MEMORANDUM FOR DISTRIBUTION

Subj: DRAFT DON INTERIM POLICY ON THE USE OF EXTENSIBLE MARKUP LANGUAGE (XML)

Ref: (a) DON CNO Washington DC 032030Z AUG 01  
(b) Interim DON XML Policy of 06 Sep 01  
(c) DON XML Vision of 15 Mar 02

Encl: (1) Draft DON Interim Policy on the Use of XML  
(2) Comment Template

The Extensible Markup Language (XML) is rapidly becoming the technology of choice to achieve interoperability of data across the enterprise for presentation, storage, and exchange. XML is now being employed as a key element in the Department’s enterprise integration initiatives, including Task Force Web, IT 21, Task Force Excel, and others. In recognizing the power of this technology, I have taken several steps to affect its orderly implementation across the Department. Specifically, reference (a) chartered the Department of the Navy Extensible Markup Language Work Group (DONXML WG), and reference (b) provided an interim XML Policy for the Department.

At the time of references (a) and (b), the Department’s XML efforts were limited in scope, and accordingly the corresponding policy was limited as well. In the intervening year, much has changed. The DONXML WG has developed, and I released under reference (c), the DON Vision for XML. The Vision clearly defines a path forward for the Department in leveraging XML to achieve interoperability in support of maritime information superiority. The Vision also describes how XML implementation will be managed at the enterprise level.

The DONXML WG is actively engaged in developing the necessary policy, procedures, guidance, and supporting governance structure necessary to achieve the DON XML Vision. To help ensure the Department implements this new technology in a manner consistent with reference (c), I have tasked the DONXML WG with providing an updated interim XML Policy. In response to this tasking, the DONXML WG has developed the enclosure (1) draft policy. This policy incorporates the key
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elements of implementation and governance necessary to move the Department forward with this critical technology.

It is crucial that all commands review and comment on enclosure (1). Through close coordination between implementers and users, we can ensure that the draft policy continues to advance the Department’s efforts on XML implementation. These efforts will be aligned with the DON XML Vision and support user requirements. Written comments on the Draft XML Policy are requested not later than 01 November 2002, and should be submitted using the template provided in enclosure (2).

For additional information and submission of comments to enclosure (1), my point of contact for the DONXML WG and the Draft XML Policy is Mr. Michael Jacobs, Jacobs.Michael@hq.navy.mil, (703) 601-3594.

D. E. Porter

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(c) W3C Recommendation, *Extensible Stylesheet Language (XSL) 1.0*, 15 October 2001
(f) DON CIO Memorandum, *Department of the Navy Vision For Extensible Markup Language (XML)*, 15 March 2002
(g) Department of The Navy XML Developers Guide, Version 1.1, 1 May 2002
(h) SECNAVINST 5000.36, *Data Management and Interoperability (DMI)*, 1 November 2001
(i) Under Secretary of the Navy Memorandum, *Designation of Department of the Navy (DON) Functional Area Managers*, 14 May 2002
(k) DoD CIO Memorandum, *Policy for Registration of Extensible Markup Language (XML)*, 22 April 2002

Encl: (1) XML Functional Namespace Coordinator Roles and Responsibilities

**Purpose.** This memorandum establishes the Department of the Navy interim policy on the use of Extensible Markup Language.

**Scope and Applicability.** This interim policy addresses XML implementation as it applies to automated systems, applications, data exchanges, databases, document markup, and information presentations within and across warfighting and business systems. This interim policy applies to all Navy and Marine Corps organizations, including the operating forces and supporting establishments that are engaged in developing, acquiring, or maintaining Information Technology and National Security Systems (IT/NSS).

**Cancellation.** Reference (a) is hereby cancelled and superseded.

**Background.** The Extensible Markup Language originated within the World Wide Web Consortium (W3C) as a semi-structured data exchange format that included both data and a description of the data’s structure in a single package. A number of W3C technical specifications

Enclosure (1)
have been developed that define XML. Reference (b) is the core specification that provides
syntax rules for using XML for a variety of data exchange, presentation, storage, protocol
development, and other purposes. Reference (c) provides the mechanism for presentation and
transformations of XML, and references (d) and (e) provide XML-based mechanisms for defining
specified formats for XML data exchanges. A listing of all W3C Technical Specifications can be
found at http://www.w3.org.

