

# NAVY SBIR TRANSITION PROGRAM

# SPOTLIGHT

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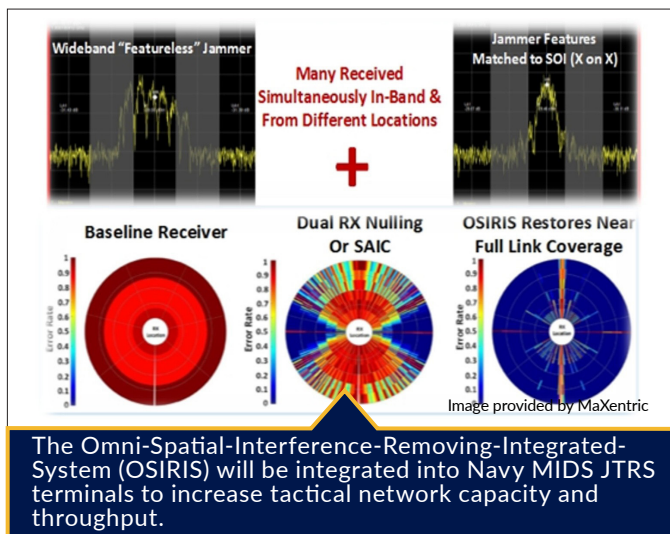
## From concept to contract: First-time SBIR participant Pareto Frontier secures Phase III award for tactical communications solution

Pareto Frontier, a small business with fewer than 10 employees, was founded in 2019 and awarded its first Small Business Innovation Research (SBIR) contract from the U.S. Navy in 2020. Five years later, the first two Navy SBIR projects the company undertook led to a SBIR Phase III award that utilizes the innovations developed under both projects.

“We set out to tackle the hardest problems in the area of electronic protection,” said Pareto Frontier principal technical lead and co-founder Jonathan Beaudeau. “We focus on real-time radio frequency signal processing solutions. We have developed some solutions for interference mitigation that really are unparalleled.”

In September 2025, Pareto Frontier received a \$10,528,078 SBIR Phase III award to develop innovative algorithms and adapt existing ones to improve the communication range, interconnectivity and anti-jamming resistance for tactical data links supporting the Navy’s Multifunctional Information Distribution System (MIDS) Joint Tactical Radio System (JTRS).

MIDS is a widely fielded multi-band, multi-mode, networkable, software-definable radio system with terminals deployed across U.S. military components on airborne, maritime, ground



mobile, and fixed-station platforms. MIDS JTRS, the Navy-specific variant of the MIDS low volume terminal (LVT), uses tactical data links not only for verbal communications but also to transmit data that supports many aspects of the warfighting mission, including situational awareness, targeting information and positional data.

Rather than developing entirely new radio communication systems, Pareto Frontier improves existing ones. “We specialize in addressing specific properties of existing systems through unconventional solutions,” said Beaudeau. “We develop signal processing solutions that we incorporate within existing platforms to improve the capability of the platforms themselves. Our main focus is on

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electronic protection, so the solutions we develop make the systems more robust to factors in the environment that would prevent their operation.”

The company’s 2025 Phase III contract, awarded by the Naval Air Warfare Center Aircraft Division (NAWCAD), continues work that began in 2020 under two separate Navy SBIR topics. For SBIR topic N201-018, Pareto Frontier developed the Omni-Spatial-Interference-Removing-Integrated-System (OSIRIS), a modular and scalable space-time adaptive processing (STAP) engine with a core algorithm that protects communication signals from interference more effectively than conventional antenna nulling. Under SBIR topic N203-150, the company further augmented OSIRIS to increase tactical network capacity and throughput for MIDS JTRS.

Pareto Frontier will work with the original equipment manufacturers (OEMs) to integrate its software solutions into the MIDS terminals. A major benefit to the Navy is the ability to improve capabilities without

physically modifying the government platform where the terminal is installed.



Jonathan Beadeau, Principal Technical Lead and Co-Founder of Pareto Frontier

“Let’s say this terminal goes into a fighter jet,” Beadeau explained. “To achieve the capability we provide without using our solution, you would have to do things like drill more holes in the plane to fit more antennas or alter the way missions operate to ensure the terminals function properly. We’re restoring survivability, maintainability and robustness to the terminal with just a software change.”

Beadeau co-founded Pareto Frontier with the company’s president, Sofia Jurgensen. Although they come from different scientific fields, both



Sofia Jurgensen, President and Co-Founder of Pareto Frontier

had experience leading research & development programs. Beadeau holds a PhD in electrical engineering with a specialty in statistical signal processing and spent 20 years with a major defense contractor.

“Throughout my career I’ve been focused on taking abstract ideas and making them real, taking them from initial concept all the way to a fielded prototype and beyond,” he said. “One of the

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key motivating factors in starting this company was to have the freedom to pursue the areas that make the most sense, to be able to develop technologies in an agile environment and make a large impact.”

Jurgensen, a neuroscientist, previously led a biomedical research group in the pharmaceutical industry. “I jumped in to build the organizational infrastructure and take on administrative execution of all non-technical tasks,” she recalled. “When the opportunity came, my experience in leading groups, programs, and projects helped us successfully execute those early-stage programs that got us to where we are today.”

Prior to winning its first Navy SBIR contract in 2020, Pareto Frontier worked in the commercial space and as a subcontractor to larger defense primes. “I had zero experience working with SBIRs beforehand,” said Beaudreau. “I worked on a lot of programs for DARPA and many federal research labs, but that was my first exposure to an SBIR.”

As a company new to the SBIR program, Pareto Frontier explored the Navy’s commercialization support options. At the start of their Phase II contract, the company enrolled in the Navy SBIR Transition Program (Navy STP).

While they found the program valuable for help developing marketing materials and providing opportunities to showcase their technology to potential customers at events, Jurgensen and Beaudreau recommend that other companies

consider carefully how their technology development timeline aligns with the Navy STP schedule.

“In hindsight, we could have taken more advantage of it if we had delayed by a year,” Jurgensen said. “It wasn’t until the Navy STP was over that we had results to show. It just happened too early for us. Smaller companies starting out, especially companies going through their first SBIR, need a heads up that this program is most beneficial once they are at a stage where they have mature technology to showcase.”

“In the future, when we have another Phase II we’ll take advantage of the STP again and this time we’ll know how to make full use of it,” Beaudreau added.

With extensive experience in wireless communications, statistical signal processing, geolocation, spacetime adaptive processing, coherent gain improvements and ultra-low latency tensor processing, Pareto Frontier offers advanced solution engineering and complete product integration, including extensive remote or on-site client support. For more information about the company’s services, visit [www.pareto-frontier.com](http://www.pareto-frontier.com).

