State of the Panel
NSRP PPPF
2023-2024

Planning, Production Processes, and Facilities Panel
J. Ben Dorris, Methods Engineer, Fincantieri Marinette Marine
PPPF Chair
Patrick Cahill, Vice Panel Chair CahillConsulting, L.L.C. 1 S
Vice Chair

August 1, 2023
Oak Ridge Laboratories, Oak Ridge Tennessee

Planning, Production Processes, and Facilities Panel's Mission:

Discover and disseminate best practices focused on the principal manufacturing processes, equipment, planning, and facilities required to support the fabrication, assembly, and testing phases of ship production, repair and maintenance.

Panel's Purpose

1. *Improve Manufacturing Processes for construction, fabrication and assembly.*
2. *Improve Manufacturing Processes for outfitting, installation and testing.*
3. *Improve shipyards sub-tier supplier performance with respect to quality, cost and schedule.*
4. *Increase use of Automation, Robotics and Mechanization in product fabrication, processes and testing including enablers such as standardization of design.*
5. *Increase knowledge and proficiency of overall workforce.*
6. *Develop and qualify emerging technologies.*
7. *Develop and implement the digitalization of shipbuilding to facilitate development or introduction of tools for improved construction and sustainment activities.*
8. *Investigate consolidation of standards, and improvements to Standardization, Commonalities and Modularity.*
9. *Improve quality, level of detail, and automation of job planning and work instructions.*
10. *Develop a framework for qualification and incorporation of additive manufacturing (AM) into shipbuilding and repair.*
11. *Develop solutions to improve installation, maintenance and efficiency of shipboard networks.*
12. *Develop warehousing scheduling and logistics improvements to facilitate equipment delivery.*

Benefit to the Navy

• **Value** – Projects have varying degrees of value depending on Implementation

• **Implementation** – Projects have varying degrees of implementation. Many recent projects have been studies into processes (AM, lifting and handling) or attempts to implement where approval has been an insurmountable hurdle (robotic welding)

• **ROI** – Various degrees of ROI. Studies tend to yield during follow on projects. Others are adopted by the shipyard on completion Benefit to the Navy

