

NAVY Transition Assistance Program

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N07-025 - Tiburon Associates, Inc.

Next Generation Aircraft Wiring Insulation

NEED & CUSTOMER REQUIREMENT

Need: The customer seeks the development of next generation aircraft wire insulation to reduce wiring failures and increase aircraft mission life. Aircraft non-availability, causing missions to be canceled, is both costly and can be detrimental to the well-being of the warfighter. Wire failure during a mission can cause mission abort, and in extreme cases, loss of equipment and pilot. Therefore, it is most important that aircraft availability be maximized and that maintenance, intermittent failures, and hard wiring failures be minimized.

Value to the Warfighter: Tiburon's insulation will provide increased arc track resistance, hydrolysis resistance and abrasion resistance. The ultimate value to the warfighter is increased operational life of wire insulation and therefore, aircraft availability.

Operational Gap: Current wire construction technology was first introduced in 1991 and although there have been some improvements; there has been no significant advancement in performance.

Customer Specifications: The customer used AS22759 wire as the baseline and desires increased arc track resistance, hydrolysis resistance, and increased abrasion resistance. Lighter wire weight, vibration tolerance and increase temperature operation are also desirable characteristics.

Technology Description: Modified polyimide wire insulation that has improvement in physical and chemical characteristics over current wire insulation (improved arc track resistance, hydrolysis resistance, abrasion resistance). This wire insulation also weighs less than current wire insulation constructions.

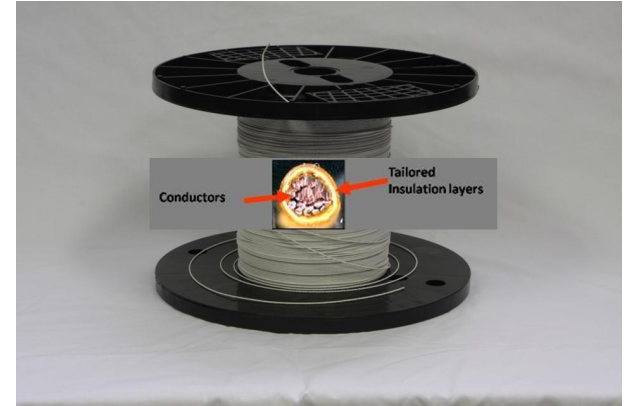
SPONSORSHIP of original SBIR/STTR Topic

SYSCOM: NAVAIR

Transition Target: V-22

Original Sponsoring Program:
PMA-275 (V-22 Program)

TPOC Phone Number:
(301) 342-0899



TECHNOLOGY DEVELOPMENT MILESTONES (SBIR/STTR)

Milestone	TRL	Risk	Measure of Success	TRL Date
Define coating process and insulation layers	5	Moderate	Defined insulation layers and adhesion between layers	December 2009
Complete risk reduction plan implementation	5	Moderate	Continuous updating of risk reduction plan and implementation, reduce cracking, successful adherence	January 2010
Second Prototype Wire Construction	5	Moderate	Successful run at Nexans plant, wire available for testing	Feb - March 2010
Final Phase II Option Testing and Evaluation	6	Moderate	Testing of wire from prototype runs and any additional lab runs; successfully pass testing of AS22759 requirements	April - May 2010

Open contract: N68335-07-C-029 ending November 2009

TECHNOLOGY TRANSITION OPPORTUNITIES (PHASE III)

Other Potential Applications:

Wiring is a commodity product and therefore, advances in insulation could be of interest across the Department of Defense for use in all fixed wing and rotary aircraft. The commercial market also presents a potential area for application pending specification modifications.

Business Model:

1. Develop insulation material license to wire manufacturer (AS 22759 type wire)
2. Coat conductor and coat outer layer (in-house or contract out)
3. Become wire material developer and specialty wire products for self healing wire, high abrasion resistance wire, lower toxicity wire insulation.

Objective:

Tiburon Associates Inc. is interested in meeting with Program Acquisition Offices and OEMs to discuss technology insertion opportunities. Tiburon seeks funds to transition next generation wire insulation into system components. Tiburon looks forward to implementing its novel, next generation wire insulation and helping to improve warfighter safety and aircraft sustainability.

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