

Department of the Navy SBIR/STTR Transition Program

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NAVSEA #2016-621

Topic # N141-056

Waterproof Towed Array Hosewall

Texas Research Institute Austin, Inc.

WHO

SYSCOM: NAVSEA

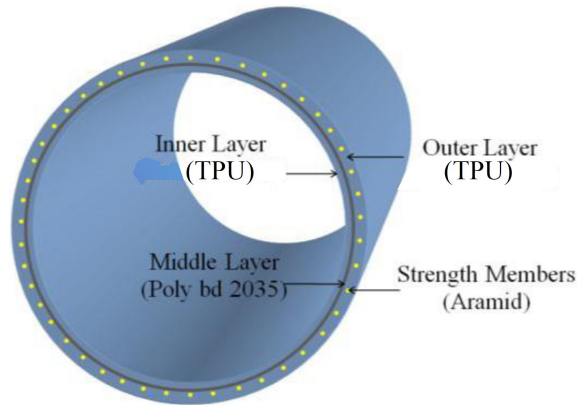
Sponsoring Program: Naval Sea System Command

Transition Target: SSN-688, SSN-688I, SSN-21, SSN 774

TPOC:
(202)781-4058

Other transition opportunities:

Low water absorption polyurethanes have potential use in many subsea applications within the Navy, off shore oil and gas, and commercial underwater markets.



TRI/Austin, Inc. 2016

WHAT

Operational Need and Improvement: The improved performance of the Thermoplastic polyurethane (TPU) hydrophobic backbone reduces permeation through the system there by extended the service life of various towed array systems.

Specifications Required: Water transmission rates will be evaluated comparing performance for physical properties, the tests will include hardness, abrasion resistance, specific gravity and density, and acoustical properties..

Technology Developed: Demonstrating the feasibility of reducing the water permeation in TPU hosewall designs by incorporation of a TPU having a hydrophobic polymeric backbone. These results indicate that water permeation can be reduced by a factor of five to ten by incorporation of the hydrophobic TPU.

Warfighter Value: Extending the service life of towed array systems by reducing water permeation will reduce maintenance costs, extend procurement cycles, and allow for better long term performance of towed array systems across the fleet.

WHEN

Contract Number: N00024-16-C-4008 **Ending on:** February 21, 2018

| Milestone | Risk Level | Measure of Success | Ending TRL | Date |
|-------------------------------|------------|----------------------------|------------|----------------|
| Performance Screening Testing | Med | Meet Physical Requirements | 3 | October 2016 |
| Prototype Validation Testing | Med | Meet all requirements | 4 | March 2017 |
| Accelerated Life Testing | Med | Meet Service Life | 5 | September 2017 |
| Qualification Testing | Med | Perform in Field Testing | 6/7 | January 2018 |
| Scale Production | Med | Meet all Requirements | 7 | January 2019 |

HOW

Projected Business Model: TRI will be looking for sub tier licenses for this technology with both Navy primes, secondary Navy vendors along with commercial applications. The licences will be specific to market segment and will be reflected in the terms and conditions.

Company Objectives: TRI's long history in subsea components failure analysis, accelerated life testing and material solutions for extending service life of cable and connectors, sonar systems, and towed arrays should continue to make TRI the market leader in these area's. TRI is interested in discussing the low water absorption hose wall technology with Navy primes who manufacture towed array systems.

Potential Commercial Applications: The off shore oil and gas market has many of the same issues facing them as does the Navy, making them a prime market for these low water absorption material technologies.

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