{{lastupdated_at}} by {{lastupdated_by}}

Git workflow

We are using git as version control system for the GammaLib code and GitLab to manage the git repositories.

Every developer will have an own copy of the GammaLib code in the git repository, hence there is no need (and even no possibility) to push to the gammalib repository. As a developer you will fork the gammalib project, create a feature branch and add some new code (or correct a bug), and issue a pull request so that your change gets included in the trunk. This is identical to the workflow that you will follow when using GitHub.

Before you start

Make sure you configured your Git using your user name and e-mail address (you only need to do this once on your machine):

```
$ git config --global user.name "John Doe"
$ git config --global user.email johndoe@example.com
```

In addition, you may add

```
$ git config --global http.sslverify "false"
```

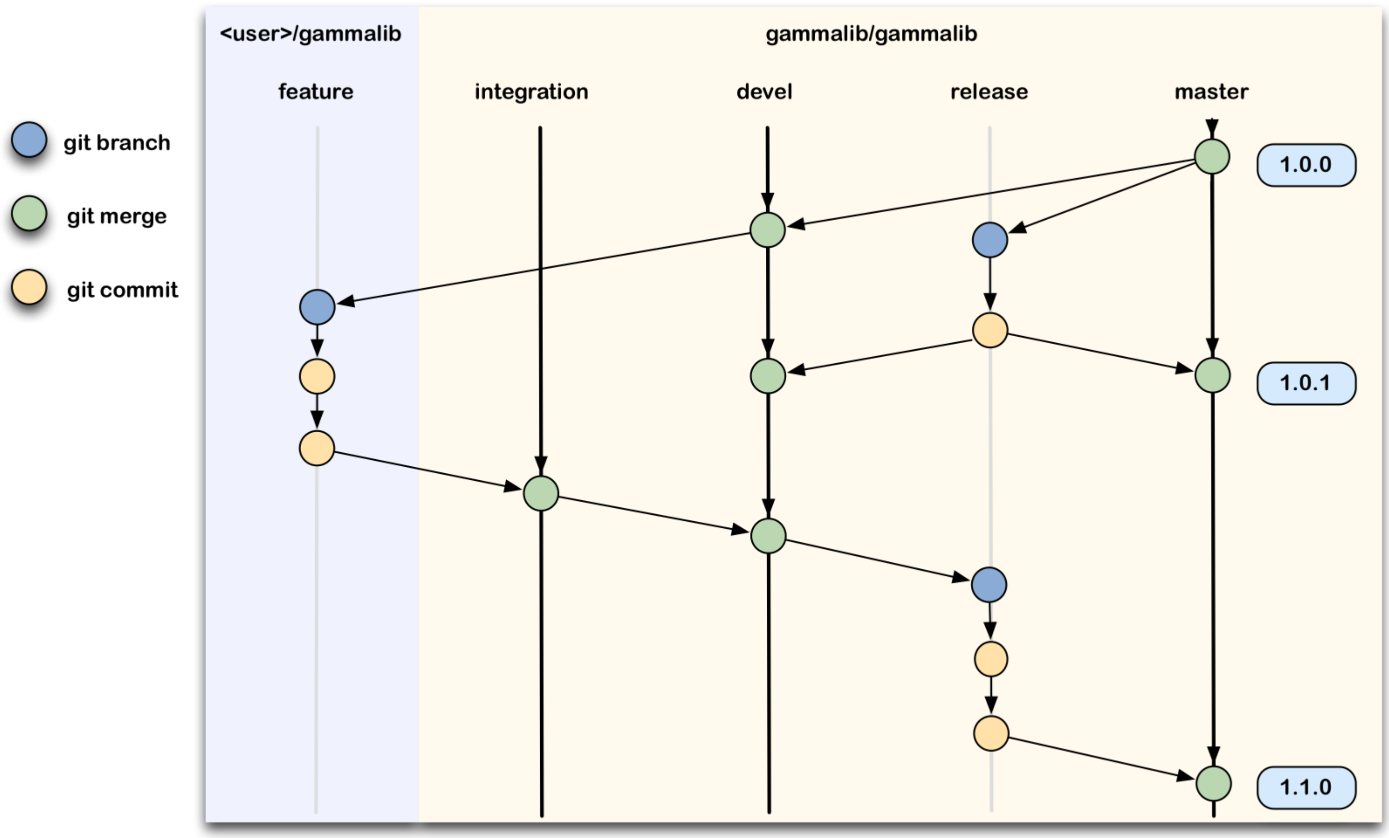
so that you have no SSL certificate error when you access Git.

