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Appendices

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1. Introduction (Informative)

Since its approval as a W3C recommendation in 1998, XML has been adopted in a number of industries as a framework for the definition of the messages exchanged in electronic commerce. The widespread use of XML has led to the development of multiple industry-specific XML versions of such basic documents as purchase orders, shipping notices, and invoices.

While industry-specific data formats have the advantage of maximal optimization for their business context, the existence of different formats to accomplish the same purpose in different business domains is attended by a number of significant disadvantages as well.

- Developing and maintaining multiple versions of common business documents like purchase orders and invoices is a major duplication of effort.
- Creating and maintaining multiple adapters to enable trading relationships across domain boundaries is an even greater effort.
- The existence of multiple XML formats makes it much harder to integrate XML business messages with back-office systems.
- The need to support an arbitrary number of XML formats makes tools more expensive and trained workers harder to find.

The OASIS Universal Business Language (UBL) is intended to help solve these problems by defining a generic XML interchange format for business documents that can be extended to meet the requirements of particular industries. Specifically, UBL provides the following:

- A library of XML schemas for reusable data components such as “Address,” “Item,” and “Payment” — the common data elements of everyday business documents.

- A set of XML schemas for common business documents such as “Order,” “Despatch Advice,” and “Invoice” that are constructed from the UBL library components and can be used in generic procurement and transportation contexts.

A standard basis for XML business schemas provides the following advantages:

- Lower cost of integration, both among and within enterprises, through the reuse of common data structures.

- Lower cost of commercial software, because software written to process a given XML tag set is much easier to develop than software that can handle an unlimited number of tag sets.

- An easier learning curve, because users need master just a single library.

- Lower cost of entry and therefore quicker adoption by small and medium-size enterprises (SMEs).

- Standardized training, resulting in many skilled workers.

- A universally available pool of system integrators.

- Standardized, inexpensive data input and output tools.

- A standard target for inexpensive off-the-shelf business software.

UBL is designed to provide a universally understood and recognized commercial syntax for legally binding business documents and to operate within a standard business framework such as ISO 15000 (ebXML) to provide a complete, standards-based infrastructure that can extend the benefits of existing EDI systems to businesses of all sizes. UBL is freely available to everyone without legal encumbrance or licensing fees.

UBL schemas are modular, reusable, and extensible in XML-aware ways. As the first standard implementation of ebXML Core Components Technical Specification 2.01, the UBL Library is based on a conceptual model of information components known as Business Information Entities (BIEs). These components are assembled into specific document models such as Order and Invoice. These document assembly models are then transformed in accordance with UBL Naming and Design Rules into W3C XSD schema syntax. This approach facilitates the creation of UBL-based document types beyond those specified in this release.

1.1. Acknowledgements

The OASIS UBL TC thanks Altova for its contribution of XML Spy licenses for use in UBL schema design and Sparx Systems for its contribution of Enterprise Architect licenses for use in developing UML content models. Special thanks are due to GEFEG for its contribution of FX (EDIFIX) and technical expertise in the generation and quality review of UBL schemas.

2. Terms and Definitions

Assembly model

A tree-structured model of ABIEs that can be implemented as a document schema.

Class diagram

A graphical notation used by [UML] to describe the static structure of a system, including object classes and their attributes and associations.

Context

The circumstance or events that form the environment within which something exists or takes place.

Document

A set of information components that are interchanged as part of a business transaction; for example, in placing an order.

Spreadsheet model

A representation of an assembly model in tabular form.

XSD schema

An XML document definition conforming to the W3C XML Schema language [XSD1] [XSD2].

The terms *Core Component (CC), Basic Core Component (BCC), Aggregate Core Component (ACC), Association Core Component (ASCC), Business Information Entity (BIE), Basic Business Information Entity (BBIE),* and *Aggregate Business Information Entity (ABIE)* are used in this specification with the meanings given in [CCTS].

The terms *Object Class, Property Term, Representation Term,* and *Qualifier* are used in this specification with the meanings given in [ISO11179].

The keywords MUST, MUST NOT, REQUIRED, SHALL, SHALL NOT, SHOULD, SHOULD NOT, RECOMMENDED, MAY and OPTIONAL, when they appear in this document, are to be interpreted as described in [RFC2119].

3. Symbols and Abbreviations

ABIE

Aggregate Business Information Entity

ASBIE

Association Business Information Entity

BBIE

Basic Business Information Entity

BIE

Business Information Entity

CC

Core Component

CV2

Credit Card Verification Numbering System

EDI

Electronic Data Interchange

ISO

International Organization for Standardization

NDR

UBL Naming and Design Rules (see Appendix F)

UML

Unified Modeling Language [UML]

UN/CEFACT

United Nations Centre for Trade Facilitation and Electronic Business

UNDG

United Nations Dangerous Goods

URI

Uniform Resource Identifier

UUID

Universally Unique Identifier

XML

Extensible Markup Language [XML]

XPath

The XML Path Language

XSD

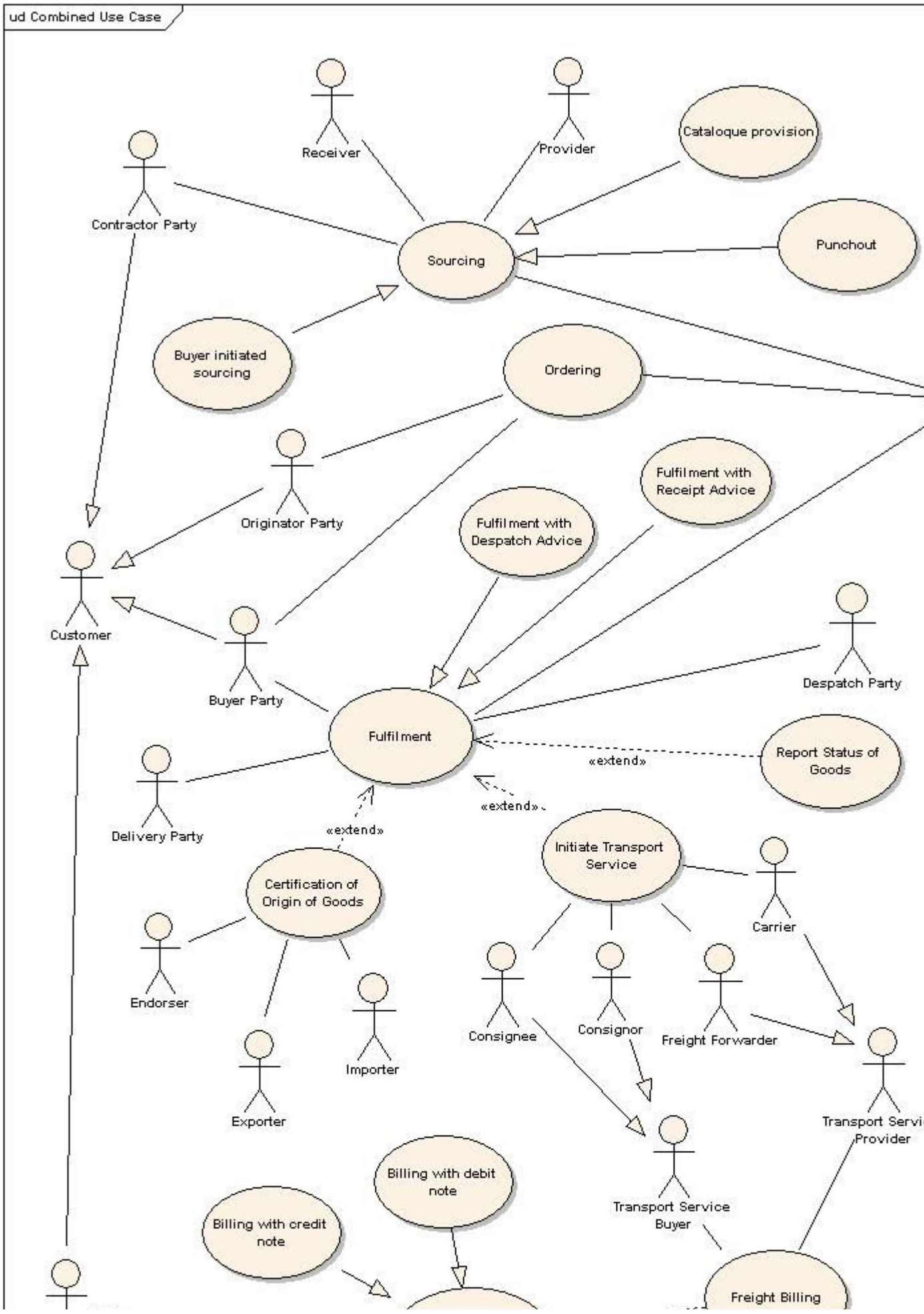
W3C XML Schema Language [XSD1] [XSD2]

