

# OpenStreetMap

## a resource for a data scientist

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# What is OpenStreetMap?



Local Knowledge



Community Driven



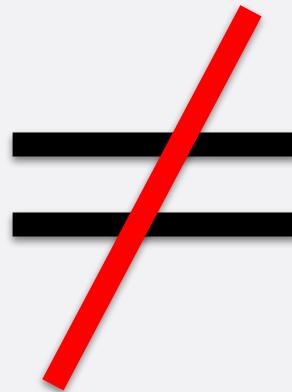
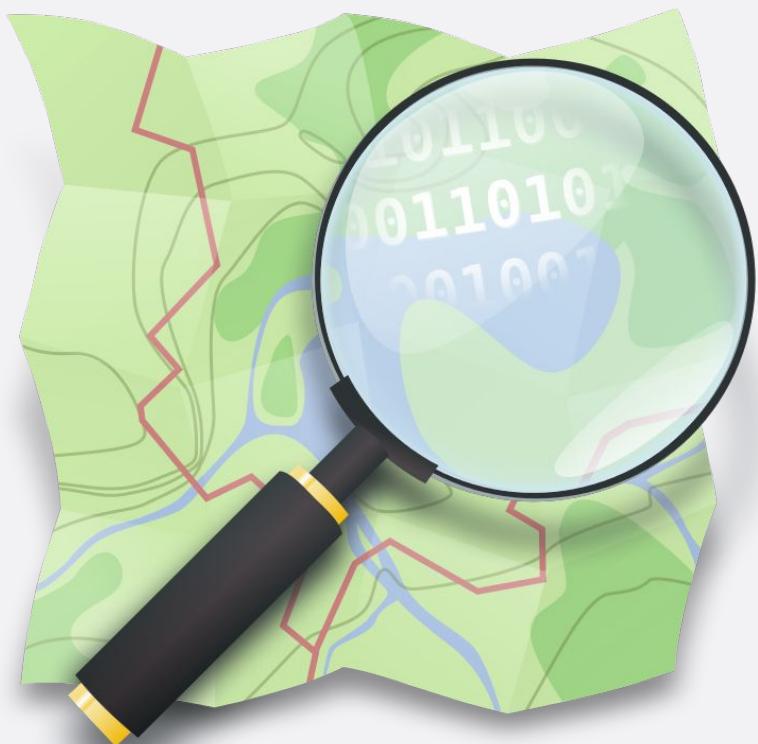
Open Data

OpenStreetMap is built by a community of mappers that contribute and maintain data about roads, trails, cafés, railway stations, and much more, all over the world.

<http://www.openstreetmap.org/about>



# OpenStreetMap is NOT an alternative to Google Maps





OPEN DATA

IS A COMMONS



The screenshot shows a detailed map of the FBK Fondazione Bruno Kessler campus in Trento, Italy. The map includes several buildings labeled: 'Polo Ferrari 2', 'Polo Scientifico e Tecnologico "Fabio Ferrari"', 'Polo Ferrari 1', 'Biblioteca Polo Ferrari', 'Mensa Polo Ferrari', 'Bar Polo Scientifico Ferrari', 'FBK Fondazione Bruno Kessler' (multiple locations), and 'FBK - Fondazione Bruno Kessler'. The map also shows streets like 'Via Sommarive', 'Via alla Cascata', 'Via dei Valoni', and 'Via Sabbioni'. A green area representing a park is visible on the right. The top left features the OpenStreetMap logo and navigation buttons for 'Edit', 'History', and 'Export'. The top right includes links for 'GPS Traces', 'User Diaries', 'Copyright', 'Help', and 'About'. A user profile for 'napo' is shown in the top right corner. The bottom left shows a scale bar from '30 m' to '1 km', and the bottom right includes copyright information and a 'Make a Donation' link.

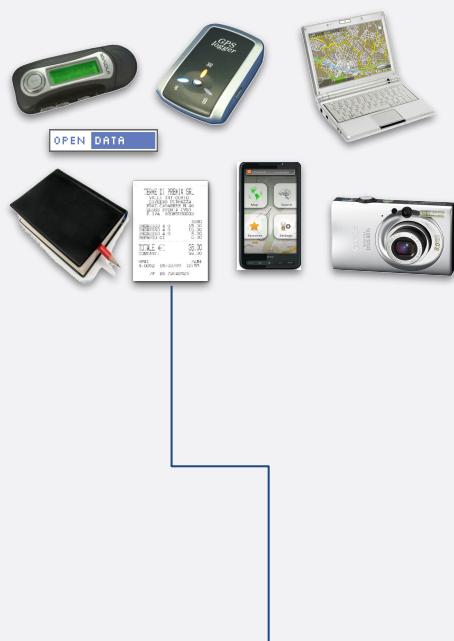
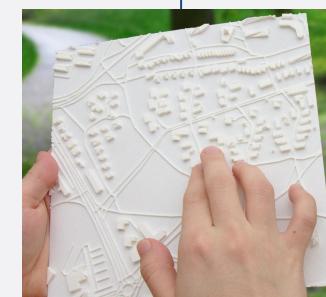
# What's happening now



<http://osmlab.github.io/show-me-the-way/>

# Geospatial analysis and representation for data science

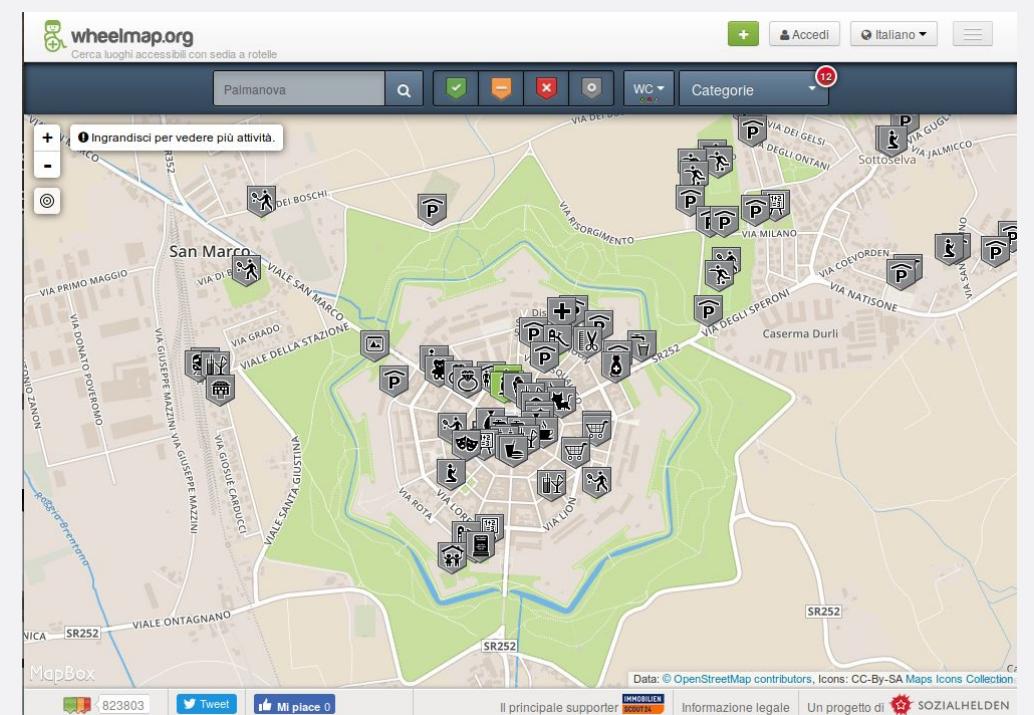
Master in Data Science - University of Trento



The screenshot shows the homepage of MapMyDay. At the top, there's a logo with the text "MAP M+ DAY". Below it, a large banner features the text "Be the movement!". Underneath, a call-to-action text reads: "Join "MapMyDay" – a global social event for more accessibility! We need your support! Because steps are a daily barrier for millions of people worldwide who are traveling – whether they use a wheelchair, a walking aid or a stroller. The event will kick off on World Tourism Day. Help out with a few clicks and mark places in your neighborhood on the online map [Wheelmap.org](https://wheelmap.org) as to whether they are wheelchair accessible or not. Let's do this together and gather as many places as possible!"

<http://mapmyday.org/en>



<https://wheelmap.org/it/>

The image displays two screenshots of mobile map applications side-by-side.

**Orux Maps (Left):**

- Header:** "Orux Maps" in large white font, "online/offline map viewer for Android. and more..." below it.
- Menu:** "MAIN MENU" on the left with links to OsmAnd, Download / First Steps, Plugins, Screenshots, How To + FAQs, and Blog.
- Resources:** "RESOURCES" on the left with links to Project Site (Google Code), Forum (Google Group), Source Code (github), OsmAnd release builds, OsmAnd nightly build, OsmAnd CZ, OSM Homepage, and Administrator.
- Translations:** "W OsmAnd translation 72% done".
- Users:** "116 Users" with buttons for "I USE IT" and "Share".
- Content:** "New version: OruxMaps" in red, "Test next version" in green, and a note about OsmAnd calibration.

**Locus Map (Right):**

- Header:** "Locus" logo with "63" above it, "HOME", "NEWS", "FEATURES", "DOWNLOAD", "SUPPORT", and "CONTACT" menu items.
- Image:** Three devices (two phones and one tablet) displaying the Locus Map interface with various routes and locations marked.
- Text:** "Locus Map – GPS navigation app for Android that can do everything you want".
- List:** A bulleted list of features: View maps offline, Track your route, Find caches, Use a voice guide, And much more....
- Call-to-action:** "So download it for free today."
- Download:** "GET IT ON Google play" button.
- Google Play:** Icons for "Locus Pro" (Rating: 4.8, Paid) and "Locus Free" (Rating: 4.4, Free).
- Google+:** "Locus Map" icon.
- Bottom:** "Geocaching", "Online maps", "Points & Tracks", "Hiking & Cycling", "Navigation & More" icons.

# BATTLEFIELD 4 (BF4) IMAGES

The image shows a screenshot of the Battlefield 4 Battlelog leaderboards. The main focus is a map of a city street with player icons and a large blue circle highlighting a specific area. To the right is a detailed leaderboards table for the M416 assault rifle.

**LEADERBOARDS > ASSAULT RIFLES > M416**

**FRIENDS #6**

**UPPSALA Top 5%**

**UPPLAND Top 70%**

**SWEDEN Top 25%**

**WORLD Top 5%**

**ALL TIME**

**M416 Most kills**

Rank	User	Kills
1	ogabretts	16,654
2	ogbystrom	15,558
3	JBRipley	15,330
4	Sodatrukt	15,135
5	tsa	14,657
6	TheBikingViking	14,301
7	Indigownd	13,719
8	DarkLord7854	11,503
9	drohr31337	11,334
10	Flag-E	10,964
892	MHESLOW	7,643

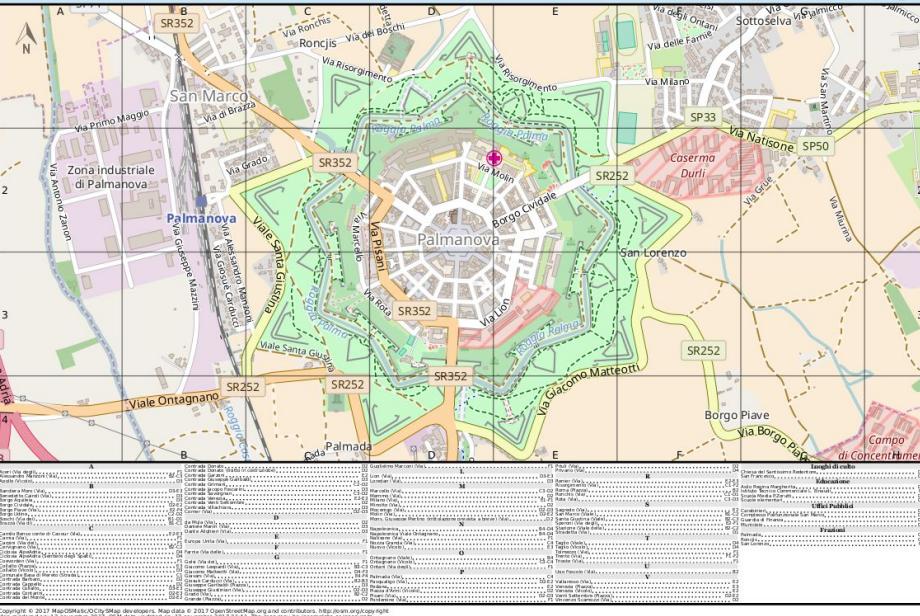
962 players

**VIEW SPECIFIC ASSAULT RIFLE**

**BF4 SCREENSHOTS - BATTLELOG LEADERBOARD**

M416 Top 25%   AN92 Top 38%   SAR-11 Top 5%   SAR-21 Top 42%   AEK-971 Top 68%   FAMAS Top 71%

## Palmanova - centro storico



## MapOSMatic

<http://maposmatic.org>

<https://maposmatic.osm-baustelle.de/>

# Orienteering

<http://oobrien.com/oom/>

Point	Description
1	Post box number
2	Post box number
3	Colour of do...
4	Colour of do...
5	Fire hydrant...
20	Number of tr...
21	Name of road
22	Gate closes at:
23	No _____ el...
30	Name of chemist



<https://touch-mapper.org/>

≡ Google Scholar
OpenStreetMap


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Articoli
Circa 51.800 risultati (0,04 sec)
 Il mio profilo
 La mia biblioteca

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In qualsiasi momento

Dal 2020

Dal 2019

Dal 2016

Intervallo specifico...

