

The European ARC Services and User Support

Martin Zwaan
ARC ESO, Garching



EUROPEAN ARC
ALMA Regional Centre



**European ALMA
Regional Centre**

ALMA observatory

Joint ALMA Office

High-level concepts for ALMA Science Operations

- Observations only in service observing mode with flexible (dynamic) scheduling
- Observations 24h/day interrupted by maintenance periods
- All observations executed in the form of scheduling blocks (SBs)
- Default output: reliable images, calibrated according to the calibration plan
- The Joint ALMA Observatory (JAO) is responsible for the data product quality
- All science and calibration raw data are captured and archived
- **User interface is provided by the ALMA Regional Centres (ARCs)**

The ALMA Regional Centres

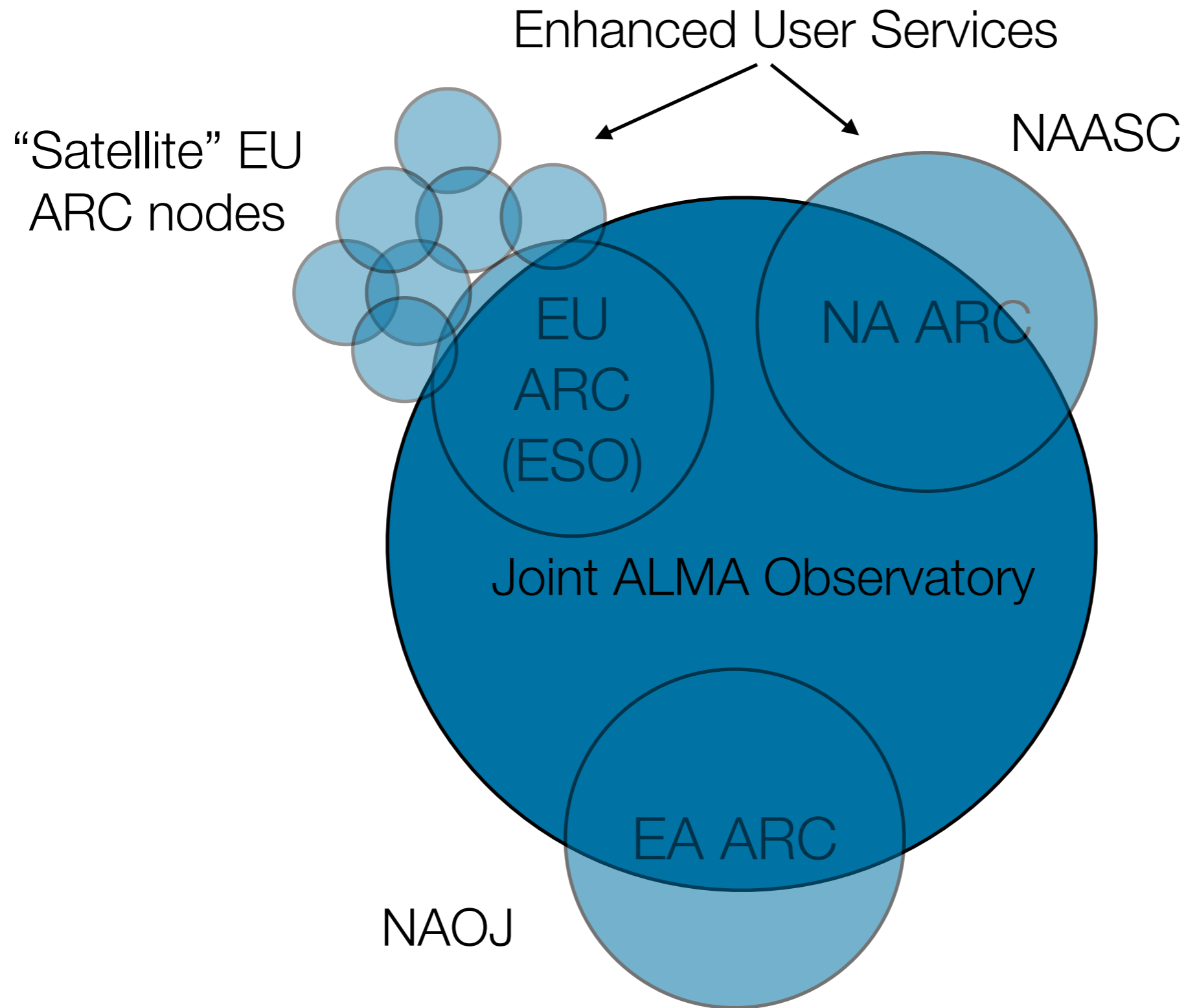
- The ALMA Regional Centres (ARCs) are the **interface** between the user communities and the observatory
- There is one ARC for **each executive**
 - one in Europe, one in North America, one in East Asia
- The ARCs provide a core package of **operationally critical services** to ALMA Operations in Chile and their regional user communities
- Close links with the **Department of Science Operations (DSO)** in Chile

