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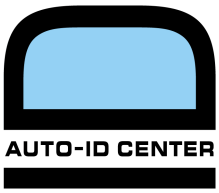

WHITE PAPER

Survey of Languages, Specifications and Standards for Database and Network Communication

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ABSTRACT

This paper presents a brief survey of the many specifications, languages and standards for database and network communication. Based largely on markup meta-languages, such as the Standard General Markup Language (SGML) and the eXtensible Markup Language (XML), these efforts cover a wide range of industries, applications and functions. All of the projects listed here are presented in more detail elsewhere. The intention of this paper, however, is to provide a simple survey and quick enumeration of the many, varied efforts from across industry. Finally, the diversity and commonality of these initiatives suggest a comprehensive, unified language.

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Biography

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Co-Director

Dr. David Brock received Bachelors degrees in theoretical mathematics and mechanical engineering from MIT, and his Masters and Ph.D. degrees from the Department of Mechanical Engineering at MIT with an affiliation to the Artificial Intelligence Lab. He is currently a Principal Research Scientist in the Laboratory for Manufacturing and Productivity and Co-Director of the MIT Auto-ID Center. Dr. Brock is also the Founder of Brock Rogers Surgical, a manufacturer of robotic medical devices. Dr. Brock has worked with a number of organizations including the Artificial Intelligence Laboratory, the Massachusetts Eye and Ear Infirmary, DARPA, Lockheed-Martin, Loral, BBN and Draper Laboratories.

WHITE PAPER

Survey of Languages, Specifications and Standards for Database and Network Communication

Contents

1. INTRODUCTION

There has been an explosion in the recent years of initiatives, consortia and organizations that develop open languages, specifications and standards for database and network communication. Based largely on the eXtensible Markup Language (XML), these languages have focused on a wide range of industries, applications and functions. This paper presents a brief enumeration and summary of some of these efforts – including both legacy and current development.

There are now hundreds of simultaneous efforts world-wide to create open standards for everything from music to poultry and biology to board games. Many of these efforts – though extremely diverse – share common elements and similar strategies. The intention of this paper is to simply illustrate the wide range of projects and magnitude of the development. It is not the objective here to explore any domain in detail, but to provide a quick snapshot of these projects.

Many of the languages, specifications and standards listed in this survey were gathered from organizations and independent groups who maintain Internet sites for this purpose [1, 2]. This paper does not intent to replicate these efforts, but to provide – at a glance – the disparity and commonality of these efforts.

2. BACKGROUND

The General Markup Language (GML) (originally titled the Text Description Language (TDL)) was conceived in 1969 by Charles Goldfarb, Ed Mosher, Ray Lorie (GML) [3]. The intent was to create a system for text editing, formatting and information retrieval subsystems to share documents. The first Document Type Definition (DTD) was developed two years later in 1971, while exploration into text processing with GML continued for many years after that. The first GML-based document composition product – the "Document Composition Facility" (DCF) was developed by IBM in 1975, and was the first viable commercial product based on GML.

The Standard Generalized Markup Language (SGML), which began in 1978, was lead by the American National Standards Institute (ANSI) committee on Computer Languages for Processing Text [4]. The Computer Graphics Association (CGA) was able to recommend a draft of SGML as a working standard (GCA 101-1983) by 1983. The US Internal Revenue Service (IRS) and the Department of Defense (DoD) were major early adopters of SGML. The project was also authorized by the International Organization for Standardization (ISO) (ISO/IEC JTC1/SC18/WG8). In 1985, a proposal for an international standard was published and an international users group was formed. The following year the standard gained international approval (ISO 8879:1986).

In 1989, Tim Berners-Lee, while at the European Particle Physics Laboratory (CERN), developed a simple browsing and authoring system using a simple hypertext language, which – to some points of view – looks like a simplified text presentation application of SGML. Early browsers of the HyperText Markup Language (HTML) were text based, though in 1993, Marc Andreessen added simple images to his Mosaic browser [5].

In 1996, World Wide Web Consortium (W3C) sponsored a group of SGML experts – including Jon Bosak from Sun Microsystems, Inc. – to define a general markup language with capability similar to SGML, but with the simplicity of HTML. The eXtensible Markup Language (XML) was approved two year later, in 1998, as an official recommendation of the W3C.

3. ORGANIZATIONS

The scope and diversity of the languages and standards in many ways reflect the people, groups and organizations that develop them. From individuals to multi-national corporations and industry standards bodies to international cooperatives, database and network language development spans nearly the full range of human activity.

3.1. Individuals and Small Groups

The original General Markup Language (GML) and the HyperText Markup Language (HTML) that followed were essentially the vision of one person. Many of these current efforts also result from an individual or a very small team.

Some of these efforts are both simple and creative, such as the Better Markup Language (BML), Simple Markup Language (SML), Why Markup Language (YML) and Pet Name Markup Language (PNML). Others focus on narrow applications and special interests, such as Comics Markup Language (ComicsML) and the eXtensible Game Format (XGF).

Although it may seem that individual or small team efforts cannot achieve the support necessary for wide spread adoption, we must remember that the most pervasive networking standards were started by these individual efforts.

3.2. Academia

Engineering departments, business schools and research centers within universities and colleges are also developing various networking languages. Many of these related to the research within that particular department, such as the Astronomy Markup Language (AML), University of Ulster, United Kingdom, Anatomy Markup Language (AnatML) Biomedical Research Group, Department of Engineering Science, University of Auckland, New Zealand and the Systems Biology Markup Language (SBML), California Institute of Technology.

Most, however, originate from computer science departments and address more general issues of representation, communication and process, such as the Object-Oriented Programming MetaLanguage (OOPML), University of Montreal, Canada, Pattern Markup Language (PML), Keio University, Japan, and the Procedural Markup Language (PML), Georgia Institute of Technology.

3.3. Corporations

Many companies use the eXtensible Markup Language (XML) as a basis for data storage and communication, as well as proprietary commercial software packages. The most extensive use, however, remains for internal data management systems.

A number of companies use standard markup languages as common platforms for data storage and manipulation within their consumer software, such as FrameMaker®+SGML, which lets users publish XML from the Adobe, Inc. FrameMaker®, XML and XSL within ColdFusionMX®, the ColdFusionMX® Markup Language (CFML) from MacroMedia, Inc., and 3D Modeling Web Services a subscriber-based service that allows manufactures to add 3D CAD models to their on-line catalogs, from SolidWorks® Corporation.

Microsoft, Inc. has added XML support to Microsoft® Excel, so that it can import and export XML while preserving format, structure and data through their new XML Spreadsheet file format (XML-SS). These are just a few examples from many hundreds of corporate efforts that use XML within their product lines. There are also companies developing open standards as part of an overall corporate objective. These include as the Banner Markup Language (BannerML) for attaching text to Internet banners from Cogitum, Inc., the Cell Markup Language (CellML) for storing and exchanging computer-based biological models, from Physiome Sciences, Inc., the Petroleum Markup Language (PML) from Oildex, Inc., the Abstract State Machine Language (ASML) from Microsoft, Inc. Research, and, of course, the many open standards from SUN Microsystems, Inc. – particularly the JAVA™ Programming Language and all the associated specifications and languages.

3.4. Industry Consortia

In addition to individual corporations, there are a number of industry consortia and trans-industry initiatives seeking to develop open languages and standards. Many of these sprang from the need for vertical industries to integrate their efforts and share common function.

Some of the many examples include the Meat and Poultry eXtensible Markup Language (mpXML) from the Meat and Poultry Data Standards Initiative, the Chemical Industry Data Exchange (CIDX), Open Travel Alliance (OTA), Petroleum Open Software Corporation (POSC), Human Resources Markup Language (HR-XML) from the HR-XML Consortium, IXRetail the Digital Receipt Standard from the Association for Retail Technology Standards (ARTS), Hospitality Industry Technology Integration Standards (HITIS) from the American Hotel & Model Association, and the Mortgage Bankers of America Markup Language (MBAML) from the Mortgage Industry Standards Maintenance Organization.

3.5. Government

National governments and governmental standards bodies now played a major role in developing database and network communication standards. In the United States, the National Institute of Standards and Technology (NIST) are developing a number of open standards including the Architecture and Tools for Linguistic Analysis Systems (ATLAS) Interchange Format (AIF), the Materials Markup Language (MatML), the Process Specification Language (PSL) and others.

Others in the United States include the Encoded Archival Description (EAD) from the United States Library of Congress, the National Library of Medicine XML Formats (NLMXML) from the National Library of Medicine, the Astronomical Instrument Markup Language (AIML) from the National Aeronautics and Space Administration (NASA) and the schema from the Naval Surface Warfare Center Navy Continuous Acquisition & Life-Cycle Support (CALS).

3.6. International Organizations

There are a number of international standards organizations who have traditionally developed specifications and methods for global product description and trade. These organizations continued their role in this new era of Internet communication and common markup languages. There are others that have emerged explicitly because of the Internet and are tasked with maintaining and extending the network communication standards.

The Organization for the Advancement of Structured Information (OASIS) is a not-for-profit, global consortium that develops, maintains and promotes electronic business standards [6]. OASIS has developed a variety

of standards for security, Web services, business transactions, publishing and legal processes. OASIS operates the XML.org and the XML Cover Pages Web sites, which provide a clearing house and on-line reference for markup language standards [1,2].

The International Organization for Standardization (ISO) is a non-governmental, worldwide federation of national standards bodies [7]. The mission of ISO is to promote the development of standardization to facility the exchange of goods and services.

The World Wide Web Consortium (W3C) leads the World Wide Web and develops the common protocols for network interoperability [8]. The W3C creates Web standards that (1) provide universal access to networked information, (2) share common knowledge through the "Semantic Web," (3) provide secure and trusted communication, (4) operate on heterogeneous platforms, (5) are simple, modular and evolving, (6) decentralized and distributed and (7) visual creative and compelling.

The United Nations Center for Trade Facilitations and Electronic Business (UN/CEFACT) is an open organization within the United Nations whose purpose is to improve international business and trade through the simplification and harmonization of procedures and information flow [9].

The Accredited Standards Committee (ASC) X12 of the American National Standards Institute (ANSI) developed uniform standards for inter-industry electronic interchange of business transactions [10]. The ASC X12 develops, maintains, interprets, publishes and promotes the proper use of the American National and UN/EDIFACT International Electronic Data Interchange Standards (EDI).

The Internet Engineering Task Force (IETF) is a large open international community of network designers, operators, vendors, and researchers who develop, evolve and extend the Internet architecture [11]. The IETF is one of the principal organizations devoted toward creating new Internet standards. The IETF is unique in that it is a somewhat loose collection of groups who collaborate on technical challenges of the Internet.

The Object Management Group (OMG) is an open, not-for-profit consortium that produces and maintains computer industry specifications for interoperable enterprise applications [12]. The principal specification of the OMG is the Model Driven Architecture (MDA), which is based on the Meta-Object Facility (MOF™) a common basis for disparate meta-models, the Common Warehouse Metamodel (CWM™) metadata interchange specification, the Unified Modeling Language (UML™) a method, specification and visualization system for software structure, design and requirements, and the XML Metadata Interchange (XMI).

4. SUMMARY AND FUTURE DIRECTION

There is a vast sea of open languages and standards that address nearly every aspect of commerce and industry. There is not yet, however, a unifying approach which brings together these disparate efforts or which leverages the work put forth by these developers.

Future languages should allow efforts to build upon each other. More particularly, a set of modular, standardized libraries could be constructed that define elemental functions which serve as a basis for industry specific schema. An additional feature of these libraries could be as a translation function, in which domain specific languages could communicate through these libraries.

It is clear in this brief survey, that a unifying approach to networking languages has not yet emerged, and that the need for such an approach is critical.

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9. **The United Nations Centre for Trade Facilitations and Electronic Business (UN/CEFACT).**
(http://www.unece.org/cefact/)

10. **The Accredited Standards Committee.**
(ASC) X12 (http://www.x12.org)

11. **The Internet Engineering Task Force (IETF).**
(http://www.ietf.org/)

12. **The Open Management Group.**
(http://www.omg.com)

6. LANGUAGES, SPECIFICATIONS & STANDARDS

STANDARD	NAME	DESCRIPTION	DEVELOPER
4ML	Music & Lyrics Markup Language	The Music & Lyrics Markup Language (4ML) is describes music and lyrics.	**4ML**
AML	Ad Markup Language	Markup for Advertisements.	**Zedak, Inc.**
AML	Annotation Markup Language	The combination of the structural skeleton and the DCS defines a virtual annotation markup language (AML).	**Vassar College**
AML	ASN.1 Markup Language	XML encoding of Abstract Syntax Notation One (ASN.1).	**ITU and ISO**
AML	Astronomical Markup Language	"AML, 'Astronomical Markup Language', is an XML language, aimed at being a standard exchange format for metadata in astronomy. AML now supports the following objects (in the object-oriented sense): astronomical object, article, table, set of tables, image, person, and project.	**Damien Guillaume University of Ulster**
AML	Automation Markup Language	AML (Automation Markup Language) is the primary internal language used by **AutoMate**.	**UNISYN**
AML	Avatar Markup Language	AML (Avatar Markup Language) is a new language based on XML, which encapsulates Text To Speech content, Facial Animation and Body Animation in a unified manner with appropriate synchronization information.	**Computer Graphics Laboratory, Swiss Federal Institute of Technology**
ABML	Anti-Body Markup Language	Anti-Body Markup Language.	
ABML	Avatar Body Markup Language	ABML (Avatar Body Markup Language) is a new language based on XML, which encapsulates Text To Speech content, Facial Animation and Body Animation in a unified manner with appropriate synchronization information.	**Computer Graphics Laboratory, Swiss Federal Institute of Technology**
ACML	Active Cell Markup Language	Active Cell Markup Language.	**Abyan, Inc.**
ACML	Agent Communication Markup Language	XML version of FIPA standards-draft Agent Communication Language, which combines the traditional agent communication concepts of KQML with the industry acceptable universal format of XML.	**IBM**
ACML	Auto Catalog Markup Language	Automotive Catalog Markup Language.	**Clemson**
ACAP	Application Configuration Access Protocol (ACAP)	The Application Configuration Access Protocol (ACAP) is designed to support remote storage and access of program option, configuration and preference information.	**Internet Engineering Task Force (IETF)**
ACS X12	Accredited Standards Committee (ASC) X12	The Accredited Standards Committee (ASC) X12 develops standards for cross-industry electronic exchange of business information.	**ACS**
ADML	Architecture Description Markup Language	A Standard XML-Based Language for Describing Software Architectures to Enable Their Representation, Evaluation, and Analysis. **(ref)**	**Open Group**
aecML	Architecture Engineering and Construction Markup Language	aecXML is an XML-based language used to represent information in the Architecture, Engineering and Construction (AEC) industry. This information may be resources such as projects, documents, materials, parts, organizations, professionals or activities such as proposals, design, estimating, scheduling and construction.	**International Alliance for Interoperability**

