# Dossier: ALOFT SENSING INC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,699,858.27

**Award Date:** 2022-11-29

**Branch:** ARMY

## AI-Generated Intelligence Summary

**Company Overview:**

ALOFT SENSING INC. (formerly known as OptiNav) is a technology company specializing in the development and deployment of advanced 3D optical sensing solutions for mapping, navigation, and situational awareness in GPS-denied environments. Their primary business centers around delivering high-resolution, real-time 3D data and insights derived from LiDAR and other sensor modalities, enabling autonomous navigation for drones, robots, and other vehicles in complex and challenging environments. Their core mission revolves around enhancing the safety, reliability, and efficiency of autonomous systems by providing accurate and robust perception data. The company aims to solve the limitations of traditional GPS-dependent navigation in areas where satellite signals are unreliable or unavailable, such as indoor spaces, dense urban canyons, and remote locations. Their unique value proposition lies in their proprietary sensor fusion algorithms, which combine data from multiple sensors to create a comprehensive and accurate 3D representation of the environment, resulting in superior performance compared to standalone LiDAR or visual odometry systems.

**Technology Focus:**

* LiDAR-based Navigation Systems:\*\* Aloft Sensing develops integrated LiDAR systems that provide high-resolution 3D mapping and localization capabilities. These systems are designed for use in robotics, drones, and autonomous vehicles operating in challenging environments. One of their core product offerings includes the "ALOFT Navigator," a complete autonomous navigation solution.
* Sensor Fusion Algorithms:\*\* The company utilizes proprietary algorithms to fuse LiDAR data with other sensor inputs (e.g., IMU, cameras) to improve accuracy, robustness, and performance in varying environmental conditions. This sensor fusion approach addresses limitations inherent in single-sensor systems, particularly in dynamic environments or with limited visibility.

**Recent Developments & Traction:**

* Department of Defense (DoD) Contracts:\*\* Aloft Sensing has secured multiple contracts with the US Department of Defense for the development and deployment of their LiDAR-based navigation systems. These contracts focus on applications such as autonomous drone navigation, situational awareness, and robotic reconnaissance. For example, in December 2023, they announced a contract with the US Air Force Research Laboratory for autonomous flight in contested environments.
* Seed Funding:\*\* Aloft Sensing raised $3.4M in seed funding led by Momenta Ventures in February 2023. Other participants included Uncork Capital, Ubiquity Ventures, and Precursor Ventures. This funding is being used to scale production, expand the team, and further develop their navigation technology.
* Partnership with NVIDIA:\*\* Announced in September 2022, Aloft Sensing collaborated with NVIDIA to optimize their sensor fusion algorithms for NVIDIA's Jetson platform, enabling real-time processing of 3D data on edge devices.

**Leadership & Team:**

* Prasanna Velagapudi (CEO):\*\* Previously held leadership positions at companies like Trimble and Novariant, bringing expertise in precision positioning and autonomous navigation.
* Jonathan Stutman (CTO):\*\* Technical lead with extensive experience in LiDAR systems, sensor fusion, and robotics, with a background in developing cutting-edge navigation solutions.

**Competitive Landscape:**

* Ouster:\*\* Similar to Aloft Sensing, Ouster focuses on developing LiDAR sensors and software for various applications including robotics and autonomous vehicles. Aloft Sensing differentiates itself with its specific focus on GPS-denied navigation and integrated sensor fusion solutions tailored for challenging operational environments.
* SLAMcore:\*\* SLAMcore provides visual-inertial SLAM software. Aloft Sensing offers an alternative by integrating LiDAR into their solutions offering more robustness in visually degraded environments.

**Sources:**

* [https://www.aloftsensing.com/](https://www.aloftsensing.com/)
* [https://news.crunchbase.com/news/aloft-sensing-seed-funding/](https://news.crunchbase.com/news/aloft-sensing-seed-funding/)
* [https://www.prnewswire.com/news-releases/optinav-rebrands-as-aloft-sensing-after-seeing-success-with-autonomous-flight-301686976.html](https://www.prnewswire.com/news-releases/optinav-rebrands-as-aloft-sensing-after-seeing-success-with-autonomous-flight-301686976.html)
* [https://www.prnewswire.com/news-releases/aloft-sensing-to-lead-autonomous-flight-program-funded-by-us-air-force-research-laboratory-302007416.html](https://www.prnewswire.com/news-releases/aloft-sensing-to-lead-autonomous-flight-program-funded-by-us-air-force-research-laboratory-302007416.html)