Practical Universal Business Language Deployment

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Practical Universal Business Language Deployment

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Notes:

Practical Universal Business Language Deployment

- Introduction - G. Ken Holman
- Module 1 - OASIS Universal Business Language (UBL)
- Module 2 - Parties and document types
- Module 3 - Information items
- Module 4 - Naming and design rules
- Module 5 - Document models
- Module 6 - Model semantics
- Module 7 - XPath enumerations
- Module 8 - Controlled vocabulary overview
- Module 9 - UBL customization overview
- Conclusion - Where to go from here?

Series: Practical Universal Business Language Deployment

Reference: Electronic commerce

Outcomes:

- introduce the components of the Universal Business Language deliverables and supplementary packages

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Notes:

G. Ken Holman

Introduction - Practical Universal Business Language Deployment

Five-year International Secretariat Manager ISO/IEC JTC 1/SC 34

- SGML
- Open Document Format
- XML Document Schema Definition Languages

Member 1996 XML W3C Working Group

- `http://www.w3.org/TR/WD-xml-961114#secC.`

Founding chairman OASIS XML Conformance Committee

Founding chairman OASIS XSLT/XPath Conformance Committee

Produced first commercial training course in XSLT (December 1997)

Produced first commercial training course in XSL-FO (April 2001)

Self-published electronic PDF books on XSLT and XSL-FO

- produced using XML, XSLT and XSL-FO

Published two books by Prentice Hall on XSLT and XSL-FO

- Definitive XSLT and XPath
- Definitive XSL-FO

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Notes:

G. Ken Holman (cont.)

Introduction - Practical Universal Business Language Deployment

Chairman OASIS Code List Representation Technical Committee

- the committee responsible for genericode

Member of OASIS Universal Business Language (UBL) Technical Committee

Co-editor UBL 2.0

Chairman UBL Human Interface Subcommittee (UBL HISC)

- formerly Forms Presentation Subcommittee (UBL FPSC)

Chairman UBL Adoption Subcommittee (UBL ASC)

Chairman UBL Small Business Subcommittee (UBL SBSC)

Technical lead - Code list validation

Technical lead - UBL conformant customization

Produced first commercial training course in UBL (June 2006)

Self-published electronic PDF book on UBL

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Notes:

Module 1 - OASIS Universal Business Language (UBL)

- Lesson 1 - OASIS Universal Business Language (UBL)
- Lesson 2 - ebXML context
- Lesson 3 - UBL applicability
- Lesson 4 - UBL 2.0 specification contents

Outcomes:

- gain an overview of the UBL specification
- be aware of the standardization committee structure
- understand the role of UBL in the ebXML context
- understand the expectations of applicability for UBL and what it tries to accomplish
- be aware of some existing deployments of UBL and thoughts for the future of UBL

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OASIS Universal Business Language (UBL)

Module 1 - OASIS Universal Business Language (UBL)
Lesson 1 - OASIS Universal Business Language (UBL)

UBL is an international effort to develop open royalty-free standards for the machine-processing of business information

- the UBL committee has worldwide committee membership
  - vendor members
  - consultant and trainer members
  - business expert and user members
- there are worldwide deployments active or in the works
- **the intellectual property is owned by the Organization for the Advancement of Structured Information System (OASIS)**
  - `http://www.oasis-open.org/who/intellectualproperty.php`
  - UBL is licensed under "RF on Limited Terms"
    - limiting the contributors' IP obligations, not the users' ability to use
    - as a requirement of membership all developers and participants in the technical committees transfer the intellectual property of their contributions to the organization
  - `http://lists.oasis-open.org/archives/ubl/200610/msg00047.html`
  - the intellectual property is not tied up by any one vendor or user

Entry point for e-commerce for small- and medium-sized businesses

- inevitably to be used by large businesses as well due to mandated requirements by large users and governments

Supplants the need to use existing or develop one's own proprietary electronic format

- proprietary software is under the control of a vendor or the software developer
- proprietary formats have limited (if any) interoperability with systems created by other vendors
- no leverage of available implementations for re-use

Opportunity to move quickly from business process modeling to active messaging

- use your own methods to determine your own business processes
- when done map your information model components to off-the-shelf UBL business objects
- utilize off-the-shelf UBL document models for information interchange in the modeled business process
- customization approaches provide for unique requirements

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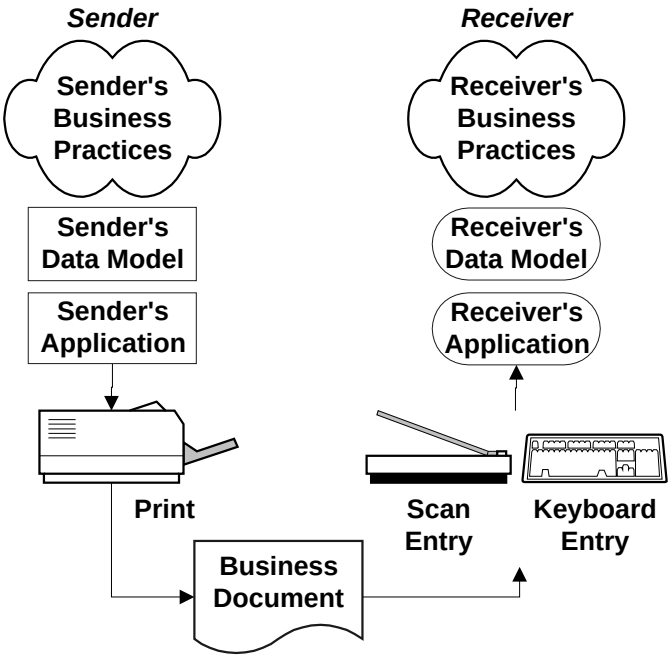
OASIS Universal Business Language (UBL) (cont.)

UBL is designed to eliminate re-keying of data

- supplant existing fax- and paper-based supply chains



The sender prepares a business document for sending:

- the information components of the sender's business practices are expressed in a data model supporting the specific business practices of the sender
- the sender's application accesses the information in the data model and prints off the business document in hard copy

The receiver receives a business document:

- the document information components are scanned or manually entered into the receiver's application, running a risk of a possible scanning or entry error
- the receiver's application stores the information components in the receiver's data model
- the receiver's business practices act on the presence of expected information found in the data model

The sender's and receiver's business practices are probably very similar, though they do not have to be

- the data models could be quite different in structure, but probably have similar components
- the applications could be very different, on different platforms and obtained from different vendors

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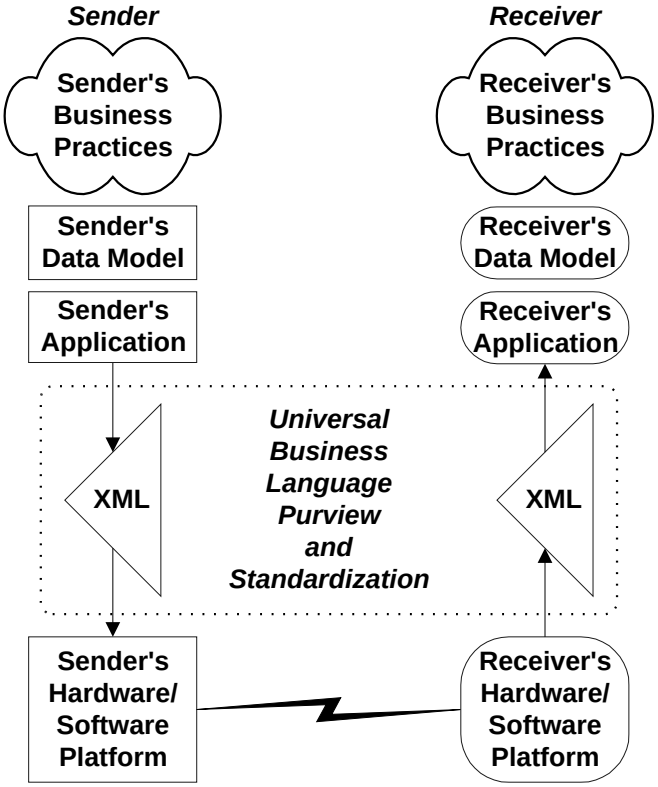
OASIS Universal Business Language (UBL) (cont.)

