

**Building a Space Development Industry in Luxembourg.** G. L. Martin<sup>1</sup>, A. Monnat<sup>2</sup>, B. Lamboray<sup>3</sup> and M. R. Link<sup>4</sup>, <sup>1</sup>Ministry of the Economy ([Gary.Martin@eco.etat.lu](mailto:Gary.Martin@eco.etat.lu)), <sup>2</sup>Luxembourg National Research Fund ([Andreea.Monnat@fnr.lu](mailto:Andreea.Monnat@fnr.lu)), <sup>3</sup>Ministry of the Economy ([Bob.Lamboray@eco.etat.lu](mailto:Bob.Lamboray@eco.etat.lu)), <sup>4</sup>Ministry of the Economy ([Mathias.Link@eco.etat.lu](mailto:Mathias.Link@eco.etat.lu)),

**Abstract:** Luxembourg has made developing its private space sector a priority for the country's future. Space is already a major industry within Luxembourg going back as far as the 1980s with the success of SES, a global leader in satellite communications. Today, the space activities in Luxembourg cover a large part of the value chain.

The Luxembourg government is actively working to enable an innovative vision of space industrialization with its resulting new markets and promising returns. In 2016, Luxembourg initiated the SpaceResources.lu Initiative, to promote the peaceful exploration and sustainable utilization of space resources for the benefit of humankind. Luxembourg created a framework for space commercialization by carving out an envelope of 200M Euros to support this bold vision. In 2017, Luxembourg passed legislation that enabled the creation of a national regulatory framework needed to decrease risk and enable businesses to use space resources. Since the vision was announced with its supporting policies and laws, established space companies and start-ups have begun moving to Luxembourg and are already creating new economic activity. These new companies not only represent those focused on space resources but, in addition, businesses hoping to develop other space activities in unique and imaginative ways.

Luxembourg is doing something that not many other countries are doing. They are not planning government-sponsored missions into space, but instead, they are completely focused on creating an environment/ecosystem where space companies are nurtured and encouraged to take root and grow. The Directorate of Space Affairs within the Luxembourg Ministry of the Economy leads the effort. The location of the organization underscores the economic drivers for Luxembourg's approach to space exploration and development.

To create a sustainable ecosystem supporting the growing space sector, the Ministry of the Economy has developed a comprehensive strategy to realize its spaceresources.lu vision. It has five pillars:

- 1). Promote Space Resources
  - Ensure national political support and promote international cooperation
- 2). Build a Regulatory Framework
  - Build clear legal framework and engage internationally
- 3). Develop Top-Tier Talent
  - Promote long-term public support and workforce engagement through education and R&D
- 4). Offer R&D Support
  - Provide dedicated support for industrial research and development activities
- 5). Enable Long-Term Investment

- Develop investment instruments focused on commercial space

Another major contributor to supporting the Luxembourg SpaceResources.lu Initiative is the Luxembourg National Research Fund, which is firmly committed to building up strategic research and innovation funding programs to support active collaboration and knowledge transfer between the public and private actors within the space domain. For the country, these joint efforts are crucial, as investments into the space domain will open up new domains in science and technology, triggering other sectors to collaborate with the space sector for joint research and development.

This presentation will describe these new exciting programs in Luxembourg to create and sustain the vibrant ecosystem needed to fulfill the country's SpaceResources.lu vision.