



Society of Naval Architects and Marine Engineers 2009 Annual Meeting and Expo

Title: Enabling the Virtual Navy Enterprise

SNAME PS#: P18

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Abstract: The Virtual Navy Enterprise encompasses those Navy organizations, shipbuilders, integrators, and suppliers necessary to provide life cycle support for the fleet. The efficiency of this virtual enterprise is typically hampered by lack of interoperability and effective data exchange. This is particularly true for activities, such as Ship Alterations, that involve several different organizations. The ISE-6 team worked with NSWC Port Hueneme Division to develop a technical approach that fosters interoperability across the Virtual Navy Enterprise. This extends the ISE-6 Phase 1 work with the PLCS standard to include exchange of technical publication data using the S1000D international standard, which allows exchange of design and logistics data between ISEAs, NAVSEA, shipyards, and OEMs. A key result was the ability to automate identification of change impacts to technical publications; reducing the costs to evaluate changes and supporting cost benefit analysis and design trade studies. The ISE-6 team also worked with the US Navy S1000D Working Group and DDG 1000 Technical Data Working Group to help formulate S1000D data module naming rules, metadata use for efficient searching, and business rule definition. The ISE-6 team conducted a demonstration of this approach for a Ship Alteration resulting from a vendor change to the radar oscillator. The ISEA updates the radar product data and technical publication to reflect this change. An Engineering Change is coordinated between NAVSSES and the Shipyard to implement the SCD. The changes are passed, via PLCS and S1000D, to the shipyard IDE resulting in an associated change to the HVAC system to accommodate the increased heat load. The Shipyard develops a design change. The S1000D data modules affected by the AC Unit change are identified by the Shipyard and updated to reflect the change.

Keywords: