

# **Surface Preparation and Coatings (SP&C) Joint Panel Meeting (JPM) Update**

**Arcino “*Q*” Quiero, Jr. – SP&C Panel Chair  
HII-Newport News Shipbuilding  
September 10-12, 2019 – Quonset Point, RI**



# NSRP SP&C Panel Mission Statement

Surface Preparation & Coatings

## **Specs to Decks**

- Research, evaluate, develop, and sustain current and emerging technologies that will reduce cost and maintain or enhance quality
- Engage Suppliers, Applicators, and Specifiers of surface and preservation systems
- Facilitate Panel meetings to encourage broad and active participation
- Network with industry experts

# NSRP SP&C Panel Member Shipyards (11)



# NSRP SP&C Panel Steering Committee

## Surface Preparation & Coatings

### **Active Member Shipyards & NAVSEA:**

- Austal USA
- ✓ BAE Systems Southeast – Steve Cogswell
- ✓ GD-Bath Iron Works – Robert Cloutier
- ✓ GD-Electric Boat – Mark Toscano
- ✓ GD-NASSCO – Angel Zepeda
- ✓ HII-Ingalls Shipbuilding – Conlan Hsu
- ✓ HII-Newport News – Arcino “**Q**” Quiero
- VT Halter Marine
- ✓ NAVSEA 05 – Mark Ingle/Howard Castle

### **Panel Officers:**

- SP&C Panel Chair – Arcino “**Q**” Quiero
- SP&C Panel Vice-Chair – Robert Cloutier
- Technical Warrant Holder (TWH) – Mark Ingle

### **Member Shipyards:**

- Conrad Shipyard
- Fincantieri Marinette Marine
- Vigor Shipyard

# NSRP SP&C Panel Focus

## Surface Preparation & Coatings



- Workforce
  - Specifications
  - Surface Preparation
  - Coatings Application
  - Environmental Compliance
- Quality Assurance & Documentation
- Embracing Innovation & Advancing Technology

# NSRP SP&C Panel Activities & Participants

## Surface Preparation & Coatings

### **Two “Official” Meetings/Year:**

- Programs Updates
- Projects Reviews
- Technical Presentations
- Participants Workshops/Demo
- **Facilities Tours**

### **Sponsor 3 Panel Projects/Year:**

- Funding – Up to \$150K
- Duration – 12 Months
- Impact – Immediately
- **No Cost Extension (NCE)**

### **Panel Participants Include:**

- **NAVSEA 05 (TWH)**
- NAVSEA 04/CWP Quality
- NSRP and Public Shipyards
- ManTech
- MegaRust
- NACE
- SSPC
- Suppliers, Subcontractors, & Academia
- Work collaboratively w/various Navy Working Groups: SSRAC, NSRP Day, & **Corrosion Community of Practice (CoP)**

# NSRP SP&C Panel Activities & Participants

## Surface Preparation & Coatings

### ***“Ideas” Pitch – MegaRust 2019:***

- Team W/NSRP Shipyard
- Submit to SP&C Chair,  
[Arcino.Quiero@hii-nns.com](mailto:Arcino.Quiero@hii-nns.com),  
August 12<sup>th</sup> @ 12 Noon, ET
- Solicitation information is available on NSRP’s website:  
[www.nsrp.org](http://www.nsrp.org)

### **Sponsor up to three (3) Panel and one (1) Joint Panel projects for 2020:**

- Funding – Up to \$150K
- Duration – 12 months after receipt of funding
- Immediate Impact:
  - Safety
  - Quality
  - Schedule
  - Costs
  - Specification

**Return on Investment (ROI)**



# NSRP SP&C Panel Projects

## Surface Preparation & Coatings

### Top 3 – 2019:

- *Survey of Surface Prep & Coatings Automation*
- *Standardization and Digitization of Visual Inspection for Shipbuilding & Repair*
- *Primers with Extended AF Overcoat Window Surface Preparation*

### Joint & WFD Proposals – 2019:

- *Certification Program – Shipbuilding Industry Surface Prep & Coatings Training*
- *Virtual Spray Paint Training System*

### Current Projects - 2018:

- ✓ *Thermal Insulating Aerogel Filled Coatings*
- ✓ *Evaluation of Plasma Coating Removal & Surface Preparation*

