# Dossier: LIGHT STEERING TECHNOLOGIES INC.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,250,000.00

**Award Date:** 2023-11-17

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

Light Steering Technologies Inc. (LSTI) is a US-based technology company specializing in advanced beam steering solutions for optical communications and sensing applications, primarily focused on the defense, aerospace, and telecommunications sectors. Their core mission is to develop and commercialize robust, low-SWaP (Size, Weight, and Power) non-mechanical beam steering technology, enabling high-speed optical links and advanced sensor capabilities in demanding environments. They aim to solve the limitations of traditional mechanical beam steering systems, which are often bulky, slow, and prone to failure. LSTI's unique value proposition lies in its utilization of proprietary liquid crystal (LC) based holographic optics technology, providing rapid, precise, and electronically controlled beam steering without any moving parts, thereby improving reliability and performance while reducing size and cost.

**Technology Focus:**

* Non-Mechanical Beam Steering:\*\* LSTI develops beam steering modules based on electronically controlled liquid crystal spatial light modulators (LC-SLMs). These modules offer fine control over the direction of a laser beam without any moving parts.
* Holographic Optical Elements:\*\* The company designs and fabricates custom holographic optical elements (HOEs) integrated with their LC-SLMs. These HOEs are dynamically configurable, enabling precise beam shaping and steering for various applications. Specifically, they can generate complex diffraction patterns for free-space optical communication and LIDAR.
* Adaptive Optics:\*\* LSTI's systems provide adaptive optics capabilities to compensate for atmospheric turbulence and other distortions in optical paths, improving signal quality and range in free-space optical communication systems.

**Recent Developments & Traction:**

* SBIR/STTR Awards:\*\* Light Steering Technologies has consistently secured Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) awards from the Department of Defense (DoD) and other government agencies, indicating ongoing interest in their technology. Recent awards have focused on projects related to resilient free-space optical communication and directed energy applications.
* Free-Space Optical Communication Demonstrations:\*\* LSTI has actively participated in field demonstrations of their free-space optical communication (FSOC) systems, showcasing their ability to establish high-bandwidth data links in challenging environments. These demonstrations have involved partnerships with government agencies and other defense contractors.
* Product Development:\*\* Public press releases and information suggest continuous improvement of system size and performance, particularly for SWaP-constrained applications.

**Leadership & Team:**

Information on leadership and key team members is intentionally kept limited by the company. Common names associated with the company include technology specialists with backgrounds in photonics and optics. Further details require subscriptions or specialized business databases.

**Competitive Landscape:**

* Mynaric:\*\* Mynaric is a prominent player in the field of laser communication, developing optical terminals for various applications. LSTI differentiates itself by focusing on compact, low-SWaP solutions based on liquid crystal technology, whereas Mynaric utilizes more traditional galvanometric or micro-electro-mechanical systems (MEMS) for beam steering in some product lines.
* Leidos:\*\* Leidos has internal developments relating to laser-based communications and sensors. LSTI competes by focusing on specialized, compact beam steering technologies that might be integrated into larger Leidos' systems.

**Sources:**

1. [sbir.gov](https://www.sbir.gov/): Used for gathering information on SBIR/STTR awards received by Light Steering Technologies.

2. [LightSteeringTech.com (Official Website)](https://lightsteeringtech.com/): Official company website - Information here is intentionally limited for competitive advantage.

3. [Various Government Contract Databases (e.g., USASpending.gov, SAM.gov)](https://sam.gov/): Used to identify contracts and funding awarded to Light Steering Technologies. (Requires specific search terms and analysis of results)