Module 1 - OASIS Universal Business Language (UBL)
Lesson 1 - OASIS Universal Business Language (UBL)

Objective: enable interoperability between dissimilar systems using open standards

- using XML for all of the benefits of platform, vendor and application independence
- using an agreed-upon vocabulary ensures that all users of the XML can identify the same information items using the agreed-upon labels
- the XML document of a known vocabulary can then be understood by different applications on different platforms
- free tools are available to work with the documents
    - document creation, vocabulary validation, web and print formatting, etc.



UBL does not attempt to redefine anyone's business practices

- UBL is only addressing the representation of business information in a standardized format for the purposes of interchange
- businesses may wish to modify their expectations for information transfer in order to take advantage of UBL formats

UBL does not attempt to redefine anyone's back-end data models

- the interchange of information is distinct from anyone's internal storage representation
- UBL only describes the document model of the actual interchange artefact

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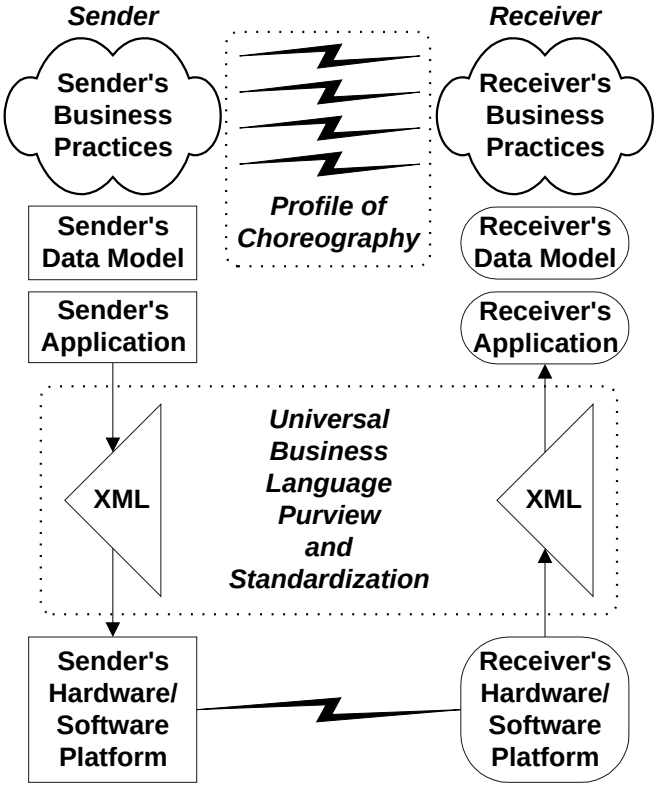
OASIS Universal Business Language (UBL) (cont.)

Module 1 - OASIS Universal Business Language (UBL)
Lesson 1 - OASIS Universal Business Language (UBL)

Communities of users have the opportunity to define a common use of UBL

- includes profiles of choreography of documents to meet arbitrary business processes
- includes modifications to the XML specifications of the UBL documents as appropriate to the needs of the community



Furthermore, individuals in the community can layer content constraints

- within any community of users, two trading partners can agree to utilize the community definition of UBL with an individual's requirements for code list values, identifier values and business rules
- note this is not depicted in the diagram but discussed later on in the material

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ebXML - Electronic business using XML

Module 1 - OASIS Universal Business Language (UBL)
Lesson 2 - ebXML context

Modular suite of specifications of infrastructure that enables electronic commerce

- `http://www.ebxml.org`
- suitable for implementation by enterprises of any size
- suitable for use by enterprises in any geographical location
- **designed for use over the Internet**
  - "builds on the experience and strengths of existing EDI knowledge"

Globally-developed and open XML-based standards

- provides for plug-and-play shrink-wrapped solutions
- implementations of ebXML components are freely available

Collaborative global project

- **OASIS**
  - Organization for the Advancement of Structured Information Standards
- **United Nations/ECE agency CEFACT**
  - ECE - Economic Commission for Europe
  - CEFACT - Centre for Trade Facilitation and Electronic Business

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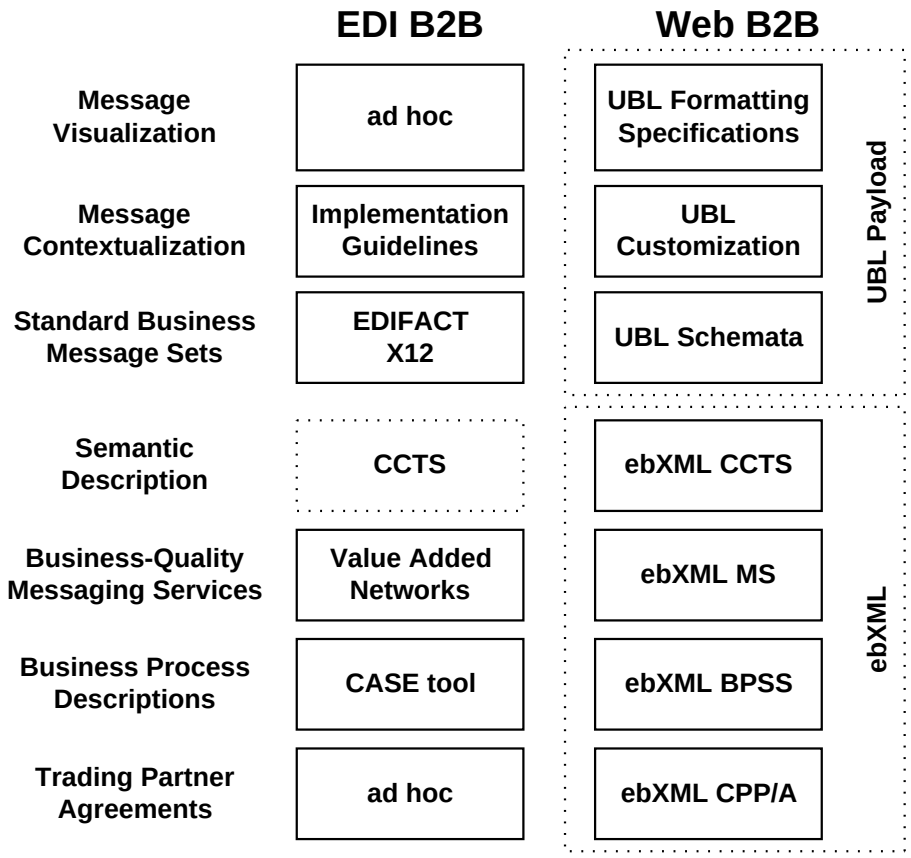
ebXML - Electronic business using XML (cont.)

Module 1 - OASIS Universal Business Language (UBL)
Lesson 2 - ebXML context

Comparing the EDI and UBL standards stacks:



Opportunity for semantic interoperability

- the information items in the EDI messages will be based on the same core component library as the information items in the UBL schemata
- **active harmonization effort underway in UN/CEFACT TBG-17 Harmonization group to find and catalogue all UBL semantics in the core component library**

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The role of UBL in e-commerce

Module 1 - OASIS Universal Business Language (UBL)
Lesson 3 - UBL applicability

UBL does not try to address every electronic business interchange problem

- business needs are as unique as the entities doing business
- a wide range of candidate uses of UBL documents is described in the specification

UBL does not try to define or constrain any business process

- business processes are ad hoc or developed using process modeling methodologies
- UBL document models can plug into a business process to satisfy interchange requirements
- an opportunity to move quickly to a production working interchange environment from an abstract business process definition
    - map information model to the UBL business objects and document types

UBL is only defining the structure and vocabulary of electronic business documents for interchange

- **the only normative deliverable is the set of W3C Schema (XSD) expressions of the interchange document models**
    - defines the nesting of information in XML constructs
    - defines the labels for the XML constructs
- UBL does not force any constraints on back-end processing, data models, database schemata, calculation models, etc.
- **customization approaches available to address tailored interchange requirements**
    - restricting and extending UBL document models

UBL employs a framework for communities of users and for trading partners to declare controlled vocabularies (e.g. code lists, identifiers) in use

- uses a supplemental methodology and approach to layer code list and value validation on top of XSD schema validation

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The role of UBL in e-commerce (cont.)

Module 1 - OASIS Universal Business Language (UBL)
Lesson 3 - UBL applicability

UBL provides a key economic benefit to the end user through standardization

- realized through availability of off-the-shelf inexpensive business software to handle the functions of dealing with the information transmissions
- the risk of investment by developers is mitigated by having a wider community of users adopting the technology

Possible stimulus for a major economic shift in the area of electronic commerce software

- the same shift as has happened in the past in other areas of information processing
  - initial "cottage industry" of vendors creating expensive custom systems for specific applications by users who can afford to pay
  - through standardization it becomes possible to address most (though not all) requirements
    - sufficient functionality that people will adopt the solution because the implementation is inexpensive to use and experiment with
  - sufficient customer pull creates a demand for a wide variety of software vendors to meet the need of a growing number of users of the low-cost or free technology
    - vendors can still compete on aspects of differentiation (usability, performance, features, integration, etc.)
- **operating systems (1960's)**
  - migration from bespoke systems to portable machine-independent systems
- **programming languages (1970's)**
  - migration from specific-purpose languages to general-purpose languages
- **publishing systems (1980's)**
  - migration from typesetting and typography to desktop publishing and generalized markup
- **hypertext systems (1990's)**
  - migration from custom applications (e.g. Ted Nelson's Xanadu, Bill Atkinson's Hypercard, etc.) to all-purpose web browsers (Tim Berners-Lee's HTML)

Standardization creates a marketplace for inexpensive products and support services

- potential big savings for small companies
- **software, training, books can all be developed for a larger customer base than with a proprietary technology**

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Other projects seen on the UBL radar

Module 1 - OASIS Universal Business Language (UBL)
Lesson 3 - UBL applicability

So many UBL projects are underway that the committee is unaware of or only just heard of without knowing details of unpublished projects

- **Europe**
  - Business Interoperability Interfaces on public procurement in Europe - WS/BII
  - `http://www.en.ds.dk/bii`
  - combines requirements from CODICE Spain (for pre-award documents) and NES (for post-award documents)
  - pilot project from the PEPPOL consortium
    - `http://www.ehandel.no/index_en.php/Artikkel/item/876.html`
- **Denmark**
  - OIOXML - based on UBL 0.7
    - `http://en.wikipedia.org/wiki/OIOXML`
  - OIOUBL - based on UBL 2.0
    - `http://www.oioubl.info`
- **Hong Kong**
  - DTTN
  - `http://www.unece.org/cefact/single_window/sw_cases/hongkong.htm`
- **Italy**
  - UBL 1.0 and SBS for SME-driven business scenarios
  - `http://services.txt.it/abilities/project.html`
  - project member work in Lithuania, Slovakia, Turkey, Romania and Hungary
- **Korea**
  - Korean Customs Service
- **North European Subset (NES)**
  - Denmark, Finland, Sweden, Norway, Iceland and England
  - `http://www.nesubl.eu/`

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Other projects seen on the UBL radar (cont.)

Module 1 - OASIS Universal Business Language (UBL)
Lesson 3 - UBL applicability

(cont.)

- **Singapore**
  - New TradeNet
- **South America**
  - various projects underway based on Spanish projects
- **Spain**
  - UBL Invoice government wide for Balearic Islands
  - Ministry of the Economy project
  - Spanish Tax Agency and the banking system
- **Sweden**
  - October 2005 - "Swed-Invoice" recommended for all government use by the Swedish Financial Management Authority
    - anticipated savings of SEK 4b (US$500m) in the first five years
- **United Kingdom**
  - February 2006 - Zanzibar marketplace, created by the UK Office of Government Buying Solutions
- **United States**
  - Electronic Freight Management (EFM) project of the US Department of Transport undergoing tests with UBL Despatch Advice, Receipt Advice, Bill of Lading and Transportation Status
    - distributed SOA (not a central database) where messages are UBL instances
    - `http://www.tfhrc.gov/pubrds/06may/06.htm`
    - `http://www.ops.fhwa.dot.gov/freight/intermodal/efmi/`

Please let us know at `info@CraneSoftwrights.com` of any others you are aware of in order for us to update these materials.

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Notes:

Document standardization business areas for UBL

Module 1 - OASIS Universal Business Language (UBL)
Lesson 3 - UBL applicability

Groups of UBL documents are being defined for two major areas of electronic business

Sourcing-to-payment procurement cycle (post-award) - in UBL 2.0

- **cataloguing**
- **ordering**
- **invoicing**
- **payment**

Transportation - in UBL 2.0

- **fulfillment**
- **shipping**

Tendering (pre-award) - coming in UBL 2.1

- **notices**
- **tenders**
- **invitations**
- **notifications**

Some overlapping roles between scenarios

- the actual roles of parties in UBL transactions are dependent on the context of use
- e.g. the despatch party and delivery party as applied to the procurement process may differ in the transportation process
    - i.e. whether the consignor in the transportation process is actually equal to the despatch party or seller party in the procurement exchange depends on different business cases

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UBL 2.0 specification contents

Module 1 - OASIS Universal Business Language (UBL)
Lesson 4 - UBL 2.0 specification contents

The UBL 2.0 specification unpacks to 120Mb of content:

- **`http://docs.oasis-open.org/ubl/os-UBL-2.0/`**
  - OASIS standard - December 12, 2006
  - zero technical and interoperability differences between committee specification and standard
- **`art\` - referenced artwork in the documentation files**
- **`asn\` - ASN.1 expressions of the document models**
- **`cl\` - code list expressions in genericode**
- **`css\` - CSS stylesheets for HTML rendering of the documentation files**
- **`db\` - DocBook support files**
  - document model for XML hypertext document
  - stylesheets for HTML projection of the hypertext document
- **`doc\` - NDR documentation file**
- **`etc\` - re-use cross reference file**
- **`mod\` - document model spreadsheets**
- **`uml\` - UML expressions of the document models**
- **`val\` - out-of-the-box two-step validation demonstration**
- **`xml\` - sample instances**
- **`xsd\` - document model schemata with documentation**
  - the files in this directory are the only normative files for UBL 2.0
- **`xsdrt\` - document model schemata without documentation**
- **`UBL-2.0.xml` - UBL specification hypertext document in XML**
  - the hypertext document links to the components of the specification
  - **`UBL-2.0.html` - documentation rendering in HTML format**
    - this is where people can browse the content of the hypertext document
  - **`UBL-index-2.0.pdf` - documentation rendering in PDF format**
    - this is a committee process artefact that serves no useful purpose
    - included only to satisfy archaic process requirements that are under OASIS review in consideration of removing its mandated presence
- note that the directories listed above without page number citations are related to the documentation files in support of the `UBL-2.0.xml` hypertext XML document and its HTML and PDF renderings

`http://docs.oasis-open.org/ubl/`

- public home of UBL committee deliverable files

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UBL 2.0 support package

Module 1 - OASIS Universal Business Language (UBL)
Lesson 4 - UBL 2.0 specification contents

`http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=ubl-ssc`

- **being moved to `http://ubl.xml.org`**
- the UBL 2.0 support package is a dynamic web page of supplemental information of interest to users of UBL 2.0
- the page is constantly being updated with new contributions from many sources

