

Electrical Connector Standardization

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GENERAL DYNAMICS
Bath Iron Works



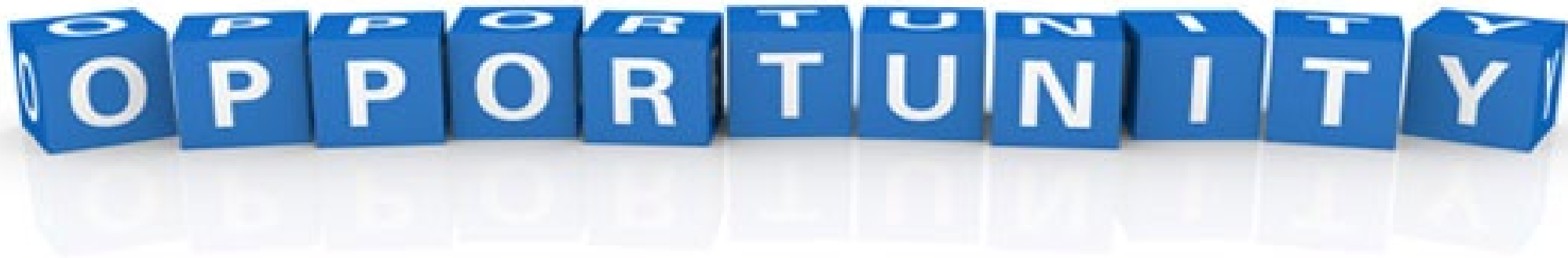
AGENDA

- Mission Statement
- Project Participants
- Quad Chart
- Primary Objectives
- Proposed Tasking
- Status



MISSION STATEMENT

Use previous studies and findings to investigate opportunities and propose plans to standardize and consolidate electrical connectors used on a ship program(s) to reduce variation, inventory and program costs



PROJECT PARTICIPANTS

- BIW
 - Rickey DeLoge – Project Manager
- ATI
 - Nick Laney – Business Manager
- HII
 - John Walks – TPOC
- D'Angelo Technologies
 - Maurissa D'Angelo – TPOC
- HII-NNSB
 - Glenn Dorsey – PTR
- NAVSEA
 - Christopher Nemarich

Electrical Connector Standardization

Joint Panel Project: Ship Warfare Systems Integration and Electrical Technologies Panels

PROJECT INFORMATION	OBJECTIVE
<p><u>Prime/Lead</u>: Bath Iron Works</p> <p><u>Team Members</u>: D'Angelo Technologies, Hill Ingalls SY</p> <p><u>Duration</u>: 12 Months</p>	<p>Identify the degree of connector consolidation that is available for a given ship class; determine the available savings resulting from the recommended available consolidation opportunities; create a business case that identifies specific opportunities to receive benefit from connector standardization; and present an implementation plan for a given ship class.</p>
DELIVERABLES/BENEFITS/ROI	FINANCIAL
<ul style="list-style-type: none"> • Report summarizing the costs and benefits from instituting a consolidation effort for a particular ship program; implementation plan • Reduced costs of installation, testing and training • Improved first time installation quality • Reduced inventories 	<p>Program Funds: \$150K</p> <p>Cost Share: \$0K</p>



Electrical Connector Standardization Objectives

Joint Panel Project: Ship Warfare Systems Integration and Electrical Technologies Panels

- Extends the findings of previous efforts to create a business case to standardize connectors to the greatest extent possible
- Focus on control, communications & instrumentation
- Demonstrate for a specific ship program(s) how common connector components can be beneficial
- Costs & benefits will be analyzed...30% cost reduction is targeted



Preliminary Project SOW

Joint Panel Project: Ship Warfare Systems Integration and Electrical Technologies Panels

