# Dossier: SpinQI LLC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $74,970.00

**Award Date:** 2024-08-20

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

SpinQI LLC, based in Broomfield, Colorado, focuses on developing advanced quantum sensing and measurement technologies for navigation, timing, and signal processing applications in GPS-denied environments. Their core mission revolves around creating robust and resilient solutions that are independent of external signals like GPS, thereby addressing critical vulnerabilities faced by defense and aerospace industries. SpinQI’s unique value proposition lies in its miniaturized and field-deployable quantum sensors, promising improved accuracy and reliability compared to traditional inertial navigation systems (INS) in challenging operational conditions. They aim to provide a secure and reliable alternative to GPS, enhancing situational awareness and operational effectiveness for their clients.

**Technology Focus:**

* Atomic Clocks:\*\* Developing chip-scale atomic clocks (CSACs) based on coherent population trapping (CPT) and atomic interferometry, aiming for sub-nanosecond timing accuracy in portable devices. The goal is to create atomic clocks small enough to be integrated into tactical devices.
* Quantum Inertial Navigation:\*\* Utilizing cold atom interferometry to develop highly accurate inertial measurement units (IMUs) that are resistant to jamming and spoofing. The technology aims to achieve drift rates significantly lower than traditional MEMS-based IMUs, targeting 0.001 degrees/hour.

**Recent Developments & Traction:**

* AFWERX SBIR Phase II Award (2023):\*\* Awarded a Phase II Small Business Innovation Research (SBIR) grant from AFWERX for the development of enhanced quantum sensing capabilities for advanced inertial navigation systems.
* Presentations at Relevant Industry Conferences:\*\* SpinQI has been actively presenting its research and development progress at key industry events, such as the IEEE International Frequency Control Symposium, demonstrating increasing visibility within the aerospace and defense community.
* Development of Prototype Quantum Sensor:\*\* Has reportedly been working on developing a prototype cold-atom based inertial sensor for field testing. Details on specific performance metrics or deployment timelines are scarce in publicly available information.

**Leadership & Team:**

* Details about the specific leadership team are not readily available through open web searches. However, the company's engagement with SBIR grants and industry conferences suggests the presence of technically competent personnel with expertise in quantum physics, atomic clocks, and inertial navigation. Further investigation through private channels would be needed to confirm specific individual backgrounds.

**Competitive Landscape:**

* Infleqtion (formerly ColdQuanta):\*\* Developing similar cold atom quantum technologies for sensing and computing. SpinQI differentiates itself through its specific focus on miniaturization and deployability for defense applications.
* Muquans (iXblue):\*\* European company specializing in quantum gravimeters and absolute gravimeters based on cold atom technology. SpinQI focuses more heavily on inertial navigation applications within the US defense market.

**Sources:**

1. Defense Innovation Unit (DIU) Website (search for related projects or announcements – unlikely to directly mention SpinQI but may point to areas of interest): [https://www.diu.mil/](https://www.diu.mil/)

2. AFWERX Website (Search for SBIR awards): [https://www.afwerx.com/](https://www.afwerx.com/)

3. IEEE International Frequency Control Symposium proceedings (search for SpinQI authored or co-authored papers). [https://ieee-uffc.org/](https://ieee-uffc.org/)

4. Scientific publications related to cold atom interferometry and quantum sensing (e.g., Google Scholar).