UBL 2.0 supporting materials produced by the OASIS TC

- data models
- XPath files
- customization spreadsheets

Related specifications produced by the OASIS UBL TC

- UBL 2.0 NDR
- UBL Methodology for Code List and Value Validation

UBL 2.0 supporting materials produced by related initiatives

- work in progress

Model trading partner agreements

- templates for contract lawyers, not suitable for use as is

UBL 2.0 resources from third parties

- unsolicited contributions from the vendor and user world

UBL 2.0 resources from academia

- unsolicited contributions from academic research projects

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Notes:

Module 2 - Parties and document types

- Introduction - Participants and document flows

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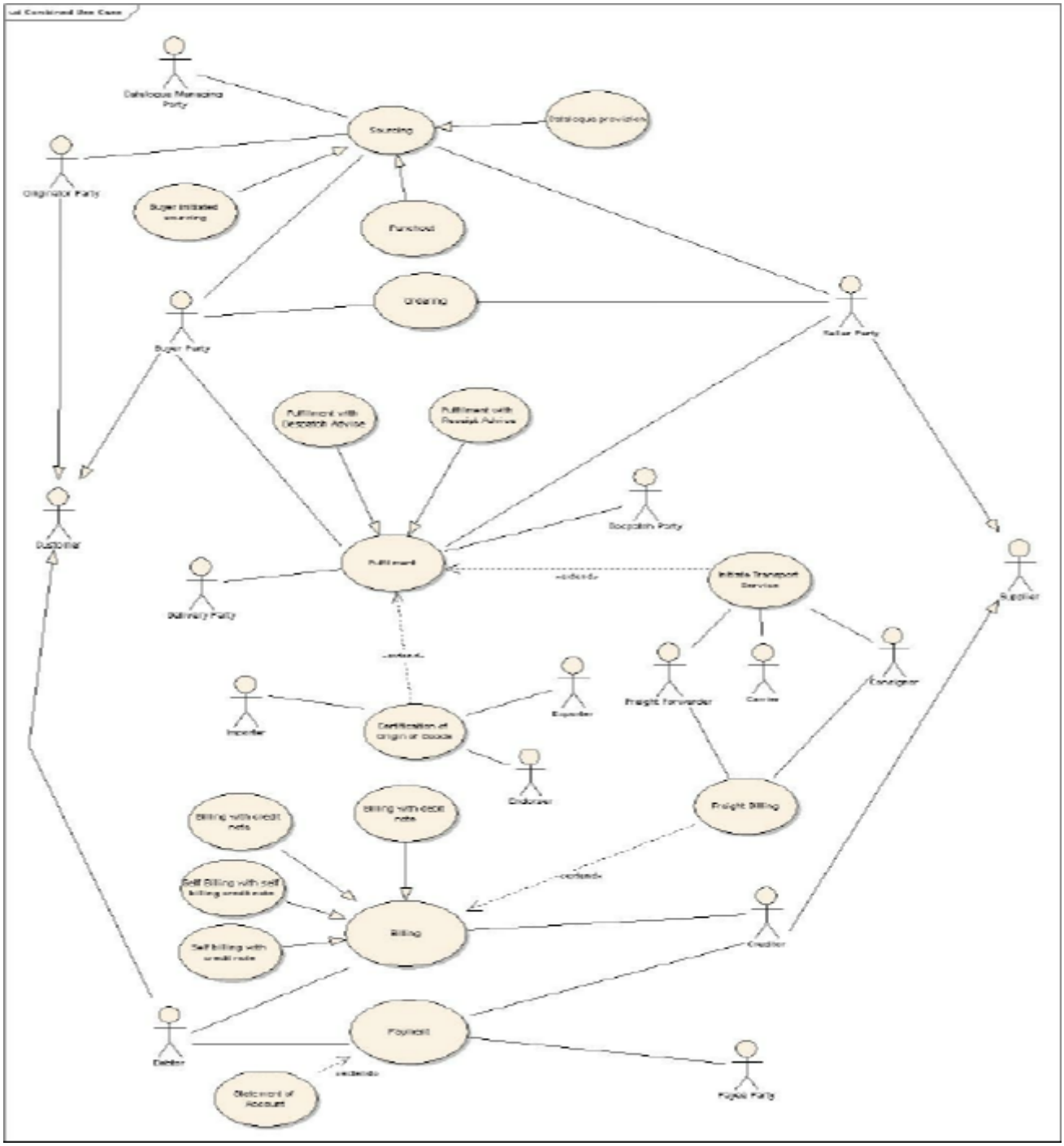
Participants and document flows

Module 2 - Parties and document types

Documentary scenario use case diagram outlines the roles of the many participants:

- the following image is a compressed version of the image found in the specification
  - **`http://docs.oasis-open.org/ubl/os-UBL-2.0/UBL-2.0.html` section 4.**



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Participants and document flows (cont.)

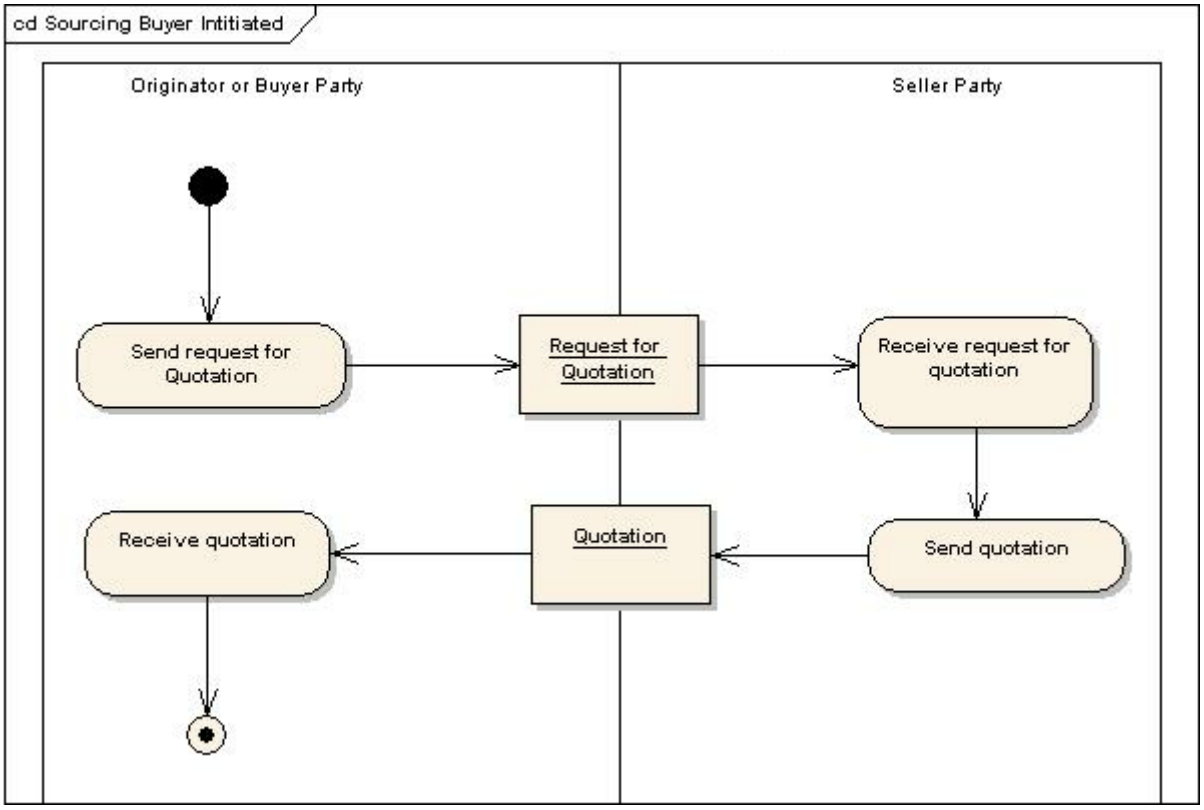
Module 2 - Parties and document types

Each document exchange is documented in the specification with sample workflows using activity diagrams:

- the vertical "columns" of activity diagrams are colloquially referred to as "swim lanes"
- document types are depicted in square-cornered boxes with underscored labels
- actions are depicted in round-cornered boxes
- the start of the process is the solid-filled circle
- the end of the process is the hollow-filled circle

Example workflow activity diagram for quotations excerpted from UBL documentation:

- excerpted from `c:\publd\artefacts\os-UBL-2.0\UBL-2.0.html` section 4.3.2.



