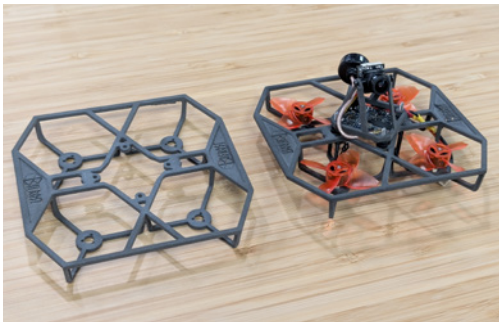


Bifrost

Use Case – UAV Production Parts



A camera drone frame (left) 3D printed with SAF technology and the completed assembly (right).



A close-up of the printed frame showing some of the detail achievable with SAF technology.

Customer Profile

Bifrost is a full-service manufacturing provider specializing in industrial 3D printing, CNC machining, custom fabrication, and turnkey solutions. Located in Grand Forks, North Dakota, Bifrost has earned a reputation for rapid prototyping and production in the aerospace industry, particularly in the uncrewed aerial vehicle (UAS/UAV) sector.

Challenge

Bifrost uses 3D printing to develop UAV components for defense and aerospace customers. Having started with lower-cost printers, the company found they were inadequate for scaling production. Parts often suffered from inconsistent dimensions and throughput was limited, making it difficult to meet tight lead times and growing customer demands. Additionally, certain SLS parts were rigid and too brittle, below customer expectations. Bifrost needed a more reliable, efficient manufacturing solution that could balance quality, cost, and speed to continue growing in the UAV market.

Solution

As a solution, Bifrost integrated a Stratasys H350™ printer with SAF® technology into its production workflow. The system's high repeatability and build efficiency addressed dimensional accuracy concerns while significantly boosting throughput relative to SLS systems. SAF technology has also enabled Bifrost to produce complex components developed with generative design and topological optimization that perform consistently with FEA/CAD software simulations.

Impact

Implementing SAF technology has allowed Bifrost to unlock new markets, win larger contracts, and serve clients more efficiently. On throughput, SAF technology delivers 6-8X improvement vs. SLS and 10X+ increase compared to SLA.

Additionally, recent projects have attained the following savings:

- Up to 80% savings in post-processing labor
- 40% reduction in production costs
- 50%+ material savings

These savings are primarily due to the build volume and hands-off production achievable with SAF technology. The H350 and SAF technology have also enabled Bifrost to transition from prototyping to full-scale production, competing with injection molding, a market previously unobtainable. Beyond drone components, SAF is now opening new opportunities for expansion into additional applications such as automotive accessories, ergonomic workplace tools, and more.

Time Savings

80%
Labor Savings

Cost Savings

$40%
Production Cost

50%
Material Cost

> "With SAF we have gained multiple new customers that were previously out of our reach, either due to cost, turnaround times, or the inability to mass produce parts. The largest orders from these have exceeded 1000 pcs."

Killian Erickson
Bifrost Founder & CEO

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