



DEPARTMENT OF THE NAVY

CHIEF INFORMATION OFFICER
1000 NAVY PENTAGON
WASHINGTON, DC 20350-1000

30 May 2003

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (NETWORKS AND
INFORMATION INTEGRATION)

SUBJECT: Department of the Navy (DON) Analysis of XML
Information Resources To Be Registered with DoD

Management Initiative Decision (MID) 905 (Attachment 1) directed Military Departments and Defense Agencies to register their metadata in the DoD Metadata Registry by September 30, 2003. The DoD memo on Net-Centric Data Management Strategy (Attachment 2) provided clarification of the Standards For Populating the Net requirements in Attachment 1. Attachment 2 also identified a due date of 30 May 2003 for Military Departments and Defense Agencies to provide an analysis of the types of XML information resources they will register into the DoD Metadata Registry. This document provides a consolidated DON response to the 30 May 2003 due date.

The DON XML Policy (Attachment 3) identified the role of the DON XML Functional Namespace Coordinator (FNC). The DON FNCs are chartered with developing their functional portion of the DON XML Enterprise Namespace and for harmonizing their components up to the DON enterprise-level. These DON XML Standards will be registered with the DoD XML Registry beginning approximately 1 July 2003.

An analysis of the quantities of XML components, which will be registered with DoD by 30 September 2003, is provided below:

Information Sources	Estimated Quantity
Documents	Medium
Domain Value Document	Small
Submission Pkg	Small
Source Code	Small
XML Attribute	Large
XML Complex Element	Large
XML Element	Large
XML Sample	Small
XML Schema Data Type	Medium
XML Schema Document	Medium

SUBJECT: Department of the Navy (DON) Analysis of XML
Information Resources To Be Registered with DoD



D. M. Wennergren

Attachments:

1. Management Initiative Decision (MID) 905 of 24 Dec 02,
Title: Net-Centric Business Transformation and e Government
2. DoD CIO Memo, DoD Net-Centric Data Management Strategy:
Metadata Registration of 3 Apr 2003
3. DON XML Policy of 13 Dec 2003

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FOLLOWING MANAGEMENT
INITIATIVE DECISION IS PROHIBITED

MID 905

TITLE: Net-Centric Business Transformation and e Government

DATE: December 24, 2002

DECISION: The Deputy Secretary of Defense approved the alternative estimate.

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Attachment 1

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MANAGEMENT INITIATIVE DECISION No. **905**

SUBJECT: Net-Centric Business Transformation and e Government

DOD COMPONENTS: Army, Navy, Air Force, OSD, Defense Agencies

SUMMARY OF ADJUSTMENTS:

<u>Alternative Estimate</u>	<u>(TOA, Dollars in Millions)</u>	
	<u>FY 2004</u>	<u>FY 2005</u>
Operation & Maintenance, Army	+3.0	+3.0
RDT&E, OSD CIO	+10.0	+20.0
Operation & Maintenance, DLA	-3.0	-3.0
Other Procurement, DLA	-1.0	-1.0
RDT&E, DLA	+2.4	+2.4
Operation & Maintenance, DISA	+3.0	+3.0
Other Procurement, DISA	+1.0	+1.0
RDT&E, DISA	-2.4	-2.4
Civilian Full Time Equivalents		
DLA	-21	-21
DISA	+21	+21

SUMMARY OF EVALUATION:

The alternative will enable DoD to transform Defense business processes with the same urgency we apply to transforming joint warfighting. Specifically, the alternative:

1. Directs the Department of Defense (DoD) Chief Information Officer (CIO) to:
 - a. Improve the Defense information technology (IT) infrastructure by
 - Eliminating bandwidth constraints to major DoD sites via the Global Information Grid Bandwidth Expansion.
 - Engaging the Principal Staff Assistants to help the Military Departments eliminate bandwidth constraints on their installations.

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- Evolving the Defense computing infrastructure to support a net-centric environment.
 - b. Develop and monitor an enterprise-wide information management strategy to
 - Provide customer-focused standards for populating the network
 - Use the results of the Horizontal Fusion initiative to identify and spin off dual use technologies applicable to both the way we fight and the way we do business.
 - Deploy collaborative capabilities and other tools.
 - c. Secure and assure the network and the information.
 - d. Accelerate commercial IT acquisition and eliminate unnecessary redundant IT investments.
 - e. Implement net-centric initiatives to facilitate implementation of the President's Management Agenda e-Government initiative within DoD.
 - f. Build the foundation for net-centric operations by enabling a corps of well-trained, highly skilled information management and information assurance personnel.
2. Directs the Military Departments and Defense Agencies to:
- a. Eliminate bandwidth constraints on their installations.
 - b. Leverage net-centric capabilities to streamline IT infrastructure.
3. Ensures broader use of the Business Case and Balanced Scorecard concept for the FY 2005 Budget Estimate Process.
4. Terminates the Joint Electronic Commerce Program Office (JECPO) realigns and accelerates the development and fielding of selected tools and applications that support the DoD transformation vision and the President's Management Agenda for electronic government.

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5. Provides additional resources to the Information Resources Management College (IRMC), National Defense University (NDU), for expansion of infrastructure, faculty and information technology (IT) course offerings essential to implementation of net-centric concepts across the Department.

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DETAIL OF EVALUATION:

This Management Initiative Decision describes the approach the Department will use to transform from a platform-centric information technology (IT) environment to a customer-focused, net-centric environment. The DoD CIO will establish a working group under the DoD CIO Executive Board to codify the strategy and assess implementation during the FY 2005 Budget Estimate Submission and FY 2005-2009 Program Review processes. Progress will be reported to the Secretary of Defense on a quarterly basis.

Five key information technology architectural tenets must be employed to ensure effective transformation to net-centricity.

"Only handle information once." Collecting information or replicating data entry is costly and adversely impacts operational efficiency. "Only handling information once" requires that technology and processes be reengineered and integrated to minimize time and effort dedicated to data collection and entry.

"Post before processing," the second tenet of net-centricity, will provide users immediate access to data and eliminate delays normally caused by processing or analyzing information before it is disseminated.

System users must have the technical capability to access data when it is needed. The ability to "pull" data when it is needed, in the form that it is needed, is a vital component of net-centricity. This concept gives data control to users, by allowing them to "pull" data as needed instead of having massive amounts of information "pushed" to them regularly, regardless of whether it is needed.