Assistance to the state of the shipbuilding and ship repair industry

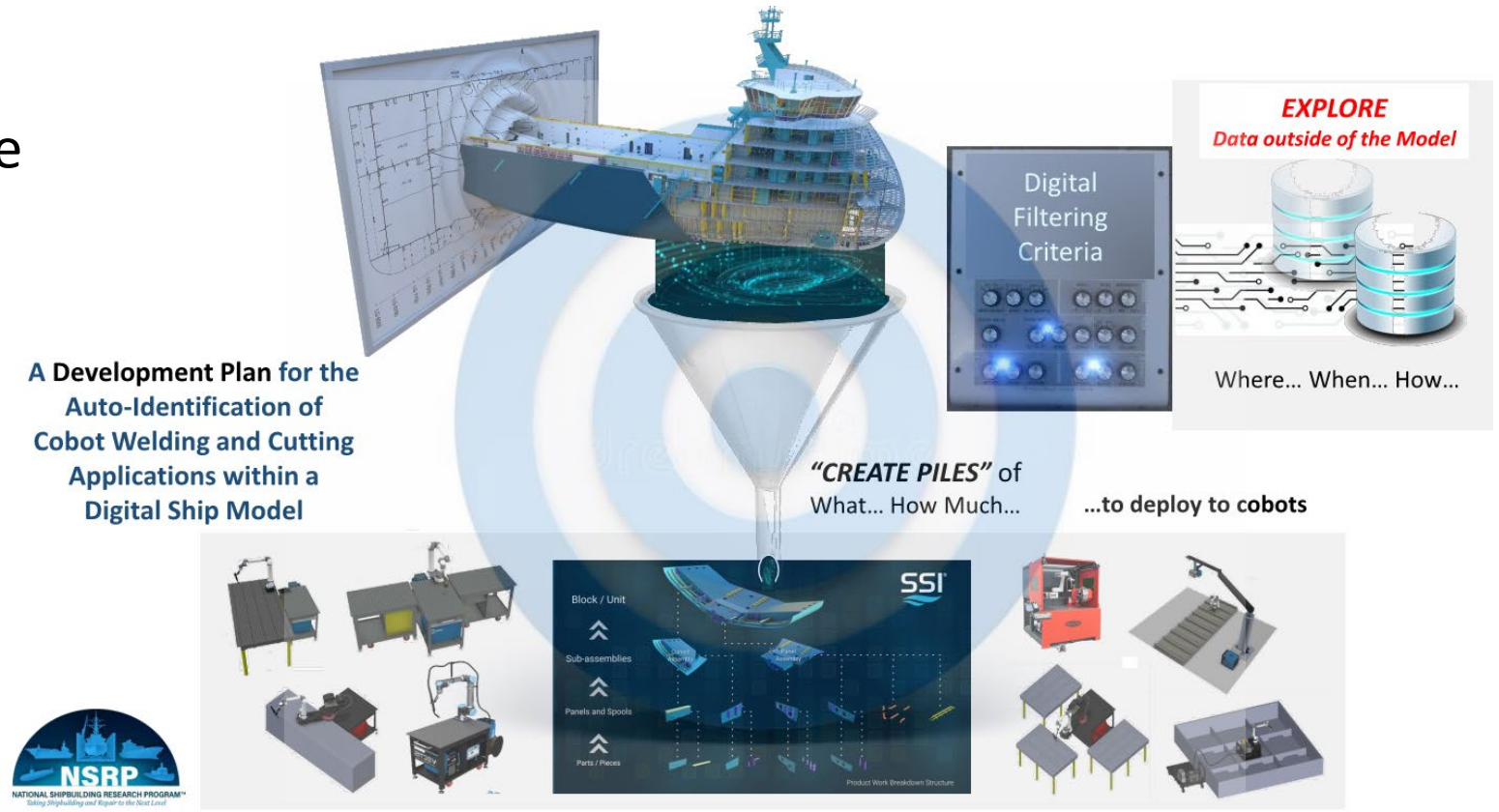
- *Past projects have developed methods, processes and tools that are shared amongst the industry through technology transfer events and personal networking*
- *Shipyard tours are an essential element of the PPPF panel, helping break the "not invented here" cycle*
- *Other industry tours (3M, Boeing, Toyota etc.) have provided insight to methods and processes that are similar to shipbuilding*
- *Vendor presentations at panel events create exposure for innovative products to the right audience*
- *PPPF provides an opportunity for shipyards to expose production support, planning and facilities personnel to new and innovative ides that are readily implemented in their own yard*

Current Project

Auto Identification of CoBot Cutting and Welding Opportunities in the computer model.

Project Team:

- Fincantieri Marinette Marine
- Next Level Consulting
- Ship Constructor USA
- Cahill Consulting Group
- April 2023 – December 2023