**Completed in 2019**

### Recently Completed Projects:

2017

- ✓ *Partial Blast of UHS Coated Tanks II*
- ✓ *Retention of Epoxy Type VI under Ultra High Solids (UHS)*

### Completed in 2018

2016

- ✓ *Boomlift Carried Environ. Enclosure*
- ✓ *Implementation of Paperless Paint*

### Completed in 2017

2015

- ✓ *Universal Primer & Surface Prep Process*
- ✓ *Partial Blast of UHS Coated Tanks*
- ✓ *Technical Guide for Inaccessible Void Coatings & Treatments*

### Completed in 2016

2014

- ✓ *Reducing Inspection Costs Using the Latest Digital Inspection Tools*
- ✓ *Cost Savings Comparison in Applying Polysiloxane vs. Silicone Alkyd Topcoats*
- ✓ *Paperless Paint Documentation II*

### Completed in 2015




# NSRP SP&C Panel 2019 Funded Projects

Top 3 / #	Prime / Lead & Team Members	Project Description
1 <sup>st</sup> / #9	<b>Prime / Lead:</b> Elzly Technology Corporation <b>Team Members:</b> BAE Systems, HII-Ingalls	<b>Survey of Surface Prep &amp; Coatings Automation</b> – Develop a path forward for NSRP Shipyards to improve automation of surface preparation and coatings processes.
2 <sup>nd</sup> / #15	<b>Prime / Lead:</b> TruQC <b>Team Members:</b> BAE System, HII-NNS	<b>Standardization and Digitization of Visual Inspection for Shipbuilding and Repair</b> – Configure commercially off the shelf product for standardizing & digitizing visual inspection data, optimizing Ship construction & repair processes.
3 <sup>rd</sup> / #2	<b>Prime / Lead:</b> Excet <b>Team Members:</b> GD-BIW, GD-EB, HII-Ingalls	<b>Primers W/Extended AF Overcoat Window</b> – Identify & test the compatibility of commercial HS primers with extended AF overcoat windows & MIL-PRF-24647 QPD AF paints, potentially eliminating the need for a thumb tacky coat.
Joint Projects	Prime / Lead & WFD / Joint Panels	Project Description
WFD 2 <sup>nd</sup> / Project #16	<b>Prime:</b> GD-NASSCO <b>Lead:</b> Work Force Development (WFD) Panel <b>Team Members:</b> HII-Ingalls, HII-NNS	<b>Virtual Spray Paint Training System</b> – Evaluate virtual reality technology, such as Virtual Paint Spray Training Systems (VPSTS), to shipbuilding standards (009-32 / NSTM-634 & SSPC as it relates to spray painting operations), and collecting user feedback on the experience.
Joint / #17	<b>Prime:</b> GD-BIW <b>Lead Panel:</b> Work Force Development (WFD) <b>Team Members / Joint Panels:</b> SP&C, WFD, and EH&S Panels	<b>Certificate Program: Shipbuilding Industry Surface Prep &amp; Coating Training</b> – The program will provide shipbuilding paint training, which will include marine & industrial applications to new hires & general public.


# Survey of Surface Prep & Coatings Automation

## *Panel: Surface Preparation & Coatings – Top 3 – #1*

PROJECT INFORMATION	OBJECTIVE
<p><b><u>Prime/Lead</u>:</b> Elzly Technology Corporation</p> <p><b><u>Team Members</u>:</b> BAE Southeast Shipyards, HII-Ingalls, others TBD</p> <p><b><u>Duration</u>:</b> 12 Months</p>	<p>Develop a path forward for NSRP Shipyards to improve automation of surface preparation and coatings processes. Assemble a team of Shipyard representatives to survey the use of blasting and coatings robotics in other industries to identify concepts that may work in shipbuilding.</p>
DELIVERABLES/BENEFITS/ROI	FINANCIAL
<ul style="list-style-type: none"> <li>• Deliver report documenting the results of a literature review and field visits to observe various abrasive blasting and coatings robots in action</li> <li>• Reduce overall costs in terms of direct cost and risks reduction</li> <li>• Identify opportunities for implementation, possibly through Research Announcement (RA) projects</li> </ul>	<p><b><u>Program Funds</u>:</b> Up to \$150K</p> <p><b><u>Cost Share</u>:</b> N/A</p> 



