Reports on ALMA Operations
the European ALMA Regional Centre

Paola Andreani
Early Science Cycle 0 started on Sept 30, 2011
**ARCs duties**

- Commissioning/Astronomers on duty turnos (observing ES cycle 0 and on)
- Phase I: science portal, helpdesk, users documents, emergency helpdesk 72hrs before submission
- Proposal Review Process:
  - Technical assessment (Chile workshops)
  - Technical secretaries
- Phase II: preparation of SBs (+documents, policies), contact scientists
- Data quality process:
  - Assistance during quality assurance 2 (QA2)
  - QA3 (feedback to JAO)
- Archive + Data delivery
- PI data reduction help
Proposals
* submitted: 917 (EU 399, 43.5%) EU very successful!, thanks to the EU ARC network which worked very well together!
* accepted: 112 (EU 35, 31.5%) (time-share balance applied)

Science Portal:
* Registered users: 2890 (EU 1396, 48%)
* Page views: 230442 (EU 104558, 45%)
* Unique visits: 81467 (EU 37282, 46%)
Highest priority proposals distributed by science categories

4 duplications: data distributed to 2-3 PIs

Users Committee, Garching April 23-24 2012
Recommended proposals: 
distribution of receiver bands

- **blue**: highest priority
- **red**: fillers

Users Committee, Garching April 23-24 2012
Cycle 0 process

• **Helpdesk**
  – Statistics/results
  – Users survey

• **Proposal Review Process**
  – Technical assessment
    • TA for all not triaged proposals
    • TA workshop in Chile in 1-5 August:
      • very useful for DSO/ARCs \( \rightarrow \) policies
  – Feedback from PIs

• **Project preparation: Phase 2 WG**
  – bootcamps
  – Only a restricted group of people able to prepare the SBs
  – Phase II policies, guidelines, change request standing committee

• **Phase II: ARC contact scientists:**
  – PIs decide which node
Users Committee, Garching April 23-24 2012

helpdesk

Total number of tickets received by ALMA since 30/03 until 31/01: 770
Total number of tickets received by EU since 30/03 until 31/01: 260 (34%)
Total number of tickets in EU per PI: 0.65
helpdesk

Distribution per department
User survey

- Survey sent to 2890 registered users
- Valid replies: 442 (15 %)
- Number of PIs: 329 (75% of the valid replies)

High level of expertise

- Blue/Green good/above average
- Reds=bad/below average

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~60% of users rated the usability of SP above-average
83% of users found all the info for preparation/submission of proposals
7% of users encountered problems with registration
Users Committee, Garching April 23-24 2012

Helpdesk

~75% of users rated the performance and usability of HD above-average

Blue/Green good/above average
Reds=bad/below average

~60% of users rated the quality of KB articles above-average but only 43% of users read them

1=agree/full
...
5=totally disagree/none

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CfP and Proposal Preparation

- 89% of users considered that the CfP included all the necessary information

- 20% of users encountered problems during proposal preparation

- Attendance to the Community Days offered by the ARC and ARC nodes was high: 57%

- >70% of users rated the quality of these workshops above-average
~75% of users considered the proposal submission very smooth. The main problem (for 41% of the users) was re-submission.

Blue/Green good/above average
Reds=bad/below average

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Proposal Review Process

~50% of users rated the usefulness of the ARP consensus report **below-average**

40-50% of users found the e-mail reporting the results of the PRP **above-average**

[Diagram showing user survey results]
P2G (Phase 2 Group) members prepare SBs
P2G prepares first draft of the project SBs before giving to ARC
contact scientist (ARC-CS) via JIRA ticket
Iterations between P2G and ARC-CS take place
Each Project needs to be fully documented
• Information passed between Contact Scientist and Users via helpdesk
• Information passed between Contact Scientist & Phase2 Group via JIRA
• All relevant interactions summarized on appropriate ticket

Contact Scientist:
- explain SB features to PI
- get PI’s feedback and approval
• Block 6 was lost due to problems with the correlator room firefighting system
• Block 10 and part of Block 11 were lost due to the array not being ready after the engineering shutdown (all antennas not in the extended configuration, reintegration of antennas into the array) and bad weather
• When SB reaches sufficient # of executions, and has passed QA0, QA2 starts on it
• Analyst performs QA2 as prescribed in documents and using specialised CASA scripts
• When approved by leads data products **packaged up** and released to ARCs data
• Starting with the extended config. Obs in March: ARCs contribute to QA2
• Each completed SB offered to the corresponding ARC
Data processing

• Data Processing procedures (including “best efforts”) and automatic script generation set up covering flagging, calibration, imaging and QA2.
  – Flagging and calibration automated except for check of quality of the calibration tables (will be run during night-time).
  – Imaging semi-automated (needs human intervention to check choice of parameters).

