

IAF SPACE EXPLORATION SYMPOSIUM (A3)
Space Exploration Overview (1)

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THE RISE OF THE LUNAR ECONOMY: COMMERCIAL APPLICATIONS ENABLED BY LUNAR
COMMUNICATION AND NAVIGATION

Abstract

The global effort to establish a sustainable lunar presence is gaining momentum, with both space agencies and private organisations planning to return to our celestial neighbour.

A wide range of application areas supports a robotic or human presence on the Moon, such as energy generation, storage, and distribution; water, hydrogen, and oxygen extraction; construction and manufacturing; transport and logistics; habitats and health preservation; food and waste management; finance and insurances; education, entertainment, tourism, and more. While all areas present significant challenges, many of them can be addressed by also leveraging lunar communication or navigation capabilities.

The European Space Agency's (ESA) Moonlight programme is contributing to these efforts by facilitating the establishment of lunar communication and navigation services, which will enable new missions and innovative business ventures towards a thriving lunar economy. In line with this goal, ESA has launched the first in a series of (co-)funded opportunities to support entrepreneurs in the development and assessment of selected business ideas that leverage lunar communication or navigation services to address the needs of downstream customers on the Moon and on Earth.

This paper offers an overview of the latest developments related to the emerging lunar economy, built upon a foundation of innovative business ideas and entrepreneurial spirit, as well as of upcoming opportunities for visionary entrepreneurs and innovators to work towards establishing a prosperous future on the Moon and beyond.