



DEPARTMENT OF THE NAVY
SPACE AND NAVAL WARFARE SYSTEMS COMMAND
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SPAWARINST 4160.3A
04/PEO C4I & SPACE
19 Jul 04

SPAWAR INSTRUCTION 4160.3A

From: Commander, Space and Naval Warfare Systems Command

Subj: SPAWAR AND PEO C4I AND SPACE POLICY, PROCEDURES AND
RESPONSIBILITIES FOR TECHNICAL MANUAL MANAGEMENT
OPERATIONS AND LIFECYCLE SUPPORT

Ref: (a) SECNAVINST 5000.36, Data Management and
Interoperability
(b) Assistant Secretary of the Navy Policy on Digital
Logistics Technical Data of Nov 99
(c) NAVSO P-35, Department of the Navy Publications and
Printing Regulations
(d) NAVSEA/SPAWAR Technical Manual Management Program
(TMMP); Operations and Life Cycle Support Procedures
Handbook, Technical Manual Number, E0005-AC-HBK-010/
TMMP SPAWAR) and S0005-AA-PRO-010/TMMP Revision 2
(NAVSEA) of Jul 00
(e) DON Policy on the Use of Extensible Markup Language
(XML) of Dec 02
(f) Unified Systems Manual - Document Management
Infrastructure Concept of Operations of Jan 03
(g) SPAWARINST 4105.2 of 11 Mar 03, Integrated Logistics
Support Certification Process for SPAWAR Systems
Fielded Afloat

Encl: (1) Guidance to Technical Manual Management Activities
(2) XML and Embedded Content
(3) Glossary
(4) World Wide Web Resources

1. Purpose. This directive supplements references (a) through
(d) and establishes policies, responsibility, and guidelines for
the management of Space and Naval Warfare Systems Command
(SPAWAR) and Program Executive Office Command, Control,
Communications, Computers and Intelligence and Space (PEO C4I
and Space) Technical Documentation.

2. Cancellation. SPAWARINST 4160.3 of 14 Nov 01

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3. Background. Reference (a) establishes DON policy for data management. References (b) and (c) provide DON policy and regulations for Technical Data. Reference (d) establishes procedures and requirements for management of Legacy Technical Manuals that are consistent with references (a) through (c).

a. Legacy Technical Manuals are developed using traditional word processing or page layout software and delivered in a paper or digital format as linear documents. The next-generation PEO C4I and Space/SPAWAR technical documents are being developed in XML format in accordance with reference (e) and delivered to the ships as an integrated hardware/software/documentation package specifically tailored to meet Human Systems Integration (HSI) requirements.

b. This next-generation content is referred to as a Unified Systems Manual (USM). The USM provides the user a single web-based interface with a platform-specific, context-sensitive search capability. It will give the user integrated access to Technical Data for all SPAWAR networked, integrated C4ISR products. The Document Management Infrastructure (DMI) provides SPAWAR Technical Documentation writers and managers with an enterprise content management system to standardize USM development and promote enterprise visibility and content reuse. Further information on USM-DMI is available in reference (f).

4. Discussion. A Supplement to reference (d) is required for next-generation C4ISR Technical Documentation to account for rapid technology refresh and support of increasing speed-to-market for Command, Control, Communications, Computers and Intelligence (C4I) Systems.

a. Enclosure (1) addresses general requirements for management of SPAWAR Technical Documentation and supplements reference (d). This instruction makes a distinction between management requirements for Legacy Technical Manuals and those for next-generation technical documentation delivered in XML format as part of the FORCEnet vision.

b. Enclosure (2) provides specific guidance for management of XML content, including USM XML content. It specifically supplements reference (g) for ILS Certification of XML content delivered as part of a system software load.

5. Scope. This instruction applies to all PEO C4I and Space/SPAWAR activities involved in Technical Documentation lifecycle management including planning, budgeting, acquisition, approval, distribution, maintenance, and disposal.

