

Integrating SimDiff with git + GitExtensions

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Introduction

Git is a distributed version control system. The primary interface for working with git is the command-line, using commands such as `git commit`, `git push`, etc. However, there are a number of GUI tools that have been built on top of the command line that provide a more convenient interface for working with a repository. Some of these interfaces support interactive diff and merge tools - others do not.

The following instructions explain how to configure SimDiff for use with git while using the Git Extensions GUI tool.

The configuration for this Git client requires the usage of Tool Selector.

ToolSelector is a utility program developed by EnSoft that can be used to select between one or more configured tools based on certain properties of the input arguments (e.g. file type). For more information about ToolSelector, please refer to the `ToolSelector User Guide.pdf` located at your ToolSelector directory (by default, `C:\Program Files\EnSoft\SimDiff\utils\toolselector`).

Note: if you are using a SimDiff version older than 2020a.2, then the ToolSelector directory is `C:\Program Files\EnSoft\SimDiff\utils\toolselector-20120215-1803`

Configuration

1. Download `gitExtensions-SD4.piz` from <https://www.ensoftcorp.com/simdiff/repository/gitExtensions-SD4.piz>, rename it as `gitExtensions-SD4.zip` and unzip it.
2. Copy the extracted files to your toolselector directory (by default, `C:\Program Files\EnSoft\SimDiff\utils\toolselector`).
3. Configure Git Extensions' external diff/merge tools as follows:
 - o Open Git Extensions
 - o Click *Tools > Settings*
 - o Enter the following information in *Git Config* section under *Git Extensions* configuration (as shown in image below)

Mergetool: `simdiff`

Path to mergetool: `C:/Program`

`Files/EnSoft/SimDiff/utils/toolselector/toolselector.exe`

Mergetool command: `"C:/Program`

`Files/EnSoft/SimDiff/utils/toolselector/toolselector.exe" -profile=3way-merge $PWD $MERGED $REMOTE $BASE $LOCAL`

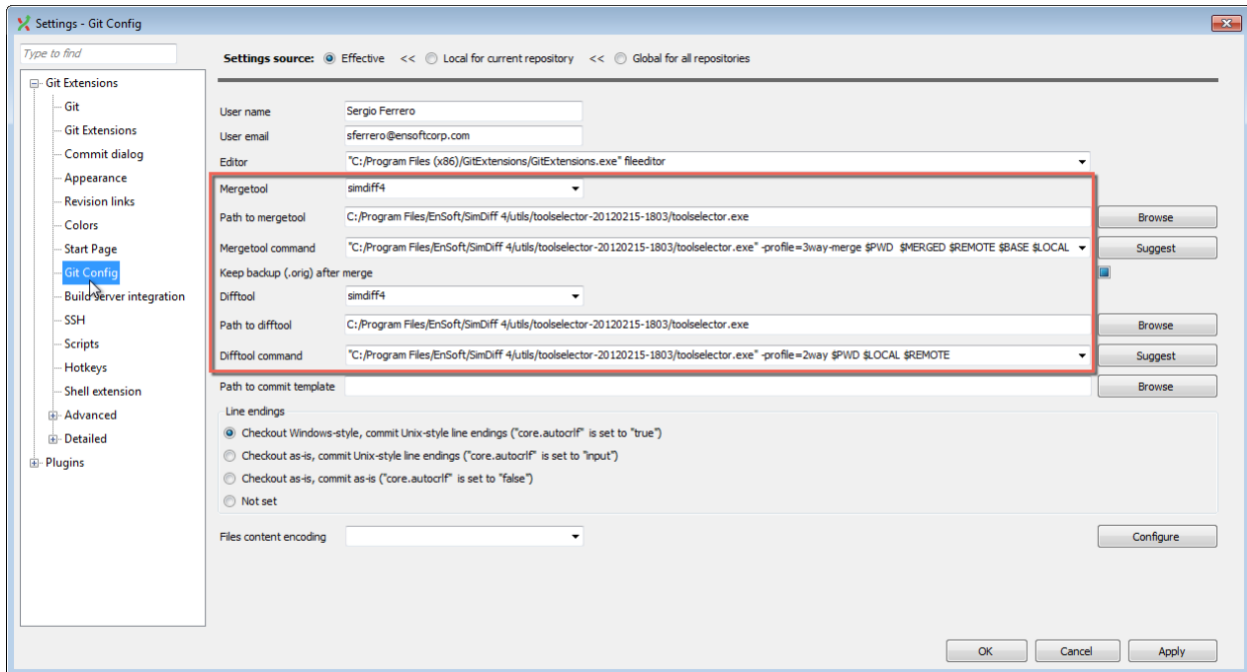
Difftool: `simdiff`

Path to difftool: `C:/Program`

`Files/EnSoft/SimDiff/utils/toolselector/toolselector.exe`

Difftool command: `"C:/Program`

`Files/EnSoft/SimDiff/utils/toolselector/toolselector.exe" -profile=2way $PWD $LOCAL $REMOTE`