Overview

The figure below illustrates the git workflow that we use for the GammaLib development. Permanent branches are shown as black lines, temporary branches as grey lines. There are three permanent branches in the central git repository:

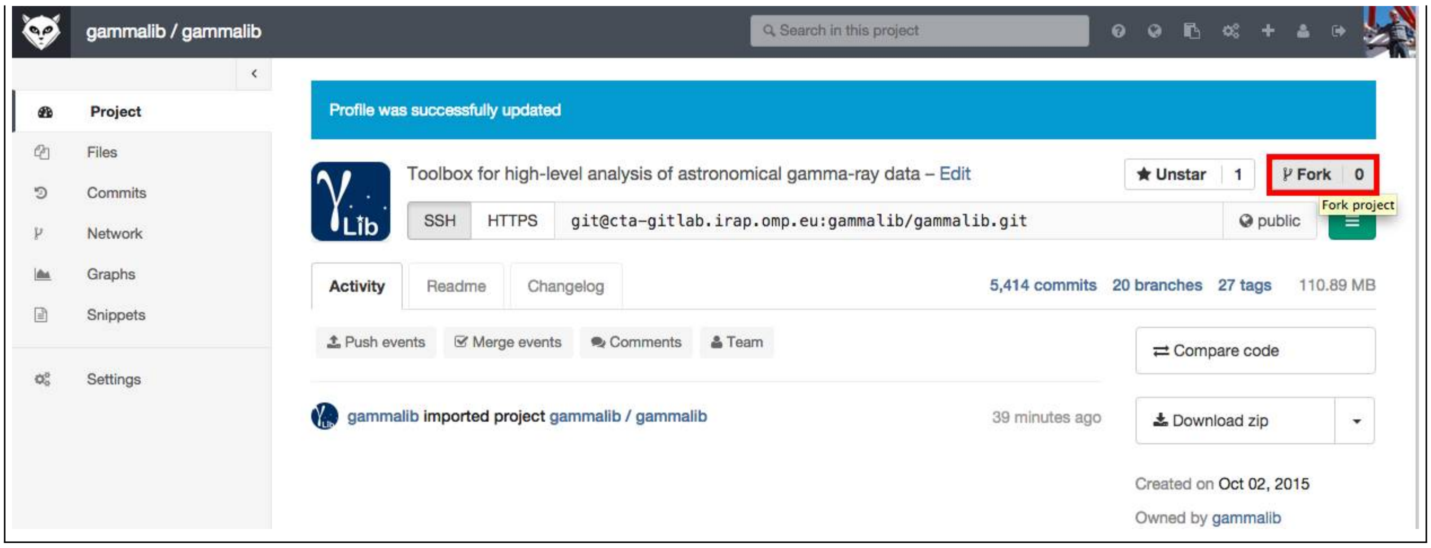
- the master branch that holds the latest release
- the devel branch that is the trunk on which development progresses
- the integration branch that is used for code integration

A temporary release branch is used for hotfixes and generally for code testing prior to any release. As developer you will fork the GammaLib repository in your private GitLab area and work on temporary feature branches.



Forking the project

As the first step you need to create a fork of the project. Connect to GitLab with your Redmine user name and password (your user name on Redmine and GitLab is identical), select the GammaLib project and click on "Fork" (highlighted by the red box below):



