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# ACS Community Branch

Who we are, and what can YOU do

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## What is ALMA Common Software (ACS)

Control and monitoring software framework developed by ALMA for its own communications. It consists in a bundle of already available software (such as CORBA ORBs, ACE, java libraries) newly provided solutions (nc, monitoring, cdb) and tools that allows us to develop solutions based in the component/container architecture.



## What is ACS Community Branch (ACB)

A completely open source control and monitoring framework, useful not only for ALMA, but for the entire astronomy and control community. Maintained and extended by its own users and enthusiasts.







A completely open source ...



2006, Germany





... control and monitoring framework, ...



2007, Chile



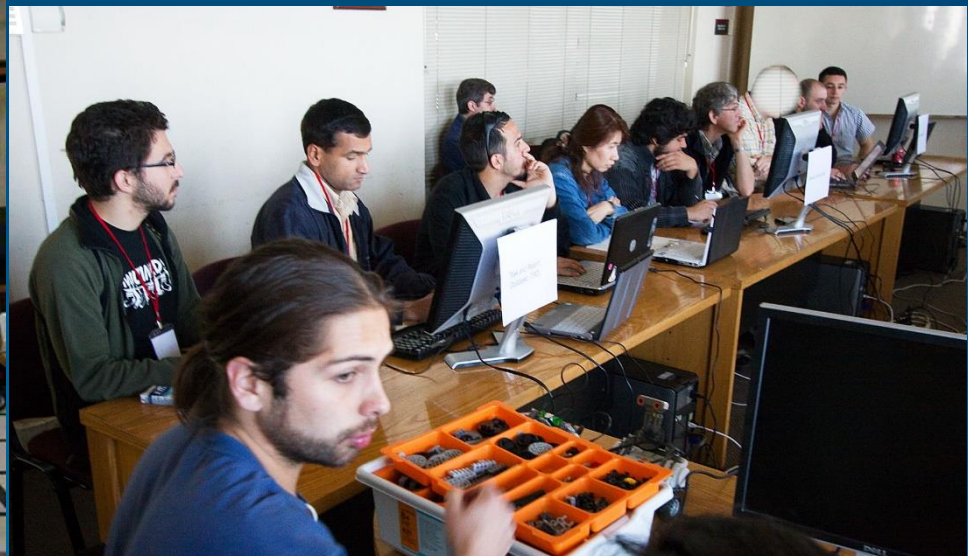


... useful not only for ALMA ...



2008, Chile





... but for the entire astronomy and control community.



2009, Chile





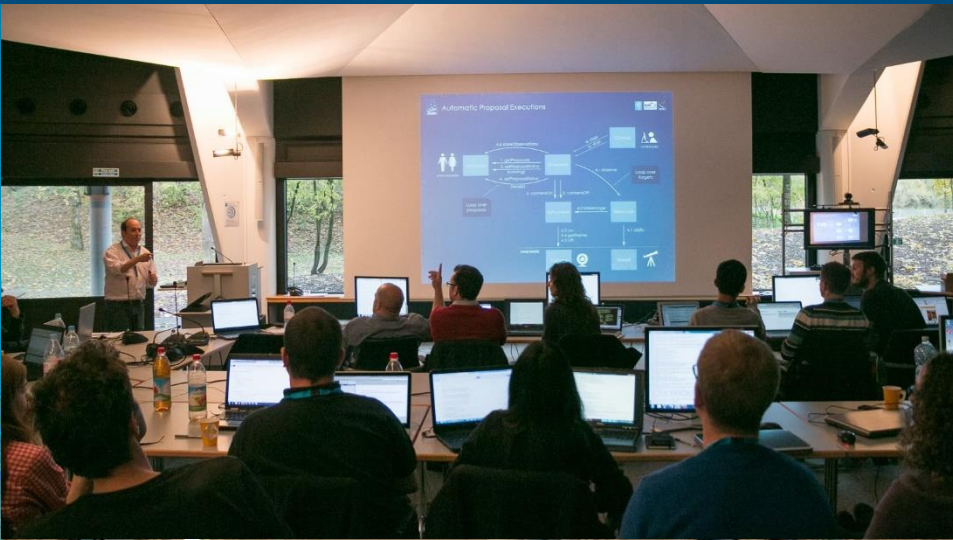
Maintained and extended by its own users and enthusiasts.