Collaboration technologies must be utilized to assist users in making sense of the data that is pulled. For example, to address most defense-related issues, a diverse group of subject matter experts collaborate to maximize benefits obtained from information that has been gathered. Often, the expertise needed to comprehensively analyze complex information does not reside in one organization or location. As a result, the capability to

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collaborate with experts within and outside DoD will be a value-added feature of net-centricity.

Diverse network paths must provide users with the capability to operate freely in an environment that is reliable and secure. When operational, the net-centric environment will eliminate current interoperability concerns and strengthen information assurance.

To ensure a successful transformation and to leverage existing net-centricity investments, the alternative recommends the following initiatives -- carefully balanced and integrated to ensure effective implementation:

Global Information Grid (GIG) Bandwidth Expansion

The GIG Bandwidth Expansion recommended in the alternative will use advanced fiber optical technology to upgrade telecommunications lines at DoD's critical installations. Current telecommunication lines are not robust enough to handle the volume of information needed to facilitate optimum, strategic decision-making. The GIG Bandwidth Expansion will provide 100 times the current telecommunications capacity to approximately 90 worldwide Defense sites. An increase in capacity of this magnitude will permit dual use of the bandwidth - with warfighting command, control, and intelligence functions as a primary mission and business transformation as an auxiliary function.

Installation Bandwidth Modernization

Expansion of GIG Bandwidth will provide a solid foundation for DoD's net-centric transformation. However, base or installation level bandwidth also must be upgraded in a timely manner to guarantee connectivity and ensure maximum benefits are obtained from the GIG Bandwidth Expansion initiative. Each Military Department and Defense Agency must develop expanded bandwidth connectivity that will provide a bridge from the installation-level telecommunications infrastructure to the expanded GIG bandwidth.

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To maximize DoD's return on its investment, each Component must develop expanded bandwidth connectivity plans for each of the 90 most critical installations included in the "Global Information Grid Bandwidth Expansion Derived Requirements," dated December 17, 2001. These connectivity plans should include installation specific strategies, timelines, cite potential risks, as well as, resource needs (by fiscal year) required to complete all installation bandwidth expansions by March 31, 2005. The GIG bandwidth expansion plans should be forwarded to the DoD CIO for review and approval by April 30, 2003. Following evaluation, the bandwidth expansion plans will undergo an affordability assessment to determine the feasibility of directing implementation of installation level bandwidth expansions. The DoD CIO will work with the PSAs to resolve crosscutting issues that may impact the Components' ability to modernize their installation bandwidth.

Upon implementation, net-centricity should eliminate outdated systems and redundant data repositories, reduce the number of servers, transform business processes, and reduce systems development and maintenance costs. Based on commercial and Defense case studies, Component server consolidations alone should reduce IT infrastructure costs beginning in Fiscal Year 2005 after the GIG Bandwidth Expansion is complete. (One DoD component recently reduced its server total by more than 50 percent through smart consolidation.) Solving the installation bandwidth problem will support further server consolidations. The DoD CIO will report on this potential for inclusion in the FY 2005 program and budget (PB) processes.

Standards for Populating the Net

Populating the net with data and ensuring access to that information will require tools to implement and use data tagging and metadata (data about data). The Extensible Markup Language (XML) is a data management tool that facilitates searches of metadata, which has been tagged and made available for data pulls. The Under Secretary of Defense (Acquisition, Technology and Logistics) and the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) issued a Departmental XML registration policy in April 2002. The alternative requires the DoD CIO establish a data strategy, by April 2003, to

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accelerate use of the XML Registry across DoD and improve the management of data holdings. To ensure compliance with this strategy, the alternative requires the Military Departments and Defense Agencies to register their metadata in the DoD Metadata Registry by September 30, 2003.

Horizontal Fusion

Communications networks are essential, but offer limited value if the data is not readily available, reliable, timely and understandable. The Horizontal Fusion RDT&E program will provide tools that integrate smart data "pulls" with expert interpretations of information. Although the Horizontal Fusion program initially will focus on providing these tools for the intelligence community, the technology will have dual use for the net-centric data business transformation concepts embodied in the Financial Management component of the Global Information Grid (GIG) Enterprise Architecture. In today's platform-centric environment, stovepiped information sources develop their own information technology capabilities. This technological environment generally breeds limited awareness and usually increases data sharing delays. Horizontal Fusion capabilities will facilitate strategic decision-making by providing users with horizontal access to information that traditionally has been available only in vertical, Component or functional area, stovepiped systems.

By improving the accessibility to information, horizontal fusion will streamline and increase the speed of command decisions and the effectiveness of business operations. This enhancement should begin to yield effective improvements to key operational and business processes during Fiscal Year 2006 program and budget processes. The CIO Executive Board (with membership of DoD Components, including OUSD(AT&L)) will oversee this process to codify strategies and implementation of net centric initiatives outlined in the alternative. The DoD CIO will prepare an analysis of this potential by January 2004 for use during the FY 2006 Defense Planning Guidance and Program/Budget processes.

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IT Infrastructure Transformation Initiatives

Transformation initiatives to accelerate commercial IT acquisitions and eliminate redundant IT investments include expansion of the Enterprise Software Initiative, greater use of commercial off-the shelf (COTS) software products across the Department, central design activity (CDA) divestiture, and streamlining the IT acquisition process. The DoD CIO will assess and collect information on these savings for use in the FY 2005 PB processes.

Enterprise Software Initiative (ESI)

In June 1998, the DoD CIO with the support and participation from the DoD Military Departments and Defense Agencies launched the ESI. This joint project was designed and implemented to reduce cost associated with commercial software acquisitions, but recently has been expanded to also include hardware purchases and selected IT services. ESI has pre-negotiated discounts with software companies and resellers that offer excellent values to customers. ESI agreements are funded in two ways. First, customers directly order software using their appropriated funds. Second, ESI makes investments in DoD software inventory or multiyear purchases using DoD revolving funds whenever a sound business case can be made for generating additional cost avoidance. Customers pay back the revolving fund when they order from ESI vendors using their appropriated funds. To date, the Army and Navy revolving funds have been used to make software investments:

Navy revolving funds were used to purchase \$18.9M inventory of Microsoft server products. This was repaid within 18 months, generating cost avoidance of about \$3.3M.

Army revolving funds were used to purchase database software from Oracle, Sybase and Informix; enterprise management software from CA and IBM; and other products. ESI investment of \$201M in Army revolving funds generated cost avoidance of more than \$1B over the nine-year life of delivery orders issued.

Use of Army and Navy revolving funds has shown to be effective in reducing the cost of commercial software. Air Force and DLA

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funds have not been used. ESI experience to date indicates that additional cost avoidance could be generated by increased use of revolving funds for multiyear purchases of commercial IT, when a solid business case exists.

The alternative requires that, by June 2003, the DoD CIO develop and implement a plan of action for optimizing the benefits accrued from the expanded ESI program. This plan should include resource requirements and offsets, if any, and cost avoidance tracking. The plan should show how the ESI might assist the components in achieving the reductions levied by the FY 2004 OMB Passback requirements.

Commercial Off-the-Shelf (COTS) Software

Expanded use of COTS software should streamline business processes, increase operational efficiency, and yield significant savings. By March 2003, the alternative requires the DoD CIO to develop an action plan to vigorously promote policies and establish incentives designed to increase the use of COTS across DoD. The plan, at a minimum, must include the establishment of a baseline of current COTS and Government Off the Shelf (GOTS) software within DoD; the simplification of the commercial business case development procedures; more flexible financing options; and the streamlining and simplification of COTS testing procedures.

Central Design Activity (CDA) Divestiture

The CDAs were established to develop software systems in support of DoD business processes. As DoD migrates to expanded use of commercial off-the-shelf software and transforms from a platform-centric to a net-centric environment, the need for in-house software and systems development is significantly diminished. In fact, results from the Army's CDA divestiture pilot demonstrate not only that CDAs can be divested without any adverse operational impact, but also that divestiture can yield cost savings.

Prior to divestiture, the Army's Commodity Command Standard Systems (CCSS) required support from 270 DoD employees and approximately 100 contractor support personnel. Similarly, the

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Army's Standard Depot System (SDS) was operated and maintained by 155 DoD employees and 60 contractor personnel. During the pilot, CCSS and SDS were placed in a minimum maintenance mode and engineering change proposals were limited to statutory and regulatory requirements only. With these limitations in place, both systems could be supported with 77 DoD employees and 214 contractor personnel. While contractor support remained constant, the net saving in DoD support was 134 FTEs. The funds recouped from divestiture of the St Louis, Missouri and Chambersburg, Pennsylvania CDAs were reallocated to the Army Logistics Support Modernization Program.

As the Department moves toward net-centricity, it is imperative that DoD optimize benefits accrued from its information technology resources. Toward that end, the alternative requires that all remaining CDAs be evaluated for divestiture. Each Military Department must review the efficacy of its CDAs and forward divestiture plans that identify expected FTE reductions and related savings to the DoD CIO by June 2003 for inclusion in the FY 2005 Budget Estimate Submission. In addition, the Military Departments should identify the modernization initiatives to which FTEs and projected savings from anticipated divestitures will be reallocated.

Streamlined IT Acquisition Process

The Rapid Improvement Team (RIT) Information Technology (IT) Portal and Community of Practice (COP) initiatives provide a forum for posting Program Manager and Program Execution Office data and making it available to be pulled by the rest of the acquisition community across the Department. The alternative recommends the approach become the standard for all IT acquisition information. The DoD CIO and the Under Secretary of Defense (Acquisition, Technology and Logistics) will jointly develop a plan to identify resource requirements and savings that can be expected to accrue from use of the portal, by May 2003, for inclusion in the FY 2005 Budget Estimate Submission.

Joint Electronic Commerce Program Office (JECPO) Termination

Since 1998, the JECPO has developed and prototyped a number of electronic-business/electronic commerce services and

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applications. That office has been instrumental in coordinating and integrating a variety of key information technology tools to include the following enterprise initiatives.

- Central Contractor Registration (CCR)
- DoD Business Opportunities
- Electronic Document Access (EDA)
- Wide Area Workflow (WAWF)
- Technical Data Solution (TeDS)
- DoD Electronic Mall (E-Mall)
- Electronic Portal Access Services (EPASS)
- DoD eBusiness eXchange (DEBX)
- Past Performance Information Retrieval System (PPIRS)

Each of these initiatives has improved operational capability and transformed business processes, while promoting interoperability. Collectively, they have significantly enhanced DoD business operations and provided capabilities that have been identified or are under consideration for export across the federal government as part of the President's Management Agenda e Government initiative for Integrated Acquisition.

To optimize available resources, promote the achievement of net-centricity, and sustain current JECPO developed systems until the Federal-wide e Government initiative is resourced, the alternative restructures DoD e-business initiatives in the following manner:

- Twenty-one full time equivalents (FTEs) and \$4 million are realigned from the Defense Logistics Agency (DLA) to the Defense Information Systems Agency (DISA) to support net-centricity and sustainment of the DEBX and EPASS. This also includes the DoD Acquisition eBusiness portfolio identified by Defense Procurement and Acquisition Policy (DPAP), which includes management and funding for operation and maintenance of CCR, DoD Business Opportunities, EDA, WAWF, and TeDS; and management of PPIRS.
- Adhering to the current program (framework initiatives, cost, schedule, and performance), DoD CIO and OUSD(AT&L) DPAP will work with the DISA to determine the resources required to sustain the Acquisition eBusiness portfolio initiatives and to

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accelerate net-centric transformation. A plan will be provided within sixty days of the signing of this MID.

- Five FTEs plus \$1 million in O&M remains at DLA and \$2.4 million in RDT&E funds are realigned from DISA to DLA to support e-Mall operation, maintenance and enhancement.
- Remaining funds and FTEs at DISA and DLA in PE0305840K, PE0701113S and PE0708012S that currently are allocated to e-Business, electronic commerce, and electronic data interchange (EB/EC/EDI) are reallocated to DISA to help achieve net-centric transformation.

Table #1, below, summarizes these adjustments to JEPCO.

