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Title: Interim SCIM and STEP Implementation

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Abstract: One of the most significant challenges facing the U.S. Navy, shipbuilders, and contractors today is the lack of a comprehensive, standards-based capability to extract and exchange shipbuilding product data from shipyard systems. In response, the Navy Product Data Initiative (NPDI) developed an Integrated Product Data Environment (IPDE) specification to define the requirements for and drive the implementation of product data systems based on an open architecture having suitable functionality and enterprise-wide interoperability to support affordable Navy ships design, construction and service life support. To ensure a standards-based data extraction and exchange capability, NPDI also developed the Ship Common Information Model (SCIM) specification to define a ship product information model, which enables effective interoperability among U.S. Navy sponsored shipbuilding IPDEs. However, the use of the SCIM specification for data exchange is currently limited by the availability of commercial CAD translators. However, AP 214 translators are commercially available for most CAD systems and have been used successfully in many industries, including shipbuilding, for the representation of shape data. The DDG 1000 program, for example, is providing detail ship design shape data in AP 214 format as a Navy deliverable. Further, many AP 214 translators also generate an auxiliary XML file with additional shipbuilding attributes. This paper reports the results of a project to investigate an interim approach using commercial AP 214 translators for shape data in conjunction with the SCIM schemas for shipbuilding product data. This enabled validation of the SCIM schemas for selected PDM information, molded form data, piping data, and structural data. The key mechanism is the definition of a cross reference mechanism from SCIM schema to geometry within an AP 214 file. The result is a collection of SCIM test files which document SCIM data exchanges, making it understandable and repeatable by other Ship programs that may require interim data

exchanges prior to the availability of full implementations of NPDI-compliant IDEs.

Keywords: