

# SBIR/STTR TRANSITIONS

2019 SUMMER



## FROM THE DIRECTOR

The Department of the Navy (DON) continues to seek ways to take the “best and better” to make the SBIR/STTR program faster, more agile and more impactful. In fact, we are reengineering the whole program. We’ve got direction from leadership to have earlier decision points, to open the aperture to more ideas, and to have champions for your technology at the front end to make sure the right people are ready at the back end to catch it and see it to deployment.

While we still expect to offer three broad area announcement solicitations each year to help with the traditional topics, we are expanding that format to include out-of-cycle solicitations that are even broader in nature. Instead of evaluating your proposal to see if it directly addresses a very specific topic, we will now have more general topics and look at your technology to see where we can use it.

In other words, we’re flipping the conversation. We want to hear from you up front, whether it’s the Navy telling you specifically the problem it needs you to solve, or you telling the Navy what you think your technology can do for us.

You will see a simpler process. Instead of requiring you to submit a 20-page technical proposal, we will now ask you to submit a five-page proposal and a pitch deck. You will also see faster selections and quicker contract awards.

We will still have the teams at the systems commands who are identifying the topics and making the selections, but we will give them the leeway to conduct the process faster. Since we want these technologies to go to acquisition, we need to find a place for them in our programs of record.

To do this, we’re going to take more risk. If it sounds like a great idea, then let’s give it a try. We’re opening the aperture. Instead of seeing two or three Phase I awardees per topic, we’ll see 20. Instead of one or two of the Phase I awardees getting a Phase II contract, we’ll see five or six. Rather than having 90 days to make decisions on Phase I awards, our teams will now commit and make selections in two weeks. We’ll commit the resources and get the contract in place in 30 days. We’ll still be following the three-solicitations-per-year schedule for those traditional topics, but we are not afraid to go out of cycle for the more general topics, and to select more companies. We’re committing resources to do things differently.

Part of the pilot process is to “sprint and surge,” and for us to move faster requires resources. We need to find out what it takes to make those selections and contracts more quickly. How do we optimize the system to make it simpler for everyone to accomplish this? If we can validate these “best and better” practices, expect to see more in the next cycle, and the next cycle. We seek continuous improvement.

## FROM THE DIRECTOR... *continued*

With this new focus, the Navy is going to expect more from you. There will be more opportunities, but we will want to see progress. If you are making progress and delivering what you've promised, expect the process to move faster. But if you're not, then expect us to end it sooner.

One of the primary reasons we're going to move in this direction is to involve more innovators and their technologies. We're looking for people who have not participated in SBIR before. We've got great relationships with small companies who are very familiar with SBIR. But we want to open the opportunity to bring even more people into the solution space.

This new approach isn't going to fix everything. SBIR can't close all the gaps and it can't solve the biggest problems. The bulk of the Department of the Navy's R&D budget will continue tackling those tough, truly intractable problems. But SBIR is an important tool in the tool kit, and leadership is telling us that we need more out of this program, and we need it now. Our acquisition process delivers incredible capabilities, but our adversaries are moving fast, and in some cases catching us. We need to change now, not tomorrow. And if anyone can change the way we do business, SBIR can lead the way.

### **Partnering Summit and Forum for SBIR/STTR Transition**

We have been evaluating the 2019 Partnering Summit and Forum for SBIR/STTR Transition (FST), held in Lowell, MA this past April. While we think past FSTs were successful, we are looking for more impactful ways to achieve the goal of the STP program. We found that a "one-size-fits-all" conference isn't the solution. For 2020, we'll be looking at focused technology events, better suited to the particular technologies, and leveraging other resources in the technology trade space and the decision makers closer to that technology.

We will partner with the trade or professional associations who are already bringing these



Courtesy of the Office of Naval Research

Bob Smith, Director DON SBIR/STTR, speaking at 2018 FST

decision makers, industry leaders and warfighters together. Our Phase II companies will still complete the full STP program, but we'll then match our companies with the best conference for them to showcase their technology.

There are organizations like the National Defense Industrial Association and Surface Navy Association that already attract the people that we want our companies to meet. So we want to have the conversations with the right organizations and see how we can work together.

We will look at these pilot FST events, and refine the concept to make them the best that we can. Please visit [www.navystp.com](http://www.navystp.com) and [www.navyfst.com](http://www.navyfst.com) for more information and updates as we move forward – taking a great program and making it better.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert L. Smith". The signature is stylized and cursive.

Robert L. Smith  
Director DON SBIR/STTR



# DEPARTMENT OF THE NAVY (DON) PARTNERING SUMMIT FORUM FOR SBIR/STTR TRANSITION (NAVY FST) SHOWCASES 129 PHASE II TECHNOLOGIES TO DECISION-MAKING WARFIGHTERS

By Edward Lundquist , Navy STP Staff Writer

The Department of the Navy's (DoN's) SBIR/STTR Partnering Summit, held April 8-9 at the University of Massachusetts Lowell, brought together representatives of the Navy and other government agencies, academia, consortia, state and regional entities, prime contractors, and small businesses to talk about the importance of partnerships and collaboration that can advance new technologies that will give our warfighters an edge.

The event was held in conjunction with the Navy FST, and took place at Lowell, a city in the middle of one of the nation's highest-density tech clusters.

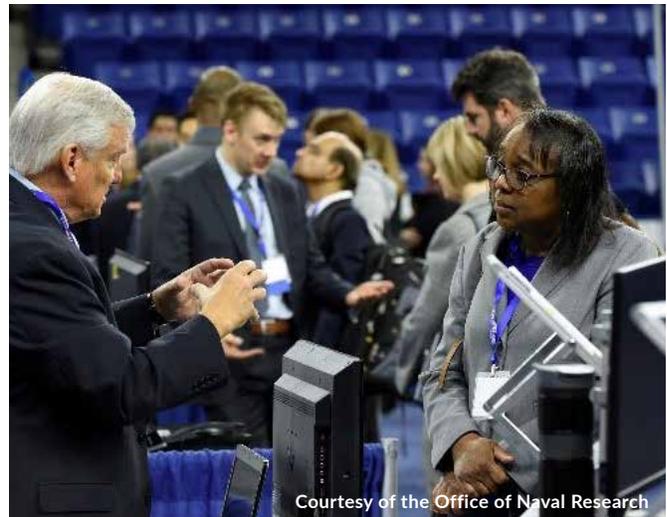
In his welcoming remarks, Dr. Joseph Hartman, dean of the Francis College of Engineering at UMass Lowell, talked about the shared concern about educating and developing a next generation of scientists and engineers. "We're all worried about the technology workforce of the future. That's why we're here."

The summit focused on the networks of public and private innovation support and development



Courtesy of the Office of Naval Research

RADM Hahn (center), Chief of Naval Research, visits FST



Courtesy of the Office of Naval Research

Networking at the 2019 FST

organizations, consortia and facilities that both foster technological development and are economic drivers. Panels examined a variety of technology incubators, collaboration engines and state-based innovation clusters in New England, as well as successful Navy, DoD and Air Force SBIR/STTR pilot programs.

