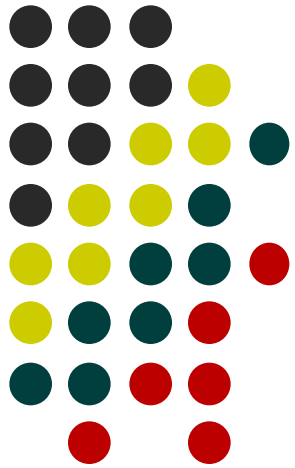
NSRP Overview

United States of America:

National Shipbuilding Research Program



What is the NSRP…

- a collaboration of U.S. shipyards
- working together to reduce cost through:
  - Breakthrough technologies and processes (the catalyst)
  - Collaboration (neutral climate of peers)
  - Implementing solutions (transfer and mplement)
  - Human and capital investment (proportional to results)

What is the NSRP…

- focus on common issues
- improving productivity and quality

What is the NSRP…

- Manage cost-shared R&D based on consensus Strategic investment Plan
- goal to reduce cost of acquisition, operation and maintenance of government vessels through:
  - manufacturing best practices
  - government and industry collaboration
  - breakthrough technologies and processes
  - rapid and widespread implementation

NSRP – mission

- manage and focus national shipbuilding and ship repair R&D funding
- leverage best commercial practices with government needs
- provide collaborative framework
- improve efficiency of U.S. shipbuilding and repair
- improve technical and business practices

NSRP – core program activities

R&D Projects	Technology Transfer Industry Networking	Ad Hoc Initiatives
- Project Solicitations - Project Management and Execution	- Panel Meetings - Industry Conferences - Project Demonstrations and Training	- Specific target areas - Quickly established to include key stakeholders - Disbanded when required actions are complete

