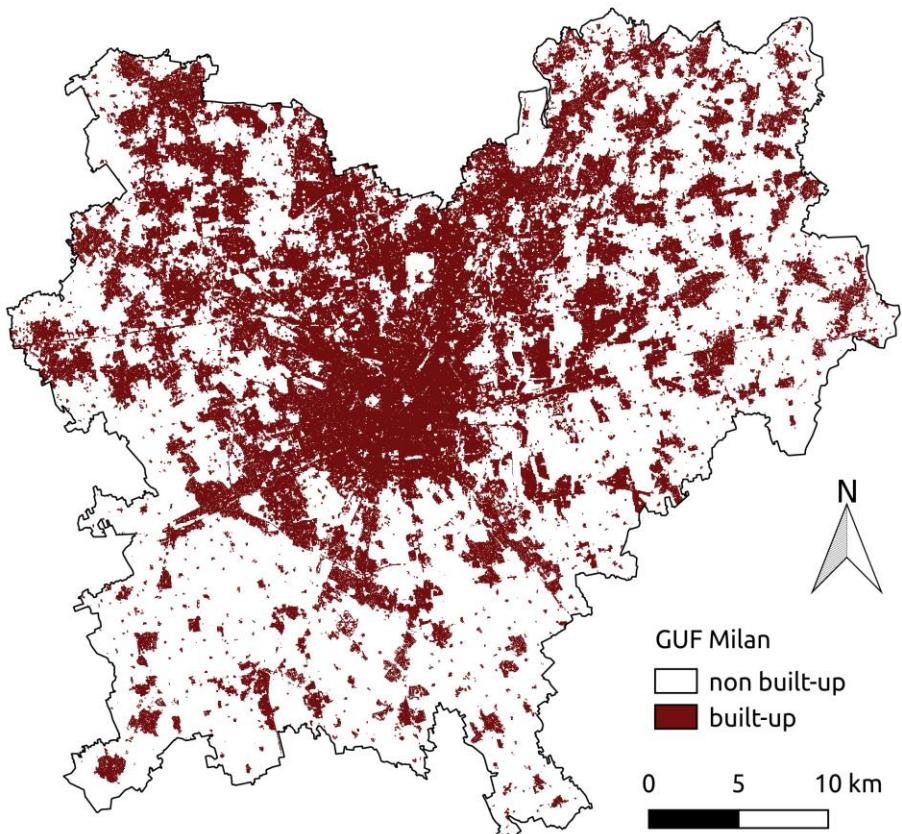
\* Politecnico di Milano, Department of Architecture, Built Environment and Construction Engineering

\*\* Politecnico di Milano, Department of Civil and Environmental Engineering

\*\*\* Universidad del Norte, Department of Systems Engineering and Computer Science, Barranquilla, Colombia

# FOSS4G in research

- Comparison of Land Use/Land Cover maps
  - GRASS GIS processing



- Comparison of Land Use/Land Cover maps
  - GRASS GIS processing

## Preliminary Assessment of the Global Urban Footprint and the Global Human Settlement Layer for the city of Milan

Marco Minghini

Politecnico di Milano, Dept. of Civil  
and Environmental Engineering,  
Piazza Leonardo da Vinci 32, 20133  
Milano, Italy  
marco.minghini@polimi.it

Monia Elisa Molinari

Politecnico di Milano, Dept. of Civil  
and Environmental Engineering,  
Piazza Leonardo da Vinci 32, 20133  
Milano, Italy  
moniaelisa.molinari@polimi.it

Linda See

International Institute for Applied  
Systems Analysis (IIASA),  
Schlossplatz 1, 2361  
Laxenburg, Austria  
see@iiasa.ac.at

Cidália Costa Fonte

University of Coimbra, Dept. of  
Mathematics – INESC Coimbra  
Rua Antero de Quental, nº 199  
Coimbra, Portugal  
cfonte@mat.uc.pt

Maria Antonia Brovelli

Politecnico di Milano, Dept. of Civil  
and Environmental Engineering,  
Piazza Leonardo da Vinci 32, 20133  
Milano, Italy  
maria.brovelli@polimi.it

# Research on FOSS4G

- FOSS4G technologies is key to address societal problems and enable sustainable development



## International Journal of Digital Earth



ISSN: 1753-8947 (Print) 1753-8955 (Online) Journal homepage: <http://www.tandfonline.com/loi/tjde20>

Free and open source software for geospatial applications (FOSS4G) to support Future Earth

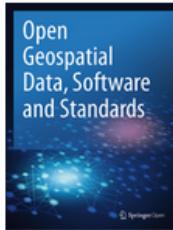
Maria Antonia Brovelli, Marco Minghini, Rafael Moreno-Sanchez & Ricardo Oliveira

# Research on FOSS4G

- Special Issue on Open Source Geospatial Software
  - deadline for submission: November 15, 2018

Open Geospatial Data, Software and Standards

About      Articles      Submission Guidelines

 Springer Open  
 Open Geospatial Data, Software and Standards

## Open Source Geospatial Software

- Open source/open data policies for SDI development and implementation
- Reproducibility of analyses and results in research and science
- Quality of open geospatial data
- Volunteered Geographic Information (VGI), Crowdsourcing and OpenStreetMap (OSM)
- Sensor Web and Internet of Things (IoT)
- Photogrammetry and Remote Sensing
- Standardization and interoperability of open geo-data and services
- Big geo-data storage, visualization and processing
- Open source geospatial software in scientific research
- Open source geospatial software in education and business
- Management and sustainability of open source geospatial projects

<https://opengeospatialdata.springeropen.com/osgs>



# My contribution to OSGeo



# FOSS4G & OpenStreetMap



- OpenStreetMap is much more than a simple map...

The screenshot shows a detailed OpenStreetMap of a town area. The map includes several roads labeled with names like 'Station Road', 'N80', 'Cooke Street', 'L21207', 'L21129', 'Jessop Street', 'Railway Street', and 'L21208'. There are also numbered plots (1-8) and a parking area labeled 'P'. Various buildings and landmarks are marked with icons, including 'Portlaoise Methodist Church', 'Sparrow Insurances', 'Ivyleigh House', 'Midland Legal', 'W X White', 'Bankz Beauty Clinic', 'Storm Cinema', 'Old Church', and 'Dunamaise'. A 'Midlands Park Hotel' is also indicated. A scale bar at the bottom left shows 30m and 100ft. The top navigation bar includes links for 'Edit', 'History', 'Export', 'GPS Traces', 'User Diaries', 'Copyright', 'Help', 'About', 'Log In', and 'Sign Up'. The bottom right corner features a 'Make a Donation' button.

<https://www.openstreetmap.org>



- it is the largest open geospatial database of the world!

[Edit](#) [History](#) [Export](#)

[GPS Traces](#) [User Diaries](#) [Copyright](#) [Help](#) [About](#) [Log In](#) [Sign Up](#)

Way: Midlands Park Hotel  
(149077343)

Changed the name of the Heritage Hotel to Midlands Park Hotel and updated some of the attributes.