... we hope you! :D



2014, Germany



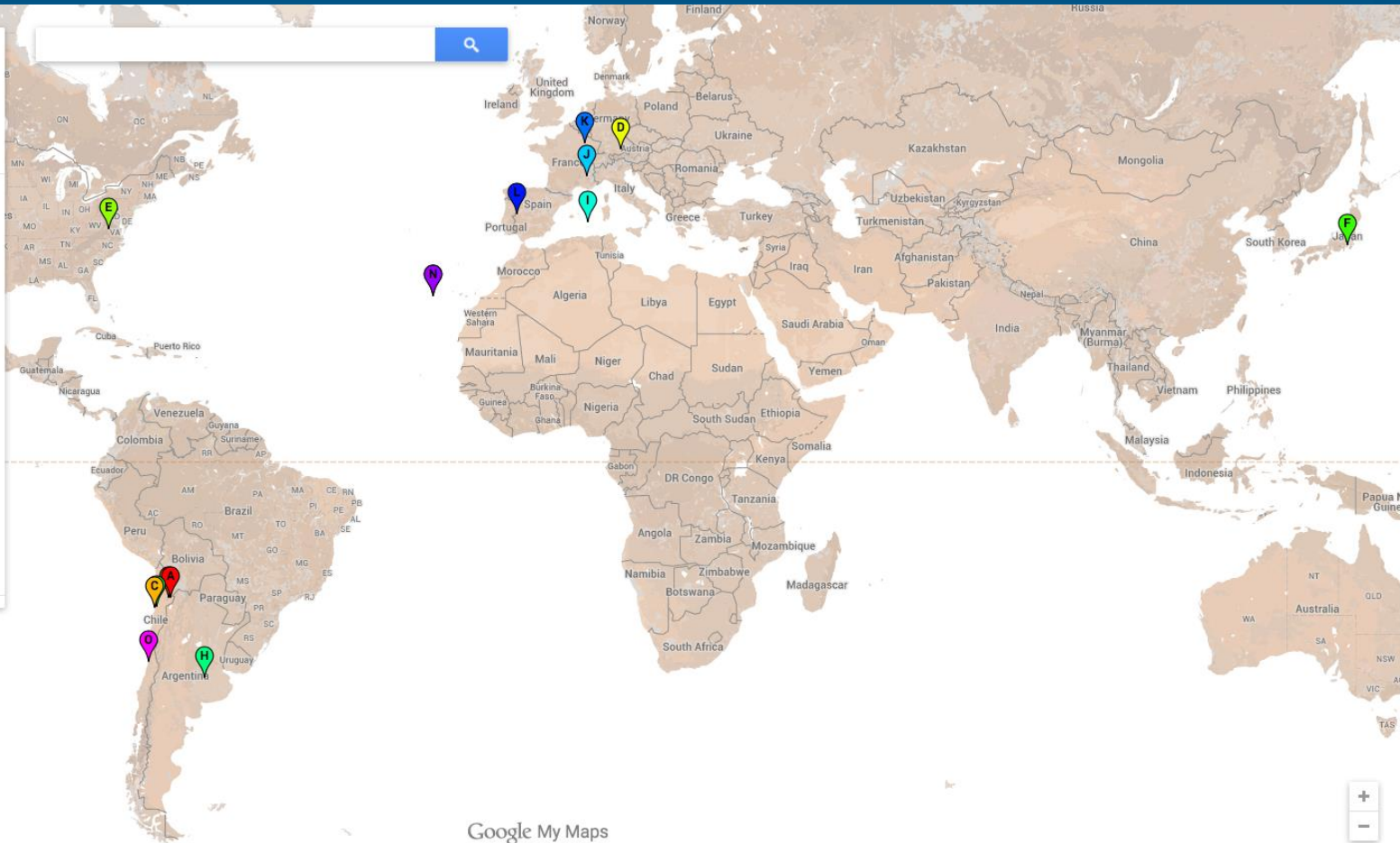
**ACS Community**

Map of ACS Community locations. Learn more about the ACS Community at

Made with Google My Maps

Places

- APEX (MPIFR/ESO)
- ALMA (NRAO/ESO/NAOJ)
- SPARTA (ESO)
- ESO
- NRAO
- NAOJ
- Observatorio Cerro Armazones (RU...)
- LLAMA
- Sardinia Radio Telescope
- ASTRI (INAF)
- Cherenkov Telescope Array
- ARIES XXI (OAN)
- BATMAN (INAF)
- Gran Telescopio de Canarias
- UTFSM