STANDARD	NAME	DESCRIPTION	DEVELOPER
AFML	Avatar Face Markup Language	ABML (Avatar Body Markup Language) is a new language based on XML, which encapsulates Text To Speech content, Facial Animation and Body Animation in a unified manner with appropriate synchronization information.	**Computer Graphics Laboratory, Swiss Federal Institute of Technology**
AGML	Agriculture Markup Language	AGML (Agriculture Markup Language) will be used primarily for financial purposes.	**Argitrade**
AHML	Angband Help Markup Language	AHML is very similar to HTML 3.2; it allows various formatting commands for text, and link files to other points in the file, or other files completely.	**Angband**
AIML	Artificial Intelligence Markup Language	Artificial Intelligence Markup Language.	**A.L.I.C.E. AI Foundation**
AIML	Astronomical Instrument Markup Language	The Astronomical Instrument Markup Language (AIML) is a domain-specific implementation of the Instrument Markup Language (IML). NASA Goddard and AppNet Inc., are developing AIML to command and control astronomical instruments.	**NASA Goddard and AppNet Inc**
AIF	ATLAS Interchange Format	The Architecture and Tools for Linguistic Analysis Systems (ATLAS) Interchange Format (AIF) is intended to be a flexible and extensible file format that will facilitate widespread exchange and reuse of annotation data. ATLAS addresses an array of applications including corpus construction, evaluation infrastructure, and multi-modal visualization.	**National Institute of Standards & Technology (NIST), Linguistic Data Consortium (LDC), Mitre**
AL3	AL3	One EDI (Electronic Data Interchange) standard that ACORD develops, known as AL3, is focused on the communication between property/ casualty organizations, their agents and other trading partners.	**Acord**
ANML	Another Markup Language	Another Markup Language describes communication network models.	**University of Calgary TeleSim Project**
Annotea	Annotations	Annotea is a LEAD (Live Early Adoption and Demonstration) project enhancing the W3C collaboration environment with shared annotations.	**W3C**
AnatML	Anatomy Markup Language	AnatML is a language for storing geometric information and documentation obtained as part of the musculoskeletal modeling project.	**Biomedical Engineering Research Group in the Department of Engineering Science at the University of Auckland, New Zealand**
APML	Affective Presentation Markup Language	Affective Presentation Markup Language is a language, which conveys meanings, intentions and non-verbal communication.	**University of Rome, ITALY**
appML	Application Markup Language	The Application Markup Language (appML) describes distributed applications and programs.	**Application Markup Language**
AQL	ATLAS Query Language	The Architecture and Tools for Linguistic Analysis Systems (ATLAS) Query Language (AQL) is a query language for ATLAS Interchange Format (AIF), which is intended to be a flexible and extensible file format that will facilitate widespread exchange and reuse of annotation data. ATLAS addresses an array of applications including corpus construction, evaluation infrastructure, and multi-modal visualization.	**National Institute of Standards and Technology (NIST), Linguistic Data Consortium (LDC), Mitre**
APPEL	A P3P Exchange Language	This document complements the P3P1.0 specification by specifying a language for describing collections of preferences regarding P3P policies between P3P agents.	**W3C School of Engineering,**

STANDARD	NAME	DESCRIPTION	DEVELOPER
ARML	Active Rule Markup Language	Active Rule Markup Language (ARML) for Sharing a Rules among Active Information Management System.	**Information and Communications University (ICU), KOREA**
ARML	Application Representation Markup Language	ARML (Application Representation Markup Language) is Nextair's open architecture patent-pending technology for completely describing an application without needing to know how to program the device.	**Nextair, Inc.**
ASML	Abstract State Machine Language	AsmL is the Abstract State Machine Language. It is an executable specification language based on the theory of Abstract State Machines.	**Microsoft, Inc.**
ASML	Automatic Site Markup Language	Automatic Site Markup Language is a markup language for HTML.	**Dartmouth Experimental Visualization Laboratory (DEVLAB)**
ASTM Healthcare	American Society for Testing and Materials Healthcare	American Society for Testing and Materials Healthcare (ASTM Healthcare) is a language for prescriptions, discharge summaries, encounter notes, operative reports, diagnostic imaging reports and the HCFA 1500 form for Medicare reimbursements.	**American Society for Testing and Materials**
ATML	Audio Text Markup Language	Audio Text Markup Language (ATML) for creating audio pages on the World Wide Web.	**Rutgers University**
ATML	ANDES Text Markup Language	ANDES Test Markup Language is a language for management and delivery of distance education courses.	**University of Southern California**
ATML	Automated Test Markup Language	Automated Test Markup Language.	
AuthoritiesML	Authorities Markup Language	The Authorities Markup Language (AuthoritiesML) is a format for the interchange of UNIMARC authority records between applications.	**Ministere de la culture et de la communication (France), Board of Research & Technology**
ATML	Aroma Text Markup Language	Aroma Text Markup Language (ATML) describes smells over the Internet for olfactory displays.	**Real Aroma, Inc.**
AWML	Augmented World Modeling Language	A The Augmented World Modeling Language models geographic location and geometry of objects, as well as symbolic descriptors of objects such as room numbers and explicit relationships between objects, such as the part-of relation.	**Fakultät Informatik**
AXML	Annotated Extensible Markup Language	Simply an annotated version of XML.	**W3C**
AXML	Allure Extensible Markup Language	The ALURe (Aggregation and Logging of User Requests) XML (AXML) defines a grammatical standard for gathering from usability testing and provides feedback to the developers regarding how the user interacts with the application.	**Blue Sky Software, Inc.**
AXML	Array Extensible Markup Language	The MGED project is charged with developing a consensus based standard for exchanging and storing data from microarray experiments.	**MGED**
AXML	Article Extensible Markup Language	AXML is an extension of XML for electronic markup of hard copy material.	**Astronomical Data Center NASA**
BML	Bean Markup Language	Bean Markup Language (BML) is an XML-based component configuration or wiring language customized for the JavaBean component model.	**IBM**
BML	Berylium Markup Language	The Berylium Markup Language is a powerful HTML replacement that allows you to insert formatting, links and other objects into the text you type on berylium sites.	**Berylium, Inc.**

STANDARD	NAME	DESCRIPTION	DEVELOPER
BML	Better Markup Language	BML is a server-side markup language designed to ease a large website and server-side programming.	**Brad Fitz, Inc.**
BML	Bibliography Markup Language	The Bibliography Markup Language encodes bibliographies similar to BibTex.	**TeamXWeb, University of Munich**
BML	Binary Markup Language	BML is a binary version of XML, it carries the same information, although using a binary encoding technique.	**ebXML Project, UN/CEFACT and OASIS**
BML	Broadcast Markup Language	Broadcast Markup Language (BML) is an XML-based standard developed by the Association of Radio Industries and Businesses (ARIB). It was adopted in 1999 as a Japanese standard ARIB STD B-24 "Data Coding and Transmission Specification for Digital Broadcasting."	**Association of Radio Industries and Businesses (ARIB)**
BannerML	Banner Markup Language	BannerML is a language for creating user-friendly descriptions of products advertised in Internet banners.	**Cogitum, Inc.**
bcXML	Building Construction eXtensible Markup Language	The Construct project aims to develop, implement, demonstrate and disseminate a new Communication Technology for the European Building-Construction industry, called Building-Construction eXtensible Mark-up Language (bcXML).	**eConstruction**
BEEP	Blocks Extensible Exchange Protocol	A generic application protocol framework for connection-oriented, asynchronous interactions.	**Internet Engineering Task Force (IETF)**
BGML	Board Game Markup Language	BGML (Board game markup language) is an XML document type for go game (and ultimately all other board games) records/databases.	**Virtual Intelligence™ Lab**
BHTML	Broadcast HyperText Markup Language	The Broadcast HyperText Markup Language (BHTML) defines the application programming interfaces for a Digital Television Application Software Environment (DASE) compliant receiver.	**The Advanced Television Systems Committee (ATSC) ATSC T3/S17 specialist group**
BiblioML	Bibliography Markup Language	The Bibliography Markup Language (BiblioML) is a format the interchange of UNIMARC bibliographic records between applications.	**Ministere de la culture et de la communication (France), Board of Research & Technology**
BIOML	BIOpolymer Markup Language	BIOML allows the full specification of all experimental information known about molecular entities composed of biopolymers, for example, proteins and genes.	**BIOPolymer Markup Language**
BIPS	Bank Internet Pay System	The Bank Internet Pay System (BIPS) enables payments through banks over the Internet.	**Financial Services Technology Consortium (FSTC)**
BizCodes Initiative	BizCodes Initiative	BizCodes Initiative is focused on promoting the concept of a universal reference system for XML based eBusiness that transcends individual schemas and industry specific exchange formats to provide a true 'lingua franca' for global eBusiness interchanges.	**XML-EDI**
BizTalk	BizTalk	BizTalk™ Framework is language for business-to-business electronic commerce.	**Microsoft, Inc.**
BLM XML	Bureau of Land Management XML	In cooperation with the U.S. Bureau of Land Management (BLM), POSC constructed a set of sample files showing how several regulatory forms based upon the 625 transaction set could be represented using XML technologies.	**Petrochemical Open Software Corporation (POSC)**
BPML	Business Process Modeling Language	The Business Process Modeling Language (BPML) is a meta-language for the modeling of business processes, just as XML is a meta-language for the modeling of business data.	**Business Process Management Initiative (BPMI)**

STANDARD	NAME	DESCRIPTION	DEVELOPER
BRML	Business Rules Markup Language	XML Rule Interlingua for Agent Communication, based on Courteous/Ordinary Logic Programs.	**IBM, Inc. AlphaWorks**
BSML	Bioinformatic Sequence Markup Language	The Bioinformatic Sequence Markup Language (BSML) encodes biological sequence information and includes graphical representations of biologically meaningful objects such as sequences, genes, electrophoresis gels, and multiple alignments.	**LabBook, Inc.**
CML	Chemical Markup Language	The Chemical Markup Language (CML) describes molecules. It covers disciplines from macromolecular sequences to inorganic molecules and quantum chemistry.	**Chemical Markup Language**
xCML	Commerce eXtensible Markup Language	cXML is a streamlined protocol intended for consistent communication of business documents between procurement applications, e-commerce hubs and suppliers.	**Commerce XML Organization**
CaXML	Chess Markup Language	Chess Markup Language.	**Chess City Magazine**
CaseXML	CASE XML-Based Transfer Format	CDIF is a Family of Standards that lays out a single architecture for exchanging information between modeling tools, and between repositories, and defines the interfaces of the components to implement this architecture.	**CDIF Electronic Industries Alliance**
Cave Script	Cave Description Language	CaveScript is the generic name of a cave survey and map data format that could store all the information about a cave survey or an entire cave map.	**Speleonics, Inc.**
xCBL	XML Common Business Library	The XML Common Business Library (xCBL) is a set of XML building blocks and a document framework that allows the creation of robust, reusable, XML documents to facilitate global trading.	**CommerceOne, Inc.**
CBML	Case Based Markup Language	Earlier research has produced version 1.0 of a Case Based Markup Language which attempts to mark up cases in XML to enable distributed computing.	**Trinity College, Dublin, IRELAND**
CDA	Clinical Document Architecture	Health Level Seven, Inc. (HL7) has developed the Clinical Document Architecture (CDA) for the healthcare industry.	**Health Level 7**
CDF	Channel Definition Format	CDF (Channel Definition Format) is the proposed open industry standard for data definition of content to be pushed across the Internet. CDF is an application of XML, which is a subset of SGML that specifies how data can be automatically broadcast from any web server to compatible receiver programs on client computers requesting such broadcasts.	**Microsoft, Inc.**
CDISC	Clinical Data Interchange Standards Consortium	The Clinical Data Interchange Standards Consortium (CDISC) Standards describe FDA safety domain metadata models and an XML DTD for clinical data interchange. The CDISC standards describe three major information components relating to a clinical trial: (1) clinical study metadata (item definitions and protocol), (2) clinical study administrative data (users and access privileges) and (3) clinical study data (complete record of patient data and audit trail).	**Clinical Data Interchange Standards Consortium**
CellML	Cell Markup Language	CellML stores and exchanges computer-based biological models.	**Physiome Sciences Inc. Bioengineering Institute at the University of Auckland, NEW ZELAND**
ChessGML	Chess Markup Language	Chess Markup Language.	**Andreas Saremba**