Ordina per pertinenza

Ordina per data

Qualsiasi lingua

Pagine in Italiano

includi brevetti

includi citazioni

 Crea avviso

**Openstreetmap: User-generated street maps**  
[M Haklay, P Weber - IEEE Pervasive Computing, 2008 - ieeexplore.ieee.org](#)  
 The OpenStreetMap project is a knowledge collective that provides user-generated street maps. OSM follows the peer production model that created Wikipedia; its aim is to create a set of map data that's free to use, editable, and licensed under new copyright schemes. A ...  
☆ 99 Citato da 2298 Articoli correlati Tutte e 13 le versioni

**[LIBRO] OpenStreetMap**  
[J Bennett - 2010 - books.google.com](#)  
 This book introduces the OSM project, its aims and objectives, and its history, then guides you through the process of gathering, editing, and using OpenStreetMap data using a series of real-world examples. This book is the perfect aid for geographic-information professionals ...  
☆ 99 Citato da 162 Articoli correlati

**Quality assessment of the French OpenStreetMap dataset**  
[JF Girres, G Touya - Transactions in GIS, 2010 - Wiley Online Library](#)  
 Abstract The concept of Volunteered Geographic Information (VGI) has recently emerged from the new Web 2.0 technologies. The OpenStreetMap project is currently the most significant example of a system based on VGI. It aims at producing free vector geographic ...  
☆ 99 Citato da 638 Articoli correlati Tutte e 6 le versioni

**Towards quality metrics for OpenStreetMap**  
[P Mooney, P Corcoran, AC Winstanley - Proceedings of the 18th ..., 2010 - dl.acm.org](#)  
 ABSTRACT Volunteered Geographic Information (VGI) is currently a "hot topic" in the GIS community. The OpenStreetMap (OSM) project is one of the most popular and well supported examples of VGI. Traditional measures of spatial data quality are often not ...  
☆ 99 Citato da 215 Articoli correlati Tutte e 12 le versioni

Ricerche correlate

[openstreetmap map](#)      [openstreetmap road network](#)  
[openstreetmap osm](#)      [openstreetmap data quality](#)



Article

# Using Latent Semantic Analysis to Identify Research Trends in OpenStreetMap

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<sup>4</sup> Department of Civil Engineering, Guru Nanak Dev Engineering College, Ludhiana, Punjab 141006, India; hsrai@gndec.ac.in

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Academic Editors: Bernd Resch, Linda See and Wolfgang Kainz

Received: 13 May 2017; Accepted: 28 June 2017; Published: 1 July 2017

**Abstract:** OpenStreetMap (OSM), based on collaborative mapping, has become a subject of great interest to the academic community, resulting in a considerable body of literature produced by many researchers. In this paper, we use Latent Semantic Analysis (LSA) to help identify the emerging research trends in OSM. An extensive corpus of 485 academic abstracts of papers published during the period 2007–2016 was used. Five core research areas and fifty research trends were identified in this study. In addition, potential future research directions have been provided to aid geospatial information scientists, technologists and researchers in undertaking future OSM research.

**Keywords:** OpenStreetMap; research trends; latent semantic analysis; volunteered geographic information



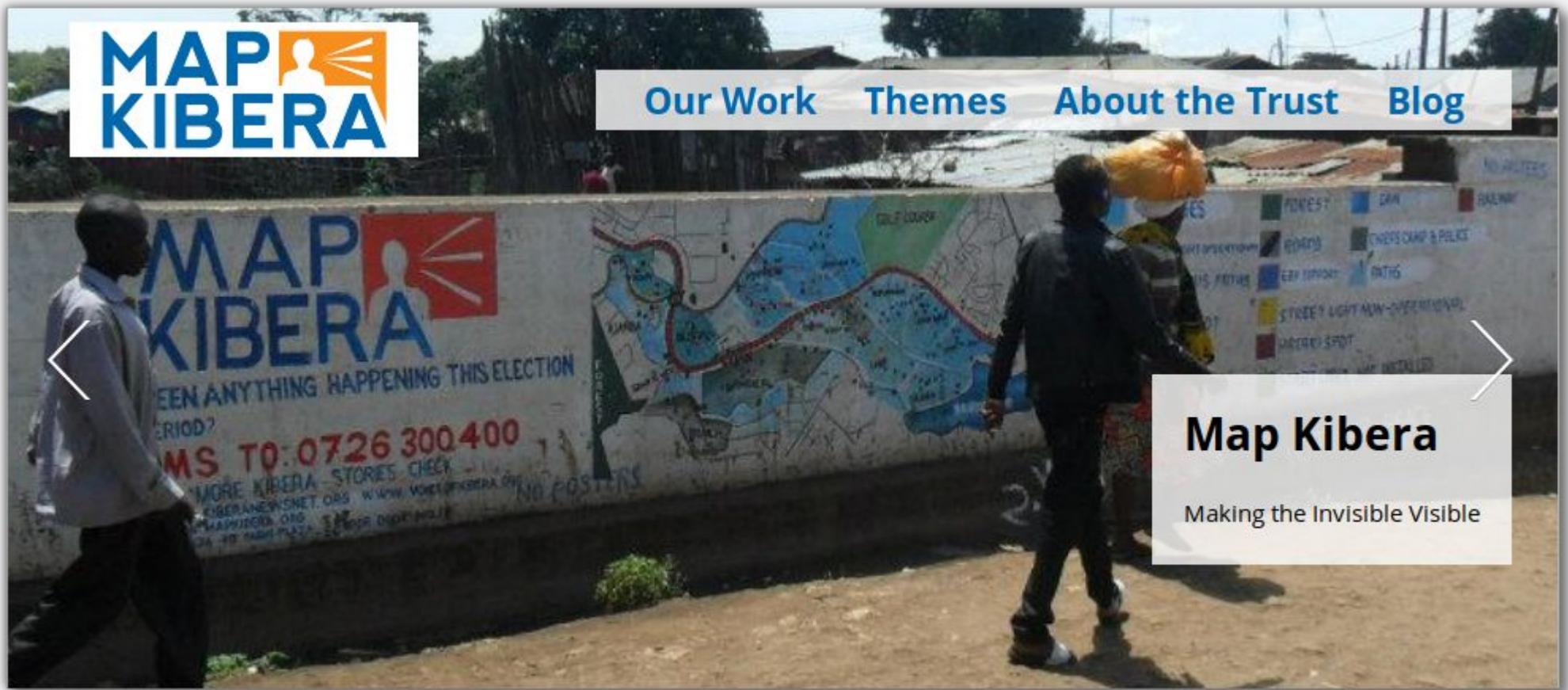
# 50 topics

## OpenStreetMap Research HOT topic 2007-20126

Using Latent Semantic Analysis to Identify Research Trends in OpenStreetMap



# Making the Invisible Visible



[mapkibera.org](http://mapkibera.org)

<http://tiny.cc/kiberacompare>



@napo



 Humanitarian  
Open Street Map  
Team

f    Twitter    YouTube

Get Involved   Projects   News   About   Partnerships   Donate   Contact

HOT and Partners Team Up to Help Eliminate Malaria

## Malaria Elimination Campaign

HOT has teamed up with many partners to identify and map populated places in areas of the globe susceptible to the disease malaria.

■ Malaria transmission occurs throughout

■ Malaria transmission occurs in some parts



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

<https://www.hotosm.org/>

@napo





**Putting the World's Vulnerable People on the Map**

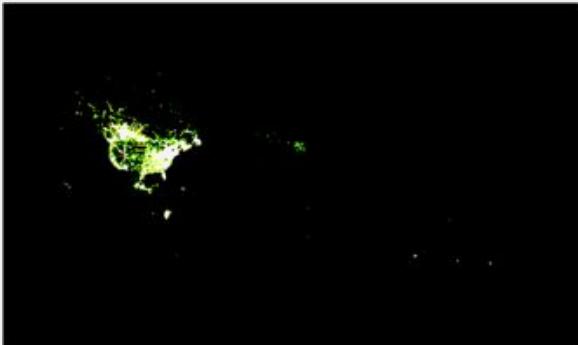
Each year, disasters around the world kill nearly 100,000 and affect or displace 200 million people. Many of the places where these disasters occur are literally 'missing' from any map and first responders lack the information to make valuable decisions regarding relief efforts. Missing Maps is an open, collaborative project in which you can help to map areas where humanitarian organisations are trying to meet the needs of vulnerable people.

**Step 1.**  
Remote volunteers trace satellite imagery into OpenStreetMap  

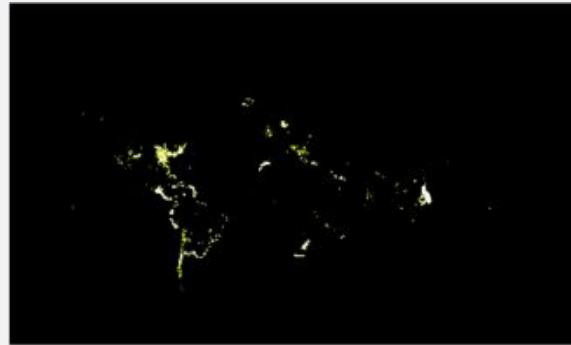

**Step 2.**  
Community volunteers add local detail such as neighborhoods, street names, and evacuation centers  


**Step 3.**  
Humanitarian organizations use mapped information to plan risk reduction and disaster response activities that save lives  


# Corporate Editors in the Evolving Landscape of OpenStreetMap



Telenav



Kaart



Apple



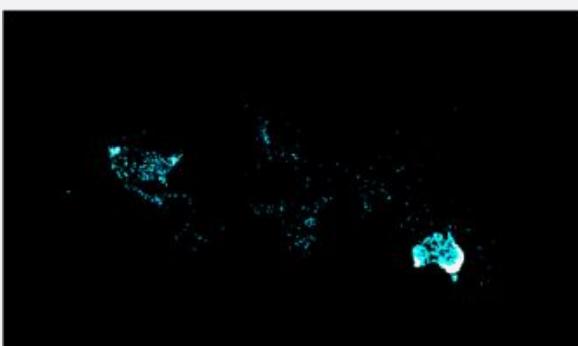
Facebook



Mapbox & Development Seed



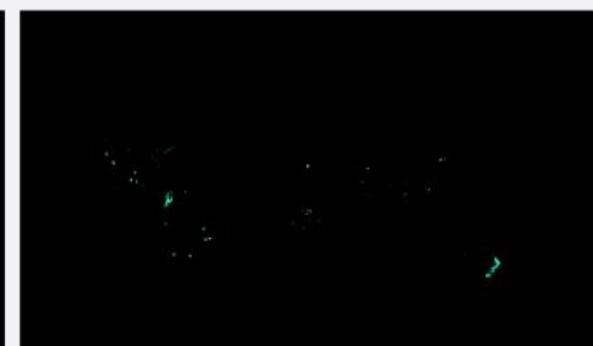
Amazon



Microsoft



Grab



Uber

<https://www.mdpi.com/2220-9964/8/5/232>



## Atlas

build passing

The [Atlas](#) is a way to efficiently represent OpenStreetMap data in memory. A subset of the data is in a "navigable network" form, meaning anything that is assumed to be navigable will be in a form of `Node`s and `Edge`s in a way a routing algorithm could traverse it. It also provides easy to use APIs to access geographical data. On top of it all, it is easy to shard and re-stitch, making it perfect for distributed processing!

Projects using Atlas:

- [atlas-generator](#): A Spark job to distribute Atlas shards generation
- [atlas-checks](#): A suite of tools to check OSM data integrity using Atlas, and Spark.
- [josm-atlas](#): A JOSM plugin to visualize Atlas data.

