This Guide is produced from http://learnosm.org/en/coordination/remote/

This printed guide may mention links & you may find it easier to view the site on your web browser where the links will function as intended.

Table of Contents

Remote editing & its place in the HOT team

Remote mapping is also referred to as ‘Armchair mapping’, and this is probably the type of mapping you will be doing if attending a mapathon. It will help you to understand what is needed if you know more about the whole process. Many people throughout the world are involved in making HOT work, and when you start remote mapping you become part of that team, which has many available roles, including (this is not the full list!):

- Sourcing & preparing satellite imagery,
- Making sure there are no legal implications such as copyright,
- Co-ordinating with the aid agencies,
- Ensuring the data is available in a format the aid agencies can use, such as Garmin maps, Osmand maps, & exports for particular programmes,
- Preparing teaching aids,
- Presenting the tasks in a format that others can use to create the maps,
- Making contact with the local people, and teaching them about HOT,
- Teaching local people how to do ground surveys and update the data for their own & others use,
- Making sure that local people take over the role of maintaining the map data that has been prepared - that they have ‘ownership’ of it,
- & remote mapping.

Remote mapping is the most labour intensive task. There have been many attempts to create software tools to replace the remote mappers, but all have failed so far. In brief, remote mapping

is the process of using a software programme, tracing information from satellite imagery, and uploading the result so that it forms part of the map data. It is a skill that can be acquired with patience. There are no perfect ‘mappers’ and although you (and everybody else) will do your best to avoid mistakes, mistakes are inevitable. The HOT team works together to keep mistakes to a minimum & to correct them when they are found - you will make mistakes, just as each one of us has - please don’t give up, just learn from them & improve.

Overview of Remote, Armchair or Mapathon mapping

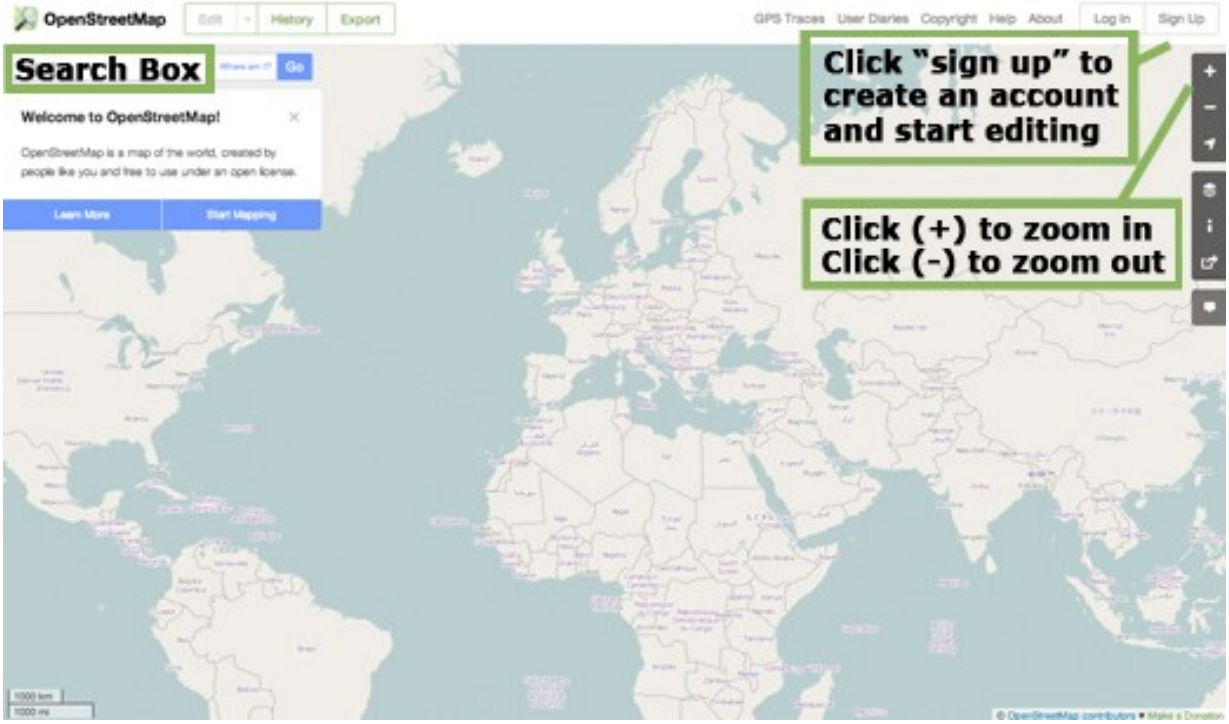
1. An administrator selects an area requiring updating in OpenStreetMap. The administrator ensures there is suitable satellite imagery available for remote mappers to trace, and creates a project covering the area. The level of detail required and the urgency are specified within the project together with any other information the remote mapper will require. When satisfied, the administrator publishes the project within the Tasking Manager tasks.hotosm.org, although they may also make changes later if required.
2. A remote mapper selects a task square, completes the mapping, and marks the square as complete.
3. A second remote mapper checks that the square is completed to a satisfactory level and marks the square as ‘validated’
4. Progress of the mapping of the project can be monitored from within the “stats” tab of the project, and the project can be downgraded or archived as required by an administrator.

Getting started on OpenStreetMap.org

In this section we will learn step by step how to navigate the OpenStreetMap website, view maps, and sign up for a user account. After you have your own username and password, you will be able to contribute your first points to the map.

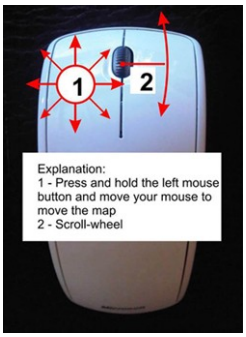
Visit the OpenStreetMap Website

- Before you begin, be sure your computer is connected to the internet. (If you are reading this online, then you must be connected!)
- Open your web browser. Common browsers are Firefox, Chrome, Opera, or Internet Explorer. If it is already open then you can create a new tab.
- In the address bar at the top of the window, enter the following and press Enter: www.openstreetmap.org
- When the page has finished loading, you should see something like this:

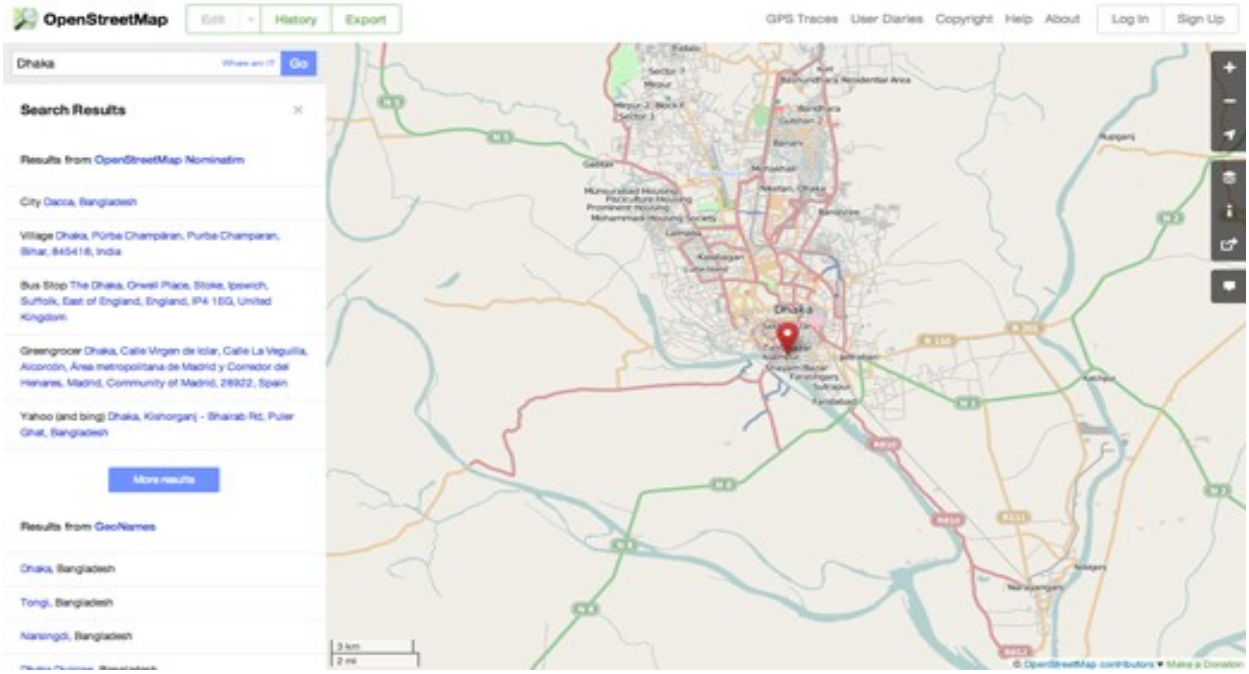


Navigate the Map

- The main thing you should see is the map. Move the map by clicking on it with your left mouse button, holding the button down, and dragging your mouse around (see figure below).



- If you have a mouse with a scroll-wheel, zoom in and out on the map by turning the wheel. If you don't have a scroll-wheel, use the + and – buttons on the upper right corner of the map. (see figure below)
- To search for a place, left-click in the box labelled "Search" on the left side of the page (see figure above). Type in the name of your town or village and press Enter. A window should appear to the left of the map with the results of your search. Click on the location that looks like the one you want. The map will automatically move to the location you chose.

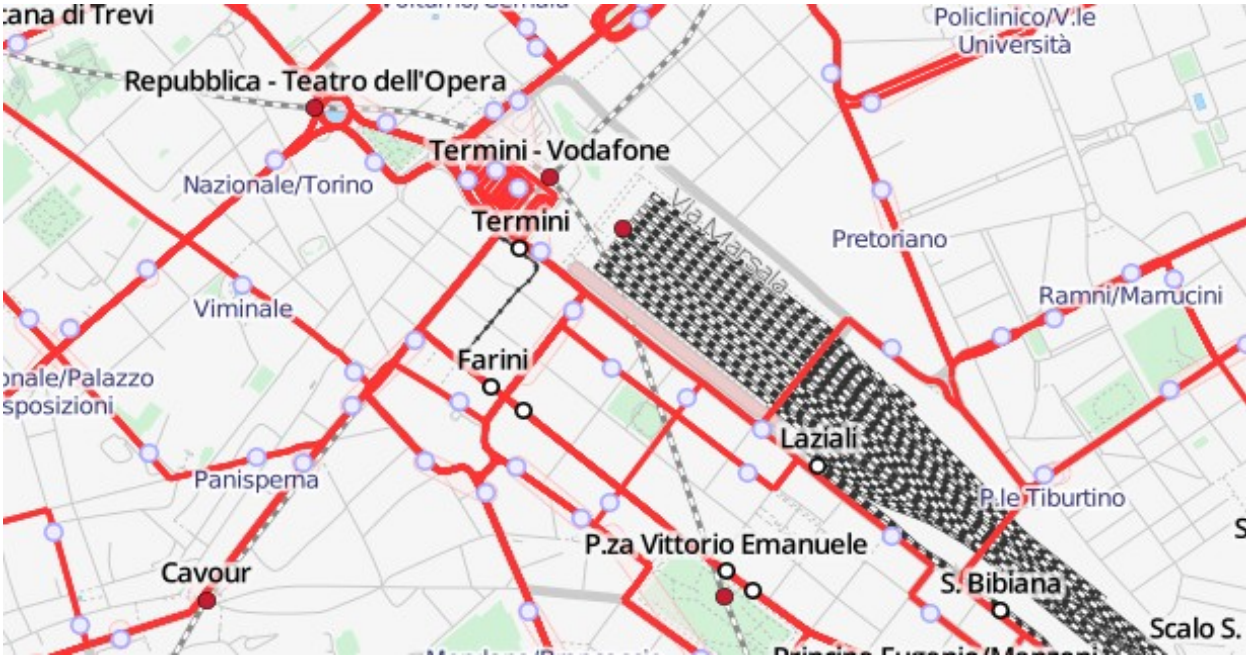


View Different Map Styles

OpenStreetMap contains geographic data from all over the world. Although it is a single database, the data can be interpreted and styled in different ways. To see this in action, let's look at various map "styles" available on the OSM website.

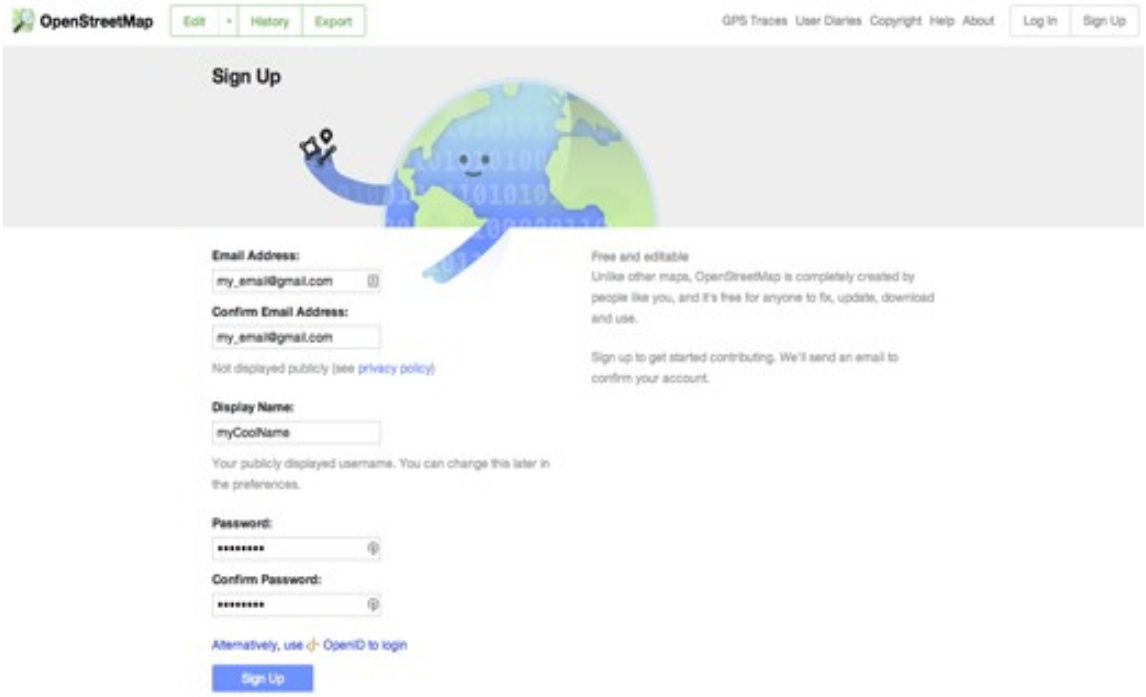
- Click on the Layers button on the right side of the map window.

- Click on the different style options for the map. Notice how the map changes with each one. The transport map, for example, emphasizes transportation routes on the map while the cycle map emphasizes cycling routes. All of the data to make this possible is contained in the OSM database.



Create an OpenStreetMap Account

- Now that you have seen what the main website looks like, you can register for a username and password and make your first additions to the map.
- On the OpenStreetMap website, click “sign up” in the top right corner of the page.
- You should see a new page that looks like this:



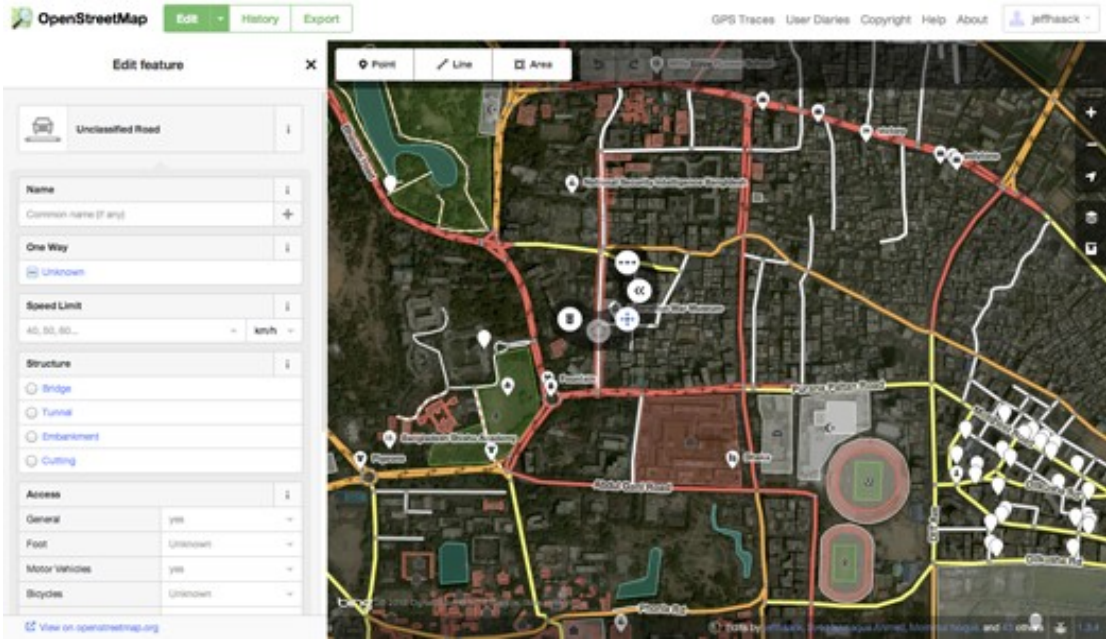
- There are five boxes on this page that you need to fill in to register an account with OSM.
- Enter your email address in the first two boxes. You should enter the same email address in both boxes. Later, you will need to open your email to confirm your account with OpenStreetMap.
- In the third box, enter the username that you would like to have. You will not be able to choose a username that someone else has chosen before, so it should be creative. If you try to enter something simple, like your first name, it is likely that someone has already claimed that name.
- Enter a new password in the fourth and fifth boxes. You should enter the same password in both boxes. It does not need to be the same as the password for your email.
- You may want to write down your OSM username and password. You will need it to log in later.
- After you have completed all the boxes, click “Sign Up” at the bottom of the page.
- If there are any problems, an error message may pop up. Check to make sure that your email is the same in the first two boxes, and your password is the same in the bottom two boxes. If the third box is highlighted red, it means that someone else has already chosen your username, and you should try a different name.
- If everything was successful with your registration, you should see an email from OpenStreetMap in your inbox. Open the email. It should look like the image below. Click on the link that is identified below:

- A new tab or window will open. If everything went well, you should have an OSM account!
- On the OpenStreetMap page, click “log in” in the top right corner. Enter your OpenStreetMap username and password and press Enter. You should now be logged in. You should see your username in the upper right corner of the page.

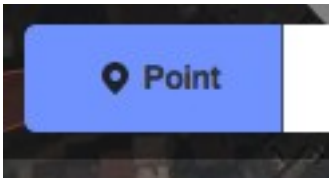
Adding Your First Points

- Now that you are logged in with your username on the OpenStreetMap website, you can use the iD editor to add your first point to the map.
- Move the map to a place that you know very well, such as your town or neighborhood. A good idea is to ensure your home (or your neighbour’s home) and workplace are drawn and given the correct address.
- Zoom in to a place where you would like to add a point to the map (perhaps a restaurant or grocery store near you isn’t yet mapped).
- Just above the map on the left, there is a tab named “Edit” with a small triangle besides it. Click the small triangle. You should see a menu drop down.
- Click “Edit with iD (in-browser editor)”.

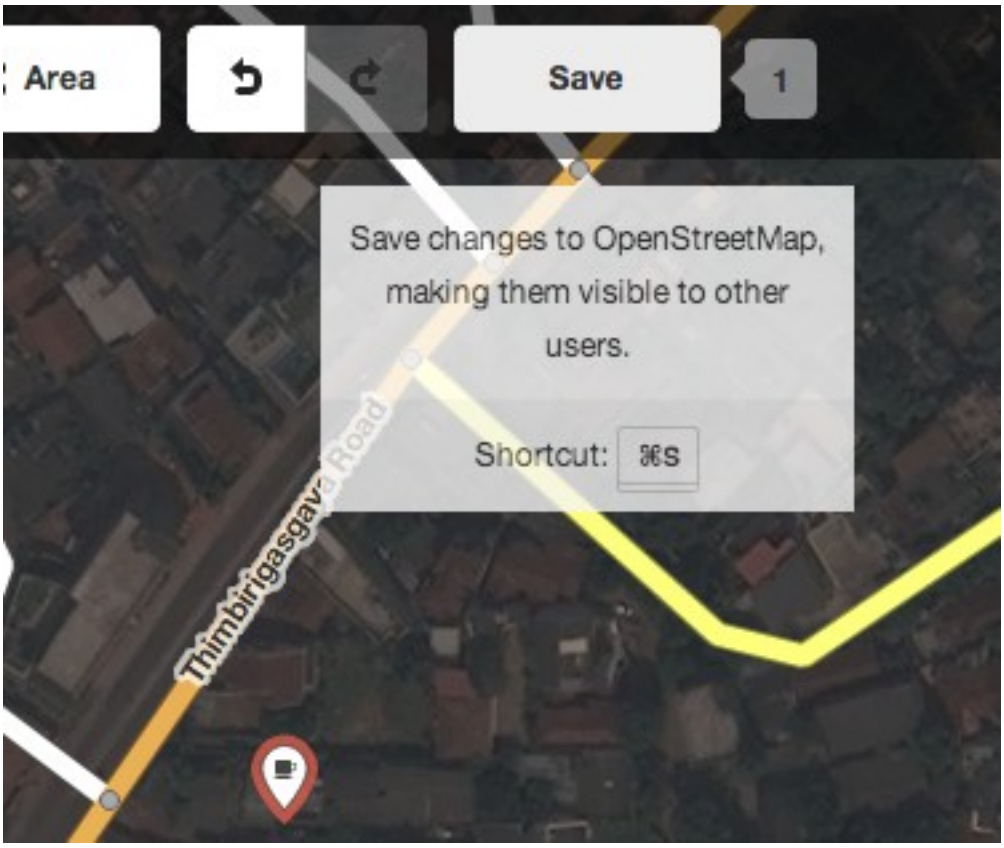
- The online editor, named iD, should open. It will look something like this.



- You can add a point to the map by clicking on the button named “Point” at the top the window. Then click on the map where you would like to add a new point.



- Select from the menu on the left what type of location it is that you are adding to the map. You can then fill in the appropriate form with the location’s name and other information.
- To save your changes, click the “Save” button at the top. Since this is your first edit, you may prefer to play around with the editor. Don’t save your changes unless you are sure they are correct.



- If you do click Save, you will be asked to provide a description of your changes. Then you can click “Save” once more, and your additions will be saved to the OSM database!

The iD editor is a fantastic way to easily edit OpenStreetMap. However, in the next chapter we will be looking at JOSM, a standalone application that offers many more features. Feel free to continue playing with iD. Once you have more experience contributing to OSM, you can choose which editor you like using the best.

Summary

Congratulations! If all went well you now have an OpenStreetMap username and password, you know how to navigate the OSM website, and you have your first understanding of how to add points to the map.

Tasking Manager

In this section, we look at the HOT Tasking Manager, an intuitive tool that mappers can use to sort an area into a grid, and work together to map an area in an organized way.

The OSM Tasking Manager allows mappers throughout the world to assist in mapping a defined region with a minimum risk of overlapping work areas.

