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# Indoor Mapping

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This page is intended to collect all ideas concerning indoor mapping activities.

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## Use cases

Indoor maps or information can be used for various applications, e.g.

- Indoor Navigation/Routing
- 3D Visualization
- 2D Maps
- Public Participation
- Emergency response
- Interested Amenities Display (e.g. Toilets, Fire Extinguisher, First Aid Box)

for different venues, e.g.

- Airports
- Hotels
- Universities
- Schools
- Museums
- Train and subway stations
- Shopping Malls
- multi storey parking decks
- other public buildings

The *indooruse cases* page contains a list of venue use case examples, with sample maps from the venues.

## People

Currently these users are working on indoor related topics:

- AddICT Compound facility (CompoundFacility)
- Saerdnaer Indoor Proposal (Proposed features/indoor), Rendering (modified Kothic JS), Routing (modified OSRM, JavaScript UI with Leaflet)
- Gomart1985 Indoor Proposal (IndoorOSM), Rendering of multi-level building maps in 2D (<http://indoorosm.uni-hd.de/>) and 3D, Indoor Routing/Navigation (<http://indoorosm.uni-hd.de/>)
- andreas.batzer Extension and aggregation of indoor proposals, see *andreas.batzer*, Rendering (own render engine in C#, yet to be published), Routing (modified OsmSharp)
- Xianlin NUS Indoor Map, Singapore
- AeroSuch Co-founder of indoor mapping startup *BuildingLayer*, Maintains *Indoor Navigation Market spreadsheet*.
- Sutler Working on an indoor map editor *Termite* This effort has been discontinued.
- Mdiener Founder of indoor mapping and indoor routing based on open source software *Campus GIS*

## Communication

There is now a new subforum for Indoor-Mapping:

- <http://forum.openstreetmap.org/viewforum.php?id=67>

Let's try to increase the communication in this project. --Andi 12.03. 3 October 2012 (BST)

## Talks

- FOSSGIS 2012: <http://www.fossgis.de/konferenz/2012/programm/vents/468.de.html>
- Mitschnitt als mp4 [webm](#)

## Tagging

see Simple Indoor Tagging

## Tags in use

Please see *Tagging proposals* for more detailed information

- level=*n*** - indicates floor level; interpretation of the values varies (see key page)
  - <*n*> is usually an integer number, sometimes also one or two characters, sometimes combined (e.g. A.B.C,1,2,3).
  - in any case, <*n*> should be ascending (towards the sky).
  - in some cultures base level is indicated by level 0, in other cultures ground floor is level 1 (or A).
  - there are also usages reported where fraction numbers are used (e.g. level=2.5) indicating a "mezzanine" or "intermediate level" (e.g. intermediate stairway platforms).

Room number and name is entered in the **ref=\*** and **name=\*** tag

- room=***yes* - see key wiki page for additional values to describe the type more detailed
- entrance=***yes* - room or building entrance
- capacity=\*** - number of seats in a room
- highway=***elevator* - elevators
- highway=***steps* - stairways
- conveying=***yes/forward/backward/reversible*

## proposed Tags

- highway=***corridor* - indoor ways
- indoor=***yes* - indicates any osm object being inside a room, a building (or both) or a shelter.
  - mandatory has to be discussed, I would prefer an **outdoor=***yes* for the difficult cases. --Saerdnaer 16.48, 28 March 2011 (BST)

## Previous tagging proposals

Older ones:

- IndoorOSM
- CompoundFacility
- Proposed\_features/indoor

Tagging proposals more concerned with the 3D shape of the building:

- Simple 3D Buildings

There are also some abandoned and inactive proposals (oldest last):

<div><div><div><div><div></div><div></div></div><div><div><div><span>* Termite#Indoor_Model</span></div><div><span>* Relations/Proposed/Level_Map</span></div><div><span>* Relations/Proposed/Level</span></div></div></div></div></div></div>
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## Rendering

An Overpass API based renderer is available : [OpenLevelUp](#)

## Routing

- The altitude value of GPS devices could be used to identify in which **level** of a parking multi storey a car is located.

