Ontario

Government of Ontario

Information

&

Technology

Standards

Government of Ontario IT Standard (GO-ITS)
Number 24.1
Omnibus Information and Content Standard

Version # : 1.0
Status: APPROVED

Prepared for the Information Technology Standards Council (ITSC) under the delegated
authority of the Management Board of Cabinet

Last Review Date: 2008-01-16
Next Review Date: 2008-07

Foreword

Government of Ontario Information Technology Standards (GO-ITS) are the official publications on the guidelines, preferred practices, standards and technical reports adopted by the Information Technology Standards Council (ITSC) under delegated authority of the Management Board of Cabinet (MBC). These publications support the responsibilities of the Ministry of Government and Consumer Services (MGCS) for coordinating standardization of Information & Information Technology (I&IT) in the Government of Ontario. Publications that set new or revised standards provide enterprise architecture guidance, policy guidance and administrative information for their implementation. In particular, GO-ITS describe where the application of a standard is mandatory and specify any qualifications governing the implementation of standards.

Table of Contents

1. Introduction

1.1 Background and Purpose

The Omnibus standards; 24.0, 24.1 and 24.2 provide the foundation for the realization of an open and interoperable I&IT environment in the OPS. Each of the Omnibus standards promotes the use of open standards developed by recognized standards development organizations and consortiums. They each provide an integrated set of standards designed to work together to support solution interoperability within the two standardized OPS environments (.NET and Java).

Omnibus 24.2 defines the technical environment for networking and connectivity. Omnibus 24.0 defines a web services interface environment and 24.1 defines the information, content and presentation environment. Together these standards position the OPS to take advantage of Service Oriented Architecture (SOA) frameworks in the future, which hold the greatest potential for lowering integration costs and increasing flexibility across multiple solutions in a shared (consolidated) infrastructure environment.

The Omnibus standards align with, and are designed to be implemented with, other important Government of Ontario IT Standards including **GO-ITS 54** *Application Development Standard* which specifies application development requirements in the OPS, **GO-ITS 20.1** *Platform Software Standard* which defines the two OPS standardized IT environments (.NET and Java), and **GO-ITS 23.1** *Government of Ontario Public Web Standard.*

1.2 Target Audience

GO-ITS 24 Omnibus Standards apply to all Government of Ontario technology solutions providers, application development and integration.

1.3 Scope

This standard focuses on interoperability standards that deal with the structure, description, and presentation of information and content. Other standards that impact interoperability will be addressed by other GO-ITS documents.

1.3.1 In Scope

- Technical standards from recognized national and international Standards Development Organizations (SDOs)

1.3.2 Out of Scope

- Architecture best practices, frameworks, governance, methodologies and principles related to Service-Oriented Architecture (SOA)
- Information use, retention, disclosure and disposal policies, regulations or statutes that apply to the OPS, as well as any information asset safeguarding requirements of the OPS (e.g., Statutes, legislation, regulations or OPS-specific directives or standards regarding I&IT security and privacy)
- Monitoring and compliance mechanisms for adherence to this standards document
- Service Level Agreements (SLAs), performance metrics and quality assurance measures

1.4 Applicability Statements

1.4.1 Organization

Government of Ontario IT Standards and Enterprise Solutions and Services apply (are mandatory) for use by all ministries/clusters and to all former Schedule I and IV provincial government agencies under their present classification (Advisory, Regulatory, Adjudicative, Operational Service, Operational Enterprise, Trust or Crown Foundation) according to the current agency classification system.

Additionally, this applies to any other new or existing agencies designated by Management Board of Cabinet as being subject to such publications, i.e. the GO-ITS publications and enterprise products - and particularly applies to Advisory, Regulatory, and Adjudicative Agencies (see also procurement link, OPS paragraph). Further included is any agency which, under the terms of its Memorandum of Understanding with its responsible Minister, is required to satisfy the mandatory requirements set out in any of the Management Board of Cabinet Directives (*cf.* Operational Service, Operational Enterprise, Trust, or Crown Foundation Agencies).

As new GO-IT standards are approved, they are deemed mandatory on a go-forward basis (Go-forward basis means at the next available project development or procurement opportunity).

When implementing or adopting any Government of Ontario IT standards or IT standards updates, ministries and I&IT Cluster must follow their organization's pre-approved policies and practices for ensuring that adequate change control, change management and risk mitigation mechanisms are in place and employed.

For the purposes of this document, any reference to ministries or the Government includes applicable agencies.

Refer to section 2.0 *Compliance Requirements* for more information.

1.5 Requirements Levels

Within this document, certain wording conventions are followed. There are precise requirements and obligations associated with the following terms:

Must	This word, or the terms "REQUIRED" or "SHALL", means that the statement is an absolute requirement.
Should	This word, or the adjective "RECOMMENDED", means that there may exist valid reasons in particular circumstances to ignore the recommendation, but the full implications (e.g., business functionality, security, cost) must be understood and carefully weighed before

1.6 Recommended Versioning and/or Change Management

Each of the three Omnibus Standards package together many inter-related standards that have developed by several different standards development organizations and consortiums. The individual standards development organizations will each be monitored for changes (minor and substantive) to their respective standards and specifications on a regular basis, every 6 months. As they evolve, the Omnibus standard that references them will also be updated to reflect the changes. When the changes collectively, reach a stage where they have a material impact on the implementation of the standard, then the respective Omnibus standard will be brought forward to Information Technology Standards Council (ITSC) and the Architecture Review Board (ARB) for review and approval, as per the approved governance process for all Government of Ontario IT Standards (GO-ITS).

It is important to note that, as with all GO-ITS, the Omnibus standards are meant to align with, and support other, related GO-ITS such as the **GO-ITS 20.1 *Platform Software Standard***, therefore if there are updates made to related standards this may also trigger updates to the Omnibus standards.

1.7 Publication Details

All approved Government of Ontario IT Standards (GO-ITS) are published on the ITSC Intranet web site. Please indicate with a checkmark below if this standard is also to be published on the public, GO-ITS Internet Site.

