



# Innovation Sourcing Network Monthly

May/June 2021  
Vol 5, Issue 3



**Unmanned Underwater  
Vehicles in the Wild**

**Supplier 360**

**CMMC Assistance**

**Procurement Technical  
Assistance Centers**

**Open TechScouts**



**Scotty Miller II**  
VP, Supply Chain Management

Our focus this month is on our business out of Quincy, Massachusetts, and our Bluefin products family. Like all of our business areas, we need to ensure we understand and follow what our markets are doing. This business is not immune to the same market conditions that have affected many of our businesses.

Our job is to ensure we meet our commitments at General Dynamics Mission Systems, but more importantly we must ensure our supply base is strong and on level ground. We continue to be affected by the pandemic as well as shortages in raw materials for electronics and petroleum-based products. I am looking for all of us to maintain our focus and deliver on our business commitments and to engage our suppliers in continuous and strategic discussions. You have all done fantastic work the last 18 months, as have our suppliers and partners. And for that, I thank you.



**In This Issue**

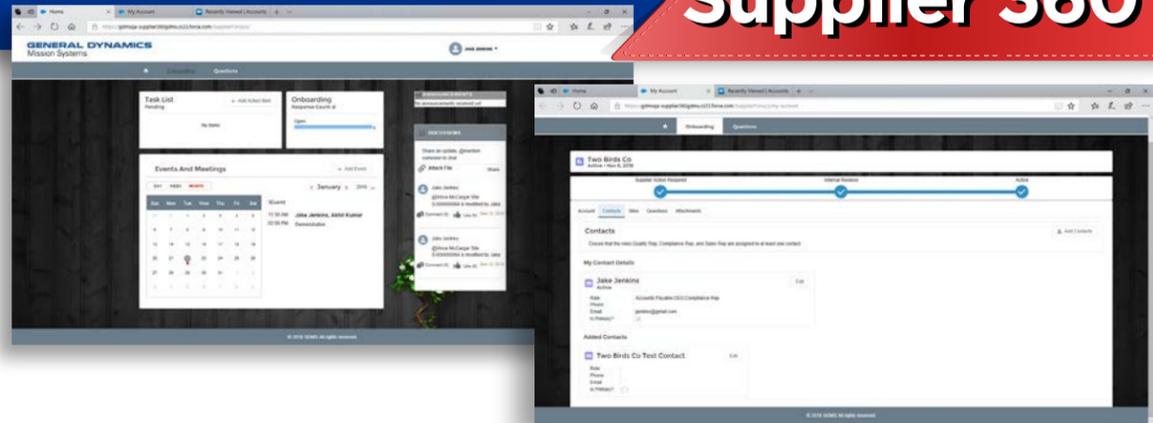
- 4 Keep Your Supplier 360 Profile Updated
- 5 Help With CMMC
- 5 Industry Events
- 6-7 Commodities Chart
- 8-10 U.S. Navy Deploys Autonomous UUVs Under The Ice
- 10 UUVs Making Their Mark
- 11 Do You Know Your PTAC?
- 12 Open TechScouts
- 13 The Supplier News and Information Center



About this publication: This is General Dynamics Mission Systems' Innovation Sourcing Network, open supplier innovation ecosystem monthly newsletter.  
© 2021 General Dynamics

# General Dynamics Mission Systems Doing Business With Us

## Supplier 360



### Keep Your Supplier 360 Profile Updated

The government Federal Acquisition Regulations (FAR) rules associated with small business (FAR 19.301-1, FAR 52.219-9 and 13 CFR 125.3) requires all purchase orders to have the proper North American Industry Classification System code (NAICS code) and Small Business Administration's (SBA) size standard in order to be counted as small business. We are requesting that all our suppliers, large or small, ensure this information is properly updated in the **General Dynamics Mission System Supplier 360 portal**.

