



ALMA Observing Tool

Philippe Salome



- A. Bridger, D. Clarke, M. Folger - **UKATC**
(Royal Observatory Edinburgh)
- J. Schwarz, M. Schilling, R. Warmels - **ESO**
- L. Testi - **ESO** *Subsystem Scientist (SSR)*



ALMA Observations

1. Program Preparation
2. Dynamic Scheduling of Programs
3. Observations
4. Data Delivery & Archiving
5. Offline Calibration & Imaging



ALMA Software

1. Observing Preparation **(OT)**
2. Scheduling **(Scheduler)**
3. Executive Operations **(Exec)**
4. Control **(Control)**
5. Telescope Calibration **(TelCal)**
6. Archive **(Archive)**
7. Offline Data Reduction **(CASA)**



ALMA Proposals (1)

- What do I need to work on in obtaining ALMA Observing time ?
- Creation of an Observing Proposal that pass (I) the Scientific and (II) the Technical evaluation by the TAC

Use the ALMA Observing Tool (OT)



ALMA Proposals (2)

1. Phase I:

- **Emphasis on the Scientific information - Define Science Goals - Limited amount of technical information**

If successful Phase I application then Phase II



ALMA Proposals (3)

2. Phase II: (local contact help for PdB)

- Everything necessary to complete an Observing Program: A set of detailed technical information

Specify how the observations are to be carried out: Create a Scheduling Block



Prepare ALMA observations

Define a list of observing parameters

1. Spatial Setup (source position, fov view...)
2. Spectral Setup (Line, continuum, velocity resolution, polarization...)
3. Calibration Plan (Accuracy of the calibration, special calibration...)
4. Requirements (sensitivity, resolution, short spacings...)



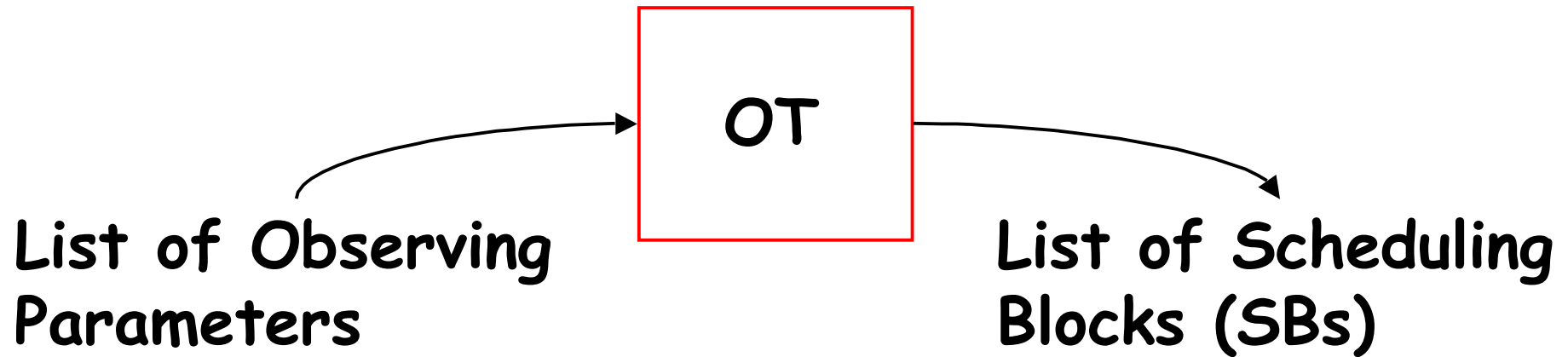
Standard observing sequence

- Bandpass calibration (strong quasars)
- Flux calibration (quasars, planets...)

- Phase/amplitude (quasars nearby the source)
- Science Target
- Phase/amplitude (quasars nearby the source)
- Science Target
- Phase/amplitude (quasars nearby the source)
- ...
- Flux calibration



Observing Tool





Scheduling Block

A key executable unit that contains all the information necessary for a single observation

The Execution of a SchedBlock will provide the smallest dataset consistent with a Science Goal

SchedBlocks can be repeated several times to achieve the required sensitivity



DEMO - Outline

1. Phase I - standard user
 - Define a science goal with Editors
 - Science Goal with Visual tools
2. Phase II - standard user -> Create a SB
3. Phase II - expert user -> possibility to modify all the parameters (current version bias for development and testing)



DEMO

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Spectral Setup

1. Band \rightarrow 8 GHz (\times 2polar) receivers
2. Baseband \rightarrow To select 2 GHz (\times 2 polar) inside the 8 GHz receiver band (multiple lines)
3. Spectral Windows \rightarrow To sample the basebands in smaller units to achieve a required velocity resolution



OT Installation

- **JavaWebStart (JRE 6.0 required)**
- **Tarball for local installation**
 - **Linux / MacOS / Windows**
- **Documentation on :**
[http://www.iram.fr/IRAMFR/ARC/tools.php?page=obsprep.php!](http://www.iram.fr/IRAMFR/ARC/tools.php?page=obsprep.php)



Development and Testing

- Status: release 5.0
- Known Pbs, still in development (need of default values for some parameters...)
- Tested every 6 months + Integrated tests at the ATF (Antenna Test Facility, Socorro)
- Next: release 6.0 and Tests at the OSF (Chile)



Credits

The OT is a software product of the ALMA ObsPrep Team, developed on the basis of the ALMA SSR (Scientific Software Requirements) and HLA (High Level Analysis) Teams



**Start preparing the
scientific cases ...**

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