<https://github.com/osmlab/atlas>

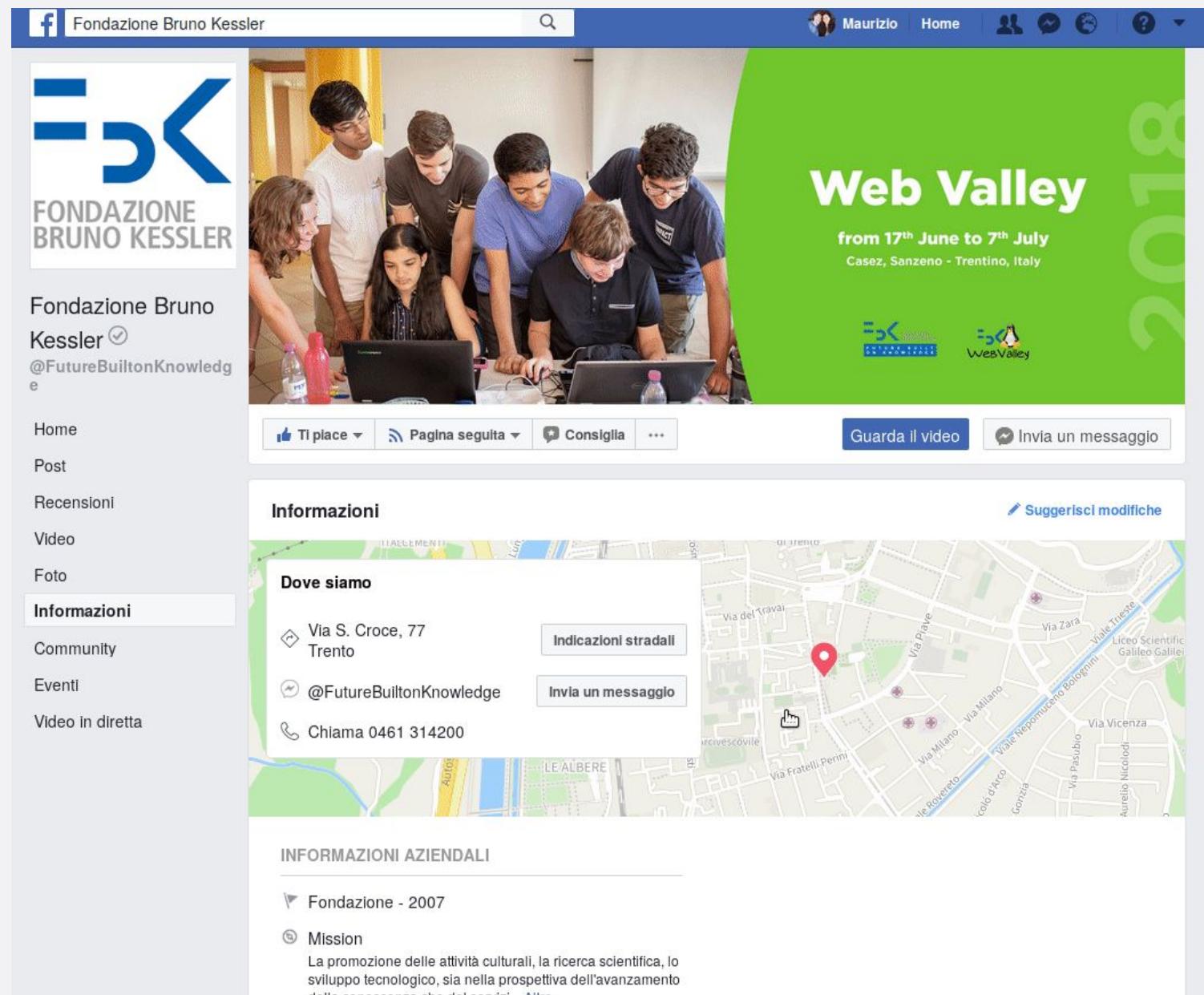
27 lines (21 sloc) | 1.52 KB

```
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4 are permitted provided that the following conditions are met:  
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25 ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE  
26 POSSIBILITY OF SUCH DAMAGE.
```





Fondazione Bruno Kessler



The screenshot shows a Facebook page for 'Fondazione Bruno Kessler'. The cover photo features a group of young people gathered around a laptop. To the right, there's a green banner for 'Web Valley' from June 17th to July 7th, 2018, in Casez, Sanzeno, Italy. The sidebar on the left includes links for Home, Post, Recensioni, Video, Foto, and Informazioni (which is currently selected). The main content area has sections for 'Dove siamo' (with address, map, and contact info), 'INFORMAZIONI AZIENDALI' (with sections for Fondazione and Mission), and a map of the city of Trento.

**Fondazione Bruno Kessler**

**Web Valley**  
from 17<sup>th</sup> June to 7<sup>th</sup> July  
Casez, Sanzeno - Trentino, Italy

**Informazioni**

**Dove siamo**

Via S. Croce, 77  
Trento

@FutureBulitonKnowledge

Chiama 0461 314200

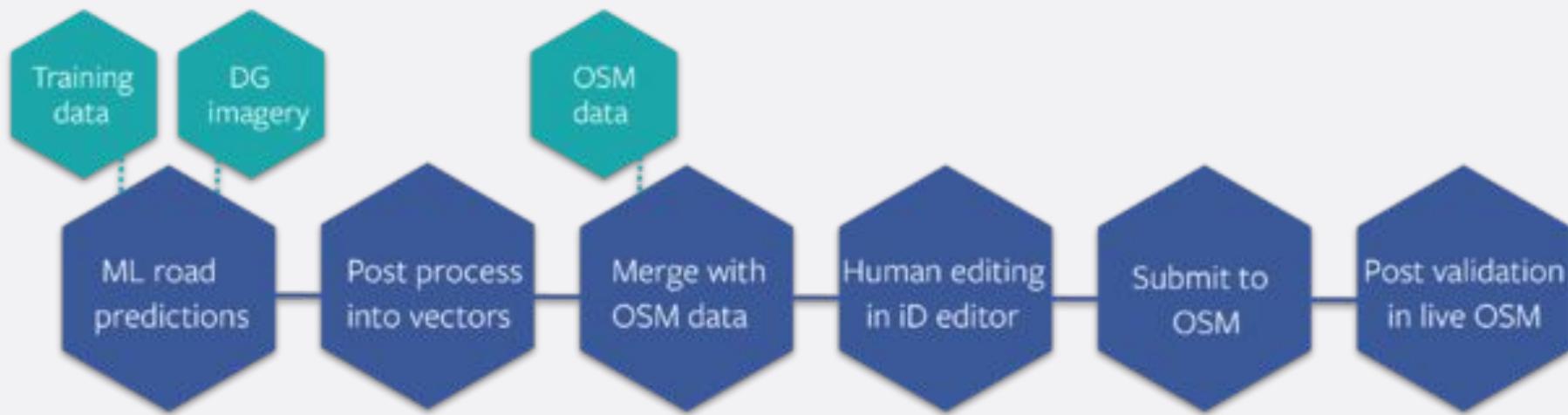
**INFORMAZIONI AZIENDALI**

Fondazione - 2007

Mission

La promozione delle attività culturali, la ricerca scientifica, lo sviluppo tecnologico, sia nella prospettiva dell'avanzamento della conoscenza che dei servizi - Altri

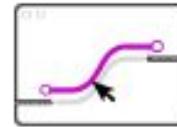
# facebook



[https://wiki.openstreetmap.org/wiki/AI-Assisted\\_Road\\_Tracing](https://wiki.openstreetmap.org/wiki/AI-Assisted_Road_Tracing)



Artificial Intelligence Detected  
Roads



Mapping the World w/ RapiD  
Editor



Humanitarian Prioritized  
Community Task Mapping

ML Roads



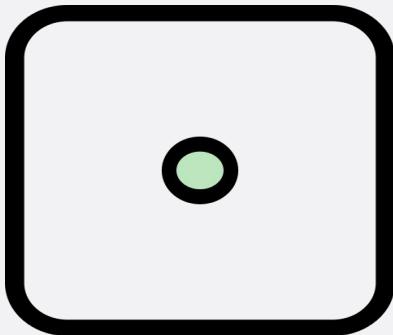
# tag key=value

## Public Transport

This is used for features related to public transport. For example: railway stations, bus stops and services. See the page titled [Public transport](#) for an introduction on its usage.

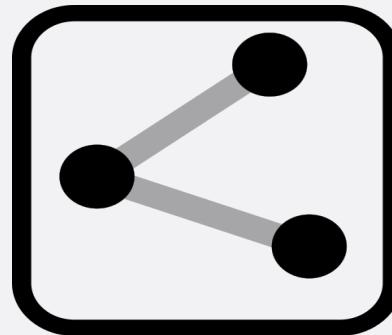
Key	Value	Element	Description	Map rendering	Image	Count
public_transport	stop_position	○	The position on the street or rails where a public transport vehicle stops.			631 228  392  199 
public_transport	platform	○ □ □	The place where passengers are waiting for the public transport vehicles.			844 953  203 891  3 646 
public_transport	station	○ □	A station is an area designed to access public transport.			22 639  9 897  355 
public_transport	stop_area	□	A relation that contains all elements of a train, subway, monorail, tram, bus, trolleybus, aerialway, or ferry stop.			528  198  180 878 

[https://wiki.openstreetmap.org/wiki/Map\\_Features](https://wiki.openstreetmap.org/wiki/Map_Features)



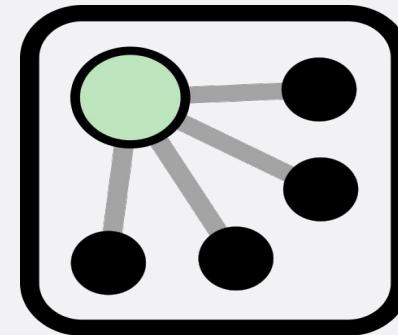
## NODE

A **node** is one of the core elements in the OpenStreetMap data model. It consists of a single point in space defined by its **latitude**, **longitude** and **node id**.



## WAY

A **way** is an ordered list of nodes which normally also has at least one tag or is included within a Relation. A way can have between 2 and 2,000 nodes, although it's possible that faulty ways with zero or a single node exist. A way can be *open* or *closed*. A *closed way* is one whose last node on the way is also the first on that way. A closed way may be interpreted either as a closed polyline, or an area, or both.



## RELATION

A **relation** is one of the core data elements that consists of one or more tags and also an **ordered list** of one or more nodes, ways and/or relations as **members** which is used to define logical or geographic relationships between other elements. A member of a relation can optionally have a **role** which describes the part that a particular feature plays within a relation.

## Example of relation: line path of the bus number 5

OpenStreetMap Edit History Export

Piazza Fiera - Povo - Oltrecastello (variante z) (1396109)

(no comment)

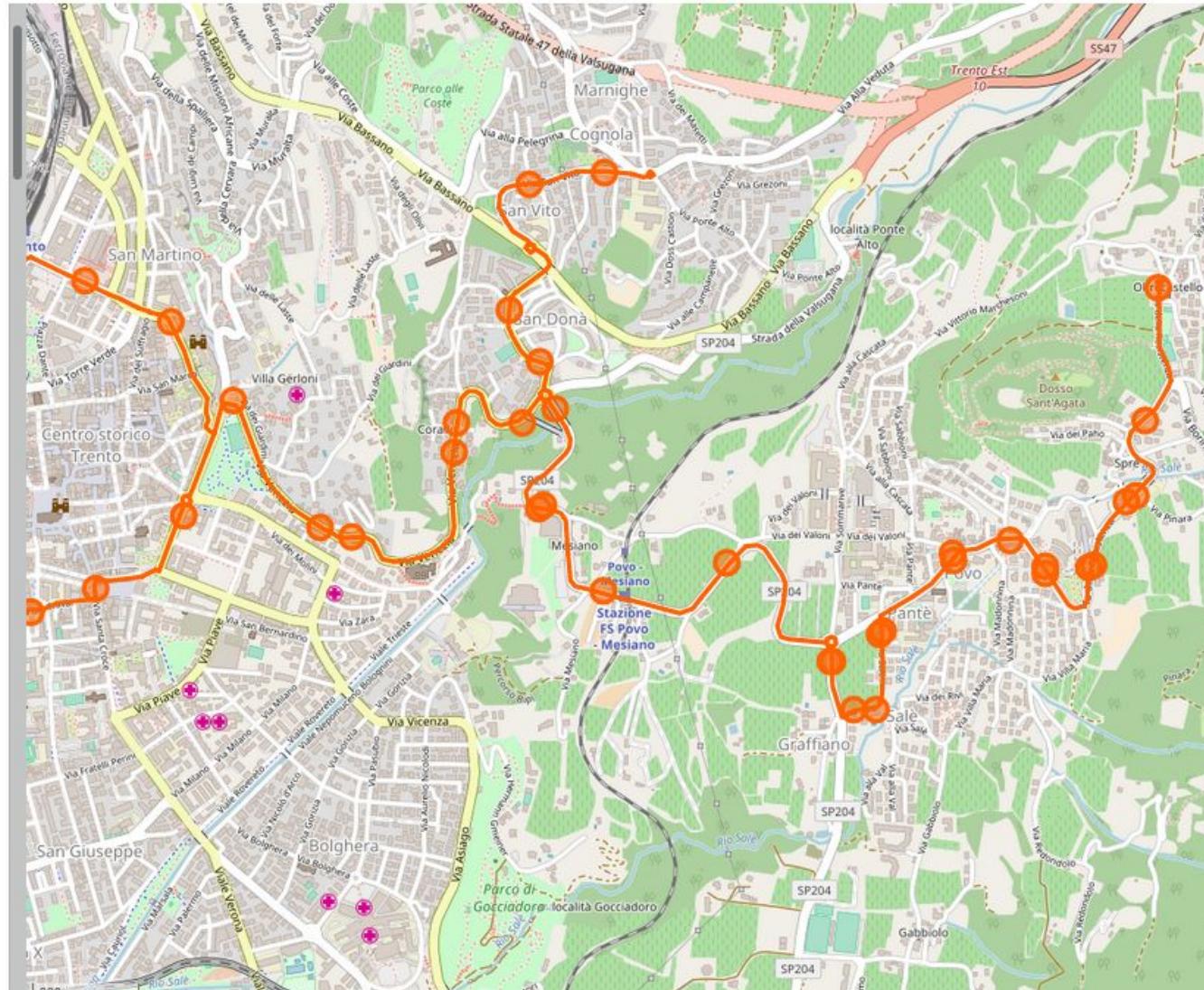
Edited 3 months ago by gumul  
Version #44 · Changeset #57637620

