

Press Release

For Immediate Release

National Shipbuilding Research Program Awards \$6.5 million for R&D Project Portfolio

September 26, 2022-- The Executive Control Board of the [National Shipbuilding Research Program](#) (NSRP) has selected a new round of R&D 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 \$6.5M in government funding and industry cost share, were among those proposed in response to a Research Announcement issued on April 18, 2022. Abbreviated descriptions follow; prime contractors are listed first and noted in **bold text**:

Robotic Arc Directed Energy Deposition (DED) Manufacturing and Repair of Marine Components

Edison Welding Institute | Vigor Shipyards | Huntington Ingalls Industries - Ingalls Shipbuilding | Wildcat Propellers | Ohio State University | Navus Automation | American Bureau of Shipping (ABS) | Design Software International | Naval Surface Warfare Center - Carderock Division

NSRP Investment: \$1.386M | **Industry Investment:** \$1.386M

Duration: 24 Months

Objective:

This project will eliminate the remaining barriers associated with NAVSEA and ABS approved process-material design data (major gap), establish prototype quality management processes that are compliant with new standards, qualify procedures and DED manufactured parts, and establish supplier(s) for DED manufacturing and repair of marine components.

Camera "In the Torch" Welding System Productization

Pacific Shipyards International | Fincantieri Marine Repair | Fresh Consulting, Inc. | General Dynamics Bath Iron Works | Hepinstall Consulting Group | Gatekey Engineering | EnergynTech | D'Angelo Technologies LLC

NSRP Investment: \$1.17M | **Industry Investment:** \$1.2M

Duration: 18 Months

Objective:

This project is proposed as a follow-on and final project to the recently completed NSRP "Welding Smart Camera-in-the-Torch" Project (TOA#2020-302-02) to increase the reliability and durability of the portable Camera-In-The-Torch and deliver a welding torch system ready for shipyard use and widespread implementation. The project will also perform market research in support of implementation.

Development of a Fast Analysis Solver for Welding Sequence Optimization of Ship Structures

Huntington Ingalls Industries - Ingalls Shipbuilding | General Motors LLC | Hexagon | Oak Ridge National Laboratory | Austal USA

NSRP Investment: \$1.17M | **Industry Investment:** \$1.17M

Duration: 24 Months

Objective:

This project will develop a fast finite element analysis solver for welding sequence optimization and to apply the solver to ship structures including panel structures and complex unit structures. While the primary use-case for the development of this solver will be weld sequence optimization, the fundamentals and interface developed therein will allow its features to be utilized for a wide-range of thermally dependent design and construction analyses.

Product-Data-as-a-Service for a Planning Yard

General Dynamics Electric Boat | Boston Engineering LLC | NAVSEA PMS397L

NSRP Investment: \$233K | **Industry Investment:** \$233K

Duration: 12 Months

Objective:

This project will address requirements to modernize accessibility to product data and improve user experience with digital technology by deploying Product Data-as-a-Service (PDaaS) as the future planning yard product, including a product model digital twin that is fit for use in the chosen sustainment use cases in which the planning yard is a major participant.

LiftShip 3

ShipConstructor USA | Austal USA | Ship Architects | Naval Surface Warfare Center – Carderock Division | Fincantieri Marinette Marine | Genoa Design International | ATA Engineering | Altair Engineering

NSRP Investment: \$795K | **Industry Investment:** \$1.2M

Duration: 24 Months

Objective:

The purpose of this RA project is to increase the efficiency and further improve usability of the LiftShip 2 [2018-451-003] RA project. This project will:

- Provide the user increases in technical functionality of data from the 3D model and provide additional seamless digital data transfer to and from the 3D model as well as to and from the Finite Element Analysis (FEA) software
- Streamline the selection of 3D objects in the 3D Design Model
- Develop a method to move system support data (where hangers and foundations attached to structure) to Finite Element Model (FEM) along with a representation of the system for FEA
- Develop a method for locking the 3D model and providing the cognizant engineer (COG) with notification if the 3D model changes impact analysis areas

Digital Twin "TRUST" Verification & Validation (V&V) Guide for Ship Design, Construction, Delivery, & Sustainment

American Bureau of Shipping (ABS) | Newport News Shipbuilding | Huntington Ingalls Industries - Ingalls Shipbuilding | Huntington Ingalls Industries - Unmanned Systems Group | NAVSEA 05Z | Naval Surface Warfare Center – Carderock Division | Naval Surface Warfare Center – Philadelphia Division

NSRP Investment: \$564K | **Industry Investment:** \$564K | **Public Sector-Provided Funding:** \$80K

Duration: 18 Months

Objective:

This project proposes to develop and demonstrate verification and validation (V&V) guidance that government agencies and the shipbuilding and ship repair industry can use jointly and collaboratively to establish trust in the wide range of technologies and applications often referred to as Digital Twins.

Enterprise-Wide Accuracy Control in a Digital Environment

Huntington Ingalls Industries - Newport News Shipbuilding | Penn State University - ARL

NSRP Investment: \$508K | **Industry Investment:** \$508K

Duration: 24 Months

Objective:

The scope of this project is implement a centralized accuracy control program based on a single software solution that connects inputs from the various forms of in-process checks, supports statistical process control, and enables real-time analysis and decision making.

Automated Detail Planning and Integrated Shipyard Operations with Engineering Data

ShipConstructor USA | Huntington Ingalls Industries - Ingalls Shipbuilding | Fincantieri Marinette Marine | General Dynamics Bath Iron Works | Floorganise | Austal USA | Halter Marine

NSRP Investment: \$671K | **Industry Investment:** \$843K

Duration: 24 Months

Objective:

This project will integrate all operational processes and information requirements with available engineering data and shipyard specific value streams serving as a precondition for LEAN shipbuilding processes. Through a pilot project at each participating shipyard, the benefits of capturing yard specific value streams to apply automated detail planning and control efforts for projects using metadata contained within the 3D model and operational feedback will be demonstrated.

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