6. Policy. Reference (d) is formally promulgated for adoption by all PEO C4I and Space/SPAWAR activities for management of Legacy Technical Manuals. The release and distribution of SPAWAR Technical Documentation shall be strictly controlled using guidance set forth in references (c) and (d). Enclosures (1) and (2) provide supplemental guidance for this process. Enclosure (3) provides a glossary of germane technology and enclosure (4) provides websites for current policy and guidance for the Navy.

a. PEO C4I and Space/SPAWAR programs providing Technical Data to the fleet or for any other government activities shall select formats for Technical Documentation development or acquisition according to a notional 40/10/50 goal. The 40/10/50 goal implies that approximately 40% of Technical Documentation, primarily that associated with software applications, shall be authored and managed as USM XML content, 10% may be delivered in paper, and the remainder (nominally 50%) shall be delivered to the operators as Class II/III Interactive Electronic Technical Manuals (IETMs) in accordance with reference (c) and enclosure (1).

b. Systems documentation developed by or on behalf of a PEO C4I and Space/SPAWAR program should be developed as USM XML content, where the technical documentation can be described according to a Job Task Analysis (JTA) model.

(1) Programs should invest in developing USM XML content in lieu of investing in the development of Class IV-V IETMs using a vendor specific or otherwise proprietary software system or database.

(2) Programs may develop Legacy Technical Documentation as Class II/III IETMs in those cases where the JTA model is not applicable, or when a Cost Benefit Analysis (CBA) is conducted that indicates that the USM-DMI methodology is not a long-term cost-effective lifecycle approach.

c. Documentation being developed or acquired under contracts or task-orders prior to the effective date of this instruction may continue development of Legacy Technical Manuals

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in accordance with references (a) through (d) and enclosure (1). Future updates to this documentation should be developed in USM-DMI where JTA applies.

d. Technical Documentation shall not be acquired, authored, or converted to Standard Generalized Markup Language (SGML). Organizations developing Technical Documentation in SGML shall migrate to an XML-format, either USM XML content (preferred), or using document-oriented Document Type Definitions (DTDs) in accordance with enclosure (2) when the USM-DMI methodology does not yield a long-term return on investment. This guidance precludes developing content in SGML, then using a publishing system's "save as XML" capability. Content should be authored directly in XML.

e. Authoritative source data published via Technical Documentation must be managed in accordance with reference (a).

(1) This data must be drawn only from authoritative sources as designated by the appropriate DON Functional Data Manager.

(2) Technical Documentation production systems, including the DMI, shall be designed to update source data automatically from authoritative sources and provide (preferably via XML markup) metadata regarding the source and date/time of syndication.

(3) Technical Documentation with embedded source data shall support automated information system search and retrieval at the data element level.

f. Technical Data authored in XML shall conform to the requirements of the DON XML Policy set forth in reference (e).

7. Responsibilities

a. SPAWAR 04H shall:

(1) Function as the single authority for establishing and disseminating corporate technical documentation policy and procedures.

(2) Maintain this instruction current in accordance with Department of Defense (DOD) and DON policy and guidance.

(3) Work with 04L to resolve issues resulting from Integrated Logistics Support (ILS) certification of Technical Documentation.

(4) Coordinate issues between Program Office, In Service Engineering Agent (ISEA), and contractor systems engineering personnel and the Technical Manual Management Activity (TMMA) through the SPAWAR 04H Technical Directors.

(5) Grant or deny waivers as required for Technical Manual Management Program (TMMP) policy and procedures.

b. Program Offices shall:

(1) Retain the government core functions and responsibilities of TMMA for all Technical Documentation associated with systems over which the office is cognizant.

(2) Designate a government employee to serve as TMMA Representative; the program Logistics Management Specialist (LMS) under normal circumstances should fill this role. When the program LMS is a contractor, or extenuating circumstance exist, an alternate TMMA representative may be appointed.

(3) Make the final decision for an acquisition or development format (USM XML content or Legacy Technical Manual) based on a BCA, and ensure that the TMMA Representatives are adequately trained and resourced in the performance of their duties.

c. TMMA Representatives shall execute their responsibilities in accordance with references (a) through (d) and enclosures (1) and (2).


K. D. SEAGHT

Distribution:
SPAWAR List 4
SNDL Part II:

C81 SHORE-BASED DETACHMENTS, SPAWARSYSCOM
FKA1B1 SPAWARSYSCOM SYSTEMS CENTER, FACILITY AND ACTIVITY
FKA1B2 SPAWARSYSCOM INFORMATION TECHNOLOGY CENTER

Guidance to Technical Manual Management Activities (TMMAs)

This enclosure supplements reference (d) as the guidance for management of Technical Documentation.

