

## HAWAII SBIR SUCCESS STORY - MAKAI OCEAN ENGINEERING, INC.

**ABOUT MAKAI OCEAN ENGINEERING, INC.** Makai Ocean Engineering was founded in 1973 as a diversified ocean engineering company. Today, the company is known for being a world renowned "think tank" for ocean-related issues. Makai's core technical area of expertise includes: submarine cables, ocean energy and marine pipelines, and subsea technologies such as underwater vehicles, buoys, communications systems and general marine engineering and R&D. The company's award-winning team is comprised of physicists, oceanographers, along with mechanical, ocean, chemical, and software engineers, most of whom hold master's degrees or Ph.Ds.

**THE CHALLENGE.** The Makai Ocean Engineering team manufactures Thin Foil Heat Exchangers (TFHX) for government agencies and private businesses at their Kona location. These devices are noted for their compact design, yet their production involves a complex process requiring special bonding equipment. Seeking assistance for this complex manufacturing process, the team engaged with Innovate Hawai'i and the HTDC Manufacturing Assistance Program (MAP).

**MEP CENTER'S ROLE.** In 2023, Makai Ocean Engineering secured a SBIR Phase I and Phase II for two separate projects, highlighting the company's competitive edge in the early stages of product development. They utilized the resources provided by the Hawai'i Small Business Innovation Research Program (HSBIR) and the services offered by Innovate Hawai'i, part of the MEP National Network™, to propel their research and development efforts. Also in 2023, the Makai Ocean Engineering team worked with Innovate Hawai'i and the Manufacturing Assistance Program (MAP) to enhance their production capabilities. This project facilitated the specification and integration of advanced manufacturing equipment tailored for their unique Thin Foil Heat Exchangers. The assistance helped the company scale-up, streamline, and further automate their manufacturing process as their company prepares for increased commercial sales. The company's SBIR Phase I project, 'Makai Repair', is software that is used to quickly analyze bridges and piers for any structural issues. The software can process scanned data and give both cost and time estimates for repairs. The company's Phase II project was for advanced computational software. In both SBIR projects, the HSBIR program played a pivotal role in supporting the Makai team, contributing to various research and development aspects such as the initial software creation in Phase I, data gathering, and the specification and implementation of equipment. This support was instrumental in crafting an integrated hardware-software product, proving its functionality, and facilitating market acceptance.

**"The Innovate Hawaii team is extremely helpful in a variety of ways—whether it is for manufacturing assistance, additional funding or as a sounding board for business related questions. We recommend them and their services to high-tech companies just starting out as well as established companies, like ourselves."**

-Hermann Kugeler, Vice President of Business Development

## RESULTS



4 new hires in 2023



\$261,000 in total awards

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