Dr. Douglas C. Blake, head of ONR's Aviation, Force Projection and Integrated Defense Department, stressed the importance of the collaborative "ecosystem" that promotes and nurtures technology development. "It's a community that comes together that ultimately creates the product. The goal is to get technology in the hands of the warfighter. But not only does it matter what they get, it matters when they get it."

Representatives of the prime contractors talked about how their companies want their small business partners to succeed.

"We want small businesses to supply us with their technology, but we want them to be successful

***“It’s not just about an idea in your head, it’s about getting a product in the hands of a Sailor or Marine.”***

Rear Adm. David Hahn  
Chief of Naval Research

and grow their business, so they are better able to supply us with their products,” said Alf Carroll, SBIR Black Belt with Raytheon.

### Technology Showcase

The Navy FST served to showcase 129 Phase II technologies from small businesses participating in the Department of the Navy SBIR/STTR Transition Program (STP). Nearly 800 people attended the event, visiting the small business booths to view their technologies and attend their Navy FST Tech Talk presentations. Numerous one-on-one meetings were scheduled and held with the small businesses, primes, and systems commands.

Bob Smith, the DoN SBIR/STTR director called the Navy FST “a showplace of \$150 million worth of SBIR Phase II technology.”

“We’re delivering things that didn’t exist yesterday, today” said Smith.

Massachusetts Lieutenant Governor Karyn Polito said the “connection-points” can bring people together to find solutions and bring them to market. “That’s why we’re here at the FST.”

While most of the presentations at the Partnering Summit and Navy FST focused on the “how,” Chief of Naval Research Rear Adm. David Hahn talked about the “why.”

Hahn talked about the great power competition, and the importance of maintaining America’s technological edge. “Dynamic forces today are different than they were just a few years ago,” Hahn said. “We never want the great power competition get to the point where a military action is a viable option. Our goal as a Navy is to ensure that future naval power is guaranteed.”

Hahn talked about the importance of the Navy FST as being a marketplace of ideas, and moreover, products. The desired end state, he said, is deploying the technology—and quickly. “It’s not just about an idea in your head, it’s about getting a product in the hands of a Sailor or Marine.”



Navy FST Tech Talk presentation

Courtesy of the Office of Naval Research



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# NAVY FST GOES “ON THE ROAD” TO DIVERSIFY SHOWCASE VENUES AND AUDIENCES

By PAUL COLE, NAVY STP CONTRACT PROGRAM MANAGER (ATSI)



At the May 2019 kickoff meeting, the Department of the Navy (DoN) SBIR/STTR Transition Program (STP) announced a new direction for their DoN Forum for SBIR/STTR Transition (Navy FST) starting with the 2019-2020 STP cycle.

Our Navy FST program is now “on the road,” showcasing technologies at multiple events throughout the year.

“This year we are exploring focused technology events to showcase our STP Phase II companies’ technologies and match them with the technology needs for both government and industry. Connecting requirements with solutions is the goal,” elaborates DoN STP Program Manager Steve Sullivan.

This change represents the latest adaptation of the 20-year-old Navy FST program.

The first of our three confirmed focused technology events include: The Naval Submarine League Annual Symposium (November 6-7, 2019); AFCEA International and U.S. Naval Institute’s co-sponsored West 2020 (March 2-3, 2020); and 2020 AIAA AVIATION Forum (June 15-19, 2020). Situated in Arlington, Va., San Diego, Ca.

and Reno, Nev., respectively, these events will provide the Navy FST with a more precise way to connect the STP small business innovators with Navy (government) decisionmakers and industry across the country.

The STP team is busy developing the new Navy FST format, which will include a booth to promote and engage the STP small businesses and their technologies with the event attendees and participants. Additionally, one-on-one meetings and Navy FST Tech Talks will remain robust components of Navy FST presence at these focused technology events.

Attending more localized events provides Navy FST with an opportunity to focus on specific technologies depending on the event. This increases the opportunity for the STP small businesses to identify transition opportunities for their technology. The STP team can’t wait to showcase your future Naval technologies to the focused technology events’ attendees and participants.

For updates on showcased technologies, upcoming opportunities and newly scheduled focused technology events, visit [www.NavyFST.com](http://www.NavyFST.com)

# WINDLIFT PROVIDES INNOVATIVE RENEWABLE ENERGY PLATFORM FOR MARINE CORPS WITH POWERFUL 3-D SCANNING AND COMMUNICATIONS SOLUTION

By Edward Lundquist By Edward Lundquist, Navy STP Staff Writer

The U.S. Marine Corps was seeking technologies that reduce the weight and volume of currently deployed renewable hybrid systems while still being effective in tactical environments. Current renewable energy systems are bulky, to gain the Marine Corps' acceptance of renewable energy systems a reduction in weight and volume by at least 50% is required.

Windlift saw an opportunity to build upon a technology developed under a 2009 Army contract. They identified an alternative uses for their technology and then grew that into a full-system Marine Corps SBIR under the Marine Corps Logistics Combat Element System program (LCES).

Windlift's Airborne Power Generation (APG) system recently participated in the Marine Corps Systems Commands SBIR Demonstration at Quantico on May 3 2019. Outcomes of that demonstration were discussions and the identification of a Phase III Transition Target with the LCES - PM Engineer Systems - Power Systems Team; the Phase III award is expected in FY 2020.

Windlift, in 2011, proposed the renewable energy systems to the Marine Corps, and was funded to develop a trailer-mounted system designed to generate 15 to 20 kilowatts on a 7-foot light tactical trailer. From that we developed a plethora of the subsystems and the components, as well as our simulation environment in the Phase II. We also built a full physics flight simulation environment where we can model all the performance characteristics of the vehicle and a sophisticated tether model where every piece of the tether—which is made out of a Kevlar blend with a copper core—is modeled for weight and aerodynamic drag. So you can see how it bends and it flexes and moves.”



Windlift's Airborne Power Generation (APG) system

The APG system has four rotors and eight control surfaces. It launches vertically and then transitions to horizontal flight. The electric motors are also generators and designed for 50,000-plus hours of operation.

The system features a 500-foot tether and will fly at around 200 to 250 feet. “When we put power up the tether, the rotors start to spin up, and then they lift off,” Creighton said. “Once it gets in the vertical lift, it’s fully machine-learning and autonomous. It flies itself.”

Ideally it needs wind of about 12 miles an hour to generate power, but once the vehicle is airborne, it senses the wind and takes measurements to optimize itself for the current flight conditions. The vehicle flies in a looping figure-eight pattern to generate power. That power can go into the battery on the trailer, or a larger battery supporting the forward operating base, or it can even power the base directly with a regular AC interface for



## WINDLIFT RENEWABLE ENERGY PLATFORM... continued

plug-ins—and it'll have a 24-volt DC, as well.

It's designed to be assembled in the field very easily with just five pieces that virtually snap together. The trailer has a 5-kilowatt tactical flight generator, winch system and a 35-kilowatt hour battery.

"It's very simple to operate," said Creighton. "The operator only has two buttons: launch and land. When it catches the wind, the rotors generate power that is transmitted back down the tether. And it flies all day autonomously until you decide that you want to land it."

Each unit is designed to operate continuously for five years, in almost any weather condition.

In addition to generating power, Windlift can serve as a sensor platform. It can fly indefinitely while there's wind or without any power use, so you can cover a wide area for persistent surveillance.

"We're going to install a synthetic aperture radar sensor on the system and are building a 3D model using the Unreal Engine to actually model the battle space based on the radar data we get from our vehicle," Creighton said. "This way the base commander will have a real-time, 3D model of the surrounding terrain to see everything that's happening, operating or moving within range—all the trucks, all the buildings, everything like that in the area, will be fully visualized. Because the Windlift is moving, it's 3D scanning, offering a better picture of the battlespace. You can't hide behind a tree with a 3D scan of the area."

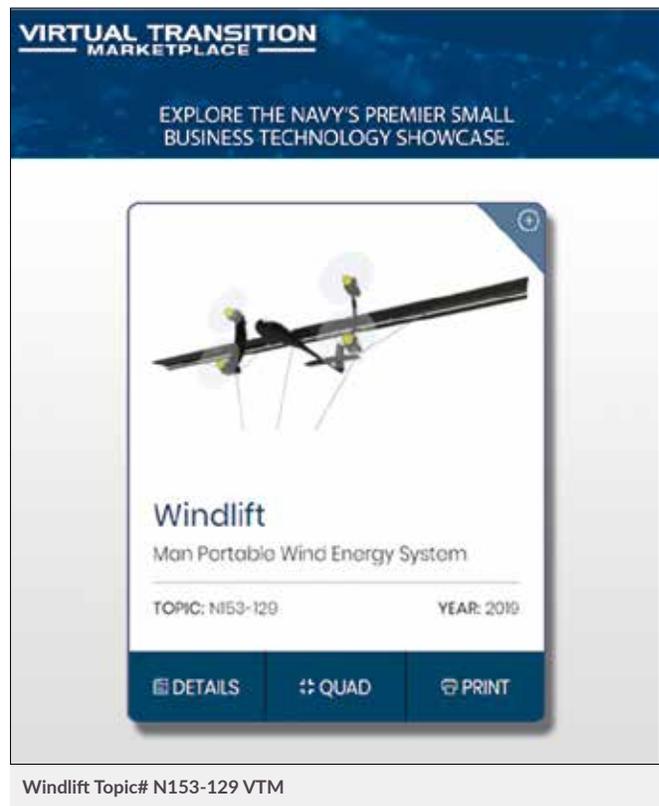
Creighton said Windlift can also provide an aerial communications and data relay platform. "We're going to install a 5G wireless node. With a series of line-of-sight Windlifts, we can have 5G wireless networking between them—you can have one 'daisy chained' to another and have very high bandwidth 5G wireless communications."

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Creighton said Windlift took advantage of the Department of the Navy SBIR/STTR Transition Program (STP) when they received their Phase II award, and presented at the Department of the Navy Forum for SBIR/STTR Transition (Navy FST).

"Even if you have been through it before, you still get a lot out of it," Creighton said. "It forces you to think. And I've learned from my experience that I'm not really good at transitioning, so hopefully, the STP and Navy FST will change that for us," Creighton said.

Upon award of the Phase III contract in FY 2020, Windlift is prepared to work aggressively with the Marine Corps to quickly field this technology into the hands of the Marines.



# VIRTUAL TRANSITION MARKETPLACE (VTM) CONNECTS NAVY CUSTOMER WITH TECHNOLOGY

By EDWARD LUNDQUIST, NAVY STP STAFF WRITER

To prepare for the recent Department of the Navy(DoN) Forum for SBIR/STTR Transition (Navy FST), Joshua Park looked at the approximately 140 different technologies on the VTM to see which companies he wanted to meet with before he attended the Navy FST.

Park is part of the Advanced Technology and Innovation (ATI) Integrated Product Team (IPT) at In-Service Support Center Cherry Point, NC, which falls under the Fleet Readiness Center East (FRCE), located on Marine Corps Parris Station. The mission of the ATI team is to identify, develop, and transition different emerging technologies into the three Fleet Readiness Centers (FRCs).

“Our goal is to foster innovation and improve overall maintenance, repair, and overhaul activities for the Navy and Marine Corps,” said Park.

Park's search of the VTM found Creare's Plasma Gasification System for Waste-to-Energy Conversion. “At first, I was not certain if Creare's technology was applicable to us because it isn't specifically related to naval aviation. But I had never seen anything like this before, and I thought it might be something worth having on base,” Park said. “I brought it to the attention of my leads and they let me run with it. I worked with the environmental scientists and environmental engineers on our base and determine there was interested in this technology.”

## Virtual Success

Paul Movizzo, Creare's DoD Business and Commercialization Development Manager said the VTM helped Creare's solution get noticed.

Movizzo said the VTM helped make an important connection with the Navy

“By participating in the STP, we went through the process of refining strategy documents, the Market Research Analysis Report, marketing materials, and the Department of the Navy SBIR/STTR Transition Program (STP) quad-chart, which is the product that's posted on the VTM,” said Movizzo. “That's where Josh found us.”



Creare developed a waste-to-energy (WTE) system based on a need posted by Navy Expeditionary Combat Command (NECC) and sponsored by Navy Facilities Engineering Command (NAVFAC). The Navy was interested in technologies applicable in a forward operating base (FOB) or a remote location to efficiently dispose of its garbage. Trucking it out or incinerating on site had many drawbacks; to be expeditionary, any solution had to be compact. So Creare partnered with Cogent Energy Systems who developed an innovative and scalable gasifier to cleanly and efficiently process waste.

“One benefit of the STP is the opportunity for STP participants to showcase their technology on the VTM” Movizzo said.

Creare is aiming to conduct a demonstration at Cherry Point with an operational prototype. Movizzo said Creare wants to transition the system out of the lab and into an representative



operating environment to better understand how much it costs to run, how many people are required to operate it, what the mean-time-between-failure will be for the different components and how to refine the design towards more compact production systems.

Movizzo said the Navy FST in Lowell, MA provided an opportunity to meet with Park and the FRC team. "It was great because we fully understood what their aircraft and component refurbishment mission needs

*To prepare for the recent Department of the Navy(DoN) Forum for SBIR/STTR Transition (Navy FST), Joshua Park looked at the approximately 140 different technologies on the VTM to see which companies he wanted to meet with before he attended the Navy FST.*

are, and what kind of waste they produce that may be difficult to get rid of. It's important for us to understand what kind of waste we might expect: if it's hazardous material; or if it's located in an environmentally sensitive area. That was a real benefit for connecting with the Navy through the VTM and hearing how

our system could fill their needs. It gave us great context for a use-case on how we might rethink designing one for a specific application," Movizzo said

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## NAVAIR WINNERS OF THE 2019 SMALL BUSINESS TECHNOLOGY COUNCIL'S (SBTC) CHAMPION OF SMALL BUSINESS TECHNOLOGY COMMERCIALIZATION AWARD

By CYNTHIA HERMANN, SBIR/STTR COMMUNICATIONS COORDINATOR, NAVAIR 4.0T

Please join us in congratulating NAVAIR's 2019 winners of the SBTC Champion of Small Business Technology Commercialization Award: Bryan (BJ) Ramsay, Science & Technology Lead, PMA-281, PEO U&W, Randel Langloss, SBIR/STTR Phase II Team Member and David Gay, PMA-280/281 Senior Asst. Program Manager for Test & Evaluation (APMT&E).