Tags

colour	#f5c500
from	Piazza Dante
importance	urban
name	Linea 5 - Piazza Dante - Piazza Fiera - Povo - Oltrecastello (variante z)
network	Servizio Urbano Trento
operator	Trentino Trasporti
ref	5
route	bus
state	alternate
to	Oltrecastello
type	route

Members

- Way Piazza Dante (96965212) as forward
- Way Piazza Dante (23066740) as forward
- Way Via Andrea Pozzo (177180084) as forward
- Way Via Torre Vanga (23058904) as forward
- Way Via Torre Vanga (283010968) as forward
- Way Via Torre Vanga (141265570) as forward
- Way Via Torre Vanga (177180085) as forward
- Way Via Prepositura (23794856) as forward
- Way Via Prepositura (141265569) as forward



<https://www.openstreetmap.org/relation/1396109#map=15/46.0670/11.1508>

@napo

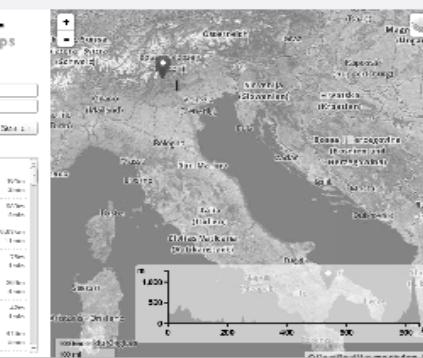


# The ODbL license by examples

```
<?xml version='1.0' encoding='UTF-8'?>
<osm version="0.6" generator="osmconvert 0.7m" timestamp="2014-09-29T20:21:02Z">
<bounds minlat="45.9775306" minlon="11.0224735" maxlat="46.1530112" maxlon="11.1948226"/>
<node id="9191867" lat="46.104119" lon="11.0899633" version="4" timestamp="2010-09-01T22:36:26Z" changeset="5658159" uid="330007" user="pikappa79"/>
<node id="9191982" lat="46.0499659" lon="11.1169915" version="6" timestamp="2011-08-06T16:07Z" changeset="8939495" uid="330007" user="pikappa79"/>
<node id="9192136" lat="46.054435" lon="11.1180986" version="6" timestamp="2012-12-14T22:11:48Z" changeset="14276412" uid="330007" user="pikappa79"/>
<node id="9192343" lat="46.1140579" lon="11.0871511" version="6" timestamp="2010-09-01T22:36:35Z" changeset="5658159" uid="330007" user="pikappa79"/>
<node id="9192428" lat="46.076984" lon="11.112499" version="2" timestamp="2011-01-19T18:32:46Z" changeset="7023211" uid="76312" user="scratara"/>
<node id="9192494" lat="45.977028" lon="11.114043" version="1" timestamp="2006-06-30T11:53:08Z" changeset="48807" uid="573" user="Jörg Ostertag">
  <tag k="created_by" v="JOSM"/>
</node>
<node id="9192593" lat="46.0521296" lon="11.1170876" version="9" timestamp="2011-08-06T16:15:07Z" changeset="8939495" uid="330007" user="pikappa79"/>
<node id="9192771" lat="46.0181248" lon="11.1274916" version="4" timestamp="2011-02-16T13:31:43Z" changeset="7303863" uid="330007" user="pikappa79"/>
<node id="9193403" lat="45.9945344" lon="11.1215165" version="2" timestamp="2009-07-06T23:57:51Z" changeset="1757920" uid="136835" user="user_136835">
  <tag k="created_by" v="JOSM"/>
</node>
<node id="9193405" lat="46.0313027" lon="11.1277415" version="5" timestamp="2011-02-16T13:31:31Z" changeset="7303863" uid="330007" user="pikappa79"/>
<node id="9193447" lat="45.9697045" lon="11.1130485" version="4" timestamp="2008-08-04T17:14:50Z" changeset="57846" uid="20610" user="napo">
  <tag k="created_by" v="JOSM"/>
</node>
<node id="9193468" lat="46.0763371" lon="11.1130076" version="10" timestamp="2013-04-21T11:37:25Z" changeset="15809662" uid="330007" user="pikappa79"/>
<node id="9193580" lat="46.0098526" lon="11.1251955" version="3" timestamp="2013-07-07T06:28:42Z" changeset="16856691" uid="530691" user="Peterfritz"/>
<node id="9193607" lat="46.054411" lon="11.1295695" version="6" timestamp="2011-11-28T21:45:33Z" changeset="9982706" uid="330007" user="pikappa79"/>
<node id="9193619" lat="46.0744894" lon="11.1124451" version="9" timestamp="2013-04-21T11:37:25Z" changeset="15809662" uid="330007" user="pikappa79"/>
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<node id="9193846" lat="46.1201572" lon="11.0860899" version="6" timestamp="2011-02-07T16:18:24Z" changeset="7217702" uid="330007" user="pikappa79"/>
<node id="9193873" lat="46.0869729" lon="11.104303" version="5" timestamp="2010-09-01T22:35:55Z" changeset="5658159" uid="330007" user="pikappa79"/>
<node id="9193877" lat="46.0521785" lon="11.1175845" version="11" timestamp="2011-08-06T16:15:07Z" changeset="8939495" uid="330007" user="pikappa79"/>
<node id="9193996" lat="46.0534124" lon="11.1185143" version="9" timestamp="2013-05-21T19:07:54Z" changeset="16228624" uid="330007" user="pikappa79"/>
<node id="9194295" lat="46.0533991" lon="11.1278855" version="8" timestamp="2011-05-07T00:08:51Z" changeset="5452578" uid="nfranz" user="nfranz"/>
<node id="9194326" lat="46.0533991" lon="11.1278855" version="8" timestamp="2011-05-07T00:08:51Z" changeset="5452578" uid="nfranz" user="nfranz"/>
```



Graphhopper maps



OpenStreetMap

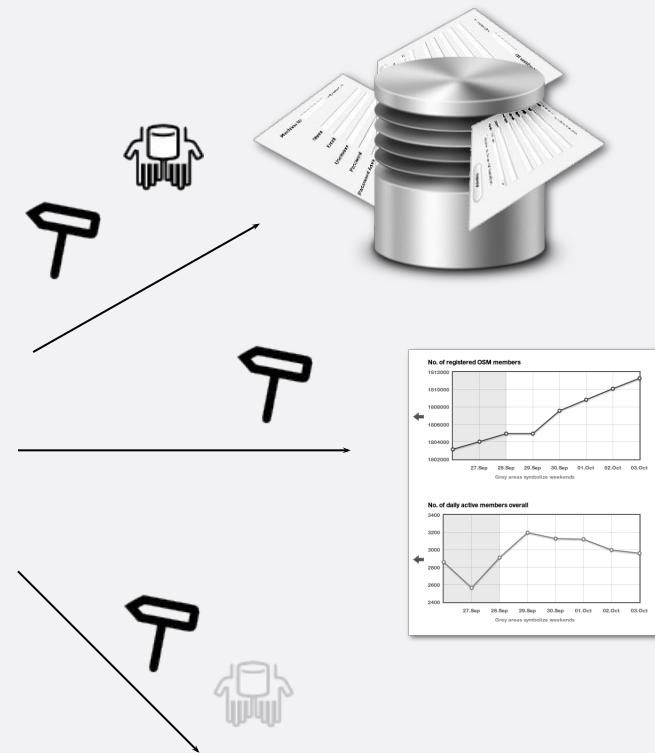
Matera

Search Results

Results from OpenStreetMap Nominatim

- City Boundary Matera, MT, BAS, Italy
- Hamlet Matera, AP, MAR, Italy
- Locality La Matera, San Esteban de Gormaz, Provincia de Soria, Castile and León, Spain
- County Boundary MT, BAS, Italy
- Archaeological Site Matera, P-3, Senere, Southern Zone, Enrias
- Residential Matera, Vista Flores, Northwood, Irvine, Orange, California, 92620, United States of America

More results



# Import are hard to do

## Contents [hide]

### 1 Process

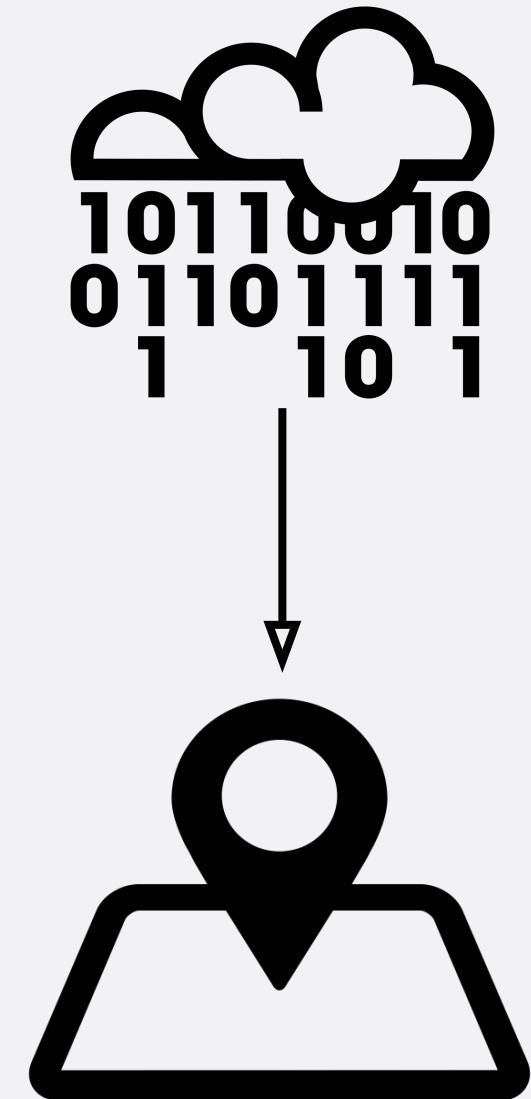
- 1.1 Step 1 - Prerequisites
- 1.2 Step 2 - Community Buy-in
- 1.3 Step 3 - License approval
- 1.4 Step 4 - Documentation
- 1.5 Step 5 - Import Review
- 1.6 Step 6 - Uploading

### 2 Key considerations

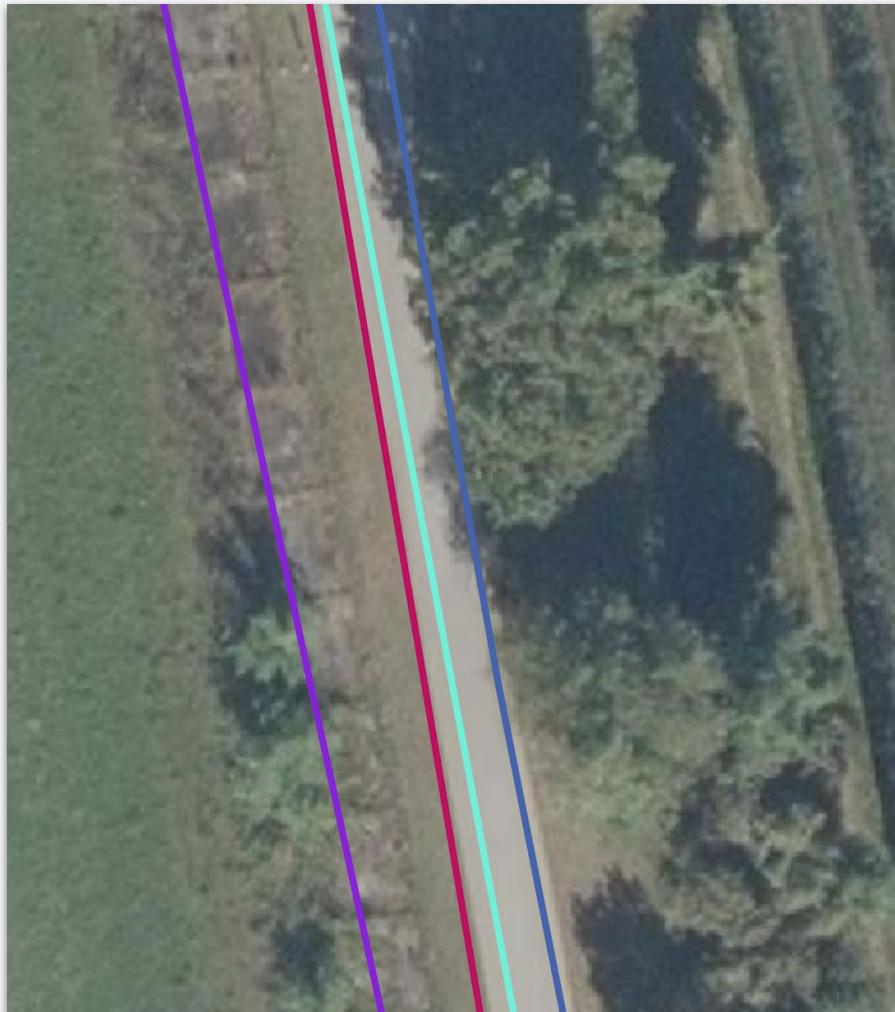
- 2.1 Discuss your proposed import
- 2.2 Document your import
- 2.3 Ensure that the data license is OK
- 2.4 Use a dedicated user account
- 2.5 Use the right tags
- 2.6 Don't put data on top of data
- 2.7 Consider simplifying
- 2.8 Keep server resources in mind
- 2.9 Take great care to avoid damaging the database

