

# LOFAR User Guide: The Framework Pulsar Pipeline

Pulp, Version 1.0

Document version 1.0

SVN Repository Revision: –revision–

K. R. Anderson

SVN Date: 2011-01-30

## Contents

<b>Change record</b>	<b>2</b>
<b>1 Introduction</b>	<b>2</b>
1.1 Applicable Documents . . . . .	2
1.2 Reference Documents . . . . .	3
1.3 Package Overview . . . . .	3
1.4 Glossary . . . . .	3
<b>2 Requirements</b>	<b>3</b>
<b>3 High Level Data Specification</b>	<b>4</b>
<b>4 Detailed Data Specification</b>	<b>4</b>
<b>5 Interfaces</b>	<b>4</b>
5.1 Interface requirements . . . . .	4
5.2 Relation to other workpackages . . . . .	4
<b>6 Changelog</b>	<b>4</b>
<b>7 Discussion</b>	<b>4</b>
7.1 Open questions . . . . .	4
7.2 Future enhancements . . . . .	4

## Change record

ISSUE	DATE	SECTIONS	DESCRIPTION OF CHANGES
1.0	2011-01-31	all	Initial release

## 1 Introduction

This document is a User Guide only.

This document describes the basic operations of the framework pulsar pipeline, known as Pulp (executable: `pulp.py`), as well as the basic environment required by the framework in order to run the pulp pipeline. Further documentation on development under the LOFAR pipeline framework, as well as a schematic documentation on the Pulp API, are available within the USG repository itself. Documentation on the Pulp API is available with the Pulp distribution, and is available with the Pulp package download in `${LOFARSOFT}/src/Pulsar/pipeline/documentation`

The pulp current release under the LOFAR USG repository is located in `$LOFARSOFT/src/Pulsar/pipeline:`

```
drwxr-xr-x 15 <user> staff 510 Jan 30 08:21 documentation/
-rw-r--r-- 1 <user> staff 3614 Jan 28 20:33 dynspec.py
-rw-r--r-- 1 <user> staff 1708 Jan 21 17:16 pipeline.cfg
-rwxr-xr-x 1 <user> staff 4545 Jan 28 20:34 pulp.py
-rw-r--r-- 1 <user> staff 40 Jan 28 17:28 pulpVersion.py
drwxr-xr-x 5 <user> staff 170 Nov 1 11:15 recipes/
drwxr-xr-x 22 <user> staff 748 Jan 29 23:09 support/
-rw-r--r-- 1 <user> staff 789 Jan 28 22:07 tasks.cfg
```

### 1.1 Applicable Documents

The user will find Pulp API documentation under `./documentation`. Pulp API descriptions can be found within the Pulp distribution and are located in `./Pulsar/pipeline/documentation`, where the user will find a directory structure that somewhat mimics the pipeline's recipe directory structure, with recipe API documents found under `./pipeline/documentation/` in `'master'`, `'nodes'`, and `'support'`.

`./Pulsar/pipeline/documentation/:`

-----

```
drwxr-xr-x 15 <user> staff 510 Jan 30 09:11 .
drwxr-xr-x 11 <user> staff 374 Jan 30 08:13 ..
drwxr-xr-x 10 <user> staff 340 Jan 29 15:39 master/
drwxr-xr-x 6 <user> staff 204 Jan 29 15:09 nodes/
drwxr-xr-x 13 <user> staff 442 Jan 29 17:11 support/
```

where a user will find API documents for the pipeline recipes, and all support modules.

`./master:`

-----

```
rw-r--r-- ... bf2presto.html
-rw-r--r-- ... buildPulsArch.html
-rw-r--r-- ... buildRSPAll.html
-rw-r--r-- ... bundleFiles.html
-rw-r--r-- ... prepareInf.html
-rw-r--r-- ... prepfold.html
-rw-r--r-- ... rfipLOT.html
```

`./nodes:`

-----

```

-rw-r--r-- ... bf2presto.html
-rw-r--r-- ... prepfold.html
-rw-r--r-- ... rfipplot.html

./support:
-----
  rw-r--r-- ... RSPlist.html
-rw-r--r-- ... bf2Pars.html
-rw-r--r-- ... buildRSPS.html
-rw-r--r-- ... bundlePlots.html
-rw-r--r-- ... foldingData.html
-rw-r--r-- ... fullRSP.html
-rw-r--r-- ... pardata.html
-rw-r--r-- ... prepInfFiles.html
-rw-r--r-- ... pulpEnv.html
-rw-r--r-- ... rfiDirectories.html

```

These are accessible and viewable through any browser.

## 1.2 Reference Documents

For documentation on the framework itself, as well as guidance on recipe writing, the user is invited to examine the framework documentation available in the repository under `$LOFARSOFT/src/pipeline`, which provides framework libraries as well as the standard imaging pipeline (sip) recipes.

## 1.3 Package Overview

Table 1 presents the overall organisation of the Pulp pulsar pipeline package.

HEAD NODE RECIPE	COMPUTE NODE RECIPE	SUPPORT MODULES
buildPulsArch	—	buildRSPS, RSPlist
bf2presto	bf2presto	bf2Pars, pulpEnv
buildRSPALL	—	fullRSP, pulpEnv
prepareInf	—	prepareInfFiles, pulpEnv
prepfold	prepfold	pulpEnv
rfipplot	rfipplot	rfiDirectories, pulpEnv
bundleFiles	—	bundlePlots, pulpEnv

Table 1: Pulp distribution and recipe relations

## 1.4 Glossary

- **API** – application programming interface (!Anton Pannekoek Instituut).
- **Pulp**– the “pulsar pipeline” under the LOFAR pipeline framework.

## 2 Requirements

—/—

### **3 High Level Data Specification**

### **4 Detailed Data Specification**

### **5 Interfaces**

—/—

#### **5.1 Interface requirements**

—/—

#### **5.2 Relation to other workpackages**

—/—

### **6 Changelog**

—/—

### **7 Discussion**

—/—

#### **7.1 Open questions**

—/—

#### **7.2 Future enhancements**

—/—