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The Atacama Large Millimeter Array (ALMA) is a joint project between astronomical organizations in Europe, North America, and Japan. ALMA consists of 50 main twelve-meter antennas, plus 4 twelve-meter and 12 seven-meter antennas constituting the "compact array". They're all operating in the millimeter and sub-millimeter wavelength range, with baselines up to 10 km. It is located at an altitude above 5000m in the Chilean Atacama desert.

The ALMA Common Software (ACS) provides a software infrastructure common to all partners and consists of a documented collection of common patterns in and of components, which implement those patterns. The heart of ACS is based on a distributed component model, with ACS components implemented as CORBA objects in any of the supported programming languages. The teams responsible for the control system's development use ACS components as the basis to control high level entities and for the implementation of devices such as an antenna mount control.

ACS provides common CORBA-based services such as logging, error and alarm management, configuration database and lifecycle management.

ACS is based on experience accumulated with similar projects in the astronomical and particle accelerator contexts, and reuses/extends proven concepts and components. Although designed for ALMA, ACS can and is being used in other control systems and distributed software projects, since it implements proven design patterns using state of the art, reliable technology. Through the use of standard constructs and components, non-ACS developers can easily understand the architecture of software modules. This makes maintenance affordable even on a very large project such as ALMA.

- [Release Notes - 2018](#)
- [Release Notes - 2019](#)
- [Release Notes - 2020](#)
- [Release Notes - 2021](#)
- [Release Notes - 2022](#)
- [Release Notes - 2023](#)
- [Release notes - 2024](#)

The ACS source code repository is hosted in a local GitLab service which is publicly available at the ALMA Open Source Software project:

- <https://asw.alma.cl/ASW>

In addition to ACS, most of the ALMA software has the GNU LGPL license and can be found in the different repositories available there.

Tutorials	Manuals	Guides	Specifications
• ACS Java Component Tutorial ◦ tutorial ◦ java • BACI Device Server Programming Tutorial ◦ tutorial ◦ c++	• Logging and archiving Manual ◦ manual ◦ logging • Notification Channel ◦ manual ◦ notification_channel	• ACS ports ◦ guide	• Management and Access Control Interface Specification ◦ specification ◦ maci

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