

Department of the Navy SBIR/STTR Transition Program

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MCSC-PRR-2474

Topic # N153-127

Low Power Water Purification System

Triton Systems, Inc.

WHO

SYSCOM: MARCOR

Sponsoring Program: PM Engineer Systems

Transition Target: PM Combat Support Systems (CSS), Family of Water Purification Systems

TPOC:

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Other transition opportunities:

- NAVSEA
- NAVAIR
- Special Operations (JSOC)
- Army
- Air Force
- Disaster Relief (FEMA)

Notes:

• Image of Low Power Water Purifier and typical estuarine operating environment.

• Triton Systems is a Global Business Venture company that successfully launches innovative products and solutions in emerging markets worldwide. We invest in new technologies through in-house incubation and external partnerships – creating thriving businesses from novel ideas.



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WHAT

Operational Need and Improvement:

- USMC Warfighters operate in austere environments where local water must be purified before drinking.
- Resupply of water is difficult and expensive via air-drop or convoy.
- Freshwater purification systems cannot purify brackish water.
- Current small-scale seawater purifiers do not produce enough water.
- A brackish water purifier is needed to support USMC Warfighters.

Specifications Required:

- Meet purification standards in TB MED 577.
- Support Squad-level need to purify 6-10 gallons of water in 1 hour.
- Weigh < 10 lbs.
- Purify brackish water with salt content up to 5000 ppm.
- "Marine-powered".

Technology Developed:

- Marine-powered reverse osmosis system that meets TB MED 577 water quality.
- Low-power input enabled by energy recovery pump.
- Anti-fouling coating increases filter permeability for increased water production.
- Provides drinkable water for 30 days from brackish source.

Warfighter Value:

- Enables purification of saline surface water.
- Reduces amount of water carried on mission.
- Improves field self-sufficiency of USMC Warfighter.
- Reduces or eliminates logistics and cost of water resupply.
- Enables missions not otherwise possible due to resupply constraints.

WHEN

Contract Number: M67854-17-C-6540 **Ending on:** March 4, 2019

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Gen 1 Prototype Demonstration (End of Phase II Base)	Med	Purification of challenge water to meet TB MED 577.	TRL-5	2nd QTR FY19
Gen 2 Prototype Demonstration (End of Phase II Option)	Med	Successful water purification while meeting weight and size requirements.	TRL-6	1st QTR FY20
Gen 3 Prototype Demonstration (During Field Test)	Med	Successful water purification field test in an operational environment	TRL-7	4th QTR FY20

HOW

Projected Business Model:

- Triton Systems will manufacture Low Power Water Purifier for Marine Corps.
- Plan direct manufacture at low-rate with transition to contract manufacturing.
- Will apply for patent protection on any resulting IP.

Company Objectives:

- Triton may elect to license or sell the technology to a third party as the business opportunity develops.
- We will seek other military and non-military applications for this technology.

Potential Commercial Applications:

- Potential non-military uses for disaster relief in coastal regions where ground and surface water sources are contaminated with seawater.
- Anti-fouling coating can be used to improve the performance of sea water RO systems.
- Improved hand-operated survival system for life rafts and downed air crews.

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