All suppliers are requested to update their profile in Supplier 360, which is our primary system for sourcing of suppliers for procurement opportunities. To learn more about Supplier 360, or request activation if General Dynamics Mission Systems has issued your company a purchase order in the last thirteen months or you're one of our sub-contractors, please visit us at <https://gdmissionsystems.com/about-us/suppliers/s360>.

Regards,  
General Dynamics Mission Systems Supplier Chain Management Team

See the latest information and quick start guides here:  
<https://gdmissionsystems.com/about-us/suppliers/s360>

Thank you for your cooperation. We look forward to building the future together. If you have any questions or concerns, do not hesitate to contact [S360@gd-ms.com](mailto:S360@gd-ms.com).



**Joanne Chabot**  
Sr. Manager Supply Chain Compliance and Oversight

### Cybersecurity Maturity Model Certification Assistance

For more information on Cybersecurity Maturity Model Certification (CMMC), as well as other Department of Defense (DoD) cybersecurity initiatives, Project Spectrum is a recommended resource (<https://projectspectrum.io>). Project Spectrum is supported by the DoD Office of Small Business Programs, and provides information, training and risk assessments to help vendors improve cyber readiness and comply with DoD requirements. Additionally, the Procurement Technical Assistance Centers (PTACs) provide vendors free assistance, including assistance

CMMC

related to DoD cybersecurity initiatives, to help them pursue contracts from Defense Logistics Agency (DLA) and other federal agencies. For more information refer to: <https://www.dla.mil/SmallBusiness/PTAP/>.

## Industry Events Supply Chain Management SCM Events 2021

DATE	EVENT	LOCATION	SCM ATTENDEE
August 1-4	Sea-Air-Space Navy League Expo	National Harbor, MD	Katie Ducharme
August 16-19	TechNet Augusta	Augusta, GA	TBD
August 23-26	Space Symposium	Hybrid Event: Colorado Springs, CO & Virtual	ISN Team
September 20-23	Air Traffic Control Association (ATCA) Annual Conference	Washington, D.C.	TBD
September 20-22	Air Force Association (AFA) Air, Space & Cyber Conference	National Harbor, MD	ISN Team
September 21-23	Modern Day Marine	Quantico, VA	TBD
October 11-13	Association of the United States Army (AUSA) Annual Meeting & Exposition	Washington, D.C.	ISN Team
November 29-December 3	Interservice/Industry Training, Simulation and Education Conference (I/ITSEC)	Orlando, FL	TBD

# Commodities

## OPERATIONAL

### Products

Active Attenuators	Jacks	Shop Floor
Adhesives	Manufacturing & Machine Tools	Supls & Cons.
Air Circulators & Blower Eq.	Manufacturing Equip. & Mach.	Sonars
Antennas	Material Handling Equipment	Speakers
Asset Tools	Microphones	Standard
Audio Equipment	Motors	Pkg. Supples
Batteries & Chargers	MRO	Surge
Bells and Buzzers	Optical Instr.	Supressors
Chemicals, Lubricants & Grease	Packaging	Switches
Chillers	& Packaging Supplies	Tape
Circuit Breakers	Paint	Tents
Compressors & Vacuum Pumps	Pallets, Crates & Lumber	Test Equipment
Controls	Populated Racks (Enclosures)	& Calibration
Display Optics	Power Dist.	Trailers
Earphones	Radar Eq.	Transformers
Electron Tubes	Radio & Comms Eq.	Vehicles
Explosive Devices	Refrigeration - Cooling	UPS
Fan & Fan Assemblies	& Heating	
Furniture - Lab	Relays	
Generating Parts	Shelters	
Generators		
Handsets		
Headsets		
Indicating Parts		
Inspection Gages		
Inverters		