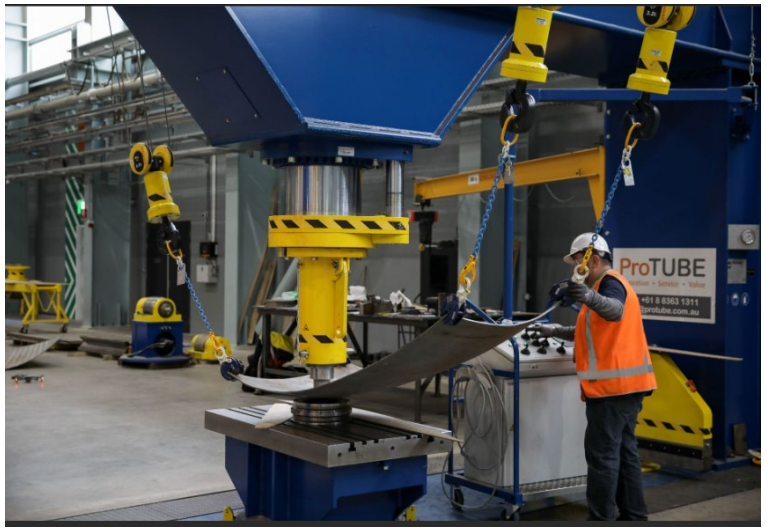


Past and Current Projects

- “Rapid Adoption Project”
- Project Team:
- ShipConstructor Software USA, Inc (SSI USA)
- Austal USA
- Fincantieri Marinette Marine

Fincantieri Bay Shipbuilding

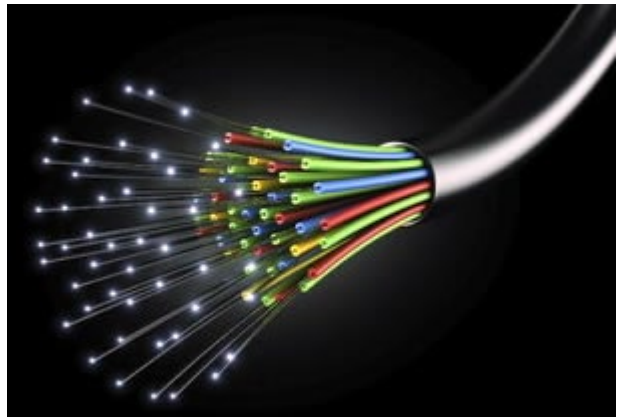
- Neiland, Netherlands
- NSRP ASE INVESTMENT: $150K



- *Objective: Many shipyards have equipment supporting complex compound curve forming. This equipment contains many manual processes where mistakes can occur through looking up data and interpreting data. The current process is highly inefficient and plagued with the potential for numerous human-induced errors*
- *The overall objective is to provide a fully functional, integrated application that automates the press operator’s information workflow to create compound curves on structural plates to the greatest degree of efficiency possible. The end product shall provide equipment pressure information for each location to the press operator for each specific point on the plate where the press is positioned*

Past and Current Projects

- CRANE LIFT DATA AGGREGATION (2018-454-016)



Past and Current Project

- "Rapid Adoption Project" Neiland Press Automation
- Project Team:
- ShipConstructor Software USA, Inc (SSI USA)
- Austal USA
- Fincantieri Marinette Marine
- Neiland Company, Netherlands
- NSRP ASE INVESTMENT: $150K

- *Objective: Many shipyards have equipment supporting complex compound curve forming. This equipment contains many manual processes where mistakes can occur through looking up data and interpreting data. The current process is highly inefficient and plagued with the potential for numerous human induced errors*
- *The overall objective is to provide a fully functional, integrated application that automates the press operator's information workflow to create compound curves on structural plates to the greatest degree of efficiency possible. The end product shall provide equipment pressure information for each location to the press operator for each specific point on the plate where the press is positioned*

Past and Current Projects

- Drydock Blocking
DM Consulting

Past and Current Projects

Advanced Development & Implementation of the High Mobility Manufacturing Robot (HMMR) (2020-303-001)

Project Team:

- Robotic Technologies of Tennessee LLC (RTT)
- Vigor Shipyards
- Edison Welding Institute (EWI)
- Cahill Consulting Group Naval Surface Warfare Center-Carderock Division
- March 2020 – March 2022