Edited 6 months ago by [peterm7](#)  
Version #2 · Changeset #53567503

Tags

addr:city	Port Laoise
addr:postcode	R32 KV20
addr:street	Jessop Street
building	yes
internet_access	wlan
internet_access:fee	no
name	Midlands Park Hotel
rooms	115
smoking	isolated
stars	4

<https://www.openstreetmap.org>



# The OpenStreetMap ecosystem

- OpenStreetMap has evolved into a complex FOSS4G-based ecosystem:
  - datasets, software, services & applications
- How is OpenStreetMap used?
  - map visualization
  - software (editors, routing, etc.)
  - data download
  - humanitarian applications
  - quality assurance/quality control
  - education and research
  - enrichment/update of governmental maps

[http://wiki.openstreetmap.org/wiki/List\\_of\\_OSM-based\\_services](http://wiki.openstreetmap.org/wiki/List_of_OSM-based_services)

[http://geomobile.como.polimi.it/website/docs/presentations/Minghini\\_2018-04-16](http://geomobile.como.polimi.it/website/docs/presentations/Minghini_2018-04-16)





# The OpenStreetMap ecosystem

- OpenStreetMap has evolved into a complex FOSS4G-based ecosystem:
  - datasets, software, services & applications

## A Review of OpenStreetMap Data

Peter Mooney\* and Marco Minghini†

\*Department of Computer Science, Maynooth University,  
Maynooth, Co. Kildare, Ireland, Peter.mooney@nuim.ie

†Department of Civil and Environmental Engineering, Politecnico di Milano,  
Piazza Leonardo da Vinci 32, 20133 Milano, Italy

<https://www.ubiquitypress.com/site/books/10.5334/bbf>



# Contributing to OSM

## How did you contribute to OpenStreetMap?

mingo23

Search

Name: [mingo23](#)

Registered: January 25th, 2014

Active mapping days: 540 (34.3%)

Created changesets: 1 760

Map changes: 104 343

GPS-tracks: 7

Review requests: 0 (own replies: 0)

Discussed own changesets: 0



Type? Great Mapper (Highly Active)

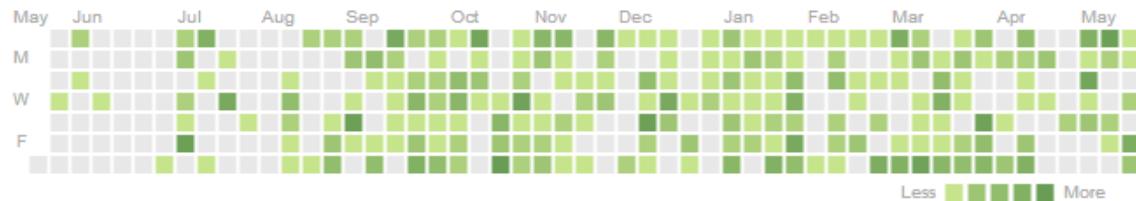
Recent changesets ([details](#)): Italy 101 Somalia 4 Mali 3

Recent ranks: Chad #135 Somalia #147 Italy #210

OSM Notes: Closed w/ comment 19 (w/o 8), commented 26 and opened 1

Changeset discussions: Participated in 2 and [created 6 comments](#)

213 mapping days with 561 changesets in the last year

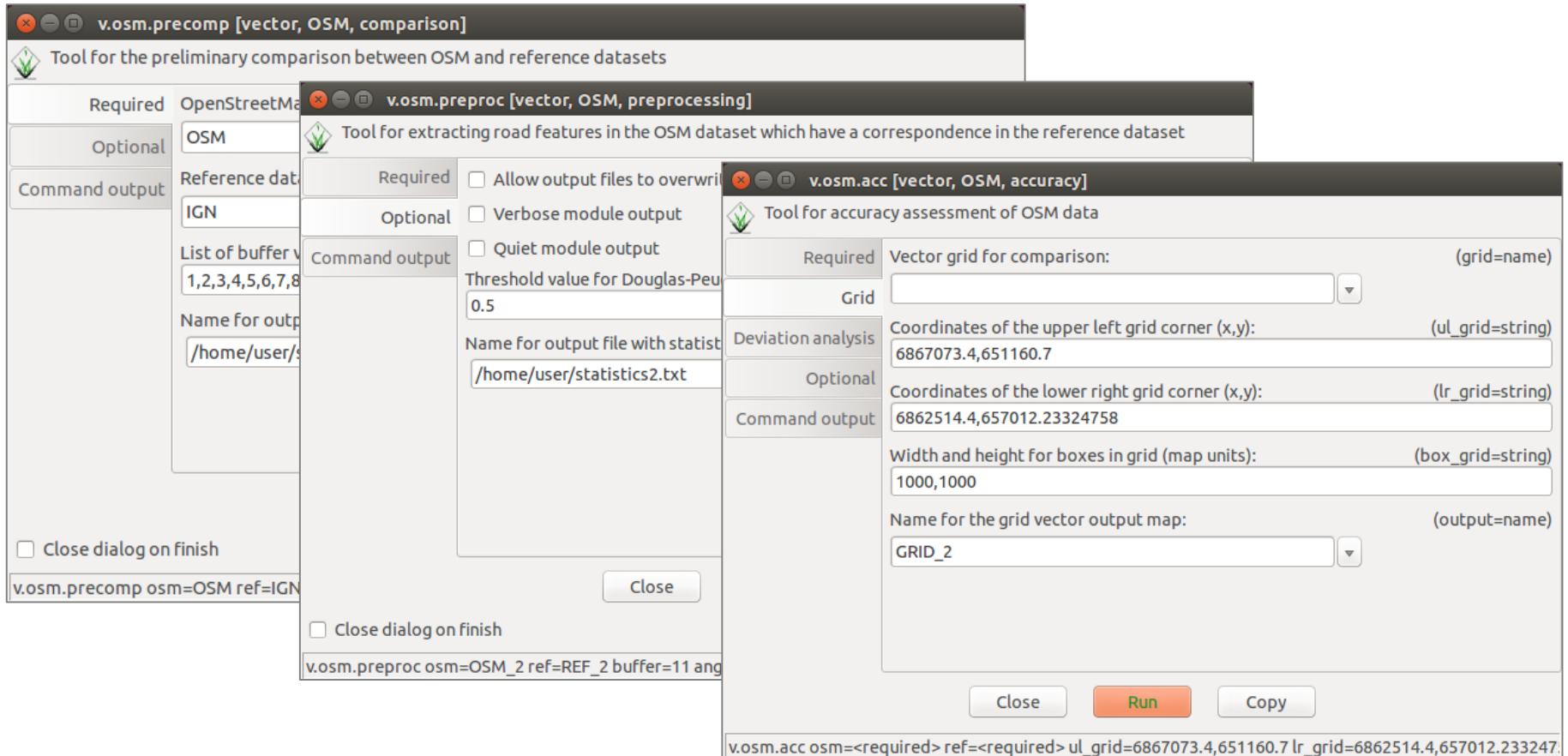


	Created	Modified	Deleted
Nodes	64 600 (69%)	24 369 (26%)	5 194 (6%)
Ways	8 588 (64%)	3 918 (29%)	996 (7%)
Relations	16 (9%)	161 (86%)	10 (5%)

<https://hdyc.neis-one.org/?mingo23>  
<https://wiki.openstreetmap.org/wiki/User:Mingo23>

# Research on OSM – data quality

- Comparison of OSM against official road network datasets
  - 3 GRASS GIS modules written in Python and available with a GUI



