VECTOR

NATIONAL SECURITY INNOVATION NETWORK

Cohort 2024 Lookbook

NSIN VECTOR 2024 | PROGRAM OVERVIEW

ABOUT

The National Security Innovation Network (NSIN), in partnership with Decisive Point, presents NSIN Vector 2024, enabling the development of next-generation applications of emerging dual-use technology for government and defense.

NSIN Vector is an opportunity for early-stage ventures to further develop their leading-edge technology solutions with the support of NSIN subject matter experts (SMEs). Over the course of the 10 week accelerator, Vector provides ventures with dual-use education, training, and mentorship as they prepare for a showcase day where winning teams are awarded non-dilutive funding to advance their core business and equip them to work with the DoD.

OUTCOMES

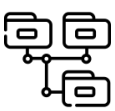
- **Observable Growth and Maturity:** The program puts companies on a path to maturity across defense and commercial indicators such as team size, commercial revenue potential, and advancement in Technology Readiness Level (TRL).
- **Product-Market Fit:** Through curated programming, our cohort teams engage with government stakeholders to tackle relevant national security challenges that align with nationwide DoD needs.
- **Access to Capital:** Cohort companies gain access to a network of private investors and government funding opportunities fueling technical development and opening doors to scale in the government and commercial markets.
- **Prize Award:** Companies compete in a culminating showcase event where top teams are awarded non-dilutive funding from a $50,000 prize purse.

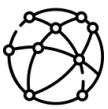
FOCUS AREAS


Advanced sensing


Command and control


Resilient position and navigation


Data sharing


Contested communications

Meet the Team

Caroline Still, Program Manager: Over four years with NSIN, Caroline has held a number of different positions within the organization. She was one of the founding members of NSIN's Data Cell, spearheading organization-wide implementation and training. She transferred into the Venture Portfolio as a Program Manager in 2022, leading NSIN's first Prize Challenge competitions before taking over the Vector program. She earned a BA with Distinction in Global Security and Justice from the University of Virginia. She is based in New York City.

Ryan leads business operations and strategy for the advisory portfolio at Decisive Point. Previously, Ryan led programming at Techstars where she advised early-stage defense and space technology companies. Ryan served in the U.S. Navy for nine years as a Surface Warfare Officer deployed aboard warships and later as a Public Affairs Officer in the Pentagon. Ryan earned an MBA from The Wharton School, an MA in Security Studies from the Naval Postgraduate School, and holds a BA in Communication from Villanova University.

Laura is a Senior Associate at Decisive Point, overseeing operations within our Accelerator programs and Advisory service. With a BA Honors in Contemporary Dance from Northumbria University, England, Laura founded Novelle Events Specialists, a venture focused on delivering educational dance performances across schools and venues in England's North East. Relocating to New York in 2009, she gained diverse experience in multiple law firms, residential and commercial property management before entering into the world of Venture.

Julia is a Senior Associate at Decisive Point, focused on venture investment, due diligence, and market research. She is an active supporter and organizer of the annual Reagan National Defense Forum. Julia began her career in the financial services industry as a summer analyst at Credit Suisse in the technology investment banking division and at AIG Asset Management. Julia graduated from the University of Southern California where she was a Presidential Scholar and Marshall Associates Endowed Scholar. She earned a BS in Business Administration and a BA in Intelligence & Cyber Operations.

LET'S START A CONVERSATION

- Interested in participating in NSIN Vector Accelerator program, please email vector@nsin.mil to get involved!
- Check out: www.nsin.mil
- Follow us on Linkedin:
- https://www.linkedin.com/posts/nsinus_accelerator-startups-defenseinnovation-activity-7186766316052094977-Zob9
- Mark your calendars: the **NSIN Vector 2024 Virtual Showcase** is set for August 15, 2024.

AI-powered Autonomy platform to detect and neutralize landmines, IEDs and other threats in real-time with no human Intervention in the field.

EAGLE A7 is an AI-powered UAV-based autonomy platform equipped with a proprietary sensor suite designed to detect and neutralize landmines and other hidden threats, including non-metallic targets. The EA7 platform is aimed at enhancing the accuracy and speed in active breaching and clearance of hazardous areas, significantly reducing human risk and improving efficiency in both active and post-conflict recovery efforts.