4. UBL 2.0 Context of Use

The processes described in this section, and the business rules associated with them, define a context for the use of UBL 2.0 business documents. They are normative insofar as they provide semantics for the UBL document schemas, but they should not be construed as limiting the application of those schemas.

UBL 2.0 extends the order-to-invoice processes of UBL 1.0 to cover a supply chain from sourcing to payment, including the commercial collaborations of international trade. The following diagram illustrates the process context assumed by UBL 2.0 documents.

Figure 1. Processes Covered by UBL 2.0


ud Combined Use Case
Receiver
Provider
Cataloque provision
Contractor Party
Sourcing
Punchout
Buyer initiated sourcing
Ordering
Originator Party
Fulfilment with Receipt Advice
Fulfilment with Despatch Advice
Customer
Buyer Party
Despatch Party
Fulfilment
Report Status of Goods
«extend»
«extend»
Delivery Party
«extend»
Initiate Transport Service
Certification of Origin of Goods
Carrier
Endorser
Consignee
Consignor
Freight Forwarder
Importer
Exporter
Transport Servi Provider
Billing with debit note
Billing with credit note
Transport Service Buyer
Freight Billing

It is important to note that the UBL 2.0 library is designed to support the construction of a wide variety of document types beyond those provided in the 2.0 package. It is expected that implementers will develop their own customized document types and components and that other UBL document types will be added as the library evolves.

4.1. General Business Requirements

This section describes some of the requirements and general business rules that are assumed for collaborations and document exchanges in UBL 2.0.

4.1.1. Items

- An item may be a product or a service
- Items may have multiple classifications
- A contract may influence prices
- An item may be part of another item
- An item may have a price per unit and an order unit
- An item may reference pictures and documents
- An item may have a validity period
- An item may refer to other relevant or necessary items

4.1.2. Item Identification

One of the following identifiers may be used to identify each Item (for example, a product):

- Buyer's Item Identification, or
- Seller's Item Identification, or
- Manufacturer's Item Identification, or
- Catalogue Item Identification, or
- Item Identification according to a system promulgated by a standards body

The Item may be further distinguished by the specification of Measurement(s) or Physical Attribute(s). This enables specification of the following kinds of item:

- Item Requiring Description

  This is an item that is not identified by an unambiguous machine-processable product code and requires additional descriptive information to precisely identify it.

- Customer Defined Item

  This is an item that the customer describes according to his need, and in the specification of which the customer may make some reference to comparable “standard” items.

- Item Requiring Measurements

  This is an item for which it is necessary to specify one or more measurements as part of the descriptive specification of the item.

4.1.3. Item Instances

Certain Items may be identified and ordered as individual, unique objects, for example, a specific car rather than a make and model of a car. This form of identification may also be needed for product tracing (e.g., perishable goods) or because of the nature of the commodity (e.g., used, collectible, specialized, or rare).

In data modeling terms, an Item Instance is an extension of an Item.

4.1.4. Item Pricing

For any given Item, price ranges by amount, quantity, location, etc., are specified by the Seller during the sourcing stage. They are not repeated back to the Seller during Ordering; only the active price is specified.

In some cases, the Buyer may not know the Item Price, in which case it is not specified. This makes a detailed response from the Seller necessary; see Order Response.

4.1.5. Hazardous Items

Although ordered items may include Hazardous items, it is not necessary to specify related information at the order stage. The Buyer may not be aware of the nature of the Item. Indication of the Hazardous nature of the Item, and any relevant information, would be indicated in the Despatch Advice and Transportation documents.

4.1.6. Parties

In UBL, a party is defined as an individual, a group, or a body having a role in a business function.

Dependent on the business process, a Party may play various roles in the document exchange.

4.1.7. Multilingual Text

Some textual components, such as Notes and Description, may be specified in several languages. Each should be a separate occurrence of the component, using the language attribute to define its presentation. However, multiple occurrences of the same textual components should not be in the same language.

4.2. Business Processes

The UBL 2.0 documents and library are designed to support the typical business processes outlined in Figure 1.

The following sections describe each business process in more detail. But first we should explain the roles that the parties involved in these processes may perform.

4.2.1. Party Roles

In the UBL supply chain processes, two main actors, Customer and Supplier, represent the key organizations or individuals involved in the processes. Each of these actors may play various roles. Processes may also involve supplementary roles that may be provided by different parties.

The actual role undertaken is dependent on the context of use. For example, the Despatch Party and Delivery Party as applied to the Procurement process may differ in the Transportation process. In other words, whether the Consignor in a Transportation process is actually equal to the Despatch Party or Seller in the Procurement process depends on the specific circumstances.

The following table contains a description of the typical roles for the actors known as Party, Customer Party, and Supplier Party.

Table 1. Party Roles

Actor	Role	Description	Example	Synonyms	Sends	Receives
CustomerParty	Originator	The party that had the original demand for the goods and/or services and therefore initiated the procurement transaction. The Originator participat	If an employee requests a computer, the employing company may become the Buyer, but the employee is the Originator. They need to receive information about		Request for Quotation	Quotation

Actor	Role	Description	Example	Synonyms	Sends	Receives
		es in pre-ordering activity either through RFQ and Quotation or by receiving a Quotation as a response to a punchout transaction on a marketplace or Seller's website. If the Originator subsequently places an Order, the Originator adopts the role of Buyer. The Originator is the typically the contact point for queries regarding the original requirem	the order.			

