



Triton Systems

Technologies & Solutions For Advancing U.S. Navy Capabilities



Navy Needs

The U.S. Navy is our country's first line of defense – not only close to home, but often far from our shores. New technologies play a significant part in keeping our nation's Naval enterprise the best in the world.

In continuing its objective of building the future force, Triton responds to the Navy's need by providing solutions through research and development – and creating new products that enhance and support the fleet on land, air and sea.



Our Expertise

Triton has over 20 years of experience in the research, design and development of naval technologies. Our focused team of engineers and scientists offer expertise in critical areas where technological advancement is needed by the U.S. Navy.

Key capabilities include: robotics, acoustics, sensing/biosensing, materials, mechanical engineering, product design, complex modeling, and integrated system design.

Creating Targeted Teams

Integral to our philosophy is to collaborate with strategic partners who are the top in their field. We partner with educational institutions, small businesses as well as larger prime contractors and also individuals to create experienced multi-disciplinary teams with the capabilities needed to develop superior technologies for the Navy.

Our facilities, and those of our partners, complement our capabilities with state-of-the-art equipment and laboratories to support R&D and manufacturing efforts.

Our Core Capabilities

- ▶ Marine Robotics
- ▶ Acoustics & Hearing Protection
- ▶ Electronics, Sensors, & Microsystems
- ▶ Shipboard Additive Manufacturing
- ▶ Reverse Engineering Protection
- ▶ Lightweight High Temperature Materials

Technologies

AVIATION SOLUTIONS

Contamination Resistant Bearings and Bushings

Extending bearing life and reducing associated safety risks for land vehicles and aircraft operating in contaminant-rich environments

Our novel strategy addresses liner wear which can be accelerated by liquid and solid contamination in spherical bearings on fixed wing and rotorcraft with oscillating loads. Our contamination-resistant bearing reduces contamination of airframe bearings without significant additional friction or cost, increasing bearing life, and reducing scheduled maintenance – and will not impact bearing installation procedures. Our patent-pending solution is targeted to the V-22 Osprey and other military rotorcraft, but can be adapted to custom and standard spherical bearing and bushing sizes.



Triton's focused team of engineers, scientists and partners offer expertise in critical areas of interest to the US Navy.

s for U.S. Navy Applications

MARINE ROBOTICS

Robotic Anchoring System

Temporary moorings for ship-to-shore and expeditionary craft

Triton has recently developed the SeaStar Anchor, an automated shallow water anchoring/securing system. This system is suitable for use in all bottom types encountered by U.S. Navy craft. The SeaStar Anchor reduces scope of anchor line and does not need to be redeployed in the case of high sea state or tidal change. It also reduces the likelihood of error while requiring fewer personnel, less time and training, and can be scaled for use on small and large vessels as well as floating platform systems.



Long Endurance Autonomous Underwater Vehicle

An in-situ system for monitoring critical choke points for months at a time

Triton's TURTLE is a more effective and economical solution to monitor the area around a sea base, port, shipping lane, or littoral area of interest. It uses energy harvesting techniques to transit long distances, hold station for months in high-current environments found in littoral areas, and conduct discreet surveillance.



ACOUSTICS

Diver Hearing Protection

Noise attenuation for divers

Navy divers experience high noise levels during typical operations from tools and air supply. These high noise levels impede safe mission execution by interfering with communication and result in the highest rate of hearing loss in the Navy. Some noise sources can be reduced through engineering controls, but this takes time and many pieces of equipment are difficult to change. Divers cannot wear traditional hearing protection devices due to dive conditions.

Responding to this critical need, Triton has developed an innovative approach to noise attenuation and improved communication in dive helmets.

Sonar Algorithms & Structural Noise Reduction for Sonobuoys

Improved ASW (anti-submarine warfare)

Sonobuoys are a key tactical tool for gathering intelligence and creating controlled areas. Triton provides a variety of innovative technology approaches for emerging sonobuoys.



The team is currently developing improvements to the AN/SSQ-101B sonobuoy to increase detection capabilities through improved processing algorithms and reduced structure-borne noise contamination.



In Ear Physiological Monitoring

In-situ physiological monitoring and hearing protection evaluation system

With our expertise in acoustics, sensors, and microsystems, we are currently developing an in-ear monitoring system to provide physiological monitoring including hypoxia, pressure, and noise level. Physiological monitoring in the ear allows for a low cost system with minimal impact on warfighter load.

VA compensation for hearing loss is currently over \$2B annually, and is the top disability facing soldiers as they return home. This system can be used to qualify and evaluate earplugs and other hearing protection in the real world environment as worn by the specific end user to ensure the best products are being used and being used correctly.

Non-Linear Hearing Protection

Non-linear attenuation, blocking loud sounds while allowing quieter sounds to pass

During normal operations the Warfighter is exposed to dangerous noise levels, but many do not wear available hearing protection devices because they impede their situational awareness and ability to communicate.

Our innovative passive earplug activates noise attenuation in the presence of loud sounds but allows sound to pass through in normal noise environments.

Our low-cost disposable solution has outperformed the state-of-the-art passive earplugs in testing, providing hearing protection without compromising critical situational awareness.

ADDITIVE MANUFACTURING

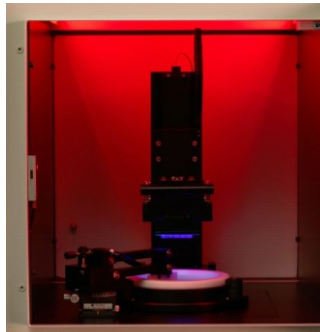
Supply Chain Management

Improving supply chain management while allowing shipboard manufacturing of failed or replacement parts

Repairing or replacing components while the fleet is underway involves long lead times or limited inventory availability. Additive manufacturing (3D printing) will allow the needed part to be manufactured shipboard.

Triton Systems is expanding the materials available for additive manufacturing. We are:

- ▶ Addressing shipboard Flame, Smoke, and Toxicity (FST) concerns by incorporating our unique flame retardant polymers into the feedstock of standard additive manufacturing tools.
- ▶ Developing in-process nondestructive inspection to ensure the parts produced meet their specifications despite the ship's motion and humid environment.
- ▶ Developing reusable masking materials for jet engine component sustainment as well as ceramic molds for metal casting.



Contact us Today!

For more information on our technologies or how Triton can assist with your current or future needs contact us at:
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About Triton

Triton Systems, Inc. (Triton) is an advanced technology development company headquartered in Chelmsford, Massachusetts. Triton selectively combines U.S. Government funds with private equity investments to transition ideas to the marketplace. Founded in 1992, Triton, along with its affiliates, has three locations in Massachusetts, a life science group in Berkeley, California, and a manufacturing site in Antwerp, Belgium.



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