



Foreword by **Manuel Heitor**

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Economic growth and the creation of skilled jobs can be achieved by stimulating the market uptake of space-based and space-enabled services that deliver a wealthy amount of space data and signals. Global internet coverage, autonomous vehicles, remotely operated vehicles, smart agriculture and the internet of things are some of the technological trends that will inevitably push for the development of a new generation of space-based services, well beyond the traditional use of satellite navigation and Earth observation systems and open the way to limitless business opportunities.

The engagement of users and end-clients is critical to boost the use of space data and ultimately to fuel the growth of *downstream* public and private markets in all areas of activity that address economic and societal challenges within the next decade. This considers maritime monitoring and surveillance, agriculture, fisheries, natural resources monitoring, desertification and wildfire protection; climate change monitoring and meteorological services; improvement and deployment of communication, energy and mobility networks; health assistance; monitoring of migratory flows.

Portugal already hosts important space infrastructures with which it contributes to ESA and European Union space programmes and initiatives. A notorious example is the ground-based infrastructure located in the Azores. On top of that, Portuguese companies and research organisations take part on important innovation and technology development projects also within the frameworks of ESA and European Union space programmes, proving an increasing competitive and reliable skills and capacity of national stakeholders.

It is now time to step-up the efforts and adopt a differentiation strategy, taking advantage of Portugal's geographical and Atlantic positioning, as well as capitalising on the country's scientific and technological base and its thriving entrepreneurial community. This strategy must consider the imminent technological evolution, the growth prospects of the space sector, requiring a careful consideration of the following:

- Reducing the cost of access to space, resorting to innovative, environmentally responsible and safe launching technologies, enabling the growth of the small-satellite markets and envisaging disruptive operation approaches, including the development of an "open spaceport" in the Atlantic, between Europe, the Americas and Africa, in a way to foster international cooperation with a wide range of operators;
- Development and construction of the next generation of satellites, following the trend of miniaturisation of satellite platforms, with an increasing use of flexible multi-purpose sensors and beyond the state-of-the-art energy and orbit management technologies;
- The deployment of large inter-connected constellations for multiple and integrated applications, in domains such as Earth observation, satellite navigation and satellite communications.

The potential development of a spaceport in the Island of Santa Maria, in the Azores, in association with the development and operation of a new generation of satellite launch services to space, will boost the utilisation of space for the benefit of humanity.