Actor	Role	Description	Example	Synonyms	Sends	Receives
		ent and may be referred to in an Order Change, Order Cancellation, or Order Response.				
Customer Party	Buyer	The party that purchases the goods or services on behalf of the Originator. The Buyer may be referred to in Order Response, Despatch Advice, Invoice, Self Billed Invoice, Credit Note, and Account Statement.	A company may delegate the task of purchasing to a specialized group to consolidate orders and gain greater discounts.	Order Point	Order, Order Change, and Order Cancellation	Order Response
Sup	Deliver	The party to whom	If a municipa	Delivery	Receipt	Despatch

Actor	Role	Description	Example	Synonyms	Sends	Receives
plier Party	y	goods should be delivered. The Delivery Party may be the same as the Originator. The Delivery Party must be referred to at line item level in RFQ, Quotation, Order, Order change, Order Cancellation, and Order Response. The Delivery Party may be referred to at line level in Invoice, Self Billed Invoice, Credit Note, and	lity buys a wheelchair for a citizen, the wheelchair must be delivered to the citizen (the Delivery Party). In such cases the citizen may be notified before delivering the wheelchair.	Point, Destination Party, Receiver, Recipient	Advice	Advice

Actor	Role	Description	Example	Synonyms	Sends	Receives
		Debit Note. The Delivery Party may be stipulated in a transport contract.				
Customer Party	Accounting Customer	The party responsible for making settlement relating to a purchase and resolving billing issues using a Debit Note. The Accounting Customer must be referred to in an Order and may be referred to in an Order Response. In a Self Billing scenario,	If a kindergarten buys some toys they may be the Originator, Buyer, and Delivery Party, but the municipality may play the role of Accounting Customer — they are going to pay for it.	Invoicee, Accounts Payable, Debtor	In a traditional Billing scenario: Debit Note, Account Response, and Remittance Advice In a Self Billing scenario: Self Billed Invoice, Self Billed Credit Note, and Remittance Advice	In a traditional Billing scenario: Invoice, Credit Note, and Statement of Account In a Self Billing scenario: Credit Note, Account Response, and Statement of Account

Actor	Role	Description	Example	Synonyms	Sends	Receives
		the Accounting Customer is responsible for calculating and issuing tax invoices.				
Supplier Party	Seller	The party responsible for handling Originator and Buyer services. The Seller party is legally responsible for providing the goods to the Buyer. The Seller party receives and quotes against RFQs and may provide information to the Buyer's requisitio	The organization that sells wheelchairs to municipalities.	Sales Point, Provider, Customer Manager	Quotation, Order Response, Order Response Simple, Catalogue, Catalogue Deletion, Catalogue Item Specification Update, Catalogue Pricing Update	RFQ, Order, Order Change, Order Cancellation, Request for Catalogue

Actor	Role	Description	Example	Synonyms	Sends	Receives
		ning process through Catalogues and Quotations.				
Supplier Party	Despatch	The party where goods are to be collected from. The Despatch Party may be stipulated in a transport contract.	The wheelchair Supplier may store chairs at a local warehouse. The warehouse will actually despatch the chair to the Delivery Party. The local warehouse is then the Despatch Party.	Despatch Point, Shipper, Sender	Despatch Advice	Receipt Advice
Supplier Party	Accounting Supplier	The party who claims the payment and is responsible for resolving billing issues and arranging	There are cases where the Accounting Supplier is not the Seller party. For example, factoring, where the invoicing	Accounts Receivable, Invoice Issuer, Creditor	In a traditional Billing scenario: Invoice, Credit Note, and Statement of	In a traditional Billing scenario: Debit Note, Account Response, and Remitt

Actor	Role	Description	Example	Synonyms	Sends	Receives
		settlement.	is outsourced to another company.		Account In a Self Billing scenario: Credit Note, Account Response and Statement of Account	ance Advice In a Self Billing scenario: Self Billed Invoice, Self Billing Credit Note, and Remittance Advice
Supplier Party	Payee	The party to whom the Invoice is paid.	The Accounting Supplier may not be the party to be paid due to changes in the organization, e.g., a company merger.	Accounts Receivable, Creditor		Remittance Advice
Customer Party	Contractor	The party responsible for the contract to which the Catalogue relates.	An organization has a central office for maintaining catalogues of	Central Catalogue Party, Purchasing Manag	Request for Catalogue	Catalogue, Catalogue Deletion, Catalogue Item

Actor	Role	Description	Example	Synonyms	Sends	Receives
			approved items for purchase.	er		Specification Update, Catalogue Pricing Update
Party	Provider	The party responsible for the integrity of the information provided about an item.	The manufacturer may publish and maintain the data sheets about a product.		Catalogue, Catalogue Deletion, Catalogue Item Specification Update, Catalogue Pricing Update	
Party	Receiver	The party receiving a document. The party receiving a Catalogue. Catalogue items may never be ordered, so the recipient	A marketplace may receive an Application Response.			Catalogue, Catalogue Deletion, Catalogue Item Specification Update, Catalogue Pricing Update, Applic

Actor	Role	Description	Example	Synonyms	Sends	Receives
		of the catalogue is not an Originator or a Buyer.				ation Response
Party	Sender	The party sending a document.	A marketplace may send an Application Response.		Application Response	
Party	Consignor	The party consigning the goods as stipulated in the transport contract. A Buyer, Delivery, Seller, or Despatcher Party may also play the role of Consignor. Also known as the Transport Service Buyer. The Consignor may be stipulated	The wheelchair Supplier may source from a local warehouse. The Freight Forwarder will collect the chair from the local warehouse, which is thus the Consignor. In this case, the warehouse also plays the role of Despatch Party to	Despatch Point, Shipper, Sender, Transport Service Buyer	Forwarding Instructions, Packing List	Bill of Lading, Waybill, Freight Invoice, Transportation Status

Actor	Role	Description	Example	Synonyms	Sends	Receives
		in a transport contract.	the Freight Forwarder.			
Party	Consignee	The party receiving a consignment of goods as stipulated in the transport contract.	The party taking responsibility for the receipt of the consignment covering the wheelchair.	Delivery Point, Transport Service Buyer	Forwarding Instructions, Freight Invoice	Bill of Lading, Waybill, Freight Invoice, Transportation Status
Party	Freight Forwarder	The party arranging the carriage of goods, including connected services and/or associated formalities, on behalf of a Consignor or Consignee. Also known as the Transport Service	The Consignor may have a contract with this Freight Forwarder, which is a Transport Services Provider, to arrange all their transport needs.	Shipping Agent, Broker, Courier, Transport Service Provider	Forwarding Instructions, Freight Invoice, Transportation Status	Bill of Lading, Waybill, Packing List

Actor	Role	Description	Example	Synonyms	Sends	Receives
		Provider. The Freight Forwarder may also be the Carrier. The Freight Forwarder may create an invoice and bill to the Transport Service Buyer for the transportation service provided.				