Current Customer Traction: We are actively engaged with the US Army AFC JPEO, C5ISR for next-gen breaching needs and international partners such as Ukraine Ministry of Defense, GICHD, and UNODA for humanitarian and economic de-mining efforts in Ukraine.

Technology Applications to National Security: The EA7 platform is uniquely capable at detecting, identifying and denying pacing and asymmetric threats in a multi-domain environment including remote EOD, next-gen breaching, target and pattern identification (ISR/sensing) and EW.

QUICK FACTS

- ***Website:*** www.aerobotics7.com
- ***Location:*** San Francisco, CA
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** System/subsystem model or prototype demonstration in relevant environment
- ***Funding stage:*** Pre-Seed
- ***Year Established:*** 2022

CEO SPOTLIGHT

- **Name:** Harshwardhan Zala
- **Role:** CEO
- **Background:** Harsh leads Aerobotics7 with over seven years of expertise (started A7 when 14 years old) in AI, UAVs, and robotics. He is experienced in driving business development and strategic partnerships.
- **Email:** harsh.z@aerobotics7.com

Aclectic Systems Inc.

Application-specific edge supercomputers for rapid hypersonic system design and development

Aclectic designs and collaborates with our Original Device Manufacturer (ODM) partners to build custom energy-efficient computing hardware (specialized server and accelerator boards). We write custom parallel operating system software, device drivers and firmware. We build specialized performance analysis tools to showcase our performance speedups and energy reductions enabled by our solution. Aclectic has built a Computational Fluid Dynamic (CFD) simulation framework and volumetric rendering software.

Current Customer Traction: Aclectic is engaged with Lockheed Martin, Boeing and Sony Innovation Studios for pilots of our Polymath platform in 2024. We are also engaged with Space Force, AFRL, DOD HPCM and DOE Argonne & Livermore Labs.

Technology Applications to National Security: Aclectic is applying our PolymathTM visual simulation platform to Hypersonic CFD simulation, digital twins and photorealistic simulators for hypersonic and space vehicles (space access, orbital transfer vehicles, etc.).

QUICK FACTS

- ***Website:*** www.aclectic.com
- ***Location:*** Newark, CA
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** System/subsystem model or prototype demonstration in relevant environment
- ***Funding stage:*** Seed
- ***Year Established:*** 2013

CEO SPOTLIGHT

- **Name:** Yahya H. Mirza
- **Role:** Founder & CEO/CTO
- **Background:** Yahya H. Mirza has 33 years of experience, an original background in aeronautical engineering, and was initially employed by Battelle Research Labs and has worked on system software or 3D visual simulation / graphics-based application projects with Spatial Technologies, Microsoft, Cat Daddy Games, Source Dynamics, Pixar Animation Studios, Soft Machines Inc., Xilinx, Intel and AMD.
- **Email:** yahya@aclectic.com

Distributed Sensing Networks for Enhanced Unmanned Maritime Vehicle (UMV) Autonomy and Monitoring.

AndrenaM is developing a buoy sensor network utilizing edge and cloud computing technology to integrate live-streamed data from multiple nodes. This system will gather unique maritime intelligence and inform thousands of autonomous drones, transforming conventional drone operations and enabling large-scale deployments. The platform's advanced algorithms and AI capabilities ensure real-time data processing and decision-making, enhancing situational awareness and operational efficiency in maritime environments.

Current Customer Traction: Currently in negotiations for a Phase I SBIR through the U.S. Department of Defense

Technology Applications to National Security: The application is for general counter UUV/USV operations in contested areas as well as ports that house strategic naval assets. The ability to track, target, and counterstrike asymmetric autonomous agents is imperative.

QUICK FACTS

- ***Website:*** https://andrenam.com/
- ***Location:*** Denver, CO
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** Analytical and experimental critical function and/or characteristic proof-of-concept
- ***Funding stage:*** Pre-Seed
- ***Year Established:*** 2022

CEO SPOTLIGHT

- **Name:** Matej Cernosek
- **Role:** CEO
- **Background:** Matej graduated from the Colorado School of Mines and went on to pursue roles at at SpaceX and Sierra Space. Matej founded his own company to benefit the arsenal of democracy.
- **Email:** matej.cernosek@andrenam.com

Anuma Aerospace Corporation

Decarbonized long-haul, heavy-lift transportation and persistent aerial platforms.

