



NATIONAL SHIPBUILDING RESEARCH PROGRAM

ADVANCED SHIPBUILDING ENTERPRISE

Reducing Naval Ship Construction & Repair Costs

FOR IMMEDIATE RELEASE

MAY 5, 2010

NSRP EXECUTIVE BOARD SELECTS EIGHT NEW SHIPBUILDING R&D PROJECTS

The Executive Control Board of the [National Shipbuilding Research Program](#) (NSRP) has awarded funding for eight new research projects as part of the Navy/Industry co-funded portfolio focusing on cost reduction in the U.S. shipbuilding and ship repair industry. These new projects, valued at approximately \$16 million including industry cost share, were among those proposed in response to an October 2009 Research Announcement.

Fueled by Navy funding that is matched by cost share provided by industry teams, the NSRP collaboration periodically funds major R&D projects through which new technologies and innovative processes can be developed and implemented as a means of reducing shipbuilding and repair costs for the Navy and the industry at large.

A brief description of each of the new projects, with a list of participants and funding information, follows:

Weld Shrinkage and Distortion Allowance for Neat Construction

Project Lead: Bollinger Shipyards

Team Members: Northrop Grumman Shipbuilding-Gulf Coast; Todd Pacific Shipyards; Marinette Marine;



ShipConstructor USA; Gatekey Engineering; Edison Welding Institute; Hepinstall Consulting Group; Victoria Dlugokecki

Objective: To map weld shrinkage and resulting distortion for both uniform and non-uniform steel assemblies, and apply the mapping data via regression analysis. Deliverables will include a computer model of weld shrinkage data for uniform and non-uniform panels.

Program Funding: \$1.9M **Industry Cost Share:** \$1.9M

Common Parts Catalog Enhancements

Project Lead: GD Electric Boat

Team Members: Northrop Grumman Shipbuilding-Gulf Coast; GD Bath Iron Works

Objective: To analyze, identify and monitor the implementation of distinct enhancements to the current Common Parts Catalog -- a real-time, searchable inter-shipyard parts catalog currently used in production in several shipyards. This project will focus on enhancements in: Network, Software and Application Changes; Model Inclusion and Exchange; and Functional Enhancements.

Program Funding: \$2.0M **Industry Cost Share:** \$2.0M

Streamlining Shipyard Rigging Analysis

Project Lead: GD NASSCO

Objective: To develop a tool for simplified finite element analysis (FEA) of rigging and lifting, while ensuring that safety measures remain. The analysis will be verified by using strain gauges on lifts of complex blocks. Additionally, the project will evaluate the use of integrated lifting lugs in place of temporary pad-eyes.



Program Funding: \$378K **Industry Cost Share:** \$378K

Large Scale Computer Simulation Modeling System Enhancements

Project Lead: NASSCO

Team Members: *TransSystems, Inc; Atlantec ES; Penn State/ARL*

Objective: To expand upon the current Large Scale Modeling and Simulation project, which focuses on scheduled production workload modeling within simulated facilities subject to their constraints, with the intention of identifying production bottlenecks and enabling the user to identify improved production plans. The project will enhance the system to add the ability to: define and use statistical variances; apply learning algorithms; and define, generate and use parametrically described interim products within the system.

Program Funding: \$1.1M **Industry Cost Share:** \$900K

ERP Integration with CAD

Project Lead: VT Halter Marine

Team Members: *Austal USA, Todd Pacific Shipyards, Bollinger Shipyards, Marinette Marine, NG Shipbuilding-Gulf Coast, Praeses LLC, Jerry Pittman & Assoc., ShipConstructor USA*

Objective: To automate the exchange of business data contained in the Product Information Model (PIM) and Enterprise Resource Planning (ERP) material management/procurement application by creating a non-shipyard specific tool that can be implemented throughout the industry.

Program Funding: \$700K **Industry Cost Share:** \$700K

Process Oriented Visual Planning Tool (POV Planner)

Project Lead: Todd Pacific Shipyards

Team Members: *Bollinger Shipyards, NG Shipbuilding-Gulf Coast, Knowledge Based Systems, First Marine International, Autodesk, Praeses*

Objective: To develop a user-friendly production planning tool that incorporates data from three commercial software tools: a Product Modeler (ShipConstructor), a Product Visualization Tool (NavisWorks) and a Work Simulation Tool (WorkSim). The POV Planner will consist of a complete set of standard shipbuilding process templates and a suite of tools.

Program Funding: \$432K **Cost Share:** \$436K

Integrated Logistics Environment (ILE)

Project Lead: GD Electric Boat

Team Members: NG Shipbuilding-Gulf Coast, Product Data Services Corp.

Objective: To continue the efforts of the Integrated Shipbuilding Environment (ISE) series of projects by facilitating data exchange and interoperability throughout the entire life cycle of the ship. In particular, the Ship Common Information Model (SCIM), will be completed and the Ship Common Information Model Evaluation will demonstrate the effectiveness of the Navy Product Data Initiative (NPDI) by migrating the Virginia Class product model data to a Joint Team environment, focusing on piping and structural models.

Program Funding: \$1.2M **Industry Cost Share:** \$1.2M

Advanced Systems Development of the Remote Climbing Robot

Project Lead: Robotic Technologies of Tennessee

Team Members: NG Shipbuilding-Gulf Coast, Bath Iron Works, Tennessee Technological University

Objective: To develop enhancements to the current mobile robot which will increase the number of weld types, broaden the spectrum of applications and provide for remote operation. The three-phase project includes actuation and instrumentation to enable remote operation; 'close-the-loop' enhancement to provide adaptive motion control to follow geometric features of the weld seam; and efficiency gains in the welding process by offloading repetitive control tasks and allowing the operator to focus on bead setup and quality monitoring.

Program Funding: \$198K **Industry Cost Share:** \$198K



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The National Shipbuilding Research Program (NSRP) is a collaboration of U.S. shipyards working with government, industry, and academia. NSRP's mission is to manage and focus national shipbuilding and ship repair research and development funding on technologies that will reduce the cost of warships to the U.S. Navy and other National Security customers by leveraging commercial practices and improving the efficiency of the U.S. shipbuilding and ship repair industry. NSRP also provides a collaborative forum to improve business and acquisition processes. NSRP is sponsored by the Naval Sea Systems Command. For more information, visit: [National Shipbuilding Research Program](#)