Profile was successfully updated

Toolbox for high-level analysis of astronomical gamma-ray data – Edit

git@cta-gitlab.irap.omp.eu:gammalib/gammalib.git

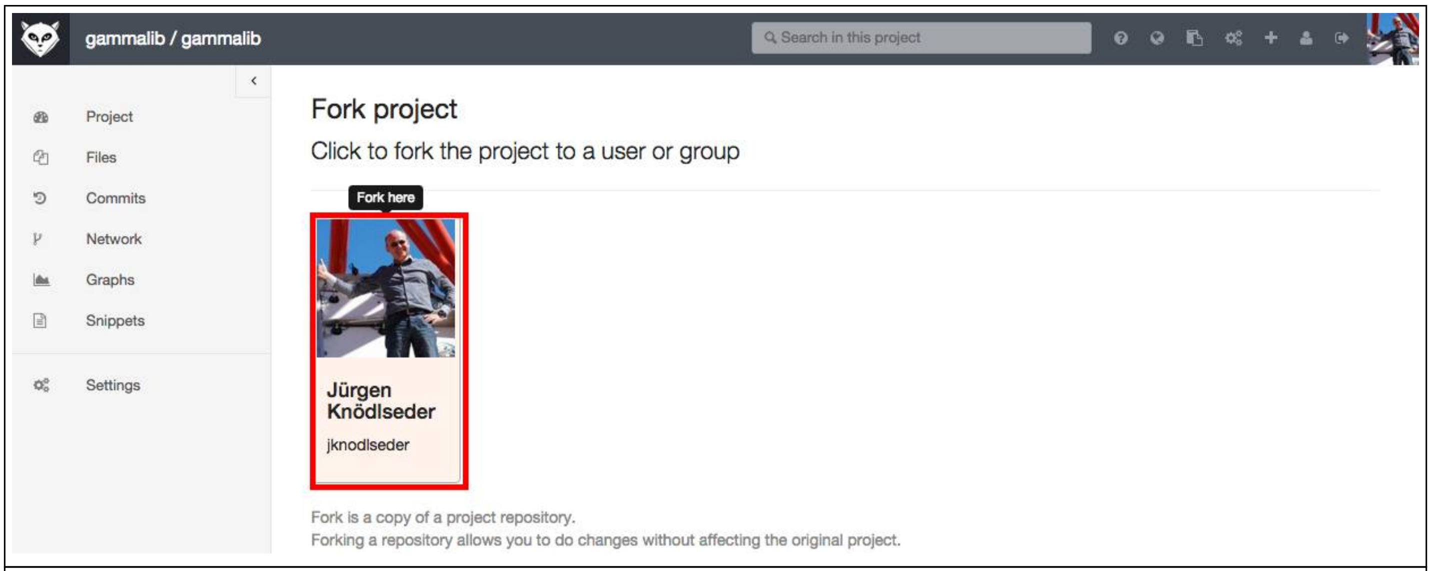
5,414 commits 20 branches 27 tags 110.89 MB

gammalib imported project gammalib / gammalib 39 minutes ago

Created on Oct 02, 2015

Owned by gammalib

This brings you to a screen that invites you to fork (i.e. copy) the project to your user account. Click on your user (highlighted by the red box below):