### 3 See also

<https://wiki.openstreetmap.org/wiki/Import/Guidelines>



# THE CYCLE PATHS OF TRENTO



- OpenStreetMap
- Azienda Promozione Turistica
- Provincia Autonoma di Trento
- Comune di Trento

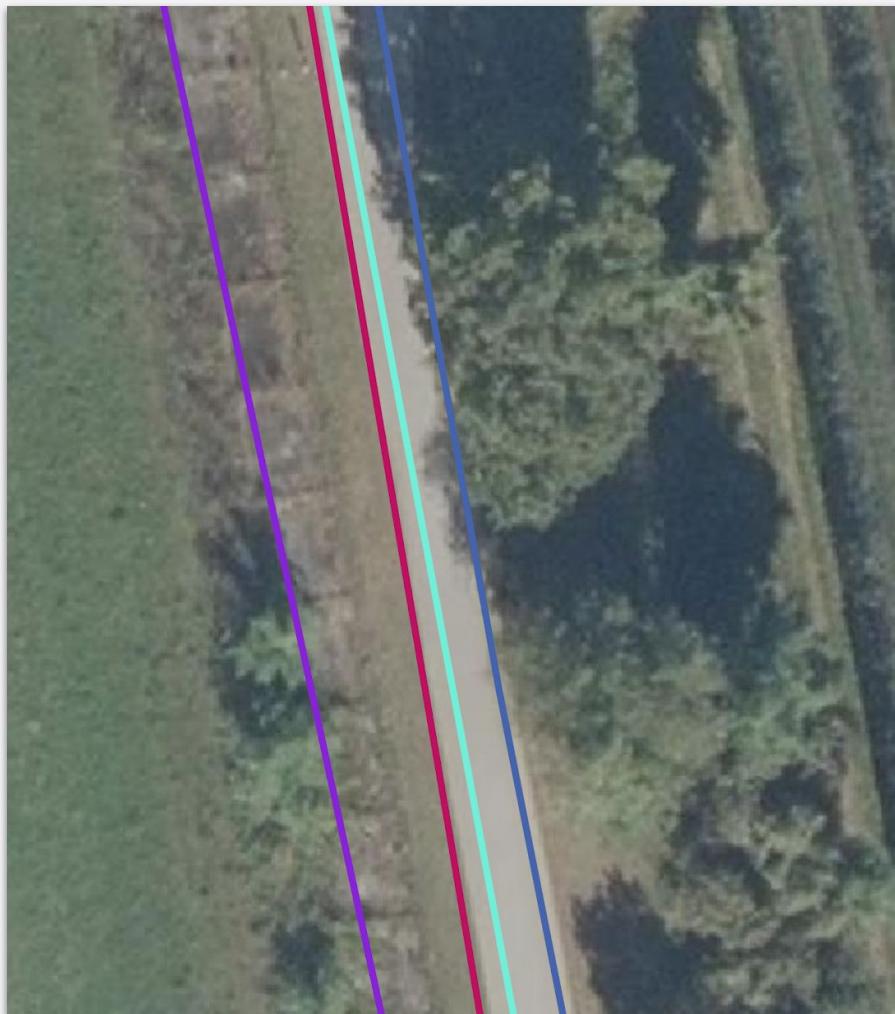
# THE CYCLE PATHS OF TRENTO



OpenStreetMap

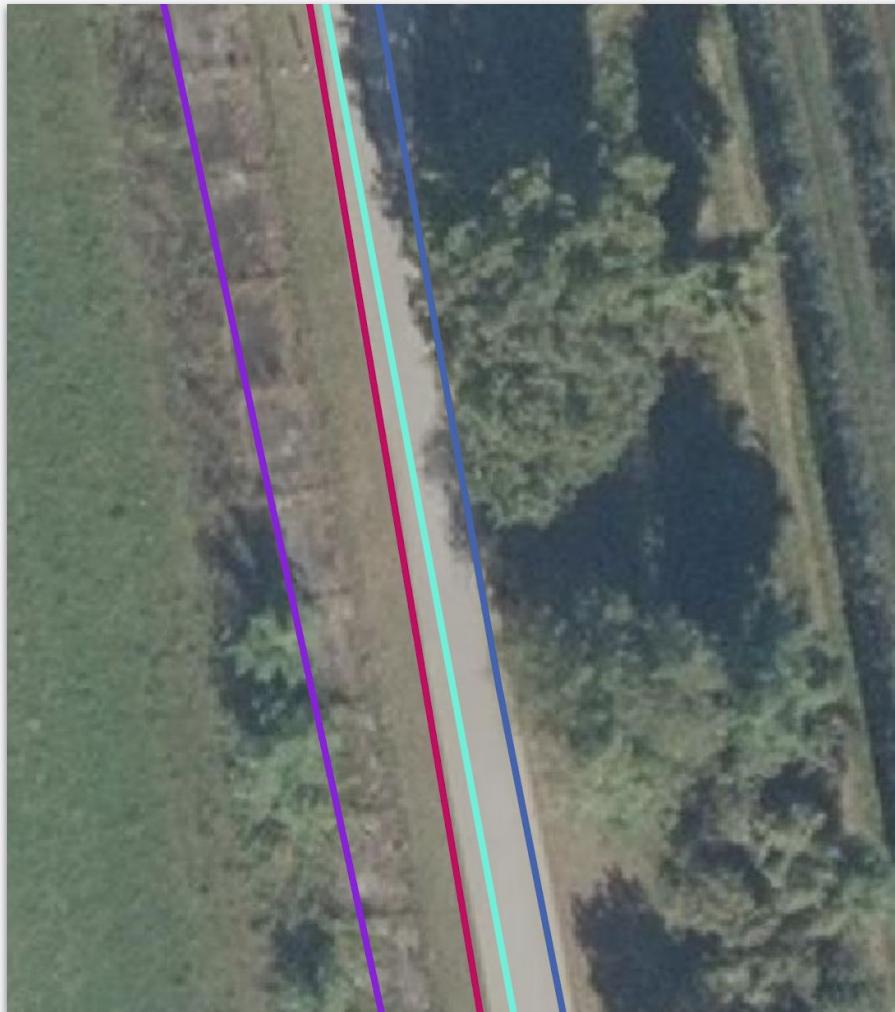
Campi	Valori
cycleway	a Promozione Turistica
foot	lia Autonoma di Trento
footway	e di Trento
highway	
segregated	
source	
surface	
name	
name:de	
name:it	

# THE CYCLE PATHS OF TRENTO



OpenStreetMap	
Azienda Promozione Turistica	
<b>Campi</b>	<b>Autonoma di Trento</b>
name	di Trento
cmt	
desc	
src	
link1_href	
link1_text	
link1_type	
link2_href	
link2_text	
link2_type	

# THE CYCLE PATHS OF TRENTO

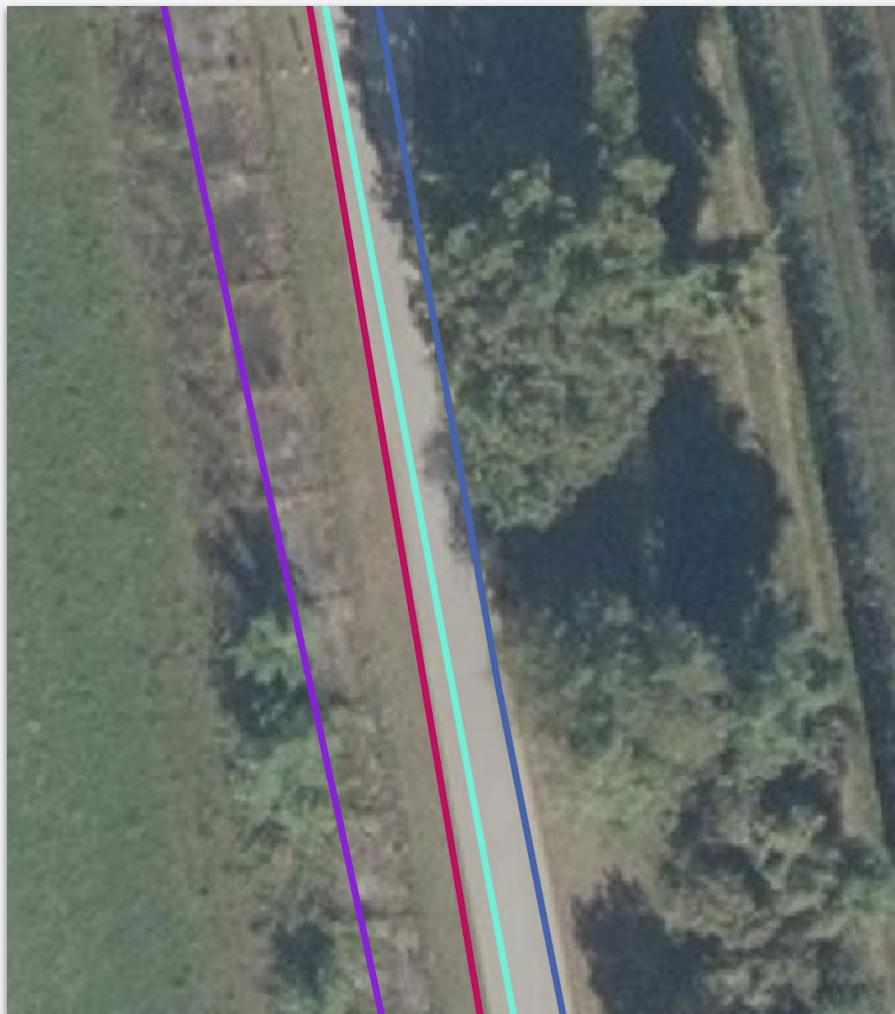


- OpenStreetMap
- Azienda Promozione Turistica
- Provincia Autonoma di Trento

## Campi

LENGTH  
PISTE\_  
PISTE\_ID  
TIPO  
SIM  
DXF\_LAYER  
AREA  
PERIMETER  
AMMCOM2001  
COMU  
COMP

# THE CYCLE PATHS OF TRENTO



- OpenStreetMap
- Azienda Promozione Turistica
- Provincia Autonoma di Trento
- Comune di Trento

## Campi

tipo
fumetto
scala_1000
scala_2000
descrizion

# EVOLUTION OF THE OBJECTS DURING THE TIME

**amenity = school** v · d · e



**Description**

A primary or secondary school (pupils typically aged 6 to 18)

**Group:** Education features

**Used on these elements**

- 
- 
- 
- 

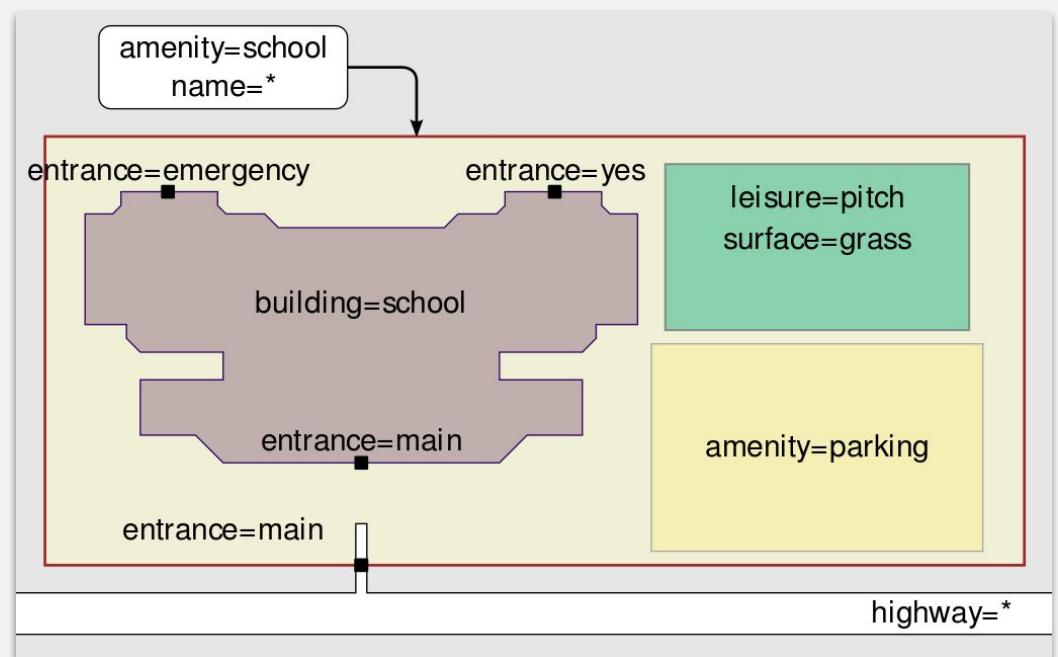
**amenity=school**

A primary or secondary school (pupils typically aged 6 to 18)

