OpenStreetMap
Data Quality
OpenStreetMap is People before Data
Remote mapping: Aerial imagery
Remote mapping: Digitization
Driven by Enthusiastic Local Mappers
from absolutely everywhere
Collaborating through tools like the HOT Tasking Manager

Exposure Data mapping in Raung Volcano, East Java is the first step to collecting spatial data in Raung Volcano which currently showing high activity.

This activity collect all spatial data especially exposure data includes buildings and roads and will be used for further action such as disaster risk analysis or disaster management activities in the surrounding area by the National Disaster Management Agency (BNPB), Local Disaster Management Agency (BPBD) or local government and community.

This activity formed by HOT Indonesia with aim that OSM users, especially in Indonesia can help to collect exposure data and contribute to the preparation for disaster relief efforts in surrounding area of Raung Mountain.

Instructions
For fast Growing Cities
Places in Crisis
Places preparing and planning
But where is the front door of OSM?
Talking About Doing vs. Doing! #whmapahton
“Collaborate with Citizen and Global Cartographers in Open Mapping”
Within 5 days, 244 volunteers mapped 90,000+ buildings
Error Detecting Tools check the OSM data for potential errors, inaccuracy or sparsely mapped pieces. Users should check if these structures are really wrong (false positives usually occur and there are not really mapping rules which are set in stone) and correct the data for a continuously rising data quality.

Comparison of some of the following tools:

<table>
<thead>
<tr>
<th>Tool</th>
<th>Coverage</th>
<th>Error types</th>
<th>Display type</th>
<th>Fix suggestion</th>
<th>Downloadable</th>
<th>API</th>
<th>Correction guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep Right</td>
<td>World</td>
<td>Many (50+)</td>
<td>Marker map</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>German only</td>
</tr>
<tr>
<td>Osmose</td>
<td>Some countries</td>
<td>Many (200+)</td>
<td>Marker map</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>JOSM Validator</td>
<td>Local</td>
<td>Many</td>
<td>List</td>
<td>Yes</td>
<td>-</td>
<td>-</td>
<td>For some problems</td>
</tr>
<tr>
<td>OSM Inspector</td>
<td>World/Partial</td>
<td>Many</td>
<td>Rendered map</td>
<td>No</td>
<td>Yes</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Maproulette</td>
<td>World/Partial</td>
<td>Many (10+)</td>
<td>One feature at a time</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

- **Keep Right**
  Keep Right (keepright.at) shows a large number of automatically detected potential errors on a map or in list form. It has a system for reporting false positives and for labelling a bug as fixed. It has rules to automatically detect the following error types: non-closed areas, dead-ended one-ways, almost junctions, deprecated tags, missing tags, bridge/tunnels without layer (careful - not always an error), motorways without ref, places of worship without religion, POIs without name, ways without nodes, floating islands, un-tagged railway crossings, wrongly-used railway crossing tag, objects with `FIXUP` tags, and relations without type. Keep Right shows tens of thousands of errors, including many that have little impact for most data uses (e.g. a stream intersecting a highway; technically some feature is needed here (a bridge, a culvert or a ford).

The bottom-right corner of the interface has links to data outputs, including GeoJSON.

There is a documentation on how to solve keep-right-errors, currently only in German language. DE: Keep Right Users Guide though here is an auto-translation into English.

- **Osmose**
  Osmose ([1][9]) is a tool similar to Keep Right but offers even more error types. Obviously, this also includes smaller issues, like minor imprecisions or missing information that should be present in an ideal map. Currently, it covers a part of the world.

  Reported by User: [http://osmose.openstreetmap.fr/en/][2] then your user name

- **JOSM Validator**
  JOSM Validator: A feature of JOSM that checks data loaded into the editor, highlights errors and warnings, and can (on request) perform some automatic fixes. By default, it checks all objects modified in that session (and also reports errors if the error wasn’t introduced by the uploader, but merely touched), but the validator can also perform complete validations on the uploaded data.

- **The Gary88 tools**
  Gary88 has created a whole bunch of quality assurance tools. The tools are currently not maintained. Most of the tools are written in Perl (scripts for your computer – no web tools) and the source code of all Gary88 tools is published online. See also Category:Gary88.

  - WayCheck is a program which checks the OSM data (files) for open ends and crossings. The found positions must be evaluated by a user and he or she can correct the data in JOSM or Potlatch or post a mark in OpenStreetBugs. The WayCheck page lists reports generated by the program and any user is encouraged to run reports and correct errors listed on the page and its links. This is especially useful for the quality of routing related data.
  
  - MotorwayCheck lists problems related to highway=motorway. Page also shows reports.
  
  - osmiffiff is a program which compares two OSM files and documents the changes in list and map form. Some reports can be seen here: osmiffiff reports.
  
  - unmappedplaces finds a list of potentially unmapped places. These are reported on the wiki page. The query can be run for other countries as well.
  
  - Mapping Quality is the successor of unmappedplaces. See the wiki page for the results. You get automatic street directory, KPIs (numbers) per place, maps that show status and CSV files for further processing.
  
  - SomeChecks performs some checks: One-way check, Roundabout check, Double-node check (ways), Area Check.
  