# Standardization & Digitization of Visual Inspection for Shipbuilding & Repair

## *Panel: Surface Preparation & Coatings – Top 3 – #2*

PROJECT INFORMATION	OBJECTIVE
<p><b><u>Prime/Lead:</u></b> TruQC</p> <p><b><u>Team Members:</u></b> BAE Southeast Shipyards, HII-Newport News Shipbuilding, Elzly Technology Corporation</p> <p><b><u>Duration:</u></b> 12 Months</p>	<p>Configure commercially off the shelf product for standardizing and digitizing visual inspection data to optimize Naval Ship construction and repair processes. The intent of this project is to prove system functionality and repeat tremendous savings and data availability seen by commercial clients over a two year period globally.</p>
DELIVERABLES/BENEFITS/ROI	FINANCIAL
<ul style="list-style-type: none"><li>• An objective, standardized, paperless, and truly digital defect identification and resolution system that can be used for internal process improvement</li><li>• Useable data consistent across class, contracts, and work processes</li><li>• Significant time and cost savings</li></ul>	<p><b><u>Program Funds:</u></b> Up to \$150K</p> <p><b><u>Cost Share:</u></b> N/A</p> 

# Test/Evaluation of Primers W/Extended AF Overcoat Window

## *Panel: Surface Preparation & Coatings – Top 3 – #3*

PROJECT INFORMATION	OBJECTIVE
<p><b><u>Prime/Lead:</u></b> Excet</p> <p><b><u>Team Members</u></b> (Including NSRP's Shipyards): National Research Lab (NRL), PPG, Sherwin Williams, International Paint, HHI-Ingalls, BAW, and BIW</p> <p><b><u>Duration:</u></b> 12 Months</p>	<p>Identify and test the compatibility between commercial high solids primers with extended AF overcoat windows and MIL-PRF-24647 QPD AF paint, potentially eliminating the need for a thumb tacky second coat. Full scale testing (e.g. dry-dock wall) of candidates identified under FY18 NAVSEA PCoE program. Recommended changes will be made via the ASTM F-718 and 009.32.</p>
DELIVERABLES/BENEFITS/ROI	FINANCIAL
<ul style="list-style-type: none"><li>• Deliverable:<ul style="list-style-type: none"><li>• Lessons learned and cost benefit analysis</li><li>• ASTM F-718 application requirement</li></ul></li><li>• Benefits:<ul style="list-style-type: none"><li>• Eliminate subjective assessment of thumb tacky</li><li>• Improve QA for 2<sup>nd</sup> coat of primer (DFT, etc.)</li><li>• Dry-dock flexibility</li></ul></li><li>• ROI: 3.3:1</li></ul>	<p><b><u>Program Funds:</u></b> Up to \$150K</p> <p><b><u>Cost Share:</u></b> NAVSEA PCoE - \$170K (FY18), \$135K (FY19)</p> <div><div>23236 Primer – Requires Thumb Tacky: </div><div>Alt. Primer with Extended Overcoat: </div></div>


# Virtual Spray Paint Training System

## Panel: WFD Top 3 – #2 & SP&C

PROJECT INFORMATION	OBJECTIVE
<p><b><u>Prime/Lead:</u></b> NASSCO</p> <p><b><u>Team Members:</u></b> Virtual Paint Products, LLC</p> <p><b><u>Duration:</u></b> 12 Months</p>	<p>Project goals will include evaluating Virtual Reality Technology such as VPSTS to shipbuilding industry standards (009-32/NSTM-631/NSTM-634 and SSPC as it relates to spray painting operations), and collecting user feedback on the experience.</p>
DELIVERABLES/BENEFITS/ROI	FINANCIAL
<ul style="list-style-type: none"><li>• Reduces rework and makes paint application more accurate</li><li>• Generates no waste or hazardous environment</li><li>• Final report and presentation will be distributed</li><li>• Final Hands-on workshop demonstrating the training</li></ul>	<p><b>Program Funds:</b> \$147K</p> <p><b>Cost Share:</b> N/A</p>