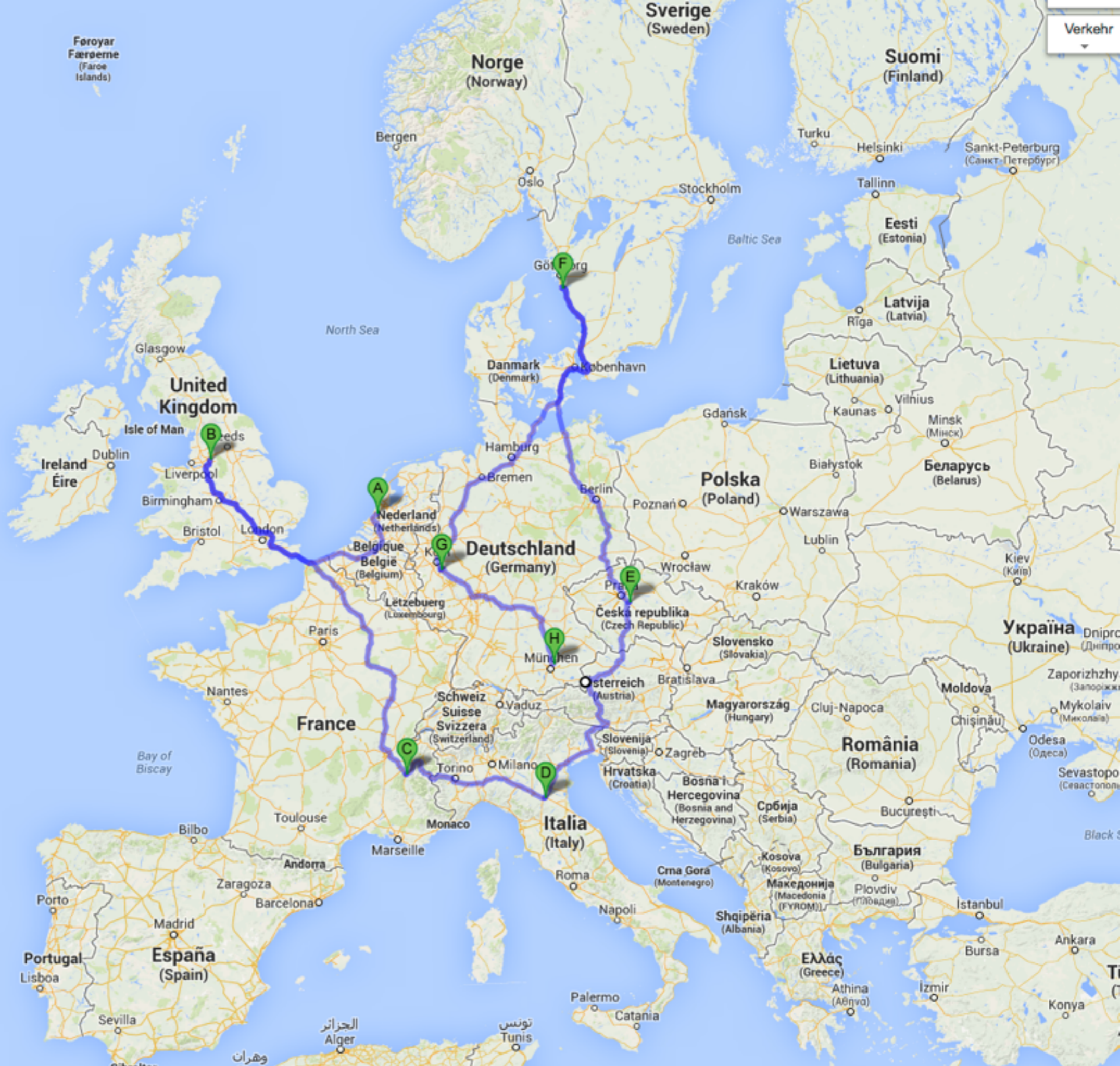
The ARC is your One Stop Shop for all things ALMA

The ALMA Regional Centre **Nodes**

- The ALMA Regional Centres (ARCs) are the **interface** between the user communities and the observatory
- The European ARC is unique for having a **distributed network of ARC nodes**
- These ARC nodes
 - have close ties with the community (active research environments)
 - host many of the mm/submm experts in Europe
 - have been preparing themselves for optimal ALMA user support!
 - have a lot of experience in preparing ALMA observations and analyzing data

Three ALMA Regional Centres





Verkehr

Føroyar
Færøerne
(Faroe
Islands)

Norge
(Norway)

Sverige
(Sweden)

Suomi
(Finland)

Bergen

Oslo

Stockholm

Turku

Helsinki

Sankt-Peterburg
(Санкт-Петербург)

Tallinn

Eesti
(Estonia)

Latvija
(Latvia)

Lietuva
(Lithuania)

Kaunas

Vilnius

Minsk
(Мінск)

Беларусь
(Belarus)

North Sea

Baltic Sea

United
Kingdom

Glasgow

Leeds

Dublin

Ireland
Éire

Liverpool

Birmingham

Bristol

London

Danmark
(Denmark)

København

Hamburg

Bremen

Berlin

Poznań

Gdańsk

Warszawa

Lublin

Wrocław

Kraków

Україна
(Ukraine)

Дніпро

Запоріжжя
(Запорізький)

Миколаїв
(Миколаївська)

Одеса
(Одеська)

Севастополь
(Севастопольська)

A

Nederland
(Netherlands)

Belgique
België
(Belgium)

G

Lëtzebuerg
(Luxembourg)

France

Paris

Nantes

Bay of
Biscay

Schweiz
Suisse
Svizzera
(Switzerland)

Vaduz

Torino

Milano

Monaco

Marseille

Toulouse

Bilbo

Zaragoza

Barcelona

Madrid

Portugal

Lisboa

España
(Spain)

Sevilla

الجزائر
Alger

وهران

تونس
Tunis

Palermo

Catania

Roma

Napoli

Српска Гора
(Montenegro)

Slovenija
(Slovenia)

Zagreb

Hrvatska
(Croatia)

Bosna i
Hercegovina
(Bosnia and
Herzegovina)

Srbija
(Serbia)

Мађарска
(Hungary)

Cluj-Napoca

Chisinau

Moldova

Србија
(Serbia)

България
(Bulgaria)

București

Ромânia
(Romania)

Chişinău

Mykolaiv
(Миколаївська)

Одеса
(Одеська)

Севастополь
(Севастопольська)

България
(Bulgaria)

Plovdiv
(Пловдив)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Србија
(Serbia)

Role of the ARC at ESO

- Science portal, helpdesk, user documents
- Proposal review process: technical assessment
- Observation preparation user support: SB preparation, OT policies
- ALMA Archive operations: host copy, data delivery
- Data quality assessment
- Data reduction help
- Astronomer on duty shifts
- Science community development
- Pipeline science input
- Coordinate ARC network



Role of the ARC nodes

- Provide face to face user support
 - proposal and SBs preparation
 - data reduction,
 - archive research
- Contact Scientists for European projects
- Quality Assurance of ALMA data
- Participate in the ALMA helpdesk
- New software and data reduction techniques
- Scientific community development
- Public relations and outreach



The EU ARC network staff



What the EU ARC network can do for you during Early Science

What the EU ARC network can do for you during Early Science

Face-to-face help with proposal preparation

What the EU ARC network can do for you during Early Science

Face-to-face help with proposal preparation

If observations are approved

Help with Scheduling Block approval

What the EU ARC network can do for you during Early Science

Face-to-face help with proposal preparation

If observations are approved

Help with Scheduling Block approval

If program has been observed

Face-to-face help with data reduction

What the EU ARC network can do for you during Early Science

Face-to-face help with proposal preparation

If observations are approved

Help with Scheduling Block approval

If program has been observed

Face-to-face help with data reduction

At any time

Tutorials, community days and school

What the EU ARC network can do for you during Early Science

Face-to-face help with proposal preparation

Use the helpdesk

If observations are approved

Help with Scheduling Block approval

A Contact Scientist will be assigned

If program has been observed

Face-to-face help with data reduction

Use the helpdesk

At any time

Tutorials, community days and school

Newsletter, Science Portal, Web pages

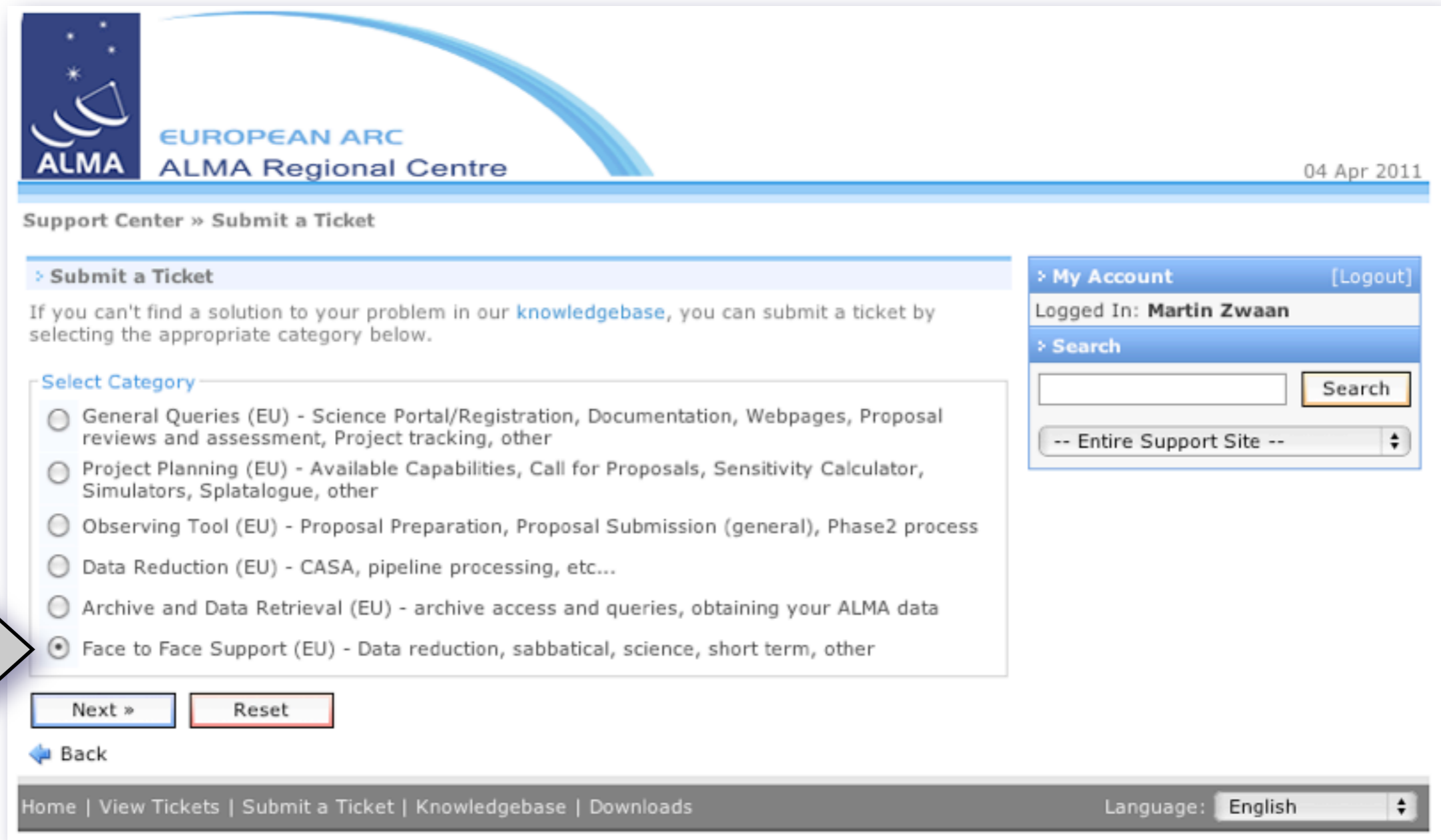
The ALMA Helpdesk

- All communications with the ARC network: **Use the Helpdesk**
- The ARC nodes are integrated into the ALMA Helpdesk

The screenshot shows the ALMA European ARC Support Center website. The header includes the ALMA logo, the text "EUROPEAN ARC ALMA Regional Centre", and the date "04 Apr 2011". Below the header, there is a "Support Center" section with a "Logged in successfully" message. The main content area is divided into four columns: "View Tickets" (Submit new tickets, view existing tickets or create new replies), "Submit a Ticket" (Submit a new ticket), "Knowledgebase" (Search support articles and find answers to frequently asked questions), and "Downloads" (View our library of file downloads and links). To the right, there is a "My Account" section with a "[Logout]" link, a "Logged In: Martin Zwaan" status, and a "Search" box with a "Search" button and a dropdown menu for "Entire Support Site". Below the main content, there is a table of "Popular Knowledgebase Articles" with columns for the article title and "Views". The footer includes navigation links: "Home | View Tickets | Submit a Ticket | Knowledgebase | Downloads" and a language selector set to "English".

Popular Knowledgebase Articles	Views
What do I do if I can't get the OT to work?	482
How do I arrange a visit to one of the ARCs?	382
Can I reduce ALMA data in software packages other than CASA, and is there support for that?	307
What do I do if my helpdesk ticket goes unanswered?	227
Where can I find ALMA documentation and manuals?	226
What translations will be available for user documentation from ALMA?	225
Where can I find data reduction tutorials and recipes using CASA?	222
Can I submit a ticket in Japanese?	194
Why do I see a "Login" screen within the helpdesk when I already logged in via the ALMA User Portal?	146
How can I find out my operating system if I'm using a Mac?	120

Organize face-to-face visit through the Helpdesk



ALMA EUROPEAN ARC
ALMA Regional Centre

04 Apr 2011

Support Center » Submit a Ticket

Submit a Ticket

If you can't find a solution to your problem in our [knowledgebase](#), you can submit a ticket by selecting the appropriate category below.