Anuma Aerospace is decarbonizing long-haul, heavy-lift transportation with a patented Partial-Vacuum Lift (PVL) cell, which also has applications for long-term, low-energy, persistent aerial platforms for sensors; communications; intelligence, surveillance, and reconnaissance (ISR); border patrol; and missile defense.

Current Customer Traction: 3 MoUs with private companies and a Phase I SBIR with NOAA.

Technology Applications to National Security: The dual-cell drone dirigible is a platform for providing denied-area communications; beyond-line-of-sight command, control and hosting of drone swarms; threat detection; positioning via triangulation, machine vision and terrain maps; or other types of sensor packages.

Anumá Aerospace

QUICK FACTS

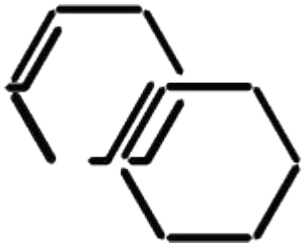
- ***Website:*** https://anumaaerospace.com
- ***Location:*** Raleigh, NC
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** Component and/or breadboard validation in laboratory environment.
- ***Funding stage:*** Pre-Seed
- ***Year Established:*** 2021

CEO SPOTLIGHT

- **Name:** Diana Tracy Little
- **Role:** Co-Founder and CEO
- **Background:** Diana Tracy Little has 30+ years of experience as a software systems architect, designer, and programmer. She has held organizational leadership roles up to Director level designing and implementing systems for nearly all aspects of organizations including HR, accounting, inventory, manufacturing, healthcare, logistics & supply chain.
- **Email:** diana.little@anumaaerospace.com

Apiary Systems

Revolutionizing geospatial intelligence through aerial swarm architectures.



At Apiary, we're developing software and hardware to enable individual robots to autonomously collaborate in large groups, solving higher complexity problems. Inspired by nature, our swarm technology amplifies the capabilities of each unit, integrating ground and air assets into a versatile and resilient system. With applications in defense, agriculture, disaster response, and space exploration, our technology thrives in expansive or hazardous environments. We're pioneering intelligent teaming to elevate current systems, ushering in a collaborative era of robotic innovation, prioritizing collective effort over individuality.

Current Customer Traction: Letter of intent from the U.S. Army Geospatial Center.

Technology Applications to National Security: Swarm drone surveillance autonomously delivers real-time geospatial information to military leaders and soldiers on the ground. It can defeat anti-access and area denial defenses expanding the kill web across multiple domains of operation.

QUICK FACTS

- ***Location:*** Columbus, OH
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** Component and/or breadboard validation in laboratory environment
- ***Funding stage:*** Pre-Seed
- ***Year Established:*** 2024

CEO SPOTLIGHT

- **Name:** Tyler Fenstermaker
- **Role:** CEO and Co-Founder of Apiary Systems
- **Background:** Tyler is currently a Junior Mechanical Engineering student at The Ohio State University where he is researcher at the Unmanned Aerial System Laboratory and a mentor and pilot for university design teams and capstone engineering projects.
- **Email:** tylerfenstermaker262@gmail.com

Better Zinc Batteries

Long-duration stationary batteries providing safe power without the need for precision manufacturing equipment.

Our flow-assisted long-duration stationary battery uses Ni-Zn chemistry with 2x the longevity of Li-ion, translating to a safer, non-flammable, and lower-cost system without the need for special manufacturing facilities nor precision equipment.

Current Customer Traction: Applicable use cases include B2B (agriculture, mining, healthcare), government (grid infrastructure, critical backup systems), and the consumer market (residential and multi-family).

Technology Applications for National Security: Our battery technology and design allows it to be scalable to fit a wide range of use cases for stationary energy storage, and is especially suited for remote areas and regions with extreme temperatures.

QUICK FACTS

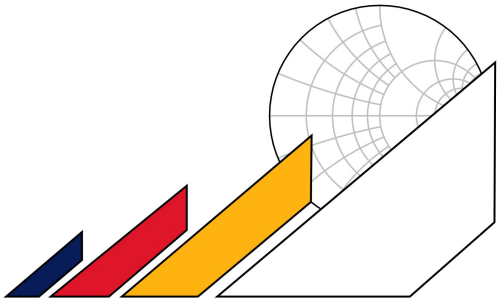
- ***Location:*** Berkeley, CA
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** Component and/or breadboard validation in a laboratory environment
- ***Funding stage:*** Pre-Seed
- ***Year Established:*** 2024

CEO SPOTLIGHT

- **Name:** Vivian Tran
- **Role:** Co-Founder
- **Background:** Vivian brings over a decade of experience at early and mid-stage startups in the Consumer and SaaS spaces, specializing in marketing, go-to-market strategy and operations.
- **Email:** seevivian@gmail.com

BoldRF LLC

Enhanced isolation performance RF front-ends to enable in-band full duplex (IBFD) wireless links.



BoldRF aims to implement an initial proof of concept of a tunable active circulator circuit integrated into a chip to cover wide bandwidth, gain, and perform isolation recovery between transmit and receive (T/R) channels in phased arrays for spectrum sharing and co-existent SATCOM/ terrestrial 5G systems. The innovation is protected by the provisional patent for IBFD RF front-ends for phased array applications, using the invention of tunable active circulators authored by Dr. Marzall. BoldRF exclusively licensed the patent with favorable terms for the company.

Current Customer Traction: LumenAstra, RF consulting services to design a high-sensitivity radiometer.

Technology Applications for National Security: Converging RF systems, resulting in simultaneous EW and sensing, radar, and communications. Coexistence of commercial and defense wireless applications.

QUICK FACTS

- ***Website:*** www.bold-rf.com
- ***Location:*** Boulder, CO
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** Technology concept and/or application formulated
- ***Funding stage:*** Pre-Seed
- ***Year Established:*** 2020

CEO SPOTLIGHT

- **Name:** Laila Fighera Marzall, Ph.D
- **Role:** CTO
- **Background:** Ph.D. in Electrical Engineering (phased array design and integrated, high-power RF components in GaAs and GaN) and MBA.
- **Email:** laila.marzall@bold-rf.com

Dayton Photonics Systems LLC

Bringing communication to the most challenging places on earth.

The B-Link Free Space Optical Communication system is a laser-based communication system with an ethernet interface. The patented mechanical beam steering provides a large field of regard allowing the user to simply point the device in the general direction of the opposite node. This beam steering, coupled with a NIR camera and beacon LED, provide automatic pointing and acquiring enabling easy deployment. The system has been developed through SBIR Phase II, to a TRL 6 and is ready for transition to commercial and defense product.

Current Customer Traction: Target customers include wireless internet service providers (Agile Networks, MetaLINK, MetroNet, others), manufacturing and distribution logistics centers (ChickFilA, In N Out, DLA, others), emergency response and disaster relief (FEMA, DHS, Red Cross) and DoD.

Technology Applications for National Security: B-Link provides rapidly deployable, secure, high bandwidth communication links in electromagnetically contested environments. It can be used to rapidly establish primary or secondary communication links with minimal infrastructure and low-power, in a reconfigurable mesh network.

QUICK FACTS

- ***Website:*** https://www.dayton-photonics.com
- ***Location:*** Dayton, OH
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** System/subsystem model or prototype demonstration in a relevant environment
- ***Funding stage:*** Pre-Seed
- ***Year Established:*** 2023

CEO SPOTLIGHT

- **Name:** Emily Fehrman Cory, Ph.D.
- **Role:** CEO
- **Background:** Dr. Cory leverages her experiences in DoD, academia and small business to help engineers build technology businesses through strategy, vision, commercialization, storytelling and teaming.
- **Email:** emily@daytonphotonics.com

Diffract Tech

Bringing 3D Digital Intelligence to how we build.