Table #1
JECPO Resource Adjustments

<u>(Full Time Equivalents (FTEs))</u>	<u>FY 04</u>	<u>FY 05</u>
<u>Sustainment of eMall Operational Capability</u> Defense Logistics Agency	+5	+5
<u>Sustainment of eBus and eCommerce Capability</u> Defense Logistics Agency	-26	-26
<u>Acceleration of Net-Centric Transformation</u> Defense Information Systems Agency -	+21	+21
 <u>(Dollars in Millions)</u>		
<u>Sustainment of eMall Operational Capability</u>		
DLA, RDT&E, BA 5	+2.4	+2.4
DISA, RDT&E, BA 5	-2.4	-2.4
<u>Sustainment of eBus and eCommerce Capability</u>		
DLA, O&M, BA 4	-3.0	-3.0
DLA, Procurement, BA 1	-1.0	-1.0
<u>Acceleration of Net-Centric Transformation</u>		
DISA, O&M, BA 4	+3.0	+3.0
DISA, Procurement, BA 1	+1.0	+1.0

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Rapid Acquisition Incentives

As recommended in the Defense Planning Guidance, the DoD CIO will establish a \$110 million central investment fund (FY 2004, \$+10.0, FY 2005-2009, \$+20.0 million RDT&E, BA 7 for each per year) that will be used to encourage the Military Departments and Defense Agencies to accelerate information technology initiatives in support of net-centric business transformation. A new Program Element Code will be established for this fund. Along with the eGovernment federal initiative support funding addressed in PBD 082, these resources will support implementation of the President's Management Agenda eGovernment direction to improve user access and resource utilization in DoD. The DoD CIO will issue guidelines by April 2003 on how the fund will be managed, including the criteria that will be used to screen nominees for receipt of rapid acquisition initiative funding. At a minimum, projects must address all elements of the Exhibit 300 requirements stated in OMB Circular A-11.

Business Case Usage

Business Cases for purposes of Information Technology resource assessment are described in the June 2002 OMB Circular A-11, Section 300 and Section 53. The President's Management Agenda's eGovernment Section uses Business Case and balanced scorecard methodologies to assess the Department of Defense's progress in achieving the goals of the Agenda. While DoD has improved the quantity and quality of business cases submitted to OMB, the department has not met the full goal of assessing and reporting 60% of the IT budget resources via business cases. By April 2003, all Components CIOs, in consultation with the CFOs and Principal Staff Assistants, will propose to the DoD CIO their approach for expanded use of the business cases and balanced scorecard for the FY 2005 Budget Estimate Submission. This may include necessary restructuring of current initiatives to align with this MID, and better descriptions of how the IT/National Security Systems align with the Global Information Grid and the Financial Management Enterprise architectural activities.

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IT Education and Training

A key component of implementing the President's Management Agenda is a skilled information management and information assurance workforce. In addition, a highly skilled IT workforce is needed to ensure maximum benefits accrue from transformation to the net-centric environment; the DoD CIO has made information technology education and training a top priority. The Information Resources Management College (IRMC) of the National Defense University (NDU) has been designated the primary source of IT education and training for DoD's senior and mid-level managers, including management of information resources as well as improving understanding of Project Management requirements.

The IRMC aggressively develops and delivers the critical IT management education and training required to meet the rapidly changing needs of the Department in areas such as net-centricity, information assurance, information operations and homeland security. Both military and civilian students participate in programs at the college. Upon completing the program, students earn 15 credits towards a masters or doctorate degree.

The alternative recognizes that the IRMC educational requirements, student throughput and program requirements have continued to increase, while the funding for IT education and training has decreased. To address the shortfall, PBD 815, in the amended FY02 PB, provided \$3 million dollars in FY 02 and 03 funds for IT education and training. This alternative continues to fund \$3 million in the IRMC (O&M BA 03, Training and Recruiting, PE0323751A) for FY 2004-2009 to cover emerging and increasing IT education and training requirements. The DoD CIO will lead an effort to assess and determine the IT education and training requirements for the Department's IT community charged with the management and oversight of IT projects and acquisitions. The plan should be provided by July 2003 to allow for development and issuance prior to the FY 2005 Program and Budget cycle.

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SUMMARY OF IMPACTS ON DOD RESOURCES:

(TOA \$'s in Millions)

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
<u>Army</u>						
(NDU/IRMC)						
O&M, A, BA 3	+3.0	+3.0	+3.0	+3.0	+3.0	+3.0
<u>OSD DoD CIO;</u>						
RDT&E, DW, BA 7	+10.0	+20.0	+20.0	+20.0	+20.0	+10.0
<u>DLA</u>						
O&M, DW, BA 4	-3.0	-3.0	-3.0	-5.0	-5.0	-6.0
Proc, DW, BA 1	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
RDT&E, DW, BA 5	+2.4	+2.4	+2.0	+2.0	+2.0	+2.0
<u>DISA</u>						
O&M, DW, BA 4	+3.0	+3.0	+3.0	+5.0	+5.0	+6.0
Proc, DW, BA 1	+1.0	+1.0	+1.0	+1.0	+1.0	+1.0
RDT&E, DW, BA 5	-2.4	-2.4	-2.0	-2.0	-2.0	-2.0
<u>NET CHANGE</u>						
<u>to TOA</u>						
OMA, BA 3	+3.0	+3.0	+3.0	+3.00	+3.0	+3.0
OSD, RDT&E, BA 7	+10.0	+20.0	+20.0	+20.0	+20.0	+20.0

(Civilian FTEs/Military E/S)

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
DLA	-21	-21	-21	-21	-21	-21
DISA	+21	+21	+21	+21	+21	+21

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FUNDING APPENDIX			MID NUMBER 905		ALTERNATIVE No. 1		
(\$ in Thousands) Qty ()							
PROGRAM/ISSUE	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
<u>Operation & Maintenance, Army</u>							
<u>Budget Activity 3, Training & Recruiting</u>							
NDU/ IRMC transfer		+3,000	+3,000	+3,000	+3,000	+3,000	+3,000
Total, Operation & Maint, Army		+3,000	+3,000	+3,000	+3,000	+3,000	+3,000
<u>Operation & Maintenance, Defense-Wide</u>							
<u>Budget Activity 4, Administration and Servicewide Activities</u>							
<u>JECPO Termination</u>							
DISA JECPO		+3,000	+3,000	+3,000	+5,000	+5,000	+6,000
DLA JECPO		-3,000	-3,000	-3,000	-5,000	-5,000	-6,000
Total O&M, Defense-Wide		-	-	-	-	-	-
<u>Other Procurement, Defense-Wide</u>							
<u>Budget Activity 1, Equipment</u>							
DISA JECPO		+1,000	+1,000	+1,000	+1,000	+1,000	+1,000
DLA JECPO		-1,000	-1,000	-1,000	-1,000	-1,000	-1,000
Total Other Procurement, DW		-	-	-	-	-	-
<u>RDT&E, Defense-wide</u>							
<u>Budget Activity 5, System Dev/Dem</u>							
DISA JECPO/E-Mall		-2,400	-2,400	-2,400	-2,400	-2,400	-2,400
DLA JECPO/E-Mall		+2,400	+2,400	+2,400	+2,400	+2,400	+2,400
Subtotal		-	-	-	-	-	-
<u>Budget Activity 7, Operating System Dev</u>							
OSD, CIO		+10,000	+20,000	+20,000	+20,000	+20,000	+20,000
Total RDT&E, Defense-wide		+10,000	+20,000	+20,000	+20,000	+20,000	+20,000
Total MID		+13,000	+23,000	+23,000	+23,000	+23,000	+23,000

