

LOFAR Pulsar Pipeline Plan: Mar 4, 2011

2011

2012

Task/Category	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
BQ/P	<ul style="list-style-type: none"> Calibrate Phase-Frequency correction due to cable lengths Implement proper Stokes (Q,U,V) on the BQ/P (depends on beam mode) Implement on-the-fly squashing of channels per subbands for BF (M-BF obs) Teddyray Multi beam observational testing (RADDEC print out via MoM to parset) Bypass 2nd Polyphase Filter = VAB pipeline Implement BQ/P 2nd data transpose for incoherent Stokes data (post H5 CS) Implement BQ/P 2nd data transpose for Raw Voltage (BF) data (post H5 CS, S) Online Coherent De-dispersion on CEP Online Coherent De-dispersion Search Mode on CEP (multi beams all de-dispersed) Separate BF from IM data writing on subchannels and disks (maybe non-issue after Phase II) Integrate real-time phase correction into VAB modules from Imaging results (lower priority if core single clock) Investigate extending the single clock on the entire core (hardware) 																							
SAS / MAC/MoM	<ul style="list-style-type: none"> Add new switches to the MoM-template creation script for IM to match some BF switches MoM additional features/connectivity to SAS/MAC (DM field, Pulsar Catalog drop down, etc) Maintenance of pre-installed MoM import/export scripts Offline Pipeline Framework connection to SAS/MAC (automated kickoff) BF-Observing Cookbook maintenance and updates as needed 																							
BF2H5 online version	<ul style="list-style-type: none"> Integrate DAL package + Pullman + Lotarush BF H5 data writer (abide by ICD) (BQ/P CS out data) BF H5 data writer (abide by ICD) (BQ/P IS out data) BF H5 data writer (abide by ICD) (few data) Load testing of H5 read/writes of BF data 																							
BF ICD	<ul style="list-style-type: none"> Profile BF Observations (& Pipeline) for typical stats on sizes Benchmark (DAL C++) 4 storage types to choose optimum BF container Perform benchmarking on H5 chunking (storage efficiency and optimization) Finalize BF ICD Identify source of metadata values (& calculations) 																							
DAL	<ul style="list-style-type: none"> Create DAL classes for BF metadata and structure (abide by ICD) Create DAL methods to access data from BF structure (abide by ICD) Hook in Coördinate Group-related material into the DAL Wrap BF DAL classes and methods with Python for PyDAL Ongoing PyDAL updates and bugfixes Integrate HDFS into file I/O for Presto/TEMPO/etc 																							
Pulsar Tools	<ul style="list-style-type: none"> Design/Implement Pulsar Pipeline(s) for other observing modes (RAW Voltage, OOD) Maintain/fix Daily build of USG (Pulsar) repository on offline cluster Test software installation/components on Phase II cluster Adapting pipeline to work on CEP II (increase number of cores, data locations, etc) Update USG Pulsar make dependencies for external packages so that "all built" is shorter Assist Pulsar Group with integration of tools/scripts into cmake & USG Maintain/upgrade Pulsar shell script pipeline Convert Pulsar Pipeline to run with H5 input, using intermediate Presto binary files Create Pulsar Test datasets and create automated test suites for code sanity check (non-LOFAR) Branch Pulsar OTF code changes to original tool repositories (sourceforge, etc) 																							
Pulsar Pipeline Integration	<ul style="list-style-type: none"> Observing Plan / Regular weekly testing of BF observations Pulsar Pipeline integration of all modes into the Framework ("See attachment with all modes") Pulsar Pipeline on & gpi profiling (if speed is less than real-time, most relevant for multi-beam modes) PWG learning curve of Pipeline Framework Pipeline Framework issues/problems/tickets action items Pulsar Search Pipeline: finalizes details/code + add SBPS functionality & perform extensive testing Pulsar Search Pipeline: profiling and speed up: most relevant for multi-beam modes Documentation/diagrams/switches of Pulsar Pipeline + tools for LOFAR science users Documentation: "How to" on the known Pulsar Pipeline with the Framework Decide how to distribute the Pulsar Pipeline Release Pulsar Pipeline 																							
BF2H5 offline version	<ul style="list-style-type: none"> TCP-packet convert module for Felcan HDF5 data writer module for Felcan Create standalone BF2H5 tool 																							
Archive	<ul style="list-style-type: none"> SARA Pulsar Archive (organize, create scripts, maintain web pages) Investigate SARA + Grid processing (LTA) potential Sync Archive schema with BF ICD LTA Archive Pulsar raw data LTA Archive Pulsar Pipeline Processed data 																							
Misc.	<ul style="list-style-type: none"> Remove PGPLOT from PRESTO Work with the VC on formal/proposal issues for LOFAR HDFS data 																							
KEY	<ul style="list-style-type: none"> J = Jason; JD = Jan David; JR = John Romain; JL = Joeri; A2 = Anastasiia; B = Ben; K = Ken; L = Lars; ASH = Ashish; PWG = Pulsar Working Group; SW = Stephan W.; MB = Michel B.; RO = Radio Observatory color = assigned task; work in process; work done color = assigned task; long term ongoing color = assigned task; work to be done (upcoming work) color = unassigned task 																							