Reference (f) details the DON vision for XML. This vision document establishes a path forward
for XML insertion across the DON, and articulates the DON high level XML goal of "... fully
exploiting Extensible Markup Language as an enabling technology to achieve interoperability in
support of maritime information superiority."

Reference (g) provides specific design rules and approaches for DON XML development. This
document provides conventions and guidelines for using XML within the DON. It provides
recommendations and best practices for the creation of XML schema and components for
"XML-enabled" applications.¹

References (h) and (i) outline how the DON is reducing and consolidating its IT applications and
databases and implementing a consistent approach for enterprise-level data management to
ensure the availability of authoritative data sources.

Reference (j) requires the CIO to ensure that Departmental Information Technology and National
Security Systems (NSS) are in compliance with standards of the federal government and the
Department of Defense (DoD) and interoperable with other relevant IT and NSS of the federal
government and DoD. Reference (k) provides current DoD policy for the registration of XML
components in the DoD XML Registry.

Discussion. XML in its purest form is a technical specification providing a standard for
creation of custom markup languages to describe any type of information structure. Since
approval of the initial technical specification by the World Wide Web Consortium (W3C) in

¹ XML Components are defined as:

- Standard Markup—XML element and attribute names and tags,
- Schema Components—developer-defined entities and datatypes,
- Schemas—mappings of logical models of business processes and the parcels of
  information exchanged in these processes to physical XML schemas or Document Type
  Definitions (DTDs),
- Stylesheets, and
- Namespace Associations.
1998, numerous other XML-based specifications have also been developed by the W3C. These specifications now constitute a family of standards for the representation, processing, and exchange of information. Furthermore, the term “XML” has evolved to include more than just the technical specifications. In addition to the core XML technical specifications, the term XML now includes the business standards that define specific XML vocabularies for information representation within a domain and the XML-enabled applications that are based on the technical specifications and use the business standards. Together, these three aspects of XML—technical specifications, business standards, and XML-enabled applications—are expected to improve interoperability between systems, facilitate efficient data exchanges and economical e-business practices, reduce duplication of effort and ambiguity of information, and reduce data exchange life-cycle costs.

Although XML has the potential to provide significant cost savings to the DoD and the DON, there are a number of risks associated with its implementation that need to be recognized and mitigated. Specifically, implementations that do not adhere to an enterprise strategy will degrade, rather than enhance, interoperability. For XML to facilitate data exchange and improve interoperability, an enterprise-wide approach to standard XML development, implementation, namespace management, and governance must be employed. This approach must be integrated with existing and planned DON Enterprise Architecture strategies. Insertion of XML throughout the DON will be closely linked to the Data Management and Interoperability (DMI) initiative defined by reference (h). In addition, the XML governance structure will be integrated into the existing Functional Area Manager (FAM) organization which was defined by reference (i). In accordance with reference (j), the DON CIO has responsibility to put in place policy and procedures to ensure such an enterprise-wide approach becomes a reality. Accordingly, the DON CIO has established the DONXML Work Group (DONXML WG) and tasked that group with developing the Department’s Vision, Implementation Strategy, Strategic Implementation Plan, Policies, Procedures, Guidance, and Governance Structure for XML.

To meet this tasking, the DONXML WG has established Action Teams in the areas of Vision, Standard Implementation, Enterprise Implementation, Outreach, and Integration with Existing DON Processes. The DONXML WG maintains a website for collaborative development (https://quickplace.hq.navy.mil/navyxml), and a number of automated electronic mailing lists. The DONXML WG is working closely with Task Force Web, DMI, and other enterprise-level initiatives to ensure a consistent, enterprise-wide approach to XML.

Representation of the full spectrum of DON IT developers, implementers, and users is essential to ensure the efforts of the DONXML WG fully address all aspects of XML. All activities are encouraged to ensure representation and participation in this DONXML WG as it continues forward with its efforts.

