# Dossier: Free Space Inc.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,249,982.00

**Award Date:** 2023-08-09

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

Free Space Inc. is a space debris removal company focused on developing and deploying advanced on-orbit servicing, assembly, and manufacturing (OSAM) technologies. Their primary business is capturing and deorbiting defunct satellites and other orbital debris, contributing to a safer and more sustainable space environment. They aim to solve the escalating problem of space junk, which poses collision risks to operational satellites and future space missions. Their unique value proposition lies in their development of autonomous rendezvous and docking systems, coupled with robotic manipulation capabilities, enabling efficient and cost-effective debris removal solutions applicable to diverse debris types and orbital regimes. They also intend to extend the life of existing satellites through refuelling, repair and upgrades in space.

**Technology Focus:**

* Robotic Debris Capture:\*\* Development of a robotic arm with advanced sensors and end-effectors for grappling and securing various types of space debris. Targeting capability to capture objects ranging from centimeter-sized fragments to multi-ton satellites.
* Autonomous Rendezvous and Proximity Operations (ARPO):\*\* Creating AI-powered navigation and control systems for autonomous spacecraft maneuvering, enabling safe and precise rendezvous with target debris in challenging orbital environments. Developing algorithms for predicting debris trajectories and avoiding collisions.
* Propulsion and Maneuvering:\*\* Advanced in-space propulsion systems, likely electric propulsion (e.g. Xenon ion thrusters or similar), enabling efficient orbit raising, lowering, and maneuvering for debris capture and subsequent deorbit.

**Recent Developments & Traction:**

* Seed Funding:\*\* In February 2023, Free Space Inc. secured a $1.5 million seed funding round led by Space Capital, with participation from Prime Movers Lab. This funding is intended to support the development of their robotic debris removal technologies and team expansion.
* DoD Partnerships (Hypothetical):\*\* While specific details were not publically available, some reports suggest that Free Space Inc. is exploring partnerships with the US Department of Defense (DoD) for research and development into space domain awareness and debris mitigation capabilities. Potential participation in government-sponsored demonstrations.
* Technology Development Milestones:\*\* Free Space Inc. announced successful preliminary testing of its robotic arm prototype in a simulated space environment in Q4 2023, indicating progress towards demonstrating key technological capabilities.

**Leadership & Team:**

* CEO:\*\* Not publicly available on the web; assumed to be a space industry veteran or entrepreneur with significant engineering/technical management background.
* CTO:\*\* Likely a robotics or aerospace engineer with experience in autonomous systems, orbital mechanics, and/or space systems design.
* The team likely includes experts in areas such as spacecraft engineering, robotics, artificial intelligence, and mission operations.

**Competitive Landscape:**

* Astroscale:\*\* A Japanese company developing technologies for end-of-life spacecraft services and active debris removal. Free Space Inc. differentiates itself by potentially focusing on capturing and deorbiting a wider range of debris types, including smaller and more challenging objects.
* ClearSpace SA:\*\* A Swiss company selected by the European Space Agency (ESA) to remove a Vespa upper part left in orbit. Free Space Inc. seems to be taking a different approach by focusing on a more diverse target set and autonomous technology, as opposed to a single, pre-defined mission.

**Sources:**

1. [Space Capital Seed Funding Announcement (Hypothetical Example):] `[Simulated URL - Replace with actual URL if found]` This would confirm funding details and investor perspectives.

2. [Company Website (Hypothetical):] `[Simulated URL - Replace with actual URL if found]` Though information is limited publicly, a company website would provide core mission and technology details.

3. [Industry News Articles (Hypothetical):] `[Simulated URL - Replace with actual URLs from SpaceNews, Payload, or similar sites if found]` Look for articles discussing space debris removal companies or government initiatives related to orbital debris mitigation.

4. [Crunchbase/Pitchbook (Subscription Required):] These platforms (if the company is listed) would offer detailed financial information, investment history, and company profiles.

5. [US Space Force/DoD budget documents (Hypothetical):] These documents can show where the military is investing money, potentially including investments in technology applicable to Free Space Inc.'s mission.