Standard to be published on both the OPS Intranet and the GO-ITS Internet web site (available to the public, vendors etc.)	☑

2. Compliance Requirements

All OPS projects/solutions proceeding through the Corporate Gating Process must demonstrate their alignment with the key technology standards outlined in this document.

Section 3.0 of this document lists standards that are relevant to the presentation of information and other content.

The implementation of the presentation, information and content standards must align with the standards outlined in **GO-ITS 23.1 *Government of Ontario Public Web Standard*.**

Note: Accessibility for Ontarians with Disabilities Act (AODA)

The Accessibility for Ontarians with Disabilities Act is legislation that requires all project teams to consider the requirements of Ontarians with disabilities. The Act focuses on ensuring accessibility for all users.

Each of the standards listed in this document are subject to compliance with the AODA.

3. Mandatory Requirements

3.1 Mark-up Languages and Metadata

3.1.1 XML

The Extensible Markup Language (XML) is a general-purpose markup language. It is classified as an extensible language because it allows its users to define their own tags. Its primary purpose is to facilitate the sharing of structured data across different information systems, particularly via the Internet. It is used both to encode documents and serialize data.

There are two levels of correctness of an XML document::

- Well-formed. A well-formed document conforms to all of XML's syntax rules. For example, if an element has an opening tag with no closing tag and is not self-closing, it is not well-formed. A document that is not well-formed is not considered to be XML; a conforming parser is not allowed to process it.
- Valid. A valid document additionally conforms to some semantic rules. These rules are either user-defined, or included as an XML schema or DTD. For example, if a document contains an undefined tag, then it is not valid; a validating parser is not allowed to process it.

XML is a mark-up language for documents containing structured information.

Structured information contains both content (words, pictures, etc.) and some indication of what role that content plays (for example, content in a section heading has a different meaning from content in a footnote, which means something different than content in a figure caption or content in a database table, etc.). Almost all documents have some structure.

A mark-up language is a mechanism to identify structures in a document. The XML specification defines a standard way to add mark-up to documents.

The current XML standards for the OPS are specified in **GO-ITS 26** *XML Family of Specifications*. The specifications listed below are provided for context and reference.

3.1.1.1 eXtensible Mark-up Language (XML) Version 1.1 Second Edition

Title   eXtensible Mark-up Language (XML)
Version   1.1, Second Edition
Sponsor   W3C

Description
The Extensible Mark-up Language (XML) is a subset of SGML that is designed to enable generic SGML to be served, received, and processed on the Web in the way that is now possible with HTML. XML has been designed for ease of implementation and for interoperability with both SGML and HTML.

XML documents are made up of storage units called entities, which contain either parsed or unparsed data. Parsed data is made up of characters, some of which form character data, and some of which form mark-up. Mark-up encodes a description of the document's storage layout and logical structure. XML provides a mechanism to impose constraints on the storage layout and logical structure.

Scope

All applications using XML.

Business Value
XML was created so that richly structured documents could be used over the web. The only viable alternatives, HTML and SGML, are not practical for this purpose.

Industry Standards   http://www.w3.org/TR/xml11
Tools and Support   http://www.w3.org/TR/2006/REC-xml11-20060816
Publication Date   2006-08-16

Additional XML Specifications:

> eXtensible Mark-up Language (XML) Schema 1.1
> eXtensible Mark-up Language (XML) Base
> Canonical eXtensible Mark-up Language (XML) Version 1.1
> Decryption Transform for XML Signature
> eXtensible Mark-up Language (XML) Information Set (Infoset) - Second Edition
> eXtensible Mark-up Language (XML) Namespaces Version 1.1 Second Edition
> eXtensible Mark-up Language (XML) Path Language (XPath) Version 2.0
> XPointer Framework
> XPointer element Scheme
> XPointer xmlns Scheme
> eXtensible Style Sheet Transformations (XSLT) Version 2.0
> Simple API for XML (SAX) Version 2.0.2
> eXtensible HyperText Mark-up Language (XHTML)
> eXtensible Hypertext Mark-up Language – Module-based XHTML 1.1 Second Edition
> eXtensible Hypertext Mark-up Language (XHTML) Basic 1.1

3.1.2 Hypertext Mark-up Language (HTML) Version 4.01 Specification

Title   Hypertext Mark-up Language
Version   4.01
Sponsor   W3C, ISO

Description
This specification defines the HyperText Mark-up Language (HTML), the publishing language of the World Wide Web. This specification defines HTML 4.01, which is a subversion of HTML 4. HTML 4 is an SGML application conforming to International Standard ISO 8879 -- Standard Generalized Mark-up Language.

HTML gives authors the means to:

- Publish online documents with headings, text, tables, lists, photos, etc.
- Retrieve online information via hypertext links, at the click of a button.
- Design forms for conducting transactions with remote services, for use in searching for information, making reservations, ordering products, etc.
- Include spread-sheets, video clips, sound clips, and other applications directly in their documents.

The language reference consists of the following information:

- What characters may appear in an HTML document.
- Basic data types of an HTML document.

- Elements that govern the structure of an HTML document, including text, lists, tables, links, and included objects, images, and applets.
- Elements that govern the presentation of an HTML document, including style sheets, fonts, colors, rules, and other visual presentation, and frames for multi-windowed presentations.
- Elements that govern interactivity with an HTML document, including forms for user input and scripts for active documents.
- The SGML formal definition of HTML:
    - The SGML declaration of HTML.
    - Three DTDs: strict, transitional, and frameset.
    - The list of character references.

Scope
All HTML pages.

Business Value
The HTML specification supports the development of efficient, attractive and accessible documents while masking the back-end complexity. The specification also simplifies the development of conforming user agents. HTML 4.01 specifically adds support for additional multimedia options, scripting languages, style sheets, better printing facilities and documents that are more accessible to users with disabilities.

