

2020 *“Ideas”* Pitch

Surface Preparation & Coatings Panel

Mega Rust 2019


May 14, 2019

Portsmouth, VA




Guide to Stainless Steel use in Navy Shipbuilding

Surface Preparation & Coatings

PROJECT INFORMATION	OBJECTIVE
<p>Prime/Lead: Elzly Technology Corporation</p> <p>Team Members: HII-Ingalls, other Shipyards TBD</p> <p>Duration: 12 Months</p>	<p>Facilitate effective use of stainless steels during shipbuilding and ship repair by identifying best practices, business case for shipyards, approved Navy practices, and methodologies to navigate concerns over it's use.</p>
DELIVERABLES/BENEFITS/ROI	FINANCIAL
<ul style="list-style-type: none">• Deliver guide document on effective use of stainless steel during shipbuilding and ship repair• Steel corrosion is a significant cost to ship owners. Effective use of stainless steel can reduce the life cycle cost and negligible increase to new build cost.	<p>Program Funds: \$150K Cost Share: \$ 0K</p> 


Power tools for surface preparation

Surface Preparation & Coatings

PROJECT INFORMATION	OBJECTIVE
<p><u>Prime/Lead:</u> Elzly Technology Corporation</p> <p><u>Team Members:</u> HII-Ingalls, other Shipyards TBD</p> <p><u>Duration:</u> 12 Months</p>	<p>To generate data on the productivity and functionality of the latest, innovative power tools use for surface preparation. The data will help shipyards:</p> <ul style="list-style-type: none">• Optimize the work requirements• Identity/demonstrate improved tools and processes
DELIVERABLES/BENEFITS/ROI	FINANCIAL
<ul style="list-style-type: none">• Deliver guide to the use of alternative power tools and attachments allowing shipyards to optimize their use• Reduce and improve quality by optimizing surface preparation tool use	<p>Program Funds: \$150K</p> <p>Cost Share: \$ 0K</p> 


Fastener Coatings for High Strength Fasteners

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PROJECT INFORMATION	OBJECTIVE
<p><u>Prime/Lead:</u> Elzly Technology Corporation</p> <p><u>Team Members:</u> HII-Ingalls, other Shipyards TBD</p> <p><u>Duration:</u> 12 Months</p>	<p>Provide guidance and recommendations on corrosion resistant alternatives to bare steel high strength fasteners.</p>
DELIVERABLES/BENEFITS/ROI	FINANCIAL
<ul style="list-style-type: none">• Deliver report including recommended fastener coating materials• Reduce ship preservation costs by providing corrosion resistant, high strength fasteners	<p>Program Funds: \$150K Cost Share: \$ 0K</p> 

Reduce the Cost and Schedule Impact of Coating Rework

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PROJECT INFORMATION	OBJECTIVE
<p>Prime/Lead: Elzly Technology Corporation</p> <p>Team Members: Shipyards TBD</p> <p>Duration: 12 Months</p>	<p>Reduce the impact of coating re-work during shipbuilding and ship repair. Specifically:</p> <ul style="list-style-type: none">• Optimize the work requirements• Identity/demonstrate improved tools and processes
DELIVERABLES/BENEFITS/ROI	FINANCIAL
<ul style="list-style-type: none">• Deliver report including recommended practices for reducing the impact of coating touchup• Reduce cost by eliminating rework• Improve quality by optimizing rework procedures	<p>Program Funds: \$150K</p> <p>Cost Share: \$ 0K</p> 

Reduce Cost by Respecting and Understanding Paint During Shipbuilding

Surface Preparation & Coatings

PROJECT INFORMATION	OBJECTIVE
<p><u>Prime/Lead:</u> Elzly Technology Corporation</p> <p><u>Team Members:</u> Shipyards TBD</p> <p><u>Duration:</u> 12 Months</p>	<p>Reduce the cost of coatings by:</p> <ul style="list-style-type: none">- Providing best practices to other trades to minimize damage to installed coatings- Providing guidance to non-technical owner representatives to identify proper coatings and differentiate significant defects
DELIVERABLES/BENEFITS/ROI	FINANCIAL
<ul style="list-style-type: none">• Prepare Training Materials & Guidance Documents (e.g., flip books) on coatings designed for the non-coatings professional• Eliminate costly decisions made by non-coatings personnel – estimated to be in excess of hundreds of thousands of dollars per year.	<p>Program Funds: \$150K</p> <p>Cost Share: \$ 0K</p>

Robotic Application to Address Labor Shortages

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PROJECT INFORMATION	OBJECTIVE
<p><u>Prime/Lead:</u> PPG</p> <p><u>Team Members:</u> Robotic Technologies of Tennessee, Vigor Shipbuilding, other Shipyards TBD</p> <p><u>Duration:</u> 12 Months</p>	<p>To demonstrate a remote-controlled painting robot that operates on both horizontal and vertical surfaces.</p> <p>The goal is to attract and retain painting labor by remaking a dirty and potentially-dangerous job into a clean and safe robotics operation.</p>
DELIVERABLES/BENEFITS/ROI	FINANCIAL
<p>Deliverables:</p> <ul style="list-style-type: none"> • Confirm ability to paint to heights relevant to Shipyard and to meet coating specifications • Assess paint process cycle time vs. current state • Assess ROI vs. current state <p>Benefits:</p> <ul style="list-style-type: none"> • Easier to attract labor to a cleaner / safer robotics job 	<p>Program Funds: \$150K</p> <p>Cost Share: TBD</p>