Diffract Technology Inc.'s vision is to create digital spatial intelligence by scaling an array of novel, foundational technologies. We aim to bridge the gap between current two-dimensional electronics (camera sensors, screens, etc.) into the budding space of three-dimensional digital technology, with computer-generated holographic projection. By providing precise and reliable 3D sensing, motion control, and visual communication, our products enable significant advances in markets such as process automation, construction, manufacturing and Industry 4.0.

Current Customer Traction: Diffract Technology has received and completed Phase I SBIRs with AFWERX and NSF with Phase II proposals currently under review. We've engaged with enthusiastic industrial partners which enables our dual use technology development plan.

Technology Applications for National Security: Diffract Tech's digital sensing and control enables robust automation of dangerous and difficult tasks. Process automation is critical for maintenance, assembly, and logistics which face additional DoD specific challenges in a national security context.

Diffract Technology, Inc.

QUICK FACTS

- ***Website:*** www.diffract.tech
- ***Location:*** Cambridge, MA
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** Analytical and experimental critical function and/or characteristic proof-of-concept
- ***Funding stage:*** Pre-Seed
- ***Year Established:*** 2020

CEO SPOTLIGHT

- **Name:** Dr. George K. Hering, Ph.D.
- **Role:** CEO
- **Background:** Dr. George K. Herring received his Ph.D. from Stanford University in Electrical Engineering where he published high-impact peer-reviewed studies on non-linear optical materials, novel holographic sensor design, and 3D sensor systems.
- **Email:** gherring@diffract.tech

KMB Telematics Inc.

Revolutionizing drone detection with advanced 3D cloud point radar that sees the unseen, even on the move.

KMB makes cutting-edge 3D point cloud radar designed to detect stationary and hovering drones, addressing the evolving threats seen during the War in Ukraine. It generates rich 3D data that can be fused with other sensors using AI, enhancing battlefield awareness by identifying hard-to-detect aerial targets, like dark swarms. This radar offers a significant tactical advantage, providing precise, real-time detection capabilities to counter the advanced drone tactics that have become prevalent in modern warfare.

Current Customer Traction: Our current customers are NASA, which funded our prototype through SBIR Phase I, II, and II-E; and Karem Aircraft, a prime contractor on the Army's Air Launched Effects (ALE) and DARPA ANCILLARY programs.

Technology Applications for National Security: This radar can be used for drone detection at a specific site, on the move drone detection for a vehicle or convoy, last-mile guidance/fire control of a counter-UAS (cUAS) effector, maritime drone detection, etc.

QUICK FACTS

- ***Website:*** http://www.kmbradar.com
- ***Location:*** Washington, DC
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** System/subsystem model or prototype demonstration in a relevant environment
- ***Funding stage:*** Seed
- ***Year Established:*** 2018

CEO SPOTLIGHT

- **Name:** Bryan Cattle
- **Role:** President & CEO
- **Background:** Bryan is an experienced electrical engineer and founder in both consumer and hard tech markets, and the recipient of four patents related to innovative radar architectures and methods.
- **Email:** bcatt@kmb.ac

Sea-launched aerial drones, a persistent sea-air interface capable of high-speed flight with low detectability.

LeVanta Tech is developing sea-launched, Group 2-4 UAS. Our float-and-fly drones provide a persistent sea-air interface capable of high-speed flight with low detectability. The motors are off while floating, reducing energy consumption. "Float-and-fly" fills a gap in current technology by having high endurance, rough seas float, takeoff, and landing, and high speed. The float-and-fly drones are attritable, yet survivable.

Current Customer Traction: LeVanta Tech has been accepted into the ANTX Coastal Trident demo event, as well as invited to participate in the USNAVSO/FOURTHFLT Fleet Experimentation event.

Technology Applications for National Security: We enable real-time maritime data for ISR, ASW, MCM, ASUW, and CIP.

QUICK FACTS

- ***Website:*** https://levantatech.com/
- ***Location:*** Springfield, MO
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** Component and/or breadboard validation in laboratory environment
- ***Funding stage:*** Pre-Seed
- ***Year Established:*** 2023

CEO SPOTLIGHT

- **Name:** Kelly Echols
- **Role:** Founder & CEO
- **Background:** Kelly is an engineer and patent attorney and conceived of LeVanta Tech's foundational technology.
- **Email:** kechols@levantatech.com

Mithril Technologies Inc.