<https://github.com/MoniaMolinari/OSM-roads-comparison>

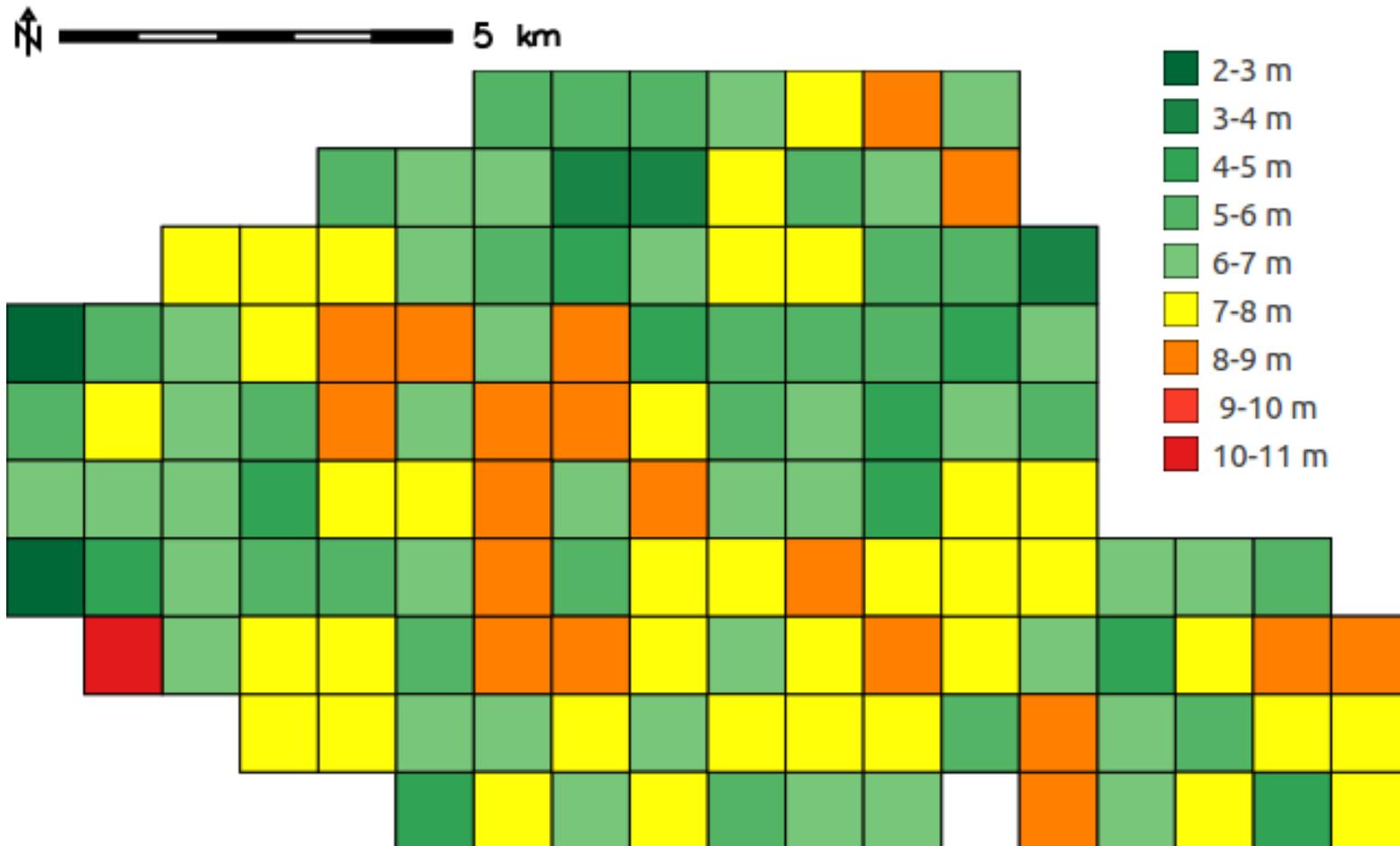
# Research on OSM – data quality

- Comparison of OSM against official road network datasets
  - grid-based evaluation of OSM completeness & spatial accuracy



# Research on OSM – data quality

- Comparison of OSM against official road network datasets
  - grid-based evaluation of OSM completeness & spatial accuracy



# Research on OSM – data quality

- Comparison of OSM against official road network datasets

## Transactions in GIS



Research Article

*Transactions in GIS*, 2016, 00(00): 00–00

### Towards an Automated Comparison of OpenStreetMap with Authoritative Road Datasets

Maria Antonia Brovelli,\* Marco Minghini,\* Monia Molinari\* and Peter Mooney<sup>†</sup>

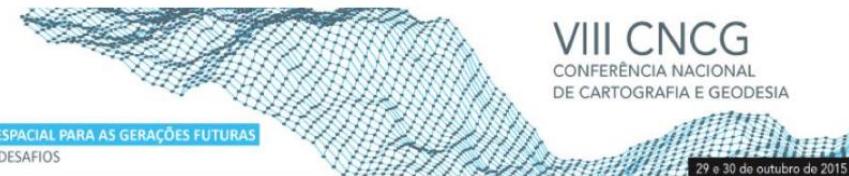
\*Department of Civil and Environmental Engineering, Politecnico di Milano, Como

<sup>†</sup>Department of Computer Science, Maynooth University



ORDEM  
DOS  
ENGENHEIROS

INFORMAÇÃO GEOESPECIAL PARA AS GERAÇÕES FUTURAS  
OPORTUNIDADES E DESAFIOS



VIII CNCG  
CONFERÊNCIA NACIONAL  
DE CARTOGRAFIA E GEODESIA

29 e 30 de outubro de 2015

### Assessing OSM Road Positional Quality With Authoritative Data

Francisco ANTUNES<sup>1</sup>, Cidália C. FONTE<sup>1</sup>, Maria Antonia BROVELLI<sup>2</sup>, Marco MINGHINI<sup>2</sup>, Monia MOLINARI<sup>2</sup> and Peter MOONEY<sup>3</sup>

The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Volume XLI-B7, 2016  
XXIII ISPRS Congress, 12–19 July 2016, Prague, Czech Republic

### AN AUTOMATED GRASS-BASED PROCEDURE TO ASSESS THE GEOMETRICAL ACCURACY OF THE OPENSTREETMAP PARIS ROAD NETWORK

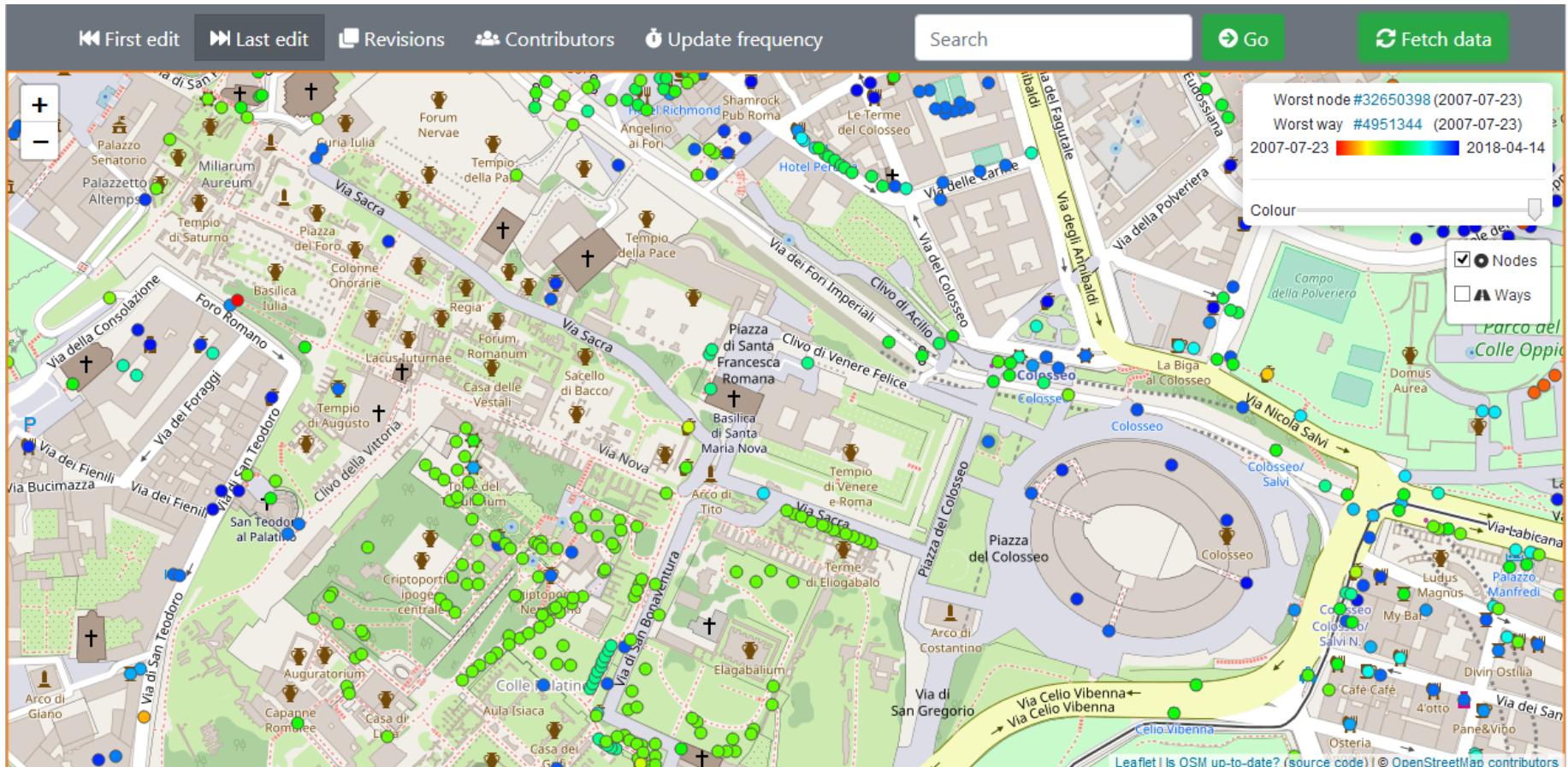
M. A. Brovelli, M. Minghini \*, M. E. Molinari