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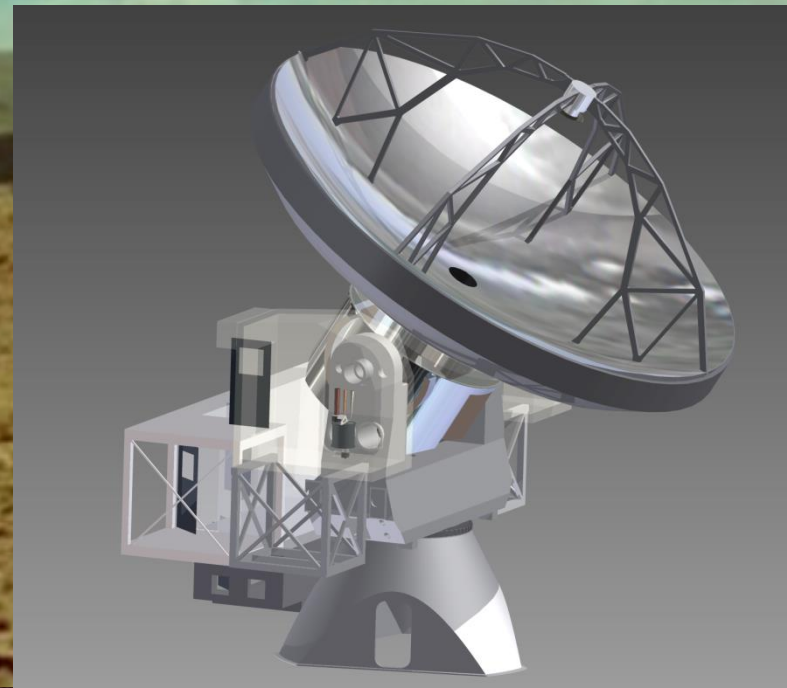


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Credit: Christoph Malin, an ESO Photo Ambassador







ALMA Observatory **CTA**





## ALMA and Universities

- An important goal for ALMA is to generate knowledge transference with universities.
- Students gain experience in software engineering while being inside the challenging astronomy industry.
- Students gains visibility and curriculum for their resume. Even for jobs outside of the industry is a good entry.





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## What are our projects in ACB

<https://github.com/ACS-Community/ACS/wiki/Project-Proposals>







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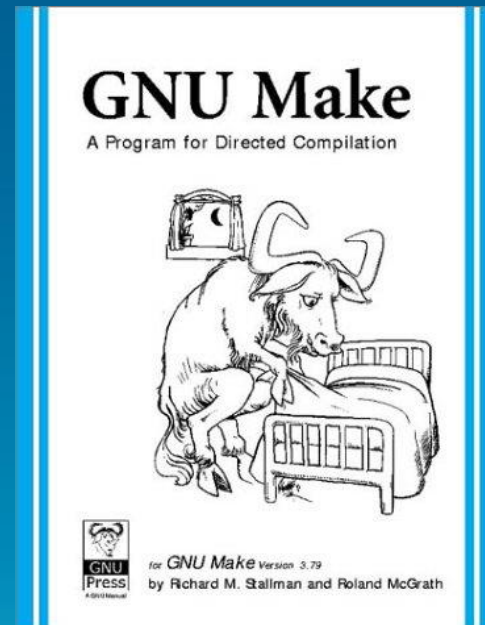


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Achieve a complete Continuous Integration