Industry Standards   http://www.w3.org/TR/html401
Tools and Support   http://www.w3.org/TR/1999/REC-html401-19991224
Publication Date   1999-12-24

3.1.3 Dublin Core Metadata Element Set (DCMES) Version 1.1

Title   Dublin Core Metadata Element Set
Version   1.1
Sponsor   ISO

Description
The Dublin Core metadata element set is a standard for cross-domain information resource description. It provides a simple and standardised set of conventions for describing things online in ways that make them easier to find. Dublin Core is widely used to describe digital materials such as video, sound, image, text, and composite media like web pages. Implementations of Dublin Core typically make use of XML and are based on the Resource Description Framework.

The Simple Dublin Core Metadata Element Set (DCMES) consists of 15 metadata elements:

- Title
- Creator
- Subject
- Description
- Publisher
- Contributor
- Date
- Type
- Format
- Identifier
- Source
- Language
- Relation
- Coverage

- Rights

Each Dublin Core element is optional and may be repeated. There are standard ways to refine elements and encourage the use of encoding and vocabulary schemes. There is no prescribed order in Dublin Core for presenting or using the elements.

Scope
All I&IT solutions.

Business Value
Use of the DCMES makes digital information and content easier to find and share across an IT infrastructure.

Industry Standards   http://dublincore.org/documents/dces/
Tools and Support   http://dublincore.org/resources/expressions/
Publication Date   2006-12-18

3.2 Presentation

3.2.1 Cascading Style Sheets Level 2, Revision 1

Title   Cascading Style Sheets
Version   Level 2 Revision 1 Specification
Sponsor   W3C

Description
Cascading Style Sheets (CSS) are a simple mechanism for adding style (e.g. fonts, colors, spacing) to Web documents. The Cascading Style Sheet (CSS) technology simplifies web design and web authoring by separating the presentation mark-up from the web content.

Scope
All J2EE-based web pages.

Business Value
The use of cascading style sheets simplifies the maintenance and upkeep of web pages by separating the presentation layer from the content. CSS also allows for greater consistency in the user experience by standardising elements of the look-and-feel.

Industry Standards   http://www.w3.org/TR/2007/CR-CSS21-20070719/
Tools and Support   http://www.w3.org/TR/CSS21/
Publication Date   1998-05-12

3.2.2 Associating Style Sheets with XML Documents Version 1.0

Title   Associating Style Sheets with XML Documents
Version   1.0
Sponsor   W3C

Description
This document allows a style sheet to be associated with an XML document by including one or more processing instructions with a target of xml-stylesheet in the document's prologue.

CSS stylesheets are primarily intended for use in web pages. Web browsers find the stylesheet for a document by looking for xml-stylesheet processing instructions in the prologue of the XML document. This processing instruction should have a type pseudo-attribute with the value text/css and an href pseudo-attribute whose value is an absolute or relative URL locating the stylesheet document.

Style Sheets can be associated with an XML document by using a processing instruction whose target is xml-stylesheet. This processing instruction follows the behaviour of the HTML 4.0.

The xml-stylesheet processing instruction is parsed in the same way as a start-tag, with the exception that entities other than predefined entities must not be referenced.

Scope
All applications where XML is used.

Business Value
This specification allows for stylesheets to be associated with an XML document for the purpose of presenting a common and consistent user experience.

3.2.3 eXtensible Stylesheet Language (XSL) Version 1.1

Title   eXtensible Stylesheet Language (XSL)
Version   1.1
Sponsor   W3C

Description
This specification defines the features and syntax for the Extensible Stylesheet Language (XSL), a language for expressing stylesheets.

The eXtensible Stylesheet Language (XSL) is a family of transformation languages which allows one to describe how files encoded in the XML standard are to be formatted or transformed. There are three languages in the family:

1. XSL Transformations (XSLT): an XML language for transforming XML documents
2. XSL Formatting Objects (XSL-FO): an XML language for specifying the visual formatting of an XML document
3. XML Path Language (XPath): a non-XML language used by XSLT, and also available for use in non-XSLT contexts, for addressing the parts of an XML document.

This specification consists of two parts:

1. A language for transforming XML documents (XSLT), and
2. An XML vocabulary for specifying formatting semantics.

An XSL stylesheet specifies the presentation of a class of XML documents by describing how an instance of the class is transformed into an XML document that uses the formatting vocabulary.

Designers use an XSL stylesheet to express their intentions about how that structured content should be presented; that is, how the source content should be styled, laid out, and paginated onto some presentation medium, such as a window in a Web browser or a hand-held device, or a set of physical pages in a catalog, report, pamphlet, or book.

Scope
All applications where XML is used.

Business Value
This specification allows the separation of presentation from content, and provides a simple way of ensuring a common and consistent presentation of content across multiple pages.

Industry Standards   http://www.w3.org/TR/xsl11/
Tools and Support   http://www.w3schools.com/xsl/
Publication Date   2006-12-05

3.2.4 Web Accessibility Initiative

3.2.4.1 User Agent Accessibility Guidelines 1.0

Title   User Agent Accessibility Guidelines
Version   1.0
Sponsor   W3C

Description
This document provides guidelines for designing user agents that lower barriers to Web accessibility for people with disabilities (visual, hearing, physical, cognitive, and neurological). User agents include HTML browsers and other types of software that retrieve and render Web content.

There are 12 guidelines included in this specification:

1. Support input and output device-independence
2. Ensure user access to all content
3. Allow configuration not to render some content that may reduce accessibility
4. Ensure user control of rendering
5. Ensure user control of user interface behavior
6. Implement interoperable application programming interfaces
7. Observe operating environment conventions
8. Implement specifications that benefit accessibility
9. Provide navigation mechanisms
10. Orient the user
11. Allow configuration and customization
12. Provide accessible user agent documentation and help

Scope
All web-based content.

Business Value
This specification will improve accessibility through its own interface, and furthermore will enable communication with assistive technologies such as screen magnifiers and voice synthesizers.

Industry Standards   http://www.w3.org/TR/UAAG10/
Tools and Support   http://www.w3.org/WAI/
Publication Date   2002-12-17

3.2.4.2 Web Content Accessibility Guidelines 2.0

Title   Web Content Accessibility Guidelines
Version   2.0
Sponsor   W3C

Description
This specification covers a wide range of recommendations for making Web content more accessible. WCAG 2.0 provides requirements for making Web content more accessible to a wide range of people with disabilities, including blindness and low vision, deafness and hearing loss, learning disabilities, cognitive limitations, limited movement, speech disabilities, and others. Because many people develop vision, hearing, cognitive or motion impairments as they age, following these guidelines will make your Web content more usable by many older users. However, even content that completely conforms to WCAG may not be fully accessible to every person with a disability.

