Complete the development and qualification of chemical propulsion systems for satellites and spacecraft

1.- PROPOSAL DESCRIPTION

The need for satellites to perform maneuvers to reposition themselves into their final orbit after being launched by a rocket is becoming increasingly common. These maneuvers are typically carried out using electric propulsion. Although highly efficient, this method presents the challenge that these maneuvers can take up to 9 months to complete.

To solve this issue, LIA Aerospace has developed products that reduce the maneuver time to no more than 15 days, at a sale price comparable to that of electric propulsion. LIA Aerospace's space propulsion technology is cutting-edge. It uses non-toxic fuels and aims to provide access to higher orbits (MEO, GEO, LLO) at a fraction of the cost of other products currently available on the market.

2.- BUSINESS MODEL

The company aims to commercialize the BP series of low-cost propulsion systems for satellites, with propellant capacities of 100kg, 200kg, 500kg, 1,000kg, and 2,000kg. These systems can be configured with different thrusters to meet the specific requirements of each mission.

LIA Aerospace has offices in Argentina and the United Kingdom, and is exploring opportunities to expand into the United States and other European Union countries.

3.- FINANCING

The company has successfully financed the first stage of its project, which included establishing the plant and building the first prototypes, with an investment of USD 1,500,000.

To complete the product development and scale up production, an additional investment of USD 5,000,000 is required, to be allocated as detailed in section 5.

4.- IRR AND INVESTOR PROFILE

The ideal investor profile is Corporate Venture Capital, because traditional Venture Capital funds typically do not invest in high-risk hardware technology. In contrast, medium to large companies with Venture Capital funds recognize the value of innovation and owning disruptive technology in niche, strategic markets.

5.- EXECUTION PLAN

The first stage was financed and developed between 2019 and 2024, and consisted of:

- Building the necessary facilities for project and product development;

- Constructing and testing the first prototypes, validating both technological maturity and commercial traction.

For the second stage, an investment of USD 5 million is required to finance the following tasks:

- Completing the development of key components, such as propellant tanks (USD 450,000);

- Qualifying the engine in a space-simulated environment (USD 1,500,000);

- Building two engineering models (USD 750,000);

- Qualifying one of the systems under conditions similar to those at launch and in space operation (USD 650,000);

- Expanding testing and integration facilities (clean room and measurement systems, USD 250,000);

- Covering salaries, rent, taxes, etc., for 24 months (USD 1,400,000).

Perfil

LIA Aerospace Ltd (UK) (https://lia-aerospace.com/) is an Argentine startup that was incubated and funded by the ESA BIC (European Space Agency Business Incubation Centre) in Harwell, United Kingdom. The company received a grant from INNOVATE UK EDGE, which was used to develop prototypes in collaboration with the Satellite Applications Catapult (UK). Recently, LIA Aerospace completed its acceleration program with the Airbus Defense and Space Accelerator in Stevenage, UK.

In Argentina, the company participated in the University of San Andrés incubator and INCUBATE in 2019. Since then, it has received the following non-repayable contributions from the Argentine State (ANR):

- Seed Fund, ANR INCUBATE, Potenciar Industria Satelital y Espacial I, FONARSEC EMPRETECNO.

- Industria Satelital y Espacial II (approved but not executed due to lack of funding).