Department of Civil and Environmental Engineering, Politecnico di Milano, Como Campus, Via Valleggio 11, 22100 Como, Italy –  
(maria.brovelli, marco.minghini, moniaelisa.molinari)@polimi.it



# Research on OSM – data quality

- Intrinsic evaluation of OSM data:
  - is OSM up-to-date: qualitative visualizations of OSM temporal history



<https://is-osm-updated.frafra.eu>

# Research on OSM – data quality

- Intrinsic evaluation of OSM data:
  - open source architecture

## OSM API v0.6

- Loading  
./map?bbox=...
- ./history: groups  
of 100 elements

## JS/CSS Libraries

-  Leaflet
-  Bootstrap
- Font Awesome 



python™

- HUG 
- Dugong: HTTP  
pipelining
- asyncio, ...

## uWSGI

- REST API (HUG)
- Static files

## Spatialite



- OSM XML→SQL
- processing
- SQL→ GeoJSON



docker

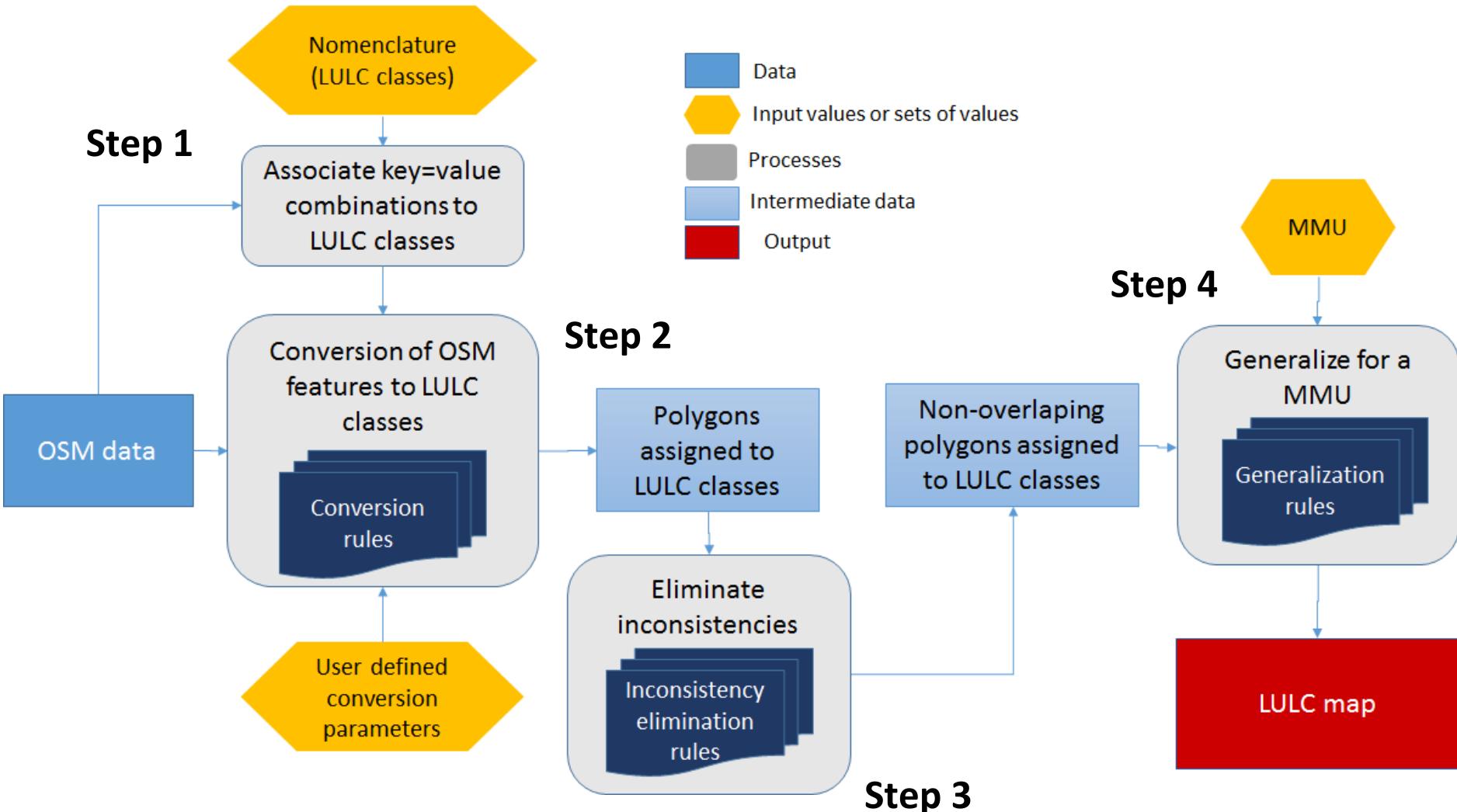
- rapid deploy
- image based on



<https://github.com/frafra/is-osm-updated>.

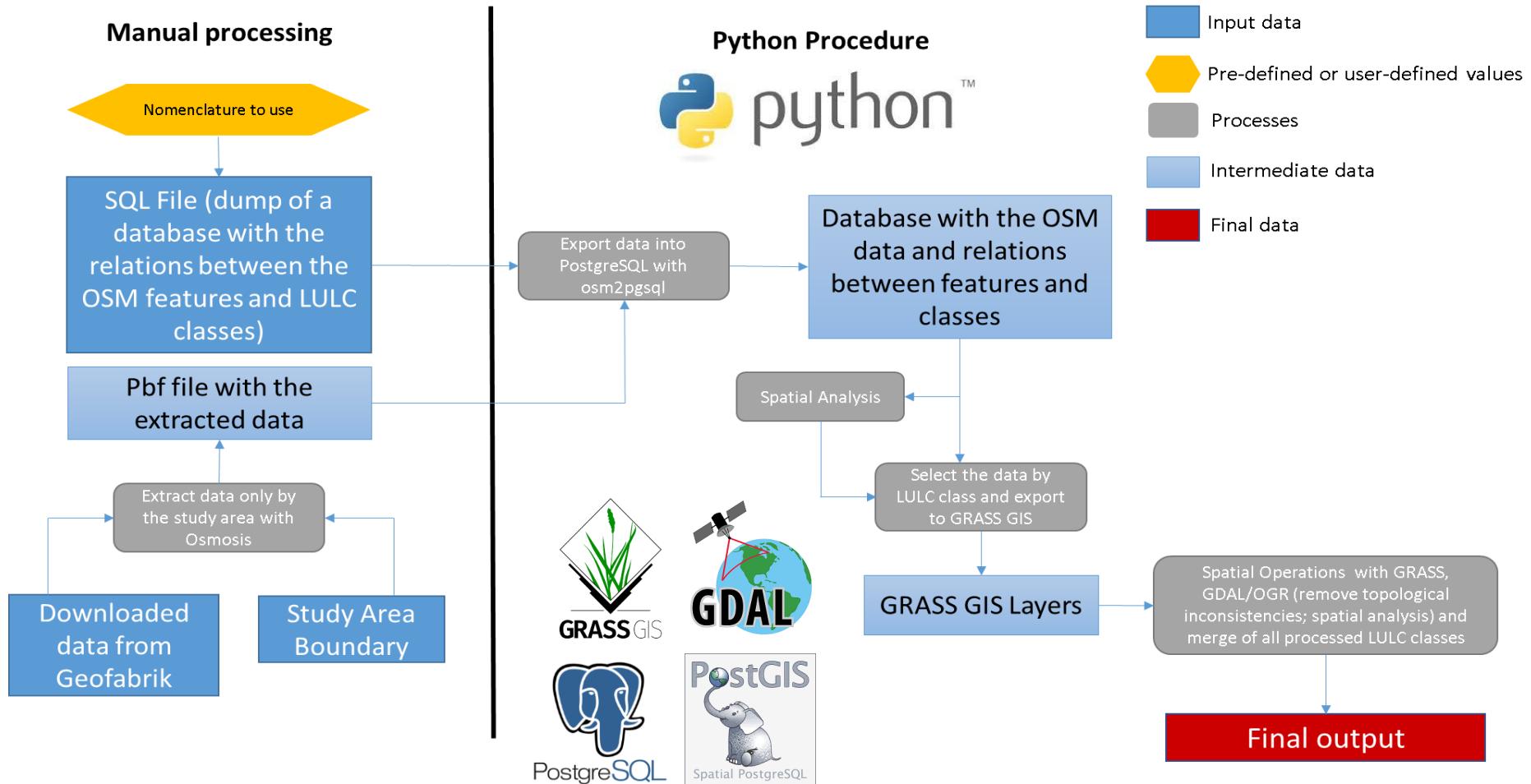
# Research on OSM – Land Use/Land Cover maps

- Methodology to convert OSM into a Land Use/Land Cover (LULC) map



# Research on OSM – Land Use/Land Cover maps

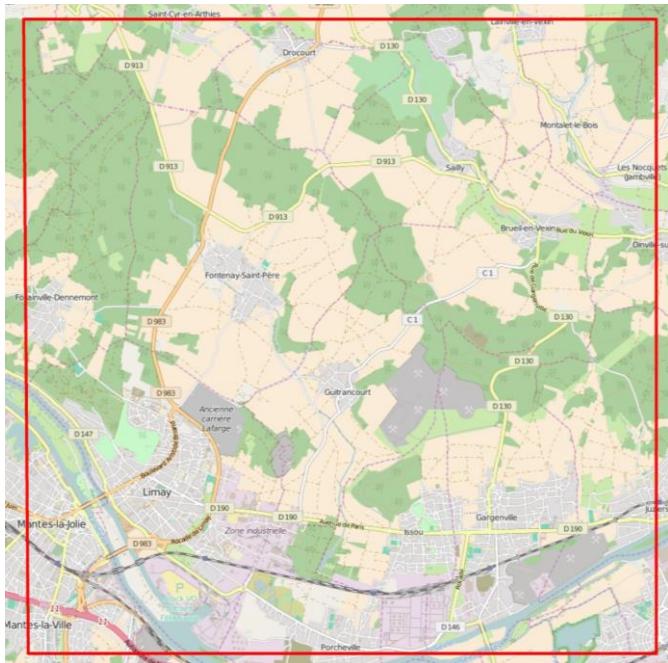
- FOSS4G-based architecture



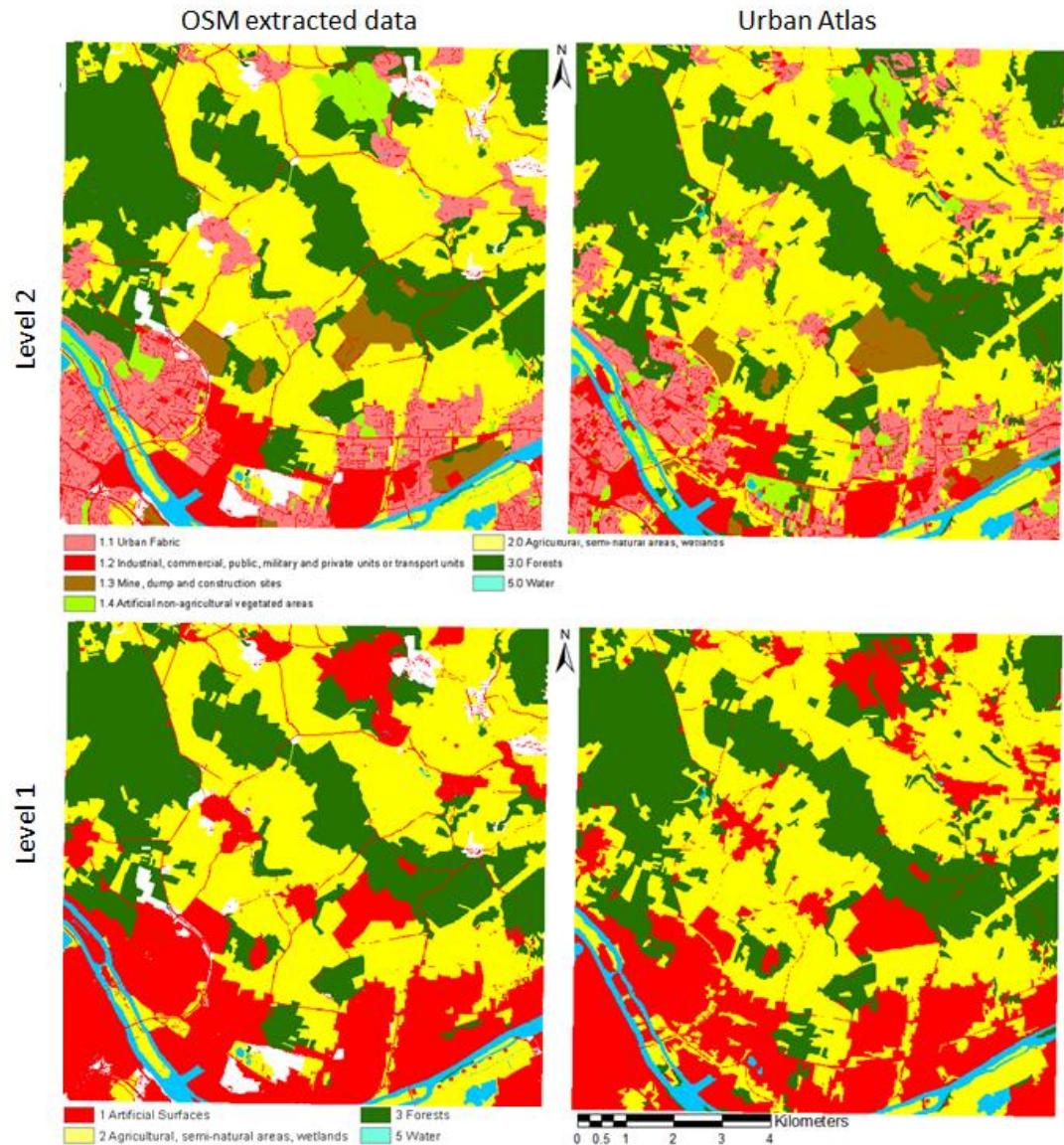
<https://github.com/JoaquimPatriarca/GIS-SENPY>

# Research on OSM – Land Use/Land Cover maps

- Case studies – Paris



© OpenStreetMap contributors

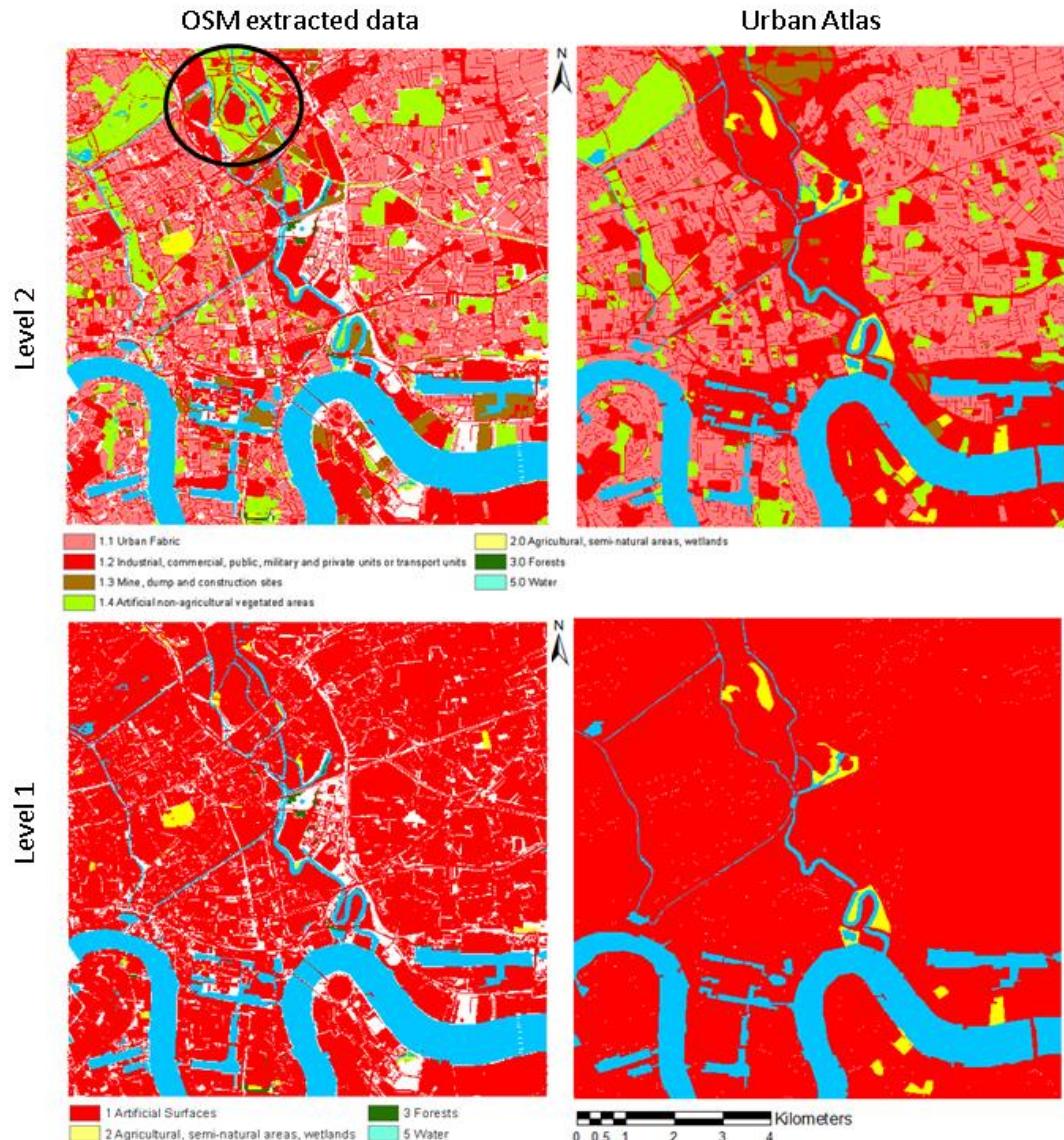


# Research on OSM – Land Use/Land Cover maps

- Case studies – London



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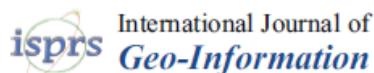
# Research on OSM – Land Use/Land Cover maps

Proceedings, 6<sup>th</sup> International Conference on Cartography and GIS, 13-17 June 2016, Albena, Bulgaria  
ISSN: 1314-0604, Eds: Bandrova T., Konecny M.

## AN AUTOMATED METHODOLOGY FOR CONVERTING OSM DATA INTO A LAND USE/COVER MAP

Cidália Fonte<sup>(1,2)</sup>, Marco Minghini<sup>(3)</sup>, Vyron Antoniou<sup>(4)</sup>, Linda See<sup>(5)</sup>, Joaquim Patriarca<sup>(2)</sup>, Maria Antonia Brovelli<sup>(3)</sup>, Grega Milcinski<sup>(6)</sup>

## Using OpenStreetMap to Create Land Use and Land Cover Maps: Development of an Application



Article

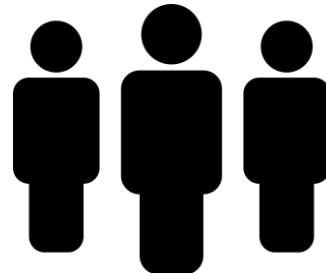
## Generating Up-to-Date and Detailed Land Use and Land Cover Maps Using OpenStreetMap and GlobeLand30

Cidália Costa Fonte<sup>1,2,\*</sup>, Marco Minghini<sup>3</sup>, Joaquim Patriarca<sup>2</sup>, Vyron Antoniou<sup>4,5</sup>, Linda See<sup>6</sup>  
and Andriani Skopeliti<sup>7</sup>





# My contribution to OSGeo



**FOSS4G**  
**community**  
**building**

# Attending FOSS4G & open source events



# Organizing FOSS4G & open source events

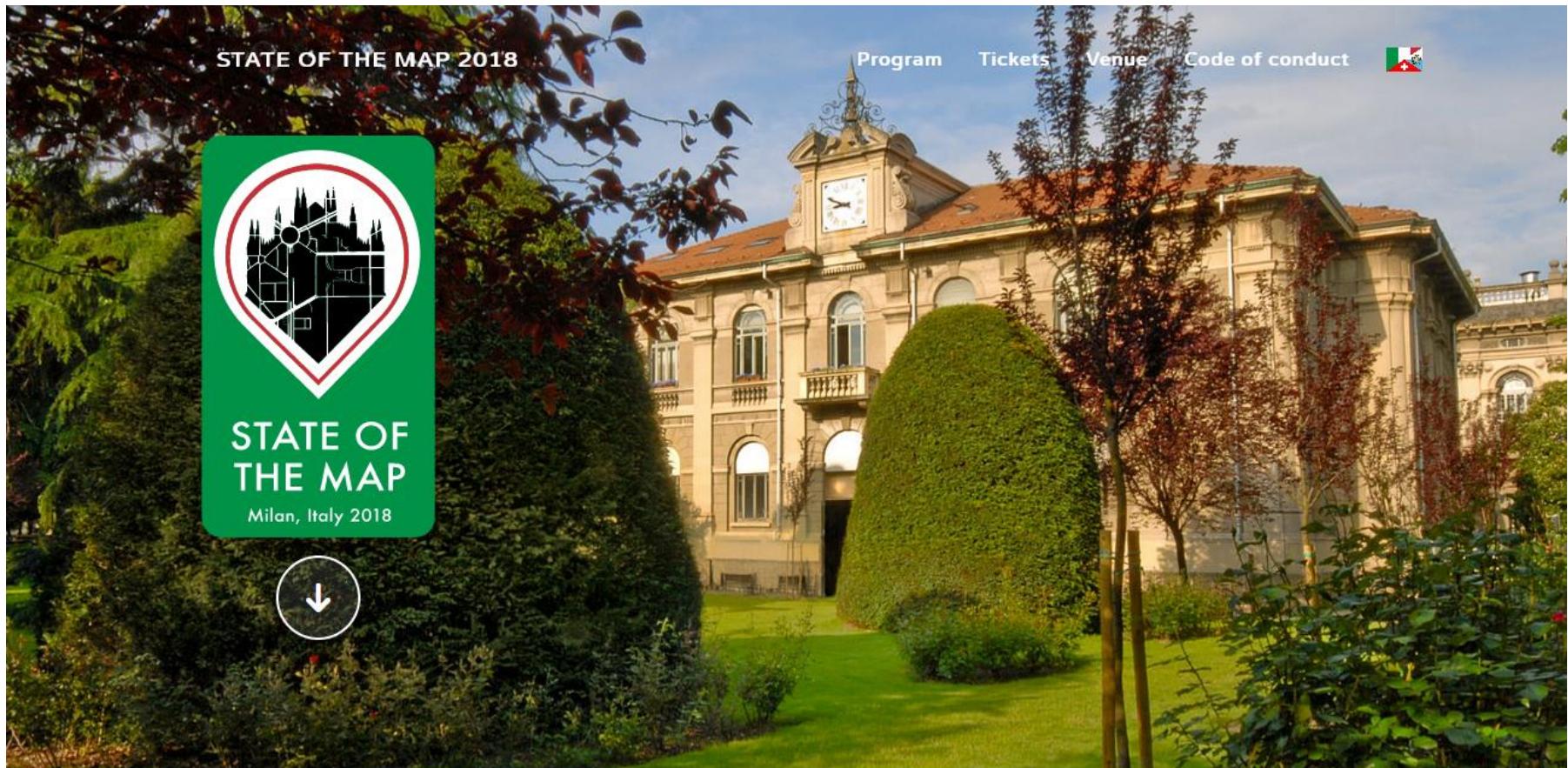
- FOSS4G Europe 2015 – Como, Italy
  - a hard, but very rewarding work!