Dynamically reshapable reflector antennas for new satellite communications & sensing capabilities

Mithril Technologies has a unique electrostatic actuation technology that allows dynamic reshaping of satellite reflector RF antennas on-orbit. This new capability enables expanded satcom, space domain awareness, and atmospheric monitoring from space.

Current Customer Traction: Government users such as USSF SSC and SpOC, and NRO, are interested in satcom capabilities that enable flexible ground coverage, as well as agile scanning for space domain awareness. Additionally, customers such as US Navy METOC and NOAA are interested in applying this technology to enable new approaches to atmospheric monitoring. Commercial communications satellite operators such as ViaSat & Intelsat are also interested in flexible satcom technology, while insurance & shipping firms are willing to pay for enhanced weather monitoring.

Technology Applications for National Security: Use cases for DoD include flexible-coverage satcom with jamming resistance for communications-denied environments, agile scanning of other orbits for space domain awareness, and enhanced theater weather imagery from space.

QUICK FACTS

- ***Website:*** https://www.mithril.space
- ***Location:*** Cambridge, MA
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** Analytical and experimental critical function and/or characteristic proof-of-concept
- ***Funding stage:*** Pre-Seed
- ***Year Established:*** 2023

CEO SPOTLIGHT

- **Name:** Scarlett Koller
- **Role:** Co-Founder & CEO
- **Background:** Experienced space systems professional commercializing new antenna technologies for expanded satellite capabilities
- **Email:** scarlett@mithril.space

Neurosmart, Inc.

Biofeedback-based, digital mental resilience coach for tactical athletes.

We are building a biofeedback driven mental resilience training technology for high performers such as military and law enforcement officers and professional athletes. Our technology monitors emotional and cognitive stress during stressful events via a wearable, maps the user's stress prior, during and after critical decisions, alerts users if they are not optimally regulating stress, and offers personalized interventions through a mobile application. Our technology is based on Neuroscience backed and ML powered patent-pending stress measurement algorithms.

Current Customer Traction: Abbotsford PD, British Columbia has purchased our technology to train their police officers. City of Miami Police and New Castle County Police are currently going through the procurement process. We have ongoing pilots with Wyoming Law Enforcement Academy, Miami Dade Public Safety Training Center, Napa County Sheriff's Office.

Technology Applications for National Security: We aim to bring our technology to the training and selection pipeline of special operators, particularly 75th Ranger Regiment. Our technology can be used to objectively assess mental resilience capacity of recruits as well as train for better stress resilience and tactical decision making.

NeuroSmart
OPTIMAL PERFORMANCE THROUGH OPTIMAL PHYSIOLOGY

QUICK FACTS

- ***Website:*** neurosmartinc.com
- ***Location:*** Mountain View, CA
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** Component and/or breadboard validation in relevant environment
- ***Funding stage:*** Pre-Seed
- ***Year Established:*** 2021

CEO SPOTLIGHT

- **Name:** Melis Yilmaz Balban, Ph.D.
- **Role:** Founder & CEO
- **Background:** Harvard trained Neuroscientist specializing in stress monitoring and management.
- **Email:** melis@neurosmartinc.com

Oso Semiconductor

Ultra low power beamforming technology enabling hyper mobile warfighter communications and sensing of the future.

Oso Semiconductor is developing the most power-efficient, high-performance chipsets for wireless applications with electrically-steered antennas, aka. phased-array antennas. Oso's ultralow-loss beamforming IP and related technology innovations provide 4x or more improvements in power, size, and weight of phased array systems. Oso's technology is key for accelerating the adoption of phased array systems in satellite communication (SATCOM), 5G, and radar systems, especially those operating at microwave and millimeter-wave frequencies above 6GHz.

Current Customer Traction: Oso is evaluating $250K in proposals for aerospace customers, has generated $20K in NRE revenue, and received 5 letters of support, a letter of intent, and numerous leads. Prospective customers, including Ball Aerospace, L3Harris, Northrop Grumman, Murata, and Gilat, all have MNDAs with Oso. NRE payments have been received from some, and discussions about evaluation kit proposals are ongoing with others.

