



# VAYURA

QUANTUM TECH

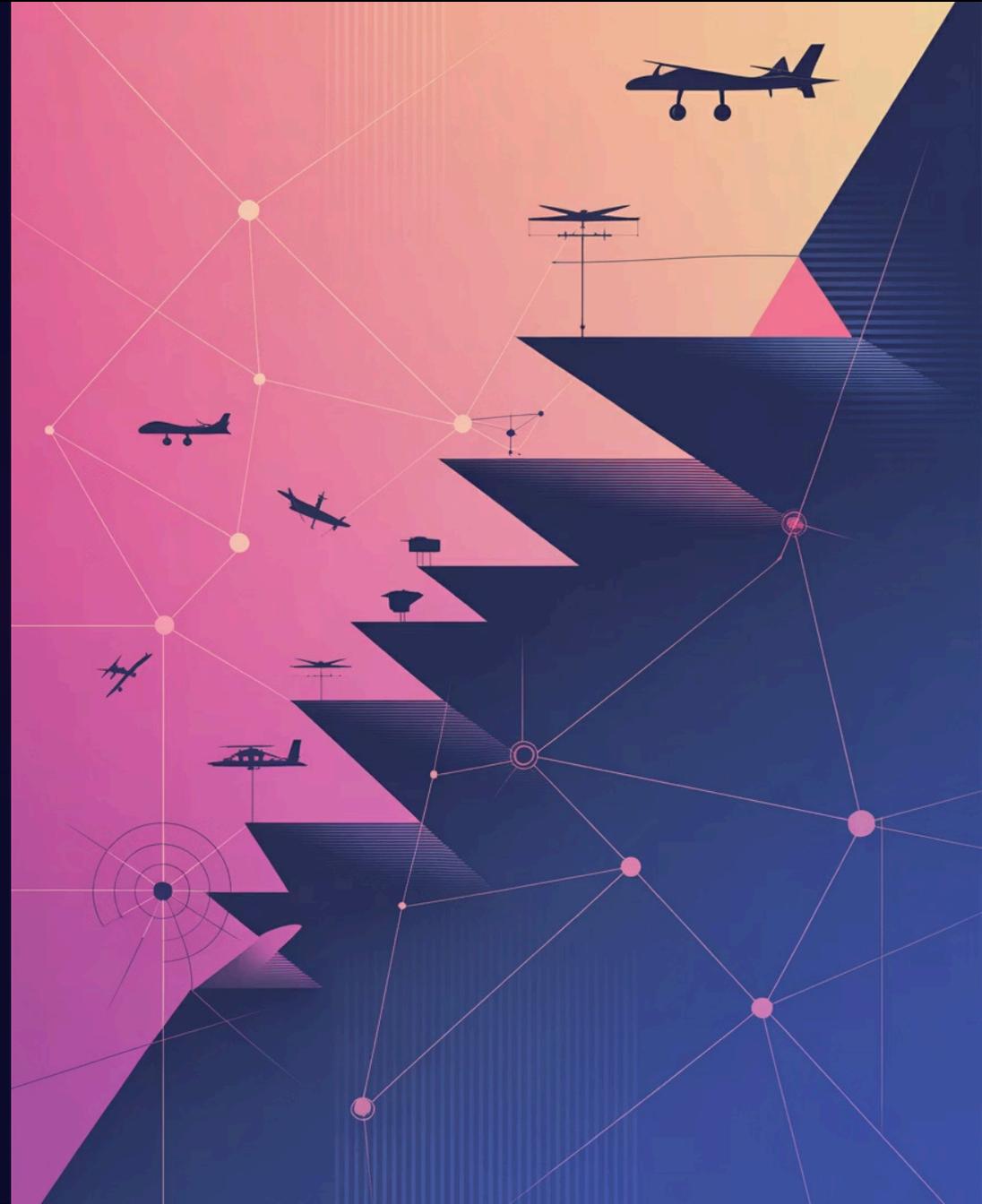
*The Future Navigates Itself*

**Founder & CEO:** HarileenKumar Gurunathan

# The Problem: The Silent Vulnerability

- Every defense platform depends on GNSS signals that can be jammed, spoofed, or denied.
- When signals vanish, aircraft lose orientation, drones drift, and missions collapse.
- Dependence on external satellite systems has become a strategic weakness.
- Even advanced systems fail because they rely on something they cannot control.