STANDARD	NAME	DESCRIPTION	DEVELOPER
ChordML	Chord Markup Language	ChordML represents music synoptically. ChordML is human-readable and stores chords, lyrics, repetition and metainformation about a music. ChordML does not intend to be a notational format that describes music completely. Instead, it narrows its objectives essentially capturing music chords.	**ChordML**
ChordQL	Chord Query Language	ChordQL is the query language for ChordML. ChordML represents music synoptically. ChordML is human-readable and stores chords, lyrics, repetition and metainformation about a music. ChordML does not intend to be a notational format that describes music completely. Instead, it narrows its objectives essentially capturing music chords.	**ChordML**
CIM	Common Information Model	This document defines an XML grammar, written in DTD (Document Type Definition), which can be used both to represent CIM declarations (Classes, Instances and Qualifiers) and CIM Messages for use by the CIM mapping onto HTTP.	**Desktop Management Task Force (DMTF)**
CIML (see xCIL)	Customer Identity Markup Language	Customer Identity Markup Language.	**MSI Business Solutions Pty. Ltd**
CIDS	Component Information Dictionary Specification	The aim of the Component Information Dictionary Standard is to provide authors and users of component information with a computer sensible dictionary of characteristic properties of components.	**Electronic Component Information eXchange (ECIX), Silicon Integration Initiative, Inc.**
CIDX	Chemical Industry Data eXchange	The Chemical Industry Data Exchange (CIDX) eStandards is an open standard for business-to-business and business-to-marketplace data exchange in the chemical industry.	**Chemical Industry Data eXchange, BASF, Dow, DuPont**
xCIL	eXtensible Customer Information Language	Although name and address data is the key identifier of a customer, other data helps to uniquely identify a customer. Customer addresses frequently change and it is not trivial to link the customer across multiple addresses with just name information.	**OASIS**
CLT	Codes for Language Transformational	Codes for Language Transformation.	**Drogoman**
CNRP	Common Name Resolution Protocol	The Common Name Resolution Protocol (CNRP) is to define a "common name" – a word or a phrase, without imposed syntactic structure, that may be associated with a resource.	**Internet Engineering Task Force (IETF)**
ComicsML	Comics Markup Language	Comics Markup Language (ComicsML) is a language for comic strips.	**Jason McIntosh**
Covad xLink	Covad xLink	An XML-based application programming interface to enable flow-through DSL provisioning between Covad and its channel partners to create a seamless supply chain. This platform allows channel partners to quickly & easily add DSL to their product portfolio. This platform is critical for Covad to scale its business.	**Covad, Inc.**
CPL	Call Processing Language	The Call Processing Language (CPL) is a language that can be used to describe and control Internet telephony services.	**Internet Engineering Task Force (IETF)**
CP Exchange	Customer Profile Exchange	CPExchange, Customer Profile Exchange, hosted by IDEAlliance, offers a vendor-neutral, open standard for facilitating the privacy-enabled interchange of customer information across disparate enterprise applications and systems.	**IDEAlliance**
CSS	Cascading Style Sheets	Cascading Style Sheets (CSS) is a simple mechanism for adding style (e.g. fonts, colors, spacing) to Web documents. Tutorials, books, mailing lists for users, etc. can be found on the "learning CSS" page.	**W3C**

STANDARD	NAME	DESCRIPTION	DEVELOPER
CVML	Curricula Vitae Markup Language	This language will allow exchanges of complete profiles and resumes in the RH industry (work experience, education, skills, identity, etc.) Candidates will also be able to use this DTD to apply for a job.	
CWMI	Common Warehouse Metadata Interchange	The Common Warehouse Metamodel (CWM) is a specification that describes metadata interchange among data warehousing, business intelligence, knowledge management and portal technologies.	**Object Management Group (OMG)**
CycML	Open Cyc	OpenCyc is the open source version of the Cyc(r) knowledge base (artificial intelligence). Developers can use CycML to exchange knowledge with one another, and CycML will also allow the KB contents to be imported and exported for archiving.	**Cycorp, Inc.**
DML	Dynamic Markup Language	The Dynamic Markup Language (DML) is designed specifically for object based graphics construction and the development of user interfaces. It bears some similarities to HTML, but includes extensions that provide support for calculations, argument passing, and variable storage.	**Rocklyte, Inc.**
DAML	DARPA Agent Markup Language	Language for Internet Agents. The DAML group combined efforts with the Ontology Inference Layer (OIL).	**Defense Advanced Research Projects Agency (DARPA)**
DaliML	Data Link for Intermediaries Markup Language	The Data Link for Intermediaries Markup Language (DALIML) allows the exchange of data necessary for the correct amount of U.S. tax to be withheld from payments of U.S. source dividends, interest, and similar types of income.	**Data Link for Intermediaries**
DaqXML	Distributed Information Systems for Data Acquisition DAQ & XML	daqXML is a language to describe instruments and measures and will be used in the design, the deployment and the operations of small to large, distributed and heterogeneous data acquisition systems.	**Advance, Inc.**
DAS	Distributed Annotation System	The distributed annotation system (DAS) is a client-server system in which a single client integrates information from multiple servers. It allows a single machine to gather up genome annotation information from multiple distant web sites, collate the information, and display it to the user in a single view. Little coordination is needed among the various information providers.	**BioDAS**
DASL	Distributed Authoring and Versioning Searching and Locating	The Distributed Authoring and Versioning protocol [also see WEBDAV] defines simple mechanisms to assign and retrieve values for properties. DASL presents scenarios for a WebDAV extension to support efficient searching for resources based on WEBDAV properties and content. These scenarios are intended to suggest some of the uses that DASL could be put to. This may in turn motivate decisions on what is essential to DASL and what may be considered extra.	**Internet Engineering Task Force (IETF)**
DCMI	Dublin Core Metadata Initiative	The Dublin Core Metadata Workshop Series began in 1995 with an invitational workshop which brought together librarians, digital library researchers, content experts, and text-markup experts to promote better discovery standards for electronic resources.	**Dublin Core Metadata Initiative (DCMI)**
DDI	Data Documentation Initiative	The Data Documentation Initiative (DDI) is an effort to establish an international criterion and methodology for the content, presentation, transport, and preservation of "metadata" about datasets in the social and behavioral sciences.	**Data Documentation Initiative**

STANDARD	NAME	DESCRIPTION	DEVELOPER
DeltaV	Web Versioning and Configuration Management	It has become clear that while versioning functionality alone (WebDAV) is useful for a range of content authoring scenarios involving one, or a small set of resources, versioning alone is insufficient for managing larger sets of content. DeltaV will define extensions to HTTP and the WebDAV Distributed Authoring Protocol necessary to enable distributed Web authoring tools to perform, in an interoperable manner, versioning and configuration management of Web resources.	**Internet Engineering Task Force (IETF)**
DIG35	DIG35 Multimedia Standard for Digital Images	The overall goal of the DIG35 initiative is to define a standard set of metadata for digital images that will improve the semantic interoperability between devices, services and software.	**Digital Imaging Group (DIG)**
DLML	Description Logic Markup Language	DLML is not a language but rather a system of DTDs that allows to encode many (if not all) description logics in the same framework.	**Description Logics Markup Language**
DMML	Dialogue Moves Markup Language	The Dialogue Moves Markup Language is a standard XML messaging interface between components of natural language dialog systems.	**IBM Alphaworks**
DocBook	Document Book	DocBook is an XML/SGML vocabulary particularly well suited to books and papers about computer hardware and software (though it is by no means limited to these applications).	**OASIS**
Doc Scope	DocScope	DocScope is a medical information tool that is as natural and easy for physicians to use as the spreadsheet is for accountants.	**Minoru Development Corp.**
DoD XML	United States Department of Defense Defense Information Infrastructure Common Operating Environment XML Repository	The DoD Defense Information Systems Agency (DISA) runs an XML registry for the Defense Information Infrastructure (DII) Common Operating Environment.	**Defense Information Systems Agency (DISA)**
DPRL (see XrML)	Digital Property Rights Language	DPRL is intended to support commerce in digital works, that is, publishing and selling electronic books, digital movies, digital music, interactive games, computer software and other creations distributed in digital form.	**XEROX PARC/ ContentGuard**
DRI	Digital Receipt Infrastructure	The standards describe the content, creation, exchange, and management of digital receipts. Digital receipts provide authenticated evidence of e-commerce transactions, much as paper receipts have done in the past.	**Digital Receipt Consortium**
DSML	Directory Services Markup Language	The Directory Services Markup Language (DSML) bridges the world of directory services with the world of XML. DSML 1.0 provided a means of representing directory information in XML. This Technical Committee is working on DSML 2.0 which will add support for querying and modifying directories.	**OASIS**
DSD	Document Structure Description	The Document Structure Description (DSD) is an XML schema language. A DSD document is a specification of a class of XML documents together with a default mechanism and documentation.	**Basic Research In Computer Science Department of Computer Science, University of Aarhus, in association with the Department of Computer Science, Aalborg University DENMARK**

STANDARD	NAME	DESCRIPTION	DEVELOPER
DXS	Distributed Xml System	The Distributed Xml System is way of using http to distribute XML documents over the web. The goal is a simple system of inter-server communication, where servers can query each other to see which dxs "services" each has available. It is aimed at the bioinformatics community, although there is nothing about it that is inherently bio-specific.	**BioDAS**
EML	Ecological Markup Language	Ecological Metadata Language (EML) is a metadata standard developed by the ecology discipline and for the ecology discipline. It is based on prior work done by the Ecological Society of America and associated efforts (Michener et al., 1997, Ecological Applications).	**National Center for Ecological Analysis and Synthesis**
EML	Election Markup Language	Standardizing the exchange of election and voter services information using XML.	**OASIS**
EML	Environmental Markup Language	Environmental Markup Language.	**Environmental Markup Language**
EAD	Encoded Archival Description	The Encoded Archival Description (EAD) is a standard for encoding archival finding aids.	**United States Library of Congress**
ebXML	Electronic Business eXtensible Markup Language	ebXML (Electronic Business using eXtensible Markup Language) sponsored by UN/CEFACT and OASIS, is a modular suite of specifications that enables enterprises of any size and in any geographical location to conduct business over the Internet. Using ebXML, companies now have a standard method to exchange business messages, conduct trading relationships, communicate data in common terms and define and register business processes.	**OASIS, UN/CEFACT**
eBIS-XML	Electronic Business eXtensible Markup Language	eBIS-XML allows orders and invoices to be exchanged directly between different accounting applications.	**Business Application Software Developers Association (BASDA) Organization**
ECML	Electronic Commerce Modeling Language	Electronic commerce frequently requires a substantial exchange of information in order to complete a purchase or other transaction, especially the first time the parties communicate. A standards set of hierarchly organized payment related information fields in an XML syntax are defined as the second version of an Electronic Commerce Modeling Language so that this task can be more easily automated, for example by wallet software.	**Internet Engineering Task Force (IETF)**
eCo	eCo Framework	While not specifically an XML standards effort, the eCo Framework demonstrates the integration of three common component-based electronic commerce services: semantic integration of multiple database types with multiple data constructs and data libraries; trusted open registries; and agent-mediated buying.	**CommerceNet**
EcoKnowMICSML	Economics Modeling Language	EcoKnowMICS ML is "An Extended Markup Language (XML) application for describing, sharing, and presenting economic data on the Web using the standard XML format.	**Economic Knowledge Management, Integration & Communication System (EcoKnowMICS Corp.)**
edaXML	Electronic Design Automation Markup Language	While not specifically an XML standards effort, the eCo Framework demonstrates the integration of three common component-based electronic commerce services: semantic integration of multiple database types with multiple data constructs and data libraries; trusted open registries; and agent-mediated buying.	**Electronic Tools Company, Inc.**

STANDARD	NAME	DESCRIPTION	DEVELOPER
EMSA	Marine and ship schema	Two schema are defined. One specifies the information requirements for the exchange of a ship Hull Moulded Form between the shipyard/ designer and a model basin. It is based on the STEP standard ISO 10303 – 216. The other specifies the information requirements for the exchange of ship structural data between the shipyard and classification society to perform hull approval. This is based on the STEP parts AP215 and AP218 (ISO 10303-215, ISO 10303-218).	**Marine e-Business Standards Association**
eosML	Equation of State Markup Language	The Equation of State Markup Language (eosML) describes system properties using compositional equation of state (EOS) models.	**Petrochemical Open Software Corporation (POSC)**
ESML	Earth Science Markup Language	The Earth Science Markup Language (ESML).	**Information Technology and Systems Center, University of Alabama Huntsville**
ETD-ML	Electronic Thesis and Dissertation Markup Language	Electronic Thesis and Dissertation Markup Language (ETD-ML): – Allows semantic encoding of ETDs independent of visual appearance – Allows simplified hypertext and multimedia – Can be retrieved and viewed electronically – Can be stored in machine archives – Survives short-lived rendering software – Based on international standards for electronic publishing (SGML, HyTime)	**Networked Digital Library of Thesis & Dissertations**
FieldML	Field Markup Language	FieldML is an XML-based language for describing time-varying and spatially-varying fields. The language will eventually serve as a replacement for the “.exelem” and “.exnode” files used by CMISS, and is intended to be useful for other groups interested in the field description problem.	**Biomedical Engineering Research Group in the Department of Engineering Science at the University of Auckland, New Zealand**
FINML	Financial Exchange Markup Language	FinXML is an XML (eXtensible Markup Language) based framework developed to support a single universal standard for data interchange within the Capital Markets.	**FinXML Consortium**
FITS	Flexible Image Transport System	The Flexible Image Transport System, or FITS, is the format adopted by the astronomical community for data interchange and archival storage.	**NASA Goddard Space Flight Center (GSFC)**
FIXML	Financial Information Exchange Markup Language	The Financial Information eXchange (FIX) protocol is a messaging standard developed specifically for the real-time electronic exchange of securities transactions.	**Financial Information eXchange (FIX) Organization**
FLBC	Formal Language for Business Communication	FLBC: Formal Language for Business Communication (FLBC) can be seen as a competitor to KQML. FLBC is a formal language that can be used for automated electronic communication (e.g., EDI or agent communications).	**Formal Language for Business Communication**
FLOWML	Flow Markup Language	FlowML is a format for storing audio synthesis diagrams, as used in various software synthesizers.	**FlowML**
FPML	Financial Products Markup Language	FpML (Financial products Markup Language) is a new protocol to enable e-commerce activities in the field of financial derivatives.	**Financial Products Markup Language (fpML) FpML.org**
FSML	Financial Services Markup Language	The Financial Services Markup Language (FSML) is a data description language based on the Standard Generalized Markup Language (SGML) that was developed to create financial documents for delivery over the Internet, including eCheck and their associated documentation.	**Financial Services Technology Consortium (FSTC)**