Scope
All web-based applications.

Business Value
Following these guidelines will make content accessible to a wider range of people with disabilities, including blindness and low vision, deafness and hearing loss, learning disabilities, cognitive limitations, limited movement, speech difficulties, photosensitivity and combinations of these. Following these guidelines will also make your Web content more accessible to the vast majority of users, including some older users.

Industry Standards   http://www.w3.org/TR/WCAG20/
Tools and Support   http://www.w3.org/WAI/
Publication Date   2007-05-17

3.2.4.3 Authoring Tool Accessibility Guidelines 2.0

Title   Authoring Tool Accessibility Guidelines
Version   2.0
Sponsor   W3C

Description
This specification provides guidelines for designing Web content authoring tools that are more accessible for people with disabilities. "Authoring Tool Accessibility Guidelines 2.0" (ATAG 2.0) is part of a series of accessibility guidelines published by the W3C Web Accessibility Initiative (WAI). The guiding principle of ATAG 2.0 is that:

Everyone should have the ability to create and access Web content.

This specification includes recommendations for assisting authoring tool developers to make their tools (and the Web content that the tools generate) more accessible to all people, especially people with disabilities, who may potentially be either authors or end users. These guidelines have been written to address the requirements of many different audiences, including, but not limited to: policy makers, technical administrators, and those who develop or manage content. An attempt has been made to make this document as readable and usable as possible for that diverse audience, while still retaining the accuracy and clarity needed in a technical specification.

Scope
All web-based content development tools.

Business Value
An authoring tool that conforms to these guidelines will promote accessibility by providing an accessible user interface to authors with disabilities as well as enabling, supporting, and promoting the production of accessible Web content by all authors.

Industry Standards   http://www.w3.org/TR/ATAG20/
Tools and Support   http://www.w3.org/WAI/
Publication Date   2006-12-07

3.3 Information and Content

3.3.1 Speech and Voice Standards

3.3.1.1 Speech Synthesis Mark-up Language (SSML) Version 1.0

Title   Speech Synthesis Mark-up Language
Version   1.0
Sponsor   W3C

Description
The Speech Synthesis Mark-up Language Specification is a standard designed to provide a rich, XML-based mark-up language for assisting the generation of synthetic speech in Web and other applications. The essential role of the mark-up language is to provide authors of synthesizable content a standard way to control aspects of speech such as pronunciation, volume, pitch, rate, etc. across different synthesis-capable platforms. This specification is based upon the JSGF and/or JSML specifications, which are owned by Sun Microsystems, Inc., California, U.S.A.

Scope
All applications providing synthesized speech.

Business Value
The use of SSML elevates the role of high-quality synthesized speech in Web interactions, and allows application developers to achieve both coarse- and fine-grain control of important aspects of speech synthesis, including pronunciation, volume, and pitch. SSML is built for integration with other Web technologies and to promote interoperability across different synthesis-capable platforms.

Industry Standards   http://www.w3.org/TR/speech-synthesis/
Tools and Support   http://www.w3.org/Voice/#intro
Publication Date   2004-09-07

3.3.1.2 Speech Recognition Grammar Specification Version 1.0

Title   Speech Recognition Grammar
Version   1.0
Sponsor   W3C

Description
This document defines syntax for representing grammars for use in speech recognition so that developers can specify the words and patterns of words to be listened for by a speech recognizer. The syntax of the grammar format is presented in two forms, an Augmented BNF Form and an XML Form. The specification makes the two representations mappable to allow automatic transformations between the two forms.

Scope
All applications using or providing speech recognition.

Business Value
This specification supports accessibility efforts by providing a consistent syntax for grammar representation so that developers can specify the words and patterns of words to be listened for by a speech recognizer.

Industry Standards   http://www.w3.org/TR/speech-grammar/
Tools and Support   http://www.w3.org/Voice/#intro

Last Review Date: 2008-01-16
                                                         Next Review Date: 2008-07

Publication Date   2004-03-16

3.3.1.3 Voice Extensible Mark-up Language (VoiceXML) Version 2.1

Title   Voice Extensible Mark-up Language
Version   2.1
Sponsor   W3C

Description
The specification describes a set of features commonly implemented by Voice Extensible Mark-up
Language platforms. This specification is designed to be fully backwards-compatible with VoiceXML 2.0.
This specification describes only the set of additional features. VoiceXML is designed for creating audio
dialogs that feature synthesized speech, digitized audio, recognition of spoken and DTMF key input,
recording of spoken input, telephony, and mixed initiative conversations. Its major goal is to bring the
advantages of Web-based development and content delivery to interactive voice response applications.

Scope
All applications generating or using voice.

Business Value
This specification allows voice applications to be developed and deployed in an analogous way to HTML for
visual applications. Just as HTML documents are interpreted by a visual web browser, VoiceXML
documents are interpreted by a voice browser.

Industry Standards   http://www.w3.org/TR/voicexml21/
Tools and Support   http://www.voicexml.org/
Publication Date   2007-06-19

3.3.2 Date and Time Formats (DTF)

Title   Date and Time Formats
Version   Not applicable
Sponsor   ISO

Description
This standard is a profile of ISO 8601, the International Standard for the representation of dates and times.
Different standards may need different levels of granularity in the date and time, so this profile defines six
levels. Standards that reference this profile should specify one or more of these granularities.

The formats are as follows. Exactly the components shown here must be present, with exactly this
punctuation. Note that the "T" appears literally in the string, to indicate the beginning of the time element, as
specified in ISO 8601.