Select Category

- General Queries (EU) - Science Portal/Registration, Documentation, Webpages, Proposal reviews and assessment, Project tracking, other
- Project Planning (EU) - Available Capabilities, Call for Proposals, Sensitivity Calculator, Simulators, Splatologue, other
- Observing Tool (EU) - Proposal Preparation, Proposal Submission (general), Phase2 process
- Data Reduction (EU) - CASA, pipeline processing, etc...
- Archive and Data Retrieval (EU) - archive access and queries, obtaining your ALMA data
- Face to Face Support (EU) - Data reduction, sabbatical, science, short term, other

Next » Reset

Back

Home | View Tickets | Submit a Ticket | Knowledgebase | Downloads

Language: English

My Account [Logout]
Logged In: **Martin Zwaan**

Search

-- Entire Support Site --

Organize face-to-face visit through the Helpdesk

Specify the needs of your visit

ALMA EUROPEAN ARC ALMA Regional Centre 04 Apr 2011

Support Center » Submit a Ticket » Face to Face Support (EU)

> Submit a Ticket

If you can't find a solution to your problem in our [knowledgebase](#), you can fill in the fields below with as much detailed information as possible and send it to our agents.

General Information

Priority:

EU Visitor

Preferred ARC Node for Support:

Type of Support Required:

Project ID:

Number of Visitors:

Proposed begin and end dates for your visit:

Areas of expertise:
Areas of expertise relevant to your visit

Special Computing Requirements:
(disk space, etc.)

Permission To Access Data:
By checking this box, you give the ARC staff permission to access your data prior to the visit for preparation purposes. Yes

Financial Support Required: Yes

Justification for Financial Support:
This field is required if the visitor requests financial support

My Account [Logout]
Logged In: **Martin Zwaan**

Search

-- Entire Support Site --

Where do I go for face-to-face support?

- Each of the nodes can help with proposal preparation, SB creation, and data reduction for most standard observing modes

→ Visit your local ARC node

- For specialized support

→ May need to travel to an ARC node with a certain specialization

Funding through MARCUs



The screenshot shows the ESO ALMA Regional Centre website. The header includes the ESO 50 Years 1962-2012 logo and the text 'European Southern Observatory'. A navigation bar contains 'Public', 'Science', and 'User Portal'. Below this is a breadcrumb trail: 'Science Users Information > Observing Facilities > ALMA Observatory > ESO ALMA Regional Centre > MARCUS funding request'. The main content area is titled 'Face-to-Face Visit Request' and contains the following text: 'Funding is available through the RadioNet3 MARCUs (Mobility for ARC Users) network for users that do not have access to their local node or for users that will be visiting a node other than their local node. To request MARCUs funding for your prospective visit, please fill the form below.' The form includes input fields for 'First and last name', 'Email address', 'Home institute and country', and 'ALMA project ID'. A dropdown menu is visible at the bottom of the form, currently showing 'Bologna'.



What ARC nodes offer

- All ARC nodes offer
 - Computer facilities for guests
 - Accommodation in guest house or local hotels
 - Fast internet links (to Garching)
- Funding for travel to ARC nodes:
 - Some ARC nodes have funds available (check local web pages)
 - RadioNet funding through MARCUs
 - In general, visiting an ARC node is like going on an observing trip

Guide to the European ARC

- The standard introduction into the services provided by the European ARC structure
- Available through the ALMA User Portal

Guide to the European ARC

- The standard introduction into the services provided by the European ARC structure
- Available through the ALMA User Portal

