

NAVY Transition Assistance Program

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NEED & CUSTOMER REQUIREMENT

- Need:**
- Better options for underwater communications
 - Technologies to protect the hearing of divers
- Value to the Warfighter:**
- Greater opportunity for communications during underwater operations
 - Ability to work longer underwater with less risk of hearing loss
- Operational Gap:**
- Currently available communications devices for free swimming divers are cumbersome and hard to keep in place.
 - Very few if any noise reduction technologies are available for divers.
- Customer Specifications:**
- Earphone must work to 300' depth, permit easy pressure equalization.
 - In-helmet device must be integrated with communications, provide substantial noise reduction.
- Technology Description:**
- Small in-ear earphone for use with SCUBA employing very high output piezoelectric drivers
 - Active Noise Reduction for helmeted divers
 - Active skull vibration reduction of bone conducted noise for free swimming divers

TECHNOLOGY DEVELOPMENT MILESTONES (SBIR/STTR)

Milestone	TRL	Risk	Measure of Success	TRL Date
In-ear earphone: Pool demonstration	6	Low	High score on audiometric word recognition tests	February 2009
In-ear earphone: Demonstration by Navy divers	7	Low	Good speech recognition at operational depths	February 2010
In-helmet ANR system: Delivery of prototype	5	Moderate	Significant reduction of noise in helmet under dive conditions	Late 2010
Bone conduction ANR for SCUBA: Preliminary design	3	Moderate	Demonstration of active control of skull vibration	Late 2010

Open contract: N00014-08-C-0861 ending 24 February 2010

N07-076 - Acentech Incorporated

Design of Transducers for Underwater Communications and Hearing Protection

SPONSORSHIP of original SBIR/STTR Topic

SYSCOM: ONR - SBIR

Transition Target: All divers including Navy, other DoD (NAVSEA 00C) and commercial

Original Sponsoring Program: PMS 415 Undersea Defensive Warfare Systems

TPOC Phone Number: 703.696.0367



TECHNOLOGY TRANSITION OPPORTUNITIES (PHASE III)

- Other Potential Applications:**
Novel communications devices for commercial and recreational divers
- Business Model:**
Acentech will license to and/or establish a joint venture with established companies for the manufacture of the wet ear communications device, the helmeted ANR device and the skull vibration ANR device.
- Objective:**
- Partner with Prime diving suppliers such as OTS or Kirby Morgan to jointly manufacture and/or purchase developed products and leverage these established channels to sell into military and commercial markets.
 - Seek additional prototype testing opportunities at NAVSEA-00C's premier diving RDT&E facility, Navy Experimental Diving Unit.