



Electronic Weld Record System

Project Snapshot



Project Lead:

Huntington Ingalls – Newport News Shipbuilding

Project Dates:

Nov 2016 – Nov 2018

Objectives:

Develop an Electronic Weld Record System that will eliminate the paper records and replace with an electronic system.

Estimated Savings:

\$1.6M per VCS hull

Welding processes at Huntington Ingalls Industries—Newport News Shipbuilding (NNS) require over 25 different forms, including Non Destructive Testing (NDT). All of these forms are manually filled out, and then signed by hand. Information recorded on the forms must be captured and retained to meet internal procedures and/or government requirements. The current NNS process for recording information on weld/NDT forms consists of physically routing paper forms from department to department obtaining signatures/OQE (Objective Quality Evidence). At the end of the paper process, as required by the ship/NAVSEA technical publications, the records are filed and stored for record retention. This process leads to hand-written errors, difficulty interpreting hand written data, missing data fields, misplacing records, and difficult/time consuming tracking and reviewing/certifying records for accuracy/completeness, impacting NAVSEA audits and system testing.

The purpose of this project is to develop an Electronic Weld Record System to eliminate the paper records and replace with an electronic system. The electronic system will be web-based and accessible by all users (e.g., welders, auditors, managers, SUPSHIP, fitters, inspection) through the NNS network using a desktop, mobile device (e.g., tablet), or kiosk. The first phase will map out the current state process, future state process, develop a paper and electronic prototype, and define the technical requirements. The paper and electronic prototype examples will help in determining the welding, NDT, Inspection, and IT software/hardware requirements. The applicable process owners, program owners, users, SUPSHIP, and NAVSEA will review the requirements to ensure all issues and technical input are being considered and met. The second phase is for system development, which includes coding, testing, evaluating, verifying, validating the software works as determined to meet the end customer/business requirements, and stakeholder demonstration of the developed system. Upon successful and timely completion of the *Electronic Weld Record* ManTech project and acceptance of the technology and associated business case by the acquisition Program Office, the results will be transitioned to the NNS facility. This technology, once fully implemented, could potentially save an estimated \$1.6M per VCS hull. The estimated savings is based on processing an estimated 30,000 weld records per year.

NSAM is a Navy ManTech Center of Excellence, chartered by the Office of Naval Research (ONR) to identify, develop and deploy, in U.S. shipyards and DoD manufacturing facilities innovative advanced manufacturing technologies that will reduce the cost and time to build and repair Navy ships and aviation assets. For additional information on this and other NSAM projects, please visit <http://nsamcenter.org>.

S2703 Electronic Weld Record
Rev A (1216)

Distribution Statement A: Approved for public
release; distribution is unlimited.
DCN# 43-2417-17