TASK	TITLE	DESCRIPTION	ESTIMATED START DATE	EXPECTATIONS
1	Review	Review Report Information	1/6/2020	Review previous D'Angelo project report (Variant Reduction for Shipboard Installed Connectors) Review consolidation reports from NAVSEA Review military programs and specifications for standardization Review other documents and past studies as applicable Review Virtual Shelf information
2	Requirements	Determine/Research Requirements	1/13/2020	Gather/Research MIL Specification Electrical Connectors Research Ship Program Specifications Research GFE/PS Contracts Create a Requirements Matrix for connectors Create association matrix between Ship Program Specifications and Virtual Shelf (if available)
3	Data Collection	Collect Applicable Data	2/3/2020	Create Master Connector List from shipboard installed connectors (commercial/military) Determine Connector Definitions Determine Connector Attributes Develop Connector Matrix Determine cross ties between commercial connectors and military connectors Determine if new connector styles, techniques, adapters, technology is not being utilized
4	Data Analysis	Analyze Collected Data	3/2/2020	Perform statistical analysis to find outliers and determine connector classifications and groupings Apply cost figures, e.g. hardware, parts, labor, testing, life cycle, etc. Create run rules and determine the process to selecting the chosen standardized products
5	Build Business Case	Find Product Opportunity	6/1/2020	Select most opportune spaces and equipment from data analysis Use application matrices and consolidated Virtual Shelf information Create mock designs that serve applications and leverage hardware commonality Conduct business case assessment utilizing cost figures
6	Report Out	Create Presentations/Reports	3/1/2020	Generate 3 quarterly reports and 1 final report

D'Angelo Technologies SOW

TASK	TITLE	DESCRIPTION	EST. START DATE	EXPECTATIONS
1	Review	Review Report Information	1/6/2020	Review previous D'Angelo project report (Variant Reduction for Shipboard Installed Connectors) Review consolidation reports from NAVSEA Review military programs and specifications for standardization Review other documents and past studies as applicable Review Virtual Shelf information
2	Requirements	Determine/Research Requirements	1/13/2020	From a collection of requirement data: Assist creating a Requirements Matrix for shipboard installed connectors Assist creating an association matrix between Ship Program Specifications and Virtual Shelf (if available)
3	Data Collection	Collected Applicable Data	2/3/2020	From a Master Connector List compiled from shipboard installed connectors (commercial/military): Assist determining Connector Definitions (Placing bounds on the type of connectors to sample, Backshells, Boots, Size, Pin, Undersea Equipme Relations Assist de Assis de connecto Assist de techniq utilized)
4	Data Analysis	Analyze Collected Data	3/2/2020	Using a t and dete grouping Assist on process i products Using all Shelf info Assist in applica Assist in Utilizing cost figures
5	Build Business Case	Find Product Opportunity	6/1/2020	Assist in applica Assist in Utilizing cost figures
6	Report Out	Create Presentations/Reports	3/1/2020	Provide p

HII SOW

TASK	TITLE	DESCRIPTION	EST. START DATE	EXPECTATIONS
1	Review	Review Report Information	1/6/2020	Review previous D'Angelo project report (Variant Reduction for Shipboard Installed Connectors) Review consolidation reports from NAVSEA Review military programs and specifications for standardization Review other documents and past studies as applicable Review Virtual Shelf information
2	Requirements	Determine/Research Requirements	1/13/2020	From a collection of requirement data: Assist creating a Requirements Matrix for shipboard installed connectors Assist creating an association matrix between Ship Program Specifications and Virtual Shelf (if available)
3	Data Collection	Collected Applicable Data	2/3/2020	From a Master Connector List compiled from shipboard installed connectors (commercial/military): Assist determining Connector Definitions (Placing bounds on the type of connectors to sample, Backshells, Feed-Through Filings, Cold-Shrink Boots, Spec. Characteristics, Space Type, Shell Size, Pinning, Termination, etc.) Understand connector attributes (Cable Types, Equipment and Equipment Source, and their Relationships) Assist determining a Connector Matrix Assist determining cross ties between commercial connectors and military connectors Assist determining if new connector styles, techniques, adapters, technology is not being utilized
4	Data Analysis	Analyze Collected Data	3/2/2020	Using a statistical dataset, assist finding outliers and determine connector classifications and groupings Assist creating run rules and determine the process to selecting the chosen standardized products
5	Build Business Case	Find Product Opportunity	6/1/2020	Utilizing application matrices and consolidated Virtual Shelf information: Assist in creating mock designs that serve applications and leverage hardware commonality Assist in conducting a business case assessment utilizing cost figures
6	Report Out	Create Presentations/Reports	3/1/2020	Review 3 quarterly reports and 1 final report. Provide personal findings and takeaways section



Electrical Connector Standardization Status

Joint Panel Project: Ship Warfare Systems Integration and Electrical Technologies Panels

- Created draft SOW documents and sent to ATI, D'Angelo, HII
- Working the price proposal to submit to ATI the week of 12/9/19
- Notional project start date after award is mid January 2020



GENERAL DYNAMICS

Electrical Connector Standardization

NSRP ETP

