

Topic: N122-129

Midé Technology Corporation

Retractable Advanced Mooring System (RAMS)

Midé developed a Retractable Advanced Mooring System (RAMS) to minimize maintenance and reduce manpower on current fixtures used by DDG 51 Class Navy ships. RAMS uses high performance, corrosion resistant materials to eliminate routine maintenance. Midé anticipates the Phase II effort to generate a fielded system that improves operation and reduces costs for Navy and other potential commercial applications. Recently, the Navy has placed an emphasis on reducing total ownership costs, especially maintenance costs, and this technology can provide those benefits. Midé Technology Corporation develops, produces and markets high performance products such as HydroActive™ bulkhead shaft seals, portable vibration data loggers, and other smart solutions. Midé's innovative people, systems approach, and customer focus enables delivery of improved systems that reduce maintenance and total life-cycle costs.

Technology Category Alignment:

None

None

None

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SYSCOM: NAVSEA

Contract: N00024-15-C-4027

 Corporate Brochure: https://navystp.com/vtm/open_file?type=brochure&id=N00024-15-C-4027

Department of the Navy SBIR/STTR Transition Program

Statement A: Approved for Release. Distribution is unlimited.

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Retractable Advanced Mooring System (RAMS)

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WHO

SYSCOM: NAVSEA

Sponsoring Program: Team Ships, PMS 400D

Transition Target: DDG 51

TPOC:
(215) 897-1446

Other transition opportunities: Bitt and chock mooring fixtures are widely used onboard both Navy and commercial vessels,. Vessels operating helicopters or with similar height-above-the-deck restrictions have the need for a reliable retractable mooring fixture.



Courtesy of U.S. Navy, RAMS II, Topic Number: N122-129

WHAT

Operational Need and Improvement: DDG 51 Class ships require retractable mooring fixtures (bitts and chocks) located on the flight deck to prevent obstruction during flight operation. The current systems have frequent issues deploying and retracting as a result of exposure to the highly corrosive seawater environment. The significant corrosion requires frequent maintenance that otherwise results in degradation of system performance. Reduced manpower impacts the prioritization of maintenance tasks and can render the retractable mooring fixtures inoperable. The Navy requires a system with greater corrosion resistance and improved operational reliability.

Specifications Required: A redesigned chock and bitt system needs to fit in the existing envelope on the ship deck. The fixtures must be able to handle the operational loads and survive in the corrosive, seawater environment. Meeting the need for reduced maintenance and increased operational reliability and maintainability in a maritime environment represents the most significant challenge associated with a bitt and chock replacement design solution.

Technology Developed: Midé has developed a retrofit solution to enhance the performance of the existing chock and bitt systems by utilizing improved materials and redesigns of critical components. The improvements reduce maintenance requirements while making the fixtures more robust in order to survive the corrosive operational environment.

Warfighter Value: Midé's design and material selection improves functionality, increases reliability and reduces the potential of the harmful impacts of corrosion. This eliminates frequent maintenance requirements on the chock and bitt fixtures, helping to reduce the manpower requirement for the ship. The improved reliability and availability, in addition to the reduced maintenance and overhaul requirements, will reduce the total ownership cost for the Navy.

WHEN

Contract Number: N00024-15-C-4027 **Ending on:** December 9, 2016

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Prototype Development and Testing	Low	Operational Loads Achieved	6	March 2016
Qualification Testing	Med	Pass Tests in Operational Environment	8	June 2017
Ship Study	Med	Successful Operation	9	June 2018

HOW

Projected Business Model: Midé is working with the current manufacturer to improve the design and function of the retractable system, using alternative materials with inherent anti-corrosion properties. Midé has the ability to manufacture some of the components in house and currently plan to partner with the system manufacturer to supply components and license our design.

Company Objectives: Midé Technology Corporation develops, produces and markets high performance products for the military and many industries. Midé's mission is to provide innovative, value-added engineering solutions to our customers. Our innovative people, systems approach, and customer focus provides us with the ability to conceptualize, design and deliver these high performance, intelligent systems and services tailored to our clients' specific needs. Midé has excelled in providing the military with improved systems that reduce maintenance requirements and total life-cycle costs. Midé is seeking other commercial and military platforms applications requiring a similar solution and are continually looking for other opportunities to apply our advanced design solutions with new materials to solve reliability and maintainability needs.

Potential Commercial Applications: Commercial vessels operating helicopters or with height-above-the-deck restrictions have the need for a reliable retractable mooring fixture alternative. A more reliable system would reduce maintenance requirements, system down time, and total life-cycle costs as a benefit to the vessel.

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