1. Appointment of TMMAs POC

a. The TMMAs Representative may appoint one or more TMMAs Points of Contact (POC) to carry out the day-to-day activities of the TMMAs. TMMAs Representatives must retain signature authority for all Technical Documentation validation and verification, other contractor deliverables and certifications.

b. TMMAs POCs may be contractors. However, contractors functioning in this capacity must not be employed by companies under contract to develop Technical Documentation for the same program.

2. Planning, Budgeting, and Funding

a. TMMAs shall provide budget estimates for Logistics Requirements Funding Summary (LRFS) input on development and updates of Technical Documentation.

b. TMMAs shall make recommendations to Program Offices on the format for Technical Documentation development and acquisition based on a Business Case Analysis (BCA).

c. TMMAs shall identify Quality Assurance (QA) requirements:

(1) To support Legacy Technical Manual procurements.

(2) To support integrated testing for USM XML content.

d. TMMAs shall make recommendations to Program Offices and O4H Technical Directors regarding migration of Legacy Technical Documentation to USM XML content.

3. Technical Manual Acquisition

a. TMMAs shall work with the Program Manager to determine a strategy for acquisition and/or development of Technical Manuals.

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(1) For government developed integrated Technical Documentation, primarily Systems Documentation, the strategy choices are USM XML content or Legacy Technical Manuals. Legacy Technical Manuals should only be developed when it can be positively established by a CBA that USM XML content is not cost-effective.

(2) For Technical Documentation acquired from a vendor or developer of a single, non-integrated piece of hardware or software, the approved formats are:

(a) USM XML content, where the vendor can be tasked to author content for the government in this format.

(b) Class II/II IETMs, as Automated Technical Information System (ATIS)-compliant linked Portable Document Format (PDF) or HyperText Markup Language (HTML).

(c) Paper only when the system or equipment described has a sufficiently short shelf life (usually less than 1 year).

(3) TMMAs should not fund the development of Class IV/V IETMs other than USM-DMI. Class IV/V IETMS, as stand-alone software tools, are not a cost-effective solution. Programs considering the development of highly interactive on-line technical documentation shall develop USM-DMI XML content instead.

b. For acquiring Legacy Technical Manuals, TMMAs shall request Technical Manual Contract Requirements (TMCRs) from Naval Systems Data Support Activity (NSDSA) Port Hueneme, California (see enclosure (4)).

c. TMMAs shall review and tailor TMCRs and forward approved TMCRs to the appropriate authority for inclusion in acquisition packages.

d. TMMAs shall ensure that rights to Technical Manuals acquired in conjunction with Commercial Off-The-Shelf (COTS) products are obtained:

(1) Data rights for COTS Technical Manuals when the product lifecycle is expected to be 3 or more years may be limited to government use only.

(2) Reproduction rights for all COTS Technical Manuals (TMs), even if the life expectancy is 3-years or less.

4. Technical Manual Quality Assurance. For Technical Manuals acquired via contract, TMMAs shall request, review, and approve contractor Technical Manual Quality Assurance (TMQA) validation and verification plans. TMMAs shall:

a. Review contractor adherence to TMQA and validation plans during quality-program reviews.

b. Convene post award conferences early in the Technical Manual development process to clarify and define requirements.

c. Coordinate, schedule, and conduct In-Process Reviews (IPRs) to assess adequacy and accuracy of Technical Manual products at designated percentages of completion.

d. Review Book Plans to evaluate whether proposed form, format, illustrations, and content satisfy requirements of the TMCR and contract.

e. Perform an independent verification, or witness contractor validation, to ensure Legacy Technical Manuals reflect hardware configuration and compliance with TMCRs.

f. Maintain records of all Technical Manual meetings, IPRs, and validations and verifications.

g. Ensure all Legacy Technical Manual Compact Disc - Read Only Memory (CD-ROMs) undergo ATIS compatibility testing (see enclosure (4)).

h. Submit requests for deviations or waivers to this policy to SPAWAR 04H-5.

5. Technical Manual Identification and CD-ROM Numbers

a. TMMAs shall obtain Technical Manual Information Numbering System (TMINS) numbers for all Legacy Technical Manuals and CD-ROM numbers from NSDSA via the Technical Data Management Information System (TDMIS), except for COTS product documentation with an expected lifecycle of 3 years or less.

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b. For COTS products with an expected lifecycle of 3 years or less, enter the International Book Serial Number (ISBN) into TDMIS by:

(1) Selecting Publication Type Code of "BN."

