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ARESPHERE: SPACE ENTREPRENEURSHIP, THE BEST WAY TO DEVELOP AND ENCOURAGE  
THE MEXICAN SPACE INDUSTRY**Abstract**

The Mexican space industry faces multiple challenges that hinder its growth and development, which can be grouped into five main categories: financing, human capital, poor space culture, infrastructure and regulatory framework.

In terms of financing, there is little private investment due to the perception of high risk, which restricts the country's capacity to invest in research and development, and in the area of human capital, the shortage of engineers and scientists specialized in space technology, as well as the brain drain to other countries in search of better opportunities, limit the execution of complex space projects. Also, the limited space infrastructure forces Mexico to depend on other countries for its space operations. Finally, the incomplete regulatory framework itself does not meet the needs of the industry.

The startup ARESPHERE supported by the Autonomous University of Baja California (UABC) has developed four proposals that strategically address the main challenges faced by the Mexican space industry, all of them promoting the circular economy and the maximum use of resources.

The Mercury project proposes the development of a drone made by additive manufacturing in biodegradable materials with modules adaptable to different needs according to the user, from cameras to sensors and satellites, which contributes to the creation of aerospace infrastructure and the maximum use of resources.

ECSAF seeks to develop a business model based on circular economy and sustainability for the aeronautical industry, through the development of a second generation biofuel with used vegetable cooking oil, in a first stage, and in a second stage, it is proposed to investigate the obtaining of alternative fuel for aviation derived from agro-industrial waste from the wine and brewing industry.

Both projects seek to be attractive products to attract investment, as they present profitable and sustainable business models, both economically and environmentally.

S-Research seeks to promote the development of Mexican designs and prototypes created by students through an online platform that allows them to market their prototypes, thus encouraging the retention of qualified talent in the country.

ARES OUTREACH seeks to make aerospace topics visible to several sectors of the population, from children to professionals and investors, through scientific dissemination strategies, promoting a greater space culture in Mexico.

By addressing these challenges in a comprehensive manner, the startup seeks to boost the growth of the Mexican space industry and position the country as a relevant player in the international space arena.