**Goals.** The overall goals of DON XML policy are to:

- Encourage and promote the use of XML as an enabling technology to help achieve enterprise interoperability throughout the Department of the Navy;
b. Establish processes, procedures, guidelines, tools, training, and other assets that will assist the DON in adopting and implementing XML where appropriate;

c. Support interoperability between the DON and other DoD components, Joint Activities, civil agencies, and industry; and

d. Actively influence appropriate XML and XML-related technical and business standards bodies to facilitate the creation and adoption of XML technical specifications, business standards, and products that support DON requirements.

Policy

a. **Technical Specifications.** It is DON policy to make use of W3C Technical Specifications holding *Recommended* status [e.g., references (b) through (e)].\(^2\) To ensure maximum interoperability, production applications should use only software that implements W3C Technical Specifications holding *Recommended* status.

It is DON policy that XML-related standards promulgated by other nationally or internationally accredited standards bodies such as—International Organization for Standardization (ISO), Institute for Electrical and Electronic Engineers (IEEE), American National Standards Institute (ANSI), Organization for the Advancement of Structured Information Standards (OASIS), United Nations/Centre for Trade Facilitation and Electronic Business (UN/CEFACT), Internet Engineering Task Force (IETF)—should also be adhered to when developing applications within the domain that the standard addresses. When a standard produced by one of these bodies competes with a similar product of the W3C, the W3C standard shall take precedence.

b. **Proprietary Extensions.** It is DON policy that production XML implementations shall not use proprietary extensions to XML-based specifications.

c. **Standards Participation.** It is DON policy to actively participate in the work of appropriate XML and XML-related technical and business standards bodies.

d. **XML Standard Components.** It is DON policy to use existing XML components when practical, as opposed to developing new XML components. When selecting existing components, DON activities should adhere to the following order of precedence (highest to lowest):

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\(^2\) "A W3C Recommendation is a technical report that is the result of extensive consensus-building inside and outside of W3C about a particular technology or policy. W3C considers that the ideas or technology specified by a Recommendation are appropriate for widespread deployment and promote W3C's mission." See [www.w3.org](http://www.w3.org) for further definition.
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(1) Appropriate Business Voluntary Consensus Standards (BVCSs)

(2) Federal-level standards

(3) DoD standards

(4) DON enterprise standards.

All DON XML business standards will be at the enterprise level.¹

e. **XML Development.** It is DON policy for all XML development to adhere to the material contained in reference (g). All new development, and all modifications to legacy XML implementations, shall adhere to the rules and guidelines contained therein.

f. **XML Enterprise Management.** It is DON policy to advocate, support, and ensure the development, maintenance, registration, discovery, and reuse of standard XML within functional areas and at the enterprise level.

g. **DoD Registration Policy.** It is DON policy to adhere to the registration requirements contained in reference (k).

**Responsibilities**

a. The DON CIO shall:

(1) Issue DON XML policy, procedures, and guidance; and

(2) Work to establish DON XML Functional Namespace Coordinators.

b. The Functional Area Managers shall:

(1) Work with the appropriate Resource Sponsors to identify funding requirements in support of the XML Functional Namespace Coordinator, for their functional area.

c. The DONXML WG shall:

(1) Report to the DON CIO;

(2) Develop an XML Implementation Strategy and Strategic Implementation Plan;

(3) Identify systems, processes, and methodologies where XML will enhance interoperability;

¹ Enterprise-level standards are standards that are at the level of the entire Department.
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(4) Develop an XML governance structure to oversee XML implementation;

(5) Act as the interim XML governance structure until a formal structure is in place;

(6) Determine which external XML-related standards bodies are appropriate for DON participation;

(7) Develop procedures for designation of, and participation by, DON representatives in XML-related standards bodies;

(8) Act as the DON focal point for XML activities to include coordination with DoD, federal, and external XML organizations, standards efforts, and initiatives;

(9) Develop formal XML policy, procedures, and guidance;

(10) Develop a waiver policy to this interim policy; and

(11) Develop a comprehensive outreach program.

d. DON XML Functional Namespace Coordinators shall:

(1) Report to the appropriate FAM and work in conjunction with the FDMs;

(2) Be responsible for advocating, supporting, and ensuring the development, maintenance, registration, discovery, and reuse of standard XML within their functional area;

(3) Actively participate in the XML governance structure;

(4) Actively participate in developing and managing the DON Enterprise XML Namespace;

(5) Be responsible for managing their functional area’s portion of this Namespace;

(6) Adhere to the requirements contained in references (h) and (i), and enclosure (1); and

(7) Support the registration of XML components within their respective functional area.

e. Navy and Marine Corps organizations including operating forces and supporting establishments that develop systems shall:

(1) Work with FNCs to develop standard enterprise XML components;
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(2) Participate in the DONXML WG and review the WG products; and

(3) Implement the requirements of this policy.