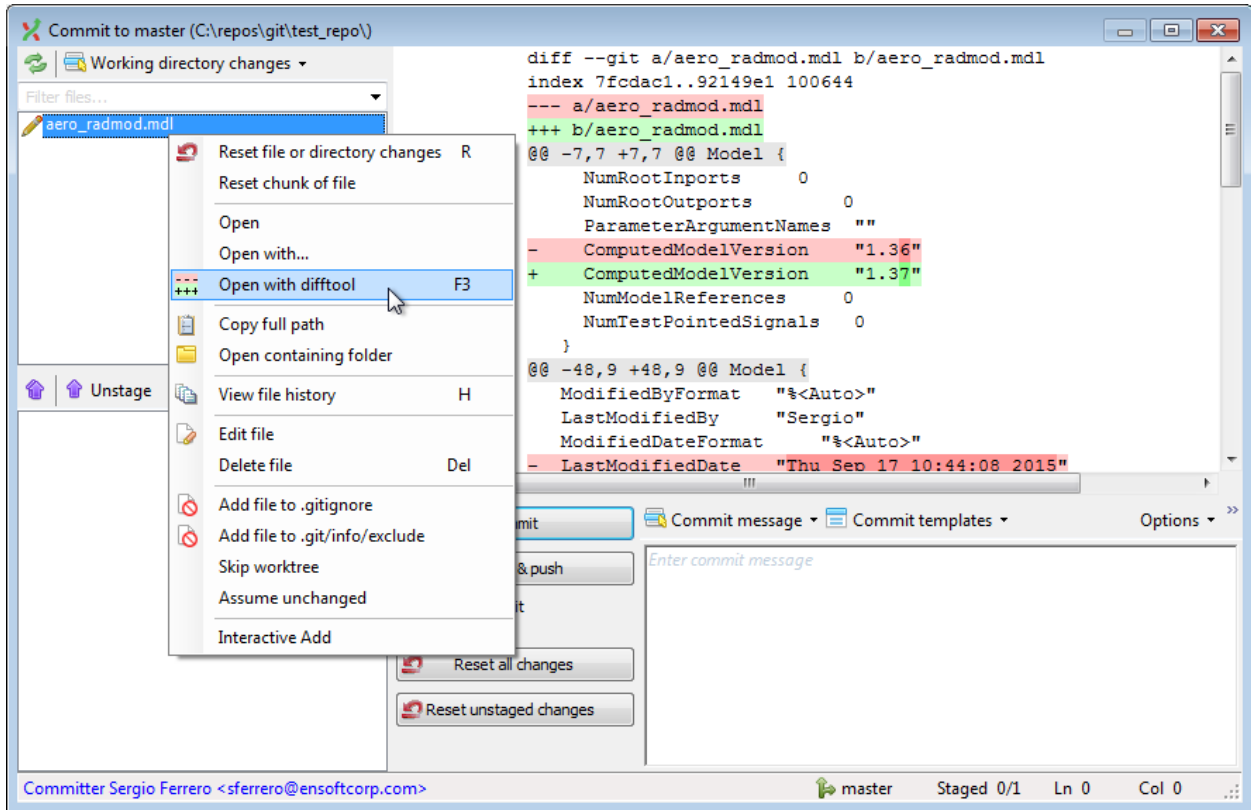


Notes

- If SimDiff and ToolSelector are not installed to their default locations, you will need to modify the paths given in step 3 above.
- If ToolSelector is installed to a location other than its default location within the SimDiff directory, you will need to update `simdiff-cd.bat` with the correct absolute or relative path to `simdiff4.exe`.
- We strongly recommend using a 3-way diff as part of your merge process, because a 3-way diff tells you not only what differs between two versions of a model, but also which changes were made in which model. 3-way diff is included in all editions of SimDiff.

