# Dossier: SPECULAR THEORY INC.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,799,733.00

**Award Date:** 2023-06-16

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

Specular Theory Inc. is a defense technology company specializing in advanced sensing and perception systems for autonomous navigation and situational awareness. Their primary business revolves around developing and deploying perception software and hardware solutions that enable autonomous vehicles, robots, and other platforms to operate effectively in challenging environments, particularly those with limited visibility or GPS access. They aim to solve the problem of reliable and robust autonomous operation in degraded visual environments (DVE) and contested environments by providing superior perception capabilities through sensor fusion and advanced algorithms. Their unique value proposition lies in their expertise in fusing different sensor modalities (LiDAR, radar, EO/IR cameras) with advanced AI-powered perception software, including deep learning and computer vision techniques, to provide highly accurate and reliable environmental understanding, even in adverse conditions.

**Technology Focus:**

* Sensor Fusion Perception Software:\*\* Develops proprietary software algorithms that fuse data from various sensor modalities (LiDAR, radar, cameras) to create a comprehensive and accurate 3D representation of the environment. This software offers enhanced object detection, classification, tracking, and scene understanding capabilities, particularly in DVE conditions.
* AI-Powered Autonomous Navigation:\*\* They employ AI, specifically deep learning, to develop autonomous navigation systems that can operate vehicles and robots in complex and unpredictable environments. They focus on robust performance even with limited or degraded sensor data.
* Hardware Solutions:\*\* Specular Theory offers sensor fusion hardware solutions, integrating their software for end-to-end perception capabilities in a single package.

**Recent Developments & Traction:**

* SBIR Phase II Award (unspecified date):\*\* Was awarded a Small Business Innovation Research (SBIR) Phase II grant for developing technology related to sensor fusion and autonomous navigation, suggesting ongoing government interest and funding. (Source: General Web Search)
* Partnerships with Government Agencies:\*\* Appears to have established partnerships and collaborations with various government agencies and defense contractors, as evidenced by mentions of their technology being used in government-related projects (details limited in public domain).
* Continued development and advancement of their core AI perception technology\*\*

**Leadership & Team:**

* Information on key leadership is limited to general web searches, with no readily available public information on the CEO, CTO, or other high-level executives.

**Competitive Landscape:**

* Ouster:\*\* Ouster is a prominent LiDAR company offering digital LiDAR sensors and perception software, competing in the autonomous vehicle and robotics space. Specular Theory's differentiator likely lies in their specific expertise and focus on sensor fusion, especially for challenging defense and aerospace applications in degraded visual environments, beyond LiDAR-only solutions.
* AEye (now merged with CF Acquisition Corp III):\*\* While AEye has since undergone a major change and merger, pre-merger they focused on adaptive LiDAR technology for the automotive and industrial sectors. Specular Theory differentiates itself through its stronger focus on defense and aerospace applications, integrating a broader range of sensors beyond LiDAR, and potentially tailored for government specific needs.

**Sources:**

1. [https://www.cbinsights.com/company/specular-theory](https://www.cbinsights.com/company/specular-theory)

2. [https://opencorporates.com/companies/us\_de/6319376](https://opencorporates.com/companies/us\_de/6319376)

3. Extensive General Web Search to identify news, grants and relevant information