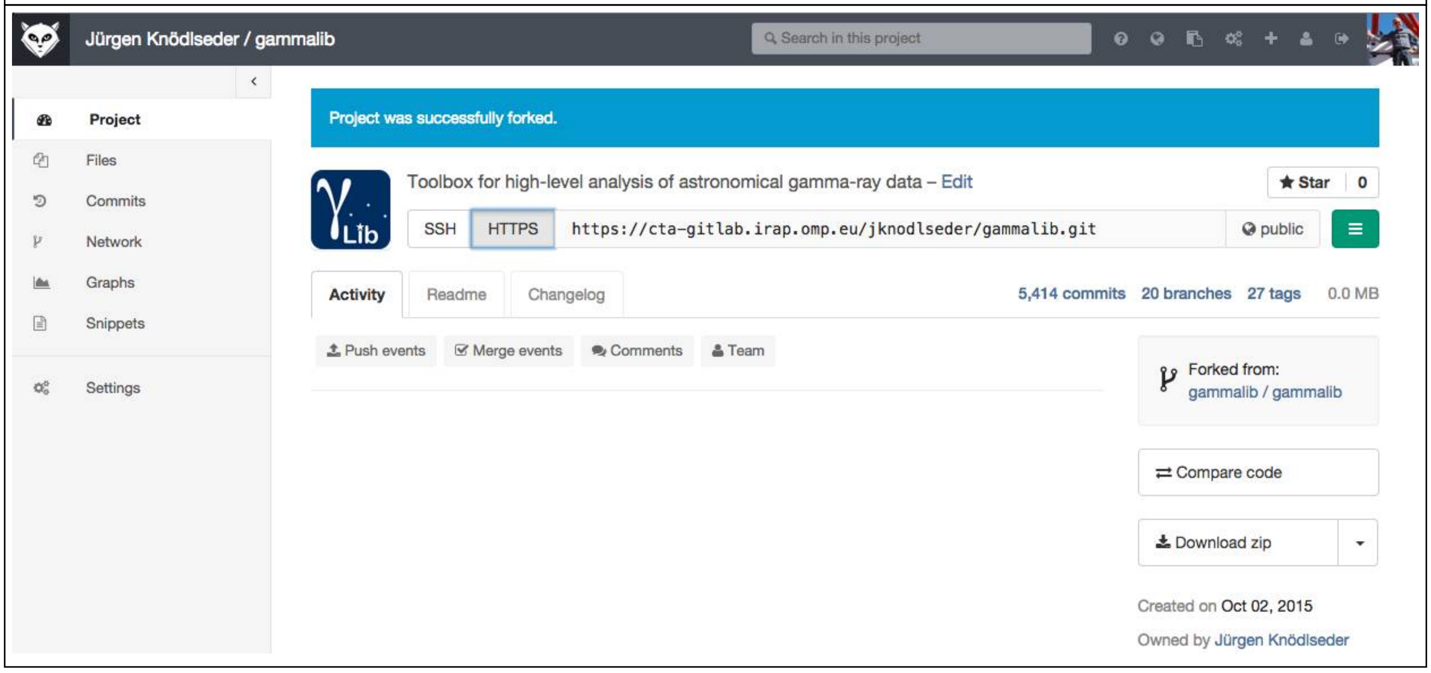
Fork project

Click to fork the project to a user or group

Jürgen Knödlseder

jknodlseder

Fork is a copy of a project repository.
Forking a repository allows you to do changes without affecting the original project.



Project was successfully forked.

Toolbox for high-level analysis of astronomical gamma-ray data – Edit

https://cta-gitlab.irap.omp.eu/jknodlseder/gammalib.git

5,414 commits 20 branches 27 tags 0.0 MB

Forked from: gammalib / gammalib

Created on Oct 02, 2015

Owned by Jürgen Knödlseder

After a short while a fork will be created that now is under your ownership. You can access this fork through the HTTPS protocol at the address https://cta-gitlab.irap.omp.eu/<user>/gammalib.git where <user> needs to be replaced by your user name (your user name on Redmine and GitLab is identical). For the example below, you create a clone by typing in a shell:

```
$ git clone https://cta-gitlab.irap.omp.eu/jknodlseder/gammalib.git
$ git init
```

We recommend adding the main gammalib repository as a remote repository named upstream so that you can fetch the latest code version before you start a new feature:

```
$ git remote add upstream https://cta-gitlab.irap.omp.eu/gammalib/gammalib.git
```

Modifying or adding code

To work on a feature or to correct a bug you step in the gammalib directory that was created after cloning and you create a new feature branch using

```
$ git pull upstream devel
$ git checkout -b 9101-correct-nasty-bug
```

The first command pulled in the latest changes from the main gammalib repository. Note that a branch name should always start with the number of the issue you work on and a short description what you actually are planning to do.

Suppose that there is a bug in the inst/cta/src/GCTAModelIrfBackground.cpp file. After correcting the bug you need to stage the change for commit using

```
$ git add inst/cta/src/GCTAModelIrfBackground.cpp
```

and then commit the change using

```
$ git commit -m "Fixed the nasty bug (#9101)"
```

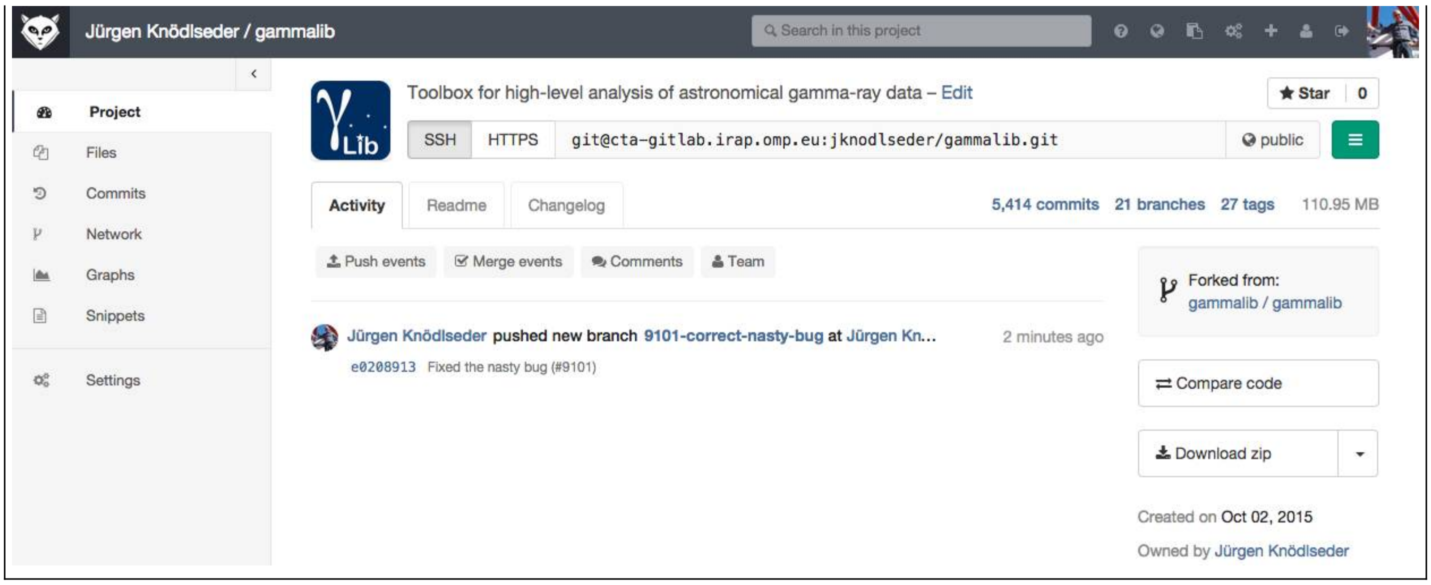
where the message in hyphens should be as detailed as possible (the example here is definitely not very good). Please also attach the issue number in the commit message. This allows tracking which issues were in fact fixed by a given commit.

