The vast majority of the product data required to perform a downstream function probably exists in electronic form. The problem is to find, trust it, translate it, and USE it.

- FINDING THE DATA: The case for an Integrated Product Data Environment
- TRUSTING THE DATA: The case for Accreditation
- TRANSLATING THE DATA: The case for STEP

We need to make sure that we acquire and manage the product data commensurate with the level of the data rights to which we are entitled.

- Form, fit, and function in the cases where the governments rights are limited.
- All OMIT data (operation, maintenance, installation, training).
- Detailed manufacturing data in the cases where the government has the appropriate rights.

Early stage design, contract design, detail design, construction, and logistics support all benefit from an accurate, up to date Product Model!
Program Managers for ACAT I and II programs shall assess the long-term technical data needs of their systems.

Consider technical data requirements as part of life-cycle sustainment planning within the Acquisition Strategy.

Assess the data required to design, manufacture, and sustain the system, as well as to support re-competition for production, sustainment, or upgrades.

Enforce the contractor's responsibility to verify any assertion of restricted use and release of data.
Digital Product Model Data
...its more than just design and construction

- The DPM should be the primary source of data for all pre milestone B activities.
- The DPM should be used by NAVSEA to validate the design during the Detail Design and Ship Production phases.
- The DPM should be the authoritative source of data for technical data packages, technical manuals, and training.
Product Model Data and Exchange
Current NAVSEA Policy

DON Policy stipulating that product model data should be delivered in STEP format

NAVSEA instruction for the development, maintenance, and acquisition of product model data

THE ASSISTANT SECRETARY OF THE NAVY
Research, Development and Acquisition
1000 Navy Pentagon
Washington, DC 20300-1000

OCT 23 2004

MEMORANDUM FOR DISTRIBUTION

Subj:

DON POLICY ON DIGITAL PRODUCT/TECHNICAL DATA

Ref:

(a) DEPSECDEF Memorandum, “Policy for the Transition to a Digital Environment for Acquisition Programs”, 2 July 1999
(b) USD (A&T) Management Reform Memorandum #2, “Moving to a Paperless Contracting Process by January 1, 2000”, 21 May 91 with Addendum, 29 July 1997
(c) USD (A&T) Memorandum, “Guidance for the Transition to a Digital Environment for Acquisition Programs”, 15 July 1997
(d) USD A&T Memorandum, “Transition to a Digital Environment for Acquisition Programs (Paperless Program Office)”, 15 April 1999
(e) SECNAVINST 5000.36, Department of the Navy Data Management and Interoperability, 1 November 2001
(f) GENADMINSNO Washington DC0323002ZAPR2001, “Implementing the Web Enabled Navy”
(g) Web-Enabled Navy Logistics Integration (WEN-L) Plan, June 2001
(h) NAVAIR Instruction 3.3.4002, “Digital File Formats Required for Technical Data Repository and Distribution Management”, 1 May 2003
(j) SECNAVINST 5000.2B, “Implementation of Mandatory Procedures for Major and Non-major Defense Acquisition Programs and Major and Non-major Information Technology Acquisition Programs”, 6 December 1996
(l) DoD Memorandum on the DoD Information Technology Standards Registry (DIST), 15 July 2006; DoD CIO, USD (A&T), and JS
(m) Joint Aeronautical Commanders Group, Strategy for Product Data throughout the Life Cycle, 8 May 2002
(n) DISA D/MOC, Version 3.1, Baseline Specifications, 29 April 1997
(o) Global Information Grid, Overarching Policy, DoD Directive 8100.1, 19 Sept 2002
(p) ASN RDA Memorandum on Summary of FORCEnet EXCOM, 19 February 2004, ASN RDA
(q) SECNAVINST 4105.1A, Independent Logistics Assessment (ILA) and Certification Requirements
(r) DON Independent Logistic Assessment Handbook, NAVSO P-3692, December 2003