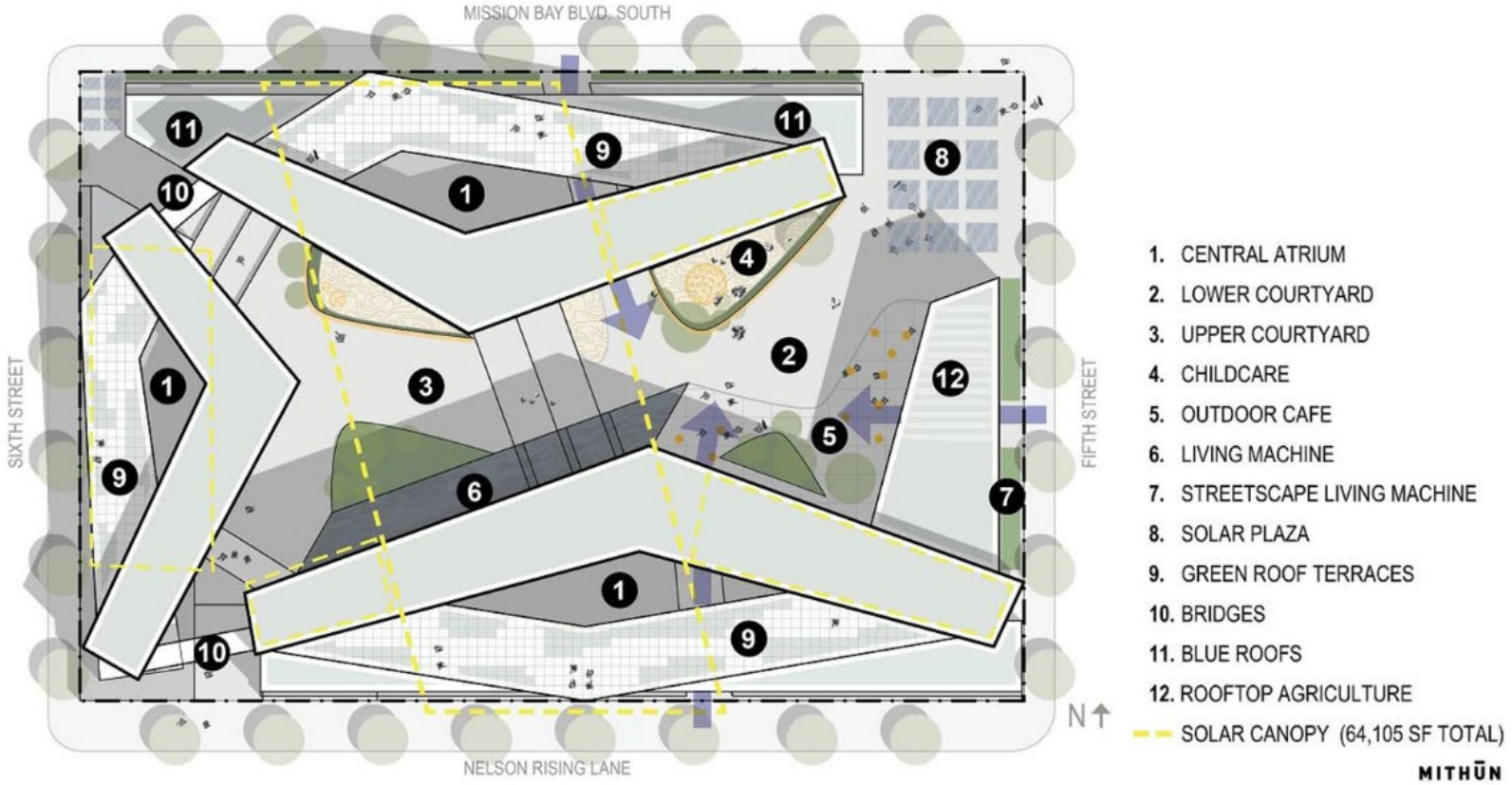
- INDUSTRY INVESTMENT: $725K | NSRP ASE INVESTMENT $703K

Possible Project:

sustainable shipyard

ambientale ergonomia estetica

environment ergonomics aesthetics



NSRP
NATIONAL SHIPBUILDING RESEARCH PROGRAM™
Taking Shipbuilding and Repair to the Next Level