(2) Entering ISBN number under Publication Number field in TDMIS.

c. TMMAs shall ensure that a TMINS number is requested for any COTS manual without an ISBN, except for a Temporary Alteration (TEMPALT) not to exceed one year.

d. TMMAs shall ensure all Technical Documentation is removed from service, or has a TMINS number or ISBN assigned, when TEMPALTs exceed more than 12 months of service life.

e. TMMAs shall ensure that Technical Manual records in TDMIS have a status of Final Issue (FI) within 3 years of initial entry. After 3 years, the status will automatically change to Never Issued (NI) if the document has not been completed or finalized.

6. Technical Data Management Information System. TMMAs shall ensure that TDMIS is properly employed in the Life Cycle Management of SPAWAR Legacy Technical Manuals. The TMMAs shall notify NSDSA of all errors, omissions, and recommendations for improvement found when using TDMIS products and services.

7. Printing, Distribution, Library, and Stocking

a. TMMAs shall ensure that Legacy Technical Manual products are printed and distributed in accordance with reference (d).

b. TMMAs shall review TDMIS generated baseline distribution lists for Legacy Technical Manuals to ensure the distribution lists reflect:

(1) All addressees with a need to know.

(2) Sufficient copies to satisfy follow-on installation, if applicable.

(3) For the Naval Sea Systems Command (NAVSEA)/SPAWAR Engineering Library For Legacy Technical Manuals, provide two hard copies, or one CD-ROM and sufficient copies, to satisfy a two-year supply for applicable training commands.

d. For USM XML content, follow hardcopy guidance of enclosure (2).

e. For Legacy Technical Manuals, ensure there is sufficient stock of the Technical Manual at DDSF, Mechanicsburg, PA at all times.

8. Technical Manual Maintenance. The TMMAs shall provide management services to ensure changes resulting from hardware changes, software changes, Technical Manual Deficiency/Evaluation Reports (TMDERS), and Advanced Change Notices (ACNs) are issued as formal changes or revisions as appropriate to ensure quality products. Lifecycle maintenance of USM-DMI content is addressed by enclosure (2).

9. ILS Certification

a. TMMAs Representatives shall report to the Code 04H LMS representing their program office and are responsible to the LMS for completing the reference (j) ILS Certification Checklist for program Technical Data.

b. TMMAs shall ensure CD-ROM control numbers have been assigned to all required CD-ROM media. Navy CD-ROM control numbers shall be obtained via TDMIS.

c. For each Technical Manual, TMMAs shall verify that the ILS Certification Sheet data matches the supporting manual (title and publication number), CD-ROM Number and Revision Number, and if applicable, Version # and Release #.

d. TMMAs shall verify TDMIS data:

(1) Verify Manual/Revision # / Version # / Release # status.

(2) Ensure that any CD-ROMs containing the manual are reflected in TDMIS.

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(3) Ensure TDMIS Pub Status reflects Final Issue (FI), not Under Development (UD), for each TM listed on the ILS Certification Form.

(4) Verify that the Equipment Application/Applicability section associates the Technical Manuals with correct equipment name/nomenclatures and RIC/APL/ACL. The Joint Electronics Type Designation Automated System (JETDAS) is the authoritative database for nomenclatures.

(a) Ensure that the data in Technical Manual Requirements and Computer Resource Requirements sections of the ILS Certification Checklist have been validated prior to performing steps (b) and (c) below.

(b) Ensure that the equipment data in TDMIS matches identically the data provided in the Configuration Identification Requirements section of the ILS Certification Checklist.

(c) Ensure that the ACL/APL/AEL/PAL numbers for equipment associated with a particular Technical Manual match exactly the same data in the Configuration Identification Requirements of the ILS Certification Checklist.

(5) Ensure the Fleet Tailored Technical Data (FTTD) Publication Research section identifies active publications applicable to a ship or ship class and reflects the applicable equipment for the ship or ship class as specified by RIC/ACL/APL within the ILS Certification Checklist.

(6) Ensure that ATIS compatibility is indicated as part of the CD-ROM Module in a data field called "ATIS Compatible." This field contains a "Y" for Yes or "N" for No when the publication list information has been uploaded into TDMIS.

