

The background features a large, detailed Earth in the center, with a rocket launching from the top and leaving a white trail. To the left, a large, reddish-orange Mars is visible. Above Earth, a small, grey, cratered asteroid floats in space. The bottom of the image shows a dark, silhouetted landscape of a space station or lunar base with various structures and a figure standing on a ridge.

Overview on ESRIC and the Space Resources Week

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LUXEMBOURG
**SPACE
RESOURCES
WEEK**

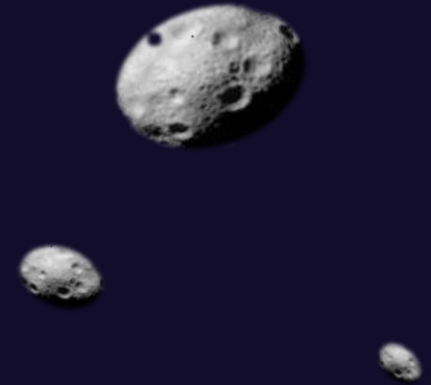
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Welcome to the 2021 Space Resources Week!

- More than 1300 registrations with 115 speakers from all over the world
- **Largest event worldwide fully dedicated to space resources**
- Organized by the newly created ESRIC, a cooperation between LSA, ESA and LIST
- 13 sessions, covering general, scientific, technical, business, legal and economic topics.

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Luxembourg aims to contribute to the peaceful exploration and sustainable utilization of space resources for the benefit of humankind



SpaceResources.lu FIVE STRATEGIC PILLARS

POLITICAL SUPPORT

Ensure national political support and promote international cooperation



LEGAL FRAMEWORK

Build clear legal framework and engage internationally



RESEARCH & EDUCATION

Promote long-term public support and workforce engagement by education and R&D



INNOVATION, R&D

Provide dedicated support for industrial R&D activities



FUNDING INSTRUMENTS

Develop long-term funding instruments



The European Space Resources Innovation Centre



LUXEMBOURG
INSTITUTE OF SCIENCE
AND TECHNOLOGY



ESRIC aims to become the internationally recognised **centre of expertise** for **scientific, technical, business and economic** aspects related to the use of space resources for human and robotic **exploration**, as well as for a future **in-space economy**.

Established by **LSA** and **LIST** as a national innovation centre in the field of space resources.

ESA joined as a strategic partner.

Implemented as a department at LIST, with a dedicated governance and branding.

Other partners may join ESRIC to develop new ideas and projects.



ESRIC allows to address objectives of both SpaceResources.lu & ESA's space resources strategy



ESRIC develops activities in four main areas:

Research

Research is at the heart of ESRIC's mission to build a future in-space economy.

ESRIC will establish world-class labs and testing facilities to undertake ground-based R&D along the space resources value chain.

Knowledge

ESRIC will provide a source of up-to-date information on developments related to space resources utilization.

Business

ESRIC will support commercial initiatives from established players and start-ups, enable technology transfer between space and non-space industries and encourage public-private partnerships and new initiatives.

Community

ESRIC will help to connect the space resources community by creating an open and collaborative environment to encourage dialogue and exchange of ideas.

Planned research infrastructure



© ESA - ESTEC

ESRIC will host key **research infrastructure** required to develop new space resources technologies.

This infrastructure will be **accessible** to European industry and academia.

During the first phase, key infrastructure will comprise various end to end **oxygen demonstrators** procured by ESA (hydrogen reduction, carbothermal reduction, molten salt) and an optimised **Dirty Thermal Vacuum Chamber** to run space resources experiments.

Four thematic research areas are implemented in close partnerships with public and private entities



ISRU Value Chain

Analyze the ISRU value chain; define and lead collaborative end-to-end ISRU projects.