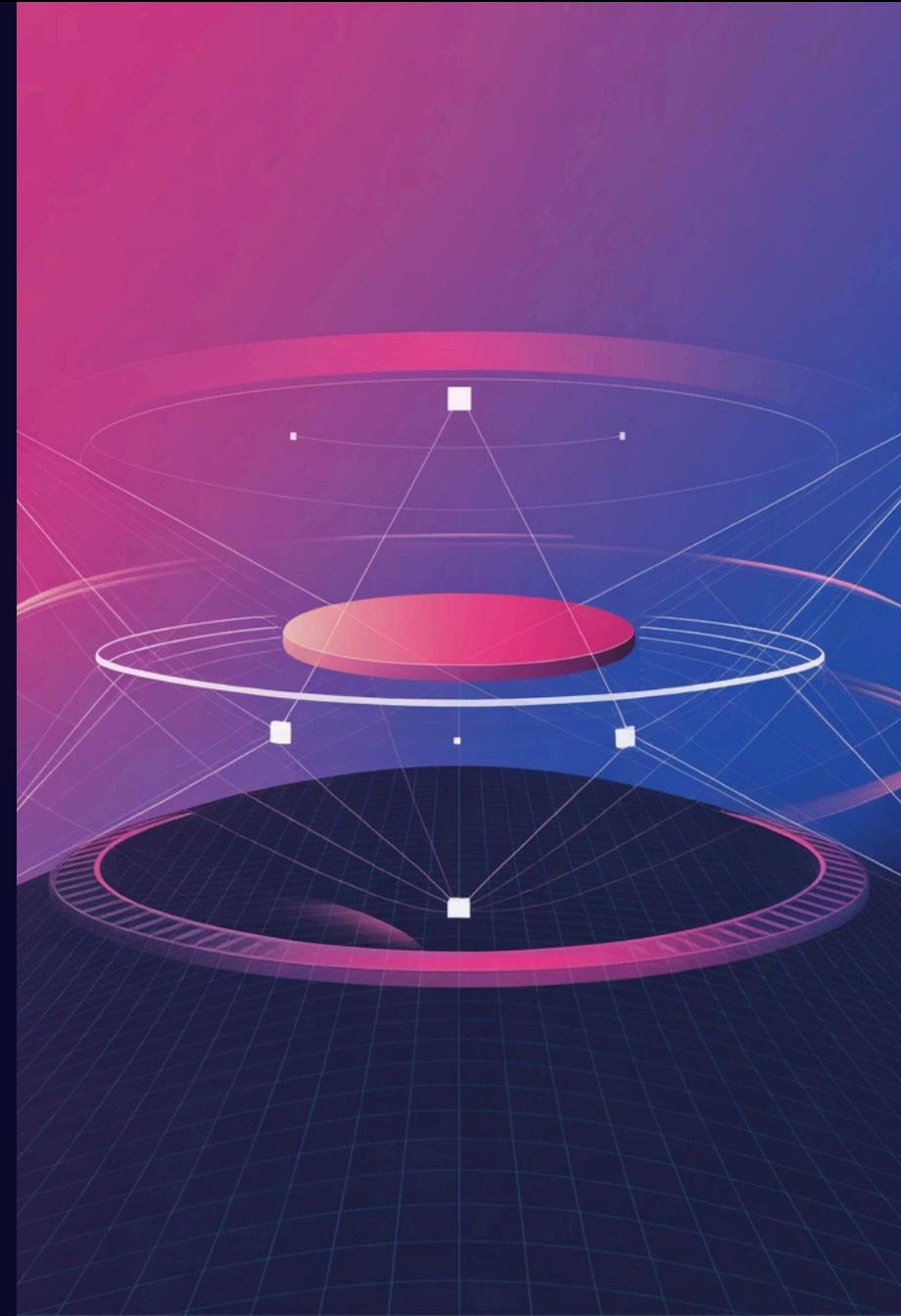
GNSS - Global Navigation Satellite Systems.



# The Breakthrough: A New Way to Navigate

- Powered by **NV-diamond quantum sensing** and **AI-based stabilization**.
- We reimagined navigation by turning to the Earth itself.
- Our system reads **Earth's intrinsic magnetic field and Earth's own parameters**, not satellites.

Delivers precise navigation even when jammed or denied.



# The Transformation: The Value We Create



Strong culture of Research & Innovation.