Now you can push your change into the git repository using

```
$ git push origin 9101-correct-nasty-bug
```

Note that the origin argument specifies where to push the change (origin means to the same repository where you have cloned from), and the 9101-correct-nasty-bug argument gives the name of the branch you want to push.

You can now verify on GitLab that a new branch exists in your project:


Jürgen Knödlseder / gammalib

Toolbox for high-level analysis of astronomical gamma-ray data – Edit

SSH HTTPS git@cta-gitlab.irap.omp.eu:jknodlseder/gammalib.git public

Activity Readme Changelog 5,414 commits 21 branches 27 tags 110.95 MB

Jürgen Knödlseder pushed new branch 9101-correct-nasty-bug at Jürgen Kn... 2 minutes ago

e0208913 Fixed the nasty bug (#9101)

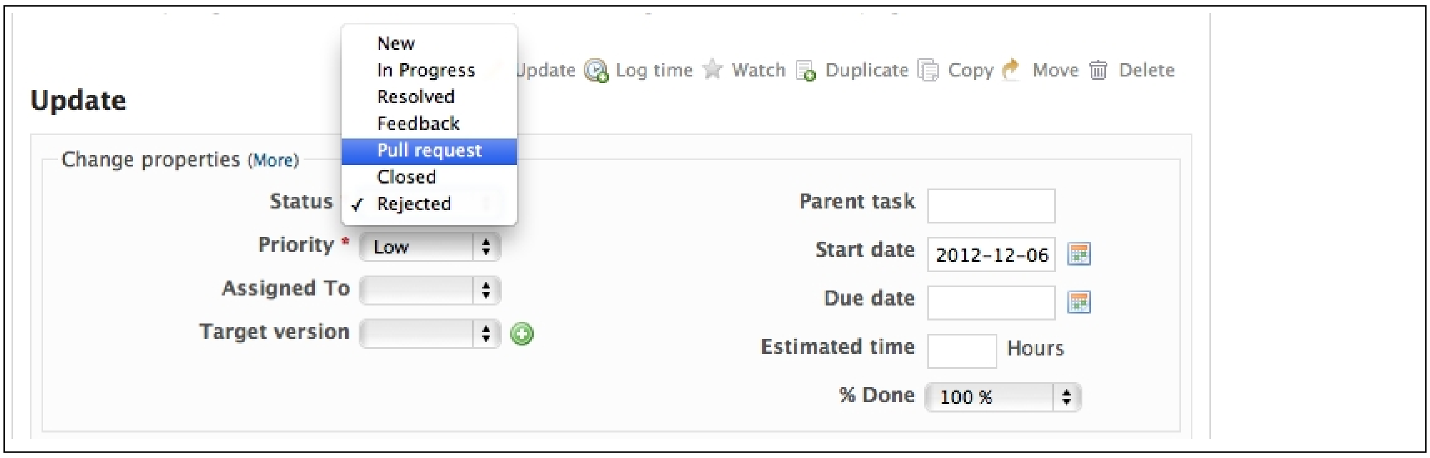
Forked from: gammalib / gammalib

Created on Oct 02, 2015

Owned by Jürgen Knödlseder

Issuing a pull request

After having thoroughly checked your new code, and after having pushed the code into your git repository, you can now issue a pull request so that your change gets merged into the main code base (the so called "trunk"). For this you have to open the relevant issue in Redmine and put the status of the issue to "Pull request":