STANDARD	NAME	DESCRIPTION	DEVELOPER
GML	Game Markup Language	Game Markup Language.	**Heavy Cat Multimedia, Ltd**
GML	Generalized Markup Language	The Generalized Markup Language (GML) (originally named Text Description Language (TDL)) was the first standardized language for annotating or tagging text.	**Charles F. Goldfarb, Ed Mosher and Ray Lorie**
GML	Geography Markup Language	The Geography Markup Language (GML) is an XML encoding for the transport and storage of geographic information, including both the spatial and non-spatial properties of geographic features. Guideline XML (gXML) is ant XML standards-based exchange format specifically designed to simplify the integration of EDI translators, validation engines, forms builders, and specification tools.	**OpenGIS Consortium**
gXML	Guideline XML	Guideline XML (gXML) is an open specification designed to facilitate the exchange of e-commerce guidelines using eXtensible Markup Language (XML). Guidelines are used to define business documents such as purchase orders, catalog requests and invoices.	**EDIFecs**
GAME	Genome Annotation Markup Elements	The goals of GAME, at least in the perspective of the bioxml community, are to provide an xml dtd and tools for annotating biosequence “features”.	**BioDas**
GBXML	Green Building Markup Language	The Green Building XML Schema is designed to be the best solution for architects, building designers, CAD developers, and product manufacturers who want to incorporate green building principles in their designs, tools, and products.	**Green Building XML**
GDML	Geometry Description Markup Language	The Geometry Description Markup Language (GDML) defines of geometry data in XML format.	**GDML**
GEML (GeneXML)	Gene Expression Markup Language	GEML – an open-standard XML format for DNA microarray and gene expression data.	**Rosetta Biosoftware, Inc.**
GEDML	Geneological Data Markup Language	GEDML encodes genealogical data sets in XML.	**Geneological Data Markup Language**
GEN	Global Engineering Network Initiative	GEN addresses business-to-business electronic commerce in engineering.	**C-Lab Innovation Center of Siemens & Universität Paderborn**
GeoLang	Geography and Languages	Advancing the XML Topic Maps specification (ISO/IEC 13250:2000) for navigating information resources by defining published subjects for languages, countries, and regions.	**OASIS**
GIML	Gastro-Intestinal Markup Language	Gastro-Intestinal Markup Language.	**MIT**
GO	GeneOntology Markup	A comprehensive XMLSchema GPS/Location markup language (GPSml) for a standard way of sharing GPS location information between disparate systems, devices and users.	**Gene Ontology Consortium**
GPSml	Global Positioning Markup Language	The goal of the Gene Ontology Consortium is to produce a dynamic controlled vocabulary that can be applied to all eukaryotes even as knowledge of gene and protein roles in cells is accumulating and changing.	**Chaeron Corp.**
GXD	Grid eXtensible Data	GXD, Grid eXtensible Data, is a framework facilitating publication and use of data from diverse data sources. GXD defines an object-oriented data model designed to represent a wide range of things including data, its metadata, resources and query results.	**NASA**

STANDARD	NAME	DESCRIPTION	DEVELOPER
GXL	Graph Exchange Language	GXL (Graph Exchange Language) is designed to be a standard exchange format for graphs.	**Graph eXchange Language**
H7 XML	Health Level 7 XML	The HL7 Document is intended to be the basic unit of a document-oriented Electronic Patient Record (EPR). In the document-oriented patient record, whether computer- or paper-based, the patient's medical record is represented as a collection of documents.	**Health Level 7**
HDML	Handheld Device Markup Language	The Handheld Device Markup Language (HDML) is a presentation markup language designed for Personal Digital Assistants (PDA).	**W3C**
HEML	Historical Event Markup and Linking	The Historical Event Markup and Linking project explores XML-related technologies to develop a set of text markup and transformation tools that are useful to historians worldwide.	**Historical Event Markup and Linking**
Health Care Claim – Institutional	Health Care Claim Institutional	A DTD for the ANSI ASC 837 (Version 4010) Health Care Claim-Institutional, the HIPAA-mandated standard for electronic health care claims by institutions, effective October 16, 2002. The Health Insurance Portability and Accountability Act (HIPAA) mandates standards for electronic claims and certain other transactions which health plans, clearinghouses and payers must implement by October 2002, provided that covered entities may obtain a one year delay by filing a compliance plan and meeting certain other conditions (see Administrative Simplification Compliance Act: Simple Delay).	**ComplyX Structured Information, Inc.**
HITIS	Hospitality Industry Technology Integration Standards	The Historical Event Markup and Linking project explores XML-related technologies to develop a set of text markup and transformation tools that are useful to historians worldwide.	**American Hotel & Motel Association**
HR-XML	Human Resources Markup Language	hr-xml.org is home to the HR-XML Consortium; an independent, non-profit organization dedicated to the development and promotion of standardized XML vocabularies for human resources (HR).	**HR-XML Consortium**
HRMML	Human Resource Management Markup Language	Structured Methods has developed Human Resource Management Markup Language (HRMML), an XML-based markup language for job postings, job descriptions, and resumes.	**Structure Methods, Inc.**
HTML	HyperText Markup Language	HTML is the lingua franca for publishing hypertext on the World Wide Web. It is a non-proprietary format based upon SGML, and can be created and processed by a wide range of tools, from simple plain text editors – you type it in from scratch- to sophisticated WYSIWYG authoring tools.	**W3C**
HTTP	Hypertext Transfer Protocol	The Hypertext Transfer Protocol (HTTP) is a protocol with the lightness and speed necessary for a distributed collaborative hypermedia information system. It is a generic stateless object-oriented protocol, which may be used for many similar tasks such as name servers, and distributed object-oriented systems, by extending the commands, or "methods", used. A feature if HTTP is the negotiation of data representation, allowing systems to be built independently of the development of new advanced representations.	**W3C**
HTTP-DRP	Hypertext Transfer Protocol Distribution and Replication Protocol	The Hypertext Transfer Protocol Distribution and Replication Protocol (HTTP-DRP) provides a specification of a protocol for the efficient replication of data over HTTP. Discussion seems to have halted on this initiative.	**W3C**
HumanML	Human Markup Language	HumanML is designed to represent human characteristics through XML. The aim is to enhance the fidelity of human communication.	**OASIS**

STANDARD	NAME	DESCRIPTION	DEVELOPER
HyTime	Hypermedia Time-based Structuring Language	The Hypermedia/Time-based Structuring Language (HyTime), defined in this International Standard, provides facilities for representing static and dynamic information that is processed and interchanged by hypertext and multimedia applications.	**ISO/IEC JTC1/SC34 ISO – International Organization for Standardization**
IML	Image Markup Language	IML is a schema for storing textual annotations to GIF or JPEG image.	**University of Washington**
IML (also ICML)	Instrument Markup Language also Instrument Control Markup Language	The Instrument Markup Language (IML) is designed to be a very general and highly extensible framework that applies to virtually any kind of instrument that can be controlled by a computer.	**NASA Goddard Space Flight Center (GSFC) CommerceOne, Inc.**
ICE	Information and Content Exchange	Specifically, ICE manages and automates establishment of syndication relationships, data transfer, and results analysis.	**IDEAlliance**
IDML	International Development Markup Language	The IDML Initiative was formed to discuss the possibility of an International Development Markup Language, or IDML, for the international development community.	**International Development Markup Language Initiative**
IDWG	Intrusion Detection Exchange Format	The purpose of the Intrusion Detection Working Group is to define data formats and exchange procedures for sharing information of interest to intrusion detection and response systems, and to management systems which may need to interact with them.	**Internet Engineering Task Force (IETF)**
IEEE DTD	IEEE DTD	This DTD is intended to allow both new standards to be edited and legacy data to be handled. Therefore it has to cope with all the different ways the standards were written in the last couple of decades. Thus the DTD is intentionally lax. It is VERY flexible.	**Institute of Electrical and Electronics Engineers (IEEE)**
IFX	Interactive Financial eXchange	The IFX specification provides a robust and scalable framework for the exchange of financial data and instructions independent of a particular network technology or computing platform.	**Interactive Financial eXchange (IFX) Forum**
IMPP	Instant Messaging & Presence Protocol	InTml describes virtual reality (VR) applications in a platform-independent and toolkit-independent manner, for development and understanding purposes.	**Internet Engineering Task Force (IETF)**
IMS Global Learning	IMS Global Learning Specifications	IMS Global Learning Consortium, Inc. (IMS) is developing open specifications for facilitating online distributed learning activities such as locating and using educational content, tracking learner progress, reporting learner performance, and exchange.	**IMS Global Learning Consortium, Inc.**
InTml	Interaction Techniques Markup Language	InTml describes virtual reality (VR) applications in a platform-independent and toolkit-independent manner, for development and understanding purposes.	**University of Alberta, Department of Computing Science**
IOTP	Internet Open Trading Protocol	The Internet Open Trading Protocol provides an interoperable framework for Internet commerce. It is optimized for the case where the buyer and the merchant do not have a prior acquaintance and is payment system independent.	**Internet Engineering Task Force (IETF)**
IRML	Investment Research Markup Language	Standardizing and promoting a universal platform for the exchange of information relating to processes and products surrounding the creation, distribution and retrieval of financial research content.	**Investment Research Markup Language Organization**
ISO/IEC 13250 Topic Navigation Maps	ISO/IEC 13250 Topic Navigation Maps	This International Standard provides a standardized notation for interchangeably representing information about the structure of information resources used to define topics, and the relationships between topics.	**ISO/IEC JTC1/SC34 ISO – International Organization for Standardization**

STANDARD	NAME	DESCRIPTION	DEVELOPER
IXML	International Consortium for the Advancement of Academic Publication (ICAAP) eXtended Markup Language	The International Consortium for the Advancement of Academic Publication (ICAAP) has developed its own SGML application, called ICAAP eXtended Markup Language, for use in archiving and producing scholarly content. IXML provides a complete scholarly journal markup system for producing critical content (e.g., journal articles).	**International Consortium for the Advancement of Academic Publication (ICAAP)**
IXRetail	Digital Receipt Standard	The IXRetail digital receipt XML schema is an electronic purchase verification that can be issued by retailers, financial institutions or any other industry that provides consumers proof of purchase.	**The Association for Retail Technology Standards (ARTS)**
JabberXML	Jabber Markup Language	The first application of Jabber technology is an instant messaging system focused on privacy, security, ease of use, access from anywhere using any device, and interoperability with IM, phone, and web-based services.	**Jabber Software Foundation**
JDF	Job Definition Format	Job Definition Format (JDF) supplies a means for printing businesses to streamline the process of producing printed material.	**International Cooperation for Integration of Processes in Prepress, Press & Postpress (CIP4)**
JDox	Java Documentation	JDox, an easily formatted, fully searchable XML version of Sun Microsystems's Javadoc program results.	**Sun Microsystems**
JECMM	Joint Engineering Change Management Model	Joint Engineering Change Management Model.	**PDIT Interoperability Solutions, Inc.**
JLife	JavaTM Life Insurance Language	The JLife standard takes both the ACORD Life Data Model and the methods defined for processing data in OLifE and translate them into JAVA. This provides a component-based solution for sharing data that links Internet client applications to the data from back office systems.	**Acord**
JSML	JavaTM Music Markup Language	Java Music Specification Language (JMSL) is a Java-based development tool for experiments in algorithmic composition, live performance, and intelligent instrument design.	**JSML**
JSML	JavaTM Speech API Markup Language	JScoreML is an on-line musical notation editor with playback and midi file creation capabilities. It was developed in association with the NIDE project.	**SUN Microsystems, Inc.**
JScoreML	JavaTM Score Markup Language	The Java™ Speech API Markup Language (JSML) is a text format used by applications to annotate text input to speech synthesizers.	**JScoreML**
KBML	Koala Bean Markup Language	The Koala KBML package enables to serialize/deserialize JavaBeans™ to/from XML documents.	**Koala Project, ILOG, Inc. FRANCE**
LACITO	Langues et Civisations à Tradition Orale	Among other things, the goal of the LACITO project is to archive linguistic documents associating transcription and recorded speech in a format which guarantees their conservation and their availability for research.	**LACITO**
LandXML	Land Extensible Markup Language	The LandXML schema facilitates the exchange of data create during the Land Planning, Civil Engineering and Land Survey process.	**LandXML Organization**
LEDES	Legal Electronic Data Exchange Standard	The LEDES™ (Legal Electronic Data Exchange Standard) file format is intended to serve as a standard file format to be used by the legal industry for the electronic exchange of information. Version 1998B is an ASCII based format, but LEDES 2000 (L2K) is an XML proposal.	**LEDES Committee**
LegalXML	Legal Markup Language	Legal Markup Language for court filings, contracts, notary, justice and transcripts.	**LegalXML, OASIS**