The awards presentation took place 11 June 2019 at the annual Small Business Technology Council (SBTC) membership meeting in Washington D.C. Panels featuring speakers from Congressional Staff, Federal Agencies and other government representatives discussed issues and initiatives that are important to high-tech small business. Nine winners were selected from Army, Air Force and Navy, representing Program Managers, Contracting Officials, PEOs and government officials for their work helping SBIR/STTR companies commercialize their technologies while meeting their agency's needs.

According to Small Business Technology Council (SBTC), one of the biggest challenges facing SBIR/STTR companies is finding the funding necessary to commercialize their technologies. Although certain incentives and preferences required by law are

provided by the agencies, those within the agencies may not know what is available or how to implement these funds. In 2015, the Small Business Technology Council decided to highlight and honor some of best Individuals in government nominated by companies they worked with. Nominees were evaluated by an independent panel who selected those individuals that have gone "above and beyond" to help a small business source and implement funds in order to bring their technology closer to the commercial arena.

Last year's winner of the Oreta B. Stinson Small Business Advocate Award and one of the first 2015 winners of the SBTC Champion's award, Bryan (BJ) Ramsey has been an active supporter in research, development and transition of small business technologies within PMA-281 since 2011. His knowledge of funding resources originated with the Office of Naval Research (ONR) and Office of the Chief of Naval Operations (OPNAV), providing him with access to information on numerous funding sources and an understanding where to find funding. Knowing that limited program dollars has driven the need for "higher risk, higher payoff, and funding sooner," he has used his knowledge and experience

## NAVAIR SBTC AWARD... continued

to follow through providing PMA-281 with needed technology fast. Mr. Ramsay believes “the SBIR Program offers great opportunities to provide hands-on product management to assist companies to evolve and transition their technology.”

With over forty years of service, both military and civilian, supporting various Department of Defense agencies, Randel Langloss has a passion for finding an answer to technological needs for the “Big Picture.” He is very familiar with transitioning difficult but worthwhile topics that offer potential game changers across the battlespace. He emphasizes that engineers, especially new engineers, should “work towards a vision” when taking on a new project. Although this is an individual award for his dedication and perseverance in providing support to small businesses, he believes it is always a NAVAIR SBIR/STTR team effort.

As test manager for PMA-281, David Gay’s interest has been in tools that can decrease the amount of time and/or increase the robustness of the testing for the PMA’s software. Having worked with small business for the last five years, Mr. Gay discovered that Innovative Defense Technologies (IDT) Automated Test and Retest Tool (ATRT) was an SBIR project that fit those goals. He believes that the tool has “the ability to significantly impact programs that need to reduce test time of products that need to get to the fleet faster.” He went on to say, “As a small business IDT had no insight into the workings of NAVAIR and I felt that they needed a champion to ‘get the word out’ that the tool could provide significant benefits.” With



Courtesy of SBTC  
Pictured: SBTC Executive Director Jere Glover (Right presents award to Randel Langloss, Champion of Small Business Technology Commercialization Award winner, alongside NAVAIR SBIR/STTR Program Manager Donna Attick (Left) in Washington, D.C.

his support and commitment to providing innovative technology to the warfighter, IDT’s technology is gaining greater exposure to the fleet as Mr. Gay plans to test and evaluate processes in other programs he oversees.

NAVAIR’s awardees have worked diligently to help transition small business technology to the warfighter utilizing their experience and knowledge of various funding sources. Thereby, accelerating the delivery of small business developed capabilities not only to the fleet, but also to other commercial ventures.

For More Information on the Navy SBIR Program visit [www.navysbir.com](http://www.navysbir.com)

## SUBUAS NAVIATOR PROVIDES INNOVATIVE, AMPHIBIOUS ORDNANCE IDENTIFICATION SOLUTION TO WARFIGHTERS

By EDWARD LUNDQUIST, NAVY STP STAFF WRITER

The Rutgers University Aerospace Department saw the Office of Naval Research (ONR) STTR Phase I topic “Hybrid Unmanned Air / Underwater Vehicle for Explosive Ordnance Disposal (EOD) and Mine Countermeasures (MCM)” and knew they had a solution. “Naviator,” an air-surface-subsurface drone technology which they had developed, able to operate in all three of those mediums was the solution to the Navy’s need,

“To discover and safely dispose of mines and unexploded ordnance.” The university teamed with a newly formed company, SubUAS, founded by the inventors of the Naviator, world experts in hybrid air/sea autonomous vehicles, to respond to the STTR topic.

According to SubUAS COO Dr. Mark Contarino, the company exceeded expectations from the



## SUBUAS NAVIATOR... continued



SubUAS "Naviator - (pronounced Navy-A-tor)

start. The mine countermeasures topic called for a drone to take off, go over a GPS coordinate, drop down [underwater], take an image, come back up and then go to the next target. SubUAS went through the Phase I SBIR process to complete a feasibility analysis on a potential air-water drone, but went beyond that. Instead, they delivered a video for the Navy of an air-water drone functioning and conducting air-water transitions in the marine environment—in 30 mph winds where the Manatee River meets the Gulf of Mexico. That video helped SubUAS become a Phase II awardee.

SubUAS, continuing with their newly formed tradition of exceeding expectations, has been awarded two Phase III contracts from ONR. In August 2018, ONR awarded SubUAS a contract valued at \$600K to build low cost air/water vehicles for the Navy with purchase options for quantities up to 400 vehicles. Then in September 2018, SubUAS was awarded a second Phase III contract from ONR with a contract value of \$2M to increase the depth rating of a heavy lift air/water vehicle, automated object recognition, and adding manipulator arms to perform tasks underwater.

Underwater vehicles have been used to find mine-like objects and help classify them as mines; but, the vehicles are slow and sending messages back to a host-ship either requires communicating underwater, surfacing to transmit a radio message, or returning to the ship to have the data analyzed. Using a UAV

could carry out that task faster. "Initially, we were confirming a possible mine's localized position and taking a picture of it and sending that back to someone to classify it," said Contarino, "but we are able to do more."

SubUAS "Naviator,"- (pronounced Navy-A-tor) is an eight-rotor vehicle that can fly at 50 knots and swim under the surface at four knots. "We fly out, quickly drop down and come back up, and instead of trying to pass acoustic data underwater—which is bits per second—we now can go up into the air and do a live video feed and we can repeat that for 10 targets. As we go under, we're literally a flying submarine. We can go in and out of the water as many times as our battery allows," said Contarino. "The transition is seamless. We're not waiting for a buoyancy control device to help us up. We literally power through the water. It takes no extra battery to get up and we can do it multiple times."

Contarino said the Phase II objective was to build a heavy lift version. "The Navy does not want a little

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toy—they want to carry 50-pound payloads and more. We built a 6-foot by 6-foot by 4-foot version, with about 85 pounds vehicle weight and about a 45-pound lift capability. First, we were able to demonstrate going in and out of the water in my backyard pool. In Florida, we have a cage

over it, which allowed us to avoid the FAA regulations on vehicles heavier than 55-pounds."