## MECHANICAL

### Products

Actuating Levers	Firing Pins	Ornamental
Antenna Masts	Flat Mechanical Part	Parts
Arms	Gaskets	Pistons
Bearings	Gears	Plastic-
Bellows	Glass parts	Fabricated
Bolts	Grommets	Items
Brackets	Heat Sinks	Plastics
Calibrated parts	Holding/ Positioning Parts	Pulleys
Cams	Insulating parts	Quick Release
Cases	Joy Sticks (Custom)	Plungers & Slides
Casters	Keypad	Raw Material
Castings	Membrane	Retaining parts
Chassis and Bases	Labels	Rivets
Container Hardware	Lanyards	Screens/ Ventilating Parts
Custom Fabric Parts	Lenses	Screws
Custom Packaging	Links	Sealing Parts
Decals	Machining	Sectors and Spools
Disks	Mechanical	Shafts
Drive Belts	Clutches	Sheet Metal
Drums	Mechanical Hardware	Shielding parts
Enclosure parts	Metals	Springs
Eyelets	Nameplates	Tags and Instruction
Fan Blades and Rollers	Nuts	Washers
Fasteners	Operating Control Parts	Wheels
Fastening Parts		

## COMPONENT AND ASSEMBLY

### Products

Bandpass filters	PCB-Mounted: Amplifiers, Passive
Capacitors	Attenuators, Passive filters, Transformers
Circuit board Assemblies	Populated Boards
Circuit boards	Power Amplifiers
Coil Forms	RF (Not Component Level)
Contract Manufacturing (Keypad Assemblies, Box Build, CCA)	Resistors
Converters (RF) - Up and Down	RF Assemblies
Delay Lines	RF Circulators
Flex circuits & Flex Assemblies	RF Filters
FPGA Boards	RF Mixers
Fuses	RF Switches
Inductive Devices	Semiconductors
Inductors	Sensors
Isolators - RF	Substrate
LED	TCXO
Limiters - RF	TLNB
Microcircuits	Tuners
Oscillators (Crystal)	Tuning Cores
	TWTA
	VCOs
	Waveguides

## IT HARDWARE AND SOFTWARE

### Products

Cameras
Cloud Platform
Cloud Infrastructure
Cloud Solutions
Computer Hardware
Hardware Services
IT Hardware & Software Maintenance
Networking
Networking Switches
Optical Transceiver
Routers
Servers
Software
Storage
Telecom
Video

## SERVICES

Commercial Services	Marketing / Advertising
Engineering Services (Including Testing)	Professional Consulting
Environmental Health & Safety	Trade Show Services Support
Facilities Support Services	University R&D/Capstone
Security Services	
Fleet Management	
IT Support Services	

## HR SUPPORT SERVICES

Recruiting  
Staffing  
Training

## TRAVEL

### Products

Airlines	Other Related
Car Rental	Travel
Ground Services (Airport Parking, Car Services, etc.)	Support Services (Agency, Technology, etc.)
Hotel / Lodging	
Meeting/ Events	
Sourcing Support	

## COMPOSITES

### Products

Diverter Strips
Dry Fabric/Roving/ Non-Woven Material
Honeycomb Core
Prepregs & Prepreg Tapes
Radome Bagging Materials
Thermal Barriers

## INTERCONNECT

### Products

Back Shells	Headers
Cable Assemblies	Holders
Cables	Sleeving
Computer Cables	Sockets
Connectors	Terminals
Cords	Wire

## ICEX 2020: U.S. Navy Deploys Autonomous UUVs Under The Ice

Article published 4/26/2021 by General Dynamics Mission Systems



*Under the ice and on top of the world. During the U.S. Navy's ICEX 2020 Exercise, one of our Bluefin-21 autonomous Unmanned Underwater Vehicles (UUVs) was put to the test in the harsh conditions of the Arctic Circle. (Image Credit: Dan McDonald, General Dynamics Mission Systems)*

As the Arctic ice is diminishing, interest in the region for defense, commerce, fishing and tourism is increasing. Understanding the ever-changing ocean, ice and atmospheric environment—especially in the Arctic—is essential in order to best equip the U.S. Navy with the most effective technology. During the U.S. Navy's recent biennial Ice Exercise (ICEX 2020), General Dynamics partnered with MIT to put the Bluefin-21 Macrura Unmanned Underwater Vehicle (UUV) to the test under the ice in the Arctic Circle.