Robotic Application to Address Labor Shortages

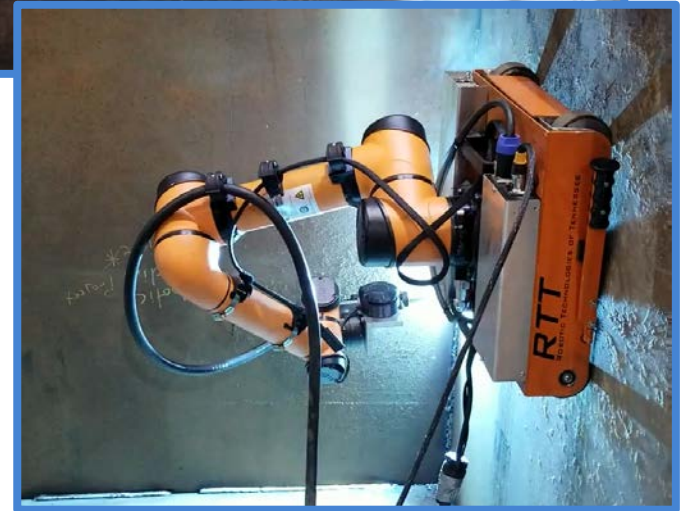
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Photo Above: Painting labor at Shipyards is in short supply and suffers from high turnover due to dirty and potentially hazardous conditions.

Photo Below: RTT's robotic technology with vertical climb, already demonstrated for welding, enables cleaner / safer remote paint application.



This program will demonstrate the ability to add paint functionality to a remote-controlled robotic platform to deliver a quality paint finish under Shipyard conditions using RTT's advanced surface detection and mapping algorithms.

Once successful under Coatings and Surface Preparation Panel, the project will evolve into a joint project with the Work Force Development Panel.



Temporary Protection of Shipboard Coatings and Finishes for Cost Reduction and Schedule Impact for New Build and Overhaul

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PROJECT INFORMATION	OBJECTIVE
<p>Prime/Lead: Entry Point International, LLC</p> <p>Team Members: Righter Group, Inc., HII-Ingalls Shipbuilding, Protec Marine</p> <p>Duration: 12 Months</p>	<p>The goal of this project is to demonstrate and measure the cost benefits of a higher performing temporary protection system including the scope of use. Deep dive into real cost reductions (legacy materials and uses vs new methods) in damages to finishes and the associated rework for new build and overhaul which result in direct cost reductions to shipyards. Answering the Question " What is the real cost of improper temporary protection to a shipyard?"</p>
DELIVERABLES/BENEFITS/ROI	FINANCIAL
<ul style="list-style-type: none">• Decreased labor and increased durability vs. legacy methods• Identify state of the art protection materials for varying levels of need throughout ships	<p>Program Funds: \$150K Cost Share: \$ 0K</p> <div data-bbox="944 1146 1300 1379"></div> <div data-bbox="1369 1105 1835 1379"></div>

Temporary Protection of Shipboard Coatings and Finishes for Cost Reduction and Schedule Impact for New Build and Overhaul

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- Explore uses for higher performing temporary protection in shipbuilding, study the true cost impact of rework of finish materials, focus on re-usability, recycled technologies, eliminate the waste of one-time use materials, and schedule impacts
- Focus on “One Time” Installation of Temporary Protection
- Prove that legacy approaches of temporary protection are actually costing Shipyards more money than expected and budgeted



Preservation of Vulnerable Materials During the Build Process

Surface Preparation & Coatings

PROJECT INFORMATION	OBJECTIVE
<p><u>Prime/Lead:</u> NNS</p> <p><u>Team Members:</u> NNS, Others TBD</p> <p><u>Duration:</u> 12 Months</p>	<p>To identify and evaluate temporary coatings to protect parts used in shipbuilding that can be easily removed and do not leave residue while protecting surfaces from corrosion, environmental degradation or inadvertent damage during ship construction (e.g., from blasting welding heat/sparks). Determine the risks and rewards associated with the many temporary coating products.</p>
DELIVERABLES/BENEFITS/ROI	FINANCIAL
<ul style="list-style-type: none">• Cost Avoidance• Improves Safety, Quality, Time Efficiency• Final Report to include Technical Data Package, Recommendations for Coatings, Recommendations for Implementation• ROI: TBD	<p>Program Funds: \$150K or less</p> <p>Cost Share: N/A</p>

Preservation of Vulnerable Materials During the Build Process

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- Expedite work: reduce time in surface prep and fit-up
- Reduce general corrosion, pitting and clean-up of material surfaces
- Improve safety: reduce injury caused by corrosion removal and pitting corrosion repair processes
- Protect coated surfaces
- Protect frequently damaged items (e.g., light fixtures)
- Reduce rework