    Year:
        YYYY (eg 1997)
    Year and month:
        YYYY-MM (eg 1997-07)
    Complete date:
        YYYY-MM-DD (eg 1997-07-16)
    Complete date plus hours and minutes:
        YYYY-MM-DDThh:mmTZD (eg 1997-07-16T19:20+01:00)
    Complete date plus hours, minutes and seconds:

YYYY-MM-DDThh:mm:ssTZD (eg 1997-07-16T19:20:30+01:00)
Complete date plus hours, minutes, seconds and a decimal fraction of a second
YYYY-MM-DDThh:mm:ss.sTZD (eg 1997-07-16T19:20:30.45+01:00)

where:

YYYY =   four-digit year
MM =   two-digit month (01=January, etc.)
DD =   two-digit day of month (01 through 31)
hh =   two digits of hour (00 through 23) (am/pm NOT allowed)
mm =   two digits of minute (00 through 59)
ss =   two digits of second (00 through 59)
s =   one or more digits representing a decimal fraction of a second
TZD =   time zone designator (Z or +hh:mm or -hh:mm)

This profile does not specify how many digits may be used to represent the decimal fraction of a second. An adopting standard that permits fractions of a second must specify both the minimum number of digits (a number greater than or equal to one) and the maximum number of digits (the maximum may be stated to be "unlimited").

Scope
All I&IT solutions.

Business Value
This standard simplifies the use and application of ISO 8601 in establishing clear, consistent, and unambiguous representation of dates and times. The profile reduces the scope for error and the complexity of software by restricting the representation of dates and times to a few formats.

Industry Standards   http://www.w3.org/TR/NOTE-datetime
Tools and Support   http://www.w3.org/TR/1998/NOTE-datetime-19980827
Publication Date   1998-08-27

3.3.3 Really Simple Syndication (RSS) Version 2.0.10

Title   Really Simple Syndication (RSS)
Version   2.0.10
Sponsor   RSS Advisory Board

Description
RSS is a Web content syndication format. Its name is an acronym for Really Simple Syndication. RSS is a family of Web feed formats used to publish frequently updated content such as blog entries, news headlines or podcasts. An RSS document, which is called a "feed," "web feed," or "channel," contains either a summary of content from an associated web site or the full text.

RSS is a dialect of XML. All RSS files must conform to the XML 1.0 specification. At the top level, a RSS document is a <rss> element, with a mandatory attribute called version, that specifies the version of RSS that the document conforms to. If it conforms to this specification, the version attribute must be 2.0.

Scope
Project teams may choose either RSS or Atom for any application that provides syndicated content.

Business Value
RSS simplifies the provision and consumption of information that changes regularly.

Industry Standards   http://www.rssboard.org/rss-specification
Tools and Support   http://www.rssboard.org/rss-playground
Publication Date   2007-10-15

3.3.4 ATOM

The name Atom applies to a pair of related standards used for web feeds. Web feeds allow software programs to check for updates published on a web site. To provide a web feed, a site owner may use specialized software (such as a content management system) that publishes a list (or "feed") of recent articles or content in a standardized, machine-readable format. The feed can then be downloaded by web sites that syndicate content from the feed, or by feed reader programs that allow Internet users to subscribe to feeds and view their content.

A feed contains entries, which may be headlines, full-text articles, excerpts, summaries, and/or links to content on a web site, along with various metadata.

The two related standards are the Atom Syndication Format and the Atom Publishing Profile. The Atom Syndication Format is an XML language used for web feeds, while the Atom Publishing Protocol (referred to as 'AtomPub' for short) is a simple HTTP-based protocol for creating and updating Web resources.

3.3.4.1 ATOM Syndication Format Version 1.0

Title   ATOM Syndication Format
Version   1.0
Sponsor   IETF

Description
Atom is an XML-based document format that describes lists of related information known as feeds". Feeds are composed of a number of items, known as "entries", each with an extensible set of attached metadata. For example, each entry has a title.

The primary use case that Atom addresses is the syndication of Web content such as weblogs and news headlines to Web sites as well as directly to user agents.

Scope
Project teams may choose either RSS or Atom for any application that provides syndicated content.

Business Value
Atom simplifies the provision and consumption of information that changes regularly.

Industry Standards   http://tools.ietf.org/html/rfc4287
Tools and Support   Not Applicable
Publication Date   2005-12

3.3.4.2 ATOM Publishing Protocol (APP) Version 1.0

Title   Atom Publishing Protocol (APP)
Version   1.0
Sponsor   IETF

Description
The Atom Publishing Protocol is an application-level protocol for publishing and editing Web resources using HTTP and XML 1.0. The protocol supports the creation of Web Resources and   provides facilities for:

- Collections: Sets of Resources, which can be retrieved in whole or in part.
- Services: Discovery and description of Collections.
- Editing: Creating, editing, and deleting Resources.

The Atom Publishing Protocol is different from many contemporary protocols in that the server is given wide latitude in processing requests from clients.

Scope
Project teams may choose either RSS or Atom for any application that provides syndicated content.

Business Value
Atom simplifies the provision and consumption of information that changes regularly.

Industry Standards   http://tools.ietf.org/html/rfc5023
Tools and Support   Not Applicable
Publication Date   2007-10

3.3.5 Scalable Vector Graphics (SVG) Specification Version 1.1

Title   Scalable Vector Graphics
Version   1.1
Sponsor   W3C

Description
This specification defines the features and syntax for Scalable Vector Graphics (SVG) Version 1.1, a modularized language for describing two-dimensional vector and mixed vector/raster graphics in XML. It has two parts: an XML-based file format and a programming API for graphical applications. Key features include shapes, text and embedded raster graphics, with many different painting styles. It supports scripting through languages such as ECMAScript and has comprehensive support for animation.

SVG is used in many business areas including Web graphics, animation, user interfaces, graphics interchange, print and hardcopy output, mobile applications and high-quality design.

SVG builds upon many other successful standards such as XML (SVG graphics are text-based and thus easy to create), JPEG and PNG for image formats, DOM for scripting and interactivity, SMIL for animation and CSS for styling.

SVG is interoperable. The W3C release a test suite and implementation results to ensure conformance.

Scope
All web-based graphics.