# Certificate Program: Shipyard Industry Surface Prep & Coating

## Panel: Surface Prep & Coatings (SP&C) – Joint Proposal

Project Idea	Objectives
<p><b><u>Lead / Prime:</u></b> Work Force Development (WFD) Panel / GD-BIW</p> <p><b><u>Team Members:</u></b> Surface Prep &amp; Coating, Work Force Development, and Environmental Panels</p> <p><b><u>Duration:</u></b> 12 Months</p>	<p>Design Enhanced Trade Training Program:</p> <ul style="list-style-type: none"> <li>• Shipyard Industry Surface Prep &amp; Coating</li> <li>• Team with Shipyards, Academia and Industry Experts to build curriculum</li> <li>• Incorporate best practices and new technologies /equipment</li> <li>• Develops competent marine / industrial painters (new hires and pre-hires)</li> <li>• Adaptable to all shipyards</li> </ul>
Deliverables/Benefits/ROI	Financial
<ul style="list-style-type: none"> <li>• Curriculum / road map for program development</li> <li>• Enhanced new hire surface prep &amp; coating competencies and qualifications</li> <li>• Trained employees = increased skills, first time quality, job satisfaction, motivation, innovation, and process improvement</li> </ul>	<p><b><u>Program Funds:</u></b> Up to \$150K</p> <p><b><u>Cost Share:</u></b> N/A</p> 

# NSRP SP&C Panel 2019 Road Map

## Surface Preparation & Coatings

- ✓ **February 6<sup>th</sup>-7<sup>th</sup>** – **NSRP Technology Investment Plan (TIP) Meeting** – Summerville, SC
- ✓ **February 11<sup>th</sup>-14<sup>th</sup>** – **SSPC 2019 Coatings + Annual Conference** – Orlando, FL
  - SSPC Awards Lunch – Monday, February 11<sup>th</sup>
    - **Judie Blakey** – “Women in Coatings Impact Award”
    - **Mark Schultz** – “John D. Keane Award of Merit”
  - SP&C Panel 2019 Update – Tuesday, February 12<sup>th</sup>
  - MegaRust Mid-Year Update – Wednesday, February 13<sup>th</sup>
- ✓ **March 12-15, 2019** – **NSRP All Panel Meeting** – Charleston, SC
  - State of the SP&C Panel – Tuesday, March 12<sup>th</sup> AM
  - SP&C Panel Meeting – Thursday, March 14<sup>th</sup> AM
  - ECB Panel Project Selection (“Top 3” & “Joint” Projects) – Thursday, March 14<sup>th</sup> PM – **OUTSTANDING!**
  - ECB Panel Project Selection (“Next 2” Projects) – Friday, March 15<sup>th</sup> AM
- ✓ **May 14-16, 2019** – **Mega Rust 2019 – Naval Corrosion Conference** – Portsmouth, VA
  - SP&C Panel Meeting (8:00 AM – 12 Noon) – Tuesday, May 14<sup>th</sup>
- ✓ **June 24-28, 2019** – **NAVSEA SSRA Standard Item Review** – Newport News, VA
- ✓ **August 20, 2019** – **NACE Corrosion Consortia** – Houston, TX
- ✓ **September 10-12, 2019** – **Joint Panels; SP&C and EH&S Fall Meeting** – Quonset Point, RI
- October 29-November 2, 2019** – **SNAME 2019 Maritime Convention** – Tacoma, WA
- November 18-20, 2019** – **ECB Mtg. & NSRP Day @ NAVSEA** – Washington Navy Yard, Washington, D.C.



# NSRP SP&C – For the Good of the Panel

## Surface Preparation & Coatings

Congratulations to **Atmospheric Plasma Solutions (APS)** for winning CTMA Technology Competition. On May 8<sup>th</sup> APS presented ***Atmospheric Plasma Coating Removal***, during the 2019 CTMA Partners Meeting. The JTEG awarded APS a trophy, \$50K for project funding, and invited to participate in a one-year technology demonstration / evaluation project.



Glenn Astolfi, Project Lead

***Atmospheric Plasma Coating Removal*** (APCR) is a media and chemical free process reduces injuries, increases environmental safety, and lower cost.



# NSRP SP&C Panel – Responsibilities & Takeaways

## Surface Preparation & Coatings

***“You, the Coatings Community, are the SMEs. You owe it to yourselves, your Shipyards, and your Companies to stay aware of and understand current and proposed requirements. Don’t allow someone else to determine your fate or the fate of your Company without your input”.***

***“The work isn’t completed until the ship is painted and the coating system is documented; preferably paperless”.***

***“Together, let’s paint a picture that allows us, the Coatings Community, to be successful!!!”***

***“Q”***

# *Questions*