

## 2.6 Resolving conflicts in JOSM

This section provides:

- An overview of data conflict in OpenStreetMap
- Step-by-step instructions for resolving data conflict in JOSM
- Guidance on preventing and managing data conflict

*The following materials are designed to assist project managers and others leading trainings and workshops. However, this material is also suitable for individuals interested in learning how to validate OSM data in JOSM.*

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### Overview

Other contributors may have edited the same features as you in JOSM. Alternatively, different data may have been collected in the field for the same features. Both situations cause data conflicts during the upload process. Therefore, it is critical for digitizers to learn about data conflicts in OpenStreetMap, conflict types, and how to fix them using JOSM.

### Resources and Training Materials

This section features a selection of resources targeted at project managers, trainers, or even self-learners on the topic(s) outlined above.

*The following section is designed to serve as self-paced material that can be used both during trainings, and by self-guided learners.*

### Resolving Data Conflicts in JOSM

#### Objectives:

- Participants can explain data conflicts on OpenStreetMap
- Participants can describe the different types of conflict in JOSM
- Participants can fix data conflicts using JOSM
- Participants learn how to avoid data conflicts in JOSM

#### 1. Data Conflicts in OpenStreetMap

While uploading your edits in JOSM (learn more about this in **2.4 Editing with iD and JOSM**), you might have received a message like this:

Example of Conflict Detection Window in JOSM

Example of Conflict Detection Window in JOSM

This indicates a data conflict in OSM. A conflict has occurred because you have been editing the same data/object(s) as another contributor simultaneously. Thus, the other contributor has uploaded their changes first and they have been received by the OSM Server. You are attempting to upload the same data/object(s) with your own changes. Therefore, your changes are automatically rejected by the server because it causes confusion.

You will come across data conflicts in JOSM when you are editing, adding, or deleting objects which are being worked on by another contributor. The other contributor has uploaded their changes slightly before you. Therefore, when you try to upload your changes, it causes confusion for the OSM Server because it does not know which changes are correct. If this happens, the data conflict must be fixed before you upload your changes.

Example why conflict happens in JOSM Example why conflict happens in JOSM

Example why conflict happens in JOSM

The image above illustrates a potential conflict stemming from the different positioning of the rectangular object in **My version** and **Their version** (which has already been received by the server). To resolve this conflict, you have to choose either 'My Version' or 'Their Version' (see section 3. Fixing Data Conflict in JOSM).

## 2. Types of Data Conflict in JOSM

### 2.1 Conflict of Properties

A conflict of properties occurs when an object has been moved or deleted and one or more of its nodes is in a different location than the other version.

Conflict Property Window

Conflict Property Window

The image above illustrates a conflict of properties in JOSM. In **My version** the object is square and in **Their version** a corner nodes has been deleted. To fix this, you need to choose which version is correct.

### 2.2 Conflict of Tags

A conflict of tags occurs when different tags have been assigned to the same object by multiple contributors. The tag can be deleted or changed to the other version.

Conflict of Tag in JOSM

Conflict of Tag in JOSM

The image above illustrates varied tags for the same object between two versions in JOSM. **My version** has Rumah Sakit tag (*amenity = hospital*) and a name value of 'Rumah Sakit Tebet Raya'. While **Their version** has tag (*amenity = clinic*) and a name value of 'RS Tebet Timur'. You have to choose which version has the correct information before uploading to the server.

### 2.3 Conflict of Nodes

A conflict of nodes occurs when there are differences in the direction of a way or if nodes in a way have been deleted or moved.

Conflict of Nodes in JOSM

Conflict of Nodes in JOSM

## 3. Fix Conflict Data in JOSM

Fixing conflict data in JOSM is quite simple, even though most OSM contributors do find it confusing. Essentially, you have to decide which is the correct version and choose to **keep your version** or delete your version and **use their version**. To fix conflict data in JOSM:

- When the conflict window appears, you might be inclined to select the **Synchronize node 5,960,126 only** option. However, this option will only fix the conflict in one node. Instead, select **Synchronize entire dataset** so you can resolve all conflicting nodes in one go.

Conflict Detection Window in JOSM

Conflict Detection Window in JOSM

- JOSM will then display the number of conflicts, select **OK**.

Number of detected conflict

Number of detected conflict

- There is a list of conflicts in the **Conflict** panel to the lower right corner of JOSM. You can choose which conflict you want to fix and select **Resolve**.

Conflict panel to fix detected conflict

Conflict panel to fix detected conflict

- When you select the **Resolve** button, the conflict window appears and shows details about the conflict. This might look complicated but it is actually fairly straightforward. You can tell which conflict type has been detected because a red square symbol will display in the corresponding tab (either properties, tags or nodes). You can look at a list of changed or moved coordinates as shown in the image below.

A Window to Resolve Conflict

A Window to Resolve Conflict

- You can only resolve one conflict at a time. If you are sure that your version is the correct one (you edit / add the object based on your field survey mapping or you already know the object personally), then choose **My Version (local dataset)**. However, if you are not sure about your version and think that the other version is more convincing select **Their version (server dataset)**. Select: blue arrow in the version you think is right. If the conflict has been fixed then the symbol in the tab will change to: green check

Choose one of the versions to resolve data conflict

Choose one of the versions to resolve data conflict

- After you have selected the right version, make sure the color of the conflict box has changed from pink to green. This indicates you have successfully fixed the conflict.

Difference color between original conflict and resolved conflict

Difference color between original conflict and resolved conflict

- Select **Apply Resolution** as shown in the picture above. When you have resolved all conflicts, you can upload your OSM changes.

Resolved conflict window

Resolved conflict window

- In the conflict panel, you can activate **Conflicts** window. This window shows total number of conflict on all of your data when you click the **Resolve** button. You also can use another way by right click on one of the conflict and choose **Resolve to my versions** or **Resolve to their versions**. To find the object you can right click and click **Zoom to Conflict**. This will be very useful if you have many conflicts and need to check and fix them one by one.

Window of list conflict on JOSM\_

Window of list conflict on JOSM\_

Note : You can not upload your changes until you have resolved all of your conflict and list of conflict in the conflict window has empty. Keep in mind, you need to be careful when resolving the conflict and need to check it one by one to make sure everything is correct as it should.

#### 4. Avoiding Data Conflict in JOSM

You can do some things to avoid conflict when uploading your data into OSM server, as follows:

- **Upload your changes continuously**

To minimize conflict, you can upload your changes continuously. For instance, if you mapped 100 buildings but does not have a good internet connection, you should upload your changes for every 20 buildings or every 15 minutes. The reason for this is because the conflict would have bigger possibility to occur if you upload when it is finished. The longer you waiting to upload the more possibility the data could possibly have edited and uploaded to the server by other contributors. Therefore, the probability of conflict for your edit will increase.

If you want to save your OSM data and upload it later, you can update your OSM data first before you upload it. This should be done so you can get the latest OSM data from the server before you upload it. You can do that by click **File → Update data** or **Update Modified** then waiting until the updating process is finished. After that, you can upload your changes with **Upload data** options **File** menu or just click icon on *menu* bar.

Update data options in file menu

Update data options in file menu

- **Edit Only in Downloaded Area**

You can do mapping in specific area to minimize risk of conflict with avoid editing objects outside your downloaded area in JOSM. This can prevent two or more users editing in same area. Notice that diagonal lines around your downloaded area is an area you need to avoid to edit in JOSM.

Downloaded Area

Downloaded Area (black) dan Outside Downloaded Area (diagonal lines)

After you download the data, your editing area is only area inside which does not have diagonal lines. The area outside you editing area most likely currently editing or have been edited by other contributors. Avoid edit in the area will reduce the risk of getting conflict in your data.

- **Using Tasking Manager**

If you want to do collaborative mapping, you can use *Tasking Manager*. It will help you to divide your mapping area into task grids. Thus, you can choose your mapping area grid easily without worry getting same area with other OSM contributors because once you select certain grid, it will be locked and cannot choose by other contributors.

Any mapping volunteer in the area can choose one grid that they want and after finish they can mark the grid as completed mapped. This will allow a lot of people to map certain area in same time without getting worried to get conflict.

Tasking Manager Interface

Tasking Manager Interface ([tasks.openstreetmap.id](https://tasks.openstreetmap.id))

## **Summary**

If you have followed and finished to practice all the steps in this chapter, You have successfully understand about data conflict in JOSM and how to fix it. Moreover, you also have learned about types of conflict and how to avoid them in JOSM. Congratulations!