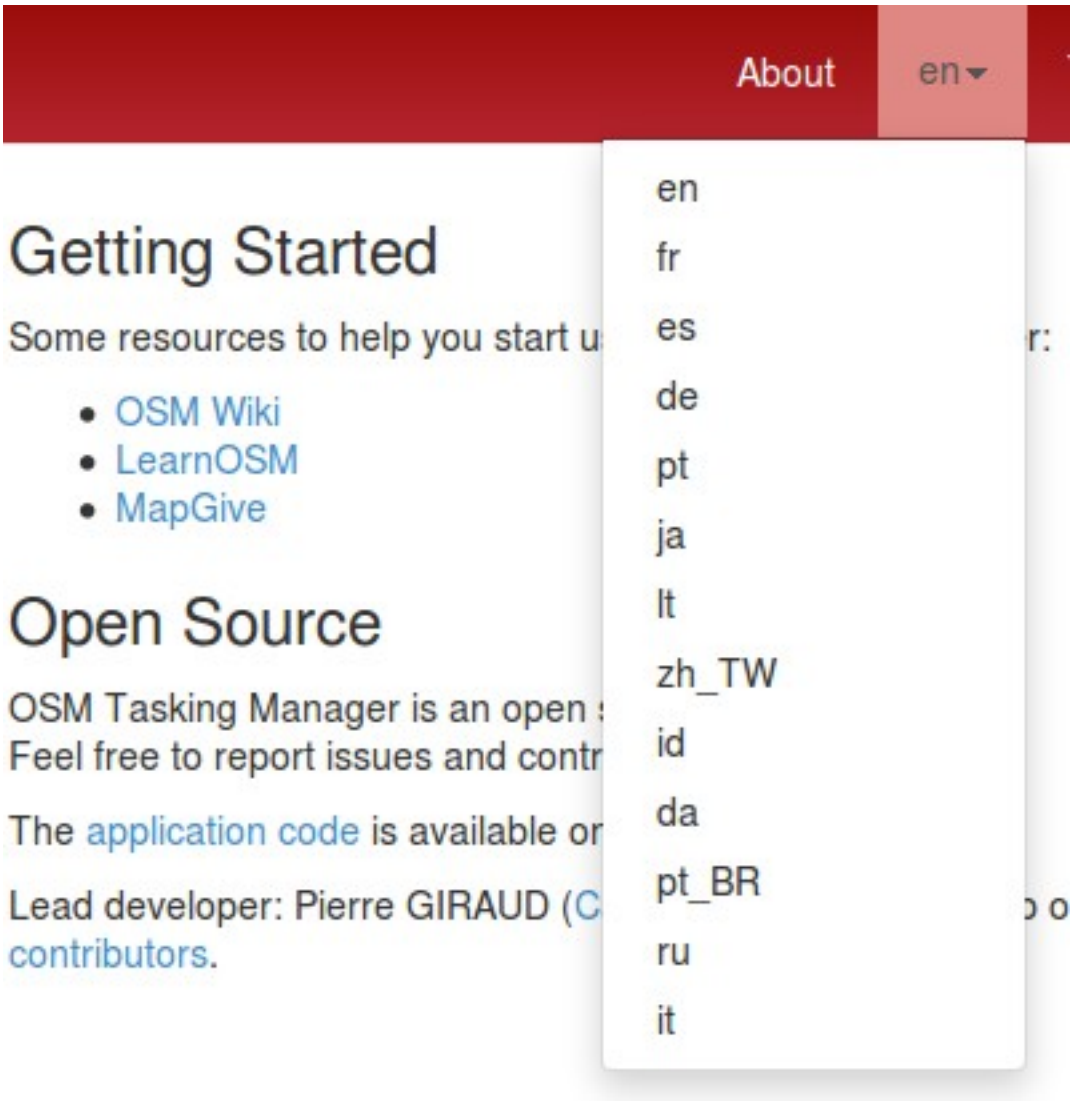
This allows people both on the ground and working remotely (also sometimes referred to as “armchair mappers”) to collaborate effectively, rapidly, and avoid accidental rework being required due to conflicts.

Overview of the process

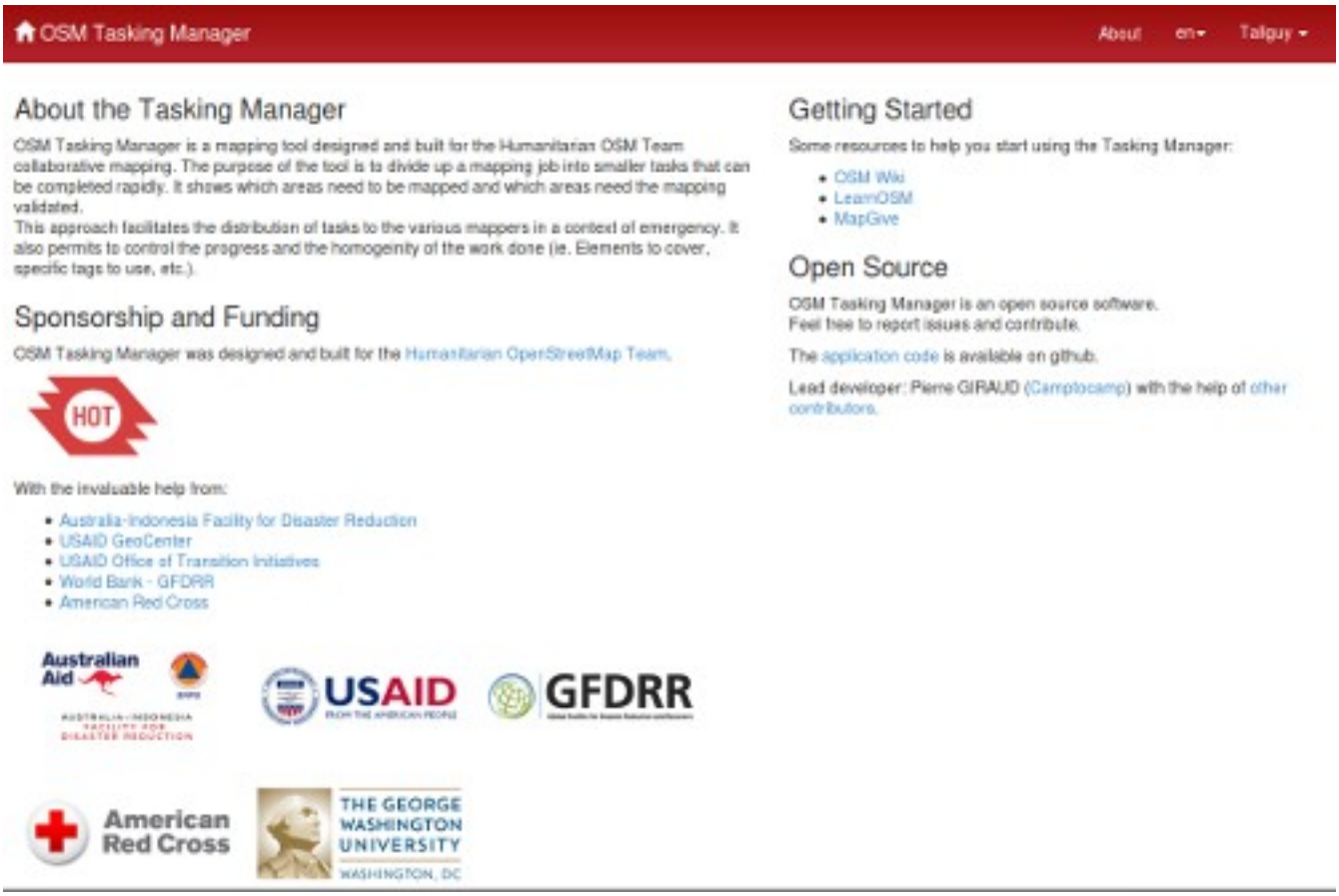
1. An administrator selects an area requiring updating in OpenStreetMap. The administrator ensures there is suitable satellite imagery available for remote mappers to trace, and creates a project covering the area. The level of detail required and the urgency are specified within the project together with any other information the remote mapper will require. When satisfied, the administrator publishes the project within the Tasking Manager, although they may also make changes later if required.
2. A remote mapper selects a task square, completes the mapping, and marks the square as complete.
3. A second remote mapper checks that the square is completed to a satisfactory level and marks the square as ‘validated’
4. Progress of the mapping of the project can be monitored from within the “stats” tab of the project, and the project can be downgraded or archived as required by an administrator.

Options & links

The Task Manager initially displays in English - to change to another language click on **en** in the red header banner.

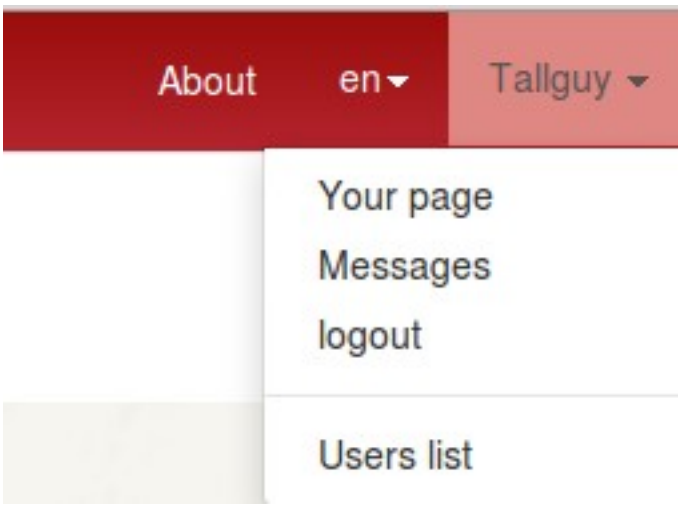


For information about the Tasking Manager, HOT sponsors, partners & help click on **About** at the top of the page.



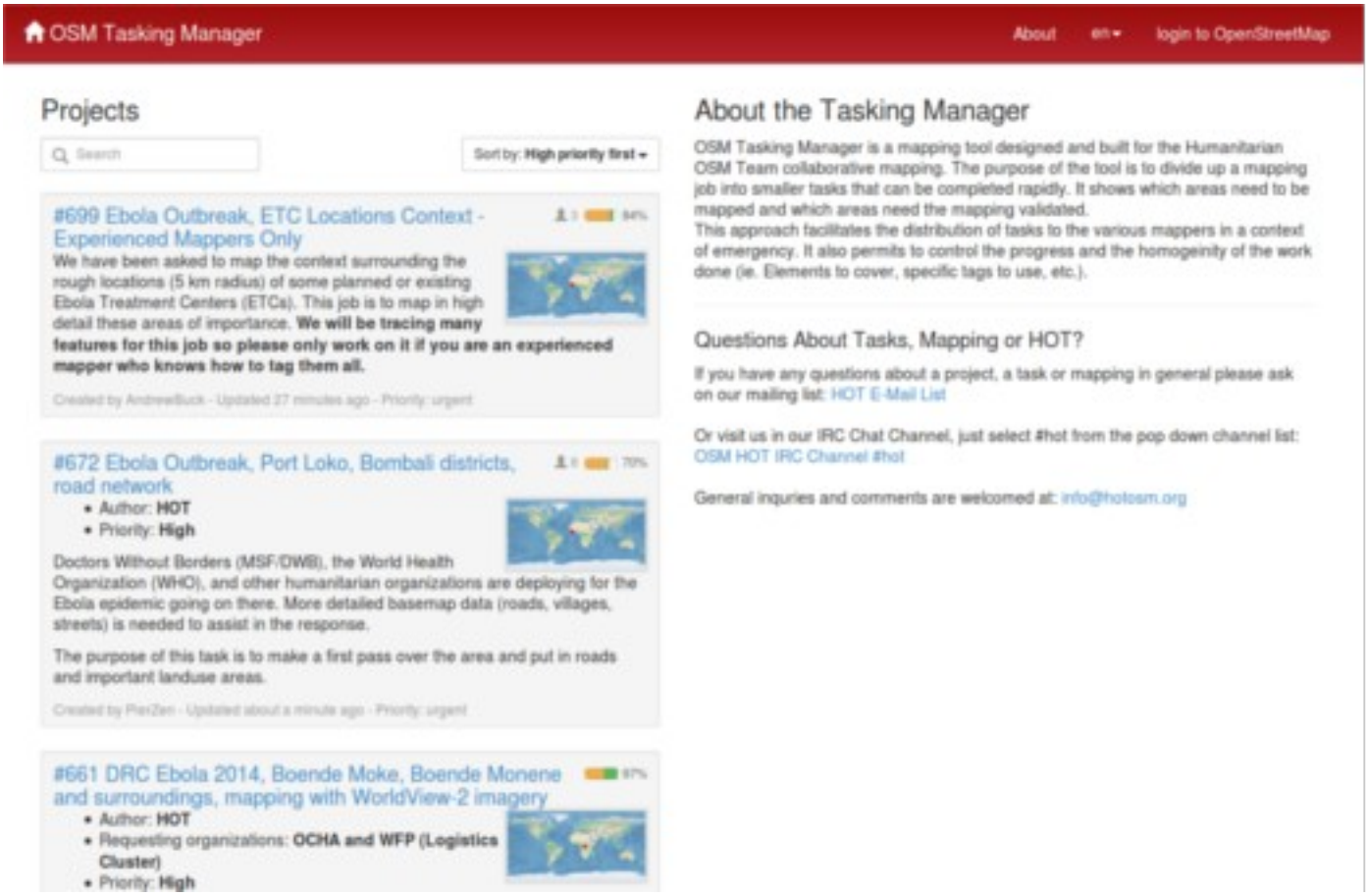
Once you have logged in, you may click on your username at the top. Here you can:

- Access a list of projects for which you have completed squares,
- Go to your **Messages** screen within the Tasking Manager (this is not the same as the OpenStreetMap messaging system)
- Logout
- See a list of all users who have contributed completed squares within the Tasking Manager. You may access links to see more information about the user you select, such as which tasks they have completed squares for, and how many.

