



National Shipbuilding Research Program

For Immediate Release

Executive Control Board awards \$13.3M for R&D Project Portfolio

December 18, 2017 -- 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 \$13.3M, including cost share, were among those proposed in response to Research Announcement 16-01, issued in July 2017. Abridged descriptions follow:

Integration of Scanning & Laser Peening Activity

Hepburn & Sons, LSP Technologies, Mentoring Solutions, Siemens, NSWCCardero

Industry Investment: \$986K | **NSRP Investment:** \$1.23M

Duration: 12 Months

Objective

The primary goal of this project is to validate feasibility and strategic benefits of a robotically controlled scanning and laser peening system ready to deploy and be procured by the shipyards. Software development is required to establish scanning resulting point cloud data set and translate into a laser peening path plan to a robot.

SMART: Shipyard Mobile Applications in Real Time

Bollinger Shipyards Lockport, GD Electric Boat, GD Bath Iron Works, Sparkhound Inc., D'Angelo Technologies, Hepinstall Consulting Group

Industry Investment: \$755K | **NSRP Investment:** \$770K

Duration: 12 Months

Objective

Develop the capability for shipbuilders to access relevant and current information based on visual awareness of ship location and to capture and report technical information digitally onboard in real-time. The project will provide a turnkey mobile application solution that enables shipyard deckplate management and high velocity exchange of quality, schedule, and technical information.

Computer Aided Robotics for Welding (CAR-W) Support for Multipass Welding & Extension of CAD System Support

Wolf Robotics, HII-Newport News Shipbuilding, GD Electric Boat, Siemens PLM

Industry Investment: \$1.43M | **NSRP Investment:** \$1.44M

Duration: 12 Months

Objective

This project centers on updating Siemens' software to enable base CAR-W support, establishing agreed upon standards of data transfer for multi-pass weld information, and demonstrating advanced multi-pass path-planning capabilities to meet the needs of shipbuilders engaged in heavy-plate fabrication.

Integration of Outfitting and Structural Details on Swaged Bulkheads

GD NASSCO, San Diego State University

Industry Investment: \$253K | **NSRP Investment:** \$362K

Duration: 12 Months

Objective

Develop design and production guidance for integrating swaged bulkheads into other ship structure, including interfaces with the requirements of outfitting systems and standard non-swage structural elements. This will be accomplished through Finite Element Analysis of the interface areas, including openings, headers, and brackets, supplemented by physical testing.

LiftShip

SSI-Ship Constructor Software, Austal USA, Conrad Shipyards, Bollinger Shipyards, VT Halter Marine, Ship Architects, Altair Engineering, ATA Engineering

Industry Investment: \$1.53M | **NSRP Investment:** \$1.11M

Duration: 12 Months

Objective

The project proposes to automate the process of Finite Element Analysis model generation and analysis in support of large ship structure lifting, and to present the results in a clear and concise manner for stakeholders. In addition, leverage the model generation from lift drawing output (lifting configuration drawings to coincide with the Finite Element Model being analyzed) and information to support production for the lift.





Knowledge Provisioning to Improve First Time Quality of Ship Design

Conrad Shipyard, Bollinger Shipyards, Fincantieri Marinette Marine, GD Bath Iron Works, SSI- Ship Constructor Software, Auros Knowledge Systems, Vicky Dlugokecki, Hepinstall Consulting Group

Industry Investment: \$1.34M | **NSRP Investment:** \$1.2M

Duration: 12 Months

Objective

This project will automate the provisioning of information at each step of the ship design process as the engineer progresses through the flow of work. It will ensure relevant knowledge and information is readily available in a “digestible” format at the exact time the engineer needs the information to make design decisions and perform engineering activities.

Land Based Case Study of Insulated Bus Pipe (IBP) for Ship Design

Hepburn & Sons, Tefelen, Florida State University Center for Advanced Power Systems (FSU CAPS), GD Bath Iron Works

Industry Investment: \$455K | **NSRP Investment:** \$455K

Duration: 12 Months

Objective

The overall objective of this project is to physically demonstrate the return on investment and benefits of using IBP in a shipboard application simulated at FSU CAPS (lab developed with support from the Navy for naval electrical power innovations) for all the shipyards to witness and contribute their vision of how this technology can be implemented in their respective ship designs.

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