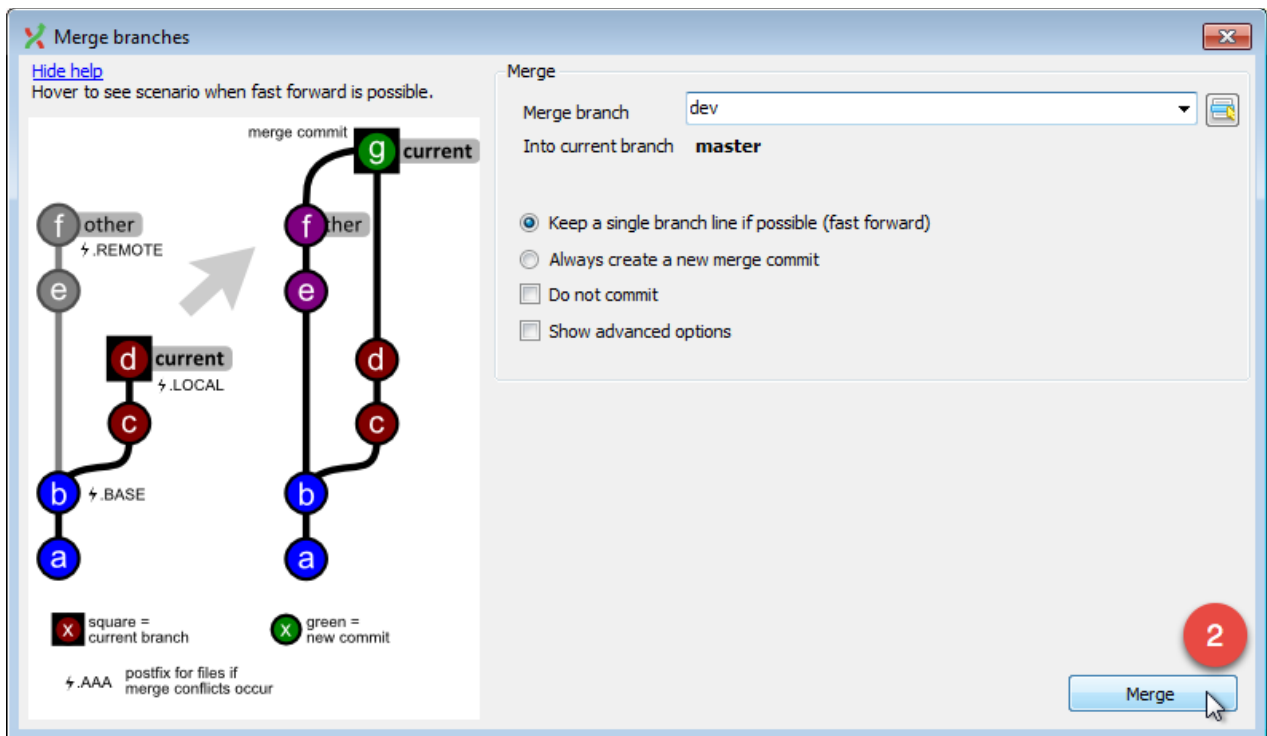
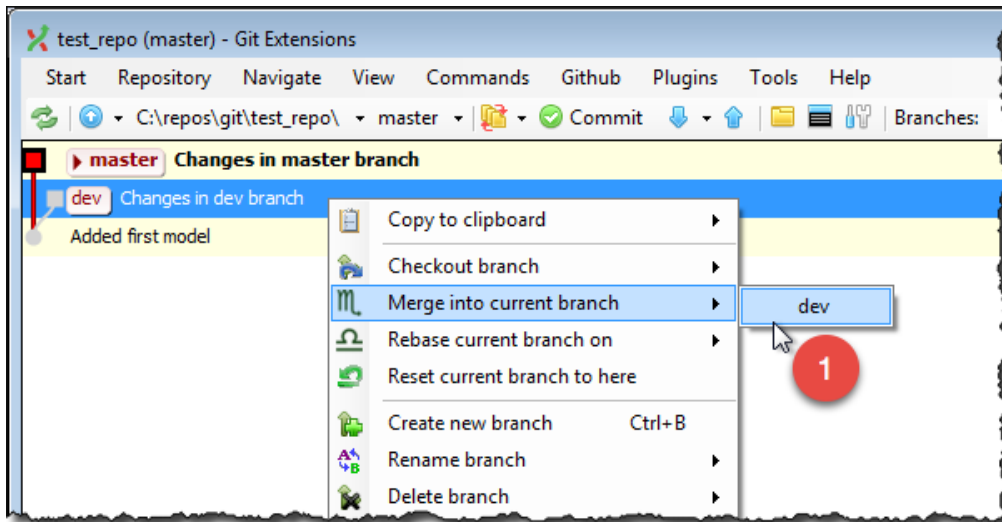
Usage

