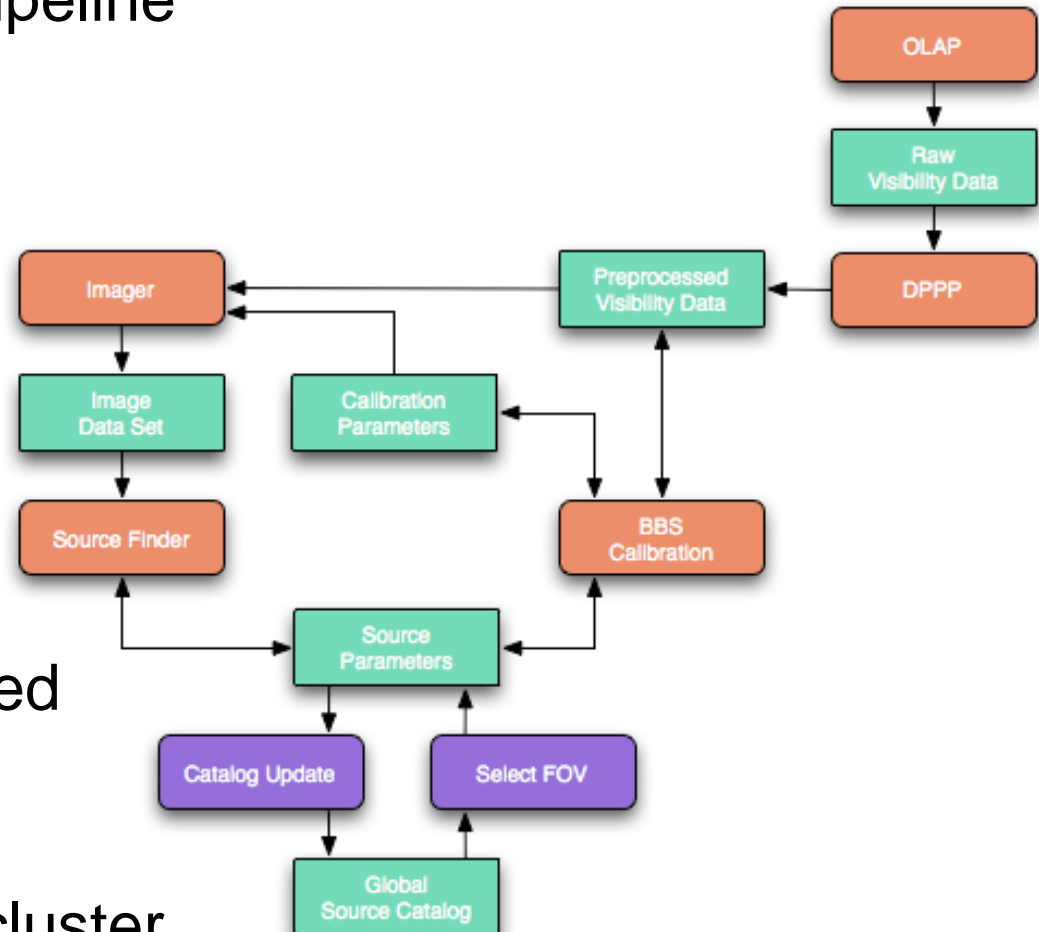


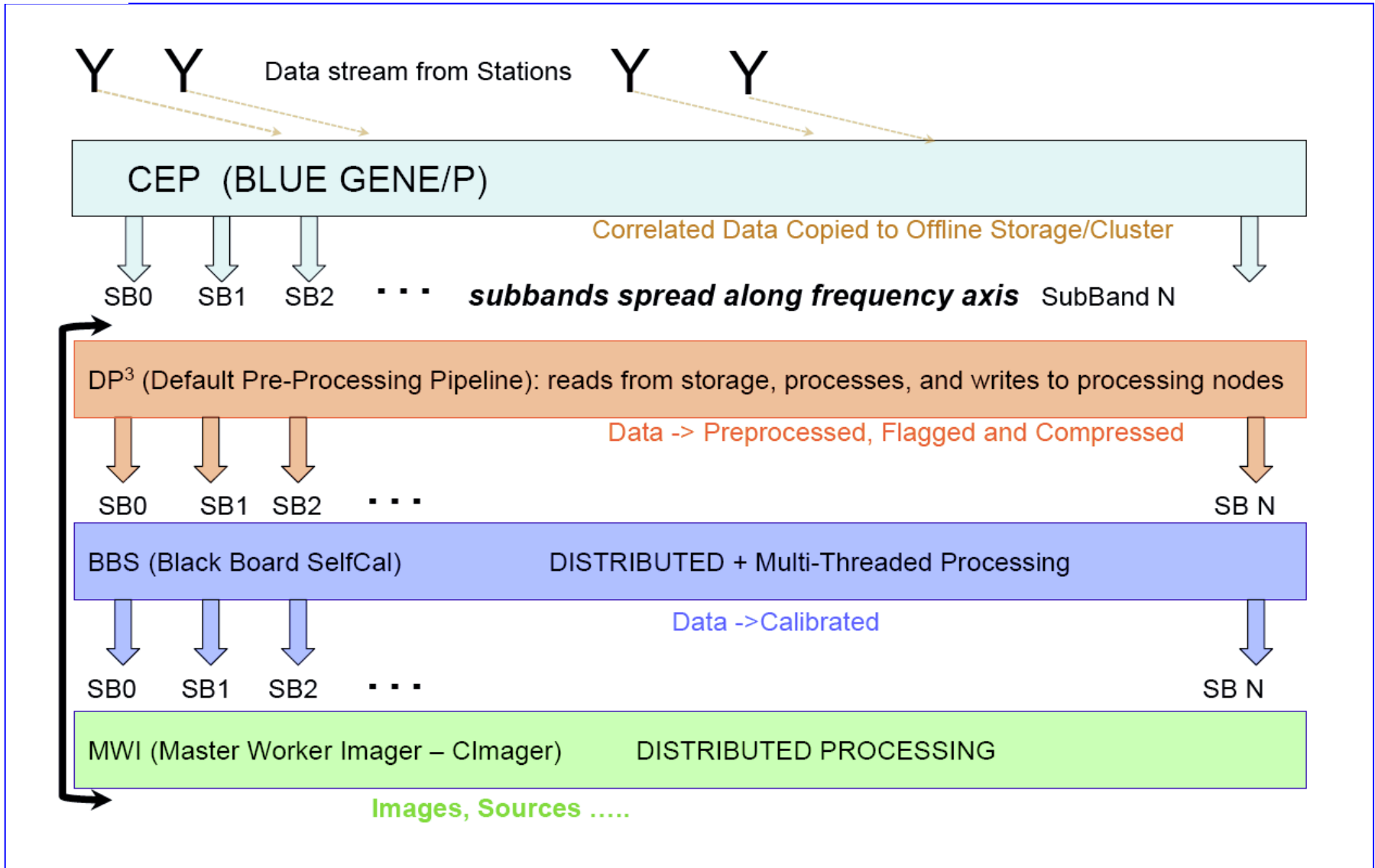
6.2.5 Distributed processing

Ronald Nijboer
ASTRON

- ASTRON's effort for ALBiUS is embedded in the larger LOFAR / APERTIF software development effort
- Within ALBiUS 6.2.5 ASTRON focuses on imaging while correcting for Direction Dependent Effects (DDEs)
- Oxford will investigate deconvolution in a distributed environment

- Standard Imaging Pipeline
- Precursor for
 - Surveys pipeline
 - EoR pipeline
 - Transients pipeline
 - Magnetism pipeline
 - Solar pipeline
- Framework to be used for APERTIF
- Runs on dedicated cluster





- LOFAR Processing Framework is in place
 - Based on C++, build on top of CasaCore,
- Data formats
 - CASA MS (v3.0), CASA tables (i.e. Images), HDF5 Images
 - With options to export to FITS
 - PostgreSQL, MySQL databases
 - LOFAR Data Access Library (DAL)
 - Python interface through PyDAL, PyRap
- Classic AIPS / ParseITongue framework to be developed in task 6.1.2 by JIVE

1. Distribute CASA Imager in MWImager framework
2. Extend CASA faceting + w-projection method with a facet based correction
3. Make AProjection method (by Bhatnagar) available in CASA
4. Investigate optimizations
 - Facets vs. convolutional approaches
 - Parallelization / distribution using multi-core machines
- Collaborate with Sanjay Bhatnagar (NRAO, Socorro)

- Multi-faceted CLEAN of GMRT data
- Use Classical AIPS / Distributed ParseITongue
- Deliverable: case study on GMRT data + Python code
- Needs input from task 6.2.1 (ParseITongue for distributed processing)

- Replace “Image Plane Calibration” by Imaging?
- Start date: month 6 (instead of 18)
- Finish data: month 30 (unchanged)
- Total effort
 - ASTRON:11 man months
 - UOXF: 6 man months
- Manpower
 - Ger van Diepen (ASTRON, 50%)
 - Hans-Rainer Kloeckner (UOXF)