• Data processing now shared between the JAO and the ARCs:
  – Staff has been trained
  – The ARCs have now started to process data (so far 2 datasets to EA, 3 to NA, 2 to EU)
Cycle 0 data delivery

- Complete .tar files are ingested into NGAS
- Data is verified at the ARCs and sent to the PIs via ftp
- Currently: delivered data to 23 PIs

- Once the pipeline is fully operational the projects can be re-reduced and ingested into the archive with full metadata, previews and dependencies

- For Cycle 0 data reduction a normal workstation should be enough
- Processing at the ARC: 96 core/60TB lustre processing cluster
Cycle 0 data delivery

• Data from the SCO archive transferred by network to the ARC archives
• Time consuming (> 1-2 weeks) because of the large amount of data transferred (Cycle 0 data packages include large datasets of calibrated data that will not need to be included in future packages).
• PIs notified within 1-3 days after their data packages reached the ARC archives
The European ARC
The ARC and ARC node staff

Users Committee, Garching April 23-24 2012
Role of the ARC nodes

- Provide face to face user support
  - proposal and SBs preparation
  - data reduction,
  - archive research
- Participate in the ALMA helpdesk
- New software and techniques
- Advanced data reduction
- Scientific community development
- Public relations and outreach
- Support for special projects
What the ARC nodes do during the proposal life time

face to face help with proposal preparation

if proposal approved

face to face help with project preparation, and/or ARC contact scientist

if project observed

face to face help with data reduction

any time

Tutorials, schools, workshops

Newsletters, science portal, web pages

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Organise a visit through the helpdesk

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Expertises @ the EU ARC used in the helpdesk/face-to-face visits

- High-frequency observing
- Wide-field and high-dynamic-range imaging
- Molecular spectroscopy, catalogues, models
- Polarimetry
- Astrometry
- Multi-frequency synthesis
- Array combination imaging
- Solar physics

Allegro (NL)
IRAM/UK/NL
DE/CZ/NL
IRAM/UK/DE/I
Nordic/UK/DE
Nordic/UK
UK
CZ

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ARC nodes:
Preparing the community

- **December 2010**
  - UK ARC Community Days

- **June 2011**
  - Preparing for ALMA

- **May 2011**
  - Leeds Early Science workshop
  - ALMA proposal/OT tutorial workshop

- **November 2010**
  - Observing with ALMA - Early Science

- **February 2011**
  - German ALMA Early Science Community Day

- **April 2011**
  - Early Science workshop

- **May 2011**
  - Nordic ALMA Proposal Workshop

- **December 2010**
  - Nordic ARC-node workshop

- **EU ARC retreat March 2011**

- **June 2011**
  - Training School Astrochemistry with ALMA

- **ALMA community days April 2011**

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Guide to the European ARC

Guide to the European ALMA Regional Centre

Available from:
http://www.eso.org/sci/facilities/alma/arc/

Version: 13 November 2012
Authors: European ARC and ARC nodes, edited by Martin Zwaan

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Users Committee, Garching April 23-24 2012
ARC node events for cycle 1

- 2 April 2012
  ALMA evolved stars workshop

- Early June 2012
  Cycle 1 and CASA workshop

- 27-30 March 2012
  ALMA session at NAM

- 28-29 February 2012
  ALMA winter school

- 25-26 June 2012
  ALMA Cycle 1 Community Days

- 15-17 February 2012
  ARC Retreat

- 2-3 April 2012
  Paola Andreani
  Italian mm-astronomy meeting
Cycle 1 timeline

- April 3: Announcement

Key dates

The key dates for Cycle 1 are given below. ALMA reserves the right to alter the given dates, should it become necessary to do so.

15 May 2012: Deadline for Notices of Intent
31 May 2012: Call for Proposals for ALMA Early Science Cycle 1, release of Observing Tool, and opening of archive for proposal submission.
Mid November 2012: Result of the proposal review process sent to PIs
1 January 2013: Start of ALMA Cycle 1 observing.
February 2013: One month engineering period during altiplanic winter.
31 October 2013: End of ALMA Cycle 1 observing.