(7) Ensure TMMMA Representative information identified on the ILS Certification Checklist is correct (i.e. name, responsible activity/code, phone number and email address).

e. TMMAs shall verify other available data on-line:

(1) Check the Technical Manual Management Program (TMMP) page at NSDSA Port Hueneme (see enclosure (4)) for updated database website links or other online resources.

(2) Ensure Configuration Data Management Database - Open Architecture (CDMD-OA) records reflect the applicable ship or ship class for each Technical Manual.

f. TMMAs shall ensure that information such as Volume Identifier (ID) Number, Stock Number, Date, Title, Distribution Statement, supercession information (if CD-ROM is superceding another document), Read Me File location, POC (CD-ROM Installation Info), etc. appears on the CD-ROM face. The waiver statement must be placed on the CD-ROM face.

10. Distribution Control

a. The TMMAs shall ensure Technical Documentation distribution is on a "need to know" basis and limited to authorized U.S. government agencies, activities, and authorized Foreign Military Sales (FMS) countries. SPAWAR Code 04H will authorize distribution.

b. The TMMAs shall ensure that all printed copy, page-oriented electronic (Class 0-III IETM), and CD-ROM media bears the applicable distribution statement from reference (d) on the front cover and title page. TMMAs shall ensure that Class IV/V IETMs have presentation systems that require distribution statement acknowledgement prior to allowing access to content.

c. The TMMAs shall ensure classified Technical Documentation is handled, safeguarded, transmitted, marked, downgraded, and declassified per appropriate security regulations.

11. Disposal. The TMMAs shall notify NSDSA to cancel, supercede, or make obsolete Legacy Technical Manuals.

12. Training and Certification

a. TMMAs shall become Technical Manager-certified (click TMMAs on NSDSA Port Hueneme website (see enclosure (4))).

b. TMMAs shall complete the technical manual process and TDMIS training course (see NSDSA Port Hueneme website, enclosure (4)).

Guidance for Management of XML Technical Documentation

This enclosure provides background information and additional resources and supplements enclosure (1) as guidance for management of Technical Documentation formatted in XML.

1. Background

a. Operator requirements for accessing C4I information via context-sensitive, web-enabled interfaces are driving the evolution of Technical Data technology. The concept of a document as a single entity structured by volume, chapter, and paragraph is rapidly giving way to the idea that Technical Documentation can be modeled, represented, manipulated, and reused in a fashion similar to structured data via XML.

b. The XML 1.0 Specification (see enclosure (4)) establishes the current industry specification for development of XML and XML "aware" systems. SPAWAR employment of XML to Markup Technical Documentation is broken into two major categories:

(1) The employment of document-oriented XML using the NAVSEA or SPAWAR IETM XML DTDs (see enclosure (4)) where the primary means of delivery is an electronic, page-oriented, Class 0-III IETMs. Documentation employing XML in this manner is still considered to be a Legacy Technical Manual.

(2) The employment of XML to deliver next-generation integrated technical documentation as virtual documents in a non-linear fashion via USM-DMI.

c. References (a) through (d) are primarily focused on traditional or Legacy Technical Manual management, while PEO C4I and SPACE/SPAWAR is focusing on the development of Technical Data for C4I systems such that it meets increasing user demands. In response to user requirements for better information access, PEO C4I and Space/SPAWAR has implemented the USM-DMI. USM-DMI employs XML-based virtual documents based on a model derived from JTA. It provides the user with a single web-based interface to integrated systems documentation in the context of jobs, duties, and tasks that a user must perform according to Skill Object/Navy Enlistment Code (NEC).

d. Legacy System Administrator's Manuals (SAMs), System Operator's Manuals (SOMs), System User's Guides (SUGs), System User's Manual (SUMs), and Software Verification Documents (SVDs), collectively referred to as Systems Documentation, will be unified and presented via USM-DMI. The USM-DMI Concept of Operations (CONOPS), reference (f), describes this approach in detail. Technical Documentation authored in accordance with reference (f) will be referred to as USM XML content.

2. XML Technical Documentation Development and Conversion

a. Based on the notional 40/10/50 policy, TMMAs must recommend to program offices a development/acquisition strategy for Technical Documentation. The policy implies that preference should be given to developing USM XML content first, developing Class II/III IETMs using the SPAWAR or NAVSEA DTDs (see enclosure (4)) second, developing Class II/III IETMs without employing XML third, and paper fourth.

b. For government sponsored integrated Systems Documentation, USM XML content should be developed. TMMAs shall:

(1) Participate in USM-DMI Integrated Product Team (IPT) meetings held in accordance with reference (f).

