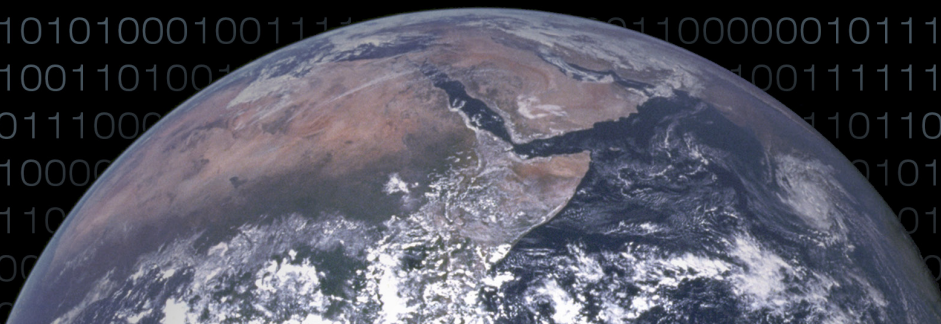


Resilient MEMORY

A FAMILY-RUN BUSINESS IN COLORADO REVOLUTIONIZES
SOLID-STATE DATA STORAGE

Before there was SEAKR, a Colorado-based engineering firm building hundreds of memory and processing units for satellites and aircraft, there was just R.

The company's name is an acronym for the father and his three sons, Scott, Eric, Kurt and Ray Anderson. But it was Ray, a retired Air Force colonel, who—with the help of several Small Business Innovation Research (SBIR) contracts—was the driving force behind the premier producer of solid-state recorders on the market.



Like many founders, Ray Anderson's business acumen was sharpened by his time in the military. There, Anderson worked with both the Corona and Hexagon satellite reconnaissance programs, which monitored the activities of foreign powers during the Cold War. The satellites recorded data using physical film reels, which, when full, were ejected back to earth.

Anderson, said Dave Jungkind, director of business development at SEAKR, thought the system was "ridiculous."

"Even after they had the ability to store the info and downlink it via radio, he thought that was ridiculous," Jungkind said. "He saw a problem in these existing programs and wanted to solve it."

Following his decorated military career, Anderson sat down with his oldest son, Scott, and perused a catalog of SBIR opportunities. One, for a first-of-its-kind solid-state recorder (SSR), caught his eye. It was just the kind of technology that would solve the "ridiculous" conundrum that had plagued Anderson during his time in the Air Force.

Scott and Ray had the technical expertise to design such a recorder, and Anderson, with his experience in the defense sector, had the contacts necessary to get



the company off the ground. In 1983, SEAKR Engineering, Inc. took off.

Almost immediately, the company scored an SBIR contract of its own to demonstrate a proof-of-concept for its solid-state recorder—a device that uses semiconductor memory rather than physical tape to record data and photographs.

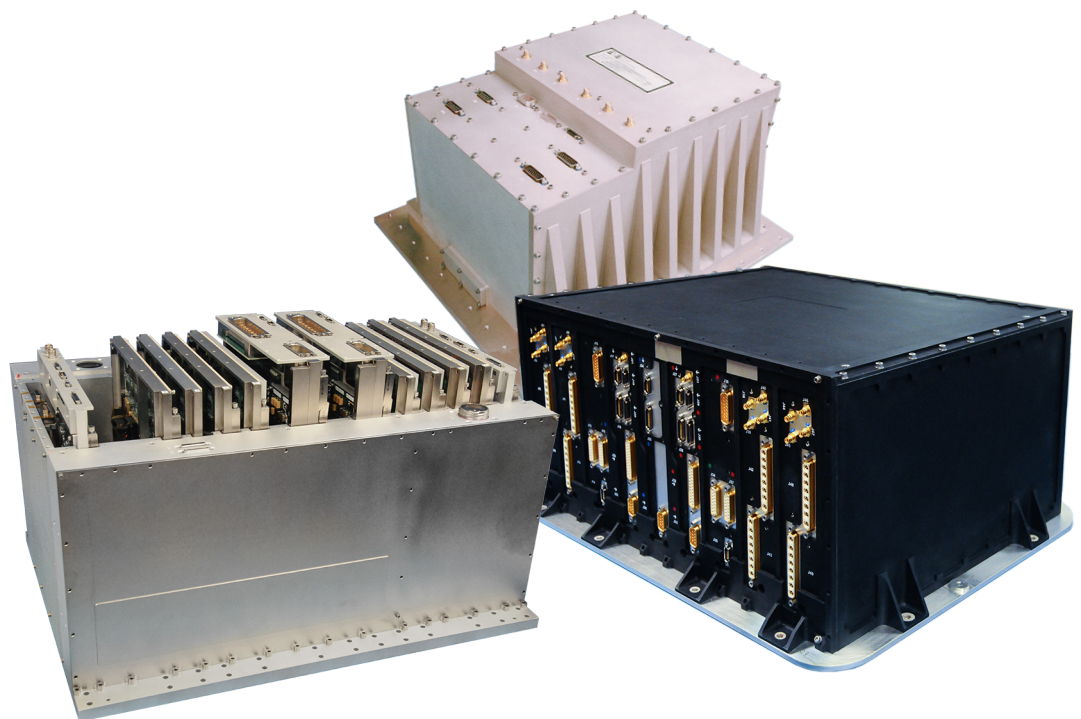
"SEAKR was ahead of everybody in the industry building these solid-state recorders for space application," Jungkind said. "It was an enormous boon to have a much more reliable way to store images on the spacecraft."

With the success of the SSRs under its belt, the company honed in on its next target: on-board processing systems for space and aircraft. Again, SEAKR scored an SBIR contract to fund the development of its new line of real-time processors that could send data directly to facilities on the ground.

That side of the business has since "ballooned," according to Jungkind, with the company securing some \$500 million in contracts for military, commercial and NASA applications. Take, for example, NASA's TESS program, a two-year satellite survey that will attempt to locate planets outside our solar system. Launched earlier this year, the spacecraft will sport



The products developed by SEAKR Engineering include, clockwise from top, the on-orbit IRIS box, their cronos architecture, and a mod-mesh processing system.



a data-handling system designed by SEAKR.

The space agency's Orion craft, designed to carry a crew past the moon, is also outfitted with SEAKR technology.

None of these successes would have been possible without the SBIR opportunities or the subsequent contract awards, Jungkind said.

"That entire product line started under SBIR," he said.

"It's been incredibly helpful to have the SBIR program."

Since its inception, the company, which employs roughly 450 people, has launched 268 of its various systems—which now include processors and avionics. But there remain opportunities for growth, Jungkind said, particularly in the RF and electro-optical data processing sector as both the military and private enterprise scale up their flight operations.

"When launch costs are cheaper, companies still

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have the challenge of getting the data back to the ground. The only way to do that is to do processing on the spacecraft and minimize the effort to get it back to the ground," Jungkind said. "We're seeing the processing side balloon enormously. We've helped incubate this product, but we don't know how big this market will be."

Despite its rise to the top of the industry, SEAKR remains a family company at its core, Jungkind concluded. Anderson and his three sons are still heavily involved in day-to-day operations. The company also has its own nonprofit arm, the SEAKR Foundation, which offers financial assistance to military families — a nod to Anderson's service.

"We really want to put the war fighters first," Jungkind said. "We want to make them all feel like they are a part of our SEAKR family." 🌸

SEAKR Engineering, Inc.

Modernization Priority: Space

Englewood, CO • SBIR contract: F29601-96-C-0122 • Agency: Air Force • Topic: AF95-073, Development of an Advanced Solid State Recorder

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SEAKR is a family-run business. From left to right, the founders are Scott Anderson, father Ray Anderson, Eric Anderson, and Kurt Anderson.