Actor	Role	Description	Example	Synonyms	Sends	Receives
Party	Carrier	The party providing physical transport services.	The Freight Forwarder may engage an airline company to deliver the wheelchair. The airline is then the Carrier and delivers the chair to the Delivery Party.	Freight Haulier, Shipper, Ships Agent, Shipping Company, Airline, Rail Operator, Road Haulier	Bill of Lading, Waybill	Forwarding Instructions
Party	Exporter	The party who makes regulatory export declarations, or on whose behalf regulatory export declarations are made, and who is the owner of the goods or has similar right of disposal over them at the time when the	The wheelchair Supplier has to apply for a Certificate of Origin in order to sell the chairs overseas.	Seller, Consignor	Certificate of Origin	Application Response

Actor	Role	Description	Example	Synonyms	Sends	Receives
		declaration is accepted.				
Party	Endorser	The party appointed by the Government of a country who has the right to certify a Certificate of Origin. This endorsement restricts goods imported from certain countries for political or other reasons.	The Government agency validates all the information provided by Exporter for Certificate of Origin approval.	Authorized Organization, Embassy	Certificate of Origin, Application Response	Certificate of Origin
Party	Importer	The party who makes, or on whose behalf an agent or other authorized person makes, an import declaration. This may	A specialized group in a company consolidates the purchase request and handles the receiving	Order Point, Delivery Party, Buyer, Customer, Consignee		Certificate of Origin

Actor	Role	Description	Example	Synonyms	Sends	Receives
		include a person who has possession of the goods or to whom the goods are consigned.	of goods.			

4.3. Sourcing

There are three kinds of sourcing:

- Catalogue provision
- Customer initiated sourcing
- Punchout

A Seller Supplier Party, Contractor Customer Party, Originator Customer Party, or Buyer Customer Party may initiate sourcing.

Document types in these processes are Catalogue Request, Application Response, Catalogue Item Specification Update, Catalogue Pricing Update and Catalogue Deletion.

4.3.1. Catalogue Provision

A Catalogue is defined as a document produced by a party in the procurement chain that describes items and prices.

Catalogue provision is the case where a Provider sends information regarding items available for purchase to a Receiver. This may be on request or unsolicited.

Because they are only potential purchasers, a Receiver may never become a Customer Party.

4.3.1.1. Sourcing Business Rules Assumed

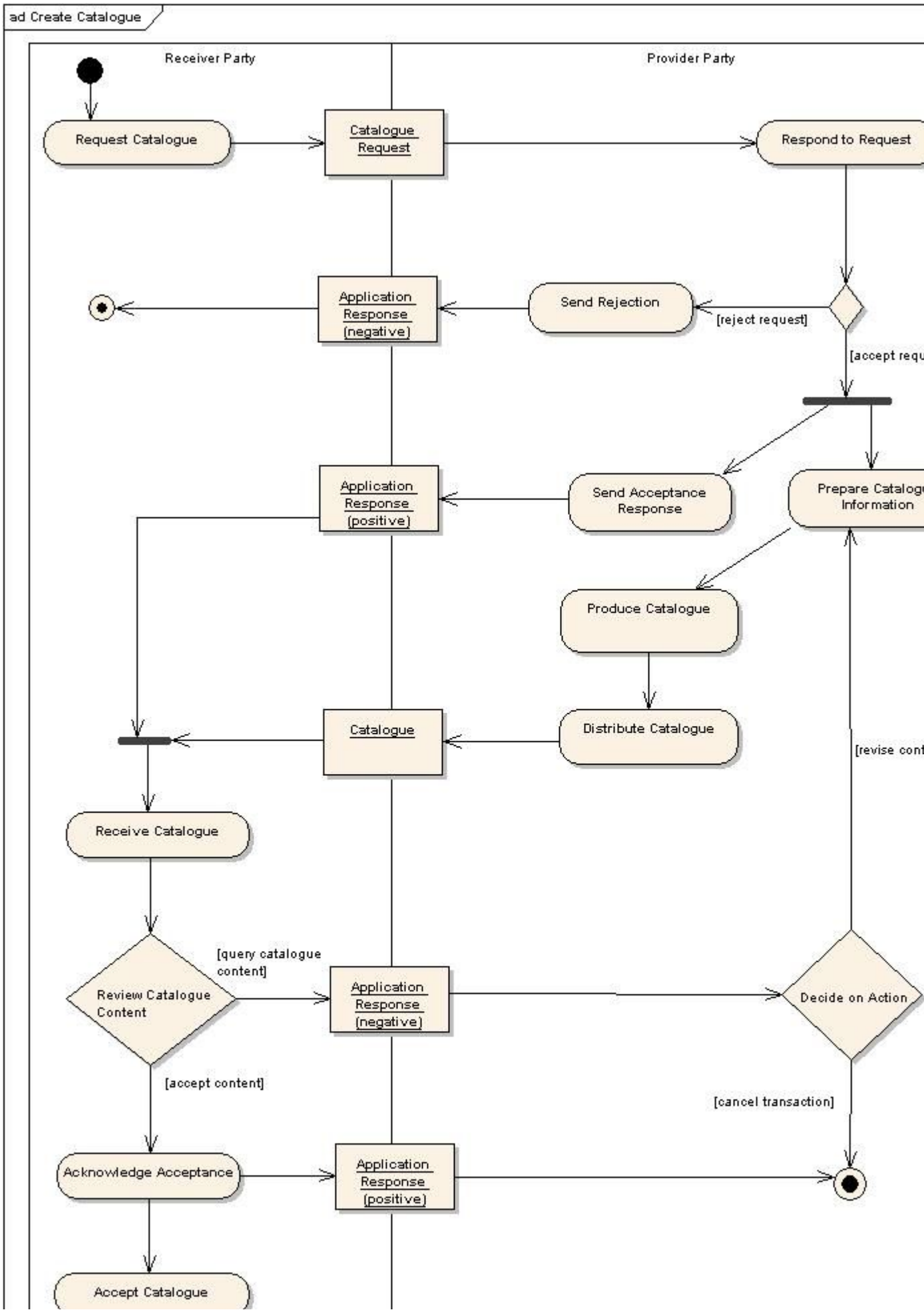
- Any conditions specified in the contract shall overrule those stated in the common Catalogue.
- A Catalogue exchange shall be between one Provider and one Receiver Party.

- A classification system may have its own set of properties.
- A classification scheme shall have metadata.
- A Catalogue may have a validity period.
- A Catalogue should include item classifications.
- Classification schemes should include standard and specific properties.
- A Catalogue may refer to the lot (sub-section) of a contract.
- A Catalogue may explicitly specify the framework contract reference.
- A Catalogue may refer to a DPS contract number.
- When a Catalogue item is updated, the item shall be replaced in the Catalogue.
- When a Catalogue item is updated, historical information about replaced or updated items must be available to reconcile with outstanding transactions.
- Prices may be updated independently of other Catalogue information.
- Catalogue distribution may be Provider or Receiver Party initiated.
- If a Receiver initiates a request for a Catalogue, they may request an entire Catalogue or only updates to either pricing or item specification details.
- Whether Receiver Party initiated or not, the decision to issue a new Catalogue or update an existing one shall be at the discretion of the Provider Party.
- If an updated Catalogue is issued, then an action code shall define the status of the items in the Catalogue.

4.3.1.2. Create Catalogue

The process of creating a Catalogue is shown in the following diagram.

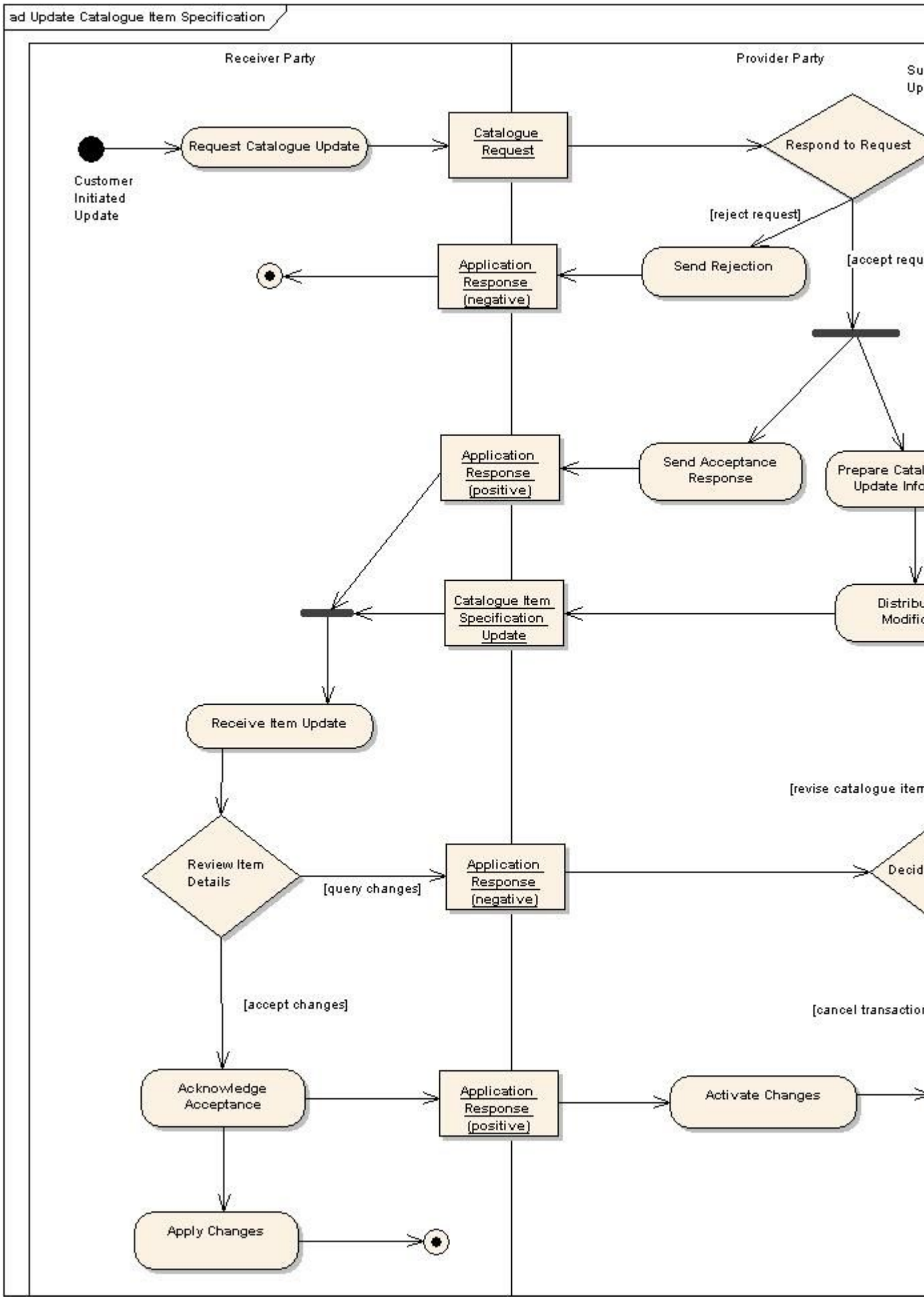
Figure 2. Create Catalogue Process


ad Create Catalogue
Receiver Party
Provider Party
Request Catalogue
Catalogue Request
Respond to Request
Application Response (negative)
Send Rejection
[reject request]
[accept requ
Application Response (positive)
Send Acceptance Response
Prepare Catalogu Information
Produce Catalogue
Distribute Catalogue
Catalogue
[revise cont
Receive Catalogue
Review Catalogue Content
[query catalogue content]
Application Response (negative)
Decide on Action
[accept content]
[cancel transaction]
Acknowledge Acceptance
Application Response (positive)
Accept Catalogue

4.3.1.3. Update Catalogue Item Specification

The process of updating a Catalogue Item Specification is shown in the following diagram.

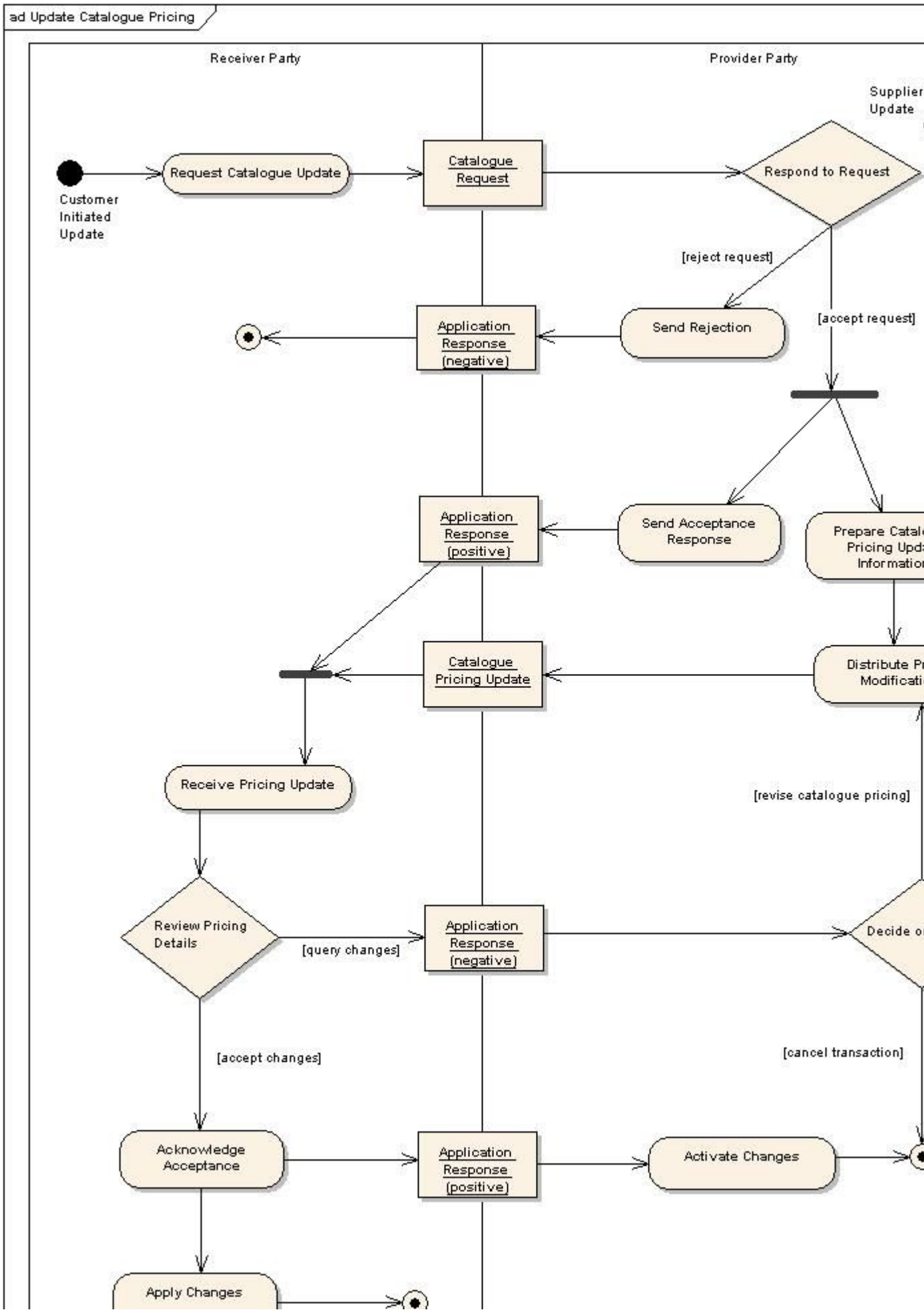
Figure 3. Update Item Specification Process