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MANPOWER APPENDIX MID NUMBER 905				ALTERNATIVE No. 1			
(Military End Strength (E/S)/Full-time Equivalent (FTEs) for Civilians)							
PROGRAM/ISSUE	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009

Operation and Maintenance, Defense-Wide (O&M,DW)

U.S. Direct Hires

DLA		-21	-21	-21	-21	-21	-21
DISA		+21	+21	+21	+21	+21	+21
TOTAL	-						



DEPARTMENT OF DEFENSE

6000 DEFENSE PENTAGON
WASHINGTON, DC 20301-6000

APR 3 2003

CHIEF INFORMATION OFFICER

**MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
DIRECTOR, DEFENSE RESEARCH AND EVALUATION
ASSISTANT SECRETARIES OF DEFENSE
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DIRECTOR OPERATIONAL TEST AND EVALUATION
ASSISTANTS TO THE SECRETARY OF DEFENSE
DIRECTOR, ADMINISTRATION AND MANAGEMENT
DIRECTOR, FORCE TRANSFORMATION
DIRECTOR, NET ASSESSMENT
DIRECTORS OF THE DEFENSE AGENCIES
DIRECTORS OF THE DOD FIELD ACTIVITIES**

SUBJECT: DoD Net-Centric Data Management Strategy: Metadata Registration

This memorandum augments information on Standards for Populating the Net provided in the Deputy Secretary of Defense Management Initiative Decision (MID) 905. MID 905 requires Military Departments and Defense Agencies to register metadata in the DoD Metadata Registry by September 30, 2003.

The Defense Information Systems Agency (DISA), in coordination with DoD Components, has established the DoD Metadata Registry to promote metadata interoperability and reuse. The DoD Metadata Registry serves as the Department's registry and repository of all metadata components and represents the combined functionality and holdings of the DoD Data Emporium and the DoD eXtensible Markup Language (XML) Registry. The DoD Metadata Registry is available at: <http://metadata.dod.mil>.

The DoD Metadata Registry supports the Department's Net-Centric Data Management Strategy by providing for the registration of structural and contextual metadata. It also incorporates a variety of metadata resources such as XML components, database schemas, and commonly used reference data sets. Phased content and capability enhancements will integrate other resources such as data elements from the Defense Data Dictionary System, data models, commonly used messaging formats, symbologies, ontologies, transformations, and mediation algorithms.

Attachment 2



The effective management of metadata is essential to implementing the Department's Net-Centric Vision. DoD Components must implement metadata management initiatives in support of the Department's Net-Centric Vision. To support metadata management activities, DoD Components should establish and/or participate in Communities of Interest (COIs). COIs are collaborative groups of people who exchange information in pursuit of their shared goals, interests, missions, or business processes, and who therefore must have shared definitions for the information they exchange. COIs are major contributors to the development and maintenance of metadata. Accordingly, DoD Components may leverage COIs to assist in the registration of metadata.

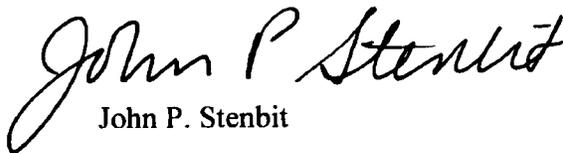
Recognizing that metadata registration is an ongoing activity, I direct the following actions be performed as part of a phased approach for satisfying MID 905 metadata registration requirements:

- Components shall provide an analysis of the types XML information resources they will register, the quantity of metadata (as defined by the count of each type of XML information resource), and the date of expected initial registration by May 30, 2003. This information, along with any questions, should be directed to DISA, Attn: Mr. Peter Pasek, (703) 882-1365, pasekp@ncr.disa.mil.
- Components must register all supported XML information resources, such as XML schema documents, to the DoD Metadata Registry by September 30, 2003. An up-to-date list of XML information resources supported by the DoD Metadata Registry is available at: <http://metadata.dod.mil>.

The phased approach to metadata registration recognizes that many metadata holdings are defined using non-XML representations. To plan for the registration of metadata holdings that are not represented in XML, I direct the following:

- Components shall provide an analysis of their metadata holdings that are not represented in XML (e.g., database schema, non-XML model formats and taxonomies) by July 30, 2003. This analysis shall include the types and quantities of these holdings and information regarding any transition of these holdings to XML. This analysis, and any questions, should be directed to DISA, Attn: Mr. Peter Pasek, (703) 882-1365, pasekp@ncr.disa.mil.

Your involvement and assistance are critical to the success of the Department's net-centric transformation. We must work as a team to ensure the Strategy is accomplished, and the Registry becomes a viable, customer-oriented tool that satisfies our business and operational needs. My point-of-contact for this action is Mr. Anthony Simon at 703-602-1090 or Anthony.Simon@osd.mil.


John P. Stenbit



DEPARTMENT OF THE NAVY

CHIEF INFORMATION OFFICER
1000 NAVY PENTAGON
WASHINGTON, DC 20350-1000

13 December 2002

MEMORANDUM FOR DISTRIBUTION

Subj: DON POLICY ON THE USE OF EXTENSIBLE MARKUP LANGUAGE (XML) OF DECEMBER 2002

Encl: (1) DON Policy on the Use of XML of December 2002

In a dynamic global environment, organizational relationships often influence business, government, and military activities and outcomes. The Department of the Navy (DON) is no exception. Interdependencies among DON programs and commands, as well as with partners such as other Department of Defense (DoD) entities, civilian agencies, U.S. allies, and non-governmental organizations, play a major role in shaping DON operations.