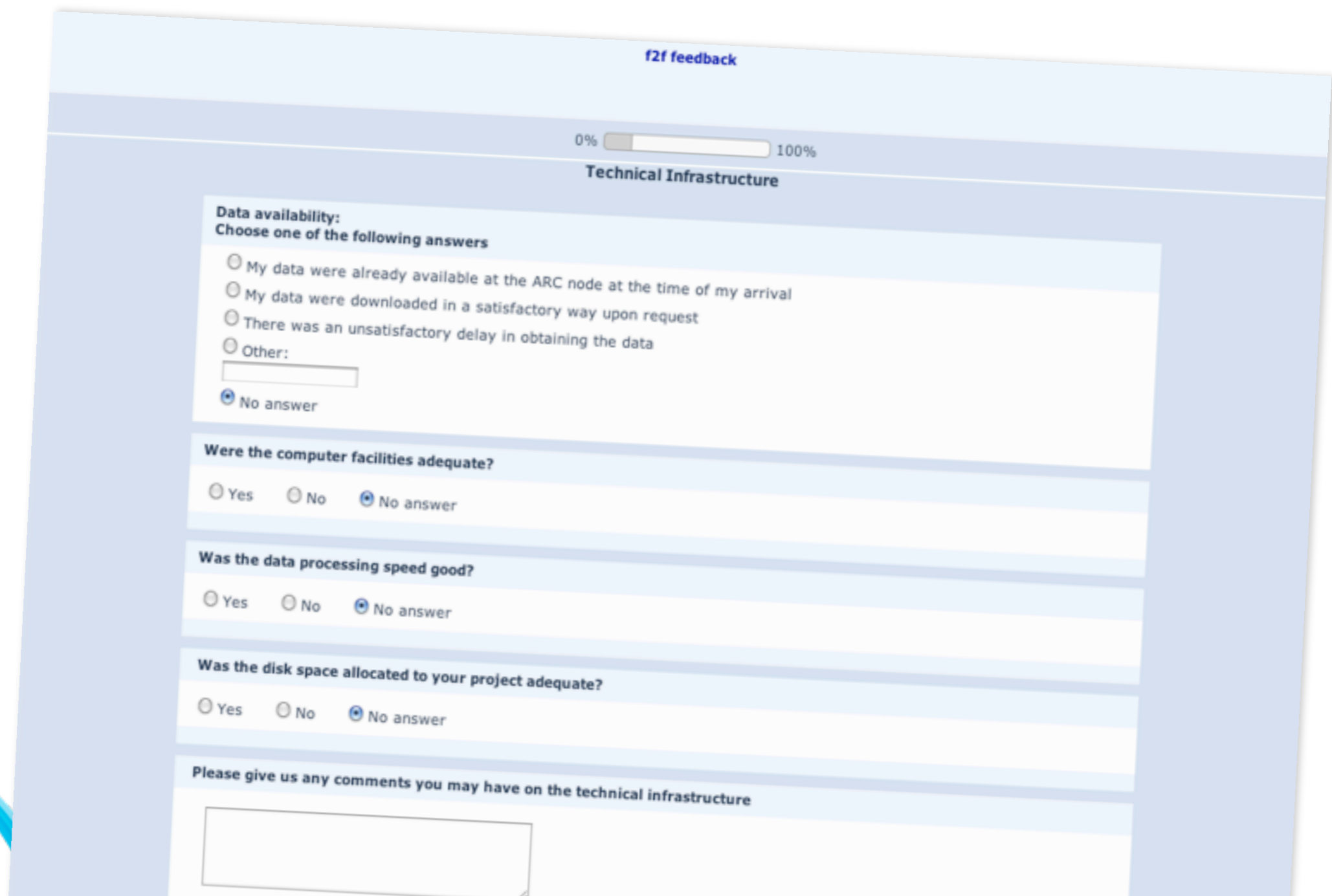


Doc 2.8, ver. 3.0 | October 2013

Guide to the European ALMA Regional Centre

Feedback form

- Your feedback is very important!



f2f feedback

0% 100%

Technical Infrastructure

Data availability:
Choose one of the following answers

- My data were already available at the ARC node at the time of my arrival
- My data were downloaded in a satisfactory way upon request
- There was an unsatisfactory delay in obtaining the data
- Other:
- No answer

Were the computer facilities adequate?

Yes No No answer

Was the data processing speed good?

Yes No No answer

Was the disk space allocated to your project adequate?

Yes No No answer

Please give us any comments you may have on the technical infrastructure

The ARC nodes' webpages

50 YEARS 1962-2012 + ESO + European Southern Observatory

ESO — Reach

Public Science User Portal Intranet Contact Site Map

Science Users Information > Observing Facilities > ALMA Observatory > European ALMA Regional Centre

ALMA Observatory

- News
- >> ALMA Science Portal
- European ALMA Regional Centre**
- ARC Staff at ESO
- Science at the ARC
- User Support at the EU ARC
- >> ARC TWiki
- Meetings and Events
- Documentation
- Employment
- Contact

European ALMA Regional Centre

The European ALMA Regional Centre (ARC) provides the interface between the ALMA project and the European science community. It supports its users mainly in the areas of proposal preparation, observation preparation, data reduction, and data analysis.

Unlike its partner ARCs in [North America](#) and [Japan](#), the European ARC is organized as a coordinated network of scientific support nodes distributed across Europe. The central node is located at ESO Headquarters in Garching bei München and carries the responsibility for all the core ARC activities as well as the coordination of the additional science support provided by the [regional nodes](#).

The European ARC is the point of contact for European ALMA users from the moment of proposal submission to the actual distribution of calibrated data and subsequent analysis via the [ALMA Helpdesk](#).

European ARC nodes

The central European ARC node is located at the ESO headquarters in Garching bei München. A distributed network of ARC nodes is being set up to provide services to the community. ARC nodes are currently set up throughout Europe at the following locations:

Bonn-Cologne

Country: Germany
Contact person: F. Bertoldi
Current staff: 3 staff astronomers, 5 postdocs, 1 IT support, 2 COFUND fellows
Expertise: advanced data analysis and modeling (including Cologne Database for Molecular Spectroscopy), polarimetry, zero-spacings correction for continuum data
[Local web pages](#)

Bologna

Country: Italy
Contact person: J. Brand
Staff: 5 staff astronomers, 2 postdocs, 2 IT support, 1 COFUND fellow

