



Framatome and Qosmosys partner to shape the future of space exploration together

December 19, 2023 - Framatome and Qosmosys announced the signing of a memorandum of understanding (MOU) to explore the integration of Radioisotope Heater Units (RHU) and Radioisotope Thermoelectric Generators (RTG) as innovative energy sources to enhance the performance of ZeusX, Qosmosys' spacecraft. ZeusX is designed for payload transportation to the Moon and beyond. This collaboration also opens new horizons for services on the lunar surface.

As humanity gears up for extended missions on the Moon, securing reliable energy sources will be crucial to support the functionality of both spacecraft and the automated and robotic systems operating on the lunar surface. To maintain thermal stability during the long lunar nights (approximately 14 Earth days) which see temperatures drop to as low as -130°C, RHUs present a safe, robust, and long-lasting alternative to current solutions. Furthermore, RTGs stand out as ideal for developing safe and durable power sources for lunar endeavors. Their use could significantly contribute to the advancement of the lunar economy by enabling more extensive and sustainable lunar activities.

"At Framatome, we are fully convinced that nuclear power can enable or enhance future space exploration," said Grégoire Lambert, VP of Framatome Space. "We are proud to partner with Qosmosys, a company at the forefront of pioneering solutions for the Moon economy. I am confident that together we will enhance the development of new services to support lunar exploration, in line with the goals of the Artemis program."

RHUs utilize the decay of radioisotopes to generate heat. Similarly, RTGs - often referred to as 'nuclear batteries' - convert the heat produced by the decay of radioisotopes into electricity. These technologies have been employed flawlessly in space vehicles for decades. However, increasing demands with regard to performance and safety are opening new and stimulating research horizons. The high level of research expertise at Framatome can significantly contribute to these developments.

"Qosmosys firmly believes that Framatome stands at the forefront of innovation in nuclear solutions. Their venture into extending this expertise to the space industry represents a commendable and forward-thinking approach. Our collaboration with Framatome paves the way for Qosmosys to achieve significant advancements in the performance of our lunar systems, while steadfastly maintaining our commitment to safety and environmental protection," says Francois Dubrulle, CEO of Qosmosys. "In adopting progressively Framatome solutions in our design, we anticipate a significant leap in our long-term capabilities, positioning us as a leading pioneer in the Moon economy."



Framatome recently created Framatome Space, putting its 65 years of nuclear and industrial expertise at the service of the space industry. For 65 years, Framatome teams have designed, built, and serviced the nuclear steam supply system of nuclear plants across the globe. Framatome has been present at every stage of the process on all types of reactor technologies. Framatome is also involved in the future of nuclear power generation from third generation reactors to advanced reactors and Small Modular Reactors (SMRs). Its Isogen joint-venture specializes in producing radioisotopes in commercial CANDU power reactors.



QOSMOSYS

About Qosmosys

Qosmosys is a Singapore-based company with branches in France and the United States. The company is currently developing its flagship spacecraft, ZeusX. Established as an international private entity, Qosmosys aims to provide on-demand services to public or private organizations looking to operate on the Moon and beyond. Qosmosys services span three sectors: transportation, robotics & resources, and science & tech. The company aims to make lunar access more accessible, providing both public and private sectors with a dependable and flexible approach to foster a moon-based economy.

About Framatome

Framatome is an international leader in nuclear energy recognized for its innovative, digital and value added solutions for the global nuclear fleet. With worldwide expertise and a proven track record for reliability and performance, the company designs, services and installs components, fuel, and instrumentation and control systems for nuclear power plants. Its more than 18,000 employees work every day to help Framatome's customers supply ever cleaner, safer and more economical low-carbon energy.

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Framatome is owned by the EDF Group (75.5%), Mitsubishi Heavy Industries (MHI – 19.5%) and Assystem (5%).