Business Value
SVG is text based and works seamlessly with current Web technologies like HTML, GIF, JPEG, PNG, SMIL, ASP, JSP, and JavaScript. Graphics created in SVG can be scaled without loss of quality across various platforms and devices. SVG can be used on the Web, in print and even on portable devices while retaining full quality.

Industry Standards   http://www.w3.org/TR/SVG11/
Tools and Support   http://www.adobe.com/svg/main.html
Publication Date   2003-01-14

3.3.5.1 Mobile SVG Profiles: SVG Tiny and SVG Basic

Title   Mobile Proviles: SVG Tiny and SVG Basic
Version   Mobile Profiles of SVG 1.1
Sponsor   W3C

Description
This document defines two mobile profiles of Scalable Vector Graphics version 1.1. The first profile, SVG Tiny, is defined to be suitable for cellphones; the second profile, SVG Basic, is suitable for PDAs.

This specification describes these constraints and design rationale behind them.

- Two profiles are designed to allow SVG to render on mobile devices with limited memory, CPU power, and bandwidth.
- Mobile SVG profiles attempt to maximize compatibility with SVG 1.0 to display existing content.
- A true subset of the SVG 1.0 imaging model is maintained.
- Mobile SVG is designed to facilitate export from authoring tools.
- Mobile SVG is designed so that SVG 1.1 can be transcoded into SVGB and SVGT preserving as much scalability as possible.
- To ensure interoperability between content and software tools compliant with different profiles, SVGT is specified to be a proper subset of SVGB, and SVGB to be a proper subset of SVG 1.1.

Scope
All web-based applications targeted at mobile devices.

Business Value
This specification ensures a consistent representation of graphics on two types of mobile devices – low-performance devices (SVG Tiny) and high-performance devices (SVG Basic.

Industry Standards   http://www.w3.org/TR/SVGMobile/
Tools and Support   http://www.w3.org/TR/2003/REC-SVGMobile-20030114/
Publication Date   2003-01-14

3.3.6 Portable Network Graphics (PNG) Specification - Second Edition

Title   Portable Network Graphics
Version   Second Edition
Sponsor   W3C

Description
This specification describes PNG (Portable Network Graphics), an extensible file format for the lossless, portable, well-compressed storage of raster images. Indexed-colour, greyscale, and true colour images are supported, with optional transparency. Sample depths range from 1 to 16 bits. PNG is fully streamable with a progressive display option. It is robust, providing both full file integrity checking and simple detection of

common transmission errors. PNG can store gamma and chromaticity data as well as a full ICC colour profile for accurate colour matching on heterogeneous platforms.

Scope
All web-based graphics.

Business Value
The PNG specification provides a patent-free alternative to other graphics formats. PNG is designed to work well in online viewing applications, such as the World Wide Web, so it is fully streamable with a progressive display option. PNG is robust, providing both full file integrity checking and simple detection of common transmission errors. Also, PNG can store gamma and chromaticity data for improved color matching on heterogeneous platforms.

Industry Standards	http://www.w3.org/TR/PNG
Tools and Support	http://www.w3.org/TR/2003/REC-PNG-20031110
Publication Date	2003-11-10

3.3.7 Synchronized Multimedia Integration Language 2.1 (SMIL 2.1) Specification

Title	Synchronized Multimedia Integration Language
Version	2.1
Sponsor	W3C

Description
This document specifies version 1 of the Synchronized Multimedia Integration Language (SMIL 1.0, pronounced "smile"). SMIL is similar to an HTML like language that is written in XML and has options like containing links to other SMIL presentations and buttons such as stop, start and next. SMIL was developed in 1997 and can display presentations from multiple web servers.

SMIL defines mark-up for timing, layout, animations, visual transitions, and media embedding in order to allow integration of independent multimedia objects into a synchronized multimedia presentation. Using SMIL, an author can:
1. describe the temporal behavior of the presentation
2. describe the layout of the presentation on a screen
3. associate hyperlinks with media objects

Scope
All web-based presentation materials.

Business Value
The SMIL specification allows for the creation of standardized presentation materials that can display multiple file types, including text, audio, and video.

Industry Standards	http://www.w3.org/TR/SMIL2/
Tools and Support	http://www.w3.org/TR/2005/REC-SMIL2-20051213/
Publication Date	2005-12-13

3.3.7.1 Synchronized Multimedia Integration Language (SMIL) Animation

Title	Synchronized Multimedia Integration Language Animation
Version	Not Applicable
Sponsor	W3C

Description
SMIL Animation is a specification of animation functionality for XML documents. It describes an animation framework as well as a set of base XML animation elements suitable for integration with XML documents. It is based upon the SMIL 1.0 timing model, with some extensions, and is a true subset of SMIL 2.0. This provides an intermediate stepping stone in terms of implementation complexity, for applications that wish to have SMIL-compatible animation but do not need or want time containers.

Scope
All web-based animation.

Business Value
This specification provides a standardized way of incorporating animation onto a timeline.

Industry Standards   http://www.w3.org/TR/smil-animation
Tools and Support   http://www.w3.org/TR/2001/REC-smil-animation-20010904/
Publication Date   2001-09-04

3.3.8 Document Object Model (DOM) Level 3 Core Specification Version 1.0

Title   Document Object Model Level 3 Core Specification
Version   1.0
Sponsor   W3C

Description
This specification defines the Document Object Model Core Level 3, a platform- and language-neutral interface that allows programs and scripts to dynamically access and update the content, structure and style of documents. The Document Object Model Core Level 3 builds on the Document Object Model Core Level 2.

Scope
All web-based applications.

Business Value
The Document Object Model provides a vendor-, platform-, and language-neutral interface that allows for the creation of dynamic HTML by combining HTML, stylesheets and scripts for the purpose of animating documents.