(2) Ensure personnel developing USM XML content have received training on USM-DMI (contact 04H-5 if required).

(3) Ensure personnel develop USM XML content in accordance with processes established by the USM-DMI IPT (see reference (f)).

c. Technical Manuals may be developed in XML employing either the NAVSEA or SPAWAR IETM XML DTD only when a BCA conclusively determines that no long-term cost savings can be achieved via USM-DMI.

d. Technical Manuals developed in Extensible HyperText Markup Language (XHTML), while technically XML, are considered HTML Class II/III IETMS. Consequently, XHTML does not satisfy the XML requirements of this instruction.

e. Legacy Technical Manuals must be converted to XML if a BCA indicates that a return on investment will be achieved. Conversion may be accomplished by a semi-automated process employing the SPAWAR or NAVSEA IETM XML DTD (see enclosure (4)), or programs may undertake re-authoring content into USM XML content based on their JTA. Contact SPAWAR 04H-5 for assistance in developing a conversion plan.

3. ILS Certification of USM-DMI Content

a. Reference (g) establishes 04L requirements for ILS Certification, which includes Technical Documentation. Technical Documentation delivered as USM XML content shall be certified as part of the Computer Resources ILS element of ILS Certification Sheet.

b. This certification must include both content validation and verification.

4. USM-DMI Quality Assurance

a. Ensure quality assurance is conducted in two phases.

(1) Validation must occur during content authoring and review processes established by the USM-DMI Content Management and Configuration Control Guide (promulgated separately, see reference (f)).

(2) Verification will occur as part of an integrated software/hardware/documentation test. The testing and subsequent content verification must be satisfactorily passed prior to final ILS certification. Coupling system testing with content verification will ensure that Technical Documentation, installed as part of system load, is consistent and complete. TMMAs shall ensure that system test plans include steps required for content verification.

b. TMMAs shall review completed test plans to ensure that:

(1) USM-DMI XML content is present for all equipment and software segments. Where no USM XML content has been written, a Legacy Technical Manual must be delivered.

(2) Verification steps have been satisfactorily completed in conjunction with testing.

5. USM-DMI Content Distribution and Configuration Management

a. Distribution of USM XML content shall be controlled by the installation process.

b. Printed copy delivery of USM XML content:

(1) Printed copy and ATIS-compatible CD-ROM Technical Manual renditions of USM XML content is not required.

(2) System installation must direct that disaster recovery procedures be printed as part of the install process.

6. USM-DMI Content Management

a. For USM XML content, TMMAs shall participate in the Content Management Control Board (CMCB) described in the USM-DMI Configuration Control and Content Management Plan (promulgated separately). The processes established by the IPT will ensure that feedback is directly captured by DMI and routed to the appropriate content owner and that action is taken in a timely fashion to address the discrepancy.

b. USM XML content will be tracked via the HIDE Content Management Capability (CMC) provided as part of DMI. The CMC will provide the capability to track versions of content items (XML documents) for a particular installation (by SHIPALT/ installation tracking number or program configuration management system tracking number) and by a system's version, variant and build number. In this way "traceability" will be maintained between a specific installation, the version, variant, build of systems installed, and the specific versions of XML documents tested/verified as part of the installation.

Glossary

Content - Unstructured or semi-structured text and media primarily intended to be viewed by a human being.

Content Management Capability (CMC) - A content management solution implemented within HIDE that employs Documentum for the management of USM XML content.

Content Management System (CMS) - An automated information system whose primary function is the management of content as objects of information.

Cost-Benefit Analysis (CBA) - An analysis performed to quantitatively evaluate the costs of a course of action and compare them to a dollar-value estimate of the benefits over a specific period of time.

Data-oriented XML - The use of XML to flag data elements such that they can be matched to authoritative data sources and automatically processed by an information system.

Document Management Infrastructure (DMI) - The shore and shipboard hardware and software infrastructure implemented by SPAWAR for the management of USM XML content. DMI for shore based systems consists of the CMC implemented on HIDE. DMI for shipboard based systems is a set of software segments installed on the General Services (GENSER) and Unclassified (UNCLASS) networks, including the Modular Embedded Document Utility Architecture (MEDULA).