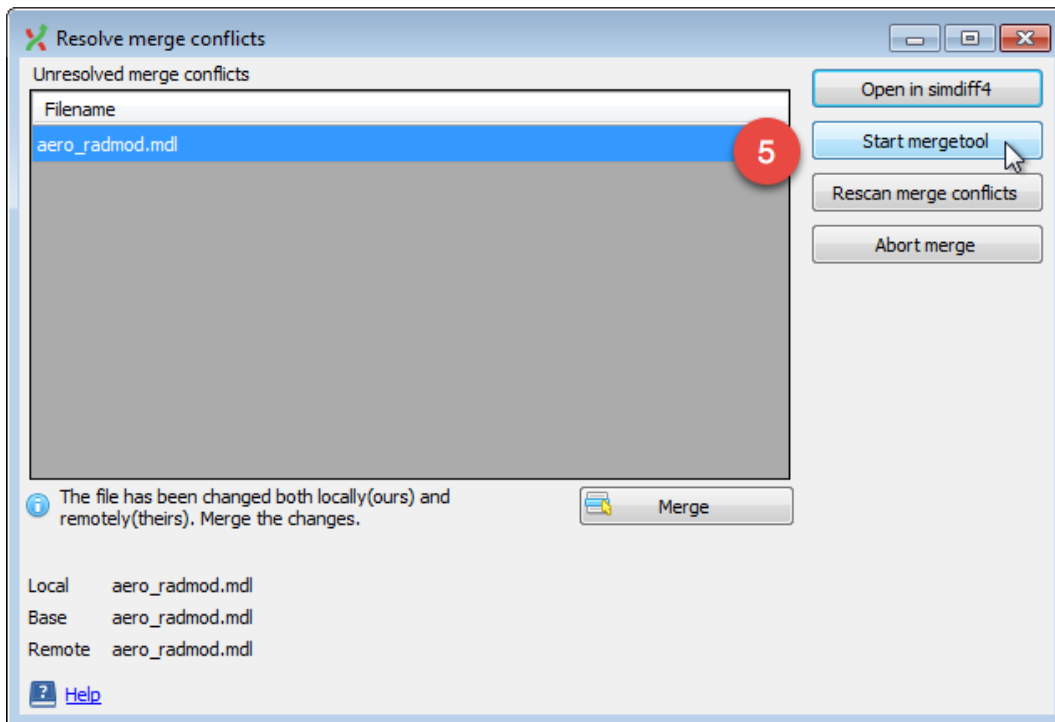
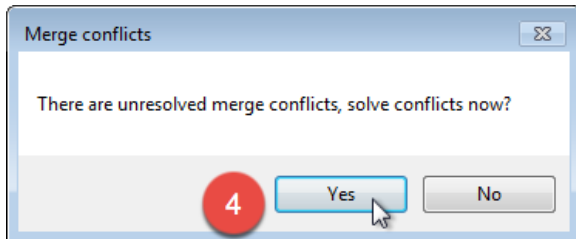
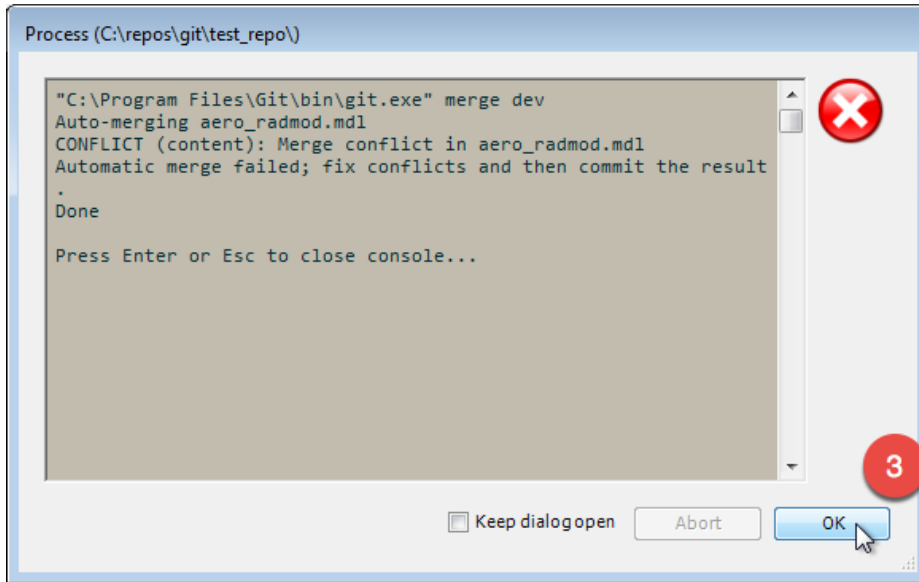
To visualize differences between 2 versions of a model, you can click the *Open with difftool* menu option and Git Extensions will open SimDiff to visualize the differences. The image below shows this option when comparing an unstaged file with the copy in the repository.



