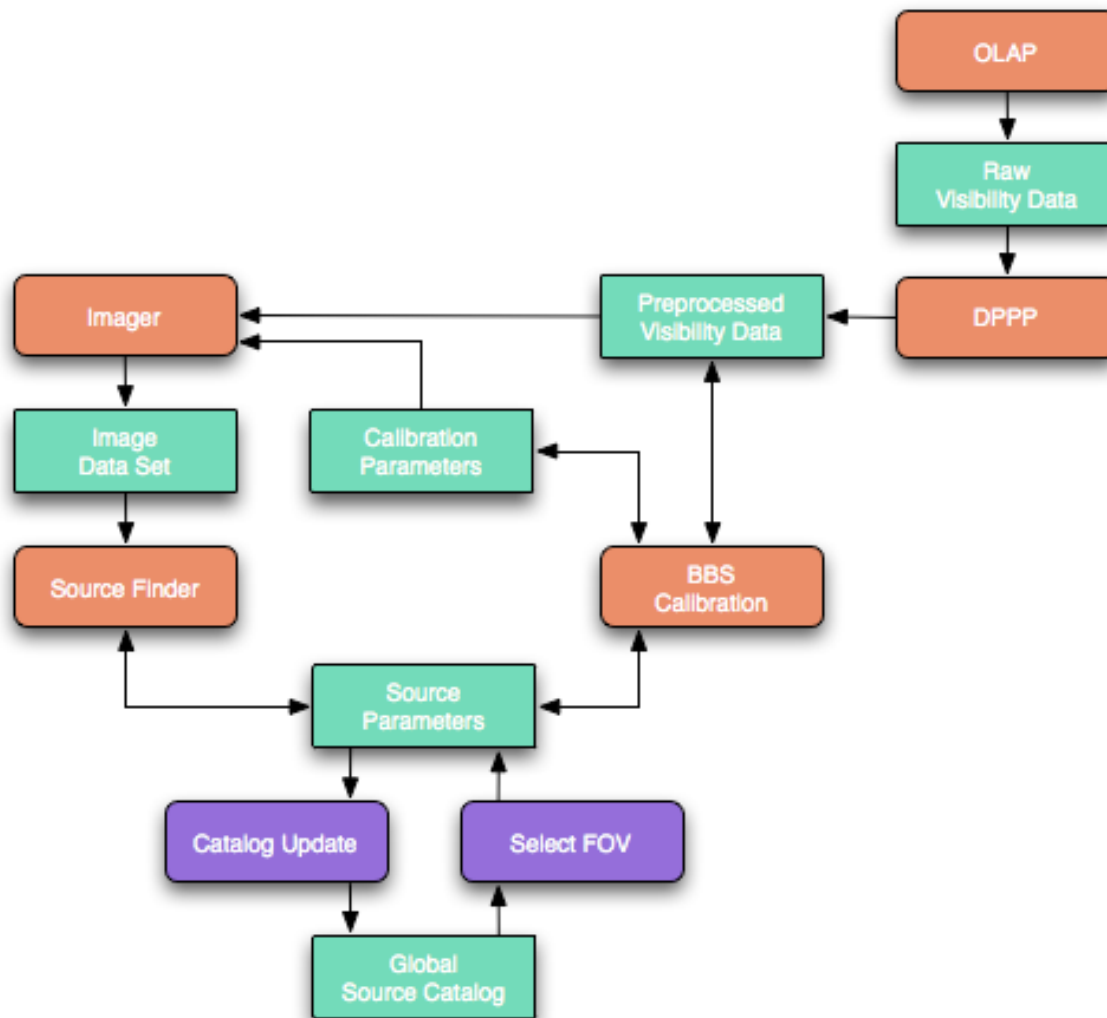# LOFAR GSM and LSM in context of the Major Cycle

R. Nijboer & G. van Diepen

- Deterministic flagging of uv-data for which strong (3C / 4C) sources enter through the station beam sidelobes
- Needs station beam model and GSM

- # GSM: Global Sky Model
  - All sky source "database"
  - Interacts with the LSM
  - In the future: may interact with the VO, or may be part of the VO

- # LSM: Local Sky Model
  - Source "database" needed for processing an observation
  - Interacts with
    - GSM
    - BBS
    - Source Finding

- Define
  - Content
    - Point sources, shapelets, … and their parameter sets
  - Operations
    - LSM – GSM interaction
    - LSM – Source Finding interaction
    - LSM – BBS interaction
    - Other
  - Initial implementation "platform"
    - Database, Python list, FITS file, …?

Parameters?

- Point sources: Name, RA, DEC, Flux (IQUV), Spectral Index, FreqRange?

- Is position always Equatorial J2000?

- Parameters for extended sources?

- Type of extended sources?

- Are parameters time dependent? (TimeRange?)

- Support for moving objects (Sun, planets, etc.)?

- Can an object have multiple names? I.e. do we need an alias table?

- ## LSM – GSM interaction
  - Get LSM from GSM using cone search on position and radius. Take specific sources into account (e.g. A-team).
  - Compare LSM with GSM on the basis of position. How to incorporate freq and time range?
  - Merge LSM in GSM
- ## LSM – Source Finding interaction
  - Add sources to LSM (by source finder).
- ## LSM – BBS interaction
  - If needed: construct ParmDB from LSM or subset of LSM for BBS
  - Update LSM with new values in ParmDB.
- ## Other
  - Remove sources from LSM and / or GSM.
  - Compare GSM with external catalogue.