

## **ALDEBARAN LAUNCH SYSTEM**

The Aldebaran Launch System has been a Project developed by the CNES (France) the CDTI (Spain ) and the DLR (Germany) aiming to develop a micro launcher to provide responsive and low-cost dedicated flights to microsatellites and to be used as well as a technological platform to qualify in flight innovative technologies to be later introduced in larger launchers.

The specified launch capability covered three payload masses: 50 kg, 150 kg, 300 kg leading to three potential launcher configurations, one for each payload mass.

For the two smaller payloads (50 and 150 kg) the airborne launch from a fighter aircraft carried was considered and for the bigger payload mass ( 300kg) an airborne launch from a cargo carrier was considered together with a classical launch from ground.

Three industrial consortiums were established with a leading prime company in each one: two in France with Astrium ST and Dassault Aviation as leading companies, and one in Spain with EADS Casa Espacio as leading company.

Each consortium included several companies specialist in each launcher area and also in the aircraft carrier.

The Spanish team was centred in the airborne launch cases and comprised the following partners:

- EADS Casa Espacio for system studies
- EADS CASA MAS for aircraft studies (Eurofighter and A400)
- Deimos Space for Mission and Trajectories studies
- Aernnova Engineering for Upper Composite studies

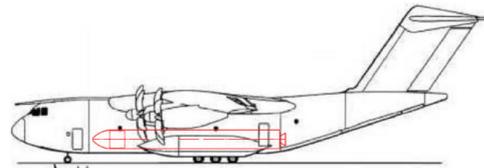
- SENER for Launch Operations studies
- CESA for ACS and Nozzle Vectoring studies

In parallel and independent of this consortium GTD (Spain) studied the Avionics and SNECMA (France) studied the Solid and Liquid Propulsion leading to many coordination meetings.

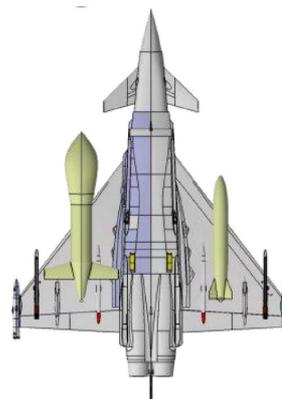
Also several meetings were held to coordinate the activities and the study results with the other two consortiums and the CNES, CDTI and DLR.

The Aldebaran Project included the initial trade offs , system and accommodation studies, trajectories , staging , etc...and concluded with the establishing of the launcher/aircraft configurations for the two smaller payloads.

The Spanish collaboration was founded by the CDTI as a SAE project.



**Launcher in cargo bay configuration**



**Launcher under wing configuration**