STANDARD	NAME	DESCRIPTION	DEVELOPER
Life Data Model	Life Data Model	Life information model for life insurance.	**Acord**
LitML	Liturgical Markup Language	LitML is intended as a markup language for liturgical texts, and will be defined using XML.	**Oremus**
LMML	Learning Material Markup Language	The Learning Material Markup Language (LMML) Framework is a flexibly adaptable and extensible family of XML markup languages for learning and teaching material (teachware). LMML provides sub-languages for various educational fields.	**LMML, Christian Süß., University of Passau**
LogML	Log Markup Language	Log Markup Language (LOGML) is an XML 1.0 application designed to describe log reports of web servers.	**Department of Computer Science, Rensselaer Polytechnic Institute**
LogGraphics ML	Log Graphics Markup Language	This document is an initial proposal for an ASCII oil field log graphics description mechanism based on the eXtensible Markup Language (XML).	**Petrochemical Open Software Corporation (POSC)**
LTSC XML	Learning Technology Standards Committee XML	The mission of IEEE Learning Technology Standards Committee (LTSC) working groups is to facilitate the development, deployment, maintenance and interoperation of computer implementations of education and training components and systems [through standards].	**Institute of Electrical & Electronics Engineers (IEEE)**
MAML (see MAGE-ML)	MicroArray Markup Language	Microarray Markup Language (MAML) is a data format for describing information about DNA-array based experiments.	**Object Management Group (OMG)**
MatML	Materials Property Markup Language	The MatML effort is addressing the problems of interpretation and interoperability through the development of an extensible markup language (XML) for materials data that will permit the storage, transmission, and processing of materials property data.	**National Institute of Standards & Technology (NIST), Material Science and Engineering Laboratory (MET)**
MathML	Mathematics Markup Language	MathML is an XML application for describing mathematical notation and capturing both its structure and content. The goal of MathML is to enable mathematics to be served, received, and processed on the World Wide Web, just as HTML has enabled this functionality for text.	**W3C**
MBAML (MISMO)	Mortgage Bankers of America Markup Language	The Mortgage Industry Standards Maintenance Organization's mission is to develop, promote, and maintain voluntary electronic commerce standards for the mortgage industry.	**Mortgage Industry Standards Maintenance Organization**
MCF	Meta Content Framework (MCF)	The Meta Content Framework (MCF) is a tool to provide information about information.	**The Mozilla Organization**
MDDL (also MDML)	Market Data Definition Language	The Market Data Definition Language (MDDL) is an XML-based interchange format and common data dictionary on the fields needed to describe 1) financial instruments, 2) corporate events affecting value and tradability and 3) market-related, economic and industrial indicators.	**Financial Information Services Division (FISD) of the Software and Information Industry Association (SIIA)**
MDSI-XML	Manufacturing Markup Language	MDSI Releases XML Standard for Publishing Manufacturing Production Data on the Internet.	**MDSI, Inc.**
Metarule	Metarule	Metarule permits the representation of knowledge in a fuzzy logic rule based manner, with support for mathematical expressions and both numerical and categorical input and output variables.	**National Research Council CANADA**
MFDX	Multifamily Data Exchange	The Multifamily Data Exchange (MFDX) is the Open Data Standard (ODS) developed for the benefit of the apartment industry to facilitate the exchange of apartment data through XML.	**Multifamily Data Exchange**

STANDARD	NAME	DESCRIPTION	DEVELOPER
MIX	Mediation of Information using XML	The goal of the MIX Project is to study, develop, apply and evaluate systems for mediation across heterogeneous information sources.	**National Partnership for Advanced Computational Infrastructure (NPACI)**
MML	Marker Markup Language	The Maker Markup Language (MML) supports Adobe, Inc. FrameMaker (TM) software.	**Adobe, Inc.**
MML	Modest Markup Language	The Modest Markup Language is a text markup language based on setext (structure-enhanced text) by Ian Feldman. It borrows the spirit of setext, many of its concepts, and even some of its syntax.	**Metamage Software Creations**
MML	Music Markup Language	Music Markup Language.	**Music Markup Language**
MoDL	Molecular Dynamics Markup Language	MoDL (pronounced as Model) stands for Molecular Dynamics Language. MoDL is an XML application that allows chemical simulation data visualization over the Web.	
MOS	Media Object Server XML	Media Object Server Communications Protocol (MOS): An evolving protocol for communications between Newsroom Computer Systems (NCS) and Media Object Servers (MOS) such as Video Servers, Audio Servers, Still Stores, and Character Generators.	**Associate Press**
MPML	Multimodal Presentation Markup Language	MPML (Multimodal Presentation Markup Language) is a language developed to enable the description of multimodal presentation based on character agents in easier way.	**Department of Information & Communication Engineering, School of Information Science and Technology, University of Tokyo JAPAN**
MPXML	Meat and Poultry eXtensible Markup Language	Meat and Poultry eXtensible Markup Language defines e-commerce within the meat and poultry industry.	**Meat and Poultry Data Standards Initiative**
MRML	Multimedia Retrieval Markup Language	The Multimedia Retrieval Markup Language (MRML) attempts to unify access to multimedia retrieval and management software component in order to extend their capabilities.	**MRML**
MSAML	Multiple Sequence Alignments in XML	MSAML is a set of XML compliant markup components for describing multiple sequence alignments [amino acids and nucleic acid sequences].	**National Research Council CANADA**
MTML	Marine Trading Markup Language	The Marine Trading Markup Language (MTML) is designed to use the Internet to greatly facilitate trading in the maritime industry.	**Maritime eCommerce Association**
MTML	Meaningful Text Markup Language	The Meaningful Text Markup Language (MTML) is language that supports study tools for taking notes and creating multiple indexes of topical reference within the contents of the book being presented.	**Gizmotron Graphics, Inc.**
MusiXML	Music eXtensible Markup Language	Music eXtensible Markup Language.	**MusiXML**
MusicXML	Music eXtensible Markup Language	MusicXML is a universal translator for common Western musical notation from the 17th century onwards. It is designed as an inter-change format for notation, analysis, retrieval, and performance applications.	**Recordare, Inc.**
NAML (now xNL)	Name/Address Markup Language	This language has been developed primarily for name and address data management. Name and Address is crucial for any customer data and our objective is to standardize the representation of the name and address data.	**MSI Business Solutions Pty. Ltd**
xNAL	Extensible Name & Address Language	Name and address Language.	**OASIS**

STANDARD	NAME	DESCRIPTION	DEVELOPER
NAA Classified Ads	Newspaper Association of America (NAA) Classified Ads format	Establish standards that permit advertisers to provide, and newspapers to share and aggregate, advertising data for publication in media-independent formats.	**Newspaper Association of America (NAA)**
Navy DTD	Navy DTD/FOSI Repository	The Navy DTD/FOSI Repository was established as a mechanism to promote sharing of DoN DTDs and FOSIs and minimize DoN investment in DTD and FOSI development.	**Naval Surface Warface Center Navy Continuous Acquisition & Life-Cycle Support (CALS)**
NewsML	News Markup Language	NewsML is an XML encoding for news which is intended to be used for the creation, transfer, delivery and archiving of news.	**International Press Telecommunications Council (IPTC)**
NML	News Markup Language	News Markup Language (NML) is a single standard language for news markup, opening a gateway for easily moving news articles to the Internet and beyond.	**American Press Institute (API)**
NISO DTB	National Information Standards Organization Digital Talking Books	The Digital Talking Book 3.0 provides the means to package a published book with the combination of professional narration, navigation into that narration, and the text of the book marked with tags to convey its structure, content, and metadata.	**National Information Standards Organization (NISO)**
NITF	News Industry Text Format	NITF uses the eXtensible Markup Language to define the content and structure of news articles. Because metadata is applied throughout the news content, NITF documents are far more searchable and useful than HTML pages.	**International Press Telecommunications Council (IPTC)**
NLMXML	National Library of Medicine XML Formats	As part of its reinvention efforts, NLM continues to refine the format that will be used for our forthcoming data creation and maintenance system and for distribution of MEDLINE data.	**National Library of Medicine**
NVML	NaVigation Markup Language	The "NVML" (NaVigation Markup Language) is a markup language for describing the navigation information for A variety of mobile information appliances are developed rapidly such as smart phones with capability of Internet access, PDAs (Personal Digital Assistants) equipped with GPS (Global Positioning System), and car navigation systems.	**W3C**
OAGIS	Open Applications Group Integration Specification)	The Open Applications Group is a non-profit consortium focusing on best practices and process-based XML content for e-business and application integration. It publishes a wide array of process models and XML-based business messages for software interoperability.	**Open Applications Group**
OBI	Open Buying on the Internet	The Open Buying on the Internet (OBI)(TM) standard is an open, flexible framework for business-to-business Internet commerce solutions. The initial focus of OBI is on automating the high-volume, low-dollar transactions between trading partners that account for 80% of most organizations purchasing activities.	**Open Buying on the Internet**
OCF	Open Catalog Protocol (OCP) and Open Catalog Format (OCF)	Open Catalog Protocol (OCP is an open standard for describing product catalogs and is used to represent, store, and transport product information.	**MartSoft, Inc.**
ODF	Weather Observation Definition Format	Weather Observation Markup Format is an application of XML to describe a particular kind of documents: weather observation reports.	**Navy Fleet Numerical Meteorology and Oceanography Center (FNMOC)**

STANDARD	NAME	DESCRIPTION	DEVELOPER
ODRL	Open Digital Rights Language	The Open Digital Rights Language (ODRL) provides the semantics for a Digital Rights Management expression language and data dictionary pertaining to all forms of digital content.	**The Open Digital Rights Language Initiative**
OeBPS	Open eBook Publication Structure	The purpose of the Open eBook Publication Structure is to provide a specification for representing the content of electronic books. Specifically: The specification is intended to give content providers (e.g., publishers, and others who have content to be displayed) and tool providers minimal and common guidelines which ensure fidelity, accuracy, accessibility, and presentation of electronic content over various electronic book platforms. The specification seeks to reflect established content format standards. The goal of this specification is to provide the purveyors of electronic-book content (publishers, agents, authors et al.) a format for use in providing content to multiple reading systems.	**Open Book Forum**
OFX	Open Financial Exchange	Open Financial Exchange supports a wide range of financial activities including consumer and small business banking; consumer and small business bill payment; bill presentment and investments, including stocks, bonds and mutual funds.	**Open Financial Exchange**
OIL	Ontology Interchange Language	Ontologies provide a shared and common understanding of a domain that can be communicated across people and application systems. The Ontology Inference Layer OIL is a proposal for a joint standard for specifying and exchanging ontologies.	**On-To-Knowledge, Information Society Technologies (IST), Program for Research, Technology Development & Demonstration**
OIM	Open Information Model	The Open Information Model (OIM) is a set of metadata specifications to facilitate sharing and reuse in the application development and data warehousing domains.	**Metadata Coalition (MDC) (Object Management Group (OMG))**
OLifE	Open Life Insurance Exchange	The OLifE standard defines the middleware pieces needed to allow applications used in a life insurance agent's system to share data that is common between them. Where ACORD XML for Life focuses on cross-system information sharing, OLifE (and JLife) provide the framework for "intra" system information sharing between applications running on a single computer.	**Acord**
OML	Ontology Markup Language	A principled approach to knowledge representation and data analysis that "advocates methods and instruments of conceptual knowledge processing which support people in their rational thinking, judgement and acting and promote critical discussion."	**The Ontology Consortium (Ontologos)**
ONIX International DTD	ONIX International DTD	ONIX International is the international standard for representing and communicating book industry product information in electronic form, incorporating the core content which has been specified in national initiatives such as BIC Basic and AAP?s ONIX Version.	**Book Industry Study Group (BISG)**
OOPML	Object-Oriented Programming Meta-Language	The OOPML project defines a XML development support for self-documented and self-tested classes.	**Informatique et recherche opérationnelle, Université de Montréal**
OPML	Outline Processor Markup Language	The Outline Processor Markup Language (OPML) is an XML-based format that allows exchange of outline-structured information between applications running on different operating systems and environments.	**OPML**
OpenMath	OpenMath Standard	OpenMath is an emerging standard for representing mathematical objects with their semantics, allowing them to be exchanged between computer programs, stored in databases, or published on the worldwide web.	**OpenMath Standard**

STANDARD	NAME	DESCRIPTION	DEVELOPER
OpenOffice XML	OpenOffice XML Format	OpenOffice XML is an open and ubiquitous XML-based file format for office documents.	**Open Office**
OPML	Outline Processor Markup Language	OPML an XML-based format that allows exchange of outline-structured information between applications running on different operating systems and environments.	**Outline Processor Markup Language**
OPX	Open Philanthropy Exchange	Open Financial Exchange supports a wide range of financial activities including consumer and small business banking; consumer and small business bill payment; bill presentment and investments, including stocks, bonds and mutual funds.	**Open Philanthropy Exchange (OPX)**
OSD	Open Software Description Format	The Open Software Description (OSD) format. OSD is an application of the eXtensible Markup Language (XML), is a vocabulary used for describing software packages and their dependencies for heterogeneous clients. We expect OSD to be useful in automated software distribution environments.	**W3C**
OTA	Open Travel Alliance	OTA presents the specifications for customer profile messages in the travel industry, covering airlines, car rentals, hotels, and other travel services.	**Open Travel Alliance**
PML	Pattern Markup Language	PML (Pattern Markup Language) is a XML-based format to describe software patterns.	**Keio University, JAPAN**
PML	Paper Markup Language	PML (Paper Markup Language) is a new protocol for Internet-based commerce between buyers and sellers of paper and printing products.	**PaperHub, Inc.**
PML	Philanthropic Markup Language	PML (Philanthropic Markup Language) describes giving.	**Giving Space Organization**
PML	Physical Markup Language	PML (Physical Markup Language) is a proposed language for describing physical objects, systems and processes.	**Auto-ID Center**
PML	Physical Markup Language	PML (Physical Markup Language) is a subset of HumanML.	**OASIS**
PML	Portal Markup Language	PML (Portal Markup Language) describes portal related data, metadata and the structure of the Portal Markup Language DOM.	**W3C**
PML	Procedural Markup Language	PML (Procedural Markup Language) is a markup language written in XML that allows the content designer to encode domain knowledge in an intuitive and flexible manner by specifying the knowledge structures, the underlying physical media, and the relationship between them using cognitive media roles. (paper)	**Georgia Institute of Technology**
PML	Property Markup Language	PML (Property Markup Language) is designed for programmers, as a technology it doesn't only provide a fancy C/Java source look and feel. It also provides an automated high-level shareable repository system.	**Budic, Inc.**
P3P	Platform for Privacy Preferences	The Platform for Privacy Preferences Project (P3P), developed by the World Wide Web Consortium, is emerging as an industry standard providing a simple, automated way for users to gain more control over the use of personal information on Web sites they visit.	**W3C**
PDML	Product Data Markup Language	Product Data Markup Language (PDML) is an Extensible Markup Language (XML) vocabulary designed to support the interchange of product information among commercial systems (such as PDM systems) or government systems (such as JEDMICS).	**Product Data Interoperability (PDI) project, PDIT Interoperability Solutions, Inc.**

