



Press Release

French Start-Up SPARTAN SPACE participates in the development of the European GATEWAY Space Station Habitation Module I-HAB

Lunar I-Hab, Gateway International Habitation Module, is a contribution by ESA to the lunar human outpost which will orbit the Moon later in this decade, and form a key element of the in-space infrastructure supporting the Artemis human lunar exploration campaigns. As part of the Lunar I-Hab development programme, a high-grade full-scale Mock-up has been produced to support the ongoing design of the flight unit.

Under contract to THALES ALENIA SPACE – Italy the Lunar I-Hab prime contractor, LIQUIFER Space Systems, located in Bremen, Germany, is managing the industrial consortium formed to design and manufacture the Mock-up. LIQUIFER is supported by SPARTAN SPACE a space start-up based in Marseilles, France, who is responsible for the design, manufacture and integration of the interior simulated equipment, together with HAUX LIFE SUPPORT GmbH of Karlsbad, Germany, who manufactured the Mock-up's primary structure at its facility in Cuxhaven, Germany.

Following the delivery of the primary structure to Turin, the module was outfitted with simulated interior equipment at low fidelity level. The primary structure and the interior equipment have been manufactured to exacting dimensional tolerances to assure the closest possible similarity to the flight unit. The integrated Mock-up was presented to Thales Alenia Space for their review and acceptance. The acceptance review was a complete success and THALES ALENIA SPACE will now proceed to use the Mock-up as a test-bed for the Human-in-the-Loop test campaign. These tests will verify the Lunar I-Hab crew systems design and enable operational astronaut activities to be demonstrated.

Marcella Salussolia, Lunar I-Hab Program Manager in Thales Alenia Space, *"We are very pleased with the achievement of this notable milestone. With the mock-up successfully accepted, quality proven and ready for the next steps, we can now progress to the Human-in-the-Loop test campaign, a crucial component of the Lunar I-Hab design and development phase. Test subjects, including ESA and NASA astronauts, will play a key role by providing valuable feedback on the cabin interior design, which will be instrumental in refining it and proving its suitability for safe and effective human operations."* Mr René Waclavicek, joint CEO of LIQUIFER, said, *"We are proud to have developed, together with our partners, this important building block of the Lunar I-Hab programme. With this Mock-Up astronauts will become familiar with the interior of the Lunar I-Hab before they enter it during future lunar exploration missions. Although LIQUIFER and SPARTAN SPACE are only small businesses, the skill and dedication of our staff were equal to the challenge of creating this important element as quickly and cheaply as possible."* Mr. Mohamed Makthoum, Project Manager for I-HAB at SPARTAN SPACE, said, *"Our company designed the mock-up based on the design of the flight model from THALES ALENIA SPACE. For the mock-up we had to consider the fact that the tests and training will be done in Earth gravity, not in weightlessness. Our team came up with solutions and we integrated the interior simulator of I-HAB into the Primary Structure in Turin."* Mr Torsten Haux, joint CEO of HAUX Life Support GmbH, said, *"This project marks the first-time involvement of HAUX in the space field and we are excited to be able to participate in this ESA flagship programme by manufacturing the primary structure for the engineering Mock-up. We are confident it will provide outstanding support to the programme during this period of development."*

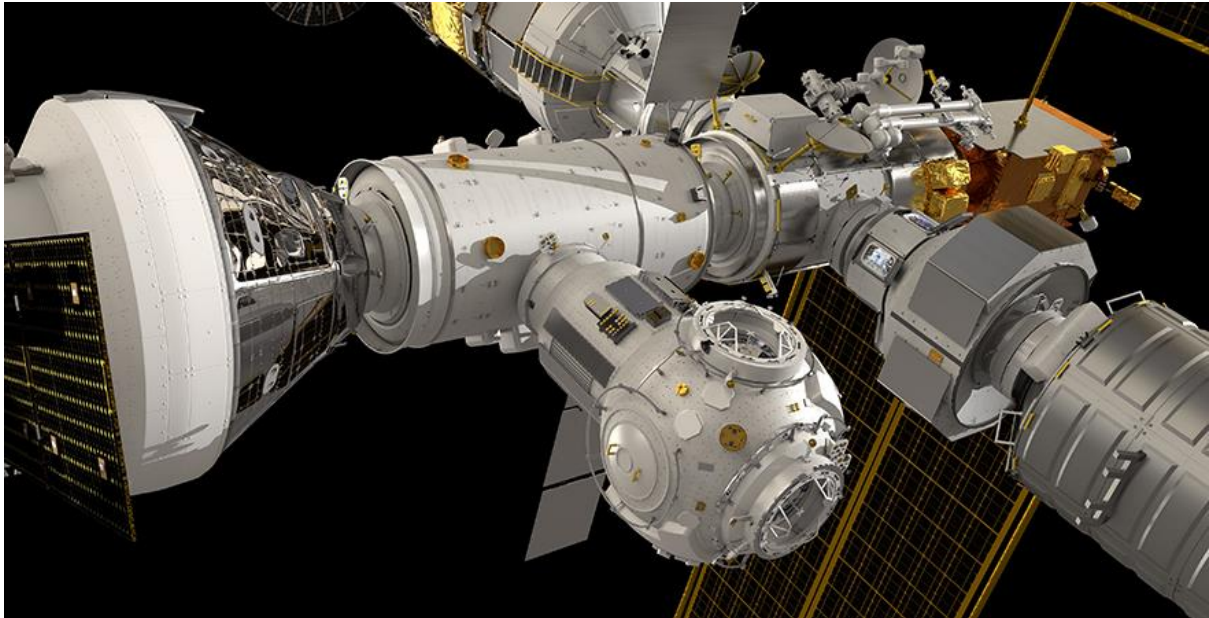
After completion of the Human-in-the-Loop tests, the Mock-up will be re-equipped to medium fidelity standards, providing an even more realistic level of simulation for later test and verification activities.

