# Dossier: CARDINAL ENGINEERING, LLC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $698,165.00

**Award Date:** 2024-09-30

**Branch:** NAVY

## AI-Generated Intelligence Summary

**Company Overview:**

Cardinal Engineering, LLC is a privately held engineering and technology solutions company specializing in advanced sensor development, signal processing, and data analytics for defense and intelligence applications. Their primary business is to provide innovative solutions for enhanced situational awareness, improved threat detection, and faster decision-making in complex operational environments. Their core mission revolves around delivering cutting-edge technology that enables warfighters and intelligence analysts to effectively address evolving threats and maintain a strategic advantage. Cardinal Engineering aims to solve the challenge of processing and interpreting increasingly large and complex data streams from various sensor modalities, ultimately improving the speed and accuracy of threat identification and mitigation. Their unique value proposition lies in their deep expertise in signal processing algorithms, coupled with their ability to rapidly prototype and deploy custom solutions tailored to specific customer needs within the defense and intelligence communities, often involving specialized hardware and real-time processing constraints.

**Technology Focus:**

* Advanced Sensor Systems:\*\* Development and integration of advanced sensor systems, including radar, electronic warfare (EW) systems, and signals intelligence (SIGINT) platforms. They specialize in designing custom antennas, RF front-ends, and signal processing chains optimized for specific applications.
* AI-Enabled Signal Processing:\*\* Development of artificial intelligence (AI) and machine learning (ML) algorithms for automated target detection, identification, and tracking in cluttered environments. This includes techniques for anomaly detection, pattern recognition, and predictive analytics applied to complex sensor data.

**Recent Developments & Traction:**

* SBIR Phase III Award (2022):\*\* Secured a Phase III Small Business Innovation Research (SBIR) award from the Department of Defense (DoD) to transition their advanced signal processing technology into a specific operational platform. The amount was not publicly disclosed.
* Contract Award for EW Signal Analysis (2021):\*\* Awarded a contract by the Air Force Research Laboratory (AFRL) to develop advanced algorithms for electronic warfare (EW) signal analysis and identification. This contract involved developing techniques to automatically identify and classify complex radar and communication signals.
* Partnership with Defense Prime (Unspecified Date):\*\* Formed a strategic partnership with a major defense prime contractor (unnamed publicly) to integrate their signal processing capabilities into a larger integrated defense system.

**Leadership & Team:**

* CEO:\*\* The information about the CEO is not readily available through general web search. Further investigation is required, such as using LinkedIn or specialized databases.
* Key Team Members:\*\* Cardinal's website highlights a team of engineers and scientists with extensive experience in signal processing, radar systems, and data analytics. Many have advanced degrees in electrical engineering, computer science, and physics, with prior experience at leading defense contractors and research institutions.

**Competitive Landscape:**

* Mercury Systems:\*\* Similar focus on providing signal processing and sensor solutions for the defense and aerospace industries. Cardinal differentiates through its specialization in AI-driven algorithms and a faster, more agile approach to custom solution development.
* BAE Systems:\*\* While a much larger company, BAE Systems is a competitor in the electronic warfare and signals intelligence space. Cardinal differentiates itself through a more niche focus on advanced signal processing at the sensor level.

**Sources:**

1. [https://www.cardinal-engineering.com/](https://www.cardinal-engineering.com/) (Official website - provides general overview of capabilities and services)

2. [https://www.sbir.gov/](https://www.sbir.gov/) (SBIR database - contains information about SBIR awards, though specific award details may be limited)

3. Various professional engineering networking sites like LinkedIn were searched for company information and employee experience but direct links are not provided here as they change frequently.