Systems that operate anywhere — land, sea, air, or orbit.



A new era of **sovereign, resilient, and continuous navigation.**

We're not improving GPS — we're replacing it.



# Product Tech / Prototype



## Core Technology

NV-diamond quantum magnetometer capable of high-precision magnetic field detection with stable operation at room temperature.



## Processing System

An AI/ML-driven algorithm processes NV-sensing data, compares it with pre-loaded references, and outputs drift-free orientation with pin-point accuracy.



## Current Status

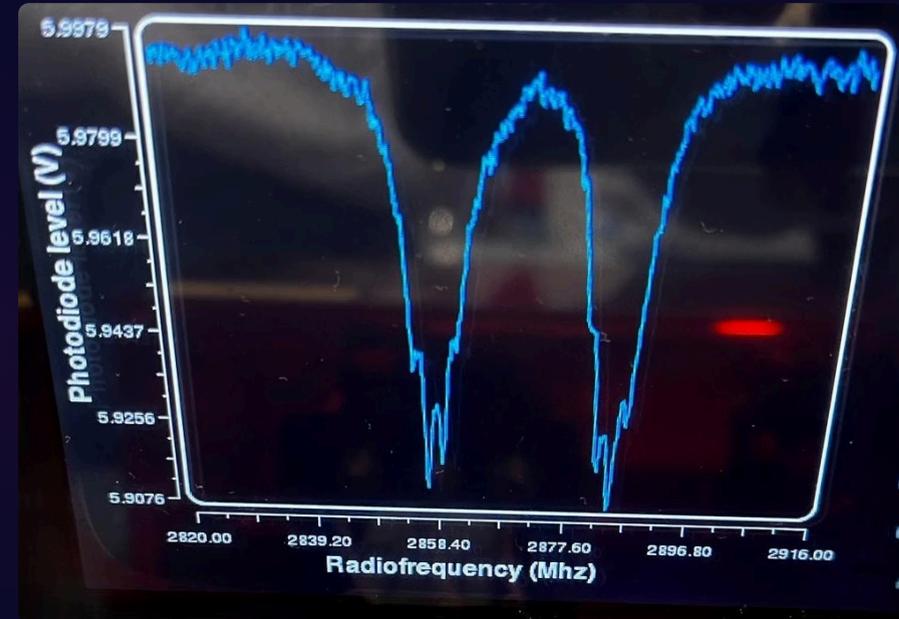
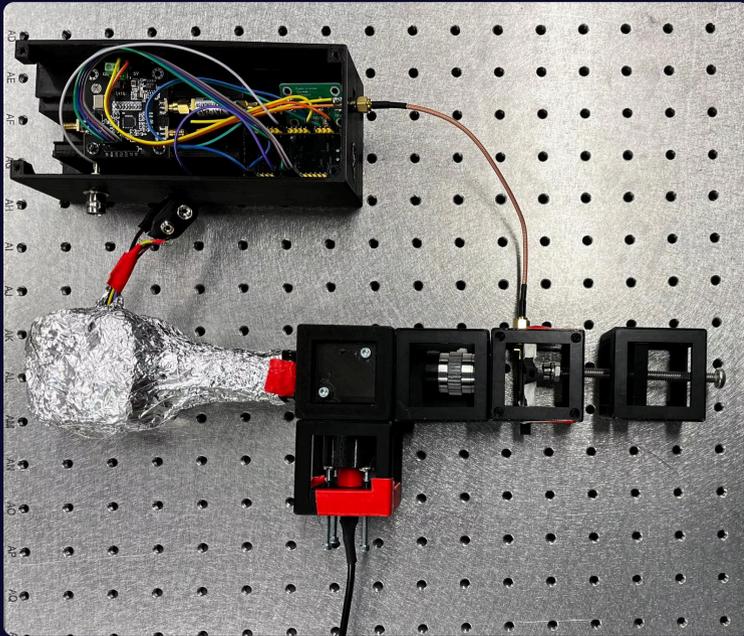
**Prototype:** Laboratory-validated and stable.



