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## Silicon Beach meets corporate aerospace giants at Redondo Beach innovation hub



Presenters pitching their innovative technology to corporate investors in space and defense systems. The event was held at Northrop Grumman Aerospace Systems in Redondo Beach. (Submitted photo)

By [Sandy Mazza](#), *Daily Breeze* POSTED: 03/10/16, 7:56 PM PST | UPDATED: 5 HRS AGO



One of the presenters pitches innovative technology to corporate investors in space and defense systems. The event was held at Northrop Grumman Aerospace Systems in Redondo Beach. (Submitted photo)

Start-ups brought innovations to make aircraft faster, lighter, less noisy, more accurate, and less dangerous at a unique event Thursday in Redondo Beach designed like TV's "Shark Tank," uniting entrepreneurs with corporate space and defense leaders.

Most presenters brought satellite and drone technology — fields that, if market trends continue, could evolve into trillion-dollar industries. Los Angeles-based Phase Four presented its plasma-propelled rocket engine that can get satellites into proper orbit faster and with lighter fuel loads than current technology, said Simon Halpern, Phase Four's

chief executive officer. As the commercial small-satellite market booms, such technology could become essential.

"Plasma is the fourth phase of matter, and it will propel the next revolution in the space industry. We are building the next generation of plasma-related technologies for satellites," according to a Phase Four written statement.

The "Aerospace Innovation Hub," hosted by El Segundo venture-capital firm Starburst Accelerator at Northrop Grumman Aerospace Systems, was the third of its kind since December. Starburst Accelerator, which hopes to help establish 300 global cutting-edge companies by 2020, moved to El Segundo from Paris, France, last year. Its prior innovation-hub events were at El Segundo's Raytheon Space and Airborne Systems and Boeing Satellite Systems.

"Southern California has been hemorrhaging talent in a dilapidated manufacturing industry co-located with our own (space and defense industry) customers," said Vandad Espahbodi, who created Starburst Accelerator. "The area is now becoming more welcoming for entrepreneurs. A lot of talent continues to grow in Silicon Beach."

South Bay and Westside communities are dubbed Silicon Beach because of soaring numbers of technology startups making a home among established aerospace giants.

Though the local aerospace industry has shrunk considerably since the Cold War ended three decades ago, much remains, buoyed by a fast-increasing number of startups. Cities like El Segundo welcome the newcomers with open arms, hoping they will fill in revenue streams that went dry with the transforming economy.

Frank Kropschot, director of strategic growth initiatives for Northrop Grumman Corp. Aerospace Systems, said the company has worked to not only "act like a startup" by

reducing bureaucracy and stimulating new inventions, but also has incorporated the work of startups into its model. He said at least one presentation made Thursday could help Northrop fix problems it is grappling with, including trouble accessing hard-to-reach aircraft parts.

Los Angeles-based DAQRI created an augmented reality safety helmet that it presented to investors Thursday as a way to improve the safety of industrial workers. The helmet is fitted with software that can analyze industrial pipes and other equipment for safety faults using a thermal camera that sees more than the human eye.

“We’re changing the way we understand safety,” said company CEO Brian Mullins. “The thermal camera allows workers to look through objects, and the helmet recognizes objects, pipes, valves ... and gives instructions to fix problems and order new parts.”

BridgeSAT, a Boston-based space optical communications company, designed a global network that can download massive bandwidth files from satellites to land-based terminals via lasers.

“We’re here to solve the problem with bandwidth (by using) fiber-optic speeds to accommodate an explosion of Low Earth Orbit satellites,” said Rizwan Parvez, BridgeSAT’s vice president. “High-density data bandwidths are increasingly competitive. We will be able to download 1.5 terabytes of data a day from each satellite.”

Drones and satellites are among the technologies sparked by the defense industry that are now being commercialized at break-neck speeds by entrepreneurial technology companies like these. Before long, if trends continue, driverless cars, a vast array of low-orbit commercial satellites and all sorts of drones will be everyday stuff.

“Everything is changing. I don’t even think we can imagine (what the future will look like),” said El Segundo Mayor Suzanne Fuentes, who attended the event Thursday.

The city began an initiative last year to bring 100 new businesses to town by 2017 and, as a historic home to the country’s leading aerospace and defense corporations, has actively sought to be on the cutting edge of modern technology in those fields.

Richard Lundquist, one of the region’s largest developers, gave Starburst Accelerator its El Segundo office space for free to entice the company to come and help finance promising local startups.

U.S. Air Force Reserve Col. Jody Merritt, who heads the Department of Defense’s Defense Innovation Unit Experimental (DIUx), said her team is constantly on the search for entrepreneurial startups to incorporate into defense technology and to “create permeability between the Department of Defense and Silicon Valley.”

“We scout, connect and support the innovation of disruptive technology that sustains and extends U.S. strategic advantage in defense while contributing to the world’s security and prosperity,” Merritt said, adding that their goal is to get on-board “when the innovations are actually being generated.”

Presenters also included Denver-based Frontline Aerospace Inc., which developed more energy-efficient, better-performing gas turbine engines for drone aircraft. It uses IsoCool compressor and MicroFire recuperator technologies designed to carry heavier loads on aircraft and use less fuel with better performance.

Apellix, a Jacksonville company, was pitching its “Worker Bee Robotics Modular system,” a drone fitted with equipment and software that can do things like de-ice and paint airplanes without using workers for the time-consuming, sometimes dangerous jobs.

“We want to replace human judgment with science,” Apellix CEO Robert Dahlstrom said. “Drones can see things and do structural analysis that humans can’t. Drones can do real work.”

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