NSRP – organization

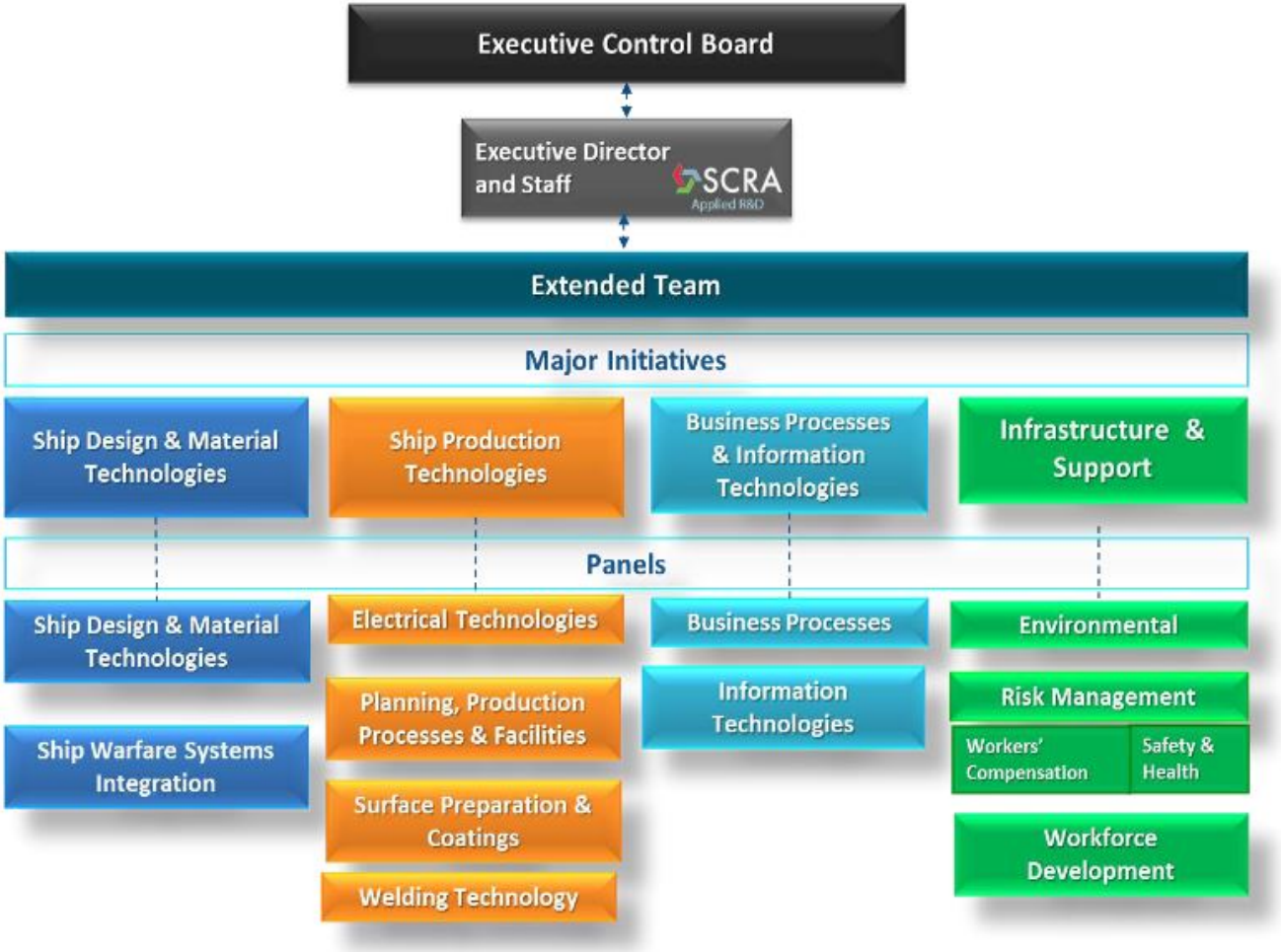
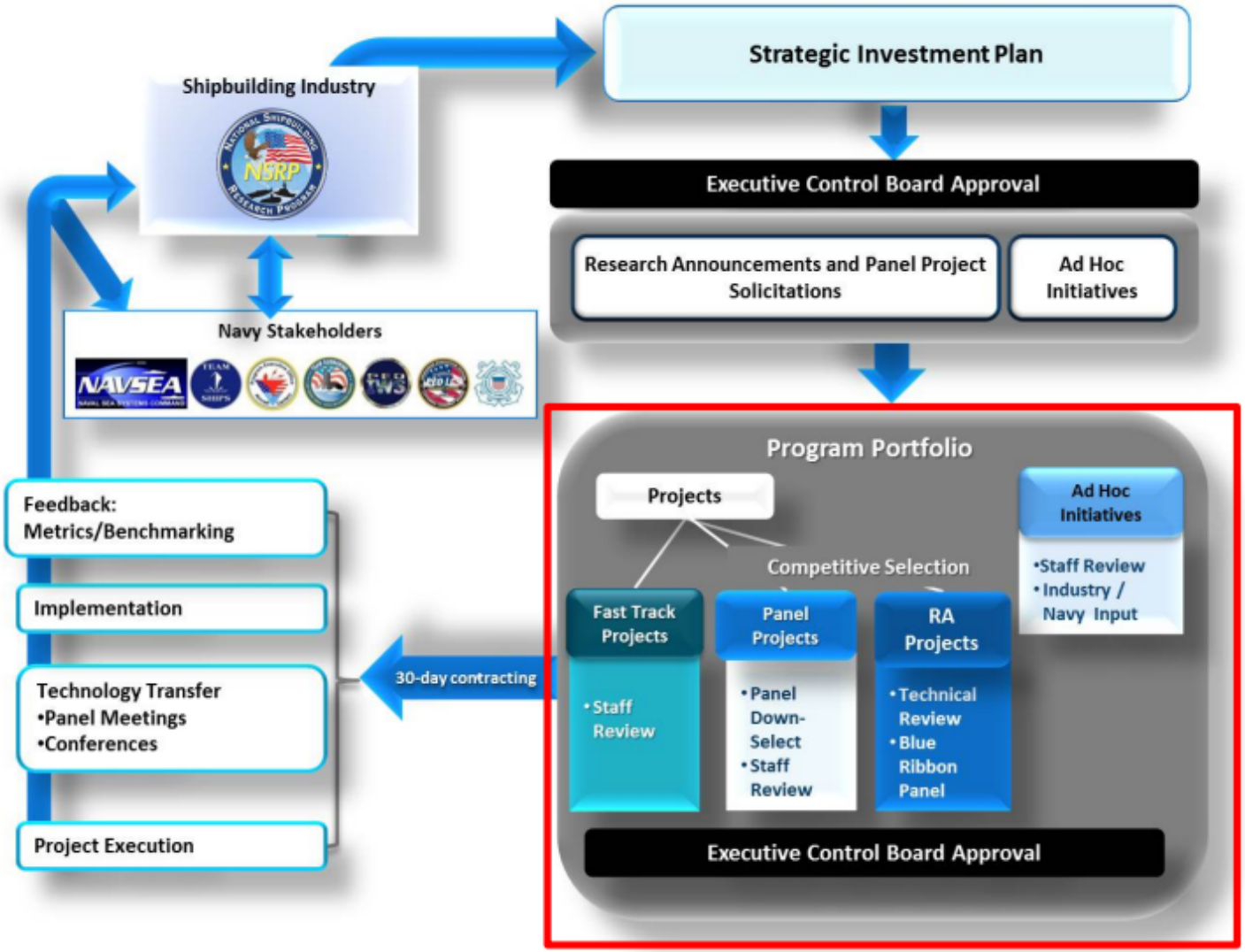