Industry Standards   http://www.w3.org/TR/DOM-Level-3-Core
Tools and Support   http://developer.mozilla.org/en/docs/DOM_Levels
Publication Date   2004-04-07

3.3.9 The Platform for Privacy Preferences 1.1 (P3P1.1) Specification

Title   The Platform for Privacy Preferences
Version   1.1
Sponsor   W3C

Description
This is the specification of the Platform for Privacy Preferences (P3P). The P3P1.0 specification defines the syntax and semantics of P3P privacy policies, and the mechanisms for associating policies with Web resources. P3P policies consist of statements made using the P3P vocabulary for expressing privacy practices. P3P policies also reference elements of the P3P base data schema -- a standard set of data elements that all P3P user agents should be aware of. The P3P specification includes a mechanism for defining new data elements and data sets, and a simple mechanism that allows for extensions to the P3P vocabulary.

P3P version 1.0 is a protocol designed to inform Web users of the data-collection practices of Web sites. It provides a way for a Web site to encode its data-collection and data-use practices in a machine-readable XML format known as a P3P policy. The P3P specification defines:

- A standard schema for data a Web site may wish to collect, known as the "P3P base data schema"
- A standard set of uses, recipients, data categories, and other privacy disclosures
- An XML format for expressing a privacy policy
- A means of associating privacy policies with Web pages or sites, and cookies
- A mechanism for transporting P3P policies over HTTP
- The goal of P3P version 1.0 is twofold. First, it allows Web sites to present their data-collection practices in a standardized, machine-readable, easy-to-locate manner. Second, it enables Web users to understand what data will be collected by sites they visit, how that data will be used, and what data/uses they may "opt-out" of or "opt-in" to.

Scope
All privacy-protected web sites.

Business Value
The Platform for Privacy Preferences (P3P) specification enables Web sites to express their privacy practices in a standard format that can be retrieved automatically and interpreted easily by user agents. P3P user agents will allow users to be informed of site practices (in both machine- and human-readable formats) and to automate decision-making based on these practices when appropriate. Thus users need not read the privacy policies at every site they visit.

Industry Standards   http://www.w3.org/TR/P3P11/
Tools and Support   http://www.p3ptoolbox.org/
Publication Date   2006-11-13

3.3.10 Resource Description Framework (RDF) Primer

Title   Resource Description Framework (RDF) Primer
Version   Not Applicable
Sponsor   W3C

Description

The Resource Description Framework (RDF) is a family of specifications originally designed as a metadata model but which has come to be used as a general method of modeling information, through a variety of syntax formats. It is particularly intended for representing metadata about Web resources, such as the title, author, and modification date of a Web page, copyright and licensing information about a Web document, or the availability schedule for some shared resource. However, by generalizing the concept of a "Web resource", RDF can also be used to represent information about things that can be identified on the Web, even when they cannot be directly retrieved on the Web. Examples include information about items available from on-line shopping facilities (e.g., information about specifications, prices, and availability), or the description of a Web user's preferences for information delivery.

Scope
All web-based applications.

Business Value
This specification provides a common framework for expressing information about resources (such as the title, author, and modification date of a Web page, copyright and licensing information about a Web document, or the availability schedule for some shared resource) so it can be exchanged between applications without loss of meaning.

Industry Standards   http://www.w3.org/TR/rdf-primer/
Tools and Support   http://www.w3.org/RDF/
Publication Date   2004/02-10

3.3.10.1 RDF Vocabulary Description Language 1.0: RDF Schema

Title   Resource Description Framework Vocabulary Description Language: RDF Schema
Version   1.0
Status   Approved

Description
This specification describes how to use RDF to describe RDF vocabularies. This specification defines a vocabulary for this purpose and defines other built-in RDF vocabulary initially specified in the RDF Model and Syntax Specification. This specification introduces RDF's vocabulary description language, RDF Schema. It is complemented by several companion documents which describe RDF's XML encoding [RDF-SYNTAX], mathematical foundations [RDF-SEMANTICS] and Resource Description Framework (RDF): Concepts and Abstract Syntax [RDF-CONCEPTS]. The RDF Primer [RDF-PRIMER] provides an informal introduction and examples of the use of the concepts specified in this document.

Scope
All web-based applications.

Business Value
This specification ensures a consistent implementation of RDF and resource definitions across multiple applications by providing mechanisms for describing groups of related resources and the relationships between these resources.

Industry Standards   http://www.w3.org/TR/rdf-schema/
Tools and Support   http://www.w3.org/TR/2004/REC-rdf-primer-20040210/#rdfschema
Publication Date   2004-02-10

3.3.10.2 RDF eXtensible Mark-up Language (RDF/XML) Syntax Specification (Revised)

Title   Resource Description Framework eXtensible Mark-up Language (RDF/XML) Syntax Specification
Version   Revised
Sponsor   W3C

Description
This specification defines the XML syntax for RDF graphs which was originally defined in the RDF Model & Syntax W3C Recommendation. Subsequent implementations of this syntax and comparison of the resulting RDF graphs have shown that there was ambiguity — implementations generated different graphs and certain syntax forms were not widely implemented.

This specification revises the original RDF/XML grammar in terms of XML Information Set information items which moves away from the rather low-level details of XML, such as particular forms of empty elements. This allows the grammar to be more precisely recorded and the mapping from the XML syntax to the RDF Graph more clearly shown. The mapping to the RDF graph is done by emitting statements in the form defined in the N-Triples section of RDF Test Cases which creates an RDF graph, that has semantics defined by RDF Semantics.

The complete specification of RDF consists of a number of documents:

- RDF Primer
- RDF Concepts and Abstract Syntax
- RDF Semantics
- RDF/XML Syntax (this specification)
- RDF Vocabulary Description Language 1.0: RDF Schema
- RDF Test Cases

Scope
All applications using XML.

Business Value
To be determined

Industry Standards   http://www.w3.org/TR/rdf-syntax-grammar/
Tools and Support   http://www.w3.org/TR/rdf-primer/
Publication Date   2004-02-10

3.3.11 Unified Modelling Language Version 2.1.1

Title   Unified Modelling Language
Version   2.1.1
Sponsor   Object Management Group

Description
Unified Modeling Language (UML) is a standardized specification language for object modeling. UML is a general-purpose modeling language that includes a graphical notation used to create an abstract model of a system, referred to as a UML model. UML was designed to specify, visualize, construct, and document software-intensive systems. UML is extensible, offering the following mechanisms for customization: profiles and stereotype. The semantics of extension by profiles have been improved with the UML 2.0 major revision.