STANDARD	NAME	DESCRIPTION	DEVELOPER
PDX	Product Definition eXchange	The PDX standardization effort is focused on the problem of communicating product content information between original equipment manufacturers (OEM), electronic manufacturing service (EMS) providers and component suppliers.	**National Electronics Manufacturing Initiative, Virtual Factory Information Interchange Project**
PEF XML	Epicentre XML	The Epicentre XML Exchange Format is based on the Express Specification of the Epicentre Data Model.	**Petrochemical Open Software Corporation (POSC)**
PetroML	Petroleum Markup Language	This is the oil industry's first set of XML schemas specifically designed to empower industry participants in end-to-end automation of oil field operations.	**Oildex, Inc.**
PGML	Precision Graphics Markup Language	PGML is a 2D scalable graphics language designed to meet both the simple vector graphics needs of casual users and the precision needs of graphics artists.	**W3C**
PhysicsML	Physics Markup Language	The complete set of XML representations of physics concepts is termed "Physics Markup Language", or PhysicsML.	**Minnesota Institute for Computational Physics and Chemistry**
PICS	Platform for Internet Content Selection	The PICS™ specification enables labels (metadata) to be associated with Internet content.	**W3C**
PMML	Predictive Model Markup Language	Predictive Model Markup Language (PMML) is an XML-based language which provides a quick and easy way for companies to define predictive models and share models between compliant vendors' applications.	**Data Mining Group (DMG)**
PNML	Pet Name Markup Language	The Pet Name Markup Language (PNML) is a simple substitution system to allow humans to use simple names that translate into secure objects before transmitted on the network.	**ERights**
PNML	Petri Net Markup Language	The Petri Net Markup Language (PNML) is an interchange format for Petri nets. A Petri Net is a directed, bipartite graph in which nodes are either "places" (represented by circles) or "transitions" (represented by rectangles), invented by Carl Adam Petri. A Petri net is marked by placing "tokens" on places. When all the places with arcs to a transition (its input places) have a token, the transition "fires", removing a token from each input place and adding a token to each place pointed to by the transition (its output places).	**Department of Computer Science, Humboldt Universität zu Berlin**
PNG	Platform for Internet Content Selection	PNG is an extensible file format for the lossless, portable, well-compressed storage of raster images.	**W3C**
PrintML	Printing Industry Markup Language	PrintML (for Printing Industry Markup Language) is a professional application based on the XML language specifically created for the printing industry.	**PrintML**
PrintTalk	Print Talk	PrintTalk is a consortium of print industry professionals seeking to provide an open XML standard to communicate business information used in the Graphic Arts industry.	**PrintTalk Consortium**
ProductionML	Production Markup Language	The Production Markup Language (ProductionML) describes oil and gas production information.	**Petrochemical Open Software Corporation (POSC)**
PSL	Process Specification Language	The Process Specification Language (PSL) is a neutral, standard language for process specification to serve as an Interlingua to integrate multiple process-related applications throughout the manufacturing life cycle.	**National Institute of Standards and Technology (NIST)**

STANDARD	NAME	DESCRIPTION	DEVELOPER
PSI	Portable Site Information	Portable Site Information is a language for creating websites that are portable between different web content platforms.	**Portable Site Information**
QML	Quest Markup Language	The Quest Markup Language, is a free XML-based Choose-Your-Own-Adventure game system.	**Quest Markup Language**
QAML	Question and Answer Markup Language	The purpose of QAML is to provide a more specific format for documents dealing with questions and answers.	**Academia Sinica Computing Centre CHINA**
QuickData	Quick Data	The Electronic Component Information eXchange (ECIX) QuickData Specifications enable real-time, business-to-business transactions such as queries and responses to be conducted over the Internet.	**Electronic Component Information eXchange (ECIX), Silicon Integration Initiative, Inc.**
RBAC	Role Based Access Control Policy	Role Based Access Control Policy (RBAC) defines an open protocol to improve the process of categorizing, aggregating, comparing, sorting, and distributing global financial research.	**PrivilEge and Role Management, Infra-structure Standards Validation (PERMIS)**
RDDL	Resource Directory Description Language	A RDDL document, called a Resource Directory, provides a package of information about some target, including: (1) Human-readable descriptive material about the target. (2) A directory of individual resources related to the target, each directory entry containing descriptive material and linked to the resource in question.	**Open Health**
RDF	Resource Description Framework	The Resource Description Framework (RDF) integrates a variety of applications from library catalogs and worldwide directories to syndication and aggregation of news, software, and content to personal collections of music, photos, and events using XML as an interchange syntax.	**W3C**
RDL	Reusable Data Language	e-Numerate created RDL(TM) tags to attach to numbers. The tags tell Numerator Lite(TM) what the numbers actually represent (i.e. feet, yen, home runs) and how they relate to other numbers.	**eNumerate, Inc.**
RecipeML	Recipe Markup Language	Recipe Markup Language – The Format for Online Recipe Content(Formerly known as DESSERT.) Currently at version 0.5; industry participation in completion of the spec is welcome.	**FormatData, Inc.**
RELAX	Regular Expressions for the eXtensible Markup Language	Regular Language description for XML (RELAX) is a specification for describing XML-based languages.	**INSTAC XML SWG, Japanese Standard Association (JSA)**
RELAX NG	Regular Expressions for the eXtensible Markup Language Next Generation	Regular Language description for the eXtensible Markup Language Next Generation (RELAX NG) unifies two XML schema languages.	**INSTAC XML SWG Japanese Standard Association (JSA) Thai Open Source Software Center THAILAND**
REXML	Real Estate Markup Language	reXML was created to provide a standard XML-based representation of the data that can now be electronically transferred between property management and financial analysis applications.	**Realm Business Solutions, Inc.**
REPML	Real Estate Property Markup Language	The REPML schema addresses the need for a concise, property-centric document model and information interchange framework for real estate properties and listings. REPML utilizes the DCN namespace, an accepted standard for Real Estate.	**Mortgage Industry Standards Maintenance Organization**
ResumeXML	Resume Markup Language	The XML Résumé Library is an Extensible Markup Language (XML) Document Type Definition for describing résumés.	**ResumeXML**

STANDARD	NAME	DESCRIPTION	DEVELOPER
RETML	Real Estate Transaction Markup Language	The "Real Estate Transaction Standard (RETS) is the new open standard for exchanging real estate transaction information.	**Real Estate Transaction Standard (RETS)**
RFML	Relational-Functional Markup Language	The Relational-Functional Markup Language (RFML) is an XML application for Relfun-style declarative programming and knowledge representation.	**German Research Center for Artificial Intelligence GmbH, GERMANY**
RightsLang	Rights Language	The purpose of the Rights Language TC is to define the industry standard for a digital rights language that supports a wide variety of business models and has an architecture that provides the flexibility to address the needs of the diverse communities that have recognized the need for a rights language.	**OASIS**
RIXML	Research Information Exchange Markup Language	To define an open protocol to improve the process of categorizing, aggregating, comparing, sorting, and distributing global financial research.	**Research Information Exchange Markup Language**
ROAMOPS]	Roaming Operations	The Roaming Operations (ROAMOPS) specification supports user roaming among groups of Internet service providers (ISPs). RosettaNet Partner Interface Processes(TM) (PIPs(TM)) define business processes between supply-chain partners, providing the models and documents for the implementation of standards.	**Internet Engineering Task Force (IETF)**
RosettaNet Partner Interface Process (PIP)	RosettaNet Partner Interface Process (PIP)	RDF Site Summary (RSS) is a lightweight multipurpose extensible metadata description and syndication format. RSS is an XML application, conforming to the W3C's RDF Specification.	**RosettaNet**
RSS	RDF (Rich) Site Summary	The Rule Markup Language (RuleML) permits both forward (bottom-up) and backward (top-down) rules in XML for deduction, rewriting, and further inferential-transformational tasks.	**RSS**
RuleML	Rule Markup Language	Rules can be stated (1) in natural language, (2) in some formal notation, or (3) in a combination of both. Being in the third, 'semiformal' category, the RuleML Initiative is working towards an XML-based markup language that permits Web-based rule storage, interchange, retrieval, and firing/application.	**German Research Center for Artificial Intelligence GmbH, GERMANY**
SML	Simple Markup Language	The Simple Markup Language (SML) is a strict subset of XML SML supports: (1) UTF-8 and UTF-16 only, (2) empty elements. Numeric character entities and (3) predefined character entities. SML does not support: (1) DTD CDATA sections, (2) XML and text declarations, (3) Processing Instructions, (4) Comments and (5) Entities (except character entities) SML attribute names must not conflict with child element names.	**Don Park**
SML	Smart Card Markup Language	The goal of SML (smartX Markup Language) is to enable automation of all interactions with XML documents providing general methods to represent a set of smart device functions.	**ThinkPulse, Inc.**
SML	Spacecraft Markup Language	Spacecraft Markup Language (SML) is an extension of the Extensible Markup Language (XML) providing the Space Community with a standard definition of XML tags and concepts of structure to allow the definition of spacecraft and other support data objects.	**Interface and Control Systems, Inc.**
SML	Steel Markup Language	"e-STEEL Corporation today announced that it is teaming with two internationally-recognized technology leaders to form a strategic alliance to develop and implement integrated end-to-end e-Commerce solutions for steel industry members. "	**eSteel, Inc.**
SAML	Security Assertion Markup Language	Advancing SAML, an XML-based security standard for exchanging authentication and authorization information.	**OASIS**

STANDARD	NAME	DESCRIPTION	DEVELOPER
SABLE	SABLE Text-to-Speech Markup	SABLE is an XML/SGML-based markup scheme for text-to-speech synthesis, developed to address the need for a common TTS control paradigmEffort combined into VoiceXML initiative.	**SABLE Consortium Centre for Speech Technology Research University of Edinburgh**
SAE J2008	Society of Automotive Engineers Standards	Society of Automotive Engineers (SAE) SAE J2008 is a family of standards developed by the membership of the Society of Automotive Engineers in response to the mandate of the Clean Air Act to partition and provide easy access to emission-related automotive service information.	**Society of Automotive Engineers (SAE)**
SBML	Systems Biology Markup Language	Systems Biology Markup Language [SBML], which can represent models of biological systems common in research on a number of topics including cell signaling pathways, metabolic pathways, biochemical reactions, and many others.	**Caltech ERATO Kitano Systems Biology Project Systems Biology Workbench, CalTech**
Schematron	Schematron	Schematron is an XML Structure Validation Language using Patterns in Trees.	**Academia Sinica Computing Centre CHINA**
SDML	Signed Document Markup Language	The SDML 2.0 specification describes a generic method for digitally signing a document, one or more sections of a document and/or multiple documents together.	**W3C**
SearchDB-XML	Search Database XML	This schema describes a Service Level Agreement (SLA), which is typically a request made by a customer to the Internet Service Provider (ISP).	**W3C**
SGML	Standard Generalized Markup Language	Conceived notionally in the 1960s – 1970s, the Standard Generalized Markup Language (SGML, ISO 8879:1986) describes the content of text documents in a logical and structural manner. The Extensible Markup Language (XML) was derived as a proper subset of SGML and was published as a W3C Recommendation in 1998.	**American National Standards Institute (ANSI)**
SHOE	Simple HTML Ontology Extensions	SHOE is an HTML-based knowledge representation language. SHOE is a superset of HTML which adds the tags necessary to embed arbitrary semantic data into web pages.	**Department of Computer Science University of Maryland**
SIF	Schools Interoperability Framework	The Schools Interoperability Framework (SIF) is an industry initiative to develop an open specification for ensuring that K-12 instructional and administrative software applications work together more effectively.	**Software and Information Industry Association (SIIA)**
SMML	Simulation Module Markup Language	The Simulation Module Markup Language (SMML) archives modules in support of continuous spatial modeling.	**University of Vermont**
SMBXML	Small and Medium Sized Business XML	The SMBXML describes business transactions.	**Oracle, Inc.**
SMDL	Standard Music Description Language	The Standard Music Description Language (SMDL) (ISO/IEC 10743), an application of the HyTime Hypermedia/Time-based document structuring facilities, is described. The discussion covers the domains of information that SMDL associates with any piece of music, the timing of cantus events, pitch in cantus events, gamut-based pitches, just-intoned pitches, user-defined functions for pitches, chords and chord symbols, instrumental and vocal sounds, and non-western music.	**ISO/IEC JTC1/SC34 ISO – International Organization for Standardization**
SMIL	Synchronized Multimedia Integration Language	The Synchronized Multimedia Integration Language (SMIL, pronounced “smile”) enables simple authoring of interactive audiovisual presentations.	**W3C**

