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The Notify Service has several limitations, such as being resource intensive and not scaling well with the number of subscribers.

Obsolescence of current technology CORBA, used in ACS, which is no longer maintained, or its maintenance is limited. This project will also work as a first stone for the study of potential CORBA replacement.

CORBA Services include:

- Messaging (request/response and publish/subscribe) (Notification Channel)
- Interface Repository
- Logging
- Error management
- Alarms
- Configuration database server

**Objective:** Find a replacement for the notification channel. Move away from CORBA while keeping in place the current API provided by Common Software.

**Requirements:**

- Should be as transparent as possible having the same features and requirements of the previous Notify Service implementation.
- ACS Notification Channel alternative should hide as much of the underlying technology as possible.
- It must be possible to set QoS properties of channels.
- Event channels should never discard events and events should be delivered to consumers in a timely manner.

Data Distribution Service (DDS) as an alternative to CORBA Notify Service: [Data distribution service.PDF](#)

- ActiveMQ
- RabbitMQ
- Kafka
- Pulsar
- ZeroMQ

ActiveMQ Artemis (latest version of ActiveMQ). Some of its relevant characteristics for which it was chosen are:

- Implements the specification of JMS.
- It is open source, multi-protocol, Java-based messaging server.
- Has connectivity from C, C++, Python.
- Supports many protocols, including one of its own: Openwire.
- It is push-push and reliable, just as the current CORBA Implementation for the Notification Channel.

More details for the technology used can be found [here](#).

1. Initial study of current software and technology.
2. Design.
3. Implementation:
  - Language: C++.
  - Maintain current API.
4. Testing.
5. Results and documentation.

**Ghantt Chart**

### Gantt Chart for Notification Channel Replacement

Summer Students 2022

Catalina Pezo V. | January 18 - March 12, 2022

	Week 1 Jan 18-22	Week 2 Jan 25-29	Week 3 Feb 1-5	Week 4 Feb 8-12	Week 5 Feb 15-19	Week 6 Feb 22-26	Week 7 Mar 1-5	Week 8 Mar 8-12
<i>Formulate Plan of Action</i>								
<i>Get to know ACS and Notification Channel</i>								
<i>Learn about ActiveMQ</i>								
<i>Design and planification of implementation</i>								
<i>Implement Replacement</i>								
<i>Testing</i>								
<i>Results and Corrections</i>								
<i>Documentation and Report</i>								

All the previous information can was presented in the initial presentation of the Summer Studentship.

Download: [ALMA Notification Channel Replacement - Initial Presentation.pdf](#)