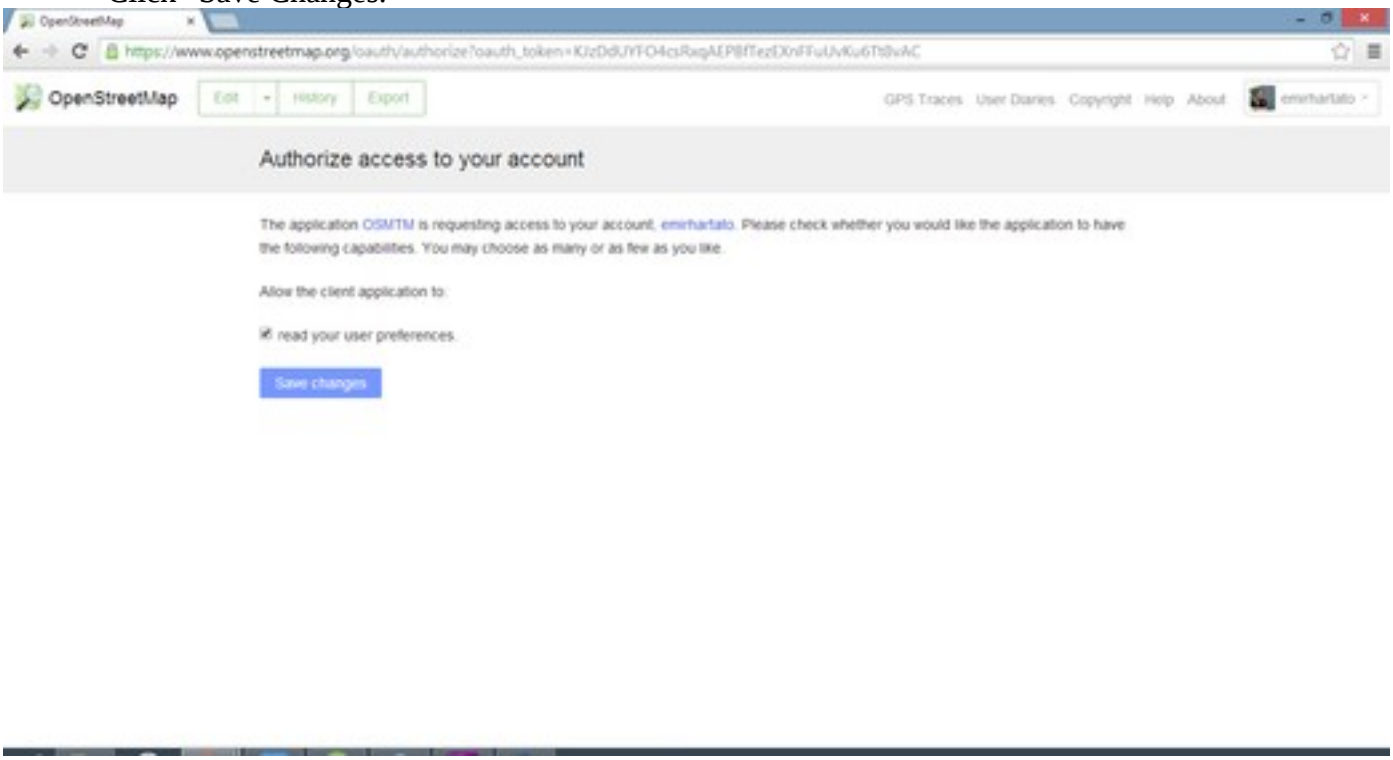


Getting started with the Tasking Manager

You may view projects as a visitor, but to actively participate you must be logged into the Tasking Manager - use your OpenStreetMap account username & password. Open your Internet browser and go to tasks.hotosm.org. You will see a page like this:



- Click “login to OpenStreetMap”
- You are agreeing to allow this application some access to your OpenStreetMap account. Click “Save Changes.”



Locating a project

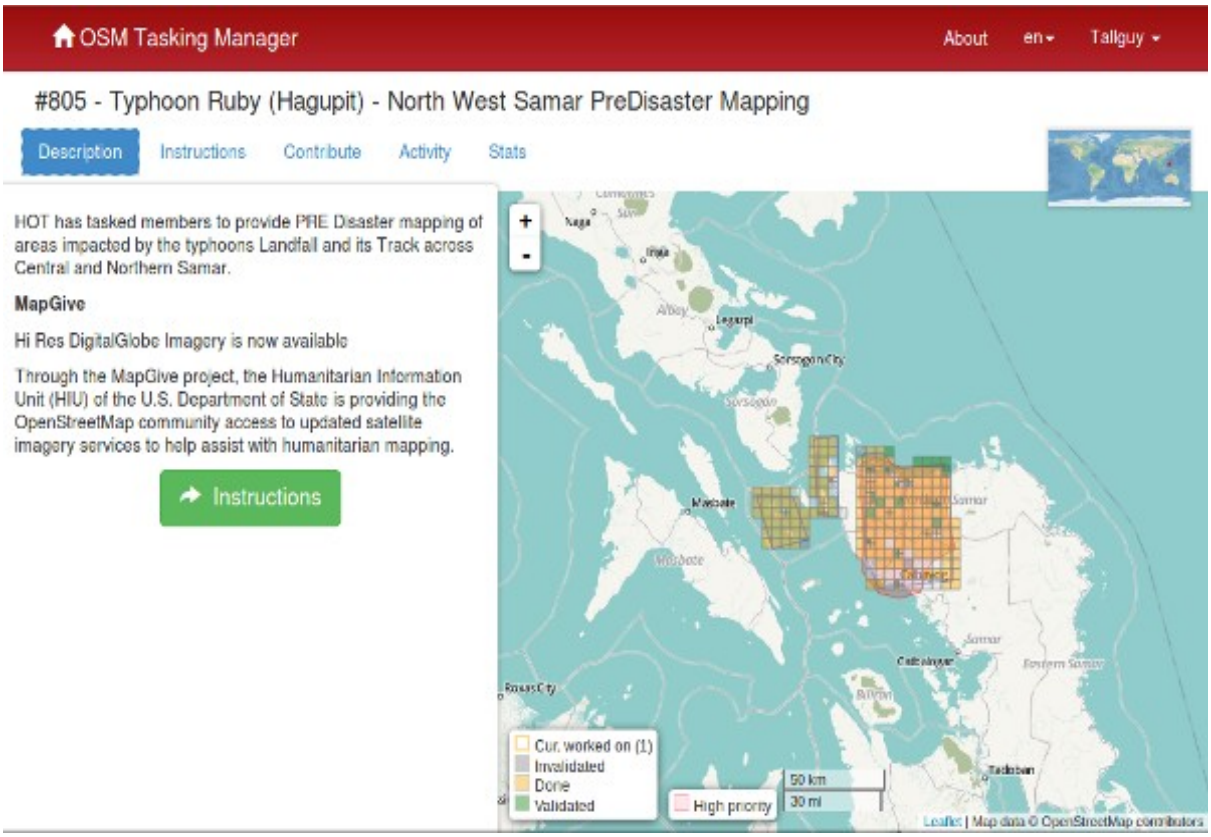
The current list of projects may be sorted according to:

- High priority
- Creation date, or
- Last update

You can further refine your list by clicking in the **Your Projects** box, to see just the projects in which you have participated, and/or you may use a free text search to locate projects that contain particular text strings, such as **Ebola** (search is not case sensitive).

Projects are frequently referred to by their Project number, e.g., **#711 - Ebola Outbreak, Kayes, Mali - Pre-emptive building mapping**, and you may also use this in the search box.

- Click on a blue project title to see more information about that project.



Description

Everything you need to know about the project is here! On the left is a description of the mapping project and what is required. On the right side is a grid showing the area to be mapped;

- Mauve line normally visible in the perimeter squares of a project indicates the border of the project. This border normally follows the available imagery, so may appear an unusual shape. Although mapping may be completed outside this border, it is not a requirement and will not be considered by validators.
- Pink areas of the map indicate higher priority areas,
- Yellow grid squares have been completed,
- A yellow border indicates the square is being worked on now,
- Green squares have been completed and “validated”, and
- The remaining squares still need to be completed, or have previously been invalidated.

Instructions tab

This shows what is required in the mapping task. Tasks range in difficulty, suitable for beginners, intermediate and advanced mappers - and the instructions will explain this.

Make sure you read and understand this section. There are many styles of mapping project, for many different purposes. Some common project activities include:

- Road networks: Used by people on the ground to load data into hand held navigation

tools, and to work out how to access remote areas
- Mapping villages: Often used to identify places where people live and may be impacted
- Mapping buildings: Used for damage assessments or contact tracing with diseases
- Mapping rivers, walls and other features

Not all areas of the world are similar to your own, so specific tagging advice may be provided. For example, Africa's road network is very different to typical American or European highway systems.

There will be a section indicating the **Changeset comment** you should copy & paste into your editing programme when uploading/saving your changes, together with the **source** information you may (depending on your editing software) need to copy & paste to the source field on making changes.

Sometimes, task specific imagery may be available - you may need to agree to a license in order to access it. Instructions usually will indicate the easiest way to load this into editors such as JOSM.

When checking a square marked as complete, validators will expect that the requirements from the instructions tab have all been completed. You may find completing an entire tile is quite difficult - guidance below is available around unlocking tiles; as well as providing useful feedback for the next mapper.

Activity tab

This shows activity that has taken place within the task in chronological order.

Stats tab

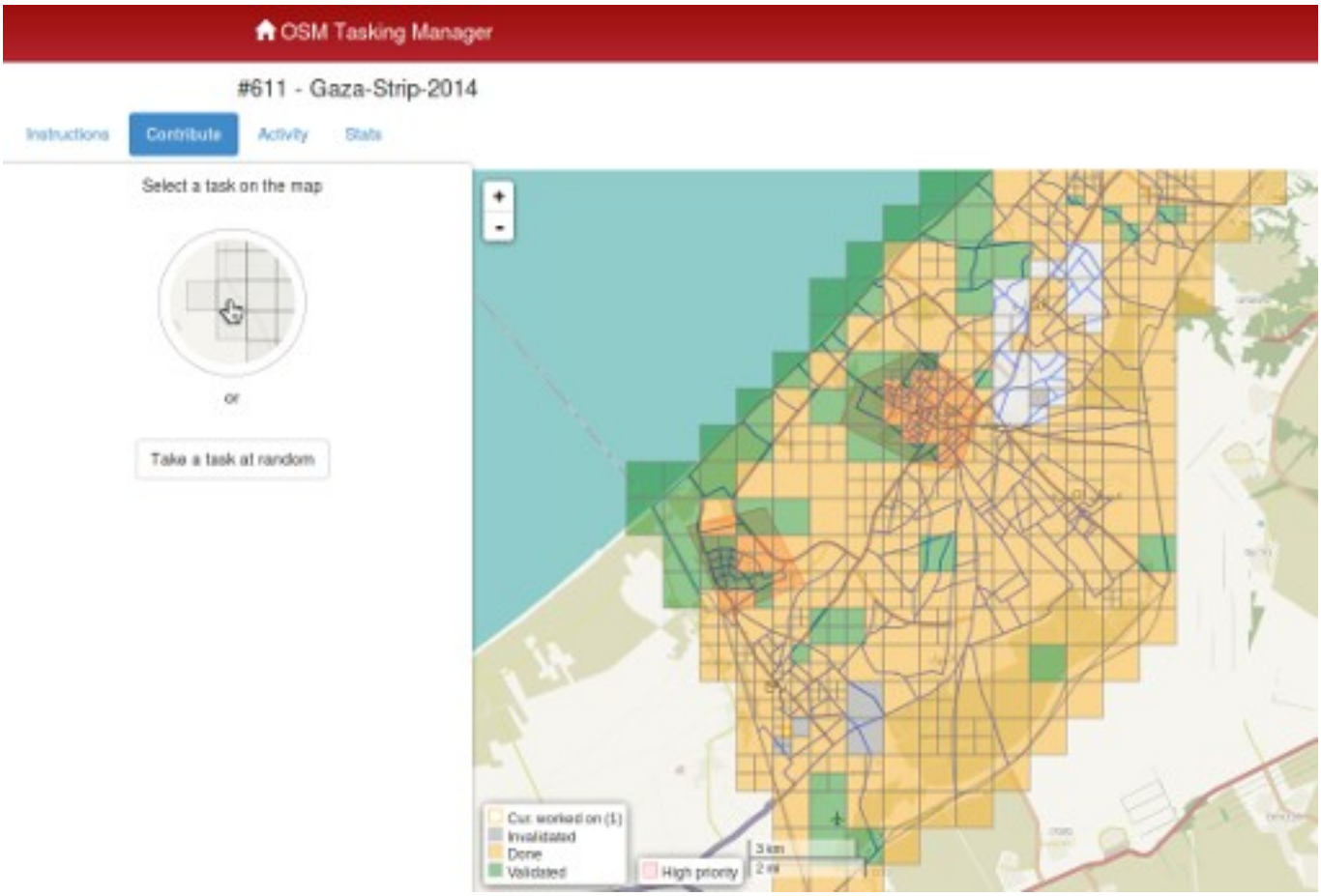
This contains a graph of progress & other information.

The Stats tab also contains a list of mappers who have completed at least one square within the project - to see which squares they have completed, you can *hover your mouse cursor* over a username, and the squares they have completed will become the only ones visible (**use this to locate the squares you have previously completed**).

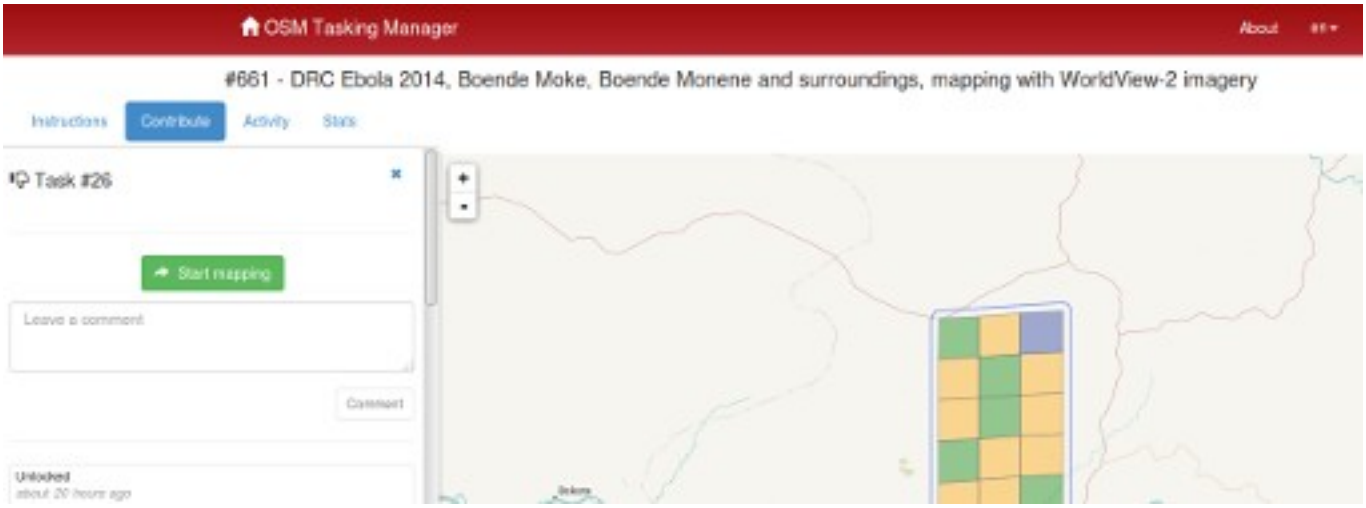
Once you have located the square by hovering your mouse over the user name, you may click on the square to see the comments that have been left by mappers and validators for the square, which is a useful way of obtaining feedback from validators.

Contribute tab

Click when you are ready to start mapping. You may choose your square to work on by selecting it from the map, or by clicking on the "Take a Task at random" option.



Selecting a square to map



Having selected your square you will be able to see if there is any history for this square, such as a mapper starting to map, but realizing they do not have time to complete the square.

If you accidentally select a square, you can release it again by clicking on the blue close control -

x - shown in the screenshot above.

Clicking on the **Start Mapping** button locks the square so that no other mapper can select it until it is released again, and starts a 2 hour (120 minute) countdown timer, at the end of which time the square is automatically released. It is good practice to check on your countdown timer on a regular basis - it is easy to become engrossed in your mapping and not realise your square has been released, and has now been selected by another mapper who has started mapping it too. This can lead to conflicts and problems.

Editing choices

Different options for editing are presented to you as soon as you lock a square.

Edit with JOSM

- When selected (assuming you have set-up JOSM to use remote control), will automatically load any existing data from OSM into JOSM (*make sure you do not have the "download data automatically" plug-in activated - de-activate under the file menu*), & will also automatically load the imagery for you to trace from.

iD editor

- Select this to automatically start a new tab or window of your web browser, with existing OSM data loaded. The Internet Explorer web browser does not currently support iD and it will load Potlatch 2 instead. Your original tab or window with the Task Manager will still

be present.

Potlatch 2

- Editor will load in a new window or tab.

Walking Papers / Field Papers

- For use only when you are involved in a project where a local mapper has carried out a ground survey and marked a printed map with information such as road names. This map can be rescanned & used as a background image for a remote or local mapper to read the information & update the OpenStreeetMap data.

Splitting a square

Having selected your square and inspected it with the imagery in place, you may realise that there is far too much detail required for mapping. An example of this may be tracing buildings in dense urban areas, or locating small villages in large areas.

As guidance, where it isn't possible for one person to complete within the 2 hour time limit you can often split the task into 4 smaller areas.

Use with caution - if/when squares are split too small it is difficult to judge what type of highway is involved, and to identify other features.

Be aware that other useful comments about the work previously completed will no longer be available.

Unlocking a square before it is complete

If you start working on a square, but cannot complete it for some reason, it is best practice to leave a comment against the square.

Simply detail what remains and choose **unlock**. Make sure your comments are relevant and aimed to help out the next mapper.

For example:

```
Almost complete, small village top left
in the square to be traced though
```

Finishing a square

It is very difficult to be completely certain that you have completed a square - however it is acceptable to mark the square as complete if you are fairly sure - the contents will be checked by another mapper when validating, and any small additions can be made then.

For the process to work most effectively, mappers need to mark squares as complete rather than leaving them for several other 'not sure' mappers to spend time also checking them.

When you have finished editing and think that the square is complete, save any remaining edits with your editing programme, then return to the Tasking Manager.

Add comments to the box detailing what you achieved and more importantly, what you are not certain of. For example; “Complete as far as I can see, but there is cloud covering the top right corner of the square & I cannot see to trace this area”.

Click on the “Mark Task as Done” button, and your work is ready for review.

Sending a message from the comment box

When leaving a comment against a square, you can have the comment sent as a message to a named mapper.

Much like Twitter, simply use an @ followed by the username. This will send a message to the user containing the comments from this box, plus a link to the square that the comments box relates to.

For example:

```
@Tallguy nice work tracing the building
details here. You missed a small group
of houses on the upper left of the tile,
I added a few in, but some still remain.
```

This is particularly useful when validating or adding on another’s previous work - you can provide feedback, thanks or more.

Be aware that many people from around the world will be participating, so prefer simple, clear language. If you come across comments in other languages, tools such as google translate are reasonable effective.

Referring to a particular square when sending an email

If you need to send a message, such as an email or an IRC message, and you are querying something concerning a particular square within a project (perhaps you need help identifying something from the satellite imagery):

1. Click on the square concerned
2. Click on the address bar in your web browser, which should show something similar to ‘http://tasks.hotosm.org/project/713#task/259’
3. Highlight with the mouse all of the text in the address bar, or use the shortcut keys **Ctrl+A** to select all the text, then use shortcut keys **Ctrl+C** to copy the text
4. In your email, IRC message, or other message,
   either, mouse right click & paste,
   or shortcut keys **Ctrl+V**, to paste the link into the message.

Getting live help

From the tasking manager;

1. Click on **OSM HOT IRC Channel #hot**
2. Enter a username (your OSM username?), or use the preset characters
3. At the bottom of the dropdown list select **hot**

- To the right of the screen is a list of users that are online now.

- Type your message in the box at the bottom left of the screen (this is sometimes temporarily obscured by other text, but this will disappear as you select the box.
- To direct a message to a particular individual, include their username from the list on the right within your message. Type, then use the return key to submit your comment. The system is ‘live’ so wait for an answer - your username will often be used in the reply to show you the comment is directed to you. You will normally receive a reply within a few seconds, so please wait.
- An alternative simple system can be found at kiwiIRC.com
- Further info on using IRC with OpenStreetMap may be found at OSM Wiki IRC
- Alternatively use an IRC client of your choice (Server=irc.oftc.net, and channel=#hot)

Editing hints and tips

By now you have a good understanding of what the Tasking Manager is, and some of the various functions it supports. Unlike normal editing, this tool is often used for time critical projects with many participants - this may be a little bit different to what you are used to.

Some general advice to heed when working in this tool:

- Avoid mapping far outside of your square - other mappers may be working in that area, resulting in duplicated efforts. It’s OK to map objects such as buildings overlapping a boundary, but avoid going much further.
- Extend roads, streams, or other features slightly over the boundaries - this lets the next mapper pick up where you left off.
- If you are in doubt about what a particular feature is, use the comment section to ask questions or check the wiki.
- If you make a serious mistake - for example, deleting a major feature or relation - use the comment box to ask other mappers to help in reverting this for you. Try to include the changeset, or a description of what happened. Being a collaborative task, many other mappers are here to help - it’s important to remember everyone makes mistakes sometimes.
- Don’t hesitate to ask for feedback - mappers validating your work can be terse or to the point, but if they know it’s OK to engage in a dialog with you, the outcome is often a lot better for all involved.
- You must not validate your own work - a second pair of eyes will always lead to better quality mapping.
- Don’t worry if other mappers are terse when validating your work - like you, they just want to ensure all of the data is mapped accurately. Feedback is invariably about the remaining work, not criticism of your efforts to date.

Remote Mapping - Starting to map

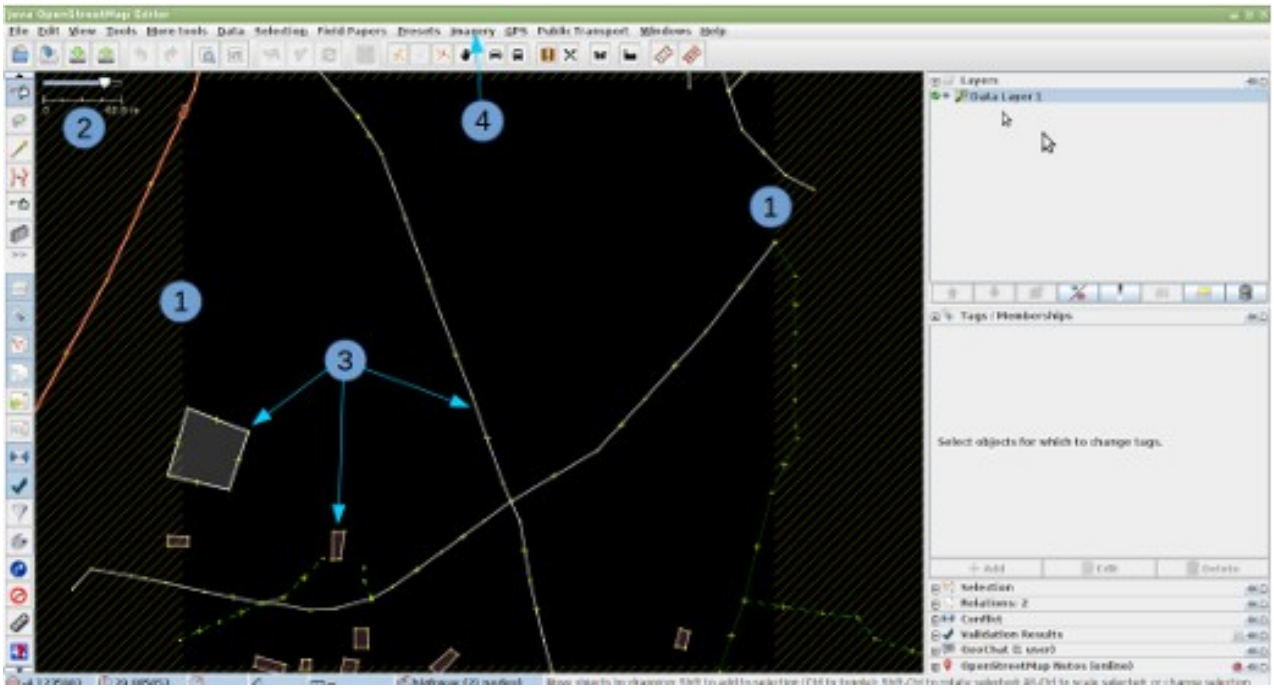
Don't give up on us now - we've thrown a lot of information at you, but it should start to fall into place as you actually start to map. You've achieved a lot:

- You have an OpenStreetMap account with a username & password,
- You know what the OSM Tasking Manager does, and have an idea about how you will use it, and
- You've decided which editing software you are going to start with, and you have an idea how it is used.

We're now going to select a square from a project and start to map it. If you are at a mapathon, or assisting remotely, the organisers will have provided instructions as to which project you should be working on. If you are working alone, look through the list of projects in the Tasking Manager tasks.hotosm.org and try to find a project which is suitable for beginners, and choose a project. You've probably already had a quick read of the information on the Instructions Tab of the project, but you need to thoroughly understand what is needed - do you need to read it again?

Having selected the project you are going to work on, now select a square and then using the drop down list, load it into your chosen editor.

Initial View - JOSM

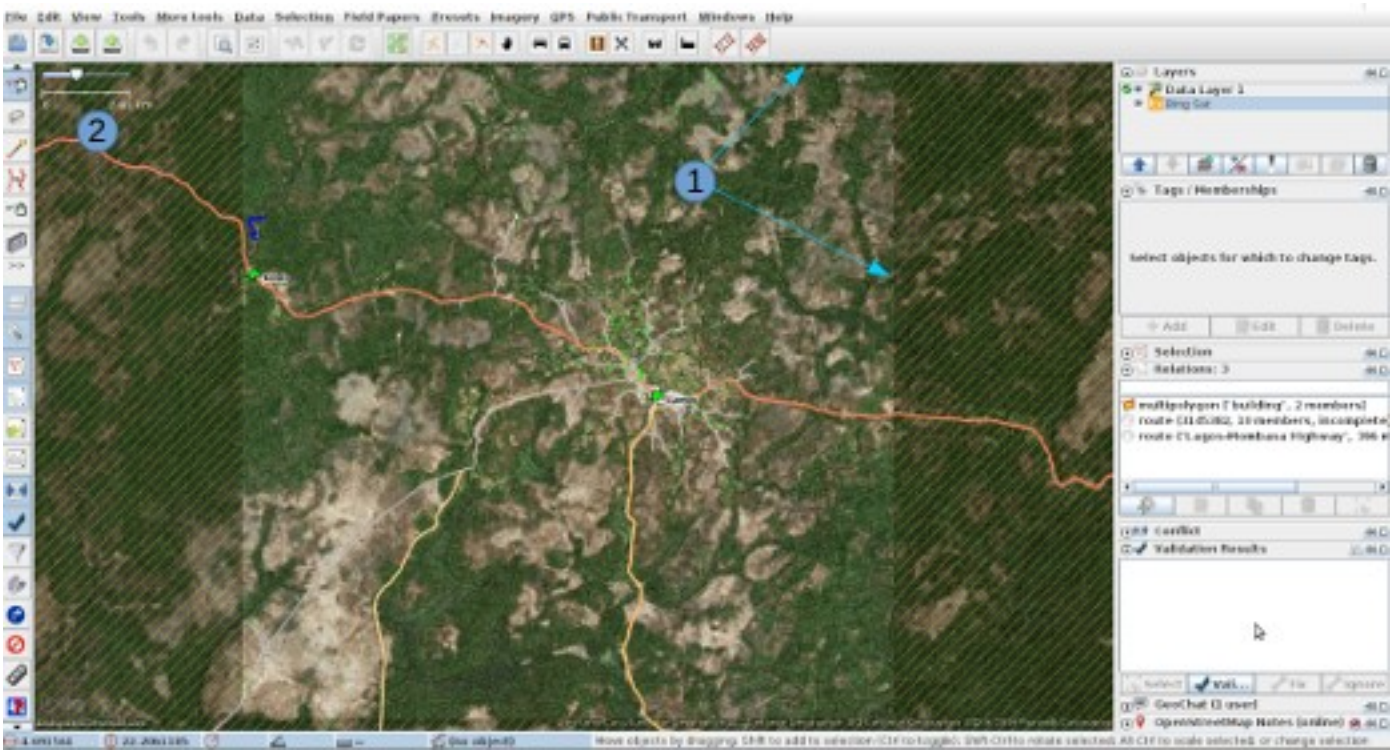


1. The boundary of your square is indicated by the crosshatching. There is a very slight overlap of the squares, so that a feature in your square that stops at the boundary will just appear within the boundary of the adjacent square. You should only map features within your square to avoid 'conflicts', which are explained elsewhere.

If the boundary crosshatching is not visible, you may have installed the plugin '*Download OSM data continuously*'. To correct this you will need to remove the tick for this plugin under the File menu of JOSM, delete the downloaded data, and download again using the Tasking Manager.

2. The scale of your view is indicated here. This is a very small square, with a figure of 40.8 metres - this figure is often several kilometres.
3. Several features already exist within the OpenStreetMap database, and these have been loaded. We will explore them in a moment.
4. There is no background imagery loaded on this occasion and we will have to load it manually - the instructions for this particular project show that bing imagery is to be loaded, and this can be quickly loaded by clicking on the word 'imagery' and then selecting 'bing' from the dropdown list. You may find that zooming out (roll the mouse centre wheel towards you) and then zooming in again helps the imagery to load quickly.

Alternate initial view - JOSM



1. Boundary of square is indicated by the crosshatching. bing imagery has been loaded, but at this scale the imagery is not detailed.
2. The scale line indicates 2.61km - this is a very large area of coverage.

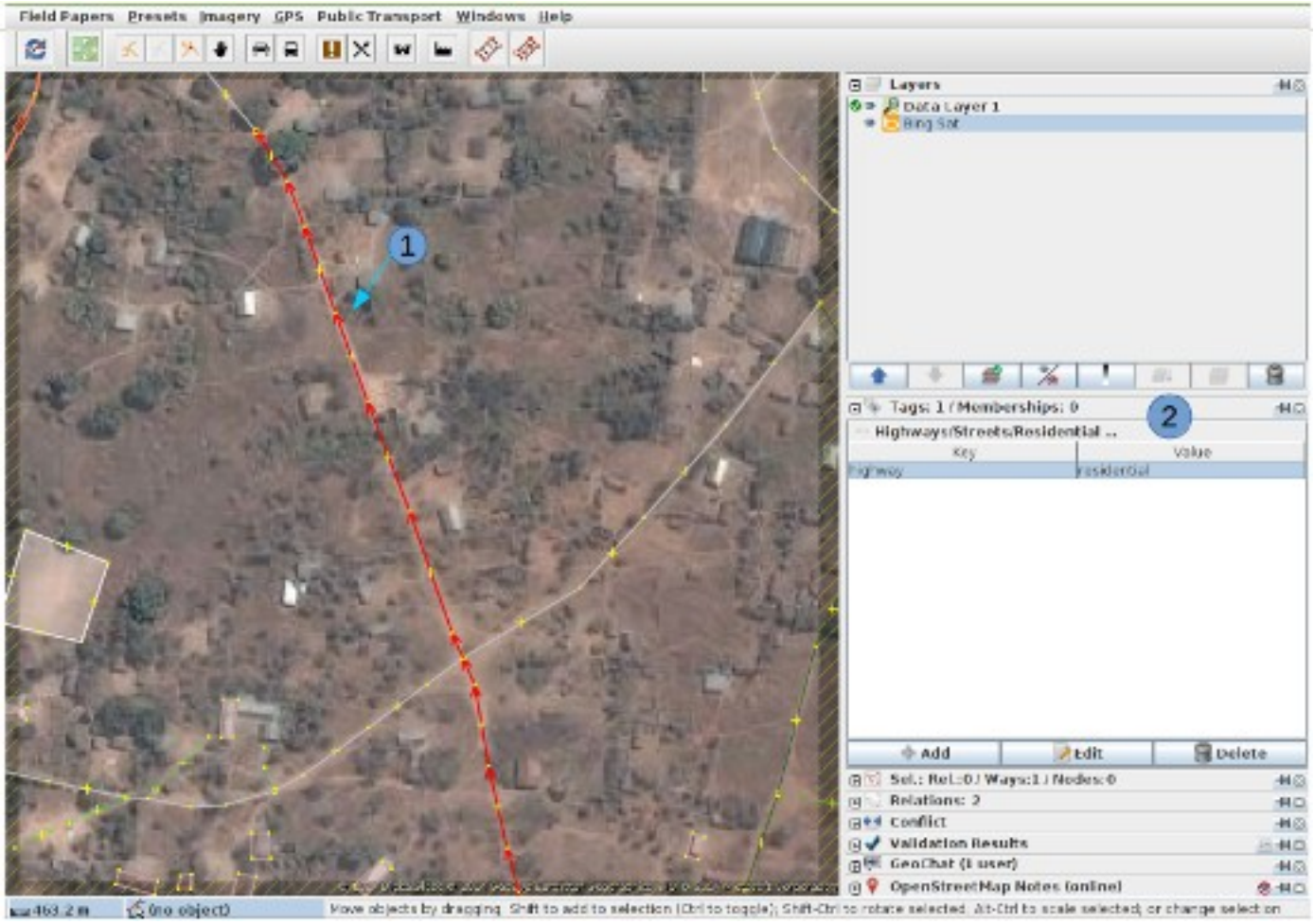
Initial View - iD

1. The boundary of your square is indicated by the purple line. There is a very slight overlap of the squares, so that a feature in your square that stops at the boundary will just appear within the boundary of the adjacent square. You should only map features within your square to avoid ‘conflicts’, which are explained elsewhere.
2. The scale of your view is indicated here. This is a very small square, with the 100 metre line extending quite a long way in proportion to the length of the square - this figure is often several kilometres.
3. Several features already exist within the OpenStreetMap database, and these have been loaded. We will explore them in a moment.
4. bing imagery has already been loaded as a background.

Alternate initial view - iD

1. Boundary of square.
2. For this square the scale indicated is 5km, at which scale the editing buttons at the top of the screen are greyed out and not selectable.

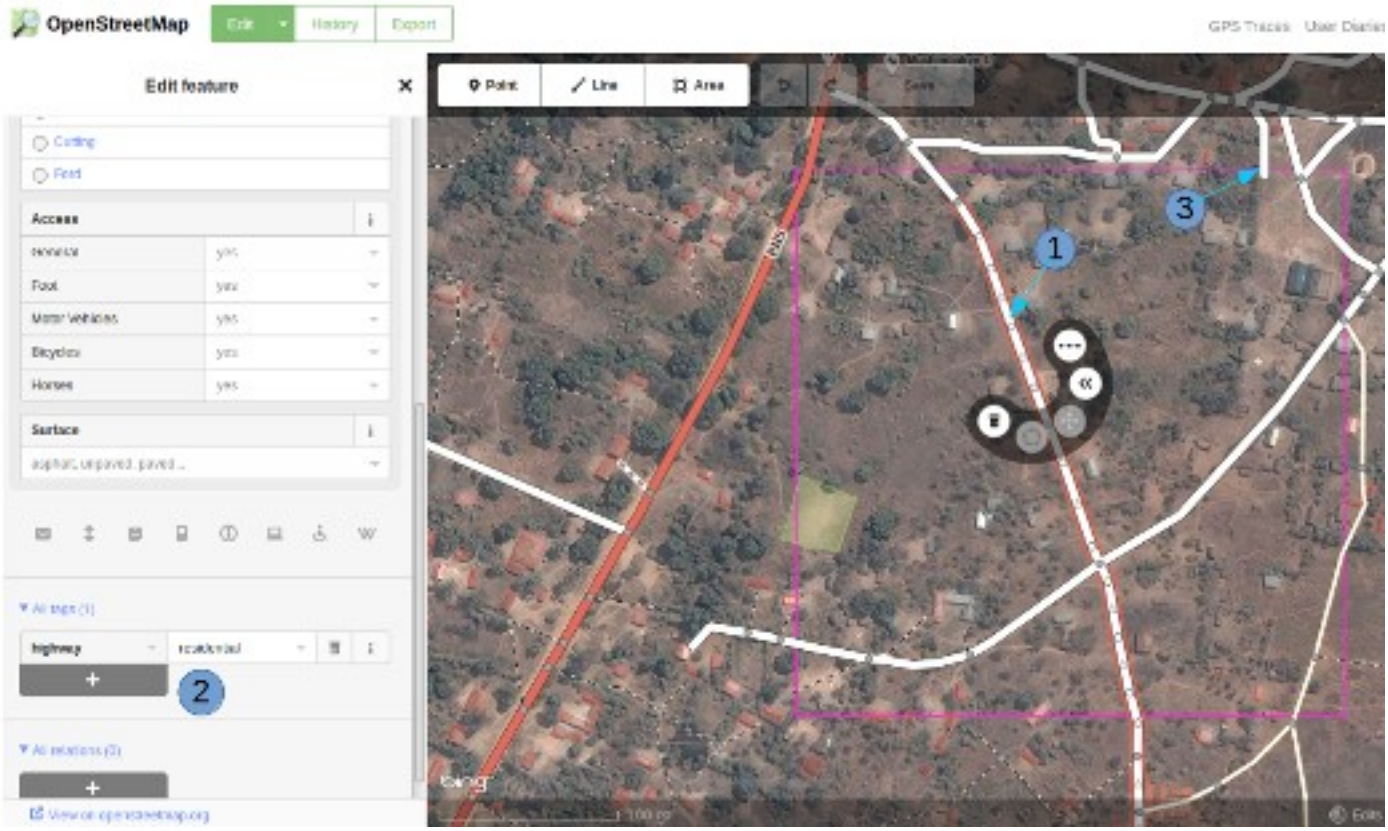
Checking on the existing data - JOSM



1. I've clicked on one of the existing features in the OSM data, and it is now coloured red in the screenshot.
2. In the **Tags / Memberships** pane to the right you can see that this feature is tagged with the key of highway & a value of residential. For ease of reference this would be referred to as
   highway=residential

The next section of this guide indicates how features should be mapped & tagged.

Checking on the existing data - iD



1. I've clicked on one of the existing features in the OSM data, and it is now highlighted with a red border in the screenshot, and iD is showing the available tools.
2. iD presented me with a number of potential tags I could use on this feature on the left side of the screen, but for our purpose I have used the scroll bar to go down to the heading **All tags** where we can see that the feature has a key of **highway** and a value of **residential**. For ease of reference this would be referred to as
   highway=residential
3. The person who has mapped the adjoining square has traced a highway from their square just over the border into my square & then stopped. This is the correct way to 'handover' a highway or feature at the border of your square.

The next section of this guide indicates how features should be mapped & tagged.

Mapping the features

Roads

Any type of roads from motorways to tracks and paths are labelled 'highway' in OpenStreetMap. It is important that highways are correctly added to the database (OpenStreetMap data) as they are used in so many ways:

- Navigation software such as Garmin devices and apps. on smartphones such as Osmand

can provide routing information over great distances if the correct information is loaded into them. As these rely on the gps within the device to locate the position in relation to the basemap loaded into them, it is important that the highways are actually within about 15 metres of the right place, or they will not work!

- Planning the route for a large ‘aid’ lorry is much easier if you can differentiate between a path & a trunk road, with all the stages in between.
- Knowing whether a road surface is asphalt or soft mud will make a difference to your route planning.
- When attempting to plot the spread of a disease, a victim’s description of “near the crossroads” is significant if you can see the crossroads on the map.

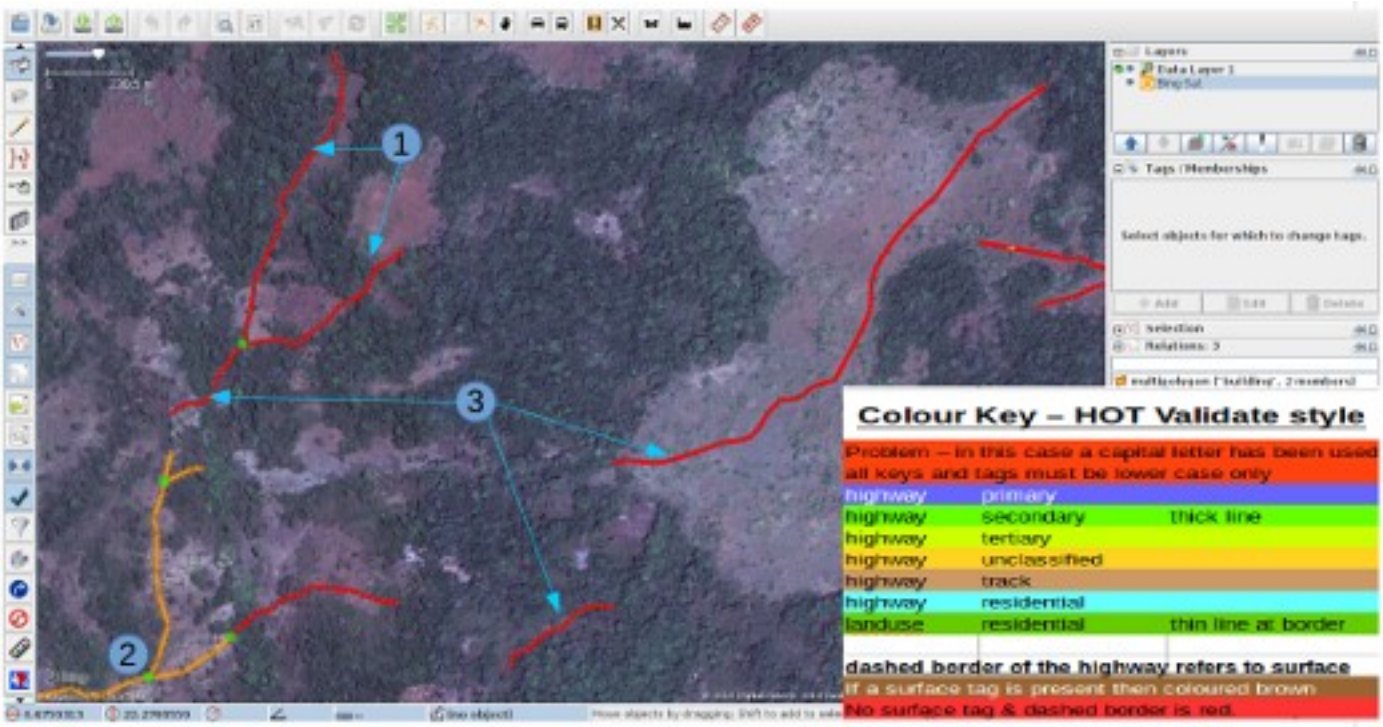
Highways - How to map

1. When tracing highways, ensure you are zoomed in sufficiently. As a starting guide set the scale to about 20 metres, and trace the highway so that your tracing has sufficient points in it to keep it on, or very close to, the road you can see in your satellite imagery. In the screenshot above you can see I have traced the road that had been passed over to me, down, through the trees, and down to another building where it appears to stop. Where the trees are close to the road, and the imagery is obtained by an overhead camera, it appears as if the road narrows as it goes through the trees - however, it is just the effect of the trees obscuring the view, and the road is the same width throughout.
2. I’ve also traced another section of road, making sure that it is connected at each end - iD shows this with a slightly larger and darker coloured dot at the junction. It is important that the roads join and ‘share a common node’ so that routing software will provide the correct guidance.
3. The road is tagged as ‘highway=residential’, and I’ve also added ‘surface=unpaved’.

4. For a full description of tagging within Africa, refer to the wiki page Highway Tag Africa.

   There is a high risk of suffering from conflicts which will prevent you saving your work when working on any highway which extends into other squares where mappers will also be editing it. It is advisable to save all your changes before editing the highway, and then save your changes at very frequent intervals, such as after adding each 6 nodes.

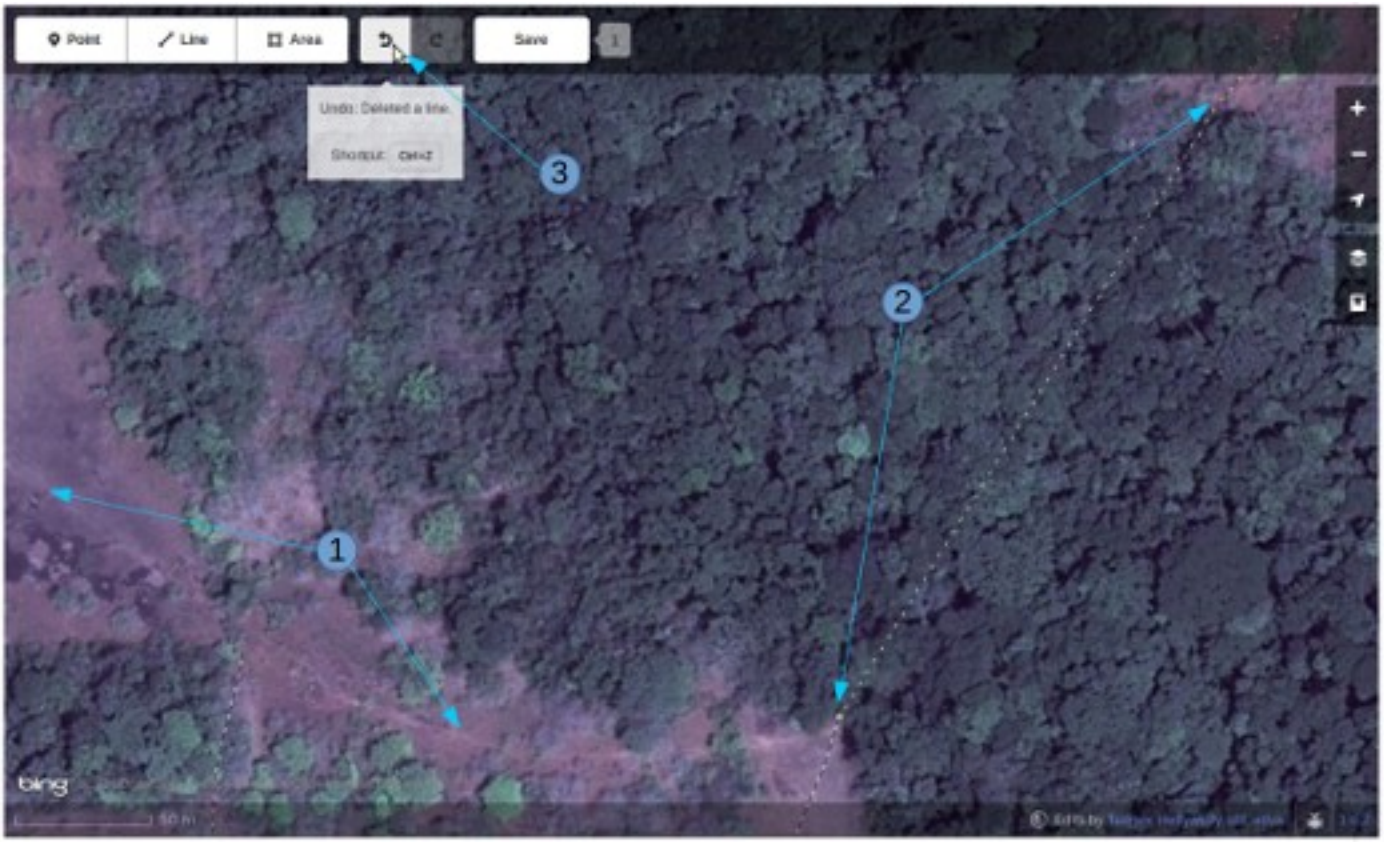
The Highway Network



This screenshot shows JOSM with the HOT-OSM-Validate style in use JOSM styles. Although designed to assist validators, it can be very useful when carrying out initial mapping. Anything that is coloured red has some kind of problem - the remaining colours are explained in the key in this screenshot.

1. This section of highway is coloured red because the tag has been incorrectly typed and a capital letter has been used. The tag should be highway=unclassified, which would have resulted in a pale brown colour in the screenshot.
2. This is part of the highway network for the town to the South West.This network connects to the rest of the highway network of Africa.
3. These sections of highway are ‘isolated’. They do not connect to the town or to an other highways in any way. In their current format they are not very useful & will need further investigation to establish if they can be connected to the rest of the network, or if consideration should be given to deleting them.

Highway or stream?



There are no style views available to assist in using iD, but in this screenshot you can see an area of vegetation and ground. The ground appears to be silt or perhaps even an area of marshland without the water present. The dotted black and white lines represent paths in iD & I have temporarily highlighted & then deleted one of them to show the terrain.

1. highway=path or stream bed. Probably both! highways of all sizes frequently follow a river valley and in many cases they may follow the course of a seasonal river or stream. In this case this appears to be a flood plain area which at the time the satellite imagery was produced was dry, and being used as a path. This would be best tagged as:
   highway=path
   seasonal=yes
   surface=unpaved
2. The path can be clearly seen going towards and into the band of trees and shrubland, but it is not possible to see its exact course through the trees. In these circumstances you can be certain the path, track or highway is present, it is just obscured from your view by the trees. I have mapped this by continuing the path I was tracing where it could be clearly seen on the ground as a straight line through the trees to the clearly visible continuation on the other side. Use this with caution, but in this instance it is obvious that the path is present and its path is likely to be very close to the line I have drawn. This is a more extreme usage - it is more usual to estimate the path of a highway for only a few metres

where your view of it is obscured by one or two trees.

3. Having deleted the path so that I could see the ground clearly, I can easily replace it by using the ‘undo’ feature of iD.

Residential Boundaries

Residential boundaries are used for many purposes in OpenStreetMap.

