

NAVY SBIR TRANSITION PROGRAM

SPOTLIGHT

Company: BluEyeQ LLC
Website: www.blueyeq.com

POC: Kent Colling, CEO and Managing Director
Phone: 434-258-5296

Address: 1225 South Shamrock Avenue
Charlotte, North Carolina 28277

Dual use innovation: BluEyeQ's SBIR strategy enhances digital twin machine health monitoring for government and industry

"I truly believe we're using the Small Business Innovation Research (SBIR) program the way it was originally intended to be used," says Kent Colling, founder, CEO and managing director of BluEyeQ LLC, a small business specializing in predictive analytics and industrial monitoring solutions. BluEyeQ strategically seeks out SBIR projects that enhance the company's portfolio of capabilities and solutions for its customers, intentionally focusing on dual use commercialization from the start of each project.

In December 2025, BluEyeQ announced the award of a new contract to deploy vibration monitoring systems to track equipment performance for Inland Empire Utilities Agency (IEUA), a municipal wastewater treatment and recycling agency serving 950,000 people across Southern California. Work performed under this contract will leverage digital twin technology developed during the company's ongoing Navy SBIR work focused on predictive maintenance techniques. The project focused on the V-22 Osprey fleet, but the technology could also benefit additional Navy assets, including other rotorcraft, surface ships and submarines.

The SBIR project, which began in 2020 and will continue through the fall of 2026, has developed a virtual digital twin of the V-22's drivetrain. This model uses both simulated and captured machine data to compute key prognostic, predictive,

and operational machine traits. An artificial intelligence (AI)/machine learning framework then uses that information to generate an interactive 3D model of machine performance and predict machine states before detectable problems develop.

"In digital twin work you create a virtual replica of the asset in the field. You can predict how it should operate under ideal conditions and then couple that with the real time data or near real time data you're getting from the field. That allows you to perform analysis and make predictions about the overall state of that equipment," Colling explains.

For the Navy, this digital twin technology enables planned and predictable maintenance, reducing lifecycle sustainment costs while improving warfighter safety by preventing unexpected failures. The technology offers similar benefits to BluEyeQ's industrial customers, including IEUA. In both applications, says Colling, end users are responsible for critical, high-value assets that are difficult to inspect manually. Failure at any single point can lead to serious accidents or unplanned downtime costing millions of dollars in lost productivity.

"In the water utility space, there are pumps, wastewater centrifuges and blowers everywhere that need to be remotely monitored. They don't

SPOTLIGHT

Dual use innovation: BluEyeQ's SBIR strategy enhances digital twin machine health monitoring for government and industry...Continued

have the manpower to regularly check all their remote lift stations and other facilities, so they need a remote capability to monitor equipment health status. It's a good fit for what we do."

The new contract with IEUA follows a successful two-year pilot program, during which BluEyeQ demonstrated the value of its digital twin monitoring system. "They've decided to scale it to virtually all of the assets at their facility, so it's a pretty big win for us," says Colling. "They identified the critical assets they wanted to monitor as part of their overall maintenance strategy, put it out for competitive bid, and we were fortunate to win it."

While working concurrently on both the IEUA pilot and the Navy SBIR project, BluEyeQ refined its digital twin vibration monitoring technology into a true dual-use solution. "BluEyeQ approaches SBIRs a little differently than many small businesses. Any SBIR that we bid on already has a defined commercialization path," Colling states. As a result, the company typically responds to only one or two SBIR solicitation topics per year, focusing on those with the strongest potential to develop new technical capabilities.

"I'm the number one advocate for the SBIR

program as a means of helping fuel small business growth. They call it America's seed fund and that's exactly how we've used it. To date, we haven't taken any outside capital investment. The SBIR program has been instrumental in our growth, allowing us to add jobs and expand our commercial business. We'll continue to pursue

SBIRs, always with the goal of expanding our existing business or commercializing new technologies for both industry and defense customers."

BluEyeQ's commercialization paths span a wide range of industry applications, including a rapidly growing customer base in the steel industry and longstanding usage in theme parks. One of the company's first product deliveries, says Colling, was to a major Florida theme park, where BluEyeQ

currently provides condition monitoring for many attractions.

"The technology applies to any rotating equipment. Anything with a motor typically has a gearbox associated with it. The gearbox on a helicopter looks very similar to those we encounter in the steel industry. In building the digital twin model as part of the SBIR project we've been able to draw on a wealth of industrial assets and apply that knowledge to military systems. The biggest challenge we've faced during



SPOTLIGHT

Dual use innovation: BluEyeQ's SBIR strategy enhances digital twin machine health monitoring for government and industry...Continued

this project with the Navy is access to data from their assets. We need Navy data to fully validate our models, but we've been able to augment and validate them using commercial data, so progress hasn't slowed. The Navy will benefit from our use of commercial data."

The digital twin SBIR project is BluEyeQ's first SBIR award from the Navy, and the company has taken advantage of the Department of the Navy's commercialization support resources. The Navy SBIR Transition Program (Navy STP) helped orient the company to the defense contracting environment. "It gave us exposure to more of the key players. We learned the terminology and gained a better understanding of the process, which was helpful. I've referred to the market research report produced through the program. While it didn't lead directly to new business, it provided valuable directional insight," says Colling.

Following the Navy STP, BluEyeQ participated in Navy Launch, a program that helps Navy SBIR Phase II awardees explore commercialization options and refine their strategy. Colling describes it as an experience that provided significant value to the company. Working closely with an assigned commercial advisor, BluEyeQ completed Navy Launch in late 2025.

BluEyeQ is a small business based in Charlotte, North Carolina. Colling founded the company in 2013, building on an extensive career that included radar and submarine sonar work, tactical radio development, broadband cable network infrastructure, and wireless mesh and sensor networks for government customers in the border security and special forces communities.

"I didn't intentionally start the business to focus

on machine health monitoring, but that's where the opportunities aligned with my capabilities and interests more than anything," says Colling. "We started doing data analytics before big data and data handling became a hot topic."

The company's name – BluEyeQ – refers to the concept of "Vision & Intelligence," its tagline, as revealed through machine data. Plus, Colling adds, it's a tribute to his highly intelligent, blue-eyed wife, who had to be convinced that quitting his job to start a business was a good idea.

BluEyeQ offers a range of machine health monitoring products and solutions, combining Internet of Things-enabled sensors, physical AI, digital twin representations that provide customers with visibility into machine condition, and expert analysis to validate system reporting and recommendations. For more information, visit www.blueyeq.com.



BLUEYEQ

VISION ■ INTELLIGENCE