



SuperOrbital Delivers 10X ROI, Mission-Critical Readiness for Beyond Aerospace



Founded in 2016, Beyond Aerospace specializes in drone streaming solutions for government, military, and commercial operators.

The company's Ares platform provides secure command/control and mission data collection including data access management for cross-agency manned and unmanned reconnaissance missions. Headquartered in Kelowna, BC, the Beyond Aerospace team consists of industry veterans from the aerospace, telecom, cyber security, and mobile applications sectors.

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CHALLENGES

- Networking constraints and idiosyncrasies
- Pushing the boundaries of the Kubernetes environment
- Infrastructure risks
- Reproducibility and reliability

Beyond Aerospace sits at the intersection of artificial intelligence, enterprise blockchain applications, and drone technology. The company currently provides drone streaming solutions for the Canadian military and government and the US Department of Defense (through a partner company), and has plans to take its products into the commercial space.

In such highly sensitive environments, software security, compliance, scalability, and repeatability are critical factors to success. Beyond Aerospace leverages the DevSecOps environment concept called Platform One, which is based on Kubernetes containers. However, blockchain technologies are extremely challenging to run in a containerized Kubernetes environment, particularly with the need to support multi-point video streaming, processing, and storage.



“We wanted to use Kubernetes as our base platform but were pushing the boundaries of what the system could do,” said Mike Ball, CEO and co-founder. “Our goal was to get to the point of zero trust and high availability through consistent software deployment and reproducible scripts, and we needed help solving the inherent nuances and idiosyncrasies.”

Creating sustainable infrastructure and repeatable solutions is a challenge for small technology companies. While solving problems with novel technologies can open new potential, a team’s focus should remain on delivering the company’s core products and services. By working with a strong partner, teams are freed up to focus on these core needs while building on top of a solid foundation.

According to Ball, “Our DevOps workload had grown to exceed our capacity. My team was spending so much time on maintenance and troubleshooting that we did not have the bandwidth to properly design and build the DevOps infrastructure that we needed. We were stuck.”

During a search for a DevOps expert, Ball came across SuperOrbital. He was impressed with their experience and brought them on to solve specific networking challenges with UDP packets for streaming video in the Kubernetes environment. **“As soon as we brought SuperOrbital on board, they accelerated our development by a factor of ten.** In just two days, they came up with a novel solution for something we



MIKE BALL
CEO

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VALUE CREATED

- Mission-critical system
- “Push button” deployment
- Zero-trust and high-availability infrastructure
- Ten times return on investment

were literally struggling with for months,” noted Ball. “Because they solved a complex problem quickly and with great success, we had the confidence to continue down the path with them.”

Beyond Aerospace required advanced network configurations for its mixed processor environment. Deploying to an edge device on an aircraft is much different than deploying to prepackaged solutions on AWS, and SuperOrbital was tasked with the whole DevOps workflow of sorting out the build processes, and dependencies for these multiple environments.

REPEATABILITY AND RELIABILITY REDUCE RISK

In a disaster-recovery scenario, there was a concern that intricate deployments could take weeks or months to recreate, which was a significant risk. SuperOrbital began by strengthening the existing infrastructure so that the nodes and underlying services the application was built on were scripted to be repeatedly provisioned at the push of a button.

Beyond Aerospace provides on-premises and managed services for its customers, and it was essential to have a flexible deployment model where an instance could be spun up reliably anywhere. This was not a trivial task as the company was using several decentralized ledger technologies each with its own complex deployment process. “Reliably provisioning and operating enterprise blockchains at scale is a monumental effort that has rarely been accomplished in the industry,” said Ball. “From a risk mitigation perspective, SuperOrbital made everything repeatable and reliable.”

EVOLVING FASTER AS A BUSINESS

Ball also noted that the velocity of his developers increased substantially because they’re spending time developing instead of fighting with DevOps issues. **“Everyone on our team is more effective because of the mature infrastructure that SuperOrbital put in place. This is going to help significantly with recruitment and the types of talent we can attract.”**

Quality is critical to the viability of any software development company, and there is little tolerance for mistakes. “One failed mission could cost a customer, which is why we have invested heavily in getting to a mission-critical state,” said Ball. “SuperOrbital tackled the challenges we were facing and quickly got us to the point where we have a recipe to build on.”

“Without putting this infrastructure in place, our ability to execute would be severely restricted,” said Ball. “We’re now set up for success. Having a solid foundation to build

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SOLUTIONS

- Kubernetes engineering
- DevOps best practices and strategy
- Embedded engineers
- Subject matter expertise

on will allow us to recognize revenue, impress our customers, and continue to grow our business.”

THE MULTIPLIER EFFECT—HOW TO BENEFIT FROM AN ENTIRE TEAM OF EXPERTS

Ball was impressed with the caliber and experience of the SuperOrbital team. “It’s like a multiplier effect—you’re getting an entire team of experts, and their collective experience is helping to solve your unique problem.”

“SuperOrbital was a breath of fresh air. They were amazingly brilliant, and everyone on our team was quite impressed. The speed at which they developed solutions and solved challenges was incredible,” said Ball. “They come in, solve the job, set you up to be successful, and move on. From a business perspective, I really like that approach.”

MONETIZING AND GROWING REVENUE

Ball and his team are looking forward to the next phase with SuperOrbital, which will focus on operational robustness. “There’s a whole operational side, such as database backups and robust secret management, that we’ll be working on next. Once that’s done, we’ll turn our attention to performance enhancements and cost optimization.” Having the confidence that a software platform will consistently deliver features over time, without breaking, is the Holy Grail that sets the stage for monetization, growth, and new opportunities.

“It’s pretty easy to quantify a return on our investment with SuperOrbital. The cost of a single failed deliverable is ten times our investment. We couldn’t afford not to hire them,” concluded Ball. “I would point someone to SuperOrbital any day of the week because these are the people that can solve your problem. They’re worth every penny.”



SuperOrbital specializes in Cloud Engineering, Distributed Systems, and all things Kubernetes. Working as your technical partner, we embed seasoned engineers within your team to help solve the most difficult challenges. Our knowledge and expertise will help you confidently execute critical, high-risk, and high-profile assignments. To learn more about how SuperOrbital can transform your company or supercharge your skills, visit superorbital.io or email hello@superorbital.io.