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Module 3 - Information items

- Introduction - UBL information model spreadsheets

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UBL information model spreadsheets

Module 3 - Information items

Two spreadsheet documents capture information regarding each single shared or specific library collection:

- same information in both spreadsheets, only different file formats for different tools
- useful for collaboration between business experts who are not document or model experts
- **`.ods` - Open Document Format (ODF) Spreadsheet**
- **`.xls` - Microsoft Excel Spreadsheet**

Color conventions

- magenta row - ABIE
- white row - BBIE
- cyan row - ASBIE
- yellow-headed column - value copied to embedded schema documentation

Example from `UBL-CommonLibrary` (e.g. row 10 has `AdditionalStreetName`):

	A	B	C	D	E	F	G
1	UBL Name	Dictionary Entry Name	Object Class Qualifier	Object Class	Property Term Qualifier	Property Term Possessive Noun	Property Term Primary Noun
2	Address	Address. Details		Address			
3	ID	Address. Identifier		Address			Identifier
4	AddressTypeCode	Address. Address Type Code. Code		Address		Address Type	Code
5	AddressFormatCode	Address. Address Format Code. Code		Address		Address Format	Code
6	Postbox	Address. Postbox. Text		Address			Postbox
7	Floor	Address. Floor. Text		Address			Floor
8	Room	Address. Room. Text		Address			Room
9	StreetName	Address. Street Name. Name		Address		Street	Name
10	AdditionalStreetName	Address. Additional_ Street Name. Name		Address	Additional	Street	Name
11	BlockName	Address. Block Name. Name		Address		Block	Name
12	BuildingName	Address. Building Name. Name		Address		Building	Name
13	BuildingNumber	Address. Building Number. Text		Address		Building	Number
14	InhouseMail	Address. Inhouse_ Mail. Text		Address	Inhouse		Mail
15	Department	Address. Department. Text		Address			Department
16	MarkAttention	Address. Mark Attention. Text		Address			Mark Attention
17	MarkCare	Address. Mark Care. Text		Address			Mark Care
18	PlotIdentification	Address. Plot Identification. Text		Address		Plot	Identification
19	CitySubdivisionName	Address. City Subdivision Name. Name		Address		City Subdivision	Name
20	CityName	Address. City Name. Name		Address		City	Name
21	PostalZone	Address. Postal_ Zone. Text		Address	Postal		Zone
22	CountrySubentity	Address. Country Subentity. Text		Address		Country	Subentity
23	CountrySubentityCode	Address. Country Subentity Code. Code		Address		Country Subentity	Code
24	Region	Address. Region. Text		Address			Region
25	District	Address. District. Text		Address			District
26	TimezoneOffset	Address. Timezone Offset. Text		Address		Timezone	Offset
27	AddressLine	Address. Address Line		Address			
28	Country	Address. Country		Address			
29	LocationCoordinate	Address. Location Coordinate		Address			
30	AddressLine	Address Line. Details		Address			
31	Line	Address Line. Line. Text		Address Line			Line
32	AirTransport	Air Transport. Details		Air			
33	AircraftID	Air Transport. Aircraft Identifier. Identifier		Air Transport		Aircraft	Identifier
34	AllowanceCharge	Allowance Charge. Details		Allowance			
35	ID	Allowance Charge. Identifier		Allowance	Charge		Identifier
36	ChargeIndicator	Allowance Charge. Charge. Indicator		Allowance	Charge		Indicator

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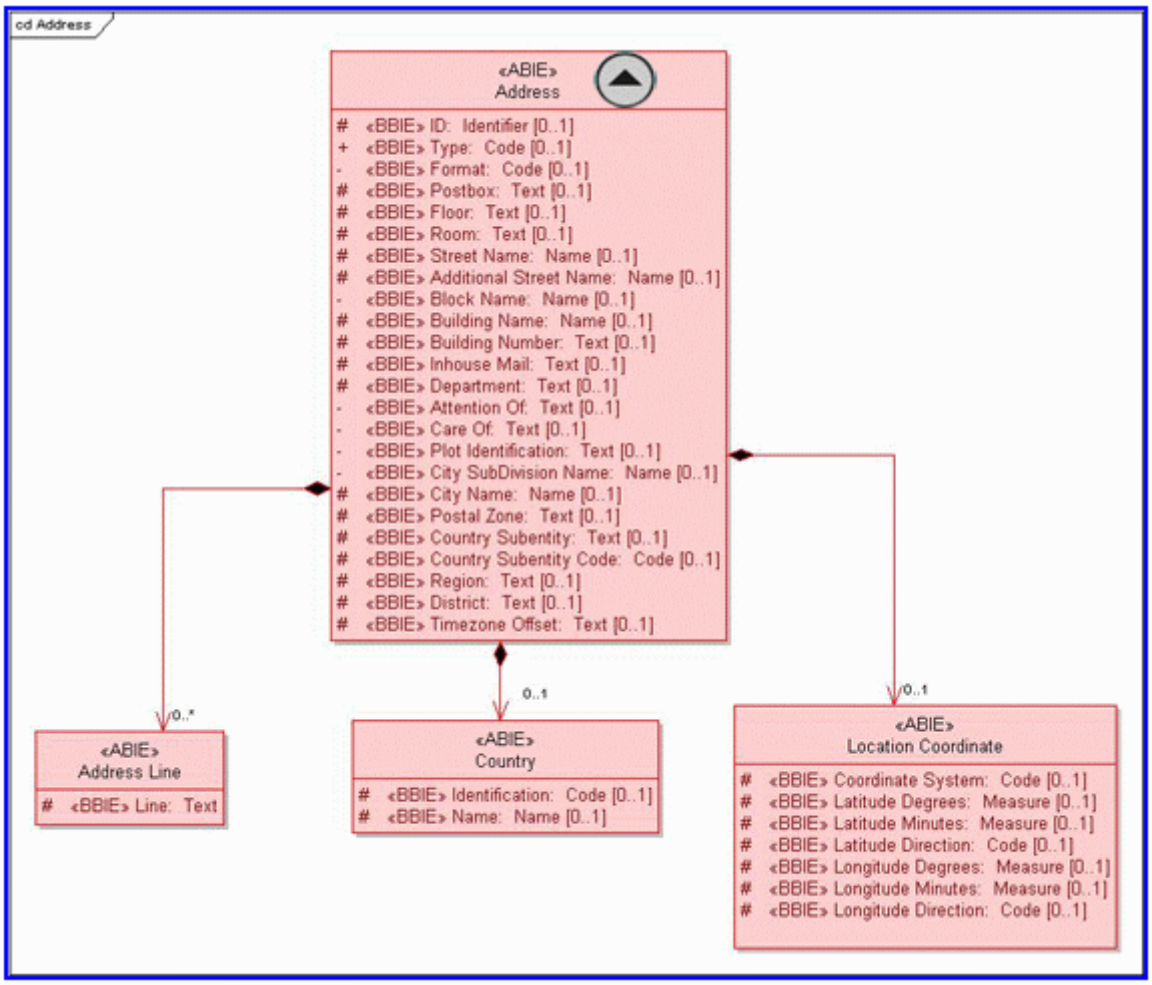
Notes:

UBL UML information models

Module 3 - Information items

Unified Modeling Language (UML) expressions of the information models are found in `c:\publd\artefacts\os-UBL-2.0\uml\`

- standalone JPEG files illustrating the structure diagrams
- interlinked HTML files that reference the JPG files



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Notes:

Module 4 - Naming and design rules

- Introduction - Formal naming and design rules

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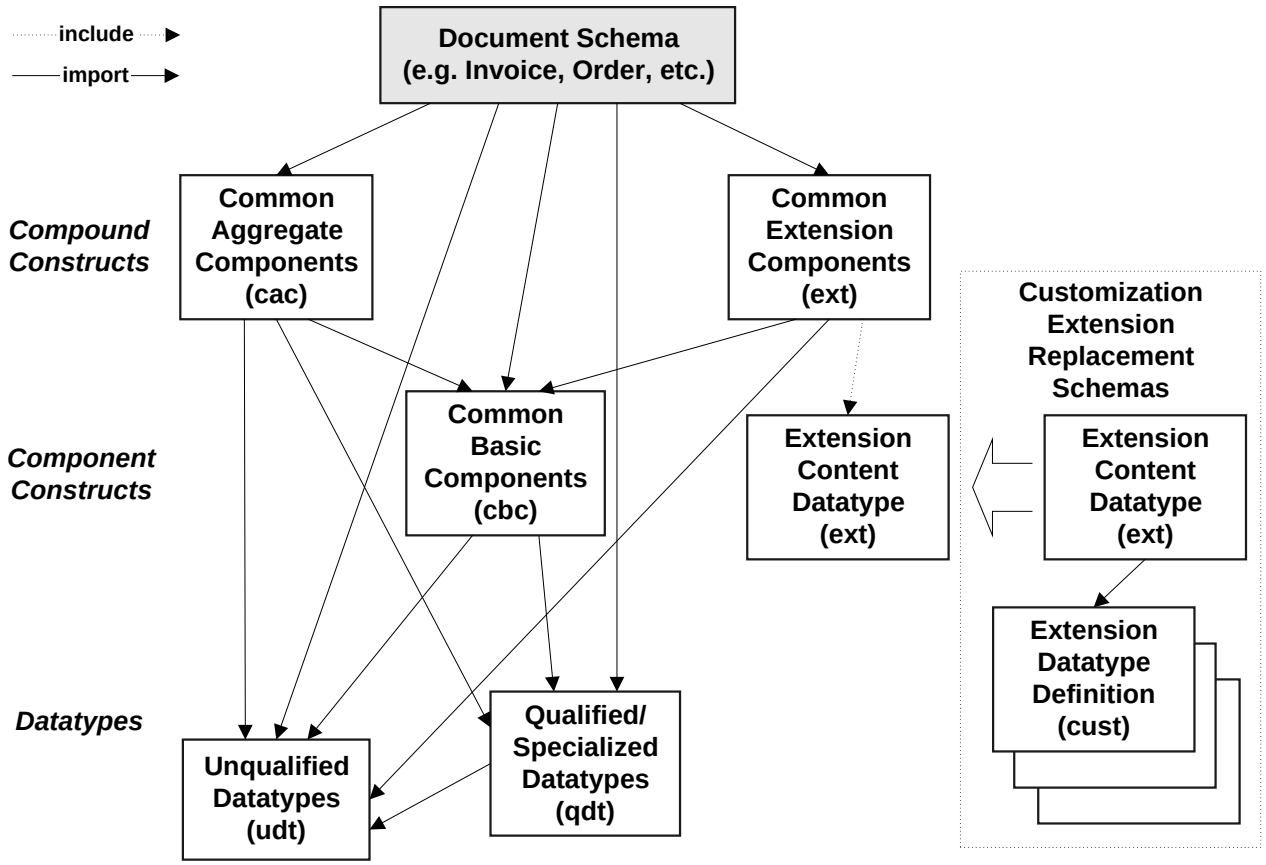
Notes:

Formal naming and design rules

Module 4 - Naming and design rules

This illustrates the schema import and include dependencies described by the NDR:

- `<xsd:include>` must be used when the namespace URI string does not change
- `<xsd:import>` must be used when the namespace URI string changes
- the parentheses surround the namespace prefix used by convention by the UBL TC



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Notes:

Module 5 - Document models

- Introduction - Document model formal expressions

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Notes:

Document model formal expressions

Module 5 - Document models

A UBL document is an XML document that satisfies the constraints chosen by the UBL TC

- structural and lexical constraints are described by a document model
- value constraints are described through supplemental declarative files
    - see Module 8 Controlled vocabulary overview (page 35) for overview
- instance constraints are described in the specification

A document model is a formalism for machine processing of the constraints of information model components in a physical expression

- two different expressions of the document model based on the form of the documents
    - determined by the kinds of networks across which the documents are transmitted
- **compact binary-encoded documents**
    - ASN.1 ISO 8825
- **marked-up text-based documents**
    - XSD W3C Schema

The only normative component of UBL is the W3C Schema XSD expression of XML document constraints

- all other committee work products are in support of or derived from the normative schemata

The document model constrains the interchange of information, not the application data model

- a popular misconception in XML-based system design is to equate the document model with the application data model
- XML provides independence between the two data models of the applications performing an interchange
- an application translates information from its data model to and from the interchange model

The UBL TC has mandated additional document-oriented constraints that go beyond the document model

- this promotes interoperability and blind interchange of XML documents

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Notes:

Document model formal expressions (cont.)

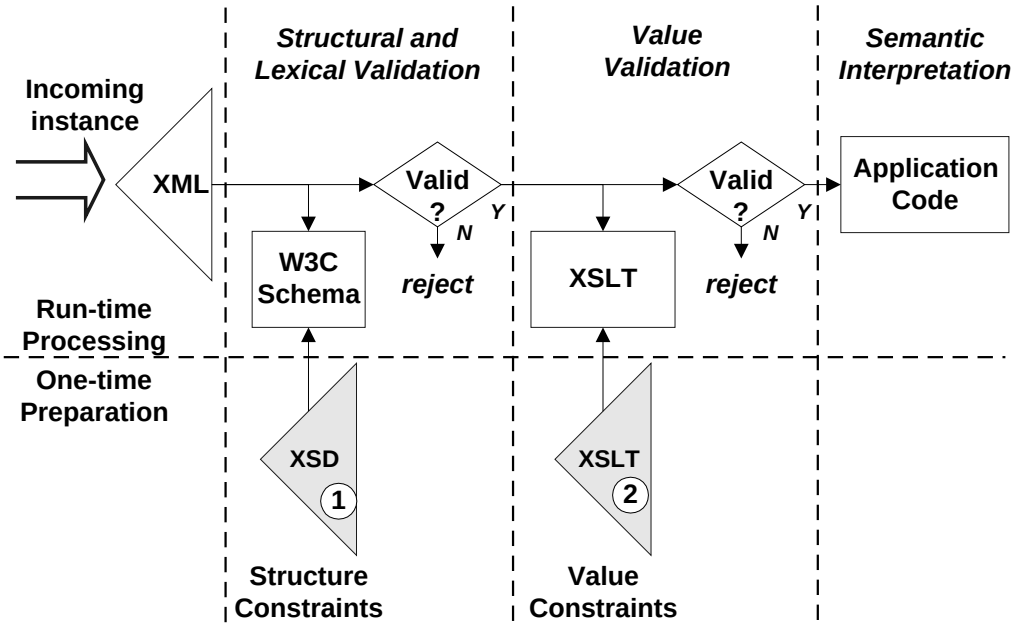
Module 5 - Document models

In UBL 1.0 all document constraints are described by XSD schema

- structure constraints using complex types
- coded values using enumerations
- no accommodation of business rules

In UBL 2.0 document validation involves two distinct steps:

- **first-pass structure (well-formed, structural and lexical) validation using XSD (1)**
  - ensures that all information items are correctly labeled and correctly positioned
  - `c:\publd\artefacts\os-UBL-2.0\xsd\maindoc\UBL-Invoice-2.0.xsd`
- **second-pass coded-value validation using XSLT (2)**
  - ensures the values used for coded-value information items are as expected by the UBL TC
  - the XSLT is an implementation of ISO/IEC 19757-3 Schematron
    - the specification of the constraints is described in Module 8 Controlled vocabulary overview (page 35)
    - the specification is translated into Schematron
    - the Schematron is translated into XSLT



