

Topic: N141-026

BTech Acoustics LLC

Innovative Velocity Sensors

BTech has developed acoustic motion accelerometers for underwater hull and bow array applications that offer higher sensitivity and bandwidth which achieve better detection performance. BTech has developed this technology for use with hull and bow arrays of passive sensors for new submarines by leveraging its staff's combined experience of over 60 years of technical achievement in underwater acoustic transducer designs. Through Phase II prototyping and testing BTech has verified the functionality and innovation of this highly acoustic motion sensor. Having unmatched expertise in transducer design innovations, BTech's goal is to integrate and transition this technology into government and prime contractor systems for improving detection capability.

Technology Category Alignment:

Command, Control, Communications, Computers, & Intelligence (C4I)

Sensors

Battlespace Environments

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SYSCOM: NAVSEA

Contract: N68335-19-C-0256



Corporate Brochure: https://navystp.com/vtm/open_file?type=brochure&id=N68335-19-C-0256



Tech Talk: <https://www.youtube.com/watch?v=3iLu4eJ4hXI>

Department of the Navy SBIR/STTR Transition Program

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NAVSEA #2020-0420

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WHO

SYSCOM: NAVSEA

Sponsoring Program: PEO IWS 5.0 / Undersea Warfare Systems

Transition Target: Navy Fleet submarine bow array

TPOC:
(401)862-5340

Other transition opportunities:
Submarine Hull Array



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WHAT

Operational Need and Improvement: The Navy is developing technologies for building and installing large SONAR arrays external to the hull of a submarine. These technologies allow for a lightweight, scalable array which provides many options for installation and deployment. Integral to these arrays are the acoustic particle velocity sensors. There are several velocity sensors available for use; however, these sensors do not meet the improved sensor sensitivity desired by the Navy in order to increase the capability of submarine flank SONAR arrays. In addition, current sensor technology does not meet all the sensor environmental requirements that come with being installed on a submarine external to the pressure hull.

Specifications Required: The Navy needs an innovative sensor solution that can meet all the performance, form factor, and environmental requirements while striving to reduce per channel cost. This requires innovation at the design level to trade off all the performance and environmental requirements against packaging of the sensor as well as to facilitate automation during the production phase.

Technology Developed: BTech has developed acoustic motion accelerometers for underwater hull and bow array applications that offer high sensitivity and wide bandwidth to achieve excellent detection performance. Demonstration of shock survivability is underway.

Warfighter Value: This technology will benefit the Navy by providing an affordable sensor solution for future arrays that are external to the submarine pressure hull. BTech produced sensors that offer excellent sensitivity and bandwidth coverage to support detection performance needed for mission success. New production methods will reduce cost, improve reliability, and reduce maintenance.

WHEN

Contract Number: N68335-19-C-0256 **Ending on:** February 24, 2021

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Pass CST Shock Test	Med	Satisfactory survivability after exposure to shockwave	5	December 2020
Acoustic Calibration	Med	Meets sensitivity and frequency response spec	5	December 2020
Deliver 9 sensors for panel test	Med	Installed and tested in 3x3 array	5	May 2021

HOW

Projected Business Model: BTech will make the sensors and provide them to the Navy and their major defense contractors.

Company Objectives: BTech's objective is to design, manufacture, sell and support the new innovative velocity sensors. We wish to discuss this technology with program in need of conformal acoustic sensors.

Potential Commercial Applications: Potential commercial applications include Geophysical Oil Exploration, harbor surveillance

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