Overview Combinations Map Wiki Projects

**Overview**

Type	Number of objects	
All	898 117	0.02%
Node	415 180	0.33%
Way	468 152	0.10%
Relation	14 785	0.26%



/\*
This has been generated by the
overpass-turbo wizard.
The original search was:
"amenity=school in Rome"
\*/
[out:json][timeout:25];
// fetch area "Rome" to search
in
{{geocodeArea:Rome}}-->.searchArea;
// gather results
(
 // query part for:
 "amenity=school"
 node["amenity"="school"]
 (area.searchArea);
 way["amenity"="school"]
 (area.searchArea);
 relation["amenity"="school"]
 (area.searchArea);
)
// print results
out body;
>;
out skel qt;

Loaded – nodes: 3979, ways: 397, relations: 29  
Displayed – pois: 164, lines: 0, polygons: 295

## Overview of the ResultMaps @ [neis-one.org](http://neis-one.org)

Copyright © Pascal Neis ([neis-one.org](http://neis-one.org)) - Map data © [OpenStreetMap](#) contributors

### Updated Maps/Websites



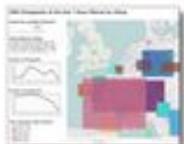
**Detect suspicious OSM Changesets**  
(Since January 20th, 2016)  
[Website](#) - [Blog Post](#)



**Latest OSM Changeset Discussions/Comments**  
(Since March 20th, 2015)  
[Website](#) - [Blog Post](#) - [Twitter](#)



**OSMstats**  
**Statistics of the free wiki world map**  
(Since September 7th, 2014)  
[Website](#) - [Blog Post](#)



**Filtering OpenStreetMap Changesets by a Specific Comment**  
(Since February 2nd, 2014)  
[Website](#) - [Blog Post](#)



**Stats about added OpenStreetMap Notes**  
(Since May 5th, 2013)  
[Website](#) - [Blog Post](#)



**Overview of OpenStreetMap Contributors aka Who's around me?**  
(Since January 6th, 2013)  
[Map](#) - [Blog Post](#)

### Static Maps/Websites



**Unmapped Places of OpenStreetMap**  
(June 19th, 2016)  
[Map](#) - [Blog Post](#)



**OpenStreetMap-GPS-Grid-Map**  
(May 27th, 2012)  
[Map](#) - [Blog Post](#)



**Unmapped Places in OSM Europe**  
(Since August 1st, 2010)  
[Map](#) - [Blog Post](#)

<http://resultmaps.neis-one.org/>

@napo



# Emacsen's Blog

Education | Esperanto | Free culture | Misc | Openstreetmap | Python | React | Reviews | Videos

Atom

FRI 16 FEBRUARY 2018

## Why OpenStreetMap is in Serious Trouble

I was a contributor for OpenStreetMap for a long time, and I advocated for OpenStreetMap for a long time, but the project has stalled while the proprietary mapping world has continued to improve in data quality. For those of us who care about Free and Open data, this is a problem. In this article, I explore the reasons why I think OSM has stalled, as well as solutions to get the project back on track.

I was a contributor to the OpenStreetMap project from 2008 until roughly 2016. I was heavily involved in the development of the Java API and contributed many features to the project. I also worked on the OSM API and contributed many features to that as well. I have since moved on to other projects and no longer contribute to OSM.

<https://blog.emacsen.net/blog/2018/02/16/osm-is-in-trouble/>

### Recent Posts

[Why OpenStreetMap is in Serious Trouble](#)

[Free Software Call To Action](#)

[Why is SFLC siding with Oracle over Linux developers?](#)

[The Rule of One](#)

[Modern Web Development with React \(Part 4\)](#)

### Categories

Education



@napo

## Tech Corner: how obtain the data

### Talk with OSM

API I/O

<http://wiki.openstreetmap.org/wiki/Xapi>

API for special queries

<http://overpass-api.de>

### Extract the data

Raw/Historic/Log data:

<http://planet.openstreetmap.org>

**Country data** (and shape files):

<http://download.geofabrik.org>

Areas in different formats

<http://https://osmaxx.hsr.ch>

<http://export.hostosm.org>



# Contacts



**Maurizio Napolitano**



<http://slideshare.net/napo>



napolitano@fbk.eu



@napo

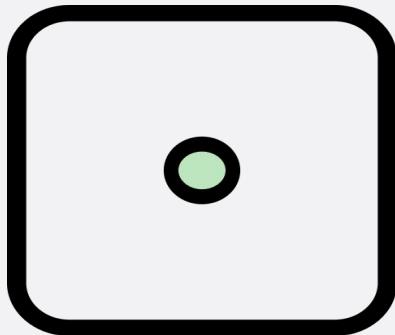
# tag key=value

## Public Transport

This is used for features related to public transport. For example: railway stations, bus stops and services. See the page titled [Public transport](#) for an introduction on its usage.

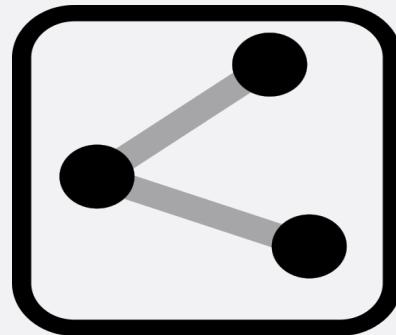
Key	Value	Element	Description	Map rendering	Image	Count
public_transport	stop_position	○	The position on the street or rails where a public transport vehicle stops.			631 228  392  199 
public_transport	platform	○ □ □	The place where passengers are waiting for the public transport vehicles.			844 953  203 891  3 646 
public_transport	station	○ □	A station is an area designed to access public transport.			22 639  9 897  355 
public_transport	stop_area	□	A relation that contains all elements of a train, subway, monorail, tram, bus, trolleybus, aerialway, or ferry stop.			528  198  180 878 

[https://wiki.openstreetmap.org/wiki/Map\\_Features](https://wiki.openstreetmap.org/wiki/Map_Features)



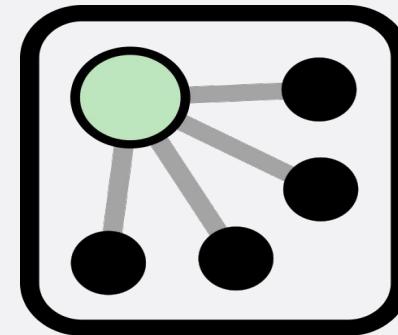
## NODE

A **node** is one of the core elements in the OpenStreetMap data model. It consists of a single point in space defined by its **latitude**, **longitude** and **node id**.



## WAY

A **way** is an ordered list of nodes which normally also has at least one tag or is included within a Relation. A way can have between 2 and 2,000 nodes, although it's possible that faulty ways with zero or a single node exist. A way can be *open* or *closed*. A *closed way* is one whose last node on the way is also the first on that way. A closed way may be interpreted either as a closed polyline, or an area, or both.



## RELATION

A **relation** is one of the core data elements that consists of one or more tags and also an **ordered list** of one or more nodes, ways and/or relations as **members** which is used to define logical or geographic relationships between other elements. A member of a relation can optionally have a **role** which describes the part that a particular feature plays within a relation.

## Example of relation: line path of the bus number 5

OpenStreetMap Edit History Export

Piazza Fiera - Povo - Oltrecastello (variante z) (1396109)

(no comment)

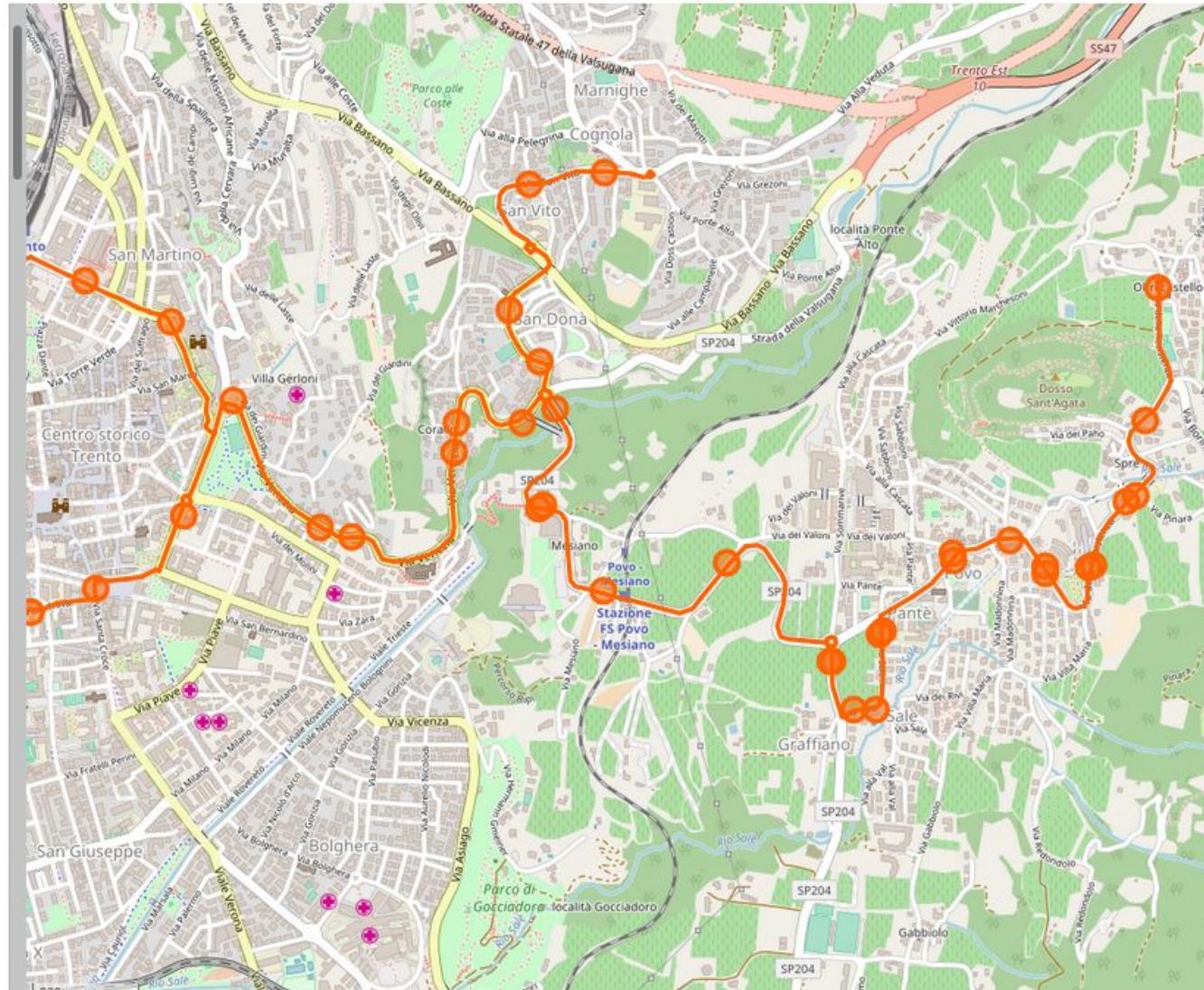
Edited 3 months ago by gumul  
Version #44 · Changeset #57637620

Tags

colour	#f5c500
from	Piazza Dante
importance	urban
name	Linea 5 - Piazza Dante - Piazza Fiera - Povo - Oltrecastello (variante z)
network	Servizio Urbano Trento
operator	Trentino Trasporti
ref	5
route	bus
state	alternate
to	Oltrecastello
type	route

Members

- Way Piazza Dante (96965212) as forward
- Way Piazza Dante (23066740) as forward
- Way Via Andrea Pozzo (177180084) as forward
- Way Via Torre Vanga (23058904) as forward
- Way Via Torre Vanga (283010968) as forward
- Way Via Torre Vanga (141265570) as forward
- Way Via Torre Vanga (177180085) as forward
- Way Via Prepositura (23794856) as forward
- Way Via Prepositura (141265569) as forward



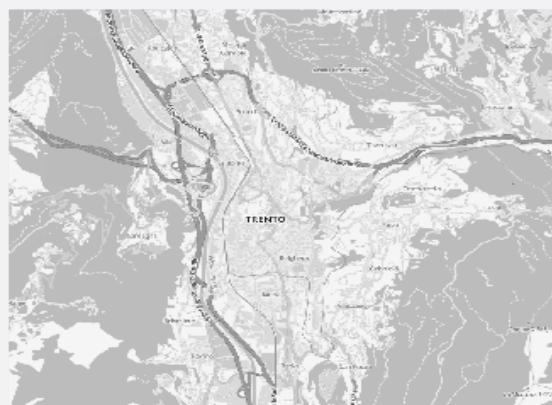
<https://www.openstreetmap.org/relation/1396109#map=15/46.0670/11.1508>