The next step was to take the vehicle to the open water beyond the 12-mile limit and the FAA restrictions and conduct some air-water transitions. The SubUAS team performed a successful demonstration of over 12 miles off the coast of Anna Maria Island in the Gulf of Mexico. Using this drone, the team was also able to manipulate and retrieve an underwater target starting and ending on land.

SubUAS started with a focus on the sponsor's mine countermeasures requirement but has garnered interest from other customers with other needs. "We can operate in three domains, and right now the payloads for all three of those mediums are different,"

## SUBUAS NAVIATOR... continued

Contarino said. The vision is that scaling the vehicle can easily accommodate the wide variety of desired payloads.

SubUAS has entered into a Cooperative Research and Development Agreement (CRADA) to use the Naval Information Warfare Center Pacific six million-gallon Transducer Evaluation Center (TRANSDEC) pool in San Diego. Their future planned work is testing here, in Panama City and other diverse locations for a variety of customer-focused EOD payloads. Battlefield applications for this new platform include investigating threats and delivering payloads; deploying explosives to eliminate mines and smart buoy sensors; conducting ships/ports inspections and stealth missions; and deploying air/water communications systems. Non-military applications include deployment of smart buoy sensors, and inspections of ships, ports, bridges, and pipelines.

SubUAS is looking at a range of capability and affordability platform options. On one end of that spectrum, a large group of inexpensive platforms can swarm a beachfront to identify or clear mines, or to overwhelm defenders during an assault, and on the other end, a large platform that operates in stealth mode. "One customer may want to conduct mine countermeasures; another may want to assault a beach; the next customer may want a relay in the sky; or to place or retrieve objects underwater. And if another sponsor comes along, we want to have the flexibility to respond to their needs, too," Contarino said.

Longer missions require more sophisticated solutions. "We're looking at endurance challenges and how to overcome them, such as underwater recharging, fuel cell technologies, hybrid generators, and diesel engines that run in the air and on the surface to charge batteries," he said.



SubUAS Topic# N16A-T025 VTM

Contarino highly recommends that a company that receives a Phase II award participate in the Department of the Navy SBIR/STTR Transition Program (STP). "Our STP business consultant was very helpful, and he kept us on course and on schedule. The Department of the Navy Forum for SBIR / STTR Transition (Navy FST) gave me access to decision-makers. It's all about putting yourself out there in front of customers and getting better at telling them what your technology can do for them. I'm looking for a champion to step up and put funding on the table. And I've had that opportunity, from multiple places, and it looks pretty good," he said. "There are no real options available other than the STP if you don't have the background already, or the (military) connections. There's no downside. It's all opportunity."

## DEPARTMENT OF THE NAVY (DON) SBIR/STTR TRANSITION PROGRAM (STP) FIRST LOOK

A snapshot of this year's small business concerns (sbc) participants. The following table provides a first look at the phase II sbcs that are currently enrolled in the don stp. The sbcs are listed in alphabetical order, under osd communities of interest (coi) categories most appropriate to their technology. If you see something of interest, and want to know more, please contact the company directly. All corporate information, and associated technology quad charts, abstracts, thumbnail descriptions and company capability brochures for the companies listed below will be available through the virtual transition marketplace (vtm) on-line database in dec 2019. You can access the vtm at: [HTTPS://WWW.NAVYFST.COM/VTM/](https://www.navyfst.com/vtm/).



# DON SBIR/STP FIRST LOOK... continued



[WWW.NAVYFST.COM/VTM/](http://WWW.NAVYFST.COM/VTM/)

SBIR/STTR Transition Program (STP) Participants					
	Company/Topic Title	Topic #	POC	Phone	Email
Advanced Electronics	Acellent Technologies, Inc. Fatigue crack detection in rotorcraft structures	N122-110	Grant J. Chang	(650) 776-7825	GRANTC@ACELLENT.COM
	Ballistic Devices Inc High Speed and High Voltage Capacitors for Naval HPRF Directed Energy Applications	N142-123	Quentin Diduck	(585) 451-5755	QDIDUCK@BALLISTICDEVICES.COM
	Creative MicroSystems Corp. Holographic Enabled Display System for Force-on-Force Marine Training	N162-123	Patrick Brophy	(802) 496-6620	PBROPHY@CREATIVEMICRO.COM
	Freedom Photonics LLC Built-In Test Capability for WDM Avionic Systems	N171-032	Dr. Milan Mashanivitch	(805) 277-3031	MASHAN@FREEDOMPHOTONICS.COM
	InnoSys Flight Deck Lighting Addressable Smart Control Modules	N152-086	Jennifer Hwu	(801) 975-7399	HWU@INNOSTECH.COM
	Metamagnetics, Inc. Synthesis and Realization of Broadband Magnetic Flux Channel Antennas	N152-081	Michael Hunnewell	(617) 833-2950	MHUNNEWELL@MTMGX.COM
	Mide Technology Corporation Touchstone - Rugged Touchscreen Button with Positive Indication Feedback	N171-009	Rick Orlando	(781)306-0609 x243	RORLANDO@MIDE.COM
	Pacific Antenna Systems Long range, High Capacity Backhaul (HCB) Ultra-wideband antennas for Ku and W Band network applications	N141-015	Tracy Tafolla	(540) 604-0198	TRACY@PASANTENNAS.COM
	Phase Sensitive Innovations, Inc. 1 Micron Fiber Optic Receiver for Mil-Aero Environment	N171-031	Ahmed Sharkawy	(302) 286-5191	SHARKAWY@PHASESENSITIVEINC.COM
	Physical Optics Corporation Tunable, Rapid, Electronically Controlled X-band (T-REX) Notch Filter	N171-074	Ms. Sarkhosh Ph. D.	(310) 320-3088 x660	NSARKHOSH@POC.COM
	Plasmonics Inc. Phase-Change Materials for Tunable Infrared Devices	N17A-T020	James Ginn	(407) 574-3107	JAMES.GINN@PLASMONICS-INC.COM
	SI2 Technologies, Inc. Ka-Band Communications Antenna System for Submarine Masts (1000-449)	N101-069	Richard (Rick) White	(443) 699-0002	RWHITE@RWCLLC.ORG
	SimVentions, Inc. Hardware Open Systems Technologies (HOST) Hardware Integration Tool Set	N162-084	Bertram Chase	(540) 372-7727	TRAMCHASE@SIMVENTIONS.COM
	Air Platforms	Advanced Cooling Technologies, Inc. Novel High Energy Density Fuels Development	N171-022	Frank Morales	(717) 205-0637
AVID LLC Morphing Actuation System for Unmanned Aircraft Systems		AF083-097	Jenny Gelhausen	(757) 886-2611	JGELHAUSEN@AVIDAEROSPACE.COM
Combustion Science & Engineering, Inc. Ignition Modeling for Present and Future Combustors and Augmentors		N17A-T003	Michael Klassen	(410) 884-3266	MKLASSEN@CSEFIRE.COM
Q Peak, Inc. Epoxyless Connectors for Optical Fiber		N172-121	Michael Rayno	(781) 275-9535	RAYNO@QPEAK.COM
Quad-M, Inc. Dual Chaff Air Expendable Decoy Device		N171-030	Victor Dube	(512) 273-1238	DUBE@QUADMINC.COM
Tetramer Technologies, LLC Fiber Optic Refractive Index Matching Material		N112-125	Margaret Shaughnessy	(864) 646-6282	MARGARET.SHAUGHNESSY@TETRAMERTECNOLOGIES.COM
Autonomy	Charles River Analytics Inc. Topside Optical Processing for Global Unmanned Navy (TOPGUN)	OSD12-HS3	Ross Eaton	(617) 491-3474	REATON@CRA.COM
	Metron, Inc. Theater Anti-Submarine Warfare Contextual Reasoning	N171-093	Dr. Douglas Marble	(703) 467-5609	MARBLE@METSCI.COM
	Orbit Logic Incorporated Multi-vehicle Collaboration with Minimal Communications and Minimal Energy	N17A-T029	Ella Herz	(301) 982-6234	ELLA.HERZ@ORBITLOGIC.COM
	Systems Technology, Inc. Aircraft Deck Motion Compensation Design	N162-098	David Klyde	(310) 679-2281 x127	DKLYDE@SYSTEMSTECH.COM
Biomedical	Trident Systems Incorporated New Condition Based Maintenance and Energy Command and Control Network Architectures for the Naval Expeditionary Force	N162-121	Edward Baumann	(703) 267-6016	EDWARD.BAUMANN@TRIDSYS.COM
	AnthroTronix, Inc. SUSTAIN: Measuring Cognitive Readiness	N101-094	Jonathan Brown	(440) 463-5269	JONATHAN.BROWN@ATINC.COM
	HoloChip Corporation Variable Accommodation Head Mounted Display	N121-041	Robert Batchko	(650) 906-1064	RGB@HOLOCHIP.COM
Quantum Applied Science and Research Inc. Development of a Diver Biometric Device (DBD)	N151-078	Melissa Poquette	(858) 412-1705	MPOQUETTE@QUASARUSA.COM	

