Pershing GTX116 – Sport Utility Yacht revolution: aerodynamic grilles produced with robotic additive manufacturing technology Heron AM

**AUSTIN, TX / MILANO, Italy – [11 March 2025]** – Produced by Pershing, one of the seven brands of Ferretti Group, **the GTX116 leverages LFAM technology for some of its main superstructures**: air grilles and visor above the windshield are additively **produced with the Heron AM system to achieve aesthetically interesting geometries with reduced weight** and delivering groundbreaking innovation in the manufacturing process of this vessel.

**In the luxury yachting industry, innovation in materials and manufacturing processes is critical to ensure high performance, exclusive design and reliability**. **Ferretti Group**, a global leader in the design, construction, and sale of luxury motor yachts and leisure boats, **chose to commission Caracol for the realization of the first 3D printed air grilles for the Pershing GTX116**, as part of its new range of sports yachts combining elegance, comfort space and the signature Pershing thrill.

Pershing GTX116 is a 35-metre yacht, with a sporty yet elegant style, and an extreme livability to elevate the seagoing experience to a new dimension. This sporty yacht optimizes all onboard weights to achieve high performance.

**The application of Caracol’s Heron AM platform demonstrates how large-format additive manufacturing can effectively be used to revolutionize yachting and luxury boat production**, enabling the fabrication of complex superstructural parts with intricate geometries. In this project, Heron AM manufactured key elements, including side air intake grilles and visors, demonstrating its capability to deliver high-performance, customized solutions for the luxury yachting industry.

From traditional manufacturing to additive manufacturing

Yacht air grilles and other superstructures are traditionally produced through manual lamination of fiberglass on molds. This process requires multiple molds depending on the complexity of the geometry and involves intensive manual work by highly skilled labor, impacting both production time and costs.

In contrast, large-format 3D printing eliminates the need for master molds and tools entirely, streamlining the production process. **With Heron AM, composite components featuring intricate geometries and highly customized designs can be produced directly from the digital model, bypassing the manual lamination phase**. This significantly reduces prototyping and production times, enabling rapid iterations and design optimizations. Moreover, the process only requires finishing operations such as gel coat application, further cutting down on labor-intensive steps.

**Heron AM also enables the use of lightweight yet strong materials, improving component performance while reducing material waste**, making the process more sustainable than traditional methods. Its flexibility allows for small-batch or fully customized production, catering to the specific needs of each project.

The additive manufacturing process and its benefits for Pershing GTX116 air grilles

The adoption of **Large-Format Additive Manufacturing (LFAM)** for the production of air grilles on the **Pershing GTX116** yacht has led to remarkable improvements in efficiency, sustainability, and overall product quality. By leveraging **Caracol’s Heron 300 system**, equipped with a **High Accuracy (HA) extruder** and a **3 mm nozzle**, the grilles were printed using **ASA reinforced with 20% glass fiber (GF)**—a material chosen for its durability and resistance to harsh marine environments.

The **3D printing process took 72 hours** to complete, producing an air grille measuring **4200 x 400 x 400 mm** and weighing **40 kg**. Compared to traditional manufacturing methods, this approach has resulted in substantial **reductions in lead time (50%), material waste (60%), and overall weight (15%)**, making it a more sustainable and cost-effective solution.

To ensure both **weather resistance and a flawless aesthetic**, the grille was finished with a **gel coat**, enhancing its durability against environmental exposure. The implementation of **additive manufacturing** for such large-scale yacht components showcases the potential of this technology to revolutionize production, offering greater flexibility and performance while significantly cutting down on inefficiencies.

Future developments of LFAM in the marine industry

**The adoption of additive manufacturing is proving to be a key strategy for the marine industry, enabling the production of highly complex and tailored components, optimizing manufacturing processes and reducing time-to-market**. In this context, Caracol's Heron AM technology emerges as a cutting-edge solution, capable of delivering excellent performance and greater versatility than traditional methods.

**In this specific project, the quality and flexibility of Caracol’s robotic platform have led to shorter lightweight air grilles production time, improved efficiency and reduced material waste, with a positive impact on both costs and the environment**. Heron AM technology has proven to be not only a valuable ally in making lighter and stronger structural components, but also a catalyst for innovation, opening up new perspectives in the design and production of unique and highly customized yacht superstructures.

CARACOL

CARACOL was founded in 2017 in Milan, Italy, with the vision of pushing the limits of additive manufacturing in terms of scale, efficiency, and sustainability. The company accomplished this by developing an integrated technological platform, including both hardware and software, to produce advanced large-scale components. Through the integration of a patented extrusion head, the development of dedicated software - Eidos Manufacturing, and the use of robotic arms as movement support, Caracol offers an additive manufacturing technology for advanced components for customers in industries such as aerospace, marine, energy, design, and architecture. Heron AM manufactures parts such as jigs and molds for aircraft components, finished parts for yacht and boat superstructures, or revolutionary projects to initiate virtuous circular economy processes for the energy or design sectors. Vipra AM is the latest launched LFAM system to produce large-scale metal applications in the most demanding industries such as aerospace, energy, construction and shipbuilding. Today, the company has opened the largest LFAM production center in Europe, a production facility in Austin (TX), USA opened in August 2023, and a commercial office in Dubai, has a core team of over 80 international professionals with highly specialized competences, in areas such as mechanical engineering, automation, computational design, design for additive, and advanced manufacturing processes.

For more information, please visit Caracol website <https://www.caracol-am.com/> and Pershing website www.pershing-yacht.com

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