In the following excerpt from an article in the [Naval Engineers Journal](#), Capt. Edward Lundquist, U.S. Navy (Ret.) describes the challenges of testing technology in these hostile, icy conditions and what researchers learned during the exercise.

There are many challenges involved with deploying UUVs in and around ice in polar regions. One of the limitations in the high north is the lack of land-based communications or satellite coverage. For systems that update their location using frequent GPS fixes, the lack of coverage becomes problematic. To demonstrate new technologies that can help unmanned underwater vehicles (UUVs), know where they are, the team used MIT's Macrura UUV based on the General Dynamics Mission Systems [Bluefin Robotics 21-inch \(diameter\) vehicle](#).

To overcome the limitations of persistent ice cover, which prevents surfacing to take a GPS fix, the team demonstrated an integrated communication and navigation-aiding framework known as the ICEX tracking range—or icex-tracker—to provide accurate positioning using network of surface buoys linked by radio communications to Camp Seadragon, equipped with small acoustic modems and transducers suspended beneath the ice.

"For ICEX 2020, our science team experimented with the MIT Macrura to navigate precisely while conducting a submerged mission," said Lt. Cmdr. Dan Goodwin, a naval officer and master's candidate in a graduate program jointly run by MIT and WHOI. "We can drill a hole in the ice and drop in an ice-tethered profiler that's anchored in the surface ice and has a suspended sensor below at predetermined depths that measures temperature and salinity versus depth. We can also attach modems to the tether that can communicate with a UUV.

We used four buoys about 2,000 meters apart, the same buoys that the submarines used, with micro modems at both 30- and 100-meters depths to compensate for the temperature and salinity differences in the water that affect acoustic propagation. This allowed the UUV to adaptively switch between modems depending on the depth of and range to the vehicle to ensure the most coherent acoustic communication. The travel time of those signals provided acoustic aided navigation for the UUV. The system was also able to compensate for currents, which can vary in in direction and intensity at different depths."

According to Goodwin, the system is completely scalable. "We could use more buoys to provide wider coverage, and provide positioning to all types of UUVs."

### REMARKABLE RECOVERY

Goodwin said launch and recovery of UUVs is tricky. In thick ice, it is especially challenging. The team had to cut a "hydro hole" 3 feet wide and 15 feet long in the 6-foot-thick ice, removing 8 tons of ice in order to make a hole large enough to place Macrura in the water.

"We were able to demonstrate under-ice navigation to near-GPS quality. The Macrura vehicle knew where it was, and we knew where it was."

In fact, at one point during the operation the vehicle stopped under the ice, and efforts to recover the vehicle were put on hold for a major ice storm. "Days later, we were able to go directly to where it was, cut a hole in the ice, and extract the vehicle," said Goodwin.

"The recovery wouldn't have been possible without the incredible accuracy of the navigation system which was improved further using the in-situ environmental model," added Schmidt.

Reproduced with permission from the American Society of Naval Engineers. [Read the full article here.](#)

### BEHIND THE SCENES PHOTOS FROM ICEX 2020



*At ICEX 2020, MIT partnered with General Dynamics to demonstrate new navigation technologies by deploying the Bluefin-21 Macrura UUV under a six-foot-thick sheet of ice. (Image Credit: Dan McDonald, General Dynamics Mission Systems)*

At ICEX 2020, the Bluefin-21 Macrura (right) was deployed under the ice and ran for several hours while operating completely autonomously, demonstrating the newly combined communication/navigation tracking system. (Image Credit: Chief Petty Officer Troy Barnhart, U.S. Navy)



