**Muhrec building documentation - Mac version**

1. Install Xcode with CLI: <https://guide.macports.org/#installing.xcode> . to install CLI run xcode-select --install
2. Install Macport: <https://guide.macports.org/#installing.macports>
3. Update port: sudo port selfupdate
4. Install packages. cfitsio, fftw-3, fftw-3-long, fftw-3-single, tiff, libxml2, libzip (ex: sudo port install cfitsio)
5. Install QT <https://www.qt.io/download/> and confirm license agreement (<http://stackoverflow.com/questions/33728905/qt-creator-project-error-xcode-not-set-up-properly-you-may-need-to-confirm-t>)
6. Add QT as environment path:   
   (in: .bash\_profile  
   add line: export QT\_HOME=mpathforqt (ex: QT\_HOME=/Users/chiaracarminati/Qt5.7.0/5.7/clang\_64)  
   in terminal: source .bach\_profile  
   and check if environment path was correctly set by typing: *env)  
   OR*nano .profile  
   export EDITOR=”nano”  
   export QT\_HOME=YOUR\_QT\_HOME (ex: “/Users/carminati/Qt/5.9.4/clang\_64”)  
   export QTBINPATH=YOUR\_QT\_BIN\_PATH (ex: ”/Users/carminati/Qt/5.9.4/clang\_64/bin”)  
   export WORKSPACE=YOUR\_GIT\_WORKSPACE (ex: “/Users/carminati/git”)
7. Order of project to build: (in the middle of this I had to run svn upgrade in all working directories)

* Kipl: repos/kipl/trunk/kipl/qt/kipl.pro
* ModuleConfig: repos/modules/trunk/ModuleConfig/qt/ModuleConfig/ModuleConfig.pro
* qtAddons: repos/gui/trunk/qt/QtAddons/QtAddons.pro
* qtModuleConfigure: repos/gui/trunk/qt/QtModuleConfigure/QtModuleConfigure.pro
* ImagingAlgorithms: repos/qni/trunk/src/ImagingAlgorithms/qt/ImagingAlgorithms/ImagingAlgorithms.pro
* ReconFramework: repos/tomography/trunk/src/Framework/ReconFramework/qt/ReconFramework.pro
* StdPreprocModules: repos/tomography/trunk/src/Preprocessing/StdPreprocModules/StdPreprocModules.pro
* StdPreprocModulesGui: repos/tomography/trunk/src/Preprocessing/StdPreprocModules/qt/StdpreprocModules/stdPreprocModules.pro
* StdBackProjectors: repos/tomography/trunk/src/Backprojectors/StdBackProjectors/qt/StdBackProjector.pro
* FDKBackProjectors: repos/tomography/trunk/src/Backprojectors/FDKBackProjector/qt/FDKBackProjector.pro
* Muhrec3: repos/tomography/trunk/src/muhrec3/muhrec3.pro

1. OR: use the build scritps in the build folder. build\_all.sh first and then one can go on wih the application .build\_application\_muhrec.sh
2. Run deployment: in repos/tomography/trunk/src/ -> deploymuhrec3\_mac.sh.   
   For a clean re-building before every new deployment it is preferable to delete muhrec.app from the Application folder.  
   To add missing images (.so), we had to add these kind of lines in the deployment:   
    *- install\_name\_tool -change libQtModuleConfigure.1.dylib @executable\_path/../Frameworks/libQtModuleConfigure.1.dylib libStdPreprocModulesGUI.1.0.0.dylib  
   - install\_name\_tool -change libQtAddons.1.dylib @executable\_path/../Frameworks/libQtAddons.1.dylib libStdPreprocModulesGUI.1.0.0.dylib*
3. To run Muhrec from terminal, go to directory: Applications/muhrec.app/Contents/MacOS/ and then run: ./muhrec3
4. To run Muhrec from terminal without GUI:   
   ./muhrec3 –f ~/.imagingtools/CurrentRecon.xml
5. Enjoy MuhRec (in ~/Applications/muhrec3) !