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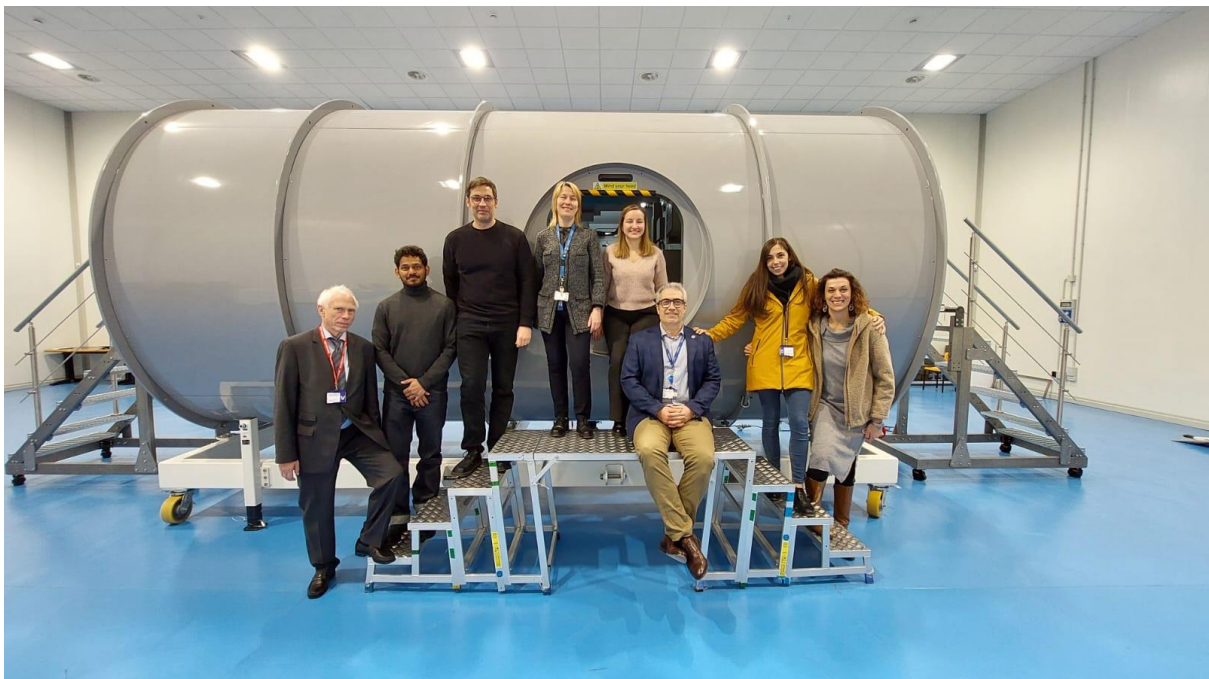
About SPARTAN SPACE

Spartan Space is a New Space company developing habitat solutions for extreme environments. The company is headquartered in Marseille, southern France and was created by a group of senior space and underwater engineers, astronauts and architects. SPARTAN SPACE aims to promote international cooperation that will enable humanity to live and work on the Moon, Mars and underwater like on Earth.

Visuals (please contact us for high resolution images):



**The lunar orbit space station GATEWAY with the I-HAB module provided by ESA
(Image: ESA)**



Lunar I-Hab Mock-up team from Thales Alenia Space (Italy), LIQUIFER Space Systems (Germany), and SPARTAN SPACE (France) at the completion of low-fidelity outfitting in Turin (PHOTO: THALES ALENIA SPACE)



**The interior of the I-HAB module is ready for ergonomic tests
(Photo: SPARTAN SPACE)**