Demonstrated using `c:\publd\artefacts\os-UBL-2.0\val\validate.bat` (`.sh`)

- invoked by `test.bat` and `test.sh`

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Notes:

Module 6 - Model semantics

- Introduction - Model semantics

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Notes:

Model semantics

Module 6 - Model semantics

Semantics is about the meaning of things

- by definition
- by association

The information item "UBL name", i.e. element type name, is mnemonic

- **the label of the information item in the XML document structure**
- the mnemonic is meant to be a useful reminder of the semantic behind the term
- the mnemonic is *not* meant to define the term
- NDR rule GNR1 requires information item names to be in Oxford English

The information item "Definition" and "Alternate Business Terms" are descriptive and meant to convey the semantic meaning

- inappropriate for use in other languages because multiple readers of a given language may interpret or translate the definition differently
- would need a language-specific version of these to consistently convey meaning to a group of readers of a language other than English

Only the UBL schemas are normative, thus mandating the mnemonics used for element names be unchangeable in all uses of UBL

- the descriptions associated with the mnemonics are informative
- transliteration of the element types does not maintain the "UBL-ness" of the document
- it is inappropriate, and not compatible with UBL, to use translated element and attribute names in instances

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Notes:

Model semantics (cont.)

Module 6 - Model semantics

The UBL International Data Dictionary (IDD) documents the translations of the descriptions and business terms in a spreadsheet:

	C	E	F	G	H
2	UBL Name	Cardi-nality	Compo nent Type	*Spanish*	
3				Business Terms	Definition
4	Address		ABIE	Dirección	Información acerca de una dirección estructurada
5	ID	0..1	BBIE	ID	Identificador de una dirección específica correspondiente a un esquema de direcciones
6	AddressTypeCode	0..1	BBIE	Tipo de Dirección	Código que especifica el tipo de dirección, como por ejemplo un domicilio social o una dirección postal personal
7	AddressFormatCode	0..1	BBIE	Código de Formato de Dirección	Código para identificar el formato específico de esta dirección
8	Postbox	0..1	BBIE	Apartado postal	Número de apartado postal
9	Floor	0..1	BBIE	Planta	Texto que identifica la planta de una de un edficio
10	Room	0..1	BBIE	Habitación	Habitación, despacho o apartamento de un edificio
11	StreetName	0..1	BBIE	Calle	Nombre de la calle para esta dirección
12	AdditionalStreetName	0..1	BBIE	Calle adicional	Nombre adicional de la calle (aporta información más detallada acerca del nombre de la calle)
13	BlockName	0..1	BBIE	Manzana	Nombre de una manzana de edificios, expresado como texto. Se refiere a una área rodeada de calles y que habitualmente contiene varios edificios identificados en su conjunto por esta dirección
14	BuildingName	0..1	BBIE	Edificio	Nombre identificativo de un edificio
15	BuildingNumber	0..1	BBIE	Número	Número de un edificio
16	InhouseMail	0..1	BBIE	Dirección interna	Ubicación específica dentro de un edificio

Localization Template

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Notes:

Module 7 - XPath enumerations

- Introduction - XPath text reports

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Notes:

XPath text reports

Module 7 - XPath enumerations

The XPath text report is a human-legible summary for each information item:

- ordinal information item position
    - ordinal element position
    - ordinal separator "."
        - this is not to be interpreted as a decimal point
    - alphabetical ordinal attribute position within each element
        - without zero fill
    - the ordinal pair "123.10" will follow "123.9" and be distinct from "123.1"
- cardinality
- absolute XPath location path address

```
1   1..1 /in:Invoice/
2   0..1 /in:Invoice/ext:UBLExtensions/
3   1..n /in:Invoice/ext:UBLExtensions/ext:UBLExtension/
4   0..1 /in:Invoice/ext:UBLExtensions/ext:UBLExtension/cbc:ID
...
17   1..1 /in:Invoice/cbc:ID
17.1 0..1 /in:Invoice/cbc:ID/@schemeAgencyID
17.2 0..1 /in:Invoice/cbc:ID/@schemeAgencyName
17.3 0..1 /in:Invoice/cbc:ID/@schemeDataURI
17.4 0..1 /in:Invoice/cbc:ID/@schemeID
17.5 0..1 /in:Invoice/cbc:ID/@schemeName
17.6 0..1 /in:Invoice/cbc:ID/@schemeURI
17.7 0..1 /in:Invoice/cbc:ID/@schemeVersionID
18   0..1 /in:Invoice/cbc:CopyIndicator
...
20   1..1 /in:Invoice/cbc:IssueDate
21   0..1 /in:Invoice/cbc:IssueTime
...
23   0..n /in:Invoice/cbc:Note
23.1 0..1 /in:Invoice/cbc:Note/@languageID
24   0..1 /in:Invoice/cbc:TaxPointDate
25   0..1 /in:Invoice/cbc:DocumentCurrencyCode
25.1 0..1 /in:Invoice/cbc:DocumentCurrencyCode/@languageID
25.2 0..1 /in:Invoice/cbc:DocumentCurrencyCode/@listAgencyID
25.3 0..1 /in:Invoice/cbc:DocumentCurrencyCode/@listAgencyName
25.4 0..1 /in:Invoice/cbc:DocumentCurrencyCode/@listID
25.5 0..1 /in:Invoice/cbc:DocumentCurrencyCode/@listName
25.6 0..1 /in:Invoice/cbc:DocumentCurrencyCode/@listSchemeURI
25.7 0..1 /in:Invoice/cbc:DocumentCurrencyCode/@listURI
25.8 0..1 /in:Invoice/cbc:DocumentCurrencyCode/@listVersionID
25.9 0..1 /in:Invoice/cbc:DocumentCurrencyCode/@name
...
```


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Notes:

Module 8 - Controlled vocabulary overview

- Lesson 1 - Controlled vocabulary overview

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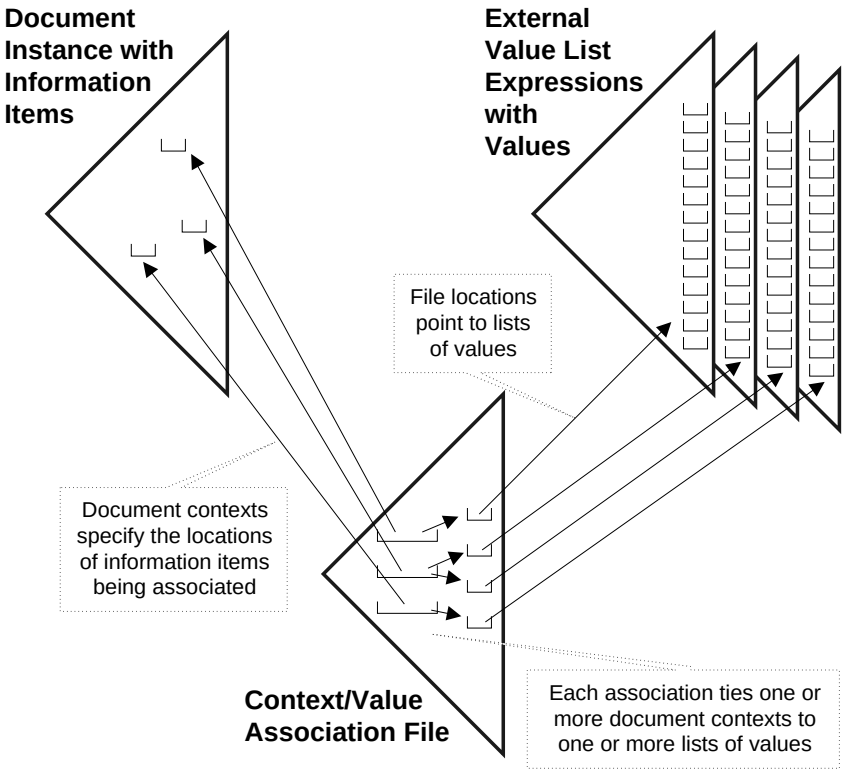
Notes:

