SBIR TRANSITION

SUCCESS STORY

DARPA SBIR INVESTMENT:	SBIR TOPIC NUMBER:	PHASE III FUNDING:
$3M	SB153-004	$150M

The Challenge

In recent years, the Department of War (DoW) has increased its focus on "spectral dominance," or maintaining unfettered access to the airwaves that facilitate GPS, radio, satellite, and cell phone communications. DARPA identified a need to enhance digital signal processing, and the challenge lied with creating more efficient and affordable analog-to-digital converters (ADC). The ability to quickly and efficiently convert radio frequency signals to the digital domain where the information is processed is a critical aspect of many DoW electronics systems.

JARIET Technologies

Technology | Transition

With help from $3M in DARPA Small Business Innovation Research (SBIR) awards and $1.5M in Phase III government matching funds across two Phase II SBIR awards, Jariet Technologies answered this challenge and developed a high sample rate (or higher communication processing speeds) ADC chiplet. Unlike single-piece traditional chips that coordinate a specific function, chiplets can be combined into different designs to accelerate and increase efficiency in electronic communications. In essence, Jariet Technologies designed an integrated circuit (IC) technology intended to reduce power consumption and provide higher rates of analog-to-digital communications for a variety of electronic systems.

Jariet Technologies' chiplets offer the ability to install numerous communication channels onto a larger chip that can be tiled into an array to serve a particular user's needs. The goal, according to company officials, is to give the DoW a better ability to observe and control the electromagnetic spectrum compared with U.S. adversaries. Ideally, the chiplets could be incorporated into digital phased arrays (antenna systems that use ADCs) for 5G mobile base stations, radio frequency transceivers, satellite systems, radar systems, and other applications.

Jariet Technologies' chiplets are production-ready, and the company is investigating additional demand in order to scale to full production. Since Jariet received its DARPA SBIR investment, the company has attracted more than $150M in customer investments. Most of those revenues have come in the form of non-recurring engineering (NRE) contracts, or one-time agreements to develop, design, and manufacture a new product. These agreements include deals with defense contractors Lockheed Martin, L3Harris, Altera, and the Naval Surface Warfare Center's STEAM PIPE 24 initiative, which focuses on microelectronics in military systems.

Benefits to National Security

- Supports warfighter advantage to achieve spectral dominance in advanced phased array systems used for electronic warfare, radar, and satellite communications systems.
- Accelerates and increases efficiency in analog-to-digital conversion across numerous electronic communications platforms.
- Reduces power consumption and circuit dimensions in electronic communications systems.

About Jariet Technologies

Jariet Technologies is a semiconductor company that specializes in high-speed data converter transceivers for radar, satellite communications, electronic warfare, communications, test equipment, and quantum computing.

Since its start in 2015, Jariet Technologies has grown from 30 to 80 employees. In 2025, the company created Jariet International, a subsidiary based in Switzerland that supports the European and international marketplaces and has 23 employees.

"DARPA investments have been instrumental in facilitating Jariet's development of advanced IC technologies that are now at the heart of the state-of-the-art systems providing spectral dominance for advanced national security applications."

- David Clark, Senior Vice President, Program and Contract Management, Jariet Technologies

Future

Jariet Technologies' chiplets have dual-use applications with promise in the booming private sector commercial satellite network industry. The company's current contracts with private sector defense contractors and programs within the DoW help put the firm in a position to obtain additional funding opportunities to create a pipeline for the chiplets to be mass produced. The initial investments from DARPA paved the way for these chiplets to be imbedded in DoW platforms and other electronics systems.