



DEPARTMENT OF THE NAVY

CHIEF INFORMATION OFFICER
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WASHINGTON, DC 20350-1000

11 October 2002

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.



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8

- 9 Ref: (a) DON CIO Memorandum, *Interim Policy on the Use of Extensible Markup Language*
10 *(XML) For Data Exchange*, 6 September 2001
11 (b) World Wide Web Consortium (W3C) Recommendation, *Extensible Markup*
12 *Language XML 1.0 (Second Edition)*, 6 Oct 2000
13 (c) W3C Recommendation, *Extensible Stylesheet Language (XSL) 1.0*, 15 October 2001
14 (d) W3C Recommendation, *XML Schema Part 1: Structures*, 2 May 2001
15 Recommendation Part 1
16 (e) W3C Recommendation, *XML Schema Part 2: Datatypes*, 2 May 2001
17 (f) DON CIO Memorandum, *Department of the Navy Vision For Extensible Markup*
18 *Language (XML)*, 15 March 2002
19 (g) *Department of The Navy XML Developers Guide*, Version 1.1, 1 May 2002
20 (h) SECNAVINST 5000.36, *Data Management and Interoperability (DMI)*, 1 November
21 2001
22 (i) Under Secretary of the Navy Memorandum, *Designation of Department of the Navy*
23 *(DON) Functional Area Managers*, 14 May 2002
24 (j) Title 10 United States Code, Chapter 131, Section 2223 (codifies Public Law 105-
25 261, "National Defense Authorization Act for FY 1999," Section 331)
26 (k) DoD CIO Memorandum, *Policy for Registration of Extensible Markup Language*
27 *(XML)*, 22 April 2002
28

29 Encl: (1) XML Functional Namespace Coordinator Roles and Responsibilities
30

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

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

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 Reference (a) is hereby cancelled and superseded.

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

Enclosure (1)

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44
45 have been developed that define XML. Reference (b) is the core specification that provides
46 syntax rules for using XML for a variety of data exchange, presentation, storage, protocol
47 development, and other purposes. Reference (c) provides the mechanism for presentation and
48 transformations of XML, and references (d) and (e) provide XML-based mechanisms for defining
49 specified formats for XML data exchanges. A listing of all W3C Technical Specifications can be
50 found at <http://www.w3.org>.

51
52 Reference (f) details the DON vision for XML. This vision document establishes a path forward
53 for XML insertion across the DON, and articulates the DON high level XML goal of "... fully
54 exploiting Extensible Markup Language as an enabling technology to achieve interoperability in
55 support of maritime information superiority."

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

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

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

68
69 Discussion. XML in its purest form is a technical specification providing a standard for
70 creation of custom markup languages to describe any type of information structure. Since
71 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.

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73
74 1998, numerous other XML-based specifications have also been developed by the W3C. These
75 specifications now constitute a family of standards for the representation, processing, and
76 exchange of information. Furthermore, the term “XML” has evolved to include more than just
77 the technical specifications. In addition to the core XML technical specifications, the term XML
78 now includes the business standards that define specific XML vocabularies for information
79 representation within a domain and the XML-enabled applications that are based on the technical
80 specifications and use the business standards. Together, these three aspects of XML—technical
81 specifications, business standards, and XML-enabled applications—are expected to improve
82 interoperability between systems, facilitate efficient data exchanges and economical e-business
83 practices, reduce duplication of effort and ambiguity of information, and reduce data exchange
84 life-cycle costs.

85
86 Although XML has the potential to provide significant cost savings to the DoD and the DON,
87 there are a number of risks associated with its implementation that need to be recognized and
88 mitigated. Specifically, implementations that do not adhere to an enterprise strategy will degrade,
89 rather than enhance, interoperability. For XML to facilitate data exchange and improve
90 interoperability, an enterprise-wide approach to standard XML development, implementation,
91 namespace management, and governance must be employed. This approach must be integrated
92 with existing and planned DON Enterprise Architecture strategies. Insertion of XML throughout
93 the DON will be closely linked to the Data Management and Interoperability (DMI) initiative
94 defined by reference (h). In addition, the XML governance structure will be integrated into the
95 existing Functional Area Manager (FAM) organization which was defined by reference (i). In
96 accordance with reference (j), the DON CIO has responsibility to put in place policy and
97 procedures to ensure such an enterprise-wide approach becomes a reality. Accordingly, the DON
98 CIO has established the DONXML Work Group (DONXML WG) and tasked that group with
99 developing the Department’s Vision, Implementation Strategy, Strategic Implementation Plan,
100 Policies, Procedures, Guidance, and Governance Structure for XML.

101
102 To meet this tasking, the DONXML WG has established Action Teams in the areas of Vision,
103 Standard Implementation, Enterprise Implementation, Outreach, and Integration with Existing
104 DON Processes. The DONXML WG maintains a website for collaborative development
105 (<https://quickplace.hq.navy.mil/navyxml>), and a number of automated electronic mailing lists.
106 The DONXML WG is working closely with Task Force Web, DMI, and other enterprise-level
107 initiatives to ensure a consistent, enterprise-wide approach to XML.

108
109 Representation of the full spectrum of DON IT developers, implementers, and users is essential
110 to ensure the efforts of the DONXML WG fully address all aspects of XML. All activities are
111 encouraged to ensure representation and participation in this DONXML WG as it continues
112 forward with its efforts.

