Digital Paint Tool and Process Optimization

Status: Implemented

PROBLEM / OBJECTIVE

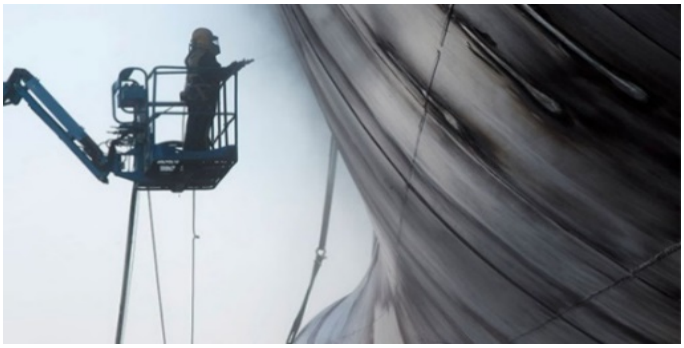
Painting in the shipyard is a major undertaking, as almost every part of a ship will go through some degree of painting during construction. Specifically designated, constrained areas in the shipyard are dedicated to performing major paintwork. This limitation, coupled with the requirement to paint most parts, can often create a bottleneck for the rest of the construction processes taking place before and after paint. At the core of this issue is the ability of the upstream engineering and planning organizations to provide the best data to the painters. Previously the paint data for engineering and planning was stored in several different places, in multiple disparate databases, and the data format/terminology varied across each ship program. This construction discipline was ripe for change: the paint 'metadata' needed to be standardized across all ship platforms, accessible as it changed, easy to maintain, and intuitive in its user interfaces and data presentation.

The primary goal of this project was the formation of a sound technical basis for the consolidation and optimization of paint data related functions and responsibilities. The primary efforts of the project included analysis of the current processes, mapping those processes, then developing planning and requirements documentation for the future state. Each effort was successfully completed resulting in a robust system definition

ACCOMPLISHMENTS / PAYOFF

Process Improvement:

The *Digital Paint Tool and Process Optimization* project analyzed the paint process and data to develop an optimized and consolidated method of generating, maintaining, and executing paint data for the DDG 51 Class destroyer. This effort created a unified data tool for paint data management, thus reducing labor costs through increased process efficiency and reduced rework. The digital paint tool will leverage the new paint data epoch by utilizing a central data management tool instead of the previous multiple federated database method. The dynamic nature of the tool allows upstream users to quickly modify, query, and provide an unprecedented ability to work with their data.



Ingalls Shipbuilding developed a new paint management processes for upstream organizations and downstream applications. Photo Courtesy of Ingalls Shipbuilding.

Implementation and Technology Transfer:

The 28-month project conducted a series of trials to validate that the paint data was captured, managed, and delivered with its integrity preserved. In order to evaluate the tool's impact on efficiency and quality, metrics were collected in accordance with the effectiveness evaluation criteria. The project has successfully completed and accepted by Ingalls management. Implementation is underway and is expected to be completed during the first quarter of FY20.

Expected Benefits and Warfighter Impact:

This effort will reduce labor hours required to provide instruction artifacts for fabrication, which translates into a potential cost savings of $218K per DDG hull. Ingalls expects the tool to provide benefits for other platforms, resulting in estimated five-year savings of over $2.7M across the Ingalls-built U.S. Navy and U.S. Coast Guard platforms.

TIME LINE / MILESTONES

Start Date:	February 2017
End Date:	May 2019

FUNDING

Current Navy ManTech Investment:	$825K

PARTICIPANTS

Navy ManTech
Huntington Ingalls Industries, Inc.
Naval Shipbuilding and Advanced Manufacturing Center

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