

Example of Conflict Detection Window in JOSM

Figure 1: Example of Conflict Detection Window in JOSM

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.

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

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 JOSMExample why conflict happens in JOSM

Figure 2: Example why conflict happens in JOSMExample why conflict happens in JOSM

Conflict Property Window

Figure 3: Conflict Property Window

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 Conflicts 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

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

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

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

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

Number of detected conflict

- In the 'Windows' menu, select **Conflict** to show the conflict window. This activates 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 of Tag in JOSM

Figure 4: Conflict of Tag in JOSM

Conflict of Nodes in JOSM

Figure 5: Conflict of Nodes in JOSM

Conflict Detection Window in JOSM

Figure 6: Conflict Detection Window in JOSM

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

- 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

- 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

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

Resolved conflict window

- You can also resolve conflicts by right clicking one in the conflict window and selecting either **Resolve to my versions** or **Resolve to their versions**. You can also right click and **Zoom to Conflict**.

Window of list conflict on JOSM_

Note : You cannot upload changes until you have resolved all conflicts. Be careful when resolving the conflicts and check them one-by -one.

4. Avoiding Data Conflict in JOSM

To avoid conflicts:

- **Upload your changes continuously**

To minimize conflicts, you should frequently upload. Upload your changes every 20 buildings or every 15 minutes. The longer you wait to upload the higher the chance that another contributor has edited and uploaded the same data.

You can update your OSM data first before uploading. This allows you to retrieve the latest OSM data from the server before uploading. Select **File → Update data** or **Update Modified** and wait until it has finished updating. Then you can upload your changes.

Update data options in file menu

- **Edit Only in Downloaded Area**

Number of detected conflict

Figure 7: Number of detected conflict

Conflict panel to fix detected conflict

Figure 8: Conflict panel to fix detected conflict

A Window to Resolve Conflict

Figure 9: A Window to Resolve Conflict

Restrict editing to your downloaded area to minimize conflict risk in JOSM. The area outside of your downloaded area is marked by diagonal lines, do not edit this region.

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

- **Using *Tasking Manager***

If you want to do collaborative mapping, you can use *Tasking Manager*. It divides a project area into a grid of tasks. Once a task is selected it is locked and cannot be chosen by another contributor. This allows many people to work in the same area at the same time while limiting the chance of conflicts.

Tasking Manager Interface (tasks.openstreetmap.id)

Summary

If you have followed all the steps in this chapter, you'll have a good understanding of data conflicts in JOSM - congratulations!

Choose one of the versions to resolve data conflict

Figure 10: Choose one of the versions to resolve data conflict

Difference color between original conflict and resolved conflict

Figure 11: Difference color between original conflict and resolved conflict

Resolved conflict window

Figure 12: Resolved conflict window

Window of list conflict on JOSM_

Figure 13: Window of list conflict on JOSM_

Update data options in file menu

Figure 14: Update data options in file menu

Downloaded Area

Figure 15: Downloaded Area

Tasking Manager Interface

Figure 16: Tasking Manager Interface