- The simplest use is to be able to see residential areas at higher zoom levels when viewing OpenStreetMap.org, where they are coloured pale grey in the standard view.
- Where there is not time to map in detail from the outset, the project within the Task Manager will frequently require something similar to this:

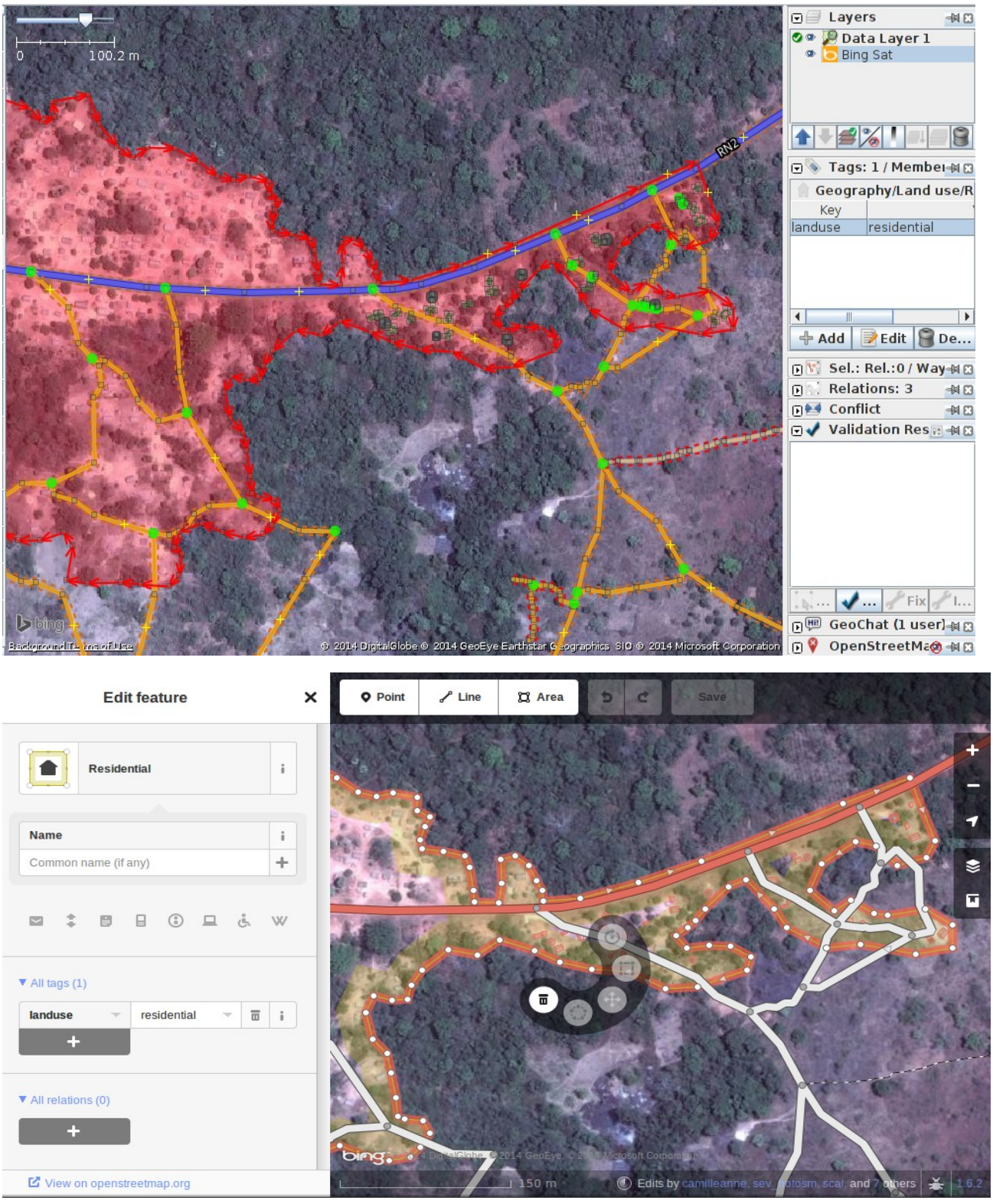
  Map essential infrastructures such as schools, place of worship and markets.
  Trace outbound of settlements and cemeteries.
  We will trace roads later in an other Task.
  + landuse=residential can also be used for statistical purposes, and accurate mapping then becomes important

- If you can establish how many people normally reside in each dwelling, and
  how many dwellings are normally built in a given area, then
  once you have worked out the area covered by a landuse=residential boundary,
  you can establish a very approximate population for that area.
  Estimating the number of aid workers & quantity of medicine now becomes more realistic.
- Place names & boundaries are often imported from other sources, but the location is not always accurate. Once you have a residential boundary the person doing the import can see where the place name should probably be.

landuse=residential - how to map

In an ideal world

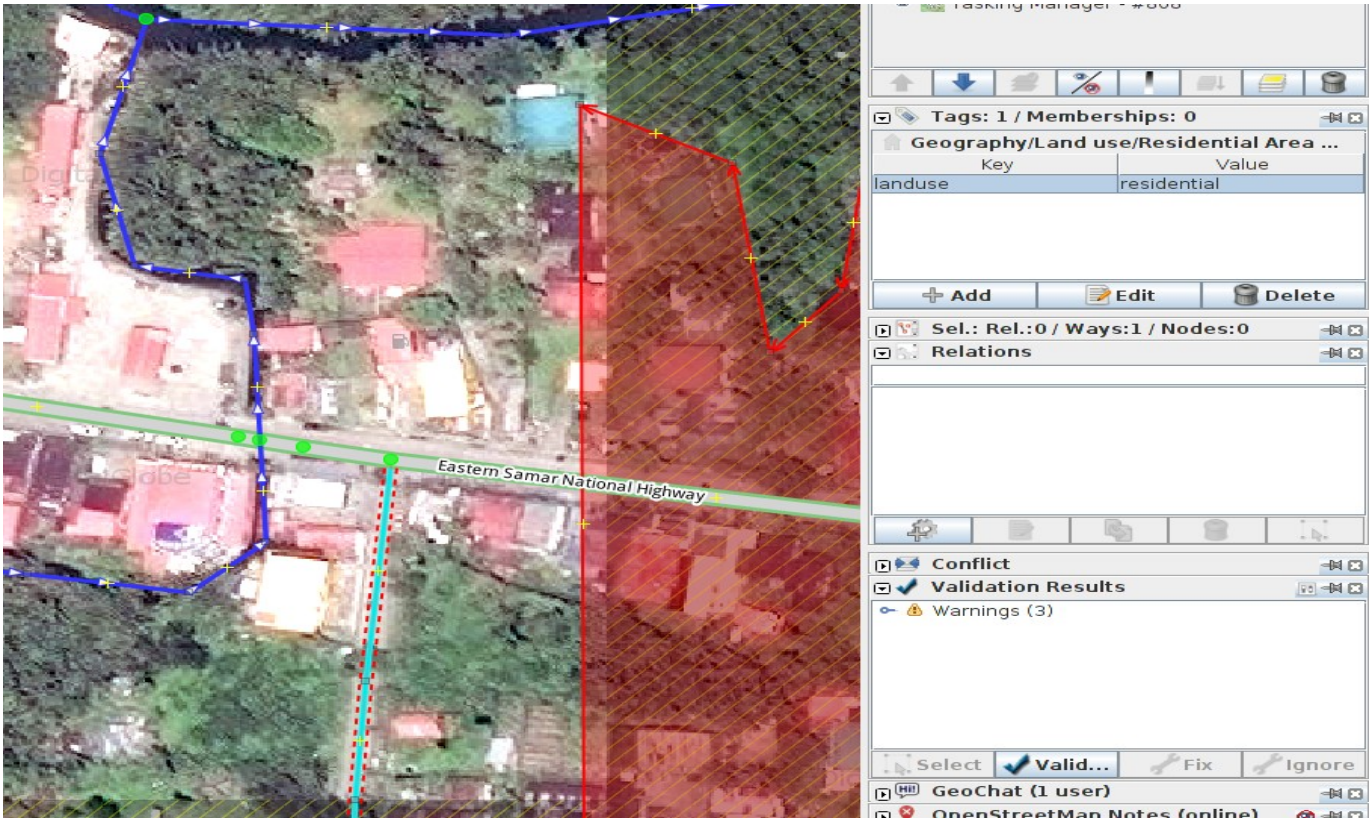
Stage 1 - A decision is taken to map an area, and a mapper quickly puts a very rough landuse=residential boundary around an area,
Stage 2 - The Task Manager project is created & the individual mappers refine the boundary so that it is closer to the buildings etc.



The iD & JOSM screenshots above show a correctly mapped landuse=residential boundary.

1. The boundary needs to be closed, so that the start point of the line (way), joins to the end point.
2. The segments and nodes of the boundary should not join highways, waterways, buildings, or any other feature. *i.e.* it should not share any nodes. But they can cross.
3. The boundary should be fairly close to the buildings & any gardens or yards that form part of the grouping.

In the screenshot below, my square contains part of a landuse=residential boundary. The person who completed the square to my right has continued a landuse=residential boundary through their square, and has then correctly 'handed it over' to me by placing the boundary just within my square for me to establish exactly where it should be in my square.



I will add extra nodes to the boundary, extending it horizontally across my square so that it goes around the buildings , and at the bottom I will continue the boundary as a straight line just inside the square below mine so that the person selecting the square below mine will be able to extend it around any buildings they may have.

This is a difficult operation - you can see only a small part of the whole town / city / village and although you will do your best with the landuse=residential boundary it is extremely likely that a validator who has an overview of several squares will need to tidy up the boundary as best they can after the individual squares have been mapped.

> ***There is a high risk of suffering from conflicts when working on a landuse=residential boundary, as it extends into other squares where mappers will also be editing it. It is***

advisable to save all your changes before editing the boundary, and then save your changes at very frequent intervals, such as after adding each 6 nodes.

Buildings, compounds & barriers

Buildings are added to the map data for a number of reasons;

- The density of buildings in an area gives a very good indication of the number of people residing there.
- The size, shape & location of a building can help to identify it as a potential evacuation or treatment site.
- The size, shape, and relative location of buildings can be used to identify particular locations such as wells, aid stations, schools, etc..
- There is the potential to estimate the degree of damage sustained by a building, which can be used to estimate the potential casualties & level of support that may be required - this is currently (January 2015) under discussion for future use.

Buildings - How to Map

The vast majority of buildings that require mapping by HOT are either based upon rectangular shapes with square corners, or are round. If a building appears to be a mixture of the two, it is more likely you are looking at a building who's outline is obscured by shadow, reflection, foliage or similar.

For some tasks where only an outline of an area is required, the task may specify that buildings can be mapped as nodes, but these situations are now rare.

building=yes

Unless the project instructions specify otherwise, buildings should be tagged **building=yes**

- There can often be a time delay between the satellite imagery being taken, and the mapping being carried out. There is the possibility that the building you are looking at that appears to have no roof, has now been completed & is now in habitation. It is also possible that you are looking at a building with several storeys, the bottom ones being lived in, and the top floor with no roof currently not being lived in.

  Mapping buildings using iD - when you are using the area tool within iD to create the basic shape, you must remember to then change the tag to building=yes. The default setting will merely tag the shape as area=yes.

- JOSM is far faster for mapping buildings - JOSM building tools is explained here.

This screenshot shows part of a square being edited. Note the scale at the bottom of 15 metres - about the figure you should aim at when editing features. When tracing, you are aiming to place the building where it meets the ground:

1. **Round buildings.** In this case they are fairly low in height and their shadow is hardly visible. If you were standing amongst them they would appear like domes. I have mapped & tagged only one of these so far **building=yes**. To quickly add the remaining round buildings in JOSM I would select this one (highlight it), keyboard shortcut *Ctrl+c*, move my cursor to the centre of another round building of the same size, keyboard shortcut *Ctrl+v*. When all of the round buildings of this size have been added in my square I paste a building over a different sized round building, use *Alt+Ctrl* & mouse to resize it to the correct size, copy it & then paste over all round buildings of the same size.
2. **Rectangular buildings.** These particular buildings are casting a noticeable shadow. The shadow can help to identify the shape of a building which is partially obscured by another feature. You will find that many buildings are not so simple, and have a verandah or are 'L' shaped - you must trace the actual shape of the building as this will help to identify it when names & other data is being added as part of the ground survey process.

3. **Barriers - walls (or hedges) of a compound.** Having examined the imagery, zooming in & out until I am satisfied that from the shape of the object (use its shadow as well to identify), I believe this to be a wall, and I have tagged it **barrier=wall**. Alternatives include barrier=fence and barrier=hedge.
4. I have joined the barrier=wall to the building=yes at the corner of the building.

Satellite imagery distorting the building shape.

1. The satellite imagery above, is of a building, but the satellite was not directly overhead, so that the building appears distorted and an end wall is visible in the image. Because of this angle, the apex roof does not appear rectangular. The sun is practically directly above the building, so that the shadow of the building indicated by the arrows from figure 1 does confirm that the building is rectangular.

2. To map this building, create a rectangle extending from the arrows of point 2, to where you estimate the building ends, indicated by point 3 in this image.