STANDARD	NAME	DESCRIPTION	DEVELOPER
SOAP	Simple Object Access Protocol	The Simple Object Definition Language (SODL) is an XML IDL DTD which allows objects to be described in a fashion compatible with Interface Definition Language (IDL) used in COM and CORBA object systems.	**Open Healthcare Group**
SODL	Simple Object Definition Language	The Simple Object Definition Language (SODL) is an XML IDL DTD which allows objects to be described in a fashion compatible with Interface Definition Language (IDL) used in COM and CORBA object systems.	**W3C**
SOX	Schema for Object-oriented XML	Schema for Object-oriented XML (SOX) defines the structure, content and semantics of XML documents to enable XML validation and higher levels of automated content checking.	**W3C**
SPML	Provisioning Services Technical Committee	The purpose of the OASIS Provisioning Services TC is to develop an end-to-end, open, XML-based framework specification for exchanging user, resource, and service provisioning information based on previous specifications such as ADPr, XRPM, ITML, and others.	**OASIS**
SpeechML	Speech Markup Language	SpeechML is an XML markup language for building distributed network-based conversational applications.	**IBM**
SSML	Speech Synthesis Markup Language	The Speech Synthesis Markup Language (SSML) is part of this set of new markup specifications for voice browsers, and is designed to provide a rich, XML-based markup language for assisting the generation of synthetic speech in web and other applications. The essential role of the markup language is to provide authors of synthesizable content a standard way to control aspects of speech such as pronunciation, volume, pitch, rate and etc. across different synthesis-capable platforms.	**W3C**
STML	Spoken Text Markup Language	STEP is the Standard for the Exchange of Product Model Data, an activity producing International Standards under the auspices of ISO TC184/SC4.	**Lucent Technologies Bell Labs Innovations**
STEP	Standard for the Exchange of Product Model Data	STEP is the Standard for the Exchange of Product Model Data, an activity producing International Standards under the auspices of ISO TC184/SC4.	**National Institute of Standards and Technology (NIST)**
StepML	Standard for the Exchange of Product Model Data Markup Language	STEPml is a library of XML specifications – Document Type Definitions (DTDs) and/or XML Schemas – for product data. STEP is the Standard for the Exchange of Product Model Data, an activity producing International Standards under the auspices of ISO TC184/SC4.	**National Institute of Standards and Technology (NIST)**
SVG	Scalable Vector Graphics	SVG is a language for describing two-dimensional graphics in XML. SVG allows for three types of graphic objects: vector graphic shapes (e.g., paths consisting of straight lines and curves), images and text. Graphical objects can be grouped, styled, transformed and composited into previously rendered objects. Text can be in any XML namespace suitable to the application, which enhances searchability and accessibility of the SVG graphics. The feature set includes nested transformations, clipping paths, alpha masks, filter effects, template objects and extensibility.	**W3C**
SWAP	Simple Workflow Access Protocol	Simple Workflow Access Protocol (SWAP) defines requirements and develop Internet based Workflow Access Protocol to instantiate, control and monitor the workflow process instances across heterogeneous workflow engines.	**Internet Engineering Task Force (IETF)**
SWMS	Simple Waypoint Markup Scheme	Simple Waypoint Markup Scheme.	**Iseran, Inc.**

STANDARD	NAME	DESCRIPTION	DEVELOPER
SyncML	Synchornization Markup Language	SyncML is a language for synchronizing devices and applications over a network.	**Synchornization Markup Language**
TML	Telephony Markup Language	By atomizing call and messaging functions in an effort to start formulating a list of possible telephony and messaging tags.	**Telephony Markup Language**
TML	Thesaural Markup Language	By atomizing call and messaging functions in an effort to start formulating a list of possible telephony and messaging tags.	**Technologies for Electronic Documents Commonwealth Scientific and Industrial Research Organization (CSIRO) AUSTRAILIA**
TML	Tutorial Markup Language	The TML language explores the creation of searchable question-banks for online delivery of tutorials and assessment. TML is an interchange framework designed to separate the semantic content of a question from its screen layout or formatting.	**Netquest Institute for Learning and Research Technology University of Bristol, UNITED KINGDOM**
TalkML	Talk Markup Language	TTalkML is an experimental XML language for voice browsers, and is being developed by HP Labs for use in the following markets: Call centers (IVR++) – sales and support services accessed via 800 numbers, adding speech recognition to today's DTMF (touch tone) systems Smart phones with displays Access to email, appointments, news and travel services etc. while your are on the road (in-car systems) Mobile devices too small for decent displays or keyboards, WCDMA palmtop organizers/pagers with low enough cost to be a must-have (like cell-phones)	**W3C**
TaxonomicML	Taxonomic Markup Language	The DTD proposed here seeks to accomplish three things: (1) The description of the structure (topology) of a biological phylogeny. (2) The presentation of statistical metadata about the phylogeny. (3) The option of superimposing a Linnean taxonomy.	**University of Albany, State University of New York**
TDL	Template Definition Language (TDL) for Electronic Patient Records (EPR)	Template Definition Language (TDL) has been developed "to share knowledge of how to construct an electronic patient record (EPR) template, based on XML (Extensible Markup Language).	**Department of Medical Informatics, University Hospital, University of the Ryukyus, Okinawa, and Division of Medical Informatics Chiba University Hospital, Chiba, Japan**
TDML	Timing Diagram Markup Language	Timing Diagram Markup Language (TDML) v1.0, an open industry-standard language for the exchange of interactive timing diagrams for digital systems.	**Electronic Component Information eXchange (ECIX)**
TEI	Text Encoding Initiative	The TEI is an international project to develop guidelines for the encoding of textual material in electronic form for research purposes.	**Text Encoding Initiative**
ThML	Theological Markup Language	Theological Markup Language is a new markup language that is being used to mark up texts for the Christian Classics Ethereal Library and other projects.	**Theological Markup Language**
TIM	Telecommunications Industry Markup Test Industry	The TIM Document Type Definition (DTD) is a specification for describing the structure of telecommunications and other technical documents, using SGML (Standard Generalized Markup Language).	**Telecommunications Industry Forum (TCIF)**

STANDARD	NAME	DESCRIPTION	DEVELOPER
TIM	MetaData	Test Industry Metadata (TIM) starts with information about web pages and other online resources.	**eTesters, Inc.**
TMML	Turing Machine Markup Language	The Turing Machine Markup Language (TMML) is an XML language for describing Turing machines.	**Unidex, Inc.**
TMX	Translation Memory eXchange	The purpose of TMX is to allow easier exchange of translation memory data between tools and/or translation vendors with little or no loss of critical data during the process.	**Localization Industry Standards Association (LISA)**
TP	Transport Package	Package for international food composition data transfer. Developed with FAO, UNESCO and FRI, Slovakia cooperation. Visit company page for more detailed information about TransportPackage DTD and related applications.	**FloraFood, Inc.**
TPAML	Trading Partner Agreement Markup Language	Transactions spanning multiple independent organizations may need to address enforcement of pairwise trading-partner agreements (TPAs).	**IBM Alphaworks**
TREX	Tree Regular Expressions for XML	The Tree Regular Expressions for XML (TREX) specifies a pattern for the structure and content of an XML document. A TREX pattern thus identifies a class of XML documents consisting of those documents that match the pattern. A TREX pattern is itself an XML document.	**Thai Open Source Software Center THAILAND**
TXLife	Translate XMLife	A life business transaction "wrapper" around the XMLife "content."	**Acord**
UML	Unified Modeling Language	The Unified Modeling Language (UML) specifies, visualizes, and documents models of software systems, including their structure and design, in a way that meets specified requirements.	**Object Management Group (OMG)**
UBL	Universal Business Language	The purpose of the UBL is a standard library of XML business documents (purchase orders, invoices, etc.) by modifying an already existing library of XML schemas to incorporate the best features of other existing XML business libraries.	**OASIS**
UCLP	Universal Commerce Language and Protocol	The Universal Commerce Language and Protocol (UCLP) is an Extensible Markup Language (XML) application for metadata related to commercial products and companies and that can be used in identifying and retrieving product data residing across the Internet.	**SAIC BellCore, Air Force Wright Laboratory AFRL/MLMS & Defense Advanced Research Projects Agency (DARPA)**
UDDI	Universal Description, Discovery and Integration	The Universal Description, Discovery and Integration (UDDI) standard (registry) creates a platform-independent, open framework for describing services, discovering businesses, and integrating business services using the Internet.	**OASIS**
UDEF	Universal Data Element Framework	UDEF "Universal Data Element Framework" is a 'Dewey Decimal-Like Indexing System'	**Universal Data Element Framework**
UIML	User Interface Markup Language	UIML is an XML language for defining user interfaces – buttons, menus, lists and other controls.	**User Interface Markup Language**
ULF	Universal Learning Format	The Universal Learning Format (ULF) is a complete suite of XML and RDF-based data formats for describing and exchanging eLearning data. The standards. The formats build on and are compatible with a wide variety of industry standards for exchanging learning.	**Saba, Inc.**
UMLS	Unified Medical Language System	The National Library of Medicine's Unified Medical Language System (UMLS) project develops and distributes multi-purpose, electronic "Knowledge Sources" and associated lexical programs. System developers can use the UMLS products to enhance their applications – in systems focused on patient data, digital libraries, Web and bibliographic retrieval, natural language processing, and decision support.	**National Library of Medicine**

STANDARD	NAME	DESCRIPTION	DEVELOPER
UPnP	Universal Plug and Play	Universal Plug and Play (UPnP) is an architecture for pervasive peer-to-peer network connectivity of PCs of all form factors, intelligent appliances, and wireless devices.	**Universal Plug and Play Forum**
URI/URL	Uniform Resource Identifiers and Uniform Resource Locator	Uniform Resource Identifiers (URIs, aka URLs) are short strings that identify resources in the web: documents, images, downloadable files, services, electronic mailboxes, and other resources.	**W3C**
UXF	Unified Modeling Language eXchange Format	UXF (UML eXchange Format) is a XML-based model interchange format for UML (Unified Modeling Language), which is a standard software modeling language by Object Management Group.	**Department of Computer Science, Graduate school of Science and Technology, Keio University, JAPAN**
VML	Vector Markup Language	The Vector Markup Language (VML) is an application of Extensible Markup Language (XML) 1.0 which defines a format for the encoding of vector information together with additional markup to describe how that information may be displayed and edited.	**W3C**
vCalendar	Virtual Card	vCalendar defines a transport and platform-independent format for exchanging calendaring and scheduling information in an easy, automated, and consistent manner. It captures information about event and "to-do" items that are normally used by applications such as a personal information managers (PIMs) and group schedulers.	**Internet Engineering Task Force (IETF)**
vCard	Virtual Card	vCard automates the exchange of personal information typically found on a traditional business card.	**Internet Engineering Task Force (IETF)**
VCML	Value Chain Markup Language	The VCMLTM, or Value Chain Markup Language, is a comprehensive set of XML-based, industry-specific vocabularies and documents required to conduct business over the Internet. The VCML transaction sets provide an XML representation of industry-specific EDI transactions, allowing industry members to leverage their existing business rules and semantics for Internet-based electronic transaction exchange.	**Value Chain Markup Language**
VHG	Virtual Hyperglossary	The VHG is a novel, simple approach to increasing knowledge creation and retrieval on the Web.	**Virtual Hyperglossary**
VIML	Virtual Instruments Markup Language	The Virtual Instruments Markup Language (VIML) is DTD for describing location, protocol and device information for a network of virtual instrumentation devices and/or systems.	**Nacimiento, Inc.**
VISA XML Invoice	VISA, Inc. XML Invoice Specification	The Visa Global XML Invoice Specification is a new specification that will dramatically increase a corporation's ability to automate business-to-business (B2B) purchasing functions and monitor travel and entertainment (T&E) expenses worldwide. The specification contains a comprehensive list of data elements contained in most invoices, including: Buyer/Supplier, Shipping, Tax, Payment, Currency, Discount, and Line Item Detail.	**VISA, Inc.**
VMML	Virtual Music Markup Language	The Virtual Music Markup Language (VMML) represents a musical score.	**Virtual Music Markup Language**
VocML	Vocabulary Markup Language	The Vocabulary Markup Language (VocML) supports the structured representation of a wide range of KOS resources, "including authority files, hierarchical thesauri (including those with poly-hierarchies), classification schemes, digital gazetteers, and subject heading lists."	**The Networked Knowledge Organization Systems/Services (NKOS) Working Group**
VoiceXML	Voice eXtensible Markup Language	Voice eXtensible Markup Language (VoiceXML) is a new standard essential to making Internet content and information accessible via voice and phone.	**VoiceXML Forum**

STANDARD	NAME	DESCRIPTION	DEVELOPER
VRML (X3D)	Virtual Reality Markup Language (Estensible 3D)	The Virtual Reality Markup Language (VRML) (now Extensible 3D (X3D)) is a software standard for defining interactive web- and broadcast-based 3D content integrated with multimedia.	**Web3D Consortium**
WAP (WML)	Wireless Markup Language	WML is a markup language based on [XML] and is intended for use in specifying content and user interface for narrowband devices, including cellular phones and pagers.	**Open Mobile Alliance Ltd.**
WDDX	Web Data Distributed eXchange	WDDX is an XML-based technology that enables the exchange of complex data between Web programming languages, creating what some refer to as 'Web syndicate networks'.	**OpenWDDX**
WebML	Web Modeling Language	Web Modeling Language (WebML) is a notation for specifying complex Web sites at the conceptual level.	**Dipartimento di Elettronica e Informazione Poltecnico di Milano ITALY**
WebDAV	Web Distributed Authoring and Versioning	The goal of this working group is to define extensions to the Hypertext Transfer Protocol (HTTP) that enable remote collaborative authoring of Web resources.	**Internet Engineering Task Force (IETF)**
WellHeader ML	Well Header Markup Language	Well Header Markup Language (WellHeaderML) contains basic well information data exchange standards with an evolving global base schema and country by country profile schemas.	**Petrochemical Open Software Corporation (POSC)**
WellLogML	Well Log Markup Language	Well Log Markup Language (WellLogML) contains well log data exchange standards with XML schema suitable for all forms of acquired, processed, and interpreted well logs.	**Petrochemical Open Software Corporation (POSC)**
WeldingXML	Welding Markup Language	A set of welding terms that describe processes and process variables. Some definitions come from AWS specifications.	**National Institute of Standards and Technology (NIST)**
Wf-XML	WXML-Based Workflow [Process Management] Standard: Wf-XML	Wf-XML is an XML-based variant of the WfMC Interoperability Interface which can work with HTTP or a number of other transport mechanisms.	**Workflow Management Coalition**
WIDL	Web Interface Definition Language	The Web Interface Definition Language (WIDL) is a metalanguage that implements a service-based architecture over the document-based resources of the World Wide Web.	**WebMethods, Inc., W3C**
WITSML	Wellsite Information Transfer Standard Markup Language	The Wellsite Information Transfer Standard Markup Language (WITSML) describes drilling information transfer – the "right time" seamless flow of well site data between operators and service companies to speed and enhance decision-making.	**Petrochemical Open Software Corporation (POSC)**
WorldOS	World Operating System	WorldOS is a framework for distributed applications, comprised of an XML oriented application server and tools for peer routing similar to Freenet or Gnutella.	**WorldOS**
WSML	Web Services Description Language	WSDL is an XML format for describing network services as a set of endpoints operating on messages containing either document-oriented or procedure-oriented information. The operations and messages are described abstractly, and then bound to a concrete network protocol and message format to define an endpoint.	**W3C**
WSIA	Web Services for Interactive Applications	Create an XML and web services centric component model for interactive web applications.	**OASIS**
XML	Extensible Markup Language	The Extensible Markup Language (XML) is the universal format for structured documents and data on the Web.	**W3C**