Document Type Definition (DTD) - A rule set specifying the structure and construct naming conventions to be used in the production and validation of XML or SGML Content. DTD syntax is defined by ISO 8879 (SGML) and the XML specification (see enclosure (4)).

Document-oriented XML - The use of XML for markup of unstructured information. Document-oriented XML markup provides generic tags for traditional document structures such as paragraphs, chapters, tables, etc.

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Electronic Technical Manuals (ETM) - Describes all combinations of Technical Manual data in digital distribution formats, stored in optical or magnetic media, and viewed through electronic display devices. As such, they include all interactive variants.

Embedded Content - Describes the delivery of Technical Documentation together with system software as an integrated bundle to end users. Embedded Content is developed, tested, installed, and available to the end-user as part of a software application. Due to its non-linear nature, such content is not suitable for presentation as a single, page-oriented document.

Horizontal Integrated Data Environment (HIDE) - An Integrated Data Environment (IDE) established and maintained by SPAWAR 04H for managing PEO C4I and Space/SPAWAR Product Data and other Content horizontally across all Program Offices and Stakeholders in the SPAWAR Enterprise. More information can be obtained on HIDE from the HIDE Website (see enclosure (4)). A login and password are required. Accounts may be requested by following the link on the login page.

Interactive Electronic Technical Manual (IETM) - Any form of digital documentation; synonymous with ETM. The term IETM implies that both presentation and content are combined to provide users with an interactive ability to locate information. The term is often misused to reference only highly interactive documentation; however interactivity is described by a classification system providing 6 levels, 0-V. Below is a summary description of each class:

Class 0 - An electronic manual that is strictly page-oriented with no hyper-linking or advance search. A scanned document without enhancements is considered a Class 0 IETM.

Class I - A Class 0 IETM with limited search capability, such as keywords.

Class II - A Class I IETM with simple hyper-linking, such as a table of contents and a glossary.

Class III - A Class II IETM with advanced hyper-linking (hyperlinks on key phrases and sections of the document, possibly to other network resources), and possible special helper applications for viewing graphics, etc.

Class IV IETM - All features of a Class III IETM. In addition, the content is presented to the user from chunks of reusable content stored by the content server/presentation software. Also contains advanced help and search functions, multimedia presentations, and menu-driven capabilities. Beginning with Class IV IETMs, the sum-total of the content cannot be presented as a single technical manual. It is said to be *non-linear*.

Class V IETM - Completely tailored and interactive content presentation, natural language search capability, and screen animations illustrating actions required to illustrate a function.

International Serial Book Number (ISBN) - The ISBN is a unique machine-readable identification number which marks any book unmistakably. (www.isbn.org)

Job-Task Analysis (JTA) - An analysis conducted to classify system user's activities according to jobs and tasks. The results of a SPAWAR conducted JTA analysis are available on the Integrated Battle Force Training (IBFT) Integrated JTA database (see enclosure (4)).

Legacy Technical Manuals - Refers to Technical Manuals that are represented in a traditional structure, or presentation based format (chapter, paragraph, etc.). Legacy Technical Manuals are Technical Documentation that is:

- a. Authored in a non-XML format, or
- b. Authored in XML according to a document-oriented DTD, such as the SPAWAR or NAVSEA IETM XML DTD (see enclosure (4)), or
- c. Authored in SGML in accordance with reference (1), and
- d. Delivered to the end-user in a paper or page-oriented electronic (Class 0-III IETM) Presentation Format.

Logistics Management Specialist (LMS) - The SPAWAR 04H representative responsible for Integrated Logistics Support within a program office.

Markup Language - A tagging language, such as SGML, HTML, or XML, used to structure, index, and link text files. Both SGML and XML provide a means to mark up documents and data with descriptive tags that provide clues as to the document's meaning and structure. XML is a reduced version of SGML (ISO 8879). Both are used to describe document content or data independent of presentation, allowing the same data to be presented in many ways based on user requirements (such as print, PDF, HTML, or embedded in software.)

Modular Embedded Documentation Utility Architecture (MEDULA) - A web-based documentation server developed by PMW-157 to provide context-sensitive access to the USM XML content. MEDULA will be installed on all Navy platforms as part of the Global Command and Control System - Maritime (GCCS-M). Activities should contact PMW-157 for installation planning details.