	Company/Topic Title	Topic #	POC	Phone	Email
Command, Control, Communications, Computers, and Intelligence (C4I)	Charles River Analytics Inc. Blended and Advanced Decision GUI Environment for Reasoning Support (BADGERS)	N171-061	Stephanie Kane	(617) 491-3474	SKANE@CRA.COM
	EMAG Technologies, Inc. Advanced Radio Frequency Link Analysis Tool	N172-119	Kazem Sabet	(734) 996-3624	KSABET@EMAGTECH.COM
	FIRST RF CORPORATION High Gain Common Data Link (CDL) Antennas for Networking UAV Nodes	N131-007	David Massey	(303) 449-5211 x160	CDMASSEY@FIRSTRF.COM
	FoVI 3D Graphics Scene Description and Application Interface for Heterogeneous 3D Display Environments	N171-041	Amy Lessner	(512) 627-0265	AELESSNER@FOVI3D.COM
	Intelligent Fiber Optic Systems Corporation Intelligent Fiber-Optic Network with Real Time Built-in Test Performance Monitoring for Prognostics and Diagnostics	N171-032	William Price	(408) 565-9002	WP@FOS.COM
	Premier Solutions Hi, LLC CS:CLIPBoard - Integrated Barcode and Inventory Management System	N171-077	Stephen Brennan	(808) 396-4444	STEVEB@PREMIERSOLUTIONSHI.COM
	RKF Engineering New Advanced Integrated Line-of-Sight Equipment System (nAILES)	A04-127	David Milliner	(202) 441-9300	DMILLINER@RKF-ENG.COM
	SA Photonics, Inc. MultiEye™ Free-Space Optical Communication System	N171-089	David Cushman	(408) 560-3500 x116	D.CUSHMAN@SAPHOTONICS.COM
	SDI Engineering Inc Development and Validation of an Advanced Simulation Tool for the Evaluation of Aerial Refueling Events	N092-111	Andrew Erickson	(425) 827-6836	AERICKSON@SDI-ENG.COM
	Skayl LLC Scalable Model-Driven Protocol Mediation and Systems Integration	N162-101	Sonya Hand	(410) 848.4946 x103	SONYA@SKAYL.COM
	Sonalysts, Inc. Resolving organizational inefficiencies through crowdsourcing	N172-131	Stephen Dorton	(860) 326-3646	SDORTON@SONALYSTS.COM
	VR Rehab, Inc. (VRR) Synthetic Vision System for Ground Forces	N171-091	Sarah Garvis	(407) 506-5104	SGARVIS@VIRTUALREALITYREHAB.COM
	W5 Technologies, Inc. Cellular Base Station for Low Earth Orbit Space Missions	N171-098	Jason Ferguson	(480) 422-6009	JASONFERGUSON@W5TECH.COM
	Cyber	Charles River Analytics Inc. Detecting Anomalies in Application Memory Space (DAAMS)	N171-056	Gerald Fry	(617) 491-3474
Innovative Defense Technologies Cyber Resiliency via Virtualization for Combat Systems		N171-049	Matt Cavanaugh	(703) 822-7871	MCavanaugh@IDTUS.COM
P&J Robinson Corporation Late-Stage Software Feature Reduction Tool for Security and Performance		N171-083	Peter Robinson	(619) 243-0961	PROBINSON@PJRCORP.COM
WPL, Inc. TEAM - Twice Encrypted and Authenticated Multicast		N162-073	Jennifer Halford	(310) 936-6157	JENNIFER.HALFORD@WPLI.NET
Electronic Warfare (EW)	Research Associates of Syracuse Cognitive Software Algorithms Techniques for Electronic Warfare	N171-044	Dennis Stadelman	(315) 339-4800 x413	DSTADELMAN@RAS.COM
	Tucson Embedded Systems Hardware Open Systems Technologies (HOST) Conformance Tool	N162-086	Ken Erickson	(520) 302-5363	KENE@TUCSONEMBEDDED.COM
	Vadum Virtual Antenna Array Mapping	N172-110	Glen Garner Ph. D.	(919) 341-8241	GLEN.GARNER@VADUMINC.COM
Energy and Power Technology	Bioenno Tech, LLC All Solid-State Batteries for Navy Applications	N162-092	Tim Lin	(714) 234-7363	TECH@BIOENNOTECH.COM
	Bioenno Tech, LLC High Density Capacitors for Compact Transmit and Receive Modules	N17A-T011	Tim Lin	(714) 234-7363	TECH@BIOENNOTECH.COM
	Candent Technologies Incorporated Reduced Cavitation, High Efficiency Outboard Propulsors for Small Planing Craft	N17A-T019	Hernando Munevar	(317) 336-4478	HMUNEVAR@CANDENT-TECHNOLOGIES.COM
	Continental Controls and Design, Inc.Giner, Inc. Miniaturized Electric Actuation System	N161-048	Lore Hynes	(714) 323-4924	LORE.HYNES@CONTINENTALCTRLS.COM
	Giner, Inc. High-Energy-Density Hydrogen Delivery System_Topic Number: N10A-T030	N10A-T030	Ed Hogan	(781) 529-0504	EHOGAN@GINERINC.COM
	Lynntech, Inc. Early Warning Fault Indication System for Li Batteries	N161-047	Dr. Brian Hennings	(979) 764-2234	BRIAN.HENNINGS@LYNNTTECH.COM
	Lynntech, Inc. Practical All Solid-State (PASS) Li-Ion Batteries (LIB)	N162-092	Dr. Brian Hennings	(979) 764-2234	BRIAN.HENNINGS@LYNNTTECH.COM
	MicroLink Devices Novel, High-Efficiency, Light-weight, Flexible Solar Cells as Electrical Power Generation Source	N16A-T006	Ray Chan	(847) 588-3001	RCHAN@MLDEVICES.COM
	PC Krause and Associates, Inc. Submarine Shipboard Power Supply Bridge	N171-075	Andrew Paquette	(765) 464-8997	APAQUETTE@PCKA.COM
	Seatrec, Inc. Development of Ocean Thermal Energy Harvesting Systems	N142-116	David Fratantoni	(508) 826-8662	DAVE@SEATREC.COM



