# Dossier: MAKAI OCEAN ENGINEERING INC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $249,993.58

**Award Date:** 2024-04-25

**Branch:** ARMY

## AI-Generated Intelligence Summary

**Company Overview:**

MAKAI OCEAN ENGINEERING INC. is a world-leading ocean technology company specializing in submarine cable systems engineering, offshore pipeline design, and ocean thermal energy conversion (OTEC). Their core mission is to develop innovative solutions for challenging ocean engineering problems, focusing on reliability, safety, and sustainability. They aim to solve problems related to deep-water infrastructure development, power delivery to remote locations, and environmentally friendly energy production. Their unique value proposition lies in their integrated approach combining advanced numerical modeling, specialized software tools (like MakaiLay for cable laying simulation), and decades of practical experience in designing and deploying subsea systems.

**Technology Focus:**

* MakaiLay & MakaiPlan Pro Software:\*\* Industry-standard software packages used for submarine cable laying simulation and route planning. MakaiLay models the dynamic behavior of cables during installation, predicting tension, touchdown location, and bending stress, enabling optimized and safe deployment. MakaiPlan Pro facilitates route engineering and desktop studies.
* OTEC Technology:\*\* Development and engineering of Ocean Thermal Energy Conversion (OTEC) systems, which generate electricity using the temperature difference between warm surface seawater and cold deep seawater. This includes design of seawater intake and discharge pipelines, power plants, and system integration.
* Submarine Pipeline & Cable Engineering:\*\* Providing consulting and engineering services for the design, installation, and maintenance of submarine pipelines and cables, including finite element analysis, risk assessment, and construction support.

**Recent Developments & Traction:**

* Navy SBIR Contract (2023):\*\* Awarded a Small Business Innovation Research (SBIR) contract by the U.S. Navy to develop advanced control systems for autonomous underwater vehicles (AUVs) used in cable inspection and repair.
* OTEC Project Progress (Ongoing):\*\* Continues to be involved in various international OTEC projects, including feasibility studies and preliminary design work for potential OTEC plants in island nations.
* MakaiLay Updates:\*\* Regularly releases updated versions of MakaiLay with enhanced features, improved modeling capabilities, and support for new cable types and installation techniques.

**Leadership & Team:**

* Dr. Duke Hartman (President):\*\* Possesses extensive experience in ocean engineering and has been with Makai for many years, contributing to the development of their core technologies.
* The leadership team includes experienced engineers and scientists specializing in marine technology, numerical modeling, and software development.

**Competitive Landscape:**

* SAIPEM:\*\* Primarily a competitor in the offshore pipeline engineering space. Makai differentiates itself with its specific expertise and specialized software in cable laying simulation, offering a more focused solution.
* Deep Sea Systems International:\*\* Competitor in the development of remotely operated vehicles (ROVs) and AUVs for subsea cable maintenance and inspection. While MAKAI are not an ROV manufacturer, their software is used to plan and execute cable maintenance operations performed by ROVs.

**Sources:**

* [https://makai.com/](https://makai.com/)
* [https://www.sbir.gov/](https://www.sbir.gov/) (Search for Makai Ocean Engineering for relevant SBIR awards)
* [https://www.marinelink.com/](https://www.marinelink.com/) (Search for Makai Ocean Engineering to find press releases and articles related to the company's projects and developments)