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Why the new software anyway?

Because very much with the requirements and needs for the LOPES experiment in mind, the old version was at its limits and not capable to step up to the task of processing the amounts of data we will be dealing with in LOFAR.

- There will be no more support for LOPES-Tools.
- Application can run without AIPS++/CASA.
- New features are implemented in the CR-Tools.

Installation of the CR-Tools

The [CR-Tools](#) have to be installed from source; for instructions how to do this and what you need, see the [installation page](#).

In a nut-shell, this is what you have to do:

1. Check if you have the required external software
2. Check out the source code from the repository
3. Configure and build

Updating a CR-Tools installation

Even if you are not actively developing new code for the [CR-Tools](#), you surely will be interesting in getting access to new functionality and fixes to known problems; therefore you should be [updating your installed version](#) in regular intervals.

The basic steps are:

1. Retrieve the lastest version of the source code from the Subversion repository by running

```
svn up
```

from the top-level directory of the code tree.

2. Initiate a new build and install.

What's the status of the newest version of the pipeline?

→ this is something Andreas should be commenting on

Are the CR-Tools usable?

There might be three different answers to this question:

1. The CR-Tools are not equipped with a graphical user interface as it has been written for the now-discontinued **LOPES-Tools**. The main reason for this is, that we have decided to move away from the Glish scripting language, which was part of AIPS++ (and only thereof). As explained above (→ [Why the new software anyway?](#)) we have stepped from the fairly monolithic AIPS++/CASA to the more compact and portable **casacore** in order to be able to run or software on the necessary broader ranges of systems; as the main focus so far has been to increase the functionality of the core modules of the **CR-Tools**, no resources have been available to be allocated to the design and implementation of a new graphical user interface.
Side Note: The CR-Tools can also use the AIPS++/CASA libraries instead of **casacore** and then build an improved version of the CGaccessClient which is the basis of the cg_access-mode.
2. Algorithm development and library expansion: this is the main area of the currently ongoing coding activities. The sources files grouped into several modules located within the `implement` directory constitute the library (`libcr.a`) which then in turn can be used for writing application programs.

```
implement
|-- Analysis
|-- ApplicationSupport
|-- Calibration
|-- Coordinates
|-- Data
|-- Display
|-- IO
|-- Imaging
|-- LopesLegacy
|-- LopesStar
|-- Math
|-- Observation
`-- Utilities
```

The whole code are is set up such, new functionality can be added in a straight-forward manner.

3. Application development: Writing new applications in C/C++ is straight-forward and can be done right away. As the **CR-Tools** are no longer in need of a fully-blown AIPS++/CASA installation (as was the case for the **LOPES-Tools**) it is now possible to write applications that run on machines without AIPS++/CASA installed.

What is the current status of the Skymapper?

At the moment (30 Jan 2008) the work on the [Skymapper](#) has been frozen in favor of connecting our routines to the expected LOFAR time-series datasets. Most of the classes in the *Analysis* module are no longer using components of the old *Skymap* module (which contained the C++ classes used from the Glish scripts), but the connection to the new module (*Imaging*) has not yet been completed.

Any idea how the polarization is implemented in the CR-Tools for the LOFAR stations?

At the moment not proper handling of the polarization information is implemented within the [CR-Tools](#).

How are the CR-Tools related to the REAS software?

- www.timhuege.de/reas

Why are the LOPES-Star/Glish based applications not built?

You probably didn't set the needed optional build parameters when calling cmake. (Glish requires CR_WITH_GLISH and the LOPES-Star applications currently require CR_WITH_PYTHON)

What about Python bindings?

Python bindings for the most basic parts of the library required to read in data are under way. Whereas of course on the longer run we plan to make the full functionality of the library available from the Python prompt, the initial phase will provide the means to open datasets in order to inspect the data; for this bindings to classes in IO and Data are generated.

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