

Topic: N161-027

## BTech Acoustics LLC

Shallow Water Communications for Mine Warfare

BTech has developed an LPD/I (Low Probability Detection/Interception) Acoustic Modem that provides covert long-range broadband underwater communication. The modem is customizable, modularly designed, reconfigurable and cost-effective. BTech has developed this technology to enhance covert communication by leveraging its staff's combined experience of over 60 years of technical achievement in underwater acoustic transducer designs. Intended applications include communications between mine countermeasure platforms but could be adapted for any underwater communications needs. The functionality and innovation of this acoustic modem has been verified through Phase II prototyping and testing. 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 mission communication, control and covertness.

### Technology Category Alignment:

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

Weapons Technologies

Advanced Electronics

### Contact:

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**SYSCOM:** NAVSEA

**Contract:** N00178-18-C-9001

 Corporate Brochure: [https://navystp.com/vtm/open\\_file?type=brochure&id=N00178-18-C-9001](https://navystp.com/vtm/open_file?type=brochure&id=N00178-18-C-9001)

# Department of the Navy SBIR/STTR Transition Program

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NAVSEA #2020-0388

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## WHO

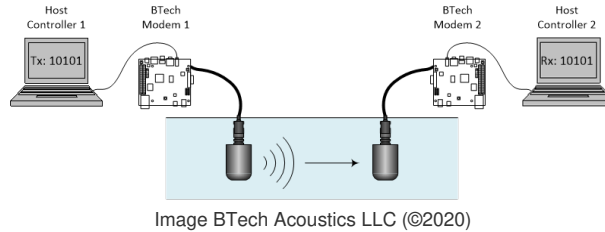
**SYSCOM:** NAVSEA

**Sponsoring Program:** PEO USC  
PMS 495, Mine Warfare Program  
Office

**Transition Target:** MIW - Command  
and Control

**TPOC:**

**Other transition opportunities:** Other  
underwater communication programs



## WHAT

**Operational Need and Improvement:** Underwater communication technologies for Naval warfare applications need improved Command and Control performance in order to be operationally useful; in particular, reduced power consumption, increased range, and more reliable data reception and transmission in a littoral environment. The objective of this topic is to develop an innovative, secure wireless communications technology for use on Naval warfare systems to enable command and control in the hostile littoral environments.

**Specifications Required:** Reduction of power consumption of at least 15% and/or increased range of at least 25%, when compared to existing COTS acoustic modems. Effective command and control of mine warfare systems requires two-way communication with reliable data transmission and reception over a range of 1000+ meters. Data is expected to consist of simple commands and confirmation signals, using Low Probability of Detection (LPD) and Low Probability of Intercept (LPI) techniques with standard encryption protocols to prevent interception or spoofing. The desired solution is a receiver/transmitter, including any required signal processing, that is able to receive a signal from a remotely located, underwater command source and transmit a confirmation signal and system status back to the original source. The system should include involved innovative signal processing and multi-modal transmission and reception methods, including both hardware and software.

**Technology Developed:** BTech has developed an LPD/I (Low Probability Detection/Interception) Acoustic Modem that provides covert long-range broadband underwater communication. The modem is customizable, modularly designed, reconfigurable and cost-effective.

**Warfighter Value:** This technology will enable warfighters to remotely "turn on," "turn off," underwater systems. The desired solution is a receiver/transmitter, including any required signal processing, that is able to receive a signal from a remotely located, underwater command source and transmit a confirmation signal and system status back to the original source.

## WHEN

**Contract Number:** N00178-18-C-9001 **Ending on:** February 6, 2021

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Test in large pond	Med	Performs communication at distance to 300ft	4	June 2020
Repeat Test in Pond or Bay	Med	Performs communication at distance to 1500ft	5	July 2020
Additional testing	Med	Support testing with Navy	5	October 2020

## HOW

**Projected Business Model:** BTech will provide the modems directly to the Navy program office or their designated technical agent or prime contractor.

**Company Objectives:** BTech's objective is to design, manufacture, sell and support the acoustic modem. We wish to discuss this technology with Undersea Warfare programs that have a need for LPI/D underwater communications with increased range over present systems.

**Potential Commercial Applications:** Potential commercial applications include oil and geophysical applications, including exploration.

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