@napo

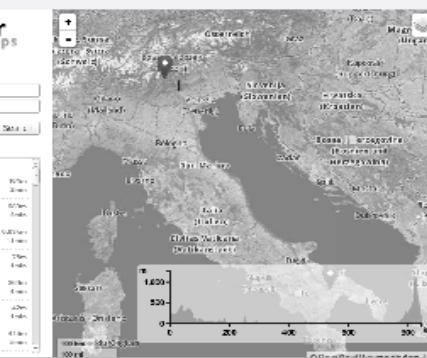


# The ODbL license by examples

```
<?xml version='1.0' encoding='UTF-8'?>
<osm version="0.6" generator="osmconvert 0.7m" timestamp="2014-09-29T20:21:02Z">
<bounds minlat="45.9775306" minlon="11.0224735" maxlat="46.1530112" maxlon="11.1948226"/>
<node id="9191867" lat="46.104119" lon="11.0899633" version="4" timestamp="2010-09-01T22:36:26Z" changeset="5658159" uid="330007" user="pikappa79"/>
<node id="9191982" lat="46.0499659" lon="11.1169915" version="6" timestamp="2011-08-06T16:07Z" changeset="8939495" uid="330007" user="pikappa79"/>
<node id="9192136" lat="46.054435" lon="11.1180986" version="6" timestamp="2012-12-14T22:11:48Z" changeset="14276412" uid="330007" user="pikappa79"/>
<node id="9192343" lat="46.1140579" lon="11.0871511" version="6" timestamp="2010-09-01T22:36:35Z" changeset="5658159" uid="330007" user="pikappa79"/>
<node id="9192428" lat="46.076984" lon="11.112499" version="2" timestamp="2011-01-19T18:32:46Z" changeset="7023211" uid="76312" user="scratara"/>
<node id="9192494" lat="45.977028" lon="11.114043" version="1" timestamp="2006-06-30T11:53:08Z" changeset="48807" uid="573" user="Jörg Ostertag">
  <tag k="created_by" v="JOSM"/>
</node>
<node id="9192593" lat="46.0521296" lon="11.1170876" version="9" timestamp="2011-08-06T16:15:07Z" changeset="8939495" uid="330007" user="pikappa79"/>
<node id="9192771" lat="46.0181248" lon="11.1274916" version="4" timestamp="2011-02-16T13:31:43Z" changeset="7303863" uid="330007" user="pikappa79"/>
<node id="9193403" lat="45.9945344" lon="11.1215165" version="2" timestamp="2009-07-06T23:57:51Z" changeset="1757920" uid="136835" user="user_136835">
  <tag k="created_by" v="JOSM"/>
</node>
<node id="9193405" lat="46.0313027" lon="11.1277415" version="5" timestamp="2011-02-16T13:31:31Z" changeset="7303863" uid="330007" user="pikappa79"/>
<node id="9193447" lat="45.9697045" lon="11.1130485" version="4" timestamp="2008-08-04T17:14:50Z" changeset="57846" uid="20610" user="napo">
  <tag k="created_by" v="JOSM"/>
</node>
<node id="9193468" lat="46.0763371" lon="11.1130076" version="10" timestamp="2013-04-21T11:37:25Z" changeset="15809662" uid="330007" user="pikappa79"/>
<node id="9193580" lat="46.0098526" lon="11.1251955" version="3" timestamp="2013-07-07T06:28:42Z" changeset="16856691" uid="530691" user="Peterfritz"/>
<node id="9193607" lat="46.054411" lon="11.1295695" version="6" timestamp="2011-11-28T21:45:33Z" changeset="9982706" uid="330007" user="pikappa79"/>
<node id="9193619" lat="46.0744894" lon="11.1124451" version="9" timestamp="2013-04-21T11:37:25Z" changeset="15809662" uid="330007" user="pikappa79"/>
<node id="9193812" lat="46.0514793" lon="11.1157438" version="15" timestamp="2010-08-09T13:10:36Z" changeset="5443649" uid="24966" user="alesstoz"/>
<node id="9193846" lat="46.1201572" lon="11.0860899" version="6" timestamp="2011-02-07T16:18:24Z" changeset="7217702" uid="330007" user="pikappa79"/>
<node id="9193873" lat="46.0869729" lon="11.104303" version="5" timestamp="2010-09-01T22:35:55Z" changeset="5658159" uid="330007" user="pikappa79"/>
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<node id="9194295" lat="46.0533991" lon="11.1278855" version="8" timestamp="2011-05-07T00:08:51Z" changeset="5452578" uid="nfranz" user="nfranz"/>
<node id="9194326" lat="46.0533991" lon="11.1278855" version="8" timestamp="2011-05-07T00:08:51Z" changeset="5452578" uid="nfranz" user="nfranz"/>
```



Graphhopper maps



**OpenStreetMap**

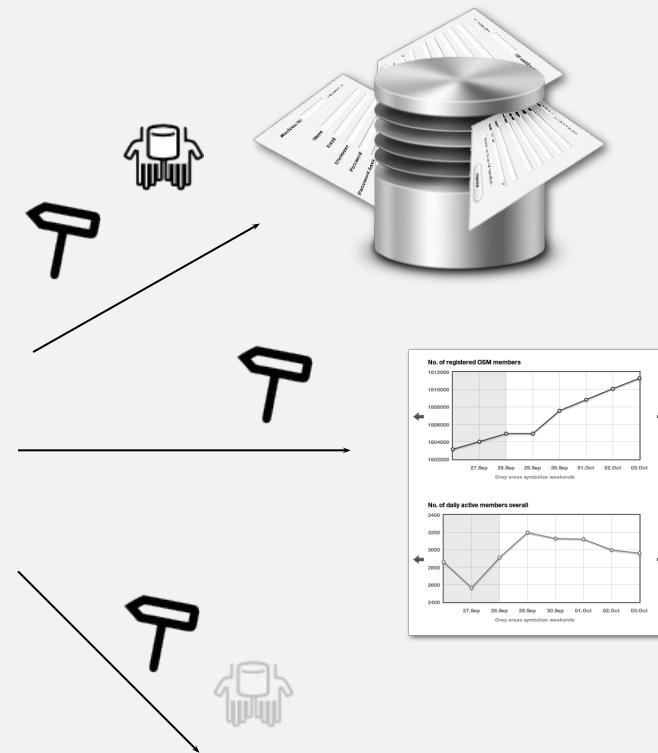
Matera

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- County Boundary MT, BAS, Italy
- Archaeological Site Matera, P-3, Senere, Southern Zone, Enries
- Residential Matera, Vista Flores, Northwood, Irvine, Orange, California, 92620, United States of America

More results



# Import are hard to do

## Contents [hide]

### 1 Process

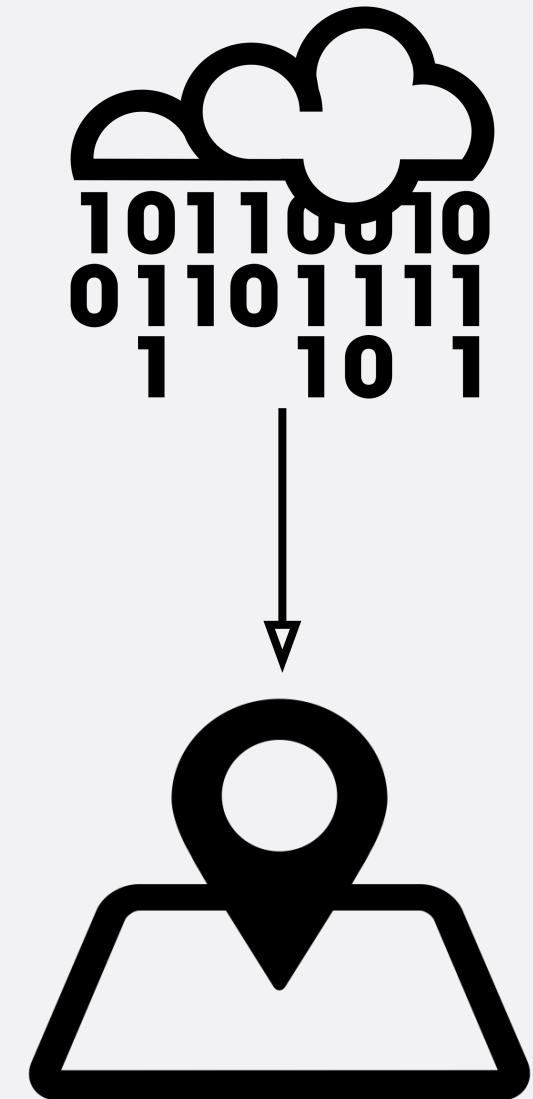
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<https://wiki.openstreetmap.org/wiki/Import/Guidelines>

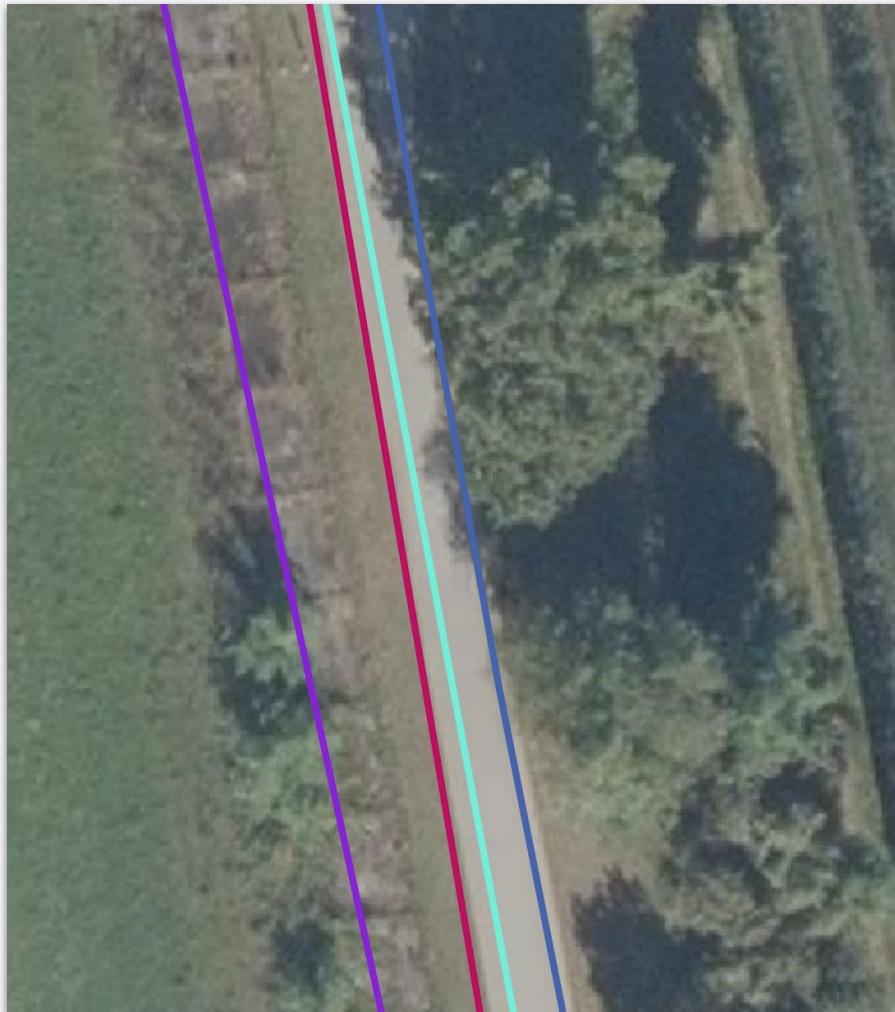


# THE CYCLE PATHS OF TRENTO



- OpenStreetMap
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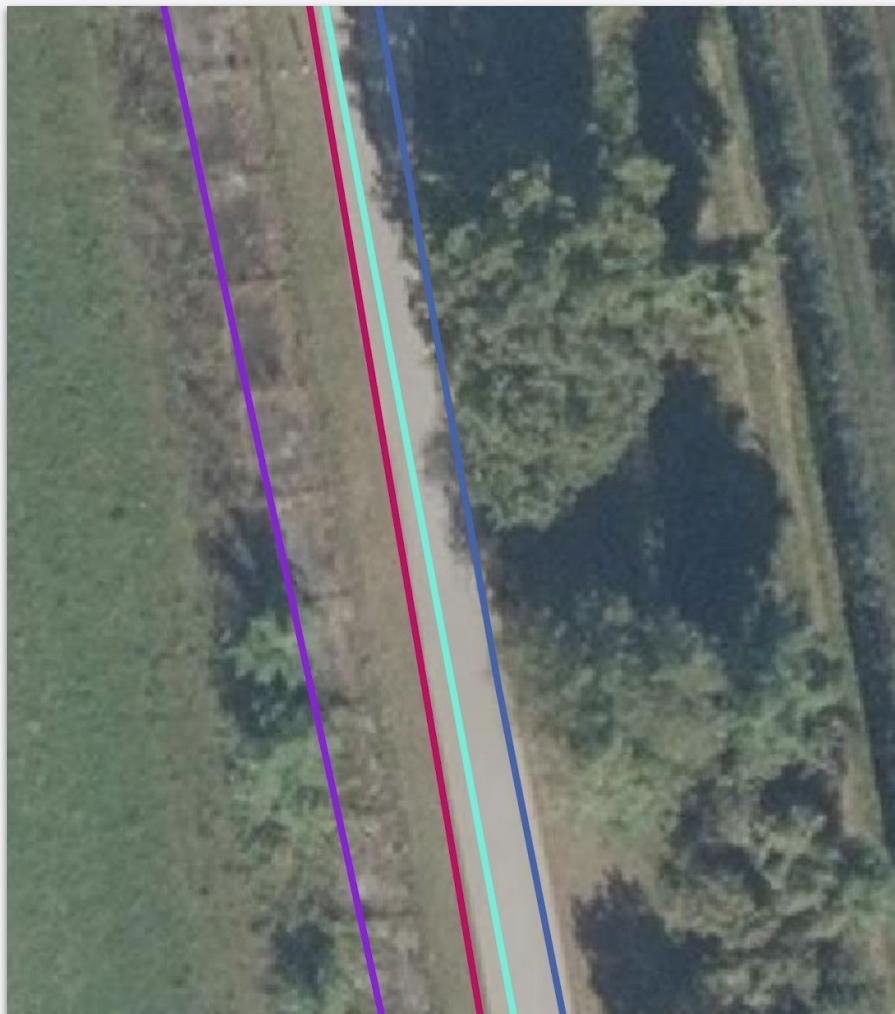
# THE CYCLE PATHS OF TRENTO