	Company/Topic Title	Topic #	POC	Phone	Email
Energy and Power Technology	Storagenergy Technologies, Inc. All Solid-State Batteries for Navy Applications	N162-092	Lynn Zhang	(801) 803-1303	LZHANG@STORAGENERGY.COM
	The Columbia Group, Inc Medium Voltage Direct Current (MVDC) Casualty Power	N162-109	Padraic McDermott	(703) 291-6426	PMCDERMOTT@COLUMBIAGROUP.COM
Engineered Resilient Systems (ERS)	BGI LLC Landing Signal Officer - Data Analysis Toolkit (LSO-DAT)	N112-111	Scott Powell	(330) 374-7737	SCOTT.POWELL@BGI-LLC.COM
	BGI LLC Analysis and Reporting Capability for Smart Aircraft Data	N112-111	Scott Powell	(330) 374-7737	SCOTT.POWELL@BGI-LLC.COM
	ISSAC Corp Medium Voltage Direct Current (MVDC) Fault Detection, Localization, and Isolation	N16A-T009	Cindy Mcanally	(719) 725-6904	CINDY.MCANALLY@ISSACCORP.COM
	WW Technology Group Miniaturized, Fault Tolerant Decentralized Mission Processing Architecture for Next Generation Rotorcraft Avionics Environment	N152-096	Dr Richard LeBoeuf	(254) 485-7809	RLEBOEUF@WWTECHNOLOGY.COM
Ground and Sea Platforms	Cardinal Engineering, LLC Submarine Component Design Tool to Assess Relative Resistance to High Intensity Loading	N151-045	Justin Caruana	(202) 506-3962	JCARUANA@CARDINALENGINEERINGLLC.COM
	Charles River Analytics Inc. Distributed Analysis Tool for Enterprise Monitoring (DATEM)	N132-139	Joseph Gorman	(617) 491-3474	JGORMAN@CRA.COM
	Charles River Analytics Inc. System for Naval Data Aggregation and Planning with Probabilistic Reasoning (SNAPPR)	N171-052	Joseph Gorman	(617) 491-3474	JGORMAN@CRA.COM
	Luna Innovations Incorporated Processes for Condition Monitoring and Prognostics at the Sensor Node	N151-027	Kevin Farinholt	(434) 220-2508	FARINHOLT@LUNAINC.COM
	Pacific Engineering, Inc Fuel Efficiency Improvements for Amphibious Vehicles	N162-079	Dexter Myers	(626) 379-2282	DEXTER.MYERS@PACIFICENGINEERINGINC.COM
	TRITON SYSTEMS, INC. SUBSAFE Hull Penetrator for Submarine High Energy Laser (HEL)	N171-039	Christopher Leman	(978) 456-4207	CLEMAN@TRITONSYS.COM
	TRITON SYSTEMS, INC. Autonomous Towed Array Straightening System	N171-055	Rafael Mandujano	(978) 856-4193	RMANDUJANO@TRITONSYS.COM
Human Systems	Charles River Analytics Inc. Ecological Advanced Support Interface Toolkit for Heads Up Attention to Improve Warfighter Knowledge (EASI-HAWK)	N162-094	Stephanie Kane	(617) 491-3474	SKANE@CRA.COM
	Creare LLC Flight Head and Hearing Protection System	N172-120	Paul Movizzo	(603) 443-2213	PGMOVIZZO@CREARE.COM
	Creative Technologies Inc. Gamification for Combat System Employment	N171-035	James Korris	(323) 472-6204	JAMES.KORRIS@CRETECINC.COM
	Mosaic Materials, Inc. Advanced Materials for Carbon Dioxide (CO2) Capture	N161-040	Graham Wenz	(612) 708-5535	GWENZ@MOSAICMATERIALS.COM
	Sera Star Systems Oxygen Mask Development to Improve and Facilitate Mask Discipline	N171-007	Lizanne Luchetti	(214) 909-9652	LIZEANNE.LUCHETTI@SERASTARSYSTEMS.COM
	Soar Technology, Inc. DeepAgent	N171-084	Christopher Kawatsu	(734) 887-7625	CHRIS.KAWATSU@SOARTECH.COM
	Tier 1 Performance Solutions, LLC Transformation Accelerated through Redesign, Guidance, and Enhanced Training (TARGET)	N17A-T017	Rod Ford	(859) 415-1024	R.FORD@TIER1PERFORMANCE.COM
	TRITON SYSTEMS, INC. Low Cost In-Flight Bladder Relief	N171-018	Kim Hallett	(603) 833-1564	KHALLETT@TRITONSYS.COM
	TRITON SYSTEMS, INC. Oil-less Deep Fryer	N171-064	Chuck Hannon	(978) 856-4146	CHANNON@TRITONSYS.COM
	VIRTUVIA, LLC (dba CoachMePlus) Human Performance Self-Service Kiosk and Application	N171-079	Kevin Dawidowicz	(716) 566-3019 x102	KEVIN@COACHMEPLUS.COM
	VR Rehab, Inc. (VRR) Rugged Touchscreen Button with Positive Indication Feedback	N171-009	Sarah Garvis	(407) 506-5104	SGARVIS@VIRTUALREALITYREHAB.COM
	Wolf Technical Services, Inc. Aircrew-Mounted Self-Adjusting Tether System	N171-026	Aaron Tolly	(317) 842-6075	ATOLLY@WOLFTechnical.COM
	Materials & Manufacturing Processes	Applied Optimization, Inc. Understanding Additive Manufacturing Solidification Profile Effects on Material Inhomogenities, Defects, and Qualification	N171-090	Anil Chaudry, Sc.D.	(937) 431-5100 x315
Composite Technology Development, Inc. Manufacturing Process Development for High Temperature Polymer or Nanocomposite Films for Dielectric Capacitors		N172-128	Mark Seeber	(303) 664-0394 x128	MARK.SEEBER@CTD-MATERIALS.COM
Creare LLC A Novel System for On-Site Structural Restoration Methods for Aircraft Components		N162-087	Paul Movizzo	(603) 443-2213	PGMOVIZZO@CREARE.COM
Directed Vapor Technologies International, Inc. Materials Modeling Tool for Alloy Design to Streamline the Development of High Temperature, High-Entropy Alloys for Advanced Propulsion Systems		N17B-T031	Matthew Terry	(434) 977-1405	MATT.TERRY@DIRECTEDVAPOR.COM
E&G Associates, Inc. Development of Explosive Feedstock for Commercial-off-the-Shelf (COTS) 3D Printers		N171-060	Bryan Ennis	(615) 752-9629	ENNIS@POWDERNOTES.COM