Update

Change properties (More)

Status	Pull request	Parent task	
Priority *	Low	Start date	2012-12-06
Assigned To		Due date	
Target version		Estimated time	Hours
		% Done	100 %

In the notes field please indicate where your change is. This means you should provide at least your user name on GitLab and the name of the feature branch. You could also copy/paste the HTTPS URL of your repository.

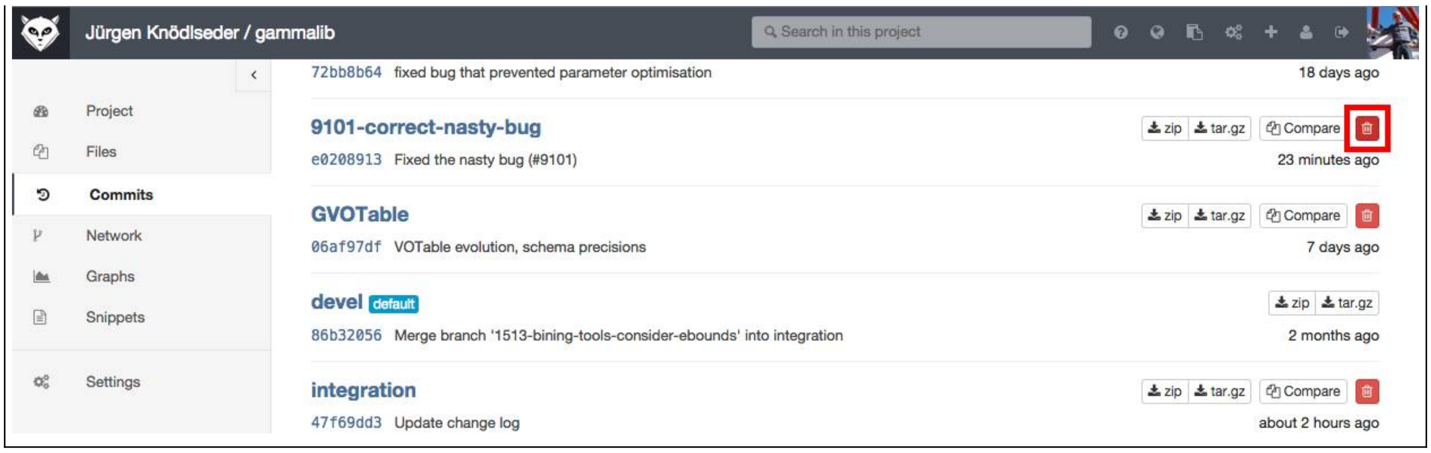
You should also describe in the notes field the changes or addition you made to the code. Explain what you have done. Say if there is anything you'd like particular attention for - like a complicated change or some code you are not happy with.

If you don't think your request is ready to be merged, just say so in your pull request message. This is still a good way of getting some preliminary code review.

Managing your code

Delete a branch

To delete a branch on GitLab, select the "Branches" tab and click on the wastebasket behind the branch you want to delete:



72bb8b64 fixed bug that prevented parameter optimisation 18 days ago

9101-correct-nasty-bug
e0208913 Fixed the nasty bug (#9101) 23 minutes ago

GVOTable
06af97df VOTable evolution, schema precisions 7 days ago

devel
86b32056 Merge branch '1513-bining-tools-consider-ebounds' into integration 2 months ago

integration
47f69dd3 Update change log about 2 hours ago

Files

gitlab-fork-step1.jpg	56.3 KB	10/02/2015	Knödlseder Jürgen
gitlab-fork-step2.jpg	38.7 KB	10/02/2015	Knödlseder Jürgen
gitlab-fork-step3.jpg	57.2 KB	10/02/2015	Knödlseder Jürgen
gitlab-push.jpg	52.7 KB	10/02/2015	Knödlseder Jürgen
pull-request.jpg	67.9 KB	10/02/2015	Knödlseder Jürgen
gitlab-delete.jpg	46.1 KB	10/02/2015	Knödlseder Jürgen
git-workflow.png	141 KB	11/21/2015	Knödlseder Jürgen