
PRESS RELEASE

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FRANCE-LUXEMBOURG SPACE COOPERATION QUADRIPARTITE AGREEMENT TO FOCUS ON EXPLORATION AND SPACE RESOURCES

Wednesday 7 July, CNES, the Luxembourg Space Agency (LSA), the European Space Resources Innovation Centre (ESRIC) and Air Liquide signed a Letter of Intent (LoI) confirming their commitment to work together on developing research and technology (R&T) activities. In the months ahead, the four partners will be pursuing their discussions on research projects encompassing space exploration and in situ resource utilization (ISRU).

A first CNES-LSA workshop in September 2020 identified joint initiatives aiming in particular to address the challenges and opportunities arising out of developments in space exploration. At the same time, LSA, ESRIC and Air Liquide, drawing on a 50-year heritage of handling gases in space, engaged discussions with a view to collaborating on production and use of gases produced from in situ space resources. Multilateral discussions subsequently confirmed a shared interest in working together in areas such as in situ production and storage of oxygen and hydrogen, production and storage of hydrogen energy in space and on the lunar surface, technologies for life support, and the refueling of satellites and launchers in orbit.

"ESRIC is a young initiative like no other in Europe, powered by LSA and the Luxembourg Institute of Science and Technology (LIST), with ESA as a strategic partner. We believe this new collaboration between France and Luxembourg will be instrumental in developing our centre and we're delighted to be working with players like CNES and Air Liquide" said Mathias Link, ad-interim Director of ESRIC.

"Space resources will be key for future space exploration," added Marc Serres, CEO of LSA. *"Being able to exploit them is a crucial stepping stone to build a permanent human presence in space. It will also open up new avenues in terms of business models and in-space products and services."*

"From Earth to space and from space to Earth, Air Liquide intends to contribute, with its partners, to the emergence of a virtuous loop by creating synergies between our terrestrial and space technologies with the aim of their mutual improvement. We are pleased to bring our expertise for a more sustainable development of space", adds Benoît Hilbert, General Manager of Air Liquide advanced Technologies.

CNES, LSA, ESRIC and Air Liquide are in discussions to form within the 2022 timeframe joint teams to work on concrete research projects aimed at developing key technologies for in situ production and utilization of gases required to make space exploration more viable in the long term.

These discussions come under the scope of the framework agreement signed between CNES and Luxembourg in 2009 that identifies a range of areas for cooperation including remote sensing, support for development of microsatellites by Luxembourg, innovative satellite technologies for telecommunications, materials analysis and expertise, and maritime safety. They reaffirm the two nations' desire to step up their cooperation in space.

After the signature of the LoI, CNES Chief Operating Officer Lionel Suchet underlined “the great prospects this cooperation holds out for developing the space ecosystem and in particular the applications sector in France and Luxembourg.”

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About CNES

CNES (Centre National d'Études Spatiales) is the government agency responsible for shaping France's space policy and implementing it in Europe. Its task is to conceive and orbit satellites, invent the space systems of the future and nurture new services to aid us in our daily lives. Founded in 1961, it is the initiator of major space projects, launch vehicles and satellites, and the partner of choice for industry fuelling innovation. CNES comprises some 2,500 men and women with a passion for space working to open up new and infinite fields of applications in five core areas of focus: Ariane, science, Earth observation, telecommunications and defence. It is a key player driving technology innovation, economic development and industrial policy for the nation. It also fosters scientific collaborations and has forged numerous international partnerships. France, represented by CNES, is the leading contributor to the European Space Agency (ESA).

www.cnes.fr

About LSA

Established in 2018 with the goal of developing the national space sector, the Luxembourg Space Agency (LSA) fosters new and existing companies, develops human resources, facilitates access to funding and provides support for academic research. The agency implements the national space economic development strategy, manages national space research and development programmes, and leads the SpaceResources.lu initiative. LSA also represents Luxembourg within the European Space Agency (ESA), as well as the space-related programmes of the European Union and the United Nations.

www.space-agency.lu

About ESRIC

Based in Luxembourg, the European Space Resources Innovation Centre (ESRIC) fosters innovation and growth in the space resources industry by connecting leading academic, industrial and entrepreneurial talents. ESRIC's activities are based on four main pillars: space resources research and development, support for economic activities, knowledge management, and community management. Launched in November 2020, ESRIC is an initiative of the Luxembourg Space Agency (LSA) and the Luxembourg Institute of Science and Technology (LIST) in strategic partnership with the European Space Agency (ESA). www.esric.lu

About Air Liquide

A world leader in gases, technologies and services for Industry and Health, Air Liquide is present in 78 countries with approximately 64,500 employees and serves more than 3.8 million customers and patients. Oxygen, nitrogen and hydrogen are essential small molecules for life, matter and energy. They embody Air Liquide's scientific territory and have been at the core of the company's activities since its creation in 1902. www.airliquide.com