ad Update Catalogue Item Specification
Receiver Party
Provider Party
Customer Initiated Update
Request Catalogue Update
Catalogue Request
Respond to Request
[reject request]
Send Rejection
Application Response (negative)
[accept requ
Send Acceptance Response
Application Response (positive)
Prepare Catal Update Info
Catalogue Item Specification Update
Distribu Modific
Receive Item Update
[revise catalogue item
Review Item Details
[query changes]
Application Response (negative)
Decid
[accept changes]
[cancel transaction
Acknowledge Acceptance
Application Response (positive)
Activate Changes
Apply Changes

4.3.1.4. Update Catalogue Pricing

The process of updating Catalogue pricing is shown in the following diagram.

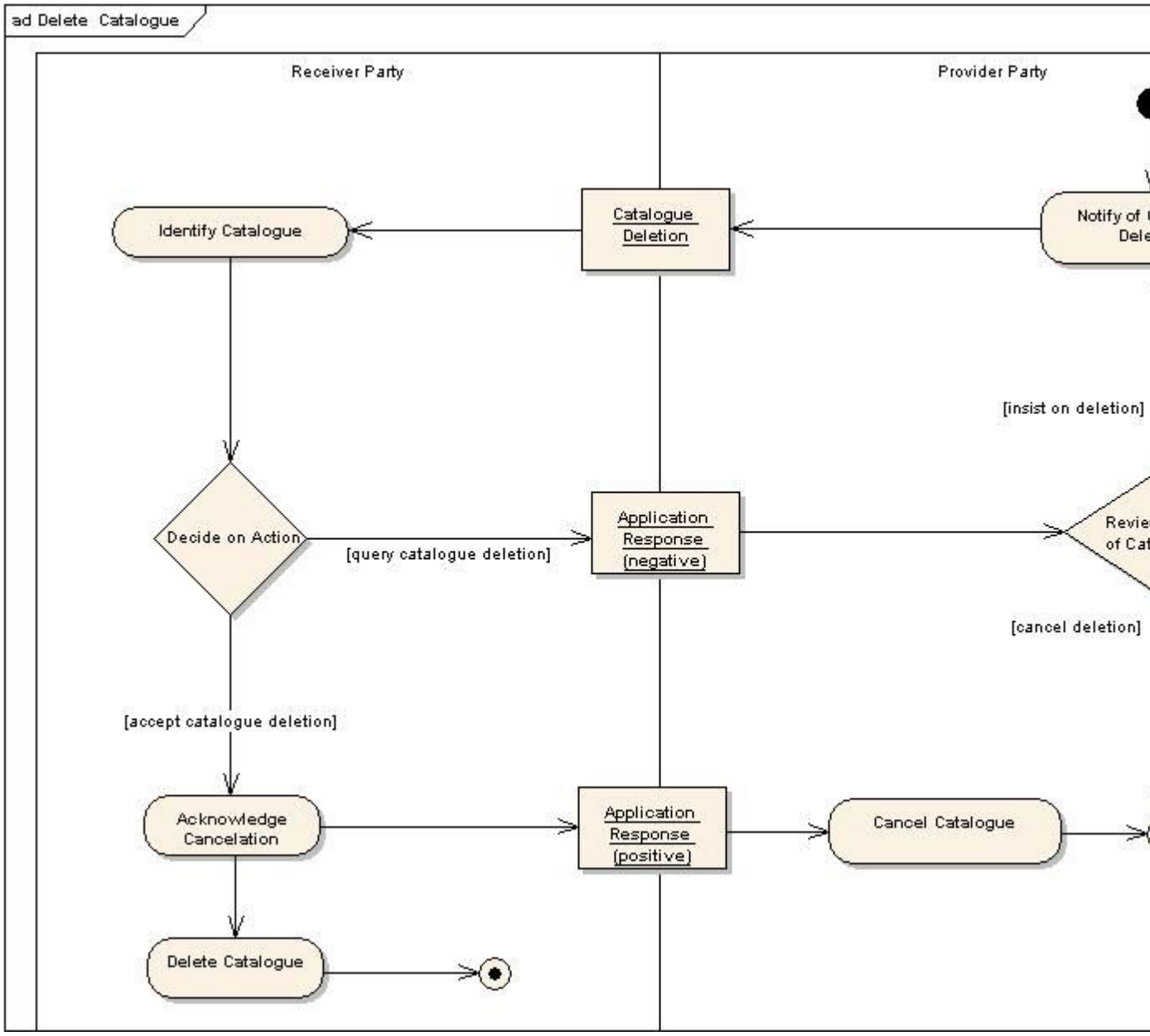
Figure 4. Update Catalogue Pricing Process


ad Update Catalogue Pricing
Receiver Party
Provider Party
Supplier Update
Customer Initiated Update
Request Catalogue Update
Catalogue Request
Respond to Request
[reject request]
[accept request]
Send Rejection
Application Response (negative)
Send Acceptance Response
Application Response (positive)
Prepare Catal Pricing Upd Informatio
Catalogue Pricing Update
Distribute Pr Modificati
Receive Pricing Update
[revise catalogue pricing]
Review Pricing Details
[query changes]
Application Response (negative)
Decide o
[accept changes]
[cancel transaction]
Acknowledge Acceptance
Application Response (positive)
Activate Changes
Apply Changes

4.3.1.5. Delete Catalogue

Deletion of a Catalogue is shown in the following diagram.