This won't be possible until someone invents a new GPS system that is a lot better at vertical accuracy. --Cartinus (talk) 14:27, 24 June 2013 (UTC)

## Devices / Technologies

- High sensitivity GPS device
- Step counter
- Compass
- Acceleration sensor
- Counting the number of wheel turns in cars / Tachometer
- Counting the number of floor tiles
- RFID
- WLAN
- Bluetooth
- Camera
- Audio footprint for rooms
- Laser rangefinder (e.g. Hector SLAM <sup>[1]</sup>)

## Projects

Indoor actives related to OSM:

- <http://indoorosm.uni-hd.de/> indoorOSM project from OSM data - a project of the University of Heidelberg
- FootPath, infrastructureless indoor navigation on OSM data for smart phones (Android) at COMSYS, RWTH Aachen University [video](#)
- Richard Atterer's *Leadme project* A spare time project by Richard Atterer for home made indoor mapping.
  - Ways4All
- OSMTools Indoor: <http://osmtools.org/indoor/#lat=51.09447&lon=17.01945&z=18>
- Fork of the previous one : <https://github.com/clement-lagrange/osmtools-indoor/> , demo here : <http://clement-lagrange.github.io/osmtools-indoor/> , fully fonctionnal indoor building browser, js only.
- [OpenLevelUp](#) - A web viewer display indoor data level by level, written in JavaScript, supports both **indoor=\*** and **buildingpart=\*** tag schemes. [Github repository](#).

former, inactive and on hold projects:

- Termite - an editor specialized for indoor maps. This has been discontinued.
- <http://andreas-hubel.de/ba/demo/> levelable indoor maps from OSM data implemented with Kothic JS
  - demo-currently-offline**: See <http://andreas-hubel.de/ba/> for implementation details and screenshots. There is also a virtual server image available which contains all software needed to run the demo. --Saerdnaer 19:35, 15 December 2011 (UTC)
  - It's now online again. See this screencast for more information (german): <http://youtu.be/OSxU99sp0Gc> --Andi 11:40, 25 June 2014 (UTC)
- OpenCaveMap project under construction, need volunteers. It's caving mapping [OpenCavemap.org](#) and all other underground places

Activities outside OSM where moved to [IndoorProjects](#)

## Challenges

There is a discussion of challenges of adding indoor maps to OSM at [Challenges\\_for\\_Indoor\\_Maps](#)

## Places

Places with indoor coverage

## Austria

## Vienna

- Südtiroler Platz <sup>[2]</sup> [Project:Ways4All](#)

## Germany

## Bavaria

- Munich
  - TUM Mathematics/Computer Science Department: <http://www.openstreetmap.org/?lat=48.262437&lon=11.667689&zoom=18>
  - Marienplatz: <http://www.openstreetmap.org/?lat=48.1374683976173&lon=11.5761378407478&zoom=18>
  - Karlsplatz (Stachus): <http://www.openstreetmap.org/?lat=48.13948&lon=11.566149&zoom=18>
  - Hauptbahnhof: <http://www.openstreetmap.org/?lat=48.141162&lon=11.56094&zoom=18>
- Passau
  - Dreiflüsse-Einkaufszentrum <http://www.openstreetmap.org/?lat=48.56337&lon=13.431078&zoom=18&layers=M>

## Baden-Württemberg

- Heidelberg
  - Institut of Geography <http://www.openstreetmap.org/?lat=49.418434&lon=8.677004&zoom=18&layers=M>

## Berlin

- Berlin
  - bcc Berliner Congress Center <http://www.openstreetmap.org/?lat=52.520765&lon=13.416662&zoom=18>

## Lower Saxony

- Braunschweig
  - Schloss-Arkaden and Schlosscarree <http://www.openstreetmap.org/?lat=52.264004&lon=10.528049&zoom=18>

## North Rhine-Westphalia

- Aachen
  - RWTH Computer Science Center Hörm: <http://www.openstreetmap.org/?lat=50.778845&lon=6.060025&zoom=18&layers=M>
  - RWTH UMIC Research Center: <http://www.openstreetmap.org/?lat=50.778834&lon=6.065266&zoom=18&layers=M>

## Thuringen

- Ilmenau
  - Technische Universität Ilmenau, Campus <http://www.openstreetmap.org/?lat=50.682884&lon=10.937887&zoom=18&layers=M>

## Philippines

- Los Baños, Laguna
- University of the Philippines Los Baños (various buildings) <http://www.openstreetmap.org/?lat=14.16534&lon=121.24303&zoom=17>
- San Pablo City, Laguna
- SM City San Pablo <http://www.openstreetmap.org/?lat=14.071238&lon=121.30207&zoom=18>

## France

## Isère

- Grenoble
  - INRIA: <http://www.openstreetmap.org/?lat=45.2182567119598&lon=5.8069825172423&zoom=18>

## Paris

- Paris XVème
  - ECE-Paris (Eiffel 2) <http://www.openstreetmap.org/#map=19/48.85163/2.28703>
- Paris TGI
  - Tribunal (partial for tourism) <http://www.openstreetmap.org/#map=18/48.85591/2.34445>
- Paris Vème
  - ENS - Rue d'Ulm: [http://clement-lagrange.github.io/osmtools-indoor/#lat=48.84171&lon=2.34483&z=18&id\\_building=2421756&id\\_level=4057538](http://clement-lagrange.github.io/osmtools-indoor/#lat=48.84171&lon=2.34483&z=18&id_building=2421756&id_level=4057538)

## Chevilly

- Centre commercial
  - Beile Épine <http://www.openstreetmap.org/#map=17/48.75643/2.37142>

## Velizy

- Centre commercial
  - Vélizy 2 (level 1) <https://www.openstreetmap.org/#map=17/48.78179/2.22063>

## Maincy

- Château de Vaux-le-Vicomte
  - [http://clement-lagrange.github.io/osmtools-indoor/#lat=48.56574&lon=2.71422&z=21&id\\_building=3717068&id\\_level=3717067](http://clement-lagrange.github.io/osmtools-indoor/#lat=48.56574&lon=2.71422&z=21&id_building=3717068&id_level=3717067)

## Pays de la Loire

- Château de Talcy
  - Partie visitable: [http://clement-lagrange.github.io/osmtools-indoor/#lat=47.76948&lon=1.44502&z=20&id\\_building=4060148&id\\_level=4060147](http://clement-lagrange.github.io/osmtools-indoor/#lat=47.76948&lon=1.44502&z=20&id_building=4060148&id_level=4060147)
- Château de Chenonceau
  - [http://clement-lagrange.github.io/osmtools-indoor/#lat=47.32464&lon=1.07057&z=20&id\\_building=4055292&id\\_level=4055291](http://clement-lagrange.github.io/osmtools-indoor/#lat=47.32464&lon=1.07057&z=20&id_building=4055292&id_level=4055291)

## Villeneuve d'Ascq

- Bâtiments du LIFL
  - M3 extension <http://www.openstreetmap.org/relation/3385027> [http://clement-lagrange.github.io/osmtools-indoor/#id\\_building=3385027](http://clement-lagrange.github.io/osmtools-indoor/#id_building=3385027)
  - M3 <http://www.openstreetmap.org/relation/3440826> [http://clement-lagrange.github.io/osmtools-indoor/#id\\_building=3440826](http://clement-lagrange.github.io/osmtools-indoor/#id_building=3440826)
  - IRCICA <http://www.openstreetmap.org/relation/3801861> [http://clement-lagrange.github.io/osmtools-indoor/#id\\_building=3801866](http://clement-lagrange.github.io/osmtools-indoor/#id_building=3801866)

## Swiss

- Rapperswil
  - HSR Hochschule für Technik <http://www.openstreetmap.org/?lat=47.2232387959957&lon=8.81700843572617&zoom=18>

## Ukraine

## Luhansk Oblast

- Severodonetsk
  - Shopping mall "Jazz" <http://www.openstreetmap.org/?lat=48.944006&lon=38.493187&zoom=18&layers=M>

## Japan

- Futako Tamagawa rise
  - rise <http://www.openstreetmap.org/?lat=35.612006&lon=139.628302&zoom=18&layers=M>
- Shibuya Hikarie
  - Hikarie <http://www.openstreetmap.org/?lat=35.65697&lon=139.70336&zoom=18&layers=M>
- AKASAKA Biz Tower
  - Biz Tower <http://www.openstreetmap.org/?lat=35.672929&lon=139.736229&zoom=18&layers=M>

Kategorien:	<div><div><div>Indoor</div><div>Visual impairment</div><div>Disabilities</div></div></div>
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