Interoperability is a cornerstone of DON efforts to strengthen its interdependent operations and, subsequently, improve the war fighter's ability to find, retrieve, process, and exchange information. The Department, like many government and private sector organizations, has increasingly looked to Extensible Markup Language (XML) technology to meet its data sharing needs. Today, the DON takes another important step to harness XML's capacity for improving interoperability with the *DON Policy on the Use of Extensible Markup Language of December 2002* (enclosure (1)).

Since the interim DON XML policy was issued last fall, the Department has created a comprehensive governance structure for its XML efforts and set a strong example for DON partners that are implementing the technology. The DONXML Work Group, formed in August 2001, has been working through its five focused action teams to provide leadership and guidance to the Department's XML efforts. *The DON Vision for XML*, released in March 2002, outlined the Department's vision for successful XML implementation across the DON and the May 2002 *XML Developer's Guide, Version 1.1* provided developers with important information about XML specifications, component selection/creation, schema design, and component naming conventions.

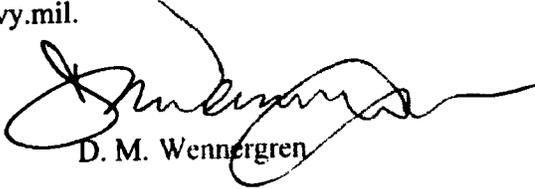
Enclosure (1), developed by the DONXML Work Group, reflects the progress made in the past year and refocuses our governance efforts to ensure the Department continues to implement XML in a manner consistent with the DON XML vision of "fully exploiting XML as an enabling technology to achieve interoperability in support of maritime information superiority." Specifically, the policy provides direction for governance issues that include the use of technical specifications and XML standard components as well as participation on XML and XML-related technical and business standards bodies. The policy also ensures the integration of DON XML implementation with that of other ongoing enterprise architecture initiatives.

Subj: DON POLICY ON THE USE OF EXTENSIBLE MARKUP LANGUAGE (XML) OF
DECEMBER 2002

The policy also outlines responsibilities of the many individuals and groups critical to the success of DON XML implementation efforts, including Functional Area Managers (FAMs), XML Functional Namespace Coordinators (FNCs), and the relationship to Functional Data Managers (FDMs). Finally, the document describes key action steps, including DONXML Work Group and FAM tasking to formally establish XML FNCs for functional responsibility areas.

Successful XML implementation requires a firm commitment to coordination. I strongly encourage you to review and adhere to this policy, which is a crucial part of our work to foster XML coordination among DON programs and commands. With your support, we can ensure that DON XML efforts remain aligned with the Department's vision for the technology and meet user requirements. This office will continue to provide the necessary processes, guidance, and governance structures to support XML implementation efforts across the DON.

If you have questions about the XML Policy, or would like additional information about DON XML efforts, please contact the DONXML Work Group Chairperson, Mr. Michael Jacobs 703-601-3594, jacobs.michael@hq.navy.mil.



D. M. Wennergren

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DEPARTMENT OF THE NAVY

CHIEF INFORMATION OFFICER
1000 NAVY PENTAGON
WASHINGTON, DC 20350-1000

13 December 2002

MEMORANDUM FOR DISTRIBUTION

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

- Ref: (a) DON CIO Memo, *Interim Policy on the Use of Extensible Markup Language (XML) For Data Exchange*, 6 Sep 01
(b) World Wide Web Consortium (W3C) Recommendation, *Extensible Markup Language XML 1.0 (Second Edition)*, 6 Oct 2000
(c) W3C Recommendation, *Extensible Stylesheet Language (XSL) 1.0*, 15 Oct 01
(d) W3C Recommendation, *XML Schema Part 1: Structures*, 2 May 01
(e) W3C Recommendation, *XML Schema Part 2: Datatypes*, 2 May 01
(f) DON CIO Memo, *Department of the Navy Vision For Extensible Markup Language (XML)*, 15 Mar 02
(g) *Department of The Navy XML Developers Guide*, Version 1.1, 1 May 02
(h) SECNAVINST 5000.36, *Data Management and Interoperability*, 1 Nov 01
(i) Under Secretary of the Navy Memo, *Designation of Department of the Navy (DON) Functional Area Managers*, 14 May 02
(j) Title 10 United States Code, Chapter 131, Section 2223 (codifies Public Law 105-261, "National Defense Authorization Act for FY 1999," Section 331)
(k) DoD CIO Memo, *Policy for Registration of Extensible Markup Language (XML)*, 22 Apr 02

- Encl: (1) Extensible Markup Language Functional Namespace Coordinator Roles and Responsibilities
(2) Definitions

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

Scope and Applicability. This 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 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.

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

Background

a. 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 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>.

b. 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."

c. 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

d. Reference (h) establishes policy and defines the infrastructure and processes necessary to unify DON Data Management and Interoperability (DMI) and achieve data interoperability within the DON, with other Military Departments and DoD agencies, and with allied forces. It defines the need for identification and designation of authoritative data sources. It outlines specific roles and responsibilities of Navy and Marine Corps Data Administrators, Resource Sponsors, and Functional Data Managers (FDMs).

e. Reference (i) provides guidance on reducing the number of DON IT applications and databases and provides a framework for coordination and management of these processes across

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.

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

the DON. It defines the roles and responsibilities of the Functional Area Managers (FAMs) and identifies the organizations responsible for designating the FAMs.

f. Reference (j) requires the Chief Information Officer (CIO) to ensure that Departmental IT/NSS systems 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 creating custom markup languages to describe any type of information structure. Since approval of the initial technical specification by the W3C in 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 ebusiness 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 DMI initiative defined by reference (h). In addition, the XML governance structure will be integrated into the existing FAM organization, which is defined in 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.

Subj: DON POLICY ON THE USE OF EXTENSIBLE MARKUP LANGUAGE (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.

As development and stand up of the formal DON XML governance structure is completed, responsibility for managing DON XML implementation will shift from the DONXML WG to this newly formed structure.

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

- a. 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.

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.

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

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):

- (1) Appropriate Business Voluntary Consensus Standards
- (2) Federal-level standards
- (3) DoD standards
- (4) DON enterprise standards.

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

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 discovery, development, registration, maintenance, 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;
- (2) Develop an XML governance structure to oversee XML implementation; and
- (3) Work to establish DON XML Functional Namespace Coordinators.
- (4) Ensure alignment of XML implementation with other enterprise integration initiatives.

³ Enterprise-level standards are standards that apply to the entire Department of the Navy.

