

35th IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS (E3)  
Economic analysis of both actual and potential future benefits from space activities and applications to  
nations and peoples. (3)

Author: Dr. Manuel Wilhelm  
Portugal Space Agency, Portugal, manuel.wilhelm@ptspace.pt

Mr. Joan Alabart  
Portugal Space Agency, Portugal, joan.alabart@ptspace.pt

Dr. Carolina Sá  
Portugal Space Agency, Portugal, carolina.sa@ptspace.pt

Ms. Sofia Souto  
Portugal Space Agency, Portugal, sofia.souto@ptspace.pt

Ms. Marta Gonçalves  
Portugal Space Agency, Portugal, marta.goncalves@ptspace.pt

Mr. Hugo Andre Costa  
Portugal Space Agency, Portugal, hugo.costa@ptspace.pt

Ms. Carolina Rego-Costa  
Portugal Space Agency, Portugal, carolina.regocosta@ptspace.pt

## FOSTERING A THRIVING SPACE ECOSYSTEM IN PORTUGAL

### Abstract

Before the background of a changing space landscape in Europe, driven by increased worldwide competition, a window of opportunity is open to evolve existing capabilities, but also to expand involvement. While experience and maturity remain essential in the space sector, new actors are entering the scene, unbound by heritage structures, but leveraging existing know-how in combination with fresh and disruptive approaches. The Portuguese space sector finds itself at a “sweet spot”, as it can build upon 20 years of experience, while at the same time being structurally lean and flexible to react.

The declared goal in Portugal is to advance the space ecosystem for the benefit of society, enabling science, developing technology, and promoting business. Certain indicators are examined documenting the progress to deliver on this commitment. Exemplary, in the last decade, the number of space related companies has doubled to ca. 60 and the number of employees involved in space activities has increased by factor 7 to ca. 1400, fueled by a doubling in public funding to ca. 45MEuros/year (2020), but also attracting commercial contracts, with an estimated 10-20% of total industrial turnover of 50-55MEuros (2020). Furthermore, since 2014, space-related start-ups have raised ca. 17MEuros in venture capital funding. In conjunction with the industrial expansion, ten Research Centers conducting space-related science have been founded in the last decade, bringing the total number to 30, with 550 active researchers. Including the space research funding volume of 5-10MEuros/year (2020), the Portuguese Space Sector total turnover is estimated at about 55-65MEuros/year (2020).

Four key enablers to support further growth have been identified: (1) Ambitious initiatives, (2) downstream users, (3) legal framework, and (4) international collaboration. Ambitious initiatives are the baseline to inspire stakeholders and society, driving investment in the upstream sector and providing appealing RD opportunities. Sustainable Earth Space define the Portuguese Agenda with the Atlantic Satellite Constellation and monitoring space debris being two examples. The downstream sector holds huge potential to exploit these initiatives, both from a business and research perspective, as is the case of

Copernicus Data. An up-to-date legal and regulatory framework enables space-related activities, democratizing access to space for commercial and institutional users and capitalizing on Portugal's advantageous position on the Atlantic. Since the 1980s, Portugal has expanded its participation in space related international organizations both at a European level (ESA, ESO, EU) and worldwide (COPOUS, SKAO) and nurtured partnerships with research institutions.