Technology Applications for National Security: Oso's technology is key for accelerating the adoption of phased array systems in satellite communication (SATCOM), 5G/6G, and radar systems, especially those operating at microwave and millimeter-wave frequencies above 6GHz. Our ultralow SW&P-C allows usage of phased arrays on drones, missiles, and other hyper mobile platforms that were previously inaccessible.

SEMICONDUCTOR

QUICK FACTS

- ***Website:*** www.ososemi.com
- ***Location:*** Berkeley, CA
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** Component and/or breadboard validation in laboratory environment
- ***Funding stage:*** Pre-Seed
- ***Year Established:*** 2022

CEO SPOTLIGHT

- **Name:** Matthew G. Anderson, Ph.D.
- **Role:** CEO
- **Background:** Dr. Matthew G. Anderson has a PhD and MSc in electrical engineering & computer science (EECS) from UC Berkeley, specializing in RF chip design, and six and a half years of industry experience, including 3+ years at Apple. Matthew also holds a bachelor's in electrical engineering (EE) and Physics from Penn State and Lawrence University, respectively.
- **Email:** mga@ososemi.com

Algorithmically improving a GNSS receiver's ability to track signal in challenging navigation environments.

PrecisionTerra

PrecisionTerra's technology is a novel GNSS signal tracking algorithm designed for dual and multi-frequency GNSS receivers. This algorithm enhances a GNSS receiver's ability to track signal in challenging navigation environments like cities and forests, where terrestrial objects like buildings and trees may interfere with and considerably weaken the signal before it reaches a GNSS receiver.

Current Customer Traction: PrecisionTerra is in late-stage conversations with two large potential commercial customers.

Technology Applications for National Security: Department of Defense use cases for PrecisionTerra's technology include resilient GNSS signal tracking in challenging navigation environments (examples are urban areas and forests) for ground-based warfighters and counter-UAS operations.

QUICK FACTS

- ***Website:*** https://precisionterra.webflow.io/
- ***Location:*** Superior, CO
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** Component and/or breadboard validation in laboratory environment
- ***Funding stage:*** Pre-Seed
- ***Year Established:*** 2023

CEO SPOTLIGHT

- **Name:** Maithreyi Gopalakrishnan
- **Role:** Founder & CEO
- **Background:** Maithreyi is a 3x startup founder with experience working in engineering and product roles across several technical industry areas including optics, semiconductors, clean technology, quantum computing, and navigation.
- **Email:** maithreyi.precisionterra@gmail.com

SolidIntel Inc.

Generative AI tools for intelligence and supply chain illumination and de-risking

SI offers bleeding edge, generative AI software to illuminate and de-risk supply chains, automating regulatory risk detection such as Chinese State Owned Enterprises, problematic investors, sanctioned and restricted entities, and forced labor. It also identifies alternative suppliers and automates regulatory risk compliance documentation. Unlike traditional supply chain tools and even legacy AI, SI's use of generative AI and LLMs, combined with public and proprietary data, deliver rapid, actionable information for decision makers, even with minimal information provided by the customer, saving the customer time and money, preventing supply chain disruptions, and even preventing risk to the warfighter.

Current Customer Traction: SolidIntel's earliest customers are in the high risk importation space, notably working to exclude Uyghur forced labor products, and identify risk in the Chinese and Russian markets.

Technology Applications for National Security: SolidIntel's technology can be used for supply chain illumination, regulatory compliance (ex: excluding 1260H companies), foreign ownership control and influence identification, sourcing, and offensive supply chain applications.

QUICK FACTS

- ***Website:*** https://solidintel.com
- ***Location:*** Alexandria, VA
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** Component and/or breadboard validation in relevant environments
- ***Funding stage:*** Pre-Seed
- ***Year Established:*** 2023

CEO SPOTLIGHT

- **Name:** Dr. Meg Reiss
- **Role:** Founder & CEO
- **Background:** Dr. Meg Reiss is a national security expert with a background in geopolitics, strategy, and law; she was most recently the National Security Policy Advisor for Senator Mitt Romney.
- **Email:** Megan.reiss@solidintel.com

Nuclear Microreactors for critical infrastructure and crisis response.