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

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 (FNC), for their functional area.

(2) Provide oversight and management of the XML FNC's efforts, for the appropriate 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;

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

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

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

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

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

(9) Develop a waiver policy to this policy; and

(10) 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 to ensure the development of an integrated data architecture;

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

(3) Actively participate in the XML governance structure;

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

(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 IT/NSS systems shall:

(1) Work with Functional Namespace Coordinators (FNCs) to develop standard enterprise XML components;

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

(3) Implement the requirements of this policy.

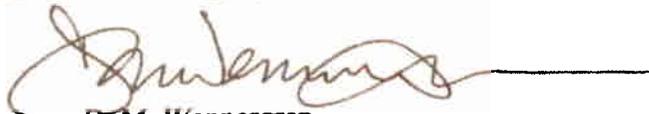
Action.

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

b. FAMs shall designate an appropriate organization to act as the DON XML FNC, for their functional area of responsibility. This designation shall take place within 60 days from the date of this memorandum.

c. The DONXML WG shall work with the FAMs to establish the FNCs.

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.



D. M. Wennergren

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**Extensible Markup Language
Functional Namespace Coordinator
Roles and Responsibilities⁴**

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. There are currently 23 functional areas identified within the Department of the Navy. The 23 functional areas were established by SECNAVINST 5000.36 and the Functional Area Manager (FAM) Designation memo.⁵ FNCs actively participate in developing and managing the Department of the Navy (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 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 markup⁶, schema components,⁷ schemas,⁸ style sheets, namespace associations, core components and business information entities, and required metadata.⁹
- ◆ 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 Department of Defense (DoD) data standards

⁴ 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.

⁵ Under Secretary of the Navy Memorandum, *Designation of Department of the Navy (DON) Functional Area Managers*, 14 May 2002.

⁶ XML element and attribute names and tags.

⁷ Developer-defined entities and datatypes.

⁸ This includes both DTDs and XML Schemas.

⁹ 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>

such as Defense Data Dictionary System (DDDS), Message Text Formatting (MTF), and Tactical Digital Information Links (TADIL).

- ◆ 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.^{10,11} 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.

¹⁰ The National Technology Transfer and Advancement Act of 1995, Public Law 104-113.

¹¹ 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.

DEFINITIONS

Attribute. A source of additional information about an element. Attribute values may be fixed in the DTD or Schema, or listed as name-value pairs (name='value') in the start-tag of an element.

Authoritative Data Source. Data products including databases that have been identified, described, and designated by appropriate Department of Navy (DON) Functional Data Managers, U.S. Military Services and Department of Defense (DoD) Components as the authorized producer of data for a given requirement. (SECNAVINST 5000.36)

Business Information Entity. A piece of business data or a group of pieces of business data with a unique business semantic definition derived from a core component through the application of context. (UN/CEFACT CCTS V1.85)

Context. The formal description of a specific business circumstance as identified by the values of a set of context categories, allowing different business circumstances to be uniquely distinguished. (UN/CEFACT CCTS V1.85)

Core Component. A building block for the creation of a semantically correct and meaningful information exchange package. It contains only the information pieces necessary to describe a specific concept. (UN/CEFACT CCTS V1.85)

Data. A representation of facts, concepts, or instructions in a formalized manner suitable for communication, interpretation, or processing by humans or by automatic means. (Federal Information Processing Standards (FIPS) Pub 11-3) Data are distinct pieces of information, usually formatted in a special way. All software is divided into two general categories: data and programs. Programs are collections of instructions for manipulating data.

Datatype. The format used for the collection of letters, digits, and/or symbols, to depict values of a data element, determined by the operations that may be performed on the data element. (ISO 11179-1)

Document Type Definition. A definition of the structure of an XML document expressed in Standard Generalized Markup Language (SGML) syntax.

Element. Each XML document contains one or more elements, the boundaries of which are either delimited by start-tags and end-tags, or, for empty elements, by an empty-element tag. Each element has a type, identified by name, sometimes called its "generic identifier" (GI), and may have a set of attribute specifications. (W3C REC-XML-20001006)

Enterprise. The highest level of an organization.

Enterprise Interoperability. Enterprise Interoperability, when used in terms of Information Technology, refers to the ability of all systems within a given enterprise (e.g., DON) to access, exchange, understand, and use shared data and processes.

Enterprise Standards. Standards selected or developed by an enterprise to promote interoperability across all functional areas. Enterprise standards are usually formally promulgated (e.g., DoD Joint Technical Architecture).

Enterprise Strategy. For information technology — a tactical strategy and an implementing process for using information as a strategic asset to manage IT far more effectively and efficiently. An enterprise strategy develops and manages an organization's IT architecture from an enterprise vice organizational or functional area perspective to promote communication, increase flexibility, and avoid waste and duplication.

Enterprise XML Namespace. A collection of namespaces of an enterprise is structured around an organizational, functional, or hierarchical structure. This namespace collection is collated as sections of a single enterprise namespace. The XML enterprise namespace is the root construct of the collection of XML functional area namespaces and will also contain XML components that have been designated as enterprise standards.

Entity. A unit of storage within an XML construct. Entities all have content and are all (except for the document entity and external subsets) identified by an entity name. Each XML document has one entity called the document entity, which serves as the starting point for the XML processor and may contain the whole document.

Functional Area. A Functional Area encompasses the scope (the boundaries) of a set of related functions and data as defined by SECNAVINST 5000.36 and the Functional Area Manager (FAM) Designation Memo. There are currently 23 functional areas defined for the DON.

Functional Area Manager. An individual designated by the Under Secretary of the Navy to manage a functional area.

Functional Data Manager. Organizations designated by the respective Resource and Program Sponsors to produce and control structuring of data within functional activities, information systems, and computing and communications infrastructures. Examples include: Naval Meteorology and Oceanography Command for meteorological and oceanographic data, Office of Naval Intelligence for characteristics and performance data of non-U.S. equipment and merchant ships, Naval Security Group for cryptologic information and data, DC/S Installations & Logistics (I&L) for Marine Corps logistics.

Governance Structure. The organizational structure necessary to make and administer policy so as to ensure a given mission is fulfilled or vision achieved. Governance structures can be formal (e.g., an organization) or matrix (e.g., participants from different organizations) in nature. The DON XML governance structure will be concerned with the enterprise-wide implementation of XML standards throughout the Department of the Navy to achieve the DON XML Vision. All XML development and use within the

DON, whether proof-of-concept or full “programmatic,” will fall within the scope of DON XML governance structure.

