

# User Software :: CR-Tools :: Development

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## Organization of the source code

After the check-out – which will take a while – you will be left with a new directory tree organized as follows:

```
lofarsoft
|-- CMakeLists.txt
|-- build
|-- data
|-- devel_common
|-- doc
|-- external
|-- release
|   |-- bin
|   |-- include
|   `-- lib
`-- src
    |-- CR-Tools
    |   |-- CMakeLists.txt
    |   |-- apps
    |   |-- doc
    |   |-- implement
    |   |-- scripts
    |   `-- test
    `-- DAL
```

In this we have:

- **usg** is the root of the User Software code tree – go there if you want to synchronize your local version against the repository.
- **build** is used for building individual packages in the code distribution; using a separate directory for this purpose makes it easy to simply erase all compile and link attempts and start again from a clean plate.
- **devel\_common** hold common tools for development; this includes e.g. the find scripts for CMake or file templates for creating new C++ classes. Unless you consider collaborating on the framework, you will not need to touch this (but you will need it).
- **doc** contains a local version of the Doxygen-based source code documentation; just go in there, fire up Doxygen and get an up-to-date version of the source code documentation.
- **external** hosts the various external packages which will be required to build parts of the LOFAR User Software; the main change her w.r.t. to old LOPES-Tools is, that critical components are distributed along with the stuff we are writing ourselves. This directory also contains **casacore**, a collection of the core libraries of the **CASA** system.

## Creating a new application

Note: At the time being there is no automated manner by which to handle the creation of a new application.

1. Create a **new source file** in the applications directory

```
lofarsoft
`-- src
    |-- CR-Tools
        |-- apps                <-- new application goes here
        |   |-- CMakeLists.txt
        |-- implement
        |-- test
```

2. Add an entry to the CMakeLists.txt in the applications directory:

```
## -----
##                                     simStationBeam

if (HAVE_CASACORE)
    add_executable (simStationBeam simStationBeam.cc)
    ## linker instructions
    target_link_libraries (simStationBeam cr)
    ## installation instructions
    install (TARGETS simStationBeam
        RUNTIME DESTINATION bin
        LIBRARY DESTINATION lib
        ARCHIVE DESTINATION lib
    )
endif (HAVE_CASACORE)
```

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