Prospecting and Mining

Identify, excavate, transport and handle space resources

Processing and Supplying

Process / transform space resources and produce, store and deliver feedstock and consumables

Manufacturing and Construction

Manufacture components, repair parts, and build infrastructure using space resources

*Initial focus on enabling sustainable space activities using **H2, O2 and Metals** on the Moon, in line with ESA's space resources strategy.*



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ESRIC is hiring its first permanent Director, Innovation Lead & FNR PEARL Fellow



Lead the development of **ESRIC** to become an internationally recognized innovation centre with more than **100+** researchers, innovators and entrepreneurs within this decade.

Develop a new research team in the area of prospecting and mining with the goal to identify, excavate, transport and handle space resources on the lunar surface with a guaranteed funding of **8M€ for the first 5 years** through the FNR PEARL programme.

For more information :

 www.esric.lu/career

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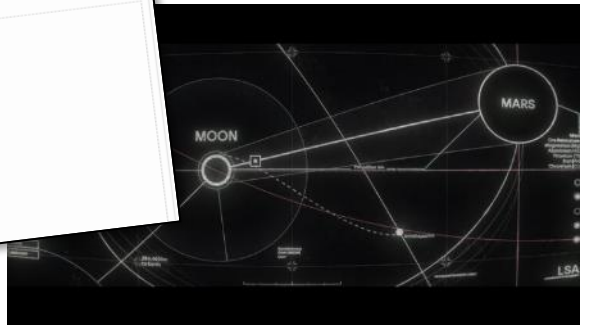


LUXEMBOURG
SPACE AGENCY



Luxembourg National
Research Fund





Knowledge management and sharing is key for the long-term development of space resources activities.

We strive to federate a space resources community around a common platform, generating new business applications, mission-driven research, and private-public partnerships.

Help us design and develop this future knowledge management platform by participating in our survey!

 www.esric.lu/survey

• ESRIC Startup Support Programme



ESRIC will develop a **Startup Support Programme** that will support early-stage startups in the space resources sector to refine their business plan, attract their first customers and secure their first investments.

The programme will be run together with **ESA**, **LSA** and **Technoport**, the leading technology incubator in Luxembourg.

→ Learn more in the “Financing & Business” Session on Wednesday 21st April!

• **ESRIC – ESA space resources challenge**

ESA and ESRIC are launching the first robotic Space Resources Challenge, conditional to internal final approval.

Robots of all sorts shall be invited to compete in an attempt to map and characterise resources (minerals/rocks) in an analogue terrain near ESTEC in 2021, then in Luxembourg in 2022.

The final announcement shall be given on ESA's platform OSIP on the 3rd of May.

→ Learn more in the “Terrestrial & Space” Session on Wednesday 21st April!



• ESA Space Resources Invitation to Tender

- ESA Space Solutions has launched an Invitation to Tender on the topic of Space Resources.
- It opened today and closes on 30 June 2021.
- The aim of this invitation to tender is to support successful teams in developing **products and services** that are **relevant to industries on Earth today** but have potential for **future application in Space**.
- Successful teams will receive **100%** funding of up to **€200K** to run a **12 months** study
- For more information visit:
business.esa.int/funding/invitation-to-tender/space-resources

→ Learn more in the “Terrestrial & Space” Session on Wednesday 21st April!



- Space resources exploration and utilization continues to grow!
- ESRIC is supporting this growth with activities in research, business, community and knowledge
- Opportunities exists for scientists, researchers, entrepreneurs, lawyers and investors
- In Europe, in Luxembourg and in ESRIC

Please make sure to:

- Answer the **ESRIC survey**: www.esric.lu/survey
- Check out **open positions**: www.esric.lu/career

Stay tuned for more information on:

- The ESRIC-ESA prospecting **challenge**
- The ESRIC **start-up support program**
- ESA Space Resources **Invitation to Tender**

The background features a dark space scene. In the upper left, a large, reddish-orange planet (Mars) is partially visible. In the center, a large blue and green planet (Earth) is shown with a white rocket launching from its surface, leaving a long white trail. To the right of Mars, a small grey asteroid floats. At the bottom, a silhouette of a lunar or planetary surface is depicted with a rover, a person, and a dome-shaped structure.

Thanks for your attention!

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