Presentation Format - The format Technical Documentation is accessed by the user for viewing. Technical Documentation formats include HTML, PDF, Microsoft Word, Computer Aided Design (CAD), and other vector and raster (bit-mapped) images. It does not include XML or SGML.

Systems Documentation - Technical Documentation that provides integrated information for the operation and administration of PEO C4I and Space/SPAWAR systems. Systems Documentation refers to Legacy Technical Manuals such as SAMs, SOMs, SUGs, SUM, and SVDs. USM XML content is also considered Systems Documentation.

Technical Data - Refers to information provided by systems engineers describing the technical details of a product (equipment or other hardware, software, system, etc.)

Technical Data Management Information System (TDMIS) - TDMIS is a Navy database used to manage and track the life-cycle history of technical manuals (see enclosure (4)).

Technical Documentation - An umbrella term referring to Technical Data that is of a written form (including voice, multimedia, or drawing).

Technical Manual - Technical Documentation that is published in a linear, page-oriented format, and tracked by the Navy's TMINS. The term Legacy is sometimes used to differentiate Technical Manuals from more sophisticated Technical Documentation, such as Class IV/V IETMs and USM XML content.

Technical Manual Identification Numbering System (TMINS) - A tracking number system employed by TDMIS to identify Navy Technical Manuals.

Technical Manual Management Activity (TMMA) - The government organization responsible for managing all phases of a Technical Manual's lifecycle.

Technical Manual Representative - A government employee with direct oversight and signature authority for the execution of the TMMA duties for a SPAWAR product.

TMMA Point of Contact (TMMA POC) - The person (government or contractor) responsible for the day-to-day execution of TMMA duties for a SPAWAR product. If a TMMA is appointed, they will report to the TMMA.

Unified Systems Manual - Document Management Infrastructure (USM-DMI) - An enterprise-level initiative cosponsored by SPAWAR 04H and PMW-157 for developing, managing, and fielding embedded XML content via the Documentum Content Management System and DMI. Reference (f) describes the CONOPS of this initiative. The working body of the USM-DMI initiative is the USM-DMI IPT, which meets at least monthly.

Uniform Resource Locator (URL) Address - An addressing scheme employed by the World Wide Web to specify resource locations in a manner that is resolvable to a physical Internet Protocol (IP) address. See <http://www.w3.org/Addressing/>.

USM XML content - Systems Documentation that is authored in accordance with USM-DMI and delivered to the user as Embedded Content. USM XML content is authored in XML according to two DTDs, the Component Product Data Document (CPDD) DTD, or the Systems Level Data Document (SLDD) DTD developed as part of the USM-DMI initiative, reference (f). Both these DTDs are available to members of the USM-DMI IPT, or may be viewed from the HIDE Website.

Virtual Documents - A term used to refer to documents constructed virtually by reusing content from other documents, either statically at design-time or dynamically at run-time.

World Wide Web Resources (current as of FEB 2004)

Assistant Secretary of the Navy Policy on Digital
Logistics Technical Data of Nov 99

<http://navycals.dt.navy.mil/calsdata/DoNpolicy.html>

ATIS Compatibility Testing Procedures, Rev 6, Apr 01,

<http://navycals.dt.navy.mil/ietm/ietmdeve.html>

DON Policy on the Use of Extensible Markup Language (XML) of
December 2002.

<http://www.doncio.navy.mil/PolicyMatrix/Uploads/0106UTQ59315.pdf>

The Extensible Markup Language (XML), <http://www.w3.org/XML/>

The Horizontal Integrated Data Environment (HIDE),

<https://webtop.spawar.navy.mil/webtop/hide.html>

IBFT IJTA Database, <https://c4isr.spawar.navy.mil/04/ibft/>

NAVSEA IETM XML DTD,

<http://navycals.dt.navy.mil/dtdfosi/netmxmlDTD.html>

NSDSA Port Hueneme, <http://nsdsa.phdnswc.navy.mil>

SECNAVINST 5000.36, Data Management and Interoperability

<http://www.doncio.navy.mil/PolicyMatrix/Uploads/1002CAZ28647.pdf>

SPAWAR IETM XML DTD, Version 3.1,

<https://webtop.spawar.navy.mil/webtop/custom/library/index.htm>

Technical Data Management Information System,

<http://nsdsa.phdnswc.navy.mil/tdmis/tdmis.asp?lvl=1>