**Patent Filing:** On going

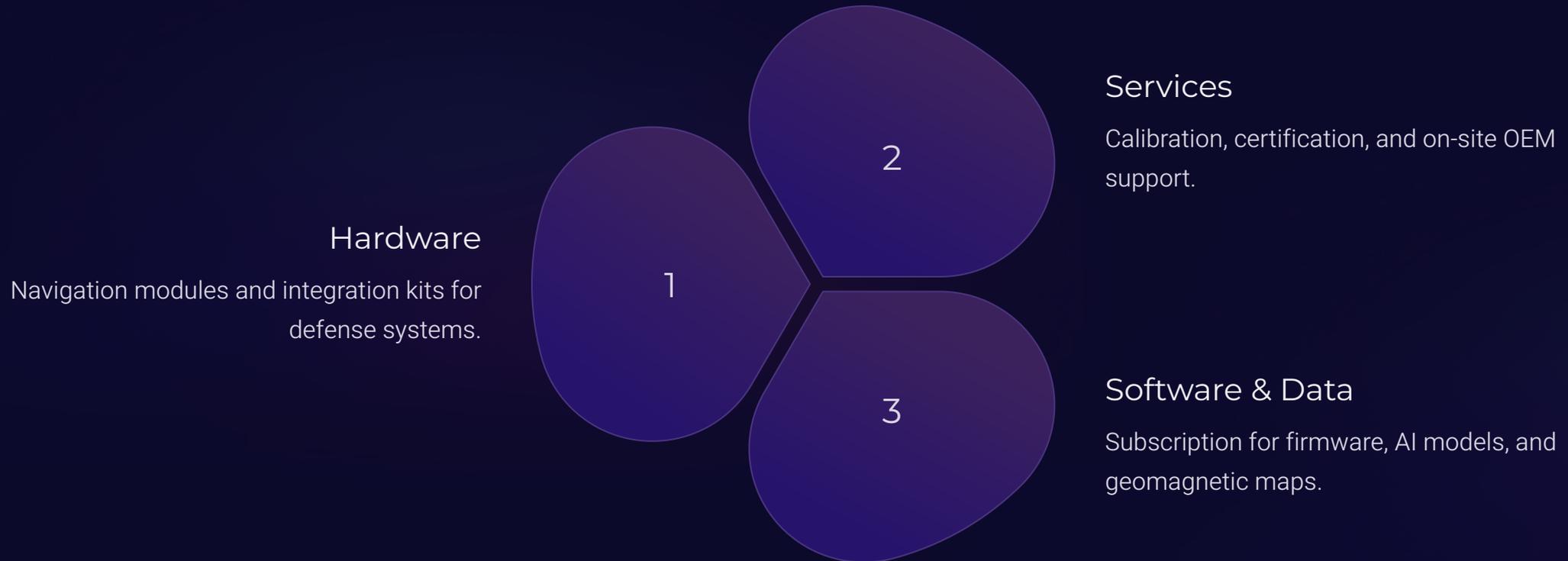
*NV - Nitrogen Vacancy*

# Laboratory-Validated Prototype



Our lab-tested prototype has demonstrated that quantum sensing can be achieved with high-precision sensing capabilities using our optoelectronic setup. Real-time sensitivity of 0.3 mT has been measured, with the graph illustrating the system's ability to detect even minute changes in the magnetic field. We observed a significant performance difference between conventional sensors and our developed setup. At this stage, the system has been successfully validated, and we have decided to rework and further evolve it into a commercial product aimed at solving critical real-world problems.

# Business Model / Revenue



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Hybrid product-service structure ensures scalability and recurring income.

# Market Size

>\$700B

Total Addressable Market by 2032

\$230B

Serviceable Available Market by 2032

(Europe + Asia + Middle East + Africa)

>\$2.3B

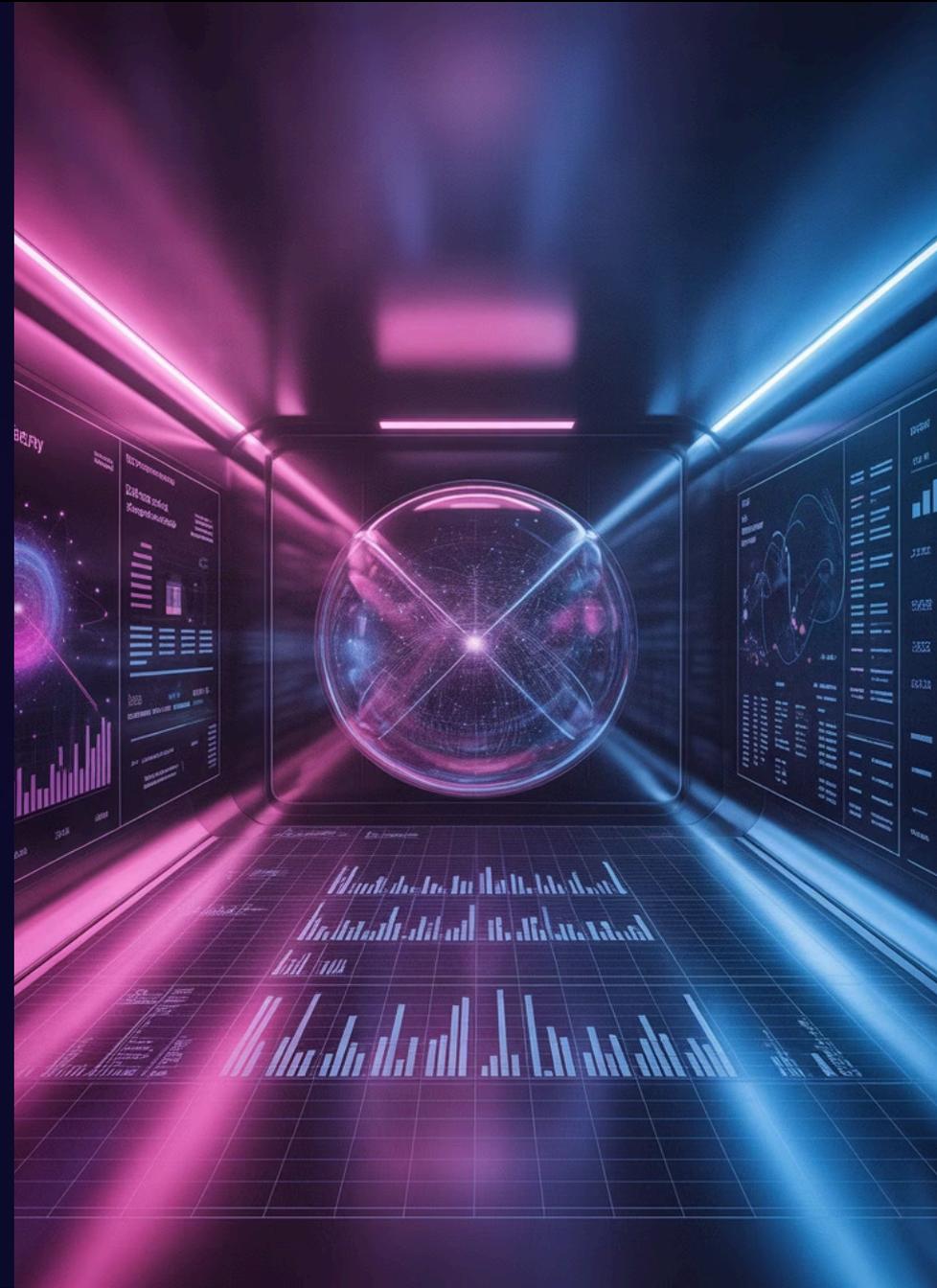
Serviceable Obtainable Market By 2032

(1% of SAM)

Growing at 11.17 % CAGR during 2025 - 2032

Quantum navigation in defense is an untapped deep-tech segment with first-mover advantage in Europe.

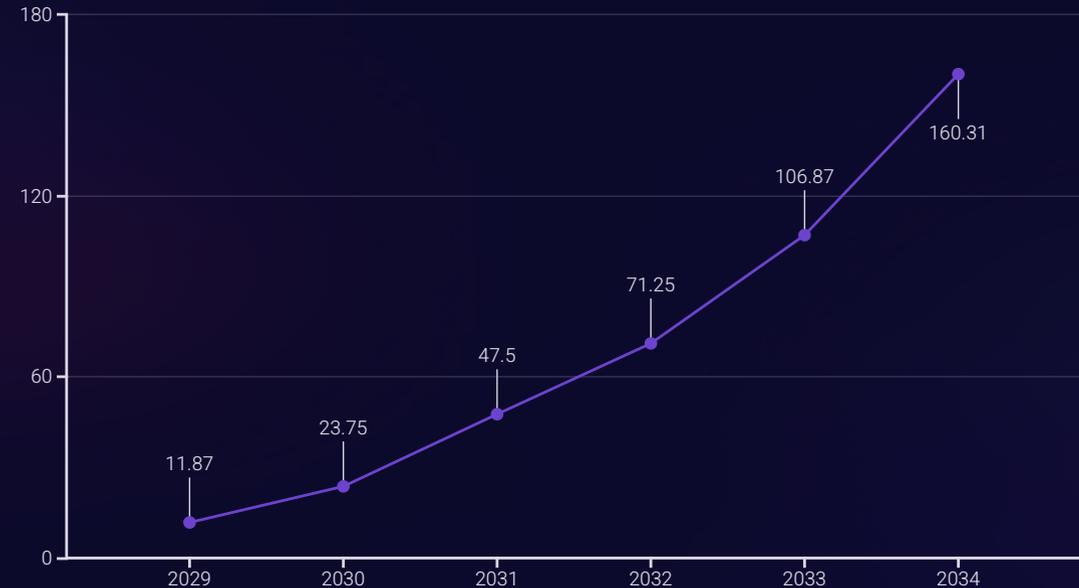
Source: <https://www.fortunebusinessinsights.com/global-navigation-satellite-system-gnss-market-103433>