	Company/Topic Title	Topic #	POC	Phone	Email
Materials & Manufacturing Processes	Grid Logic Incorporated Rapid Sealing Technology for Navy Undersea Surveillance System Cable Joints	N162-130	George Caravias	(810) 728-2468	CARAVIAS@GRID-LOGIC.COM
	Lynntech, Inc. Development of energetic feedstock for COTS additive manufacturing	N171-060	Dr. Brian Hennings	(979) 764-2234	BRIAN.HENNINGS@LYNNTECH.COM
	Materials Sciences Corporation Improved Skirt System for Air Cushion Vehicles	N171-042	Michael Orlet	(215) 542-8400	ORLET@MATERIALS-SCIENCES.COM
	Meller Optics Inc. Reduced Cost Fabrication of Optical Sapphire Hyper-hemispheres for Submarine Masts	N161-036	Ted Turnquist	(401) 331-3717	TED@MELLEROPTICS.COM
	Mentis Sciences, Inc. Innovative Packaging to Achieve Extremely Light Weight Sensor Pod Systems	N17A-T007	Robert Lumpkins	(603) 624-9197	RLUMPKINS@MENTISSCIENCES.COM
	NanoSonic, Inc. Lightweight, highly breathable HybridSil® drysuit fabrics with instant watertight sealing	N171-008	Vince Baranauskas	(540) 626-6266	VINCE@NANOSONIC.COM
	Senvol LLC Using Machine Learning to Reduce Cost and Time to Qualify Additive Manufacturing Processes	N16A-T022	Zach Simkin	(646) 930-6386	ZACH.SIMKIN@SENVOL.COM
	Shepra INC. Optimized High Performance Stainless Steel Powder for Selective Laser Melting Additive Manufacturing (AM)	N16A-T007	Fred Herman	(817) 233-1942	FRED.HERMAN@SHEPRA.COM
	Taylor & Lego Holdings, LLC (TLH) / Rapid Composites Affordable Reinforced Polymer Composite Structures with Embedded Electrical Interfaces	MDA12-025	Alan Taylor	(941) 322-6647	ATAYLOR@RAPIDCOMPOSITES.COM
	Texas Research Institute Austin, Inc. Adaptable Standardized Modular Infrastructure for Optimal Space Utilization	N141-041	Vince Newton	(703) 944-4763	VNEWTON@TRI-AUSTIN.COM
	TRITON SYSTEMS, INC. Additive Manufacturing Technology for Sonobuoy Applications	N171-010	Connor Diehl	(978) 856-4215	CDIEHL@TRITONSYS.COM
Sensors and Processing	ARIA High Fidelity Acoustic Scattering Models for Large Objects	N171-080	Dr. Jason Summers	(202) 841-7451	JASON.E.SUMMERS@ARIAACOUSTICS.COM
	Colorado Engineering Inc. Advanced Direct Digital Exciter for Radar (ADDER)	N171-051	Andrew Stout	(719) 388-8582	ANDREW.STOUT@COLORADOENGINEERING.COM
	Dakota Ridge R & D Passive Characterization of the Refractivity Environment and Temperature and Water Vapor Vertical Distributions Afloat	N161-054	Dr. Fredrick Solheim	(303) 499-6866	DAKOTARIDGERANDD@GMAIL.COM
	HYPRES, Inc. Read Out of Single Photon Cryogenic Array Detectors Via Energy Efficient Digital Means	N162-125	Mike DeZego	(914) 592-1190 x7794	MDEZEGO@HYPRES.COM
	McQ Inc. SonoWatch: Navy Acoustic Situational Awareness System	N171-053	Ron Knobler	(540) 373-2374	RKNOBLER@MCQINC.COM
	MetroLaser, Inc. Three-Component Planar Doppler Velocimetry Measurements in a Full-Scale Aircraft Exhaust	N11A-T004	Thomas Jenkins	(949) 553-0688	TJENKINS@METROLASERINC.COM
	Physics Renaissance LLC Innovative Sensing Fasteners for Aircraft Fatigue Monitoring	N161-009	Andy Jenkins	(256) 652-3564	ANDY1@HIWAAY.NET
	Quantum Semiconductor LLC Development of High Gain SiGeC CMOS Imaging Arrays for Visible Sensing	NM12-158	Lynn Forester	(408) 243-2262	LYNN.FORESTER@QUANTUMSEMI.COM
	QUASAR Federal Systems, Inc. Miniature Oriented Tri-Axial Fluxgate Magnetometer Sensor	N172-116	Gayle Guy	(858) 412-1839	GGUY@QUASARFS.COM
	SA Photonics, Inc. Modulated Underwater Laser Imaging System - Discretionary PII Effort	N07-036	David Cushman	(408) 560-3500 x116	D.CUSHMAN@SAPHOTONICS.COM
	Science Systems Solutions, Inc. Fusion of Radar and Electro-Optical/Infrared (EO/IR) for Ship Classification and Identification	N172-108	Dr. Duy Nguyen	(858) 753-3234	DUY@SIGMA-3.COM
	Signal Systems Corporation Deep Learning for Clutter Reduction in Multi-static Coherent Active Sonar Systems	N171-005	Bradley Riddle	(410) 987-1552	BRAD@SIGNALSYSTEMSCORP.COM
	Transparent Sky Real Time Computation of Precision 3D Models Using Low Size, Weight, and Power (SWAP) Architectures	N171-096	Greg Walker	(907) 322-4084	GREG.WALKER@PREVISIONCORP.COM
	Ultimara Electro-Optic Transmissive Scanner	N17A-T001	Dr. Salah Khodja	(858) 663-0081	KHODJA@ULTIMARA.COM
	White River Technologies Development of Explosive Non-Acoustic Sensing on Remotely Operated Vehicles for Littoral Threat Characterization in Complex Seabed Environments	N17A-T015	Jack Foley, Ph.D.	(978) 479-9519	FOLEY@WHITERIVERTECH.COM
Weapons Technologies	Intraband LLC Super-Efficient Mid-Infrared Quantum Cascade Lasers with Continuous-Wave Wall-Plug Efficiencies in Excess of 40%	N17A-T006	Robert Marsland, Ph.D.	(408) 216-6920	RMARSLAND@INTRABAND.NET
	Special Aerospace Services, LLC Selective Emission of Light Utilizing Functionally-Graded Energetic Materials	N172-115	Allen Minor	(720)459-2998	AMINOR@SPECIALAEROSPACE SERVICES.COM
	XL Scientific, LLC dba Verus Research Fast Rise-time High Power Radio Frequency (HPRF) Pulse Shaping	N172-135	Michael Butcher	(505) 338-2179	MICHAEL.BUTCHER@VERUSRESEARCH.NET

