Update from Luxembourg
Presentation and Discussion

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Luxembourg Space Agency

58th European Space Sciences Committee Plenary Meeting
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BETZDORF IN THE 1980ies
LUXEMBOURG HAS BEEN ACTIVE IN SPACE FOR MORE THAN 30 YEARS

1985

SES established (1985) and launches first satellite (1988)

FACILITATES
Commercialization of SATCOM and Becomes Home to Leading Satellite Operators

2005

ESTABLISHES
International Partnerships and Joins ESA, Becoming a Major Contributor to Several European Programs

IMPLEMENTS
First space policy for Luxembourg in 2008

2016

Becomes 17th ESA member (2005)

SERVES
Term as President of the Council of the EU (2015) and term as Co-Chair of ESA (2012-2016)

2018

LAUNCHES
Luxembourg Space Agency (LSA)

ENABLES
Market for Space Resource Utilization and Other Emerging Space Capabilities
LUXEMBOURG SPACE AGENCY – MISSION AND OBJECTIVES

MISSION
Develop Luxembourg Space Sector

Economic Growth
Creation of key skills and jobs Turnover/revenue generation

Space Ecosystem Enhancement
Development of an ecosystem involving space and non-space entities

Local Talent Development
Training local talent in relevant fields to support Luxembourg rapidly growing space industry

International Engagement
Contribution to Luxembourg nation exposure and branding efforts on the international stage
40+ PUBLIC AND PRIVATE ACTORS WITH CAPABILITIES ACROSS THE SPACE VALUE CHAIN
Luxembourg aims to contribute to the peaceful exploration and sustainable utilization of space resources for the benefit of humankind.
**SpaceResources.lu**

**FIVE STRATEGIC PILLARS**

<table>
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<tr>
<th>POLITICAL SUPPORT</th>
<th>LEGAL FRAMEWORK</th>
<th>RESEARCH &amp; EDUCATION</th>
<th>INNOVATION, R&amp;D</th>
<th>FUNDING INSTRUMENTS</th>
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<td>Ensure national political support and promote international cooperation</td>
<td>Build clear legal framework and engage internationally</td>
<td>Promote long-term public support and workforce engagement by education and R&amp;D</td>
<td>Provide dedicated support for industrial R&amp;D activities</td>
<td>Develop long-term funding instruments</td>
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PROMOTING SPACE RESOURCES NATIONALLY AND INTERNATIONALLY, ON ALL LEVELS

International Engagements

- ESA
- European Union
- United Nations

International Advisory Board

Organization and Engagement in Various Events

- Paris Air Show
- IAC 2018
- Asteroid Day
- Space Forum
- New Space Europe
A STEP-BY-STEP APPROACH TO BUILD A CLEAR LEGAL AND REGULATORY FRAMEWORK

National Law on the Exploration and Use of Space Resources (2017)

Hague International Space Resources Governance WG
20 building blocks for a future international framework

UN-COPUOS

Luxembourg encourages discussions on space resources exploration and utilization in all relevant international fora, in particular in the Legal Subcommittee of the UN-COPUOS.
THE EUROPEAN SPACE AGENCY IS A KEY PARTNER AND MORE AND MORE ACTIVE IN SPACE RESOURCES

Specific Agreement Signed in 2017

Cooperation in Community Building

ESA Space Resources Strategy Published in May 2019
National Research Institutions Have Become Active in ISRU

Asteroid Science Intersections with In-Space Mine Engineering (2016 and 2018)

Interdisciplinary Space Master Starting in Fall 2019

**LSA research**

LSA will create a new research arm within LSA with a strong focus on space resources.

LSA is establishing a Space Resources Research Center with national and international partners.

**Includes modules on space resources exploration & utilization**
Different Instruments Available through Partnership with ESA, SNCI and VCs

- Grants
- Early-stage and growth-stage financing
- Debt Financing

Cooperation Agreement Signed with the European Investment Bank (EIB)

"The largest multilateral investment bank"

Encouraging Innovation in the Financing of Space Ventures, a Joint Initiative with EIB
Thank you for your attention!

Upcoming events!