PRESS RELEASE

GROUP

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Michelin supports Voliris in the development of its next-generation aircraft: the NATAC

- Michelin Inflatable Solutions and Voliris are teaming up to develop an innovative freight solution: the Automatic Air Shuttle for Containers (NATAC).[1]
- Michelin Inflatable Solutions is lending its expertise in materials and assembly, with polymer composites that meet the technical requirements of this pioneering aircraft wing.
- This is yet another example of Michelin putting its innovation prowess to work on a project to decarbonize air freight.

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Michelin and Voliris join forces to create an innovative aircraft

Michelin Inflatable Solutions will collaborate on the development of NATAC, the Automated Container Transport Air Shuttle developed by Voliris. Michelin Inflatable Solutions brings its expertise in composite materials and their assembly to the service of growing technological products. By developing innovative industrial methods for assembling technical materials, Michelin shares its knowledge of materials to support the manufacture of the NATAC's wing

[1] *Navette Aérienne de Transport Automatique de Containers.*

envelope.The Voliris NATAC aims to transport freight with zero CO_2 emissions, using a flying wing suited to areas with limited infrastructure. Heavier than air, this aircraft requires no ballast when unloading its cargo and could transform the air freight sector.

Michelin is applying its innovation prowess and expertise in polymer composites and their assembly to aircraft development

The wing envelope is one of the NATAC's most innovative features, due to the major technical constraints to which it is subjected. Segmented into five lobes, the envelope has a total volume of 25,000 m³ and arrives folded at the deployment site before being inflated. Its geometry is maintained by a pulley system that varies the volume by adjusting its aerodynamic shape at different altitudes. In addition to this internal tension, the envelope must withstand significant external loads from the cables carrying the cargo (up to 30 tonnes), mechanical stresses caused by inflation pressure across a large surface area (8,000 m²), and the requirement to remain impermeable to helium and, ultimately, hydrogen.

Through its subsidiary Michelin Inflatable Solutions, Michelin is leveraging its technical coated textiles expertise to qualify the materials for the flexible envelope and develop assembly processes.

Voliris and Michelin Inflatable Solutions plan to manufacture a first full-scale demonstrator of the NATAC wing by 2028 for ground testing and validation of the shuttle's on-site deployment. This full-scale ground-based envelope will be the second key milestone for the Voliris NATAC project, following successful flight tests of a 1/7-scale shuttle prototype. To operate in any location, the NATAC has a distinctive feature: it can be shipped in 10 standard 40-foot containers and assembled directly at the departure site. The envelope must therefore be foldable without compromising its integrity – an additional challenge for Michelin Inflatable Solutions that requires an innovative approach combining materials science with expertise in folding-induced stresses.

The NATAC aircraft: a futuristic, innovative solution for decarbonizing air freight

This air shuttle is a hybrid solution combining features of airships and cargo aircraft. The NATAC requires no paved runway for takeoff, helping to limit the impact of land artificialization. To transport freight with zero CO_2 emissions, the aircraft is designed to be 100% hydrogen-compatible, with hydrogen eventually serving as both fuel and lifting gas. Lastly, its autonomous flight system enables safe, unpiloted operations, allowing it to reach areas that are difficult to access or lack heavy infrastructure. By partnering with Voliris, Michelin Inflatable Solutions is shaping the future of composites and air freight.

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About Voliris

Voliris is a subsidiary of the NYFI industrial group. Voliris is an aircraft designer and operator backed by Alain Bernard since 2003. To meet the most demanding needs of oversized freight and containerized cargo, while advancing decarbonization solutions, Voliris is developing the NATAC, an automatic air shuttle for container transport. This shuttle enables the transport of heavy loads without straining existing infrastructure and opens access to previously isolated geographical areas. Requiring no paved runway, it helps limit the impact of land artificialization. Through this project, Voliris aims to reinvent infrastructure-efficient logistics.

About Michelin

Michelin is building a world-leading manufacturer of life-changing composites and experiences. Pioneering engineered materials for more than 130 years, Michelin is uniquely positioned to make decisive contributions to human progress and to a more sustainable world. Drawing on its deep know-how in polymer composites, Michelin is constantly innovating to manufacture high-quality tires and components for critical applications in demanding fields as varied as mobility, construction, aeronautics, low-carbon energies, and healthcare. The care placed in its products and deep customer knowledge inspire Michelin to offer the finest experiences. This spans from providing data- and AI-based connected solutions for professional fleets to recommending outstanding restaurants and hotels curated by the MICHELIN Guide. Headquartered in Clermont-Ferrand, France, Michelin is present in 175 countries and employs 129,800 people.

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