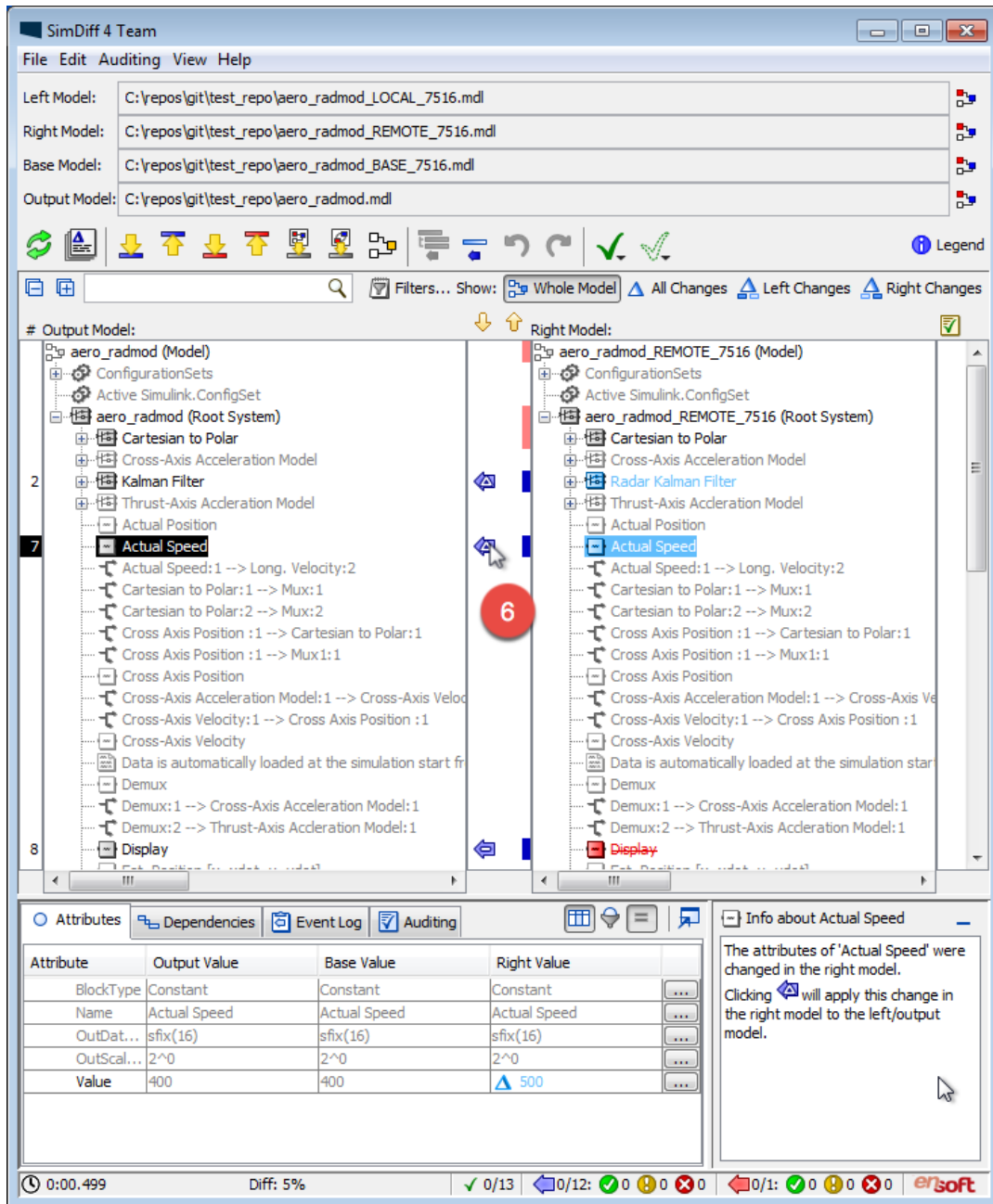
Similarly, SimDiff can be launched when Git Extensions detects a merge conflict. This section shows the workflow to be followed when merging a branch to the currently checked out branch.