# UUVS UNDER THE ICE



The MIT and General Dynamics team were able to successfully locate and recover the Bluefin-21 Macrura UUV through a "hydro hole" using the new navigation system. (Image Credit: Daniel Goodwin, MIT)

The Northern Lights illuminate Camp Seadragon, the temporary ice camp built for the U.S. Navy's biennial Ice Exercise. (Image Credit: Mass Communication Specialist 1st Class Michael Zingaro, U.S. Navy)



## More Articles about General Dynamics UUVs



### Paul Dalton, VP of Undersea Systems, Discusses How General Dynamics' UUV Capabilities Contribute to U.S. Maritime Superiority

[Read Article Here](#)

Article Published May 12, 2021, by General Dynamics Mission Systems



### Knifefish And The Future Of UUVs: A Discussion With General Dynamics Program Manager Mike Enright

[Read Article Here](#)

Article Published March 25, 2021, by General Dynamics Mission Systems



### General Dynamics Mission Systems Delivers First Knifefish Surface Mine Countermeasure Unmanned Undersea Vehicle System

[Read Article Here](#)

Article Published March 18, 2021, by General Dynamics Mission Systems



## Alexis Petro

Supplier Diversity Program Manager

### Do you know your PTAC?

As the Small Business team, we are often asked questions by small businesses that we do not have the expertise or resources to answer. A small business may need help with their SAM.gov registration, or may not fully understand the difference between the types of socioeconomic classifications and when they are able to self-certify or need a third-party verification. These are important distinctions that need to be

addressed, and fortunately as a small business, you qualify to utilize a Procurement Technical Assistance Center, or PTAC.

There are 94 PTAC Centers nationwide and 300 local offices. They serve to assist small businesses to compete successfully in the government marketplace. PTACs are part of the Procurement Technical Assistance Program (PTAP), which was authorized by Congress in 1985 and is administered by the Department of Defense, Defense Logistics Agency (DLA).

So which PTAC should you call? When you visit the [PTAC website](#) you can enter your business' address and it will direct you to your local office. Once in contact, you can receive assistance on not only SAM registration, but also a host of other topics regarding government contracting. Many PTACs will also host workshops and match-making events and provide one-on-one counseling. This is all provided at no cost to the small business.

A PTAC is an excellent resource for small businesses to develop their skills, establish their presence and grow their footprint in the federal marketplace. Get to know your PTAC and explore the benefit of these extra resources!

# SMALL BUSINESS

# TechScouts



TechScouts are our process to communicate our needs and technical opportunities with your organization. TechScout is critical to our supply chain process to source potential outside solutions. We need your innovative approaches to build partnerships to solve our customers' greatest challenges. Sign up to receive our alerts so that you can respond and share your innovative solutions with us.  
[gdmissionsystems.com/isn](https://gdmissionsystems.com/isn)

## Current Open TechScouts

### Thermoforming Machined Plastics

General Dynamics Mission Systems is seeking a partner to fabricate various machined plastic components using Royalite R85/21 ABS-Blue PMS 280. Must have thermoforming and machine capability.

For More Information, visit [gdmissionsystems.com/isn](https://gdmissionsystems.com/isn)



## The Supplier News and Information Center

is now available on the  
General Dynamics Mission Systems website  
[www.gdmissionsystems.com](https://www.gdmissionsystems.com)

GENERAL DYNAMICS  
Mission Systems

LAND SEA AIR SPACE CYBER ABOUT NEWS & EVENTS CAREERS CONTACT

search

## Suppliers



General Dynamics Mission Systems has established the **Supplier News and Information Center** on the Supplier page of our website to keep our supply chain partners informed with critical information relating to our operating status and the adjustments we are making in response to the COVID-19 outbreak.

Search under **About** and **Suppliers** to click on the **COVID-19 Information for Suppliers** button.

Visit <https://gdmissionsystems.com/about-us/suppliers/news>  
for continued updates for our Supply Chain team.