# Financial Projections (2029 – 2034)

Expected revenue trajectory after market entry:



Numbers are in (\$) Millions

From 2029 to 2034, each growth phase reflects **real technical maturity and contract readiness** – ensuring steady, credible, and defensible revenue growth.

# Roadmap (2026 – 2032)



## Phase 1 (2026-2028)

**0–6 months:** Firm setup, team expansion, R&D, certification strategy & standards mapping

**6–12 months:** Pre-MVP hardware and ML module, pre-compliance reviews

**12–18 months:** Hardware–ML integration, system testing, pre-certification testing

**18–24 months:** AI optimization, **MVP launch**, pilot deployments

**24–30 months:** Formal certification, extended testing, regulatory approvals



## Phase 2 (2029 –2030)

Product launch

### Market Entry:

Defence: Drones, Missiles

Commercial: Autonomous Mobility (Agriculture, Automobiles)



## Phase 3 (2031-2032)

Enters In-house production, Focusing on,

Defence: Unmanned Aerial Vehicle's, Fighter Jets

Commercial: Satellite launch Vehicles, Aircrafts, Helicopters



## Phase 4 (2033+)

Building on the value we have created over the years through our strong research team and collaborative environment, we will evolve into the next phase of quantum technologies—quantum computing and quantum communication.

These advancements will be critical when jointly implemented with our existing products and the customer network we would have established.

Each phase expands technological maturity and market reach across domains.

# Go-to-Market & Visibility Strategy

## Expo Presence

Presence at leading defense and technology expos across Germany & Europe.

## Direct Engagement

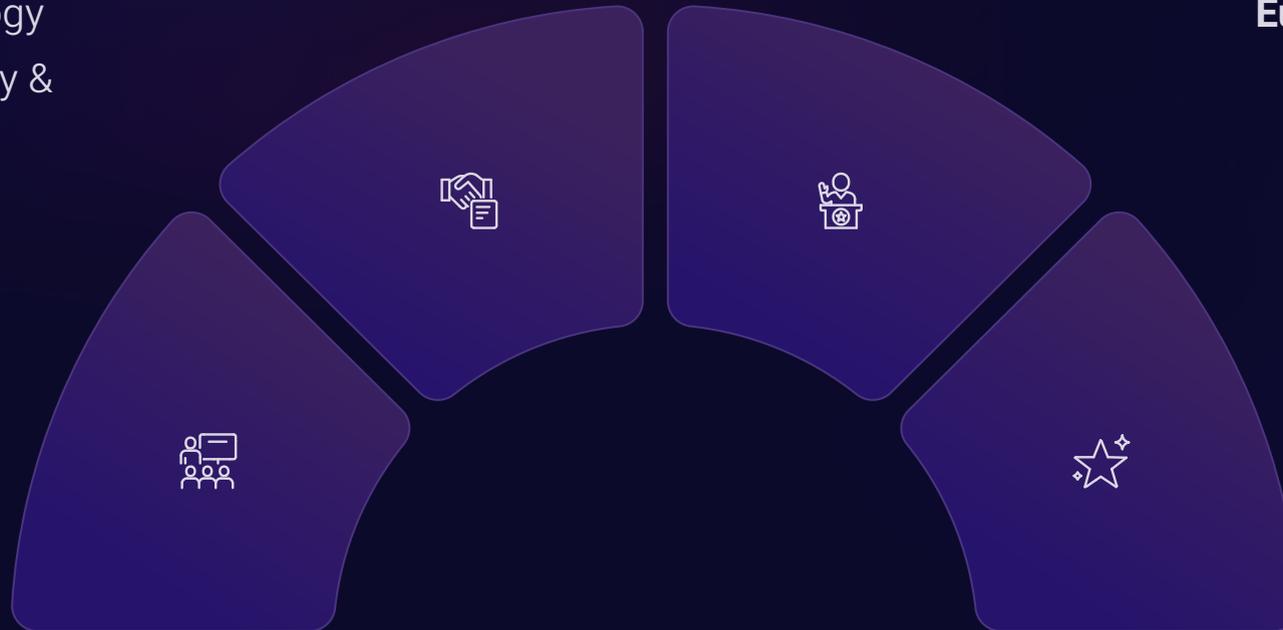
Pitch directly to defense / aerospace companies through institutional networks.