IRAM, Grenoble

Countries: France, Spain, Germany
Contact person: F. Gueth
Staff: 4 staff astronomers, 1 postdoc, 2 software engineer
Expertise: Calibration, Phase correction, Polarimetry, lma
[Local web pages](#)

Allegro, Leiden

Country: The Netherlands
Contact person: M. Hogerheijde
Staff: 1 staff astronomer, 3 postdocs
Expertise: High-frequency, Wide field imaging, Data anal
[Local web pages](#)

Manchester

Country: United Kingdom

The ARC nodes' webpages

50 YEARS 1962-2012 + ESO + European Southern Observatory

ESO — Reach

Public Science User Portal Intranet Contact Site Map

Science Users Information > Observing Facilities > ALMA Observatory > European ALMA Regional Centre

ALMA Observatory

- News
- >> ALMA Science Portal
- European ALMA Regional Centre**
- ARC Staff at ESO
- Science at the ARC
- User Support at the EU ARC
- >> ARC TWiki
- Meetings and Events
- Documentation
- Employment
- Contact

European ALMA Regional Centre

The European ALMA Regional Centre (ARC) provides the interface between the ALMA project and the European science community. It supports its users mainly in the areas of proposal preparation, observation preparation, data reduction, and data analysis.



EUROPEAN ARC
ALMA Regional Centre

Unlike its partner ARCs in [North America](#) and [Japan](#), the European ARC is organized as a coordinated network of scientific support nodes distributed across Europe. The central node is located at ESO Headquarters in Garching bei München and carries the responsibility for all the core ARC activities as well as the coordination of the additional science support provided by the [regional nodes](#).

The European ARC is the point of contact for European ALMA users from the moment of proposal submission to the actual distribution of calibrated data and subsequent analysis via the [ALMA Helpdesk](#).



European ARC nodes

The central European ARC node is located at the ESO headquarters in Garching bei München. A distributed network of ARC nodes is being set up to provide services to the community. ARC nodes are currently set up throughout Europe at the following locations:

Bonn-Cologne

Country: Germany
Contact person: F. Bertoldi
Current staff: 3 staff astronomers, 5 postdocs, 1 IT support, 2 COFUND fellows
Expertise: advanced data analysis and modeling (including Cologne Database for Molecular Spectroscopy), polarimetry, zero-spacings correction for continuum data
[Local web pages](#)

Bologna

Country: Italy
Contact person: J. Brand
Staff: 5 staff astronomers, 2 postdocs, 2 IT support, 1 COFUND fellow

IRAM, Grenoble

Countries: France, Spain, Germany
Contact person: F. Gueth
Staff: 4 staff astronomers, 1 postdoc, 2 software engineer
Expertise: Calibration, Phase correction, Polarimetry, lma
[Local web pages](#)