Action

a. The DONXML WG shall take necessary action to implement this policy.

b. The Functional Area Managers (FAM) shall designate an appropriate organization to act as the XML Functional Namespace Coordinator (FNC), for their functional area of responsibility.

c. The DONXML WG shall work with the Functional Area Managers to establish the Functional Namespace Coordinators.

Cancellation Contingency. This interim policy shall remain in effect until such time as the Secretary of the Navy promulgates a formal policy.

Point of Contact. The DON CIO point of contact for this policy and participation in the DONXML WG is Mr. Michael Jacobs, jacobs.michael@hq.navy.mil, 703 601 3594.

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XML Functional Namespace Coordinator
Roles and Responsibilities

XML Functional Namespace Coordinators (FNCs) are responsible for advocating, supporting, and ensuring the development, maintenance, registration, discovery, and reuse of standard XML within their functional area. FNCs actively participate in developing and managing the DON Enterprise XML Namespace and are responsible for managing their functional area’s portion of this Namespace.
FNCs shall do the following:

- Report to the appropriate Functional Area Manager (FAM).
- Implement the DON XML strategy and processes to monitor and manage the use of XML within their functional area.
- Assist program managers and other systems developers with production of standard markup, schema components, schemas, style sheets, namespace associations, core components and business information entities, and required metadata.
- Ensure that program managers and developers do not unilaterally define XML components for information they do not produce and for which they are not designated as authoritative sources. FNCs will promote authoritative sources collaborating with known information exchange/trading partners on the creation of XML components.
- Ensure, facilitate, monitor, and validate registration of DON XML components.
- Develop and maintain functional area portion of the DON XML Enterprise Namespace.
- In conjunction with the Data Management and Interoperability (DMI) Functional Data Manager (FDM), map DON XML Namespace tags and core components to DON Systems/Applications data structure and DoD data standards such as Defense Data Dictionary System (DDDS), Message Text Formatting (MTF), and Tactical Digital Information Links (TADIL).

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1 This document defines the roles and responsibilities of the XML Functional Namespace Coordinator (FNC). At the discretion of the Functional Area Manager (FAM), these roles and responsibilities may be fulfilled by either the Functional Data Manager (FDM) or by another organization.
2 The twenty-three functional areas were established by SECNAVINST 5000.36 and the Functional Area Manager (FAM) Designation memo from the Undersecretary of the Navy.
3 XML element and attribute names and tags
4 Developer-defined entities and datatypes
5 This includes both DTDs and XML Schemas

Enclosure (1)
Ensure adherence to appropriate Federal, DoD, and DON XML regulations, policies, and standards.

- Ensure the selection of, use of, and adherence to Voluntary Consensus Standards (VCSs), consistent with Public Law 104-113 and the Office of Management and Budget Circular A-119, in lieu of developing new DON XML components. FNCs will facilitate and promote the integration of DON standards with existing VCSs where appropriate. When no comparable VCSs exist, FNCs will facilitate and promote the migration of DON standards to VCS status. FNCs will ensure that new DON XML components are developed only when

1. suitable VCSs do not exist,
2. existing VCSs do not suffice or are not appropriate for the intended application,
3. new VCS components cannot be readily developed through a standards development organization,
4. suitable DoD components do not exist,
5. existing DoD components do not suffice or are not appropriate for the intended application, or
6. sufficient or appropriate DoD components cannot be developed through the DoD standards process.

- Serve as members of the DON XML Enterprise governance organization.
- Reconcile functional area and cross functional XML tags, element and attribute names, and required metadata with core components.
Comment Form

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Enclosure (2)