OpenStreetMap

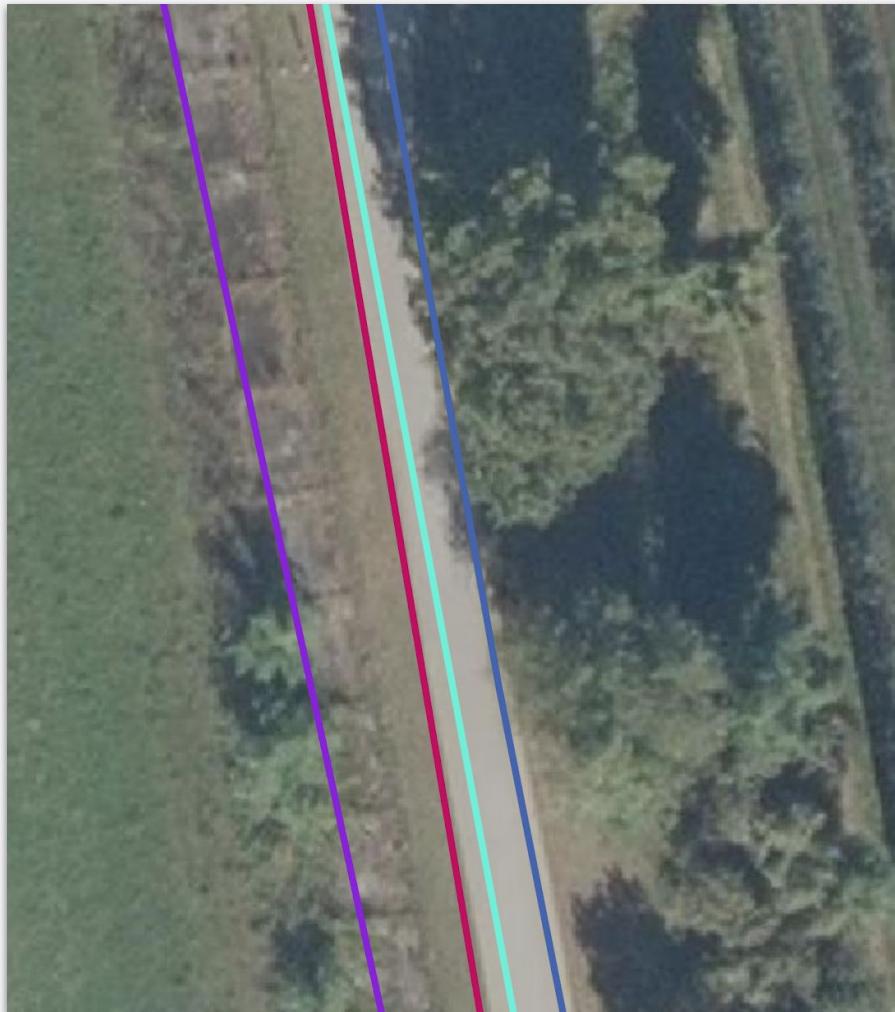
Campi	Valori
cycleway	a Promozione Turistica
foot	a Autonoma di Trento
footway	e di Trento
highway	
segregated	
source	
surface	
name	
name:de	
name:it	

# THE CYCLE PATHS OF TRENTO



OpenStreetMap	
Azienda Promozione Turistica	
<b>Campi</b>	<b>Autonoma di Trento</b>
name	di Trento
cmt	
desc	
src	
link1_href	
link1_text	
link1_type	
link2_href	
link2_text	
link2_type	

# THE CYCLE PATHS OF TRENTO

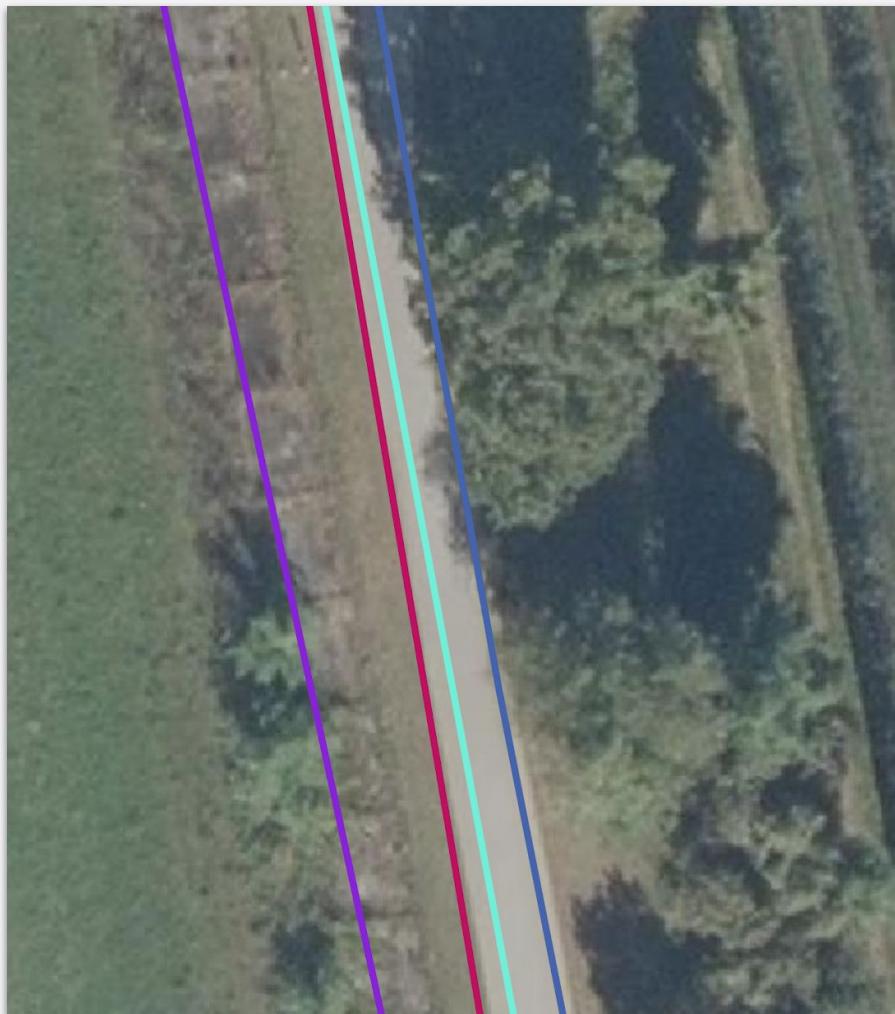


- OpenStreetMap
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## Campi

LENGTH  
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DXF\_LAYER  
AREA  
PERIMETER  
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COMU  
COMP

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- OpenStreetMap
- Azienda Promozione Turistica
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tipo
fumetto
scala_1000
scala_2000
descrizion

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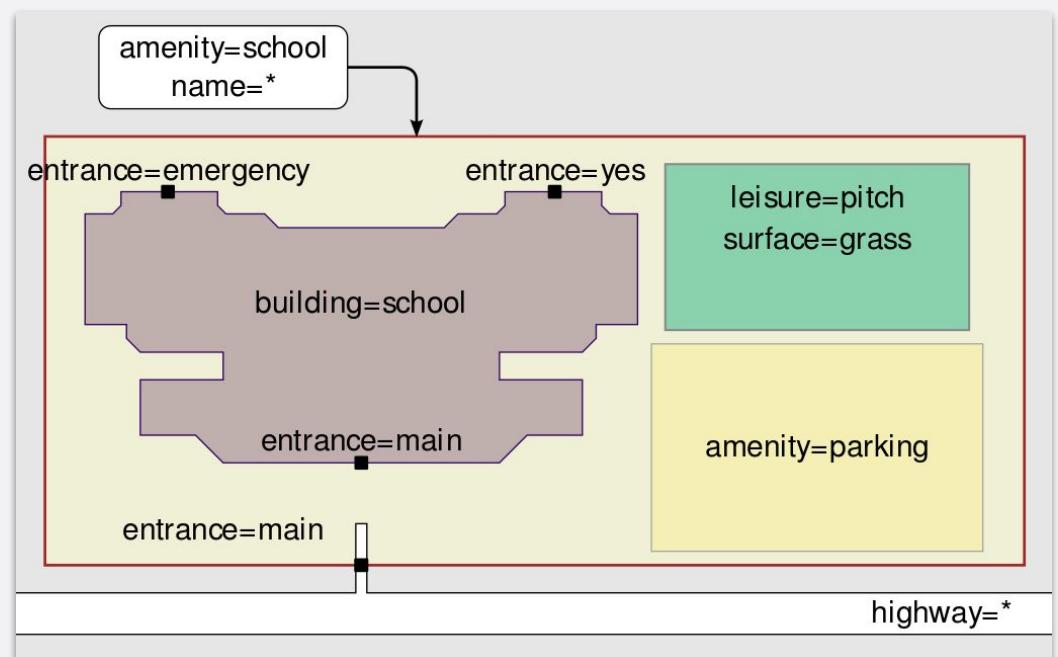
**amenity=school**

A primary or secondary school (pupils typically aged 6 to 18)

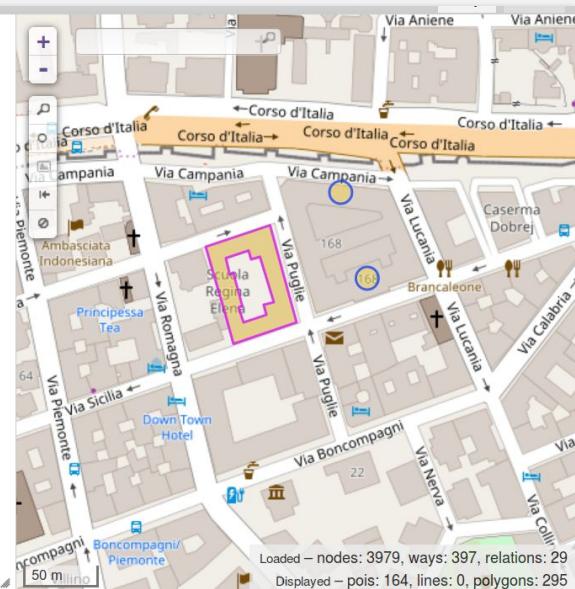
Overview Combinations Map Wiki Projects

**Overview**

Type	Number of objects	
All	898 117	0.02%
Node	415 180	0.33%
Way	468 152	0.10%
Relation	14 785	0.26%



```
/*
This has been generated by the
overpass-turbo wizard.
The original search was:
"amenity=school in Rome"
*/
[out:json][timeout:25];
// fetch area "Rome" to search
in
{{geocodeArea:Rome}}->.searchArea;
// gather results
(
    // query part for:
    "amenity=school"
    node["amenity"="school"];
    area.searchArea;
    way["amenity"="school"];
    area.searchArea;
    relation["amenity"="school"];
    area.searchArea;
);
// print results
out body;
>;
out skel qt;
```



## Tech Corner: how obtain the data

### Talk with OSM

API I/O

<http://wiki.openstreetmap.org/wiki/Xapi>

API for special queries

<http://overpass-api.de>

### Extract the data

Raw/Historic/Log data:

<http://planet.openstreetmap.org>

**Country data** (and shape files):

<http://download.geofabrik.org>

Areas in different formats

<http://https://osmaxx.hsr.ch/>



# Contacts



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