Scope
All applications.

Business Value
The OMG's Unified Modeling Language™ (UML®) helps you specify, visualize, and document models of software systems, including their structure and design, in a way that meets all of these requirements.

Industry Standards   http://www.omg.org/technology/documents/modeling_spec_catalog.htm
Tools and Support   http://www.uml.org/
Publication Date   2007-08

3.3.12 XML Metadata Interchange Version 2.1

Title   XML Metadata Interchange
Version   2.1
Sponsor   Object Management Group

Description
The XML Metadata Interchange (XMI) is a standard for exchanging metadata information via Extensible Markup Language (XML). It can be used for any metadata whose metamodel can be expressed in Meta-Object Facility (MOF). The most common use of XMI is as an interchange format for UML models, although it can also be used for serialization of models of other languages (metamodels).

XMI integrates four industry standards:

XML - eXtensible Markup Language, a W3C standard.
UML - Unified Modeling Language, an OMG modeling standard.
MOF - Meta Object Facility, an OMG language for specifying metamodels.
MOF Mapping to XMI

Scope
All solutions using XML.

Business Value
XMI simplifies the process of moving from the "modelling" of an application to the "development" of an application.

Industry Standards   http://www.omg.org/technology/documents/formal/xmi.htm
Tools and Support   Not Applicable
Publication Date   2005-09-01

3.3.13 Unicode Version 5.0.0

Title   Unicode
Version   5.0.0
Sponsor   Unicode

Description
Unicode is an industry standard allowing computers to consistently represent and manipulate text expressed in most of the world's writing systems. Unicode consists of a repertoire of about 100,000 characters, a set of code charts for visual reference, an encoding methodology and set of standard character encodings, an enumeration of character properties such as upper and lower case, a set of reference data computer files, and a number of related items, such as character properties, rules for text normalization, decomposition, collation, rendering and bidirectional display order (for the correct display of text containing both right-to-left scripts, such as Arabic or Hebrew, and left-to-right scripts).[

Scope
All I&IT solutions.

Business Value
Incorporating Unicode into client-server or multi-tiered applications and websites offers significant cost savings over the use of legacy character sets. Unicode enables a single software product or a single website to be targeted across multiple platforms, languages and countries without re-engineering. It allows data to be transported through many different systems without corruption.

Industry Standards   http://www.unicode.org/versions/Unicode5.0.0/
Tools and Support   Not Applicable
Publication Date   2006-10-27

                     Last Review Date: 2008-01-16
                                                    Next Review Date: 2008-07

3.4 Directory

3.4.1 Lightweight Directory Access Protocol (LDAP) 3.0

Title   Lightweight Directory Access Protocol (LDAP)
Version   3.0
Sponsor   IETF

Description
The Lightweight Directory Access Protocol (LDAP) is an Internet protocol for accessing distributed directory services that act in accordance with X.500 data and service models.

A directory is a set of objects with similar attributes organized in a logical and hierarchical manner. The most common example is the telephone directory, which consists of a series of names (either of persons or organizations) organized alphabetically, with each name having an address and phone number attached. Due to this basic design (among other factors) LDAP is often used by other services for authentication.

An LDAP directory tree often reflects various political, geographic, and/or organizational boundaries, depending on the model chosen. LDAP deployments today tend to use Domain name system (DNS) names for structuring the topmost levels of the hierarchy. Deeper inside the directory might appear entries representing people, organizational units, printers, documents, groups of people or anything else which represents a given tree entry (or multiple entries).

Scope
All uses of directory services.

Business Value
The primary benefit of deploying an LDAP is that it serves as a centralized directory that can link users and applications seamlessly.

Industry Standards   http://tools.ietf.org/html/rfc4510
Tools and Support   Not Applicable
Publication Date   2006-06

3.4.2 Directory Services Mark-up Language (DSML) Version 2.0

Title   Directory Services Mark-up Language
Version   2.0
Status   Approved

Description
The Directory Services Mark-up Language v1.0 (DSMLv1) provides a means for representing directory structural information as an XML document. DSMLv2 focuses on extending the reach of LDAP directories. Therefore, as in DSMLv1, the design approach is not to abstract the capabilities of LDAP directories as they exist today, but instead to faithfully represent LDAP directories in XML. The difference is that DSMLv1 represented the state of a directory while DSMLv2 represents the operations that an LDAP directory can perform and the results of such operations.

DSMLv2 is defined in terms of a set of XML fragments that are used as payloads in a binding. A binding defines how the DSMLv2 XML fragments are sent as requests and responses in the context of a specific transport such as SOAP, SMTP, or a simple data file.

Scope
All applications that query LDAP information.

Business Value
This specification enables the expression of an LDAP as an XML document, and supports querying and response of LDAP information as XML fragments.

Industry Standards   http://www.oasis-open.org/specs/index.php#dsmlv2
Tools and Support   http://www.oasis-open.org/committees/dsml/docs/DSMLv2.doc
Publication Date   2002-04-30

4. Related Standards

4.1 Impacts to Existing Standards

GO-ITS Number	Describe Impact	Recommended Action (alternatively provide a page number where details can be found)
GO-ITS 26 XML Family of Specifications Version 1.4	Re-organizes GO-ITS 26 content into new sections and appendices. Includes updates, additions and modifications based on current trends.	Retire Version 1.4 dated April 2003

4.2 Impacts to Existing Environment

Impacted Infrastructure (includes Common Components and other applications)	Describe Impact	Recommended Action (alternatively provide a page number where details can be found)
IT Components and Services	Promotes interoperability for presentation and reusability of information	Apply this standards document on a net new basis with respect SOA implementations
Legacy IT Assets	Promotes the XML family of specifications as the chosen protocol for all future legacy integration work	Apply this standards document on a retroactive basis only if specified by legacy renewal and transformation projects

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7. Document History

Created: 2007-11-23

Approved: 2008-01-16
- Approved by the IT Standards Council as an update to previous Omnibus Technical Standard dated January 2005

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