## Porting to other platforms

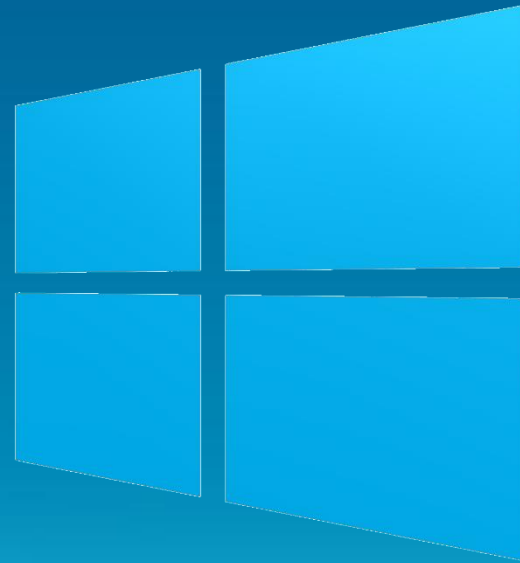




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## HW and BACI Languages support



# CAN



```
Linux 3.12-15-r125-61084-gc80f547 42 SMP PREEMPT RT Tue Aug 6 20:38:20 CEST 2014
processor           : 0
model name          : ARMv7 Processor rev 2 (v7l)
Features             : tag_half thumb fastmult vfp edsp trapeee neon vfpv3 tlc vfpd32
CPU implementor     : 0x41
CPU architecture    : 7
CPU variant         : 0x3
CPU part            : 0xc08
CPU revision        : 2

Hardware            : Generic ARMv7L (Flattened Device Tree)
Revision            : 0000
Serial              : 0000000000000000
setting sched_rt_runtime us to 1000000
starting "backbench -l 1"
Starting "cyclictest -n 100 -l1000000 -q"
Running in process mode with 30 groups using 40 file descriptors each (= 400 tasks)
Each sender will pass -l messages of 100 bytes
# /dev/cpu_dma_latency set to max
P: 0 ( 3324) P: 99 I: 10880 C: 1000000 Hls: 20 Act: 06 Avg: 04 Pks: 118

real    16m40.625s
user    0m00.358s
sys     0m07.418s
root@green10:~#
```







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## Code generation for all languages







## TMCDDB tools, and other DB backends







Provide databases backends for monitoring





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# ActiveMQ







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# Open source alternatives for Bulk Data Transfer





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## Alternatives for Notification Channel





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To introduce more members to the community





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# Opportunities for Students





- Summer internships (práctica): every year there is a call for interns. Next one this year!
  - Announcement in september 2015 ([www.almaobservatory.cl](http://www.almaobservatory.cl))
- Undergraduate and grad theses.
- Internship (pasantía): opportunity to either work in ALMA or LLAMA while obtaining your degree.





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You convinced me, I want to help...





and I don't have any ideas?

See this wiki page for project ideas: <https://github.com/ACS-Community/ACS/wiki/Project-Proposals>



and I do have a particular idea to add to the ACS framework  
Excelent! Just do it! We only ask to put yourself in contact with the  
Technical Board, and for minimal documentation for its future  
maintenance of the project. Fork and when done, send us the pull  
request.





and I do have a particular idea that uses the ACS framework

Excelent! We totally support these projects, and the more users we  
and in the ACS Community Branch, the better.

We can provide you with insights, and answers questions on ACS  
usage.



and I would like to help an ongoing project?

Make contact with the person in charge of the project in question.  
(look for the corresponding ticket in <https://github.com/ACS-Community/ACS/wiki/Project-Proposals>)

They will more than welcome you :D







Thanks! Questions?

Further information:

<http://www.almaobservatory.org>

Contact point: [ahoffsta@alma.cl](mailto:ahoffsta@alma.cl)

The Atacama Large Millimeter/submillimeter Array (ALMA), an international astronomy facility, is a partnership of Europe, North America and East Asia in cooperation with the Republic of Chile. ALMA is funded in Europe by the European Organization for Astronomical Research in the Southern Hemisphere (ESO), in North America by the U.S. National Science Foundation (NSF) in cooperation with the National Research Council of Canada (NRC) and the National Science Council of Taiwan (NSC) and in East Asia by the National Institutes of Natural Sciences (NINS) of Japan in cooperation with the Academia Sinica (AS) in Taiwan. ALMA construction and operations are led on behalf of Europe by ESO, on behalf of North America by the National Radio Astronomy Observatory (NRAO), which is managed by Associated Universities, Inc. (AUI) and on behalf of East Asia by the National Astronomical Observatory of Japan (NAOJ). The Joint ALMA Observatory (JAO) provides the unified leadership and management of the construction, commissioning and operation of ALMA.