STANDARD	NAME	DESCRIPTION	DEVELOPER
XML Base	Extensible Markup Language Base	A facility, similar to that of HTML BASE, for defining base URIs for parts of XML documents.	**W3C**
XML Court Exchange	Extensible Markup Language for Court Information	The eXtensible Markup Language forecourt management database systems in the United States.	**National Center for State Courts Court Technology Laboratory**
XML EDI	XML for Electronic Data Interchange (EDI)	XML for Electronic Data Interchange (EDI).	**XML/EDI Group**
XML Encryption	Extensible Markup Language Encryption	A process for encrypting/decrypting digital content (including XML documents and portions thereof) and an XML syntax used to represent the (1) encrypted content and (2) information that enables an intended recipient to decrypt it.	**W3C**
XML F	XML for FAX	XML-F is proposing a set of DTDs for network fax transactions. This interface is a simple, powerful means of passing fax transactions to and from fax servers.	**Esker Software, Inc.**
XML Key Management	Extensible Markup Language Key Management	A specification of XML application/protocol that allows a simple client to obtain key information (values, certificates, management or trust data) from a web service.	**W3C**
XMLife	XML for Life Insurance	A translation of the ACORD Life Data Model into XML.	**Acord**
XML MP	XML for Mortgage Partners	XML Mortgage Partners, Inc., was originally formed to provide a non-proprietary common business language to benefit the mortgage industry.	**XML Mortgage Partners (XML-MP)**
XML News	News Markup Language	XMLNews transmit data about any kind of news object, whether textual (such as an XMLNews-Story document) or non-textual (such as an image or audio clip) in the same, standard format.	**XML News**
XML RPC	Extensible Markup Language Remote Procedure Call	XML-RPC is a specification and a set of implementations that allow software running on disparate operating systems, running in different environments to make procedure calls over the Internet.	**XML-RPC**
XML Schema	Extensible Markup Language Schema	XML Schemas express shared vocabularies and allow machines to carry out rules made by people. They provide a means for defining the structure, content and semantics of XML documents.	**W3C**
XML Signature	Extensible Markup Language Signature	An XML compliant syntax used for representing the signature of Web resources and portions of protocol messages (anything referencable by a URI) and procedures for computing and verifying such signatures.	**W3C**
XML Query	Extensible Markup Language Query	A flexible query facilities to extract data from real and virtual documents on the Web, therefore finally providing the needed interaction between the web world and the database world. Ultimately, collections of XML files will be accessed like databases.	**W3C**
XML P&C	Extensible Markup Language for Property & Casualty	The ACORD XML for P&C standard addresses the industry's real-time requirements. It defines P&C transactions that include both request and response messages for Accounting, Claims, Personal Lines, Commercial Lines, Specialty Lines and Surety transactions.	**Acord**
XML TP	XML Transfer Protocol	XML Transfer Protocol (XMLTP) is a common protocol for sending and executing upon XML data.	**XML Transfer Protocol**

STANDARD	NAME	DESCRIPTION	DEVELOPER
XMLVoc	Vocabulary for XML Standards and Technologies	Define a vocabulary for the domain of XML standards and technologies, which will provide a reference set of topics, topic types, and association types that will enable common access layers and thus improved findability for all types of information relating to XML, related standards, and the XML community.	**OASIS**
XML XCI	XML Court Interface Transaction	The US District Court, District of New Mexico was an early pioneer of electronic filing via the Internet. The first pilot was begun in the summer of 1994.	**US District Court, District of New Mexico**
XAML	Authority Markup Language	Transaction Authority Markup Language (XAML) is a vendor-neutral standard that enables the coordination and processing of online transactions in the rapidly emerging world of XML web services.	**Transaction Authority Markup Language Consortium**
XACML	eXtensible Access Control Markup Language	An XML specification for expressing policies for information access over the Internet.	**OASIS**
XBL	Extensible Binding Language	XBL is a markup language for describing bindings that can be attached to elements in other documents.	**The Mozilla Organization**
XBEL	XML Bookmark Exchange Language	The XML Bookmark Exchange Language, or XBEL, is an Internet "bookmarks" interchange format.	**Python XML-SIG**
XBN	XML Belief Network File Format	XBN is a Bayesian Network Interchange Format (BNIF) to promote collaboration among investigators in the Uncertainty and Artificial Intelligence (UAI) community.	**Microsoft, Inc. Research**
XBRL	eXtensible Business Reporting Language	XBRL (eXtensible Business Reporting Language) is a royalty-free, open specification for software that uses XML data tags to describe financial information for public and private companies and other organizations. XBRL benefits all members of the financial information supply chain.	**XBRL**
XCBF	XML Common Biometric Format	The XCBF will define a common set of secure XML encodings for the patron formats specified in CBEFF, the Common Biometric Exchange File Format (NISTIR 6529). These XML encodings will be based on the ASN.1 schema defined in ANS X9.84 Biometrics Information Management and Security.	**OASIS**
XCES	XML Corpus Encoding Standard	XCEX instantiates the Corpus Encoding Standard (CES) DTDs for linguistic corpora developed by the Expert Advisory Group for Language Engineering Standards (EAGLES).	**Expert Advisory Group for Language Engineering Standards (EAGLES)**
XChart	XML Chart	XChart is the Open Healthcare Group's XML-based open source electronic healthcare system.	**Open Healthcare Group XML Description**
XDelta	XML Description Language for Taxonomy	An XML file format (working title XDELTA), derived from the DELTA (DEscription Language for TAxonomy) standard.	**Language for Taxonomy**
XDF	eXtensible Data Format	An XDF document contains N-dimensional arrays of data with associated spatial information. It is of archival quality and for interchange. Tables and scalar or vector fields are represented in a consistent way and become thoroughly self describing.	**NASA Goddard Space Flight Center (GSFC)**
XFDL (see XForms)	Extensible Forms Description Language	XFDL provides a key component of business-to-business e-commerce solutions: the ability to securely send and receive legally-binding XML documents.	**W3C**

STANDARD	NAME	DESCRIPTION	DEVELOPER
XForms	Extensible Forms	XForms is an XML application that represents the next generation of forms for the Web. By splitting traditional XHTML forms into three parts—XForms model, instance data, and user interface—it separates presentation from content, allows reuse, gives strong typing—reducing the number of round-trips to the server, as well as offering device independence and a reduced need for scripting.	**W3C**
XGF	eXtensible Game Format	The eXtensible Game Format (XGF) store game records of board games for two players.	**XGF**
XGL	XML for OpenGL	The XGL file format is designed to represent 3D information for the purpose of visualization.	**XGL**
XGMML	eXtensible Graph Markup and Modeling Language	XGMML (eXtensible Graph Markup and Modeling Language) is an XML application based on GML which is used for graph description.	**Department of Computer Science, Rensselaer Polytechnic Institute**
XHTML	eXtensible HyperText Markup Language	The eXtensible HyperText Markup Language is a reformulation of HTML 4 as an XML 1.0 application, and three DTDs corresponding to the ones defined by HTML 4.	**W3C**
XIOP	XML Inter-ORB Protocol	XIOP, an open and freely available Corba EISOP, (Environment-Specific Inter-ORB Protocol), and a GIOP compliant mapping using HTTP 1,1 as communication protocol and XML 1.0 as content encoding.	**XML Inter-ORB Protocol**
XLF	eXtensible Log File	XLF is XML-based Log Format designed to be extensible and universal.	**XLF Initiative**
XLIFF	XML Localization Interchange File Format	Advancing XLIFF, an XML specification for multi-lingual data exchange.	**OASIS**
XLink	XML Linking Language	XML Linking Language (XLink), which allows elements to be inserted into XML documents in order to create and describe links between resource.	**W3C**
XMI	XML Metadata Interchange	The main purpose of XMI is to enable easy interchange of metadata between modeling tools (based on the OMG UML) and metadata repositories (OMG MOF based) in distributed heterogeneous environments.	**Object Management Group (OMG)**
XMSG	XML Messaging Specification	XMSG is a specification for using XML to send messages that contain a set of XML documents, embedded non-XML data, and references to non-XML documents in a fashion that supports scalable transactions and operates on a participant model.	**W3C**
XMTP	XML MIME Transformation Protocol	The XML MIME Transformation Protocol (XMTP) is a mapping of MIME/SMTP to XML.	**Open Health**
XNS	eXtensible Name Service	The XNS (eXtensible Name Service) is a protocol for universal addressing, automated data exchange, and privacy control.	**XNS Public Trust Organization**
XOL	XML Ontology Exchange Language	XOL is an XML-based ontology-exchange language. Although XOL was designed for exchange of bioinformatics ontologies, it can be used for ontologies in any domain.	**Artificial Intelligence Center, SRI International**
XPath	Extensible Markup Language Path Language	XPath is a language for addressing parts of an XML document, designed to be used by both XSLT and XPointer.	**W3C**

STANDARD	NAME	DESCRIPTION	DEVELOPER
XPointer	Extensible Markup Language Pointer	This specification defines the XML Linking Language (XLink), which allows elements to be inserted into XML documents in order to create and describe links between resources. It uses XML syntax to create structures that can describe the simple unidirectional hyperlinks of today's HTML, as well as more sophisticated links.	**W3C**
XPP (ProseXML)	XML for Press and Printers (XPP)	XPP, which stands for "XML for Publishers and Printers," is a powerful and contemporary tool to facilitate publisher-to-printer technical data transfer.	**IDEAlliance**
XRL	Exchangeable Routing Language	The eXchangable Routing Language can be used to support flexible routing of documents in the Internet environment.	**College of Business and Administration, University of Colorado; Faculty of Technology and Management, Eindhoven University of Technology, The Netherlands**
XRML	eXtensible Rights Markup Language	XrML supports the publishing and sales of digital material as well as access and use controls for the non-financial exchange of secure digital content.	**eXtensible Rights Markup Language (XRML) Initiative, XEROX PARC/ ContentGuard, OASIS**
XScore	eXtensible Score Language	The eXtensible Score Language (XScore) describes musical scores and capturing both their structure and content.	**XScore**
XSET	XML Property Set Description	XSet is an XML property set description of XML 1.0 and XML namespaces. The description is a result of translating the Extended Backus-Naur Form (EBNF) productions into an XML language: the production rule language (PRL).	**Open Health**
XSL	Extensible Stylesheet Language	XSL is a language for expressing stylesheets. It consists of three parts: XSL Transformations (XSLT): a language for transforming XML documents, the XML Path Language (XPath), an expression language used by XSLT to access or refer to parts of an XML document. (XPath is also used by the XML Linking specification).	**W3C**
XSLT	Extensible Stylesheet Language Transformations	XSL is a language for expressing stylesheets. It consists of three parts: XSL Transformations (XSLT): a language for transforming XML documents, the XML Path Language (XPath), an expression language used by XSLT to access or refer to parts of an XML document. (XPath is also used by the XML Linking specification).	**W3C**
XSIL	eXtensible Scientific Interchange Language	The Extensible Scientific Interchange Language (XSIL) is a flexible, hierarchical, extensible, transport language for scientific data objects.	**Caltech Center for Advanced Computing Research, Projects and Collaborations (CACR)**
XTBML	Extensible Tabular Markup Language	A structure for creating any-dimensional tabular data (such as rate tables for life insurance).	**Acord**
XTM	eXtensible Markup Language Topic Map	The eXtensible Markup Language Topic Map (XTM) "provides a standardized notation for interchangeably representing information about the structure of information resources used to define topics, and the relationships between topics.	**Topic Maps Organization**
XUL	Extensible User Interface Language	XUL is an application of XML used to describe the layout of most windows in the Mozilla browser, including and especially the main, browser window.	**The Mozilla Organization**
YML	Why Markup Language	The Why Markup Language (YML) is an extension of the Simple Markup Language (SML), which attempts to unify the XML document object model ("DOM") and the simple application programming interface for XML ("SAX").	**Clark Evans**

STANDARD	NAME	DESCRIPTION	DEVELOPER
YAML	Yet Another Markup Language	YAML(tm) is a straightforward machine parsable data serialization format designed for human readability and interaction with scripting languages such as Perl and Python. YAML is optimized for data serialization, configuration settings, log files, Internet messaging and filtering.	**YAML**
zsqlML	Zenark Simple Query Language Markup Language	XML Schema/DTD for the definition of relational database structure.	**Zenark**

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