<http://europe.foss4g.org/2015>

# Bringing FOSS4G to the outside

- Member of the OpenStreetMap Foundation since 2017
  - State of the Map 2018 conference in Milan, Italy on July 28-30, 2018



<https://2018.stateofthemap.org>

# Bringing FOSS4G to the outside

- Voting Member of the Humanitarian OpenStreetMap Team since 2017
  - humanitarian mapping based on OSM & FOSS4G

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The Humanitarian OpenStreetMap Team (HOT) applies the principles of open source and open data sharing for humanitarian response and economic development.

---

## Get Involved



Humanitarian  
OpenStreetMap  
Team



### Help Us Map

Learn how to use OpenStreetMap tools so you can begin contributing.

Start mapping



### Working Groups

Go deeper and participate in our working groups. Anyone can join!

Explore working groups



### Donate

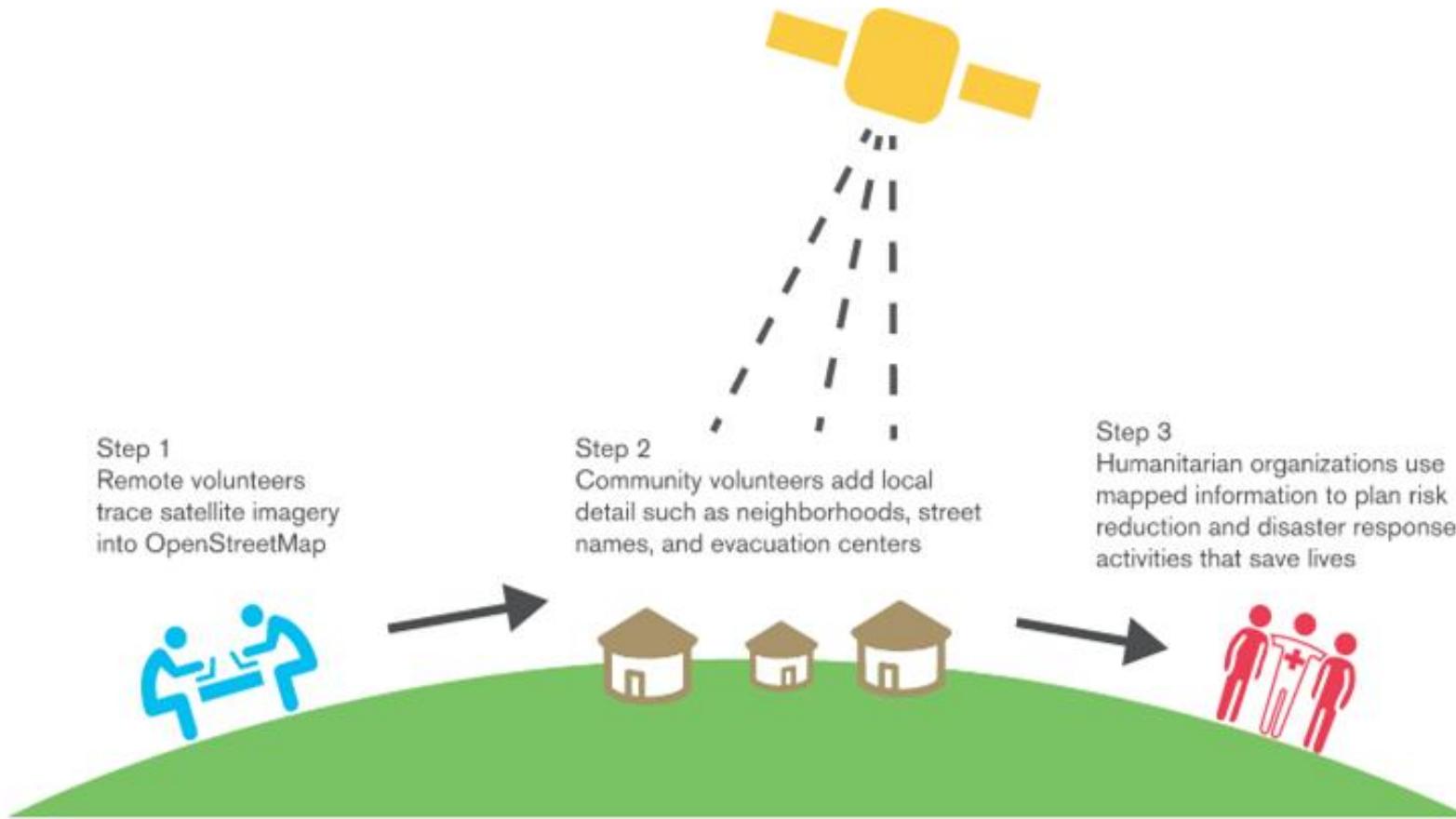
Your donation is used where it's needed most to carry out our humanitarian mission.

Give now

<https://hotosm.org>

# Bringing FOSS4G to the outside

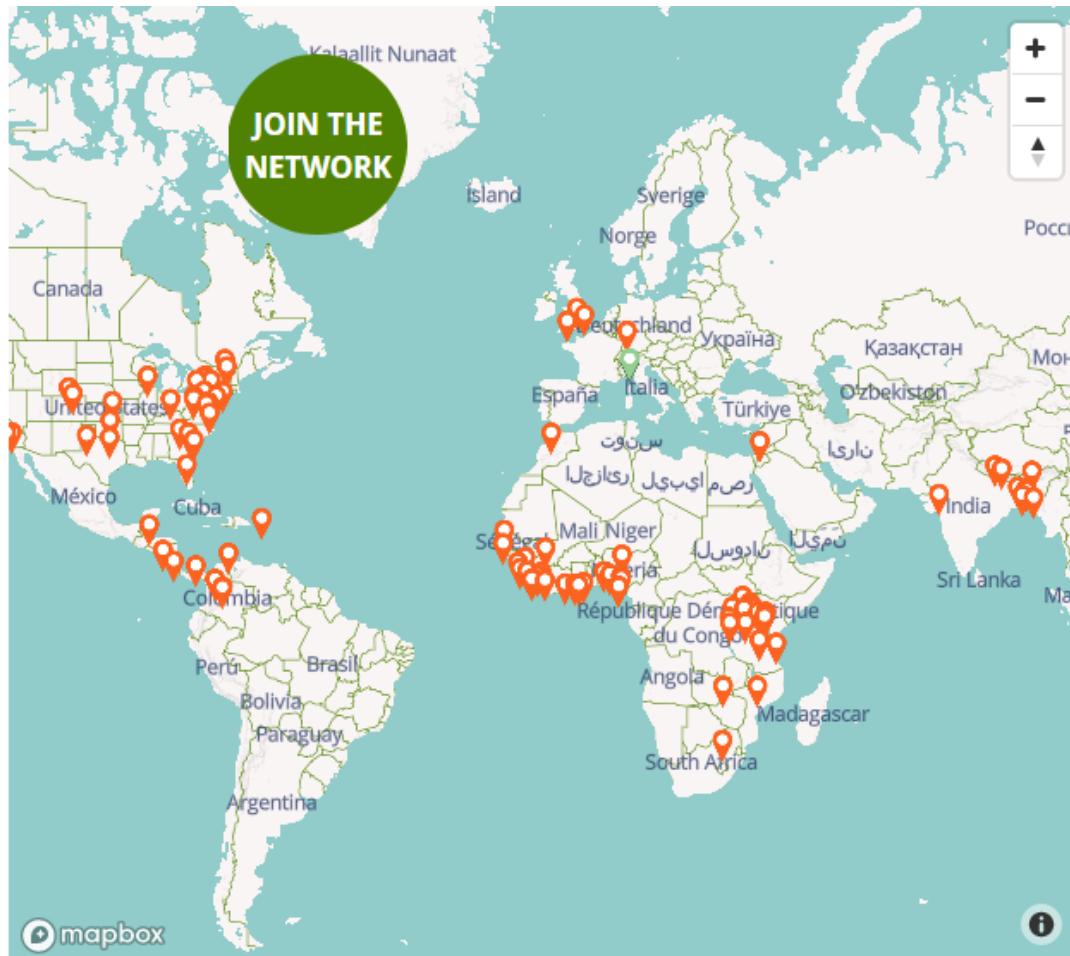
- Volunteer for HOT & the Missing Maps project
  - humanitarian mapping based on OSM & FOSS4G



