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## THE EUROPEAN SPACE RESOURCES INNOVATION CENTRE – ESRIC

### Abstract

In 2016, Luxembourg launched the SpaceResources.lu initiative with the aim to promote a peaceful exploration and sustainable utilisation of space resources for the benefit of humankind. The initiative put 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 resources and develop new capabilities as well as critical technologies in close collaboration with industry and public research.

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 is setting up the European Space Resources Innovation Centre (“ESRIC”) in close cooperation with ESA, as a tool for advancing their common goals.

Both initiatives include R&D and technology maturation, as well as partnership and business creation as part of their core strategic activities. The centre will be developed around the following four areas:

- Research: This includes the implementation of ground-based research and advancement of technologies used across the wide space resources utilisation value chain.
- Business Incubation: This includes the support to companies targeting activities related to space resource utilization as well as an incubation programme for start-ups.
- 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 producing consumables as well as products relevant for sustainable space exploration.

From the scientific, technical and business activities running at the centre, ESRIC could 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 business opportunities in the short, medium and long term.