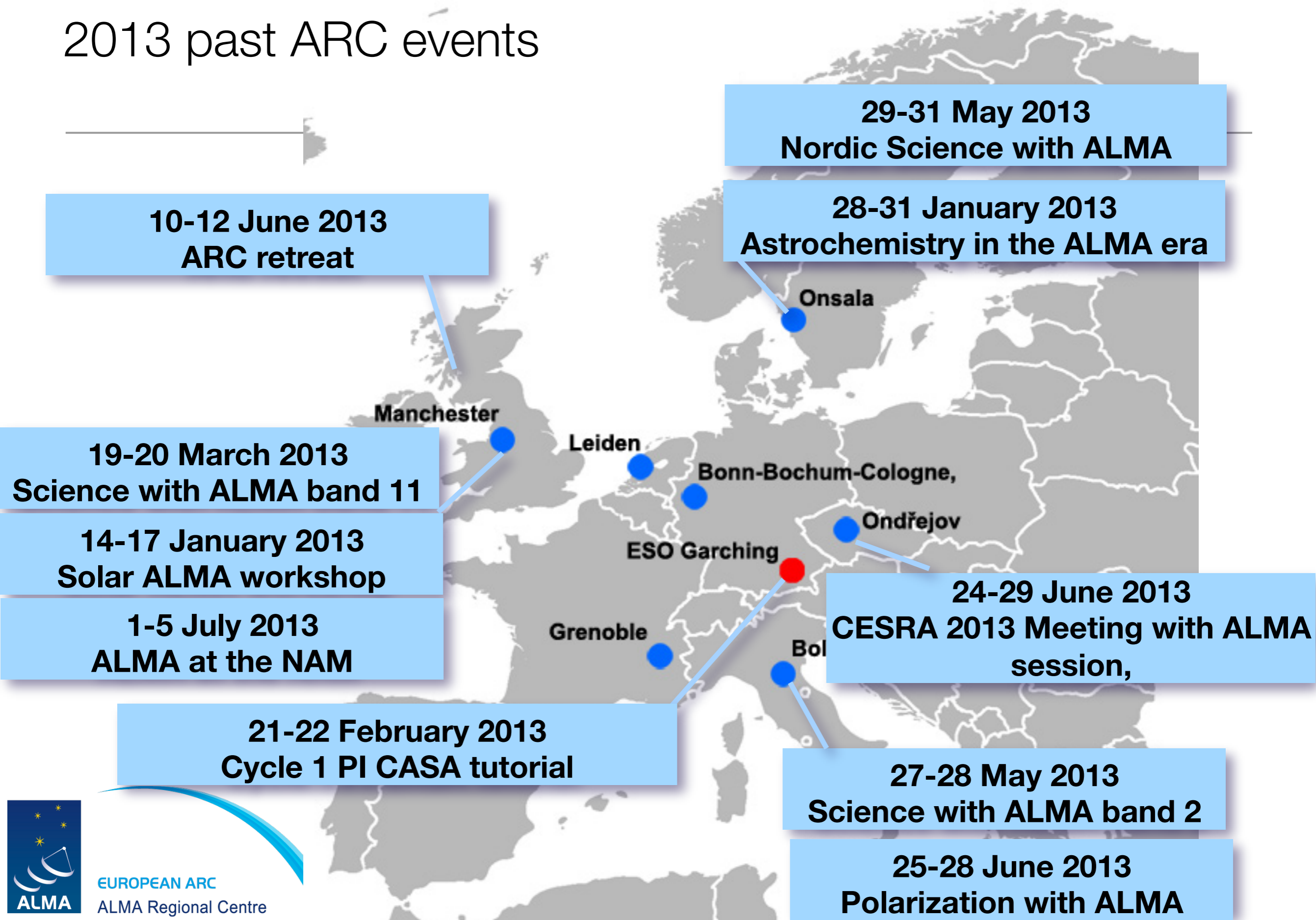
Allegro, Leiden

Country: The Netherlands
Contact person: M. Hogerheijde
Staff: 1 staff astronomer, 3 postdocs
Expertise: High-frequency, Wide field imaging, Data anal
[Local web pages](#)

Manchester

Country: United Kingdom

2013 past ARC events



Cycle 2 ARC training events



Science Portal: almascience.org

- Identical user-experience at all three sites
- One-stop-shop for ALMA science
- All ALMA users need to register!

The screenshot shows the ALMA Science Portal website. At the top left is the ALMA logo with the text "Atacama Large Millimeter/submillimeter Array" and "In search of our Cosmic Origins". Below this are navigation links for ESO, NRAO, and NAOJ. A search bar and a user profile for "Martin Zwaan" are in the top right. A left sidebar contains a menu with items: About, Science, Proposing, Observing, Data, Documents & Tools, Knowledgebase/FAQ, and Document Repository. The main content area features a large banner image of a galaxy and an ALMA antenna, with the text "Welcome to the Science Portal at ESO". Below the banner is a paragraph explaining the portal's purpose and how to switch between regional centers. On the right, a "General News" section lists several updates with dates, such as "Urgent: Cycle 2 Observing Tool Update" (Nov 15, 2013) and "ALMA Cycle 2 Call for Proposals is now open" (Oct 24, 2013).

After your Cycle 2 data have been taken: Quality Assurance

- Goal: *“deliver to the PI a reliable final data product that has reached the desired control parameters outlined in the science goals, that is calibrated to the desired accuracy and free of calibration or imaging artifacts”*
- For Cycle 2: **QA on best effort basis**
- Errors introduced by user-supplied parameters are outside the scope the ALMA QA
- QA Approach: Breakdown of QA into broad steps that mimic data flow.
 - Data Taking: QA0 (SB-level) & QA1 (Observatory Tasks)
 - Data Reduction: QA2 (Data Reduction / Science Pipeline)
 - Post Data Reduction: QA3 (Feedback from users)

After your Cycle 2 data have been taken: QA2

- When the required number of executions of an SB have been observed, the data are reduced in order to perform QA2
- All data are reduced using standard procedures for flagging, calibration and imaging
 - Cycle 0 and early Cycle 1: standard CASA scripts
 - **Later in Cycle 1 and Cycle 2: calibration using the ALMA science pipeline**
 - Science pipeline has started commissioning phase for calibration
 - Pipeline will be integrated into CASA 4.3, the tasks look like CASA tasks
 - Single dish and interferometric datasets can be handled
 - Science target imaging performed manually by ALMA staff until pipeline imaging is commissioned

After QA2

- If data pass QA2 (rms meets requirements) data are prepared for delivery
- Otherwise, more executions of SB may be required
- Data delivery
 - Cycle 0: delivered self-consistent tar files that contain the a-priori calibrated MS, the fully calibrated MS and the/some FITS cubes.
 - Cycle 1 onwards: delivery of data through Science Portal
 - One year proprietary time starts after data are available to PI
- At Cycle 2, data delegation will be available
 - PIs can give access rights to the data or a project to any registered ALMA User

-
- The European ARC is there to help you!