Figure 1 – NSRP Structure

NSRP – operation



NSRP – example projects

Project Portfolio

RESEARCH ANNOUNCEMENT PROJECT SUMMARIES

BUSINESS PROCESSES & INFORMATION TECHNOLOGIES

PRODUCTION PLANNING INTEGRATION WITH CAD

BOLLINGER SHIPYARDS | SHIPCONSTRUCTOR SOFTWARE USA | VT HALTER MARINE | MARINETTE MARINE | BAE SYSTEMS SOUTHEAST SHIPYARDS | GENOA DESIGN INTERNATIONAL | PRAESES

JANUARY 2012 – JUNE 2013

INDUSTRY INVESTMENT: $701K | NSRP ASE INVESTMENT: $730K

OBJECTIVE

To decrease man-hours and eliminate errors by automating the data exchange from a Product Data Model or Computer-Assisted Design (CAD) model into a Production Planning System. The project will leverage work done on the previously funded "Enterprise Resource Planning (ERP) Integration with CAD" project.

SUMMARY

This project proposes to strengthen the capabilities of shipyard systems by defining and implementing a method for automating the transfer of data from a Product Information Model (PIM) or CAD model into a Production Planning system. It is a continuation of a series of ShipConstructor enhancement projects – a product used by many mid-tier and smaller shipyards as well as one first-tier yard – and will leverage work conducted on the 2010 NSRP RA and panel projects on "Enterprise Resource Planning (ERP) Integration with CAD." The project team expects to realize an immediate return on investment with the ability to accurately and quickly transfer product and sequencing data directly into a Production Planning system.

Key Deliverables

- Business Process Maps
- Information Alignment Map
- XML / XSD Documents
- Final Project Report

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NSRP – example projects

RESEARCH ANNOUNCEMENT PROJECT SUMMARIES

BUSINESS PROCESSES & INFORMATION TECHNOLOGIES

PRACTICAL APPLICATIONS OF DESIGN FOR PRODUCIBILITY

BOLLINGER SHIPYARDS | NORTHROP GRUMMAN SHIPBUILDING | VT HALTER MARINE | MARINETTE MARINE | SHIPCONSTRUCTOR SOFTWARE USA | SHIPCONSTRUCTOR SOFTWARE | GENOA DESIGN INTERNATIONAL

APRIL 2008 – SEPTEMBER 2009

INDUSTRY INVESTMENT: $1.5M | NSRP ASE INVESTMENT: $1.3M

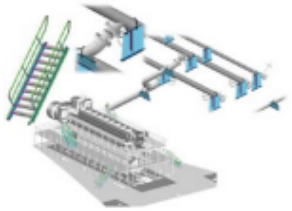
OBJECTIVE

Develop the capability of creating standard assemblies with appropriate material identification and build sequences in a manner that they can be instantiated into a design within the ShipConstructor® product.

SUMMARY

Current ship design process practices utilize many ship parts, which could be considered standard assemblies and are located and used in many different areas of a ship. Examples of these parts include hatches, doors, ladders and rails. This project was in response to the need within mid-tier shipyards for increased capabilities when modeling these standard assemblies, generating Bills of Material and assigning these components to relevant portions of a build sequence versus the common practice of creating each of these assemblies uniquely within the ship design model for a specific use and area of the ship.

In addition, the project team focused on developing distributed system supports (e.g., hangers) within the ShipConstructor product, allowing support design to be done in the preliminary design phase, Objective not during the installation phase, which has been common practice.



Key Deliverables

- Software Release featuring Stand Assembly Functionality
- Software Release featuring Hangers and Supports Functionality

Final Report

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NSRP – critical elements

- breakthrough technologies and processes
- collaboration
- implementation solutions
- human and capital investment

What is the NSRP…

For more information on NSRP, visit www.nsrp.org

Questions?