113
114 Goals. The overall goals of DON XML policy are to:

115
116 a. Encourage and promote the use of XML as an enabling technology to help achieve
117 enterprise interoperability throughout the Department of the Navy;

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119

120 b. Establish processes, procedures, guidelines, tools, training, and other assets that will
121 assist the DON in adopting and implementing XML where appropriate;

122

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

125

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

129

130 Policy

131

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

136

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

145

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

148

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

151

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

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 for further definition.

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156

157 (1) Appropriate Business Voluntary Consensus Standards (BVCSs)

158

159 (2) Federal-level standards

160

161 (3) DoD standards

162

163 (4) DON enterprise standards.

164

165 All DON XML business standards will be at the enterprise level.³

166

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

170

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

174

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

177

178 Responsibilities

179

180 a. The DON CIO shall:

181

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

183

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

185

186 b. The Functional Area Managers shall:

187

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

190

191 c. The DONXML WG shall:

192

193 (1) Report to the DON CIO;

194

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

196

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

199

³ Enterprise-level standards are standards that are at the level of the entire Department.

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201

202 (4) Develop an XML governance structure to oversee XML implementation;

203

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

205

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

208

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

211

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

214

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

216

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

218

219 (11) Develop a comprehensive outreach program.

220

221 d. DON XML Functional Namespace Coordinators shall:

222

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

224

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

228

229 (3) Actively participate in the XML governance structure;

230

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

233

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

235

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

238

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

241

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

244

245 (1) Work with FNCs to develop standard enterprise XML components;

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247

248 (2) Participate in the DONXML WG and review the WG products; and

249

250 (3) Implement the requirements of this policy.

251

252 Action

253

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

255

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

259

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

262

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

265

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

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277 N79, N097)

278 CMC (ACMC, DC/S(P&R), DC/S(PPO), DC/S(I&L), DC/S(MRA), DC/S(A), C4)

279 CINCPACFLT

280 CINCLANTFLT

281 CINCUSNAVEUR

282 CHNAVPERS

283 COMSC

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317 OGC, NAVCRIMINSERV, AUDGEN,) only
318

1
2 XML Functional Namespace Coordinator
3 Roles and Responsibilities¹
4
5

6 XML Functional Namespace Coordinators (FNCs) are responsible for advocating, supporting,
7 and ensuring the development, maintenance, registration, discovery, and reuse of standard XML
8 within their functional area². FNCs actively participate in developing and managing the DON
9 Enterprise XML Namespace and are responsible for managing their functional area's portion of
10 this Namespace.

11 FNCs shall do the following:

- 12 ◆ Report to the appropriate Functional Area Manager (FAM).
- 13
- 14 ◆ Implement the DON XML strategy and processes to monitor and manage the use of
15 XML within their functional area.
- 16 ◆ Assist program managers and other systems developers with production of standard
17 markup³, schema components⁴, schemas⁵, style sheets, namespace associations, core
18 components and business information entities, and required metadata.⁶
- 19 ◆ Ensure that program managers and developers do not unilaterally define XML
20 components for information they do not produce and for which they are not designated
21 as authoritative sources. FNCs will promote authoritative sources collaborating with
22 known information exchange/trading partners on the creation of XML components.
- 23 ◆ Ensure, facilitate, monitor, and validate registration of DON XML components.
- 24 ◆ Develop and maintain functional area portion of the DON XML Enterprise Namespace.
- 25 ◆ In conjunction with the Data Management and Interoperability (DMI) Functional Data
26 Manager (FDM), map DON XML Namespace tags and core components to DON
27 Systems/Applications data structure and DoD data standards such as Defense Data
28 Dictionary System (DDDS), Message Text Formatting (MTF), and Tactical Digital
29 Information Links (TADIL).

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

⁶ Core Components and Business Information Entities are defined in UN/CEFACT Core Components Technical Specification, Version 1.8 of 8 February 2002.

<http://www.ebtwg.org/projects/documentation/core/CoreComponentsTS1.80.pdf>

- 30 ◆ Ensure adherence to appropriate Federal, DoD, and DON XML regulations, policies,
31 and standards.
- 32 ◆ Ensure the selection of, use of, and adherence to Voluntary Consensus Standards
33 (VCSs), consistent with Public Law 104-113 and the Office of Management and Budget
34 Circular A-119, in lieu of developing new DON XML components.^{7,8} FNCs will
35 facilitate and promote the integration of DON standards with existing VCS where
36 appropriate. When no comparable VCSs exist, FNCs will facilitate and promote the
37 migration of DON standards to VCS status. FNCs will ensure that new DON XML
38 components are developed only when
- 39 1. suitable VCSs do not exist,
- 40 2. existing VCSs do not suffice or are not appropriate for the intended application,
- 41 3. new VCS components cannot be readily developed through a standards
42 development organization,
- 43 4. suitable DoD components do not exist,
- 44 5. existing DoD components do not suffice or are not appropriate for the intended
45 application, or
- 46 6. sufficient or appropriate DoD components cannot be developed through the DoD
47 standards process.
- 48 ◆ Serve as members of the DON XML Enterprise governance organization.
- 49 ◆ Reconcile functional area and cross functional XML tags, element and attribute names,
50 and required metadata with core components.
- 51

⁷ The National Technology Transfer and Advancement Act of 1995, Public Law 104-113.

⁸ Office of Management and Budget, Circular A-119 (Revised), *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*, February 10, 1998.

Comment Form

Document Title: DON Interim XML Policy

Line No.	Commenter	Current content	Proposed change	Reason for proposed change	Resolution