  - Relation Diff - Differences in relations
  
  - Relation Check

- **Coastline Error Checker**
  Coastline error checker ([2][9]) shows holes and other problems in coastlines.

- **OSM Inspector**
  OSM Inspector ([3][9]) has several views for specific mapping needs.
Integrate analysis into our team workflow
Easy and fast to add new analysis
No need to set up databases
Runs as library / CLI
Shared community
OSM QA TILES

OpenStreetMap data in vector tile format for data analysis.

OSM QA tiles contain the full spectrum of OpenStreetMap data, tile by tile:
- unsimplified geometries
- all OpenStreetMap tags
- additional properties like changeset, time, and user ids

In combination with a tile based processing framework like TileReduce OSM QA tiles allow for fast and parallelized analysis.

You can use OSM QA tiles to conflate OpenStreetMap with other datasets, detect bugs like connectivity issues and monitor for vandalism.

OSM QA tiles ship in mbtiles format.

All data: © OpenStreetMap contributors

This service is provided by Mapbox. If you have ideas to improve it, get in touch!

OSM QA tiles are created with open source software. Check out minjur and tippecanoë to create your own.
Command line

```bash
osmlint bridgeonnode --bbox="[7.4, 43.7, 7.4, 43.7]" --zoom=12 osm.mbtiles
```

Javascript

```javascript
// Outputs nodes with bridge tags to stdout
require('osmlint').bridgeOnNode(
  {bbox: [-122.1, 36.9, -121.9, 37.0], zoom: 12},
  './osm.mbtiles',
  function() { console.log('done'); }
);
```
function(tileLayers, tile, writeData, done) {
    var layer = tileLayers.osm.osm;
    var result = layer.features.filter(function(val) {
        if (val.properties.bridge && (val.geometry.type === 'Point')) {
            val.properties._osmlint = 'bridgeonnode';
            return true;
        }
    });
}
osmlint bridgeonnode --bbox=$bbox $DATA/users.mbtiles > $DATA/bridgeonnode.json
osmlint untaggedways --bbox=$bbox $DATA/users.mbtiles > $DATA/untaggedways.json
osmlint missinglayerbridges --bbox=$bbox $DATA/users.mbtiles > $DATA/missinglayerbridges.json
osmlint unclosedways --bbox=$bbox $DATA/users.mbtiles > $DATA/unclosedways.json

gist="`geojson-josm-url $DATA/results.json | gist -f results.json`"
url="$gist"

curl -X POST --data-urlencode 'payload={"channel": "#bangalore", "username": "osmlinter", "text": "$gist", "icon_emoji": ":mag:"}' https://hooks.slack.com/services/12345/
Hi, Slackbot

This is the very beginning of your message history with Slackbot. Slackbot tries to be helpful, but is only a bot, after all.

Tip: Use this message area as your personal scratchpad: anything you type here is private just to you, but shows up in your personal search results. Great for notes, addresses, links or anything you want to keep track of.

For more tips, along with news and announcements, follow our Twitter account @slackhq and check out the #changelog.
email the other day...

“I hope you are doing well, one question, is there a way I can find the following stats:

Mexican Contributors of OSM at the beginning of 2015
Mexican Contributors of OSM at the end of 2015

I would like to see if there was any major impact with all the efforts done in 2015”
function (tileLayers, tile, write, done) {
  var users = {};

  for (var i = 0; i < tileLayers.osm.osm.length; i++) {
    var ft = tileLayers.osm.osm.feature(i);

    var geom = ft.toGeoJSON(tile[0], tile[1], tile[2]);
    var pt = {
      "type": "Feature",
      "properties": {},
      "geometry": {
        "type": "Point"
      }
    }

    if (geom.type == "Point") {
      pt.geometry.coordinates = geom.geometry.coordinates;
    } else {
      pt.geometry.coordinates = geom.geometry.coordinates[0];
    }

    if (inside(pt, mexico)) {
      users[ ft.properties._user ] = (users[ ft.properties._user ] ? users[ ft.properties._user ] : 0 ) + 1;
    }
  }

  done(null, users);
};
3664 total editors in Mexico *(of current version of features)*
771 joined in 2015
About 27% increase in 2015
Vandalism

- Investigating changesets - unusual size, suspect words, etc.
- Checking priority features - type of edit (geometry, number of tags) and user reputation
- Changes to the routing graph
Clearing Up OpenStreetMap Misconceptions

OSM is GIS
Authority and Quality are Different
OSM is a Community, not a Crowd
OSM includes Experts
OSM is much more than streets
Collaborative Data Principles

An inspiring audacious goal
Anyone can contribute
Trust the local community above all
Partners flexibly commit to the network
Standards and schemas evolve fluidly
Sources and methodologies are fully transparent
If you want to do anything with data for a purpose
Understand OSM
Do it with OSM
Be inspired by OSM
@mikel mikel@mapbox.com
mikel@mapbox.com  @mikel

http://wiki.openstreetmap.org/wiki/Quality_assurance
http://osmlab.github.io/osm-qa-tiles/
https://github.com/mapbox/osm-coverage
https://www.mapbox.com/data-platform/country/
https://github.com/osmlab/osmlint
https://www.mapbox.com/blog/data-team-qa/
https://github.com/osmlab/osm-user-count
2015 New Users in Mexico
https://github.com/tyrasd/tortuosmity