# Dossier: IMPOSSIBLE OBJECTS, INC.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,898,310.85

**Award Date:** 2024-06-04

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

Impossible Objects, Inc. is a 3D printing technology company pioneering composite-based additive manufacturing (CBAM). Their primary business is developing and manufacturing CBAM printers, materials, and software that enable the production of high-performance composite parts with superior strength, heat resistance, and chemical resistance compared to traditional 3D printing methods. The company aims to solve the limitations of existing additive manufacturing technologies by enabling the efficient and scalable production of complex, high-performance parts for demanding applications in aerospace, defense, automotive, and other industries. Their unique value proposition lies in their patented CBAM technology, which utilizes sheet-based printing and a unique thermal process to create parts with superior mechanical properties and material characteristics, bridging the gap between prototyping and mass production of composite components.

**Technology Focus:**

* CBAM Technology:\*\* Impossible Objects uses a patented composite-based additive manufacturing (CBAM) process. This involves printing a design onto sheets of carbon fiber or fiberglass fabric with inkjet heads using thermally-activated powdered binders. The sheets are then stacked, laminated, and consolidated under heat and pressure, creating a three-dimensional composite part.
* Materials:\*\* The company offers a range of CBAM materials, including carbon fiber, fiberglass, and high-performance polymers. Their composites achieve properties rivaling or exceeding traditional manufacturing methods like injection molding, with high strength-to-weight ratios and the ability to create complex geometries. They also offer a unique water-soluble support material that allows for complex internal geometries without the need for machining after printing.

**Recent Developments & Traction:**

* Partnership with TIGER Coatings (October 2023):\*\* This partnership focuses on developing novel powder coating solutions specifically for parts produced with Impossible Objects’ CBAM technology. The collaboration aims to enhance the surface finish and functionality of CBAM parts.
* Partnership with Owens Corning (April 2021):\*\* The collaboration aimed to leverage Owens Corning’s glass fiber expertise to develop new composite materials for Impossible Objects’ CBAM 2.0 printing platform, improving material properties and expanding application possibilities.
* CBAM-2 Printer Launch (September 2020):\*\* Impossible Objects launched the CBAM-2 printer, the second generation of their CBAM technology, featuring enhanced speed, scalability, and materials capabilities compared to its predecessor. This launch expanded their addressable market and production potential.

**Leadership & Team:**

* Robert Swartz (Chairman):\*\* A seasoned entrepreneur with experience in building and scaling technology companies.
* Larry Kaplan (CEO):\*\* Formerly held senior executive positions at other technology firms. His background involves extensive experience in operations and strategy.

**Competitive Landscape:**

* Markforged:\*\* While Markforged focuses on continuous fiber reinforcement (CFR) technology, both companies compete in the high-performance composite 3D printing market. Impossible Objects differentiates itself through its sheet-based CBAM process, offering potentially higher material utilization and dimensional accuracy for specific applications.
* Stratasys:\*\* Stratasys is a major player in the broader 3D printing market, with offerings in various materials and technologies. Impossible Objects offers a unique CBAM solution for composite parts, targeting applications where the specific material properties and structural performance are paramount.

**Sources:**

* [https://impossible-objects.com/](https://impossible-objects.com/)
* [https://www.additivemanufacturing.media/news/impossible-objects-partners-with-tiger-coatings-to-offer-better-finishes](https://www.additivemanufacturing.media/news/impossible-objects-partners-with-tiger-coatings-to-offer-better-finishes)
* [https://www.compositesworld.com/news/impossible-objects-partners-with-owens-corning](https://www.compositesworld.com/news/impossible-objects-partners-with-owens-corning)
* [https://www.3dprintingmedia.network/impossible-objects-2/](https://www.3dprintingmedia.network/impossible-objects-2/)