## Live Demonstration

Conduct live public demonstration of GNSS-free navigation before media & defense officials.

## Brand Building

Build brand visibility as **Europe's first deployable quantum-navigation provider.**



# Competitor Analysis

## Infleqtion (United States)

**Founded:** 2007 as ColdQuanta

**Valuation:** \$ 1.8 Billion (Pre-Money)

**Technology:** Cold Atom / neutral atom quantum technology. Uses laser-cooled atoms trapped in optical lattices as qubits

**Focus:** Quantum Computing and Quantum Sensing

### Primary Products:

- Sqale - Quantum Computing platform.
- Superstaq - Quantum Software and compiler platform

## Q-CTRL (Australia)

**Founded:** 2017

**Valuation:** Publicly not disclosed  
Raised \$ 113 Million in Series B

**Technology:** Not Disclosed

**Focus:** Quantum Software infrastructure, quantum error suppression, performance optimization for quantum Computers

### Primary Products:

- Fire Opal - Quantum software platform for error suppression and improved algorithm.
- Boulder Opal - Quantum calibration control software for hardware providers.

## Sandbox AQ (United States)

**Founded:** 2016

**Valuation:** \$ 5.75 Billion

**Technology:** Not Disclosed

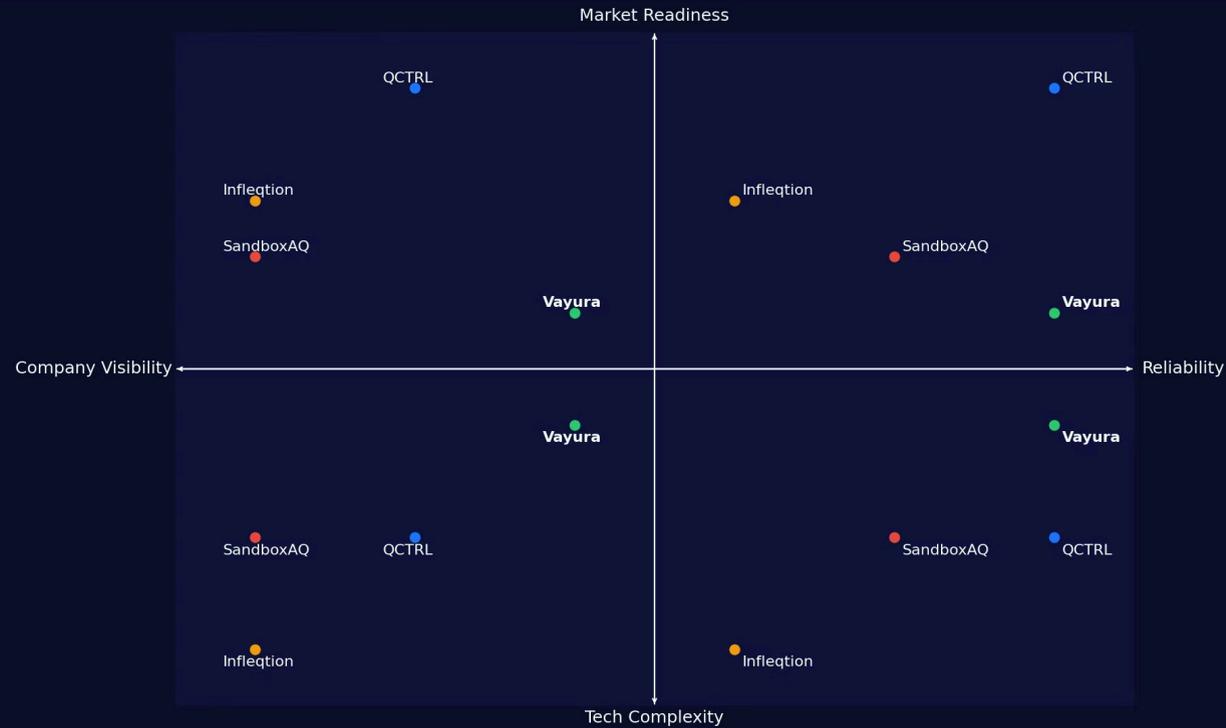
**Focus:** Quantum Solutions for cybersecurity, Quantum Cryptography, Drug discovery and material science.