Information Technology. Any equipment, or interconnected system or subsystem of equipment, that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. The term “equipment” in this definition means equipment used by a component directly, or used by a contractor under a contract with the Component, which requires the use of such equipment, or requires the use, to a significant extent, of such equipment in the performance of a service or the furnishing of a product. The term “IT” includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services), and related resources. The term “IT” includes National Security System (40 U.S.C. 1401 and Sec 5002 Title 40, United States Code, Chapter 25, as amended).

Interoperability. The ability of systems, units, or forces to provide services to, and accept services from, other systems, units, or forces, and to use the services so exchanged to enable them to operate effectively together. (CJCS Pub 1-02)

Markup. A method whereby metadata (e.g., semantic meaning, structural information) about data is encoded with the data. XML markup is separated from the data or content through the use of angle brackets (e.g., <name>). “The function of the markup in an XML document is to describe its storage and logical structure and to associate attribute-value pairs with its logical structures.” (W3C REC-xml-20001006)

Markup Language. A vocabulary created to provide a formal set of markup for a specific purpose.

Metadata. Information describing the characteristics of data; data or information about data; descriptive information about an organization’s data, data activities, systems, and holdings. (DoD 8320.1M-1)

Namespace. An XML namespace is a collection of names, identified by a Uniform Resource Identifier reference, which are used in XML documents as element types and attribute names. XML namespaces differ from the “namespaces” conventionally used in computing disciplines in that the XML version has internal structure and is not, mathematically speaking, a set. (W3C REC-xml-names-19990114)

Namespace Association. That part of an XML construct that identifies the namespace where the authoritative source information for that markup is maintained.

National Security System. The term “national security system” means any telecommunications or information system operated by the United States Government, the function, operation, or use of which: (1) involves intelligence activities; (2) involves cryptologic activities related to national security; (3) involves command and control of military forces; (4) involves equipment that is an integral part of a weapon or weapons system; or (5) subject to subsection (b), is critical to the direct fulfillment of military or intelligence missions. LIMITATION — Subsection (a)(5) does not include a system that

is to be used for routine administrative and business applications (including payroll, finance, logistics, and personnel management applications). (Information Technology Management Reform Act of 1996)

Proprietary Extensions. Vendor or implementation specific additions to an XML technical specification, business standard, markup language application, or product. Proprietary extensions can be created to satisfy developer preferences, bypass software limitations, or avoid altering existing standards. Proprietary extensions typically increase functionality at the expense of interoperability.

Registry. A mechanism where relevant repository items and metadata about them can be stored such that a pointer to their location, and all their metadata, can be retrieved as a result of a query.

Schema. A formal definition of the structure, content, and semantics of XML documents. Schemas contain the logical models of business processes and the parcels of information exchanged in these processes. The use of schema with a lower-case 's' is a generic reference to a class of schema languages expressed in XML such as Regular Language description for XML Next Generation (RELAX-NG), Schematron, and W3C Schema; whereas the use of Schema with a capital 'S', or the more formal XML Schema Definition (XSD) Schema, refers exclusively to the W3C Schema language.

Schema Components. The W3C XML Schema Definition defines thirteen building blocks in three categories (primary, secondary, helper) that together comprise the XSD abstract model. Each of these thirteen building blocks (Simple Type Definitions, Complex Type Definitions, Attribute Declarations, Element Declarations, Attribute group definitions, Identity-constraint definitions, Model group definitions [named model groups], Notation declarations, Annotations, Model groups [created by compositors but not in a group element], Particles, Wildcards, and Attribute uses) constitutes a schema component.

Standard. A document that establishes uniform engineering or technical criteria, methods, processes, and practices. (DoD 4120.24-M)

Standard Markup. XML element and attribute names and tags that are fully conformant to an identified standard.

Standard XML. XML that is fully conformant to an identified set of technical specifications, standards, policy, and associated guidance. For the DON, standard XML implementation will require uniform, standard XML implementation by using a common set of implementation characteristics, techniques, and XML components, conforming to appropriate XML technical specifications, frameworks, and business standards identified by the DONXML WG and the DON XML Governance Structure as critical to interoperability.

Stylesheet. A formal description of how the source content of an XML document or data file should be styled, laid out, and paginated onto some presentation medium, such as a window in a Web browser or a hand-held device, or a set of physical pages in a catalog,

report, pamphlet, or book. Stylesheets can also be used to transform one XML document created in a given XML markup language to another XML document created in a different XML markup language. (W3C-xsl-20011015)

Syntax. The rules governing the construction of a computer language. May also refer to a specific language (e.g., XML, Hypertext Markup Language, Standard Generalized Markup Language, Java).

Tag. The generic name for markup. XML documents will have start tags and end tags. All XML tags can be identified by the appearance of angle brackets at its beginning and end (e.g., <this is a tag>).

W3C Technical Specifications. Formal products of the World Wide Web Consortium. W3C technical specifications can have many levels of maturity. The highest level is recommended status. A technical specification holding recommended status is work that represents consensus within W3C and has the Director's approval. Technical specifications holding recommended status are appropriate for widespread deployment and are considered as equivalent to a standard.

XML. An open standard for describing data from the W3C. It is used for defining data elements on a Web page and business-to-business documents. It uses a similar tag structure as SGML and HTML; however, whereas HTML defines how elements are displayed, XML defines what those elements contain. HTML uses predefined tags, but XML allows tags to be defined by the developer of the page. Thus, virtually any data items, such as product, sales rep, and amount due, can be identified, allowing Web pages to function like database records. By providing a common method for identifying data, XML supports business-to-business transactions and is expected to become the dominant format for electronic data interchange.

XML-Based Specification. An information technology related specification that uses the concept of XML to achieve its stated functionality (e.g., XML Encryption).

XML Components

- ◆ 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 DTDs,
- ◆ Stylesheets, and
- ◆ Namespace Associations.

XML-Enabled. An application, database, or process that has been developed to leverage XML technology for generation, storage, retrieval, processing, and exchange.

XML Schema. See Schema.

XML Standard Components. Standard markup, schema components, schemas, stylesheets, and namespace associations that have been standardized through a formal process so as to achieve enterprise interoperability. XML standard components will be available for reuse through an XML registry.