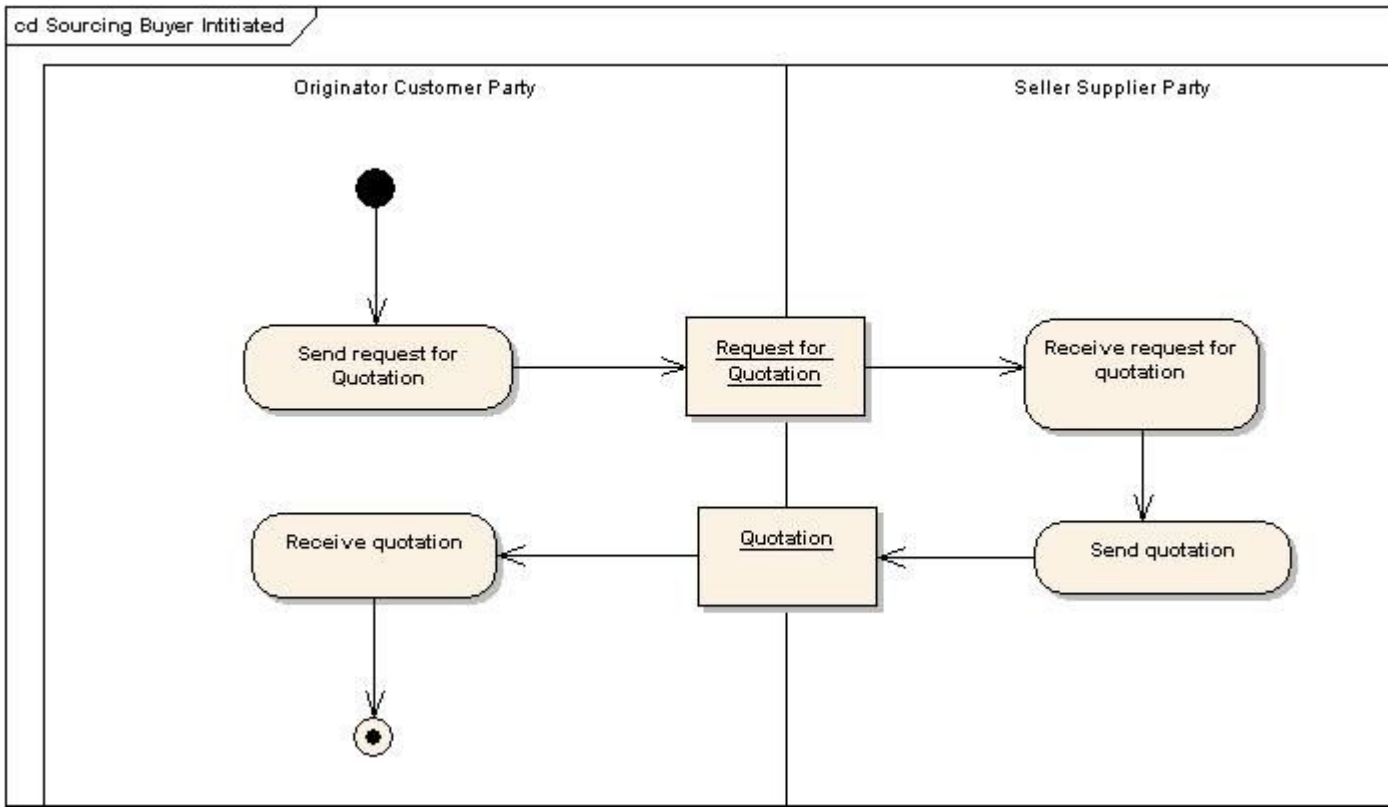
Figure 5. Delete Catalogue Process



4.3.2. Customer Initiated Sourcing

Customer initiated sourcing is the case where the Originator asks for a quotation, as shown in the following diagram.

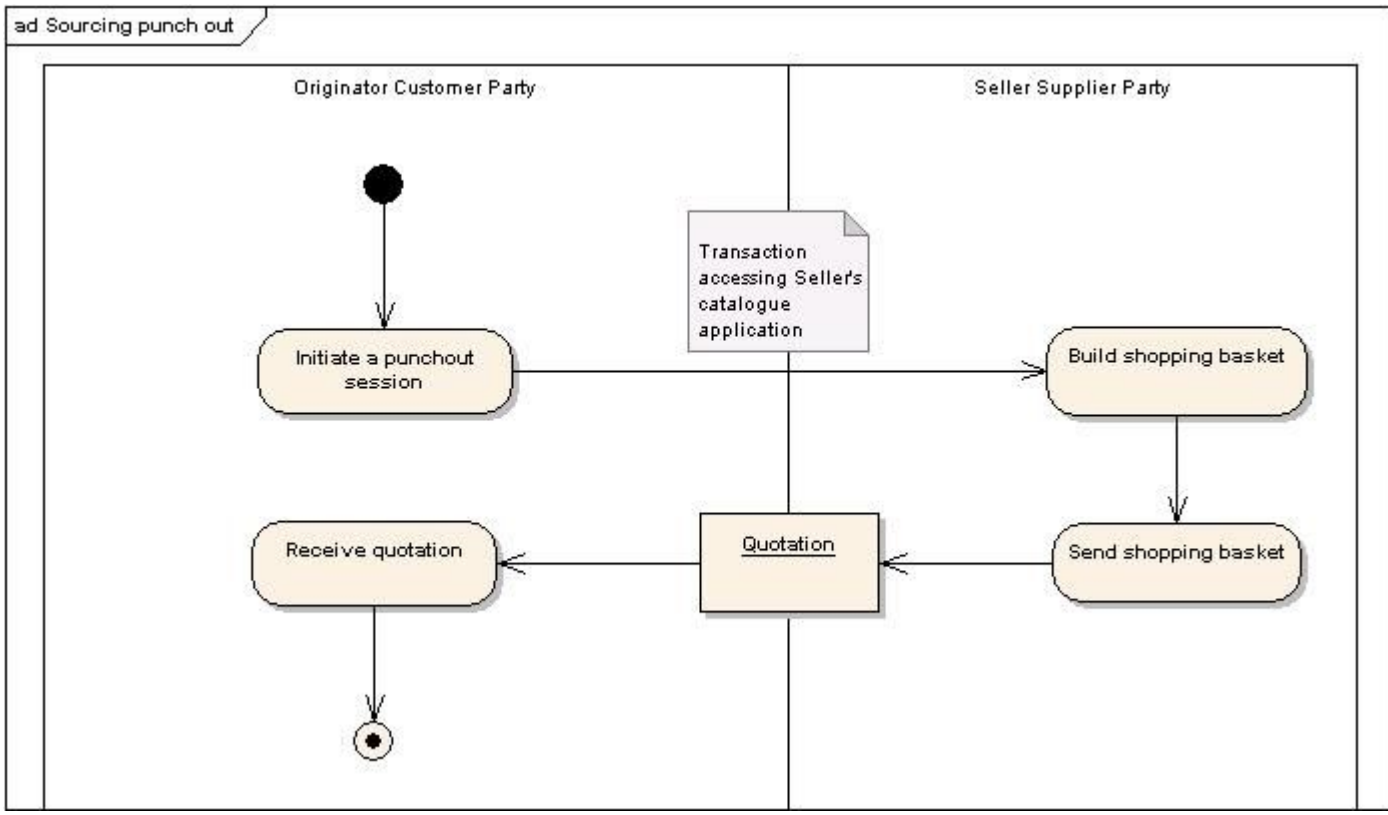
Figure 6. Customer Initiated Sourcing Process



4.3.3. Sourcing Punchout

Punchout applications are a technological innovation whereby an Originator is able to directly access a Seller's application from within their own procurement application.