### Primary Product:

- AQtive Guard - Cryptography and post-quantum security management platform.
- AQ Platforms - AI-driven platform for drug discovery, material engineering.

Quantum sensing and navigation are secondary focus areas for all three, not their primary products.

# Our Presence



## Our Edge:



**Defense-Grade Focus**  
First-mover in Defense-grade quantum navigation



**Machine Learning & AI for Navigation**  
Error correction, Pin point Accuracy, Data Updation



**Multiple Product Options**  
Choose the product that best fits your requirements



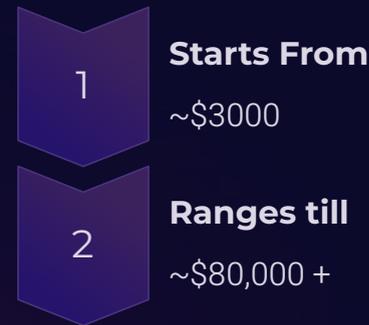
**Plug-and-Play**  
Seamless integration across platforms

# Unit Cost

Our Product Pricing (Predicted)



Current Market Pricing (Conventional GNSS)



## Tier Classification Logic:

Product tiers are defined based on overall system complexity, operating conditions, and integration requirements. **Tier 1** Systems support **high-speed and high-altitude operations** and require advanced processing, redundancy, and robustness. Tier 4 Systems are designed for **lower-speed, lower-altitude applications** with streamlined architectures and fewer integration requirements. Tier **complexity and capability scale progressively from Tier 4 to Tier 1.**

# Team



HarileenKumar Gurunathan – Founder & CEO

**B.Tech.** Electrical & Electronics Engineer | **M.Sc.** Scientific Instrumentation | **MBA.** Renewables. Led NV-diamond Sensing prototype development at Abbe Center of Photonics.



Harish Purushothaman

**B.Tech.** Electronics & Instrumentation Engineer | **M.Sc.** Scientific Instrumentation. Researcher & Developer at John Deere and IKZ Berlin in optical and quantum systems.



Harish Srinivasan

**B.Tech.** Mechanical Engineer | **M.Sc.** Scientific Instrumentation. Product Developer at Robert Bosch – hardware optimization and product engineering.



Ramya Bharathi

**Bachelor's** of Commerce | **M.Sc.** Finance. worked as external audit at Deloitte USI and as Financial analyst at Amazon.

**Advisor:** *Mr. Selvakumar Periasamy*, Chairman, German Indian Business Alliance. A business enabler and tech visionary specializing in cross-border industrial scaling, digital transformation, and fostering economic synergy between India and Europe.

**Mentorship:** Guided by *Prof. Dr. Florian Schindler*, Director (Berliner Hochschule für Technik) and by network of research advisors and technical partners

# Pre-Seed Terms

**Instrument:** Safe

**Round Size:** \$ 2,400,000

We are raising \$2.4M to reach MVP and pilot milestones over the next 18-24 months.

**Valuation Cap:** \$19,000,000

**Discount:** 13%

**Conversion:** Seed Round

## Investor Return Scenarios

Here is how your \$2.4M converts at our next projected seed round.

Scenario	Next Round Valuation	Conversion Price	Your Equity Stake
Target Success	\$30,000,000	\$19,000,000 (Capped)	~12.6%
Expected Case	\$25,000,000	\$19,000,000 (Capped)	~12.6%
Moderate Growth	\$20,000,000	\$17,400,000 (13% Discount)	~13.8%

# Contact



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QUANTUM TECH

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We're not just improving navigation. We're reinventing how the world moves, defends, and explores.