UBL use of controlled vocabularies

Module 8 - Controlled vocabulary overview
Lesson 1 - Controlled vocabulary overview

Specifying, extending and restricting controlled vocabularies in XML documents

- **context/value association declaratively ties a document context to sets of values**
  - i.e. "those enumerated values over there are to be used to validate the specified values for this particular document context"
- an XML vocabulary is used to create an instance of a context/value association file
  - W3C XPath is used to specify document context
  - a URI is used to point to an external expression of enumerated values
  - an association ties a document context to the sets of values for that context



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Notes:

Module 9 - UBL customization overview

- Lesson 1 - UBL customization overview

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Notes:

Enabling UBL for a community of users

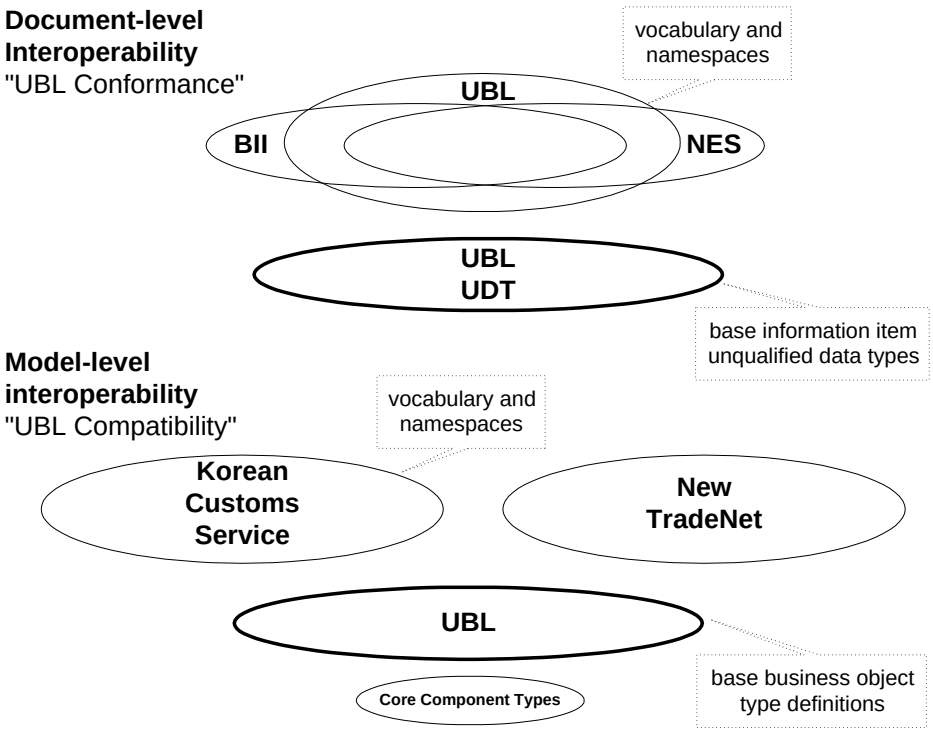
Module 9 - UBL customization overview
Lesson 1 - UBL customization overview

At least two ways to view interoperability when customizing UBL for one's own purposes

- document-level interoperability
  - objective to be able to interchange UBL messages
- model-level interoperability
  - objective to be create new information items and messages based on UBL library of constructs

In these two diagrams, the ovals represent the set of vocabulary information items (names and namespaces) for an implementation of UBL

- the top diagram illustrates how there is a big overlap of vocabulary between UBL and the North European Subset (NES), but not between UBL and New TradeNet
  - the NES uses a subset of the UBL vocabulary and adds a number of constructs as extensions
  - the New TradeNet vocabulary doesn't overlap with the UBL vocabulary
  - all three vocabularies are based on the unqualified data types of UBL, thus the XSD module is utilized in the declaration of the constructs
- the bottom diagram illustrates how there is no overlap of vocabulary between the Korean Customs Service implementation of UBL and the New TradeNet implementation of UBL
  - the business objects in both vocabularies are derived from UBL business objects, which themselves are derived from the UN/CEFACT Core Component Types (CCT)



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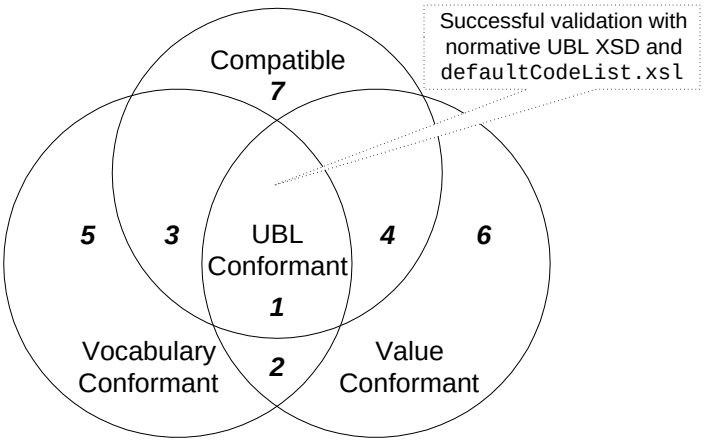
Notes:

Enabling UBL for a community of users (cont.)

Module 9 - UBL customization overview
Lesson 1 - UBL customization overview

All customizations can be categorized in one of the following combinations:



1. **fully UBL instance-level conformant**
   - successfully validates with the normative UBL XSD files and delivered `defaultCodeList.xsl`
2. **the vocabulary conforms, but includes incompatible extensions under the extension point but no non-standardized code list values**
3. **the vocabulary conforms and does not include any incompatible extensions, but there are non-standardized code list values**
4. **the vocabulary does not conform but is compatible and all of the codes used are those defined by UBL**
5. **the vocabulary conforms, but includes incompatible extensions under the extension point and non-standardized code list values**
6. **the vocabulary doesn't conform and includes incompatible constructs, but all of the codes are those defined by UBL**
7. **the vocabulary doesn't conform, and includes incompatible constructs and codes not defined by UBL**

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Notes:

Where to go from here?

Conclusion - Practical Universal Business Language Deployment

The work on UBL continues:

- OASIS UBL 2.0 Standard - December 12, 2006
  - `http://docs.oasis-open.org/ubl/os-UBL-2.0/`
- OASIS Genericode 1.0 Committee Specification - December 27, 2007
  - `http://docs.oasis-open.org/codelist/genericode`
- OASIS Context/value association using genericode (draft)
  - `http://www.oasis-open.org/committees/document.php?document_id=28019`
- focus now shifts to support, deployment, awareness and evangelism
- committee mail list - UBL TC:
  - `http://lists.oasis-open.org/archives/ubl/`
- community mail list - UBL-Dev
  - `http://lists.oasis-open.org/archives/ubl-dev/`
  - `http://www.oasis-open.org/mlmanage/`

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Notes:

Hands-on Training - April 22,23,24, 2008

Conclusion - Practical Universal Business Language Deployment

Full-day hands-on training offered during UBL International 2008

Tuesday April 22 and Thursday April 24 - Practical UBL Deployment

- overview of all artefacts in the UBL 2.0 package
- working with XML documents
- working with UBL documents
- working with the artefacts

Wednesday April 23 - Practical Code List Implementation

- overview of code list representation and association
- validating values in XML documents of any model (not just UBL)

Exercises and files on your own laptop

- experimenting with validation

Who is interested to attend?

- technical managers
- system designers
- programmers

Please find Crane Softwrights Ltd. booth to register or for more information

- or contact the registration desk

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Obtaining a copy of this material

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- **"Practical Universal Business Language Deployment" Second Edition - 2007-03-01 - ISBN 978-1-894049-17-7**
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