StarCube is a Small Modular Reactor company building microreactors for critical infrastructure & crisis response. Our shipping container-sized microreactors are portable, mobile and ultimately semi autonomous, with a lifespan of up to eight years.

Current Customer Traction: Starcube currently has traction with the U.S. National Guard, several universities (e.g. Worcester Polytechnic Institute) and international energy providers.

Technology Applications for National Security: Nuclear Microreactors limit tending of fuel supply lines in the field, which caused 50% of loss of life in Iraq and Afghanistan. StarCube reactors have the potential to be integrated in military bases, arctic & island communities, emergency response operations, data centers, and mining & heavy industrial sites.

QUICK FACTS

- ***Website:*** starcube.tech
- ***Location:*** Manchester, NH ; Stamford, CT
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** Component and/or breadboard validation in laboratory environment
- ***Funding stage:*** Pre-Seed
- ***Year Established:*** 2023

CEO SPOTLIGHT

- **Name:** Chris Ricks
- **Role:** CEO & Founder
- **Background:** Former Navy Submariner.
- **Email:** chris@starcube.tech

Terra Watts transmits wireless power and data through the subsurface.

Terra Watts pioneers the future of wireless power transmission and data communication by using Earth as a propagation medium. This innovative technology extends the range of wireless power transmission to the kilometer scale and enables underground communication signals. Our technology, which will be utilized for watt-scale applications, like carbon storage quantification and monitoring, as well as megawatt-scale applications such as renewable energy transmission, paves the way to a sustainable, renewable-powered future.

Current Customer Traction: Terra Watts is supported by the Activate fellowship and is in the process of applying for SBIR awards and other grants.

Technology Applications for National Security: Our technology has application ranging from power to forward operating bases, powering of sensor networks, subsea communications/power transmission, and salt ice power/data transfer.

QUICK FACTS

- ***Website:*** terra-watts.com
- ***Location:*** Cookeville, TN
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** Component and/or breadboard validation in laboratory environment
- ***Funding stage:*** Pre-Seed
- ***Year Established:*** 2022

CEO SPOTLIGHT

- **Name:** Dr. Kaitlyn Suarez
- **Role:** CEO & Co-Founder
- **Background:** Dr. Suarez is a geoscientist with a specialty in tectonics, petrology, & rare earth element mineralization. She earned her Ph.D. and M.S. in geosciences as a NSF Graduate Research fellow at the University of Massachusetts Amherst and holds a B.S. in geology from Union College in New York State. She is a 2023 Activate fellow.
- **Email:** kaitlyn@terra-watts.com

Thin Air Nav Corp

Dual-use positioning for aerial navigation in GPS denied and degraded areas.

Thin Air Nav has repackaged the technique known as terrestrial multilateration from fixed towers into low cost, disposable beacons.The unique innovation of this solution is re-architecting multilateration from fixed towers, historically required for multilateration, to an ultra-low-SWAP device that makes this technique both disposable and portable. Portability and expendability are the key to making multilateration a viable solution for positioning in contested environments.

Current Customer Traction: We are currently pursuing initial customers in the Air Force, Army, Navy, and in Special Operations, as well as commercial partners in the UAS space.

Technology Applications for National Security: The modular, open-systems architecture of this system can support nearly any air system that currently relies on GPS, including manned, unmanned and guided munitions.

QUICK FACTS

- ***Website:*** www.thinairnav.com
- ***Location:*** Phoenix, AZ
- ***US Based & Owned by US Citizens***
- ***Product Maturity/idea phase:*** Component and/or breadboard validation in relevant environment
- ***Funding stage:*** Pre-Seed
- ***Year Established:*** 2023

CEO SPOTLIGHT

- **Name:** Justin Armer
- **Role:** Co-Founder & Chief Architect
- **Background:** Justin Armer is an aerospace engineer. He previously helped develop a new runway-independent launch and recovery method that is now widely used across tactical UAVs.
- **Email:** justin@thinairnav.com

Get Involved! vector@nsin.mil