

LOFAR Pulsar Pipeline Plan

DRAFT

January 2011

2011

2012

	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
BGP	Implement Phase Frequency correction due to cable lengths Implement proper Stokes (L1/L2) on the BGP Implement on-the-fly squashing of channels per subbands for BF (M-BF obs) TiedArray Multi beam observations Bypass 2nd Polyphase Filter in TAB pipeline Implement BGP 2nd data transpose for Incoherent Stokes data (post HS CS) Implement BGP 2nd data transpose for Raw Voltage (RF) data (post HS CS, IS) 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 subclusters and disks (maybe non-issue after Phase II) Integrate phase correction into TAB module (from imaging results) (lower priority if core single clock) Investigate extending the single clock on the entire core (hardware)																							
SAS / MAC/MoM	Add new switches to the MoM-template creation script for IM to match some BF switches MoM additional features/connectivity to SAS/MAC (GM field, Pulsar Catalog drop down, etc) Maintenance of anti-related MoM import/export scripts Offline Pipeline Framework connection to SAS/MAC (automated kickoff) BF Observing Cookbook maintenance and updates as needed																							
BF2HS online version	Integrate DAL classes into BF2HS BF HS data writer (abide by ICD) (BGP CS out data) BF HS data writer (abide by ICD) (BGP IS out data) BF HS data writer (abide by ICD) (raw data) Load testing of HS read/writes of BF data																							
BF ICD	Profile BF Observations (A Pipeline) for typical stats on sizes Benchmark (DAL C++) 4 storage types to choose optimum BF container Perform benchmarking on HS chunking (storage efficiency and optimization) Finalize BF ICD Identify source of metadata values (A calculations)																							
DAL	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 Coordinate Group-related material into the DAL Wrap BF DAL classes and methods with Python for PyDAL Ongoing PyDAL updates and bugfixes Integrate HEFS into file I/O for Presto/TEMPO/etc																							
Pulsar Tools	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 Update USG Pulsar make dependencies for external packages so that "all build" is shorter Assist Pulsar Group with integration of tools/scripts into make & USG Maintain/upgrade Pulsar shell script pipeline Convert Pulsar Pipeline to run with HS input, using intermediate Presto binary files Create Pulsar Test datasets and make automated test-suites for code sanity check (non-LOFAR) Branch Pulsar GTF code changes to original tool repositories (sourceforge, etc)																							
Pulsar Pipeline Integration	Observing Plan / Regular weekly Testing of BF observations Pulsar Pipeline Integration of all modes into the Framework "[See attachment with all modes]" PNG naming conventions of Pipeline Framework Pipeline Framework issues/problems/hiccups action items Pulsar Search Pipeline: finalize details/code + add SSPS 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" run the Known Pulsar Pipeline w/in the Framework Decide how to distribute the Pulsar Pipeline Release Pulsar Pipeline																							
BF2HS offline version	TCP-packet convert module for Pelican HDF5 data writer module for Pelican Create standalone BF2HS tool																							
Archive	SARA Pulsar Archive (organize, create scripts, maintain web pages) Investigate SARA + Grid processing (LTA) potential Sync Archive schema with BF ICD Archive Pulsar raw data Archive Pulsar Pipeline Processed data																							
Misc.	Remove PGPLOT from PRESTO Work with the VO on formal/protocol issues for LOFAR HDF5 data																							
KEY	J = Jason; JD = Jan David; JR = John Romein; JL = Joeri; A2 = Anastasia; B = Ben; K = Ken; L = Lars; ASH = Ashah; PWG = Pulsar Working Group; SW = Stephan W.; MB = Michel B.; RO = Radio Observatory color = assigned task color = long term ongoing task color = unassigned task																							