Space Resources (10)
Space Resources (2) (2)

Author: Mr. Bob Lamboray
Luxembourg Space Agency, Luxembourg

Dr. Mathias Link
Luxembourg Space Agency, Luxembourg

THE EUROPEAN SPACE RESOURCES INNOVATION CENTRE – ESRIC

Abstract

In 2016, Luxembourg launched the SpaceResources.lu initiative with the aim to promote the peaceful exploration and sustainable utilisation of space resources for the benefit of hu-mankind. The initiative puts a particular emphasis on economics, research, education as well as legal aspects related to space resources.

With the support of the Luxembourg Government, the Luxembourg Space Agency ("LSA") is committed to support research activities connected to the utilisation of space re-sources and develop new capabilities as well as critical technologies in close collaboration with industry and public re-search.

The European Space Agency ("ESA") developed in 2019 an innovation-driven Space Resources Strategy. It is following a mission-orientated innovation approach applied to the challenge of sustained and sustainable human presence in space.

In line with the objectives of the SpaceResources.lu initiative, ESA's Space Resources Strategy and considering the growing international interest in space resources, LSA established in 2020 the European Space Resources Innovation Centre ("ESRIC") in cooperation with the Luxembourg Institute of Science and Technology (LIST), and in a strategic partnership with ESA.

LSA and ESA include RD and technology maturation, as well as partnership and business creation as part of their core strategic activities. ESRIC is thus conducting activities in the following four areas.

Research, this includes the implementation of ground-based research and advancement of technologies used across the whole value chain of space resources. The centre is hosting a Space Resources laboratory that is open to academia and industry from Europe and beyond.

Business, this includes the setup of commercial partnerships and a specific support programme for start-ups targeting activities related to space resource utilization.

Knowledge Management, this includes the monitoring of progress in research, technology, economics and legal aspects related to space resources.

Community Management, this includes the establishment of a network and broad collaborations with other relevant European and international organizations with key expertise in space resources related fields.

As the Moon is of global strategic interest, ESRIC's activities will initially be centred around the use of lunar resources for the production of hydrogen, oxygen and metals as well as products and services relevant for sustainable lunar surface activities.

From the scientific, technical and business activities running at the centre, ESRIC has the ambition to become a central place in Europe, with international reputation, for advancing the field of space resources utilisation.

Together with European space and terrestrial industry, the centre will drive technology innovation and open new opportunities.