AOC 2022 Spotlight Q&A with Andy Lowery of Epirus

Attributed to: Andy Lowery, Chief Product Officer, Epirus

Andy Lowery, Chief Product Officer at Epirus, is a proven entrepreneurial, corporate and military leader, having served 30 years in a wide spectrum of demanding US domestic and global roles. He is a recognized thought leader on the application of technology across industry. Prior to Epirus, Andy held various roles at high-tech startups: Co-Founder and CEO of RealWear, Inc., which made industrial head-up-display wearable systems, and Co-Founder of Daqri, where he pioneered mixed reality wearables for enterprise. From 2008 to 2014, Lowery worked in various roles at Raytheon, including Business Area Chief Engineer for Electronic Warfare Systems, and from 2004-2008, he led MACOM's high-power amplifier products. Andy is a retired lieutenant commander in the US Navy and holds a bachelor's degree in Electrical and Computer Engineering from the University of Illinois at Urbana-Champagne.

JED: **Epirus is a relatively new company funded through private capital and drawing on engineering talent with commercial and defense electronics backgrounds. How does this combination create agility for the company and help define its culture?**

Lowery: Agility defines everything we do at Epirus, from the engineering bench all the way up to our executive leadership team. Our agile mindset has allowed us to rapidly create three form factors of our directed energy product in three years – Leonidas, Leonidas Pod and Leonidas Mobile.
By funding our own products through private capital, rather than waiting for government requirements to be shaped, we can rapidly meet the mission needs that we know are most pressing for our customers. With this proactive approach, Epirus is able to move at the speed of technology, not the speed of

bureaucracy.
On the engineering side, we integrate the principles of the agile manifesto across the board. We are in constant contact with our customers to understand how to best meet their mission needs, and their input shapes what we do on a day-to-day basis. And with the threat landscape as dynamic as ever, we will change course on a dime to best serve the warfighter's needs.
By drawing from talent with diverse backgrounds, Epirus strives to combine the speed of Silicon Valley with the mission-driven mindset of the aerospace and defense community. We have experts from top tier tech companies working daily with career professionals from the primes. That combination of tech chops and defense expertise is a big part of what makes the magic happen here at Epirus.

JED: **From a technology perspective, where has Epirus focused its development efforts over the past few years, and how has this helped to drive development of the Leonidas system?**

Lowery: Creating technology to meet the counter-UAS challenge was our first focus, as that is where we saw a pressing need and capability gap. We continue to see active threats plaguing the warfighter and civil society. This led to the creation of Leonidas, a modular, scalable, and software-defined directed energy system. Leonidas has demonstrated its counter-UAS and counter-swarm capabilities with its high-power microwave (HPM) capability that provides counter-electronics effects for a range of targets.
But this is just the beginning, and there are two key aspects of Leonidas from a technology perspective that I want to highlight to demonstrate this. One is the scalable, modular architecture, which enables a variety of form factors – what we like to think of as the 'LEGO bricks' that make up our system. We have already created a lightweight, portable version of Leonidas, which can be mounted on a UAS itself to enable airborne missions, and we recently announced our mobile

variant that is mounted on a combat vehicle.
Another aspect of Leonidas that opens the door to many possibilities is the fact that the system is software-defined. HPM is the current function that we are focused on, but in the future, a range of other directed energy functionalities can be built into the system in order to meet mission needs.

JED: **Epirus has brought several versions of its Leonidas HPM system to the market. How does the company plan to use its modular phased array technology to create new system configurations for other applications?**

Lowery: We have brought three versions to market. We have our flagship, ground-based Leonidas, as well as our lightweight Leonidas Pod and vehicle-mounted Leonidas Mobile variants.
While I cannot get too much into the specifics of future capabilities, I would like to reemphasize the modular, scalable architecture and software definition. As the mission evolves, our software evolves. We are developing technology today to counter the threats of tomorrow.

JED: **Compared to other defense electronics companies, Epirus seems to have a relatively young workforce. How does the company attract the engineering talent it needs in a job market where it must compete with commercial technology companies, as well as larger defense systems developers?**

Lowery: You hit the nail on the head. Epirus is competing with both Silicon Valley technology companies and the primes for top talent. The way we recruit and retain the best-and-brightest is by putting people first in everything we do as a company. There are a lot of young people out there who want to work at a company that puts people first, but, at the same time, want to create something that feels a bit more meaningful than another algorithm used for advertising. It’s this combination of culture and commitment to a larger mission that draws in the engineering talent you mention. And the proof is in the pudding, as we have a truly world-class team.

JED: **Looking ahead in terms of developing new technologies and systems, what do you want Epirus to achieve over the next five years?**

Lowery: At the moment, we are continuing to build momentum from the past few years, where we've tripled the power output of our flagship Leonidas system and increased effectiveness against new targets at longer ranges.

In the not-too-distant future, our systems will be deployed for defense and national security applications. By taking weaponized drones out of the sky, providing 360-degree base protection, and replacing dangerous strike ammunition, our technology will help keep our servicemembers – and civilians – safe.

The same software-defined technology that enables our directed energy systems to be compact, efficient and high-power can be leveraged in adjacent industries. With our deep tech research and development capabilities, we believe that our platform approach to power management can deliver unparalleled energy efficiency outcomes across a wide spectrum of industries in the years to come.