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PRESS RELEASE

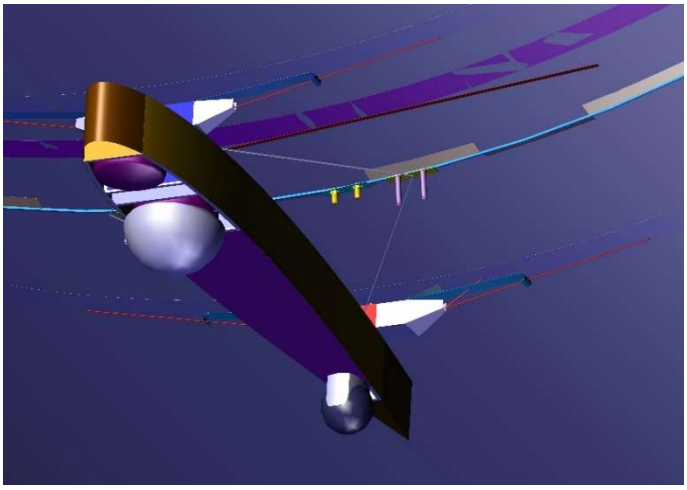
SPACE - STRATOBUS PROJECT

CNIM is designing and validating the rotation system that will enable the Stratobus™ airship to operate autonomously for up to one year

The "Gondola Mobility System", a special subassembly on which the Stratobus™ communication and/or monitoring payloads are mounted, will enable the aerostat to rotate around its longitudinal axis.
This is necessary to enable the aerostat's solar panels to track the sun's movements in order to efficiently harness its radiant energy. It is a critical system for the Stratobus's operation and energy independence. The nacelle has been trialled on a full-scale test bed built by CNIM at its workshops in La Seyne. This test bed enabled many parameters to be validated in preparation for the maiden flight.

Developing a rotation system to enable autonomous flights lasting up to one year

CNIM, the French industrial engineering contractor and equipment manufacturer, is pleased to report on the latest progress of the **Stratobus™** project. CNIM recently completed trials on the suspended nacelle, using a full-scale test bed built at its facility in La Seyne sur Mer. Installed beneath the aerostat, this ultralight carbon composite nacelle will carry mission payloads and enable the aerostat to track the sun's movement and efficiently harness the solar radiation that powers the entire system. As a result, the aerostat will be able to fly autonomous missions lasting up to one year. The successful trial is an initial technological achievement for CNIM, which is maintaining a dual focus on the project's technical and economic aspects.



CAD image of the nacelle below the aerostat

Stratobus ™ is an 85,000 cu. m **airship** designed to operate at an altitude of 20 km, in the lower layer of the stratosphere. Equipped with four electric motors powered by solar panels during the day and batteries at night, the vehicle is **fully autonomous** from an energy perspective and is able to remain on station for a full year. Under ideal conditions it can carry a **250 - 450 kg payload.** Stationed just above air traffic and considerably closer to earth than a satellite, Stratobus ™ is designed to perform civilian and defence missions in areas such as **telecommunications, surveillance, observation and navigation.**

"CNIM has been working as an industrial partner alongside Thales Alenia Space from the very start of the project, including during initial brainstorming and development of the concept for the original aerostat" notes Maxime Lauer, CNIM's Project Manager. *"Considering our expertise in composite materials for large components, and in extended, complex industrial development projects, we were awarded the contract to supply the rigid structures for the* Stratobus ™*: the nacelle, the four motor mountings and the mechanical ballast. "*

"We are delighted to be working with CNIM as a key partner in the Stratobus™ *project. CNIM has been involved from the outset, subsequently stepping up its contribution by supplying ground support resources and acquiring AirStar Aerospace. The full-scale mock-up of the nacelle is the result of a joint-engineering stage that demonstrated the viability and robustness of the* Stratobus™ *autonomous stratospheric aerostat's heliotropic mechanism*" notes Yannick Combet, Thales Alenia Space's Project Manager for Stratobus™.

Full-scale nacelle mock-up

The test bed infrastructure presented today measures 30 m in length and stands 10 m tall. "*Our integrated industrial plant and technical capabilities were the key to building this large test facility. This is the ideal scale on which to validate a system that is extremely sensitive and must be finely adjusted*" explains Maxime Lauer, CNIM's Project Manager.

The current steel nacelle attached to the test bed is the same volume and weight as the planned carbon nacelle (plus payload) that will be installed on the Stratobus™. This assembly was used to demonstrate that the nacelle is indeed able to rotate the balloon so that it maintains the ideal orientation relative to the sun. A joint patent application with Thales Alenia Space has been filed for the "Gondola Mobility System".

Following the initial testing phase, CNIM will work on qualifying the production nacelle's carbon composite material under conditions representative of the upper atmosphere.

With the acquisition of AirStar Aerospace, which was already involved in developing the airship's flexible fabric shell and creating scale models, CNIM has consolidated its status as a key partner of Thales Alenia Space for the Stratobus™ programme.

ABOUT THE CNIM GROUP

Founded in 1856, CNIM is a French global industrial equipment manufacturer and supplier. The Group operates in the environmental management, energy, defence and high-tech sectors, serving a clientèle of large private and public enterprises, local authorities and States. Technological innovation is at the heart of the equipment and services designed and produced by the Group. They contribute to producing cleaner and more competitive energy, reducing the environmental impact of industrial activities, to securing sensitive facilities and infrastructure and to protecting people and States. Listed on Euronext Paris, the Group has a stable, majority family-shareholder base, committed to its development. CNIM has 2,613 employees generating revenue of €689.8 million, 62.1 % of which was realised abroad. **www.cnim.com**

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