<https://www.missingmaps.org>

# Bringing FOSS4G to the outside

- Mentor of the PoliMappers student association
  - local chapter of the YouthMappers global network



POLIMAPPERS



<http://www.youthmappers.org>  
<https://polimappers.github.io>

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<https://polimappers.github.io>



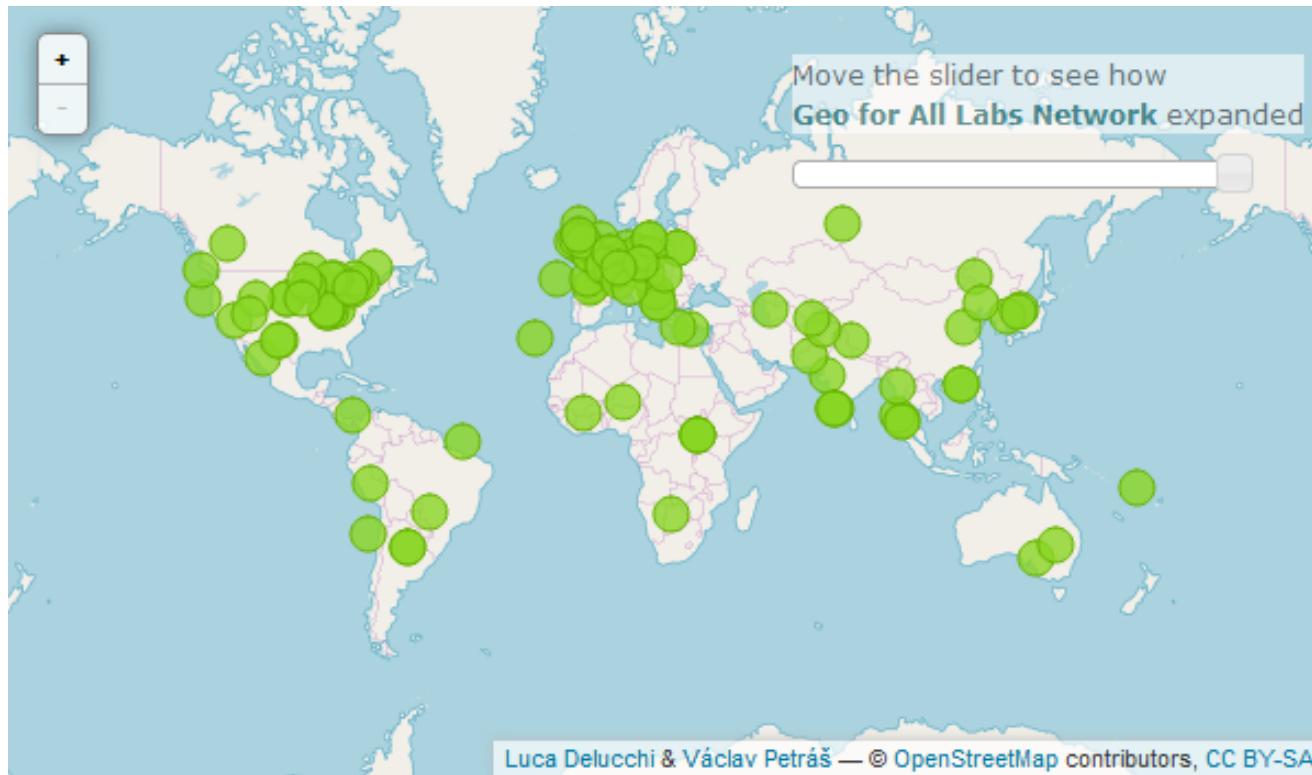
# My contribution to OSGeo



# Education on FOSS4G



- OSGeo's Committee for educational outreach:
  - aimed at making geospatial opportunities accessible to all
  - focused on open the principles of open science



<https://www.osgeo.org/initiatives/geo-for-all/about-geo-for-all>

- A Linux-based distribution with 50+ applications, datasets & tutorials
    - ideal for academic teaching & workshops



<https://live.osgeo.org>

# FOSS4G education

- FOSS4VGI Training School – Como, July 12-14, 2015



## COST Action TD1202 - Mapping and the Citizen Sensor

Training School "FOSS4VGI - Using Free and Open Source Software with VGI: integration, analysis and visualisation"



<http://geomobile.como.polimi.it/FOSS4VGI>

# FOSS4G education

- OpenStreetMap mapping parties
  - at FOSS4G Europe 2015



<https://europe.foss4g.org/2015/Mapping%20parties#osmp>



# FOSS4G education

- OpenStreetMap mapping parties
  - by PoliMappers





# FOSS4G education

- OpenStreetMap humanitarian mapathons
  - after major disasters strike
  - also with children!



[https://www.hotosm.org/updates/2016-03-09\\_200\\_kids\\_map\\_swaziland\\_for\\_malaria\\_elimination](https://www.hotosm.org/updates/2016-03-09_200_kids_map_swaziland_for_malaria_elimination)



# My contribution to OSGeo



**FOSS4G in  
business**

- A FOSS4G-based startup company I co-founded with other geo-geeks :)



<http://gisdev.io>

# Conclusions

- FOSS4G is all about community and each of us has something to give!



# Conclusions

- FOSS4G is all about community and each of us has something to give!
  - get to know the community



# Conclusions

- FOSS4G is all about **community** and each of us has something to give!
  - get to **know** the community
  - attend FOSS4G events



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  - organize events



# Conclusions

- FOSS4G is all about **community** and each of us has something to give!
  - get to **know** the community
  - **attend** FOSS4G events
  - share **ideas & experiences**
  - **organize** events
  - bring FOSS4G to others



# Conclusions

- FOSS4G is all about **community** and each of us has something to give!
  - get to **know** the community
  - **attend** FOSS4G events
  - share **ideas & experiences**
  - **organize** events
  - bring FOSS4G to others
  - **be open**



# May the FOSS be with you!

- Thanks to Prof. Maria Brovelli and the amazing FOSS4G people who have made all of this possible!
- This presentation is available at <https://tinyurl.com/y9ll3b7r>

Marco Minghini – [marco.minghini@polimi.it](mailto:marco.minghini@polimi.it)   
[@MarcoMinghini](https://twitter.com/MarcoMinghini) 



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