This memorandum updates existing DoN Policy for Digital Product/Technical Data. New business practices relying on the use of digital methodologies and products have generated significant cost savings, reduced process cycle times and expanded capability for...
NAVSEA Product Model Data Policy
NAVSEA Instruction 9040.3A

<table>
<thead>
<tr>
<th>Product Model Data</th>
<th>Procure and accept product model data in STEP, native CAD, and/or LEAPS format that provides the best technical and cost performance as determined by a business case analysis.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Data</td>
<td>Procure and accept analysis models in a format that provides the best technical and cost performance as determined by a business case analysis.</td>
</tr>
<tr>
<td>Drawings</td>
<td>Procure and accept all drawings in a digital format that provides the best technical and cost performance as determined by a business case analysis.</td>
</tr>
<tr>
<td>Configuration</td>
<td>Implement configuration management controls to ensure that all product model data, analysis models, and drawings are consistent and can be associated to a specific configuration of the ship.</td>
</tr>
<tr>
<td>Management</td>
<td></td>
</tr>
<tr>
<td>Accreditation</td>
<td>Ship and ship systems design, acquisition, and fleet support activities shall establish a digital data accreditation process.</td>
</tr>
</tbody>
</table>

Harmonized with the OPNAV PDM Working Group and the DoD Engineering Drawing Modeling Working Group
The Digital Product Model shall be delivered in both a native and neutral format. The neutral format shall comply with the Department of the Navy Policy on Digital Product/Technical Data dated 23 October 2004. ISO 10303 Part 214 shall be used to define the Digital Product Model geometry. ISO 10303 Part 239 shall be used to define product structure, the relationship between objects, and configuration management data. The Builder shall provide a list in the PPM\(^1\) of each data exchange specification (DEX) that will be used to support the ISO Part 239 exchange. In the event the contractor can demonstrate the need for an additional DEX, then the contractor shall develop a NAVSEA approved DEX.

\(^1\) Project Peculiar Manual
A two level approach for the exchange of product model data

First level: Support configuration management, logistics support, provisioning, spares, and repairs through the use of STEP for geometry, product structure, non graphical attributes, and to manage configuration items of the as-built / as-maintained ship.

Second level: Deliver the as-designed class model of
1) molded forms suitable for defining a general arrangement
2) scantling level of detail of structure to support structural (and other types of) analysis
3) functional distributed systems model (i.e. path, components, and connections)
4) compartmentation, including accesses, opening, and tightness
5) plates, stiffeners, brackets, collars, and other structural components as parts
6) distributed system components, fittings, and equipment as parts.
• Provide guidance for the acquisition of product model and related technical data.

• This instruction applies to product models and technical data derived directly from the product model such as engineering analysis, bills of material, and drawings.

• This instruction implements the DON POLICY ON DIGITAL PRODUCT/TECHNICAL DATA issued in 2004 and the NAVSEA SHIP DESIGN AND TOOLS GOALS issued in 2008.

• This instruction does not specify a format explicitly, but instead requires Navy stakeholders to reach consensus on the definition and delivery of product model data.

• Balances cost, data utility, and data exchange technology.

Getting the right data to the right place at the right time for the right cost
Product Model data is the combination of 3D geometry and non-graphic attributes to define ship objects such as a piece of equipment, deck, bulkhead, etc. Product Model data can be organized to define interim products and ultimately the entire ship.

Part & System Definition (Caterpillar 3512, Starboard Main Engine, Propulsion System)

Design Definition (12 cylinder 4 stroke diesel engine)

Physical (Geometry, material connections, etc.)

Engineering Definition (1175 HP, 6464kg, 170mm bore, 190mm stroke)

Process Definition (Starting instructions, shaft alignment)

Logistics Support (FGC, SCLSIS, etc.)

Advocates anticipate substantial economies from Product-Model-based design, construction, and service-life support activities due to better integration and reduction of engineering effort to locate, verify, and transform information.