Press Release

For Immediate Release

National Shipbuilding Research Program Awards \$2.6 million for Panel Project Portfolio

November 18, 2022-- The Executive Control Board of the <u>National Shipbuilding Research Program</u> (NSRP) has selected 18 panel projects for award, as part of the Program's continuing mission to reduce costs associated with U.S. shipbuilding and ship repair. These new projects, valued at over \$2.6M in government funding, were among those proposed in response to the Panel Project Solicitation issued in June 2022. Abbreviated descriptions follow; prime contractors are listed first and noted in **bold text**:

Cleanable Nonskid Deck Covering

General Dynamics Bath Iron Works NSRP Investment: \$150K Duration: 12 Months Objective:

This project will: 1) Identify typical Navy shipbuilder contracts requirement for nonskid cleanliness; 2) Verify if SiloxoGrip N-9020A Deck Gray MIL-PRF 24667 Type I nonskid can be kept clean through standard care and protection; 3) Verify if SiloxoGrip N-9020A Deck Gray MIL-PRF 24667 Type I nonskid can be cleaned to an acceptable level of cleanliness; 4) Develop cleaning methods for nonskid; 5) Summarize alternatives to replacement of non-skid that has lost its slip resistant properties or visibility of safety and visual aid markings that can be prevented through care and protection or cleaning.

High-Density Ribbon Fiber Optic Cable & Tooling for Shipboard Installations HII- Ingalls Shipbuilding | HII - Newport News Shipbuilding | Penn State University - ARL | KITCO Fiber Optics | Naval Surface Warfare Center – Dahlgren Division NSRP Investment: \$150K Duration: 12 Months Objective: The goal of this project is to evaluate the impact of new, high-density fiber optic cable configurations for U.S. Navy shipboard applications.

The primary objective is to identify process and tooling impacts of using this new technology. Necessary changes and process updates will be identified to support successful transition at the shipyards.



Using MELD to Additively Manufacture Flight Deck Tie Downs

Hepburn and Sons | MELD Manufacturing | HII - Ingalls Shipbuilding | Naval Surface Warfare Center – Carderock Division | Naval Surface Warfare Center – Philadelphia Division NSRP Investment: \$150K Duration: 6 Months

Objective:

The project goal and objective are to create flight deck tie downs using the Additive Friction Stir Deposition (AFSD) method of Additive Manufacturing (AM) while maintaining the geometry and function of current tie downs reducing cost and schedule for Navy shipbuilding.

Shipboard Fiber Optic Cables Jackets Performance Enhancements

RSL Fiber Systems | HII - Ingalls Shipbuilding |U.S. Navy - SUPSHIP Gulf Coast|ChemPro Technologies LLC

NSRP Investment: \$149K

Duration: 12 Months

Objective:

The project's objective is to lower the Total Ownership Cost (TOC) of shipboard fiber optic systems by decreasing the acquisition costs of fiber optic cables, lower the installation cost by improving the cables' ruggedness, and reduce the cost of repairs and maintenance by reducing the likelihood of in-service damage.

Combat Systems Standard Foundations Qualification and Optimization

HII - Newport News Shipbuilding |HII - Ingalls Shipbuilding NSRP Investment: \$121K Duration: 12 Months Objective: The overarching goals of the proposed Combat Systems Sta

The overarching goals of the proposed Combat Systems Standard Foundations Qualification and Optimization Project are to reduce schedule pressure, initial equipment installation and technology refresh costs, and initial acquisition and sustainment costs for surface ships across Navy platforms.



GMAW Electrode and Procedure Technology for Silicate-free Weld Deposition

EWI | HII - Ingalls Shipbuilding | Naval Surface Warfare Center – Carderock Division **NSRP Investment:** \$150K

Duration: 12 Months

Objective:

The project goal is to implement silicate-free (SF) gas metal arc welding technology mitigating need for multipass weld inter-pass cleaning.

Feasibility of Standardized OSHA Maritime Management Safety Training

HII - Newport News Shipbuilding | HII - Ingalls Shipbuilding | HII - Mission Technologies Division | Virginia Ship Repair Association

NSRP Investment: \$121K

Duration: 12 Months

Objective:

The objective of this project is to assess current shipbuilding industry supervisor safety training practices and develop a pathway to a nationally recognized and accepted maritime safety supervisor training credential. The goal is to reduce injuries and improve industry emergency response preparedness by providing frontline supervision the skills needed to develop a positive safety culture in their organizations.

Distributed Temperature Sensing (DTS) Integration into Ship Electrical Plant Monitoring and Controls for Conditions Based Maintenance

RSL Fiber Systems LLC | Penn State University - ARL | Luna Inc/Lios | General Dynamics Bath Iron Works | NAVSEA 05Z33 | NSWCPD Code 44

NSRP Investment: \$150K

Duration: 12 Months

Objective:

The project will concentrate on the data for electrical systems and specifically medium voltage (MV) panels however it will be expandable to other uses of the DTS technology such as machinery health monitoring, fire detection, and temperature monitoring of living spaces and storage areas, further reducing delivered ship operations and sustainment costs.

Breakthrough Welding Process for Pipe and Plate

Keyhole TIG USA | Fincantieri Marinette Marine | EWI NSRP Investment: \$150K | Industry Investment: \$30K Duration: 12 Months Objective:

The objectives of the project are:

1.) Develop mechanized K-TIG methods for candidate applications

2.) Demonstrate that the developed K-TIG methods meet identified NAVSEA TECH PUB 248

procedure qualification test requirements, and

3.) Support implementation at the participating shipyard.



Ultra Heat Resistant Primer

Fincantieri Marinette Marine | Northern Coatings and Chemical Inc | Elinor Coatings LLC NSRP Investment: \$148K

Duration: 12 Months Objective:

The goal of this project is intended to eliminate burned paint installation through development and application of advance coatings. The Team proposes to work with relevant industry professionals and material manufacturers to develop and study an Ultra Heat Resistant Primer. It will be performed in conjunction with Northern Coating & Chemical of Menominee, MI.

Zinc-Rich Coatings Over High Strength Steel

Elzly Technologies | HII - Newport News Shipbuilding NSRP Investment: \$150K Duration: 12 Months Objective: The goal of this project is to:

• Establish a credible testing protocol to assess base metal, heat-affected zone (HAZ), and deposited filler metal susceptibility to reduced properties associated with Zn-rich coatings. This project will not address other methods of zinc application like galvanizing or electroplating.

• Generate data to understand the relative impacts of Zn-rich coatings on high strength steel susceptibility to property degradation associated with phenomena such as hydrogen embrittlement. An understanding of the potential for future property degradation resulting from previously removed Zn-rich coatings will be sought.

• Should testing yield promising results, a list of alternative coating systems and appropriate areas of application will be generated to promote the advantages of adopting Zn-rich coatings.

• Based on project results, provide recommendations for shipyard and Navy consideration.

Performance Improvement for 25Hz DSSM Spring Tray

HII - Newport News Shipbuilding | NTS | NAVSEA 05P1

NSRP Investment: \$144K | Industry Investment: \$5K

Duration: 12 Months

Objective:

The objectives of this project are to:

- Evaluate Deck Shock Simulating Machine (DSSM) performance improvements with custom machined fitted washers and shims
- Produce drawings for latch adjustment mechanism
- Fabricate, install, and test latch adjustment mechanism if funding is available
- Document performance improvements

Dry Dock Block Contact Indicator

DM Consulting | Austal USA | Naval Station San Diego NSRP Investment: \$88K Duration: 12 Months Objective:

The purpose of this project is to design and test a block contact detection system. Use of the system is intended to reduce or eliminate the need for divers to verify contact between the blocks and the vessel being lifted.



Equipment Sight/Site Validation Tool

HII - Ingalls Shipbuilding | General Dynamics Bath Iron Works NSRP Investment: \$147K Duration: 12 Months Objective:

This project's goal is to explore current capabilities of existing electronic tools and software and/or develop a software/tool that will meet our sight validation requirements. Also, to ensure the tool can interface with the Navy's Program of Record (POR) Configuration Status Accounting (CSA) tool, Model Based Product Support (MBPS), and that it offers the flexibility for physical validation in a shipboard, shipyard construction, and a warehouse environment.

Alternate Blocking Materials

DM Consulting | Austal USA | Naval Station San Diego NSRP Investment: \$146K Duration: 12 Months Objective:

The purpose of this project is to design and test three different materials as candidates for replacing structural elements of dry dock blocks. Two materials to be tested will be High Density Polyethylene (HDPE) and neoprene, and these materials will be targeted at replacing soft and hard wood caps. The third material to be tested will be fiber reinforced concrete intended to replace the traditional steel reinforced concrete. The goal of exploring alternate blocking materials is to be able to reduce the cost of wood materials consumed for each dry docking and extend the service life of the concrete blocks, reducing the overall shipyard operating cost and local environment impact.

3D Printing of Supply Sensitive Parts

General Dynamics NASSCO | General Dynamics Electric Boat | Additive Manufacturing Tech Warrant Holder - NAVSEA 05T NSRP Investment: \$150K Duration: 12 Months Objective: The primary goal of this project is to conduct research into COLUMBIA and VIRGINIA parts which

currently are not sufficiently meeting NAVY's production yield requirements. The objective is to evaluate and recommend part candidates which are best suited for the AM process.

Equipment Validation Through Scanning

ShipConstructor USA | Austal USA | Fincantieri Marinette Marine | DotProduct LLC NSRP Investment: \$149K | Industry Investment: \$16K Duration: 12 Months Objective:

The goal of this panel project is to provide an efficient process using inexpensive and user-friendly commercial off-the shelf (COTS) handheld 3D scanner (and training) to receiving personnel to digitally compare items at receiving to the 3D model for verification of form/fit.



Outlining a Development Plan for the Auto-Identification of Cobot Welding & Cutting Applications within a Digital Ship Model

Fincantieri Marinette Marine | Halter Marine | Next Level Consulting | ShipConstructor USA NSRP Investment: \$150K | Industry Investment: \$48K

Duration: 12 Months

Objective:

This project will provide insight so that shipbuilders (and software vendors to the industry) can align, filter and manage digital ship model information that allows designers and planners to do their part in accelerating the adoption of cobots. Without digital filtering tools, cobot automation adoption and the benefits of cobot cost reductions to the industry will likely remain limited and sluggish.

Questions? Contact the NSRP Team at: nsrp@ati.org or visit the NSRP website at: www.nsrp.org