To start, right click the branch to be merged and follow steps described in the images below.

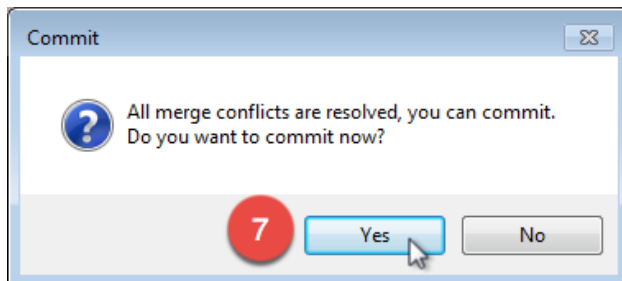


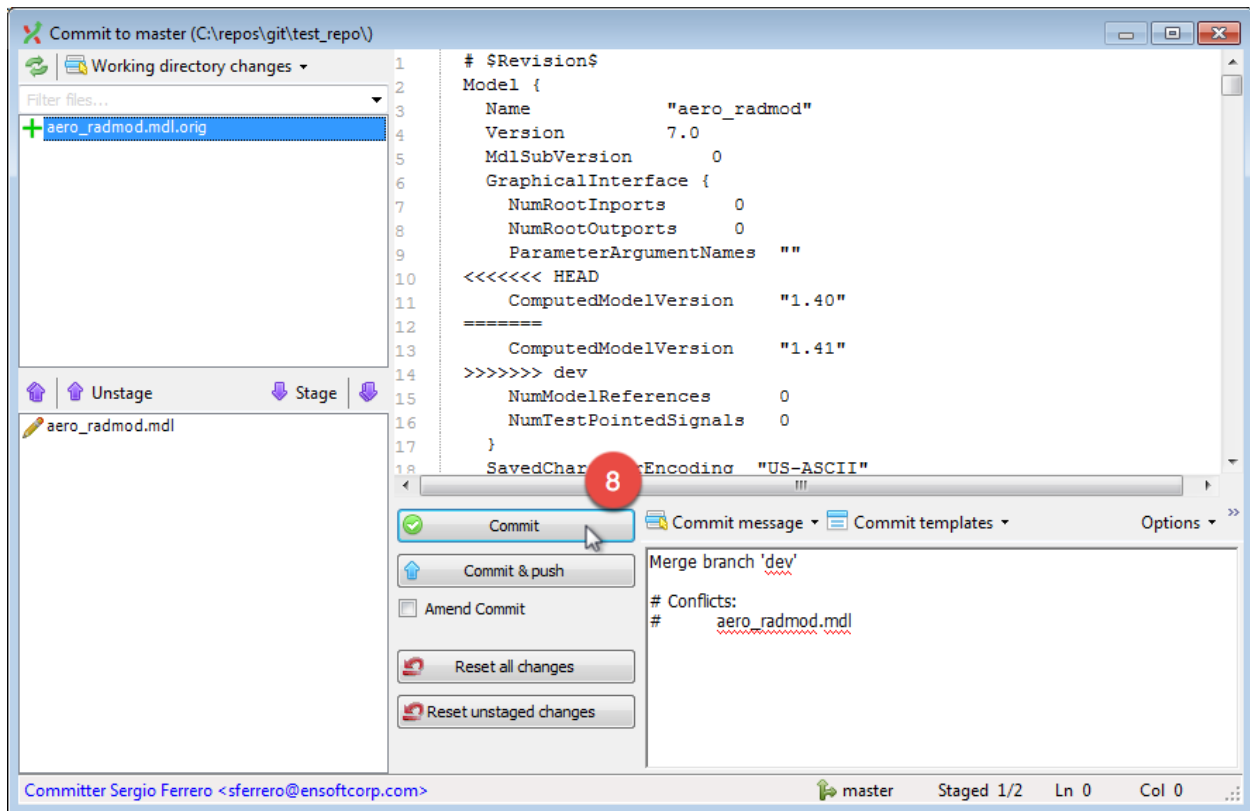


In this dialog, click *Start mergetool* button to launch SimDiff to merge the changes.



Use SimDiff to merge the changes. Once you are done, save the model from the Simulink window and close SimDiff. The next dialog will show up.





Finally, commit the merged model.