

NAVY Transition Assistance Program

NAVAIR Public Release 09-1285 Distribution: Statement A-"Approved for public release; distribution is unlimited."

N07-019 - Brainlike, Inc.

Auto-Adaptive Whale Detection

NEED & CUSTOMER REQUIREMENT

Need: A method of automatically detecting whale breaches is needed to assure that open ocean training and testing activities are not carried out in a manner that brings harm to marine species in reference to the Marine Mammal Protection Act. Maritime patrol aircraft need all-weather, all-light sensors that can detect and track whales as they breach the ocean surface at extended collection ranges.

Value to the Warfighter: A solution will enable the warfighter to carry out training missions safely and with reduced manning for marine mammal detection.

Operational Gap: Commercial maritime search radars have been demonstrated to be able to detect whale breaches in low sea states (<3). However, there is no data on how well these radars can detect whale breaching in higher sea states (>3).

Customer Specifications: A whale tracking system that will allow the use of automated techniques that make the affordable radar a cueing sensor for high-resolution systems such as electro-optic (EO)/infrared (IR) cameras; automated techniques to use affordable radar systems to detect and track a variety of maritime objects; and a multi-sensor approach that performs range clearance with a minimum set of sensors.

Technology Description: Brainlike's solution is an aerial radar platform, Auto-Adaptive Whale Search Radar (WSR), with the Brainlike Processor(TM) running automatic target recognition (ATR) algorithms. With ATR and reduced false alarm rates (FARs), the Brainlike Processor(TM) will detect and track breaching whales as vector icons that plot with periodic updates on a moving map display system using all-weather, day-night sensors. Besides reducing distracting clutter and false alarms, Brainlike Processor(TM) technology reduces transmission costs when installed on remote sensors systems, upstream of telemetry.

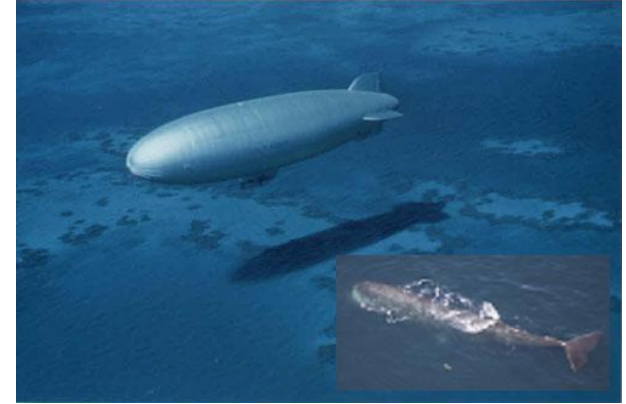
SPONSORSHIP of original SBIR/STTR Topic

SYSCOM: NAVAIR

Transition Target: Marine Mammal Mitigation Program

Original Sponsoring Program: PEO(A) - PMA-264

TPOC Phone Number: (301) 342-0043



TECHNOLOGY DEVELOPMENT MILESTONES (SBIR/STTR)

Milestone	TRL	Risk	Measure of Success	TRL Date
Proof of concept - Develop and test Whale Search Radar (WSR) platform that can cue Whale Confirmation and Classification (WCC) system	3	Low	Aerial WSR platform successfully cued WCC system in St. Lawrence Seaway tests performed with Provincial Aerospace Ltd.	August 2008
Integrate low-cost commercial Furuno radar to fit and operate on low-cost commercial aerial platform; detect and record raw radar data of surfaced Cetaceans from radar platform operating in marine environment	4	Moderate	Detection of cetaceans using Furuno radar platform in marine-based system mounted on a 40 foot mast operated with Infrared, Inc.; confirm detections with an EO/IR camera system	March 2009

Open contract: N68335-07-C-0288 ending 23 August 2009

TECHNOLOGY TRANSITION OPPORTUNITIES (PHASE III)

Other Potential Applications:

Other potential DoD applications include identifying events of interest from video cameras mounted on terrestrial unmanned aircraft systems (UASs) and, passive and active sonar submarine detection, submerged magnetometer sensing and underwater mine detection using unmanned undersea vehicles (UUVs).

Business Model:

Brainlike will license the Brainlike Processor(TM) to commercial firms that deliver marine mammal detection services to the DoD and other government agencies.

Objective:

Brainlike, Inc. is seeking funding by a Navy program office for further testing on an aircraft.

Company: Brainlike, Inc.

Contact: Mr. John Tatum

Email: tylertatum@brainlike.com

Phone: (404) 783-0923