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 25 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**
- **Force Sustainment Systems**
- **Engineered Systems**

Technologies

LIGHTWEIGHT HIGH TEMPERATURE MATERIALS

Light-Weight Vehicle Exhaust System for Amphibious Vehicles

A composites-of-composites design to reduce weight and external surface temperature.

Triton's light-weight, multilayered composite exhaust system technology is designed to replace legacy and future metal exhaust systems. Initial prototype testing demonstrated that Triton's technology reduces overall weight by approximately 50% at approximately 55% of the target cost with no performance degradation. The initial target platform for this technology is the USMC Amphibious Combat Vehicle (ACV).

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.

for U.S. Navy Applications

FORCE SUSTAINMENT SYSTEMS

Low Power Water Purification System

Marine-powered reverse osmosis system to purify brackish water

USMC Warfighters operate in austere environments where local water must be purified before drinking. Triton is currently developing a low-power, hand-operated reverse osmosis (RO) system to desalinate brackish water which will allow Warfighters to sustain themselves until resupply operations can be conducted.

The device is smaller in size than current hand-operated sea water RO systems and includes an energy recovery pump to minimize operator fatigue and special membrane coatings that will increase water production and minimize fouling. This will permit continued operation in austere environments for several weeks when resupply of potable water cannot be regularly made.

ACOUSTICS

Diver Communication Systems

Improved intelligibility and hearing protection for divers

Triton's Diver Communication System simultaneously increases intelligibility and reduces noise exposure to below harmful levels. The system has been prototyped and increased intelligibility has been verified for divers transmitting and receiving messages. The system is also a drop-in replacement of the existing communications suite which does not require any modifications to the helmet or breathing regulator. While this communication system has been designed specifically for helmeted divers, it could be adapted for use by other branches of military service with unique communication system requirements.

Level Dependent Hearing Protection

Earplugs that block loud sounds while allowing quieter sounds to pass

To maintain the ability to hear and localize soft noises in the field, dismounted soldiers will often forgo hearing protection, leading to later hearing related injury. Triton's True Awareness Hearing

Protector solves that problem by using an acoustic filter to allow low level noise through while blocking harmful loud noises. The design also minimizes the effects on the warfighters situational awareness and ability to detect and localize low level noise. Our low-cost solution has outperformed the state-of-the-art passive earplugs in testing, providing hearing protection without compromising critical situational awareness.

Sonar Algorithms & Structural Noise Reduction for Sonobuoys

Improved ASW (anit-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.

MARINE ROBOTICS

Robotic Anchoring System

Temporary moorings for ship-to-shore and expeditionary craft

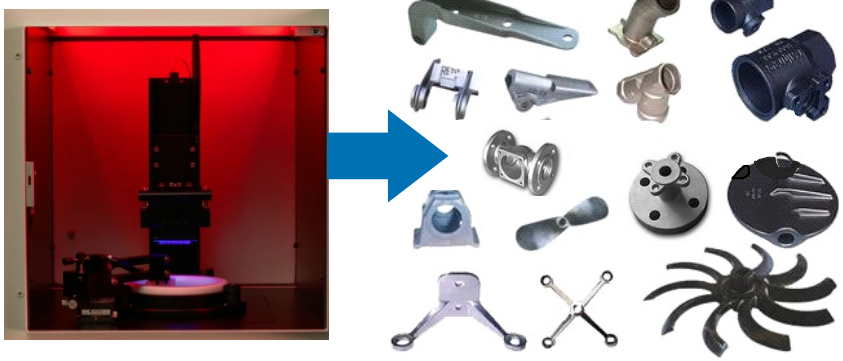
Triton SeaStar Anchor is an automated shallow water anchoring/securing system. This system is suitable for use in all bottom types encountered by U.S. Navy craft.

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.

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: telephone number 978-856-4193 or email info@tritonsytems.com.

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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