Figure 7. Punchout Sourcing Process



The Originators leave (“punch out” from) their system and interact with the Seller’s catalogue to locate and order products, while their application transparently gathers pertinent information.

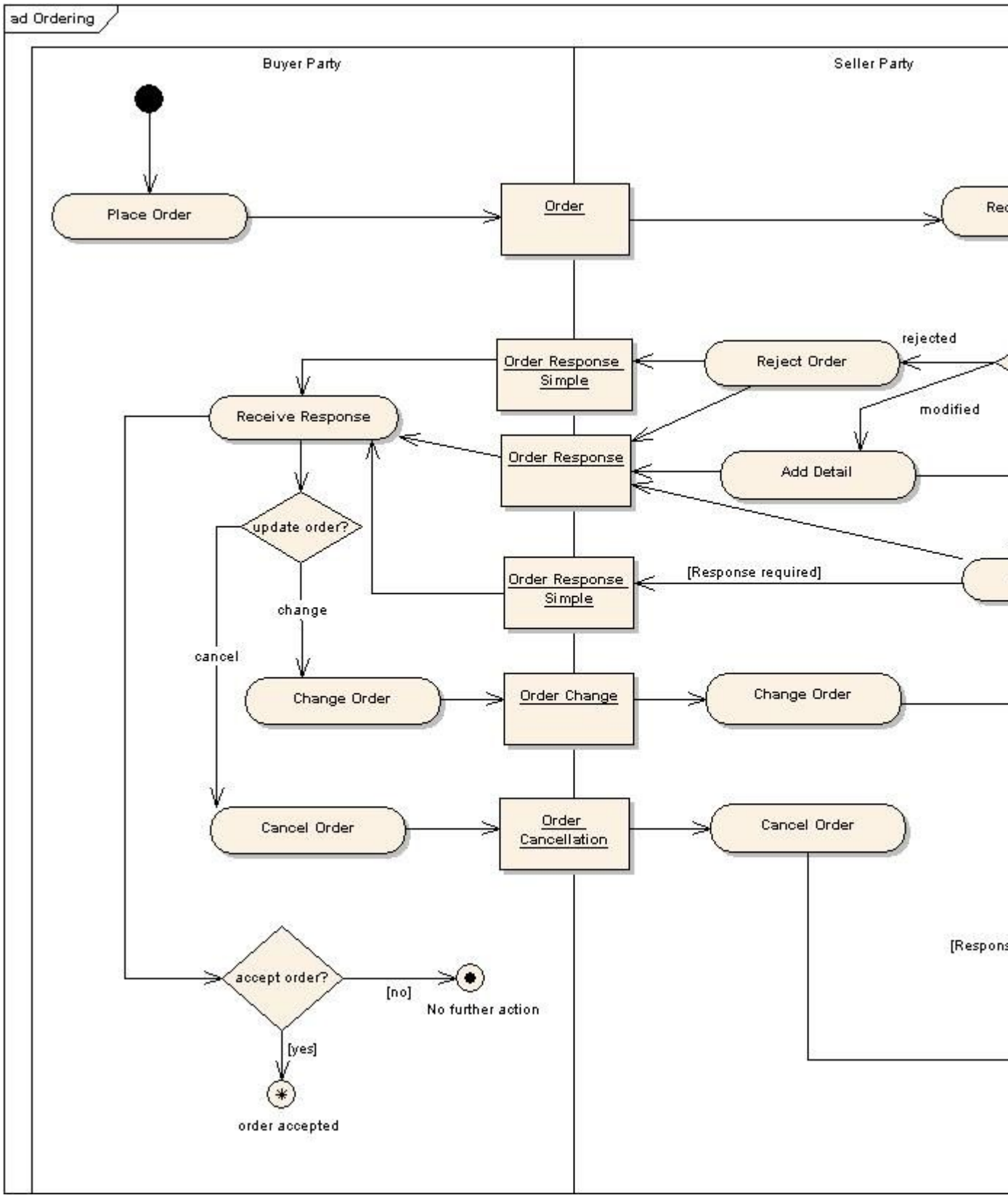
While conceptually the punchout request is a form of Request for Quote, the exchange transaction is tightly coupled to the specific catalogue application and considered outside the scope of UBL 2.0.

4.4. Ordering

Ordering is the collaboration that creates a contractual obligation between the Seller Supplier Party and the Buyer Customer Party.

Document types in these processes are Order, Order Response, Order Response Simple, Order Change, and Order Cancellation.

Figure 8. Ordering Process



4.4.1. Ordering Business Rules Assumed

The Order may specify allowance and charge instructions (e.g., freight, documentation, etc.) that identify the type of charge and who pays which charges. The Order may be placed “on account” against a trading credit account held by the Seller, or against a credit/debit card account, or a direct debit agreement. The Order allows for an overall currency defining a default for all pricing and also a

specific currency to be used for Invoicing. Within an Order, additional currencies may be specified both for individual item pricing and for any allowances or charges.

Trade discount may be specified at the Order level. The Buyer may not know the trade discount, in which case it is not specified. This makes a detailed response from the Seller necessary; see Order Response (5.4.3).

The Order provides for multiple Order Lines.

The Order may specify delivery terms, while the Order Line may provide instructions for delivery.

The Buyer may indicate potential alternatives that are acceptable.

4.4.2. Order Response Simple

The Order Response Simple is the means by which the Seller confirms receipt of the Order from the Buyer, indicating either commitment to fulfil without change or that the Order has been rejected.

4.4.3. Order Response

Proposed changes to an Order by the Seller are accomplished through the full Order Response document.

The Order Response proposes to replace the original Order. It reflects the entire new state of an order transaction. It also is the means by which the Seller confirms or supplies Order-related details to the Buyer that were not available to, or specified by, the Buyer at the time of ordering. These may include:

- Delivery date, offered by the Seller if not specifically requested by the Buyer
- Prices
- Discounts
- Charges
- Item Classification codes

The Seller may advise on replacements or substitutes which will be made, or changes necessary, using the Order Response.

4.4.4. Order Change

The Buyer may change an established Order in two ways, subject to the legal contract or trading partner agreement: first, by sending an Order Change, or second, by sending an Order Cancellation (see 5.4.5) followed by a new, complete replacement Order.

An Order Change reflects the entire current state of an order transaction.

Buyers may initiate a change to a previously accepted order for various reasons, such as changing

ordered items, quantity, delivery date, ship-to address, etc. Suppliers may accept or reject the Order Change using either Order Response or Order Response Simple.

4.4.5. Order Cancellation

At any point of the process, a Buyer may cancel an established order transaction using the Order Cancellation document. Legal contracts, trading partner agreements, and business rules will restrict at what point an Order Cancellation will be ignored (e.g., at the point of manufacture or the initiation of the delivery process). Given the agreements and rules, an Order Cancellation may or may not be an automated business transaction. The terms and conditions of contract formation for business commitments will dictate which, if any, of these restrictions or guidelines will apply.

4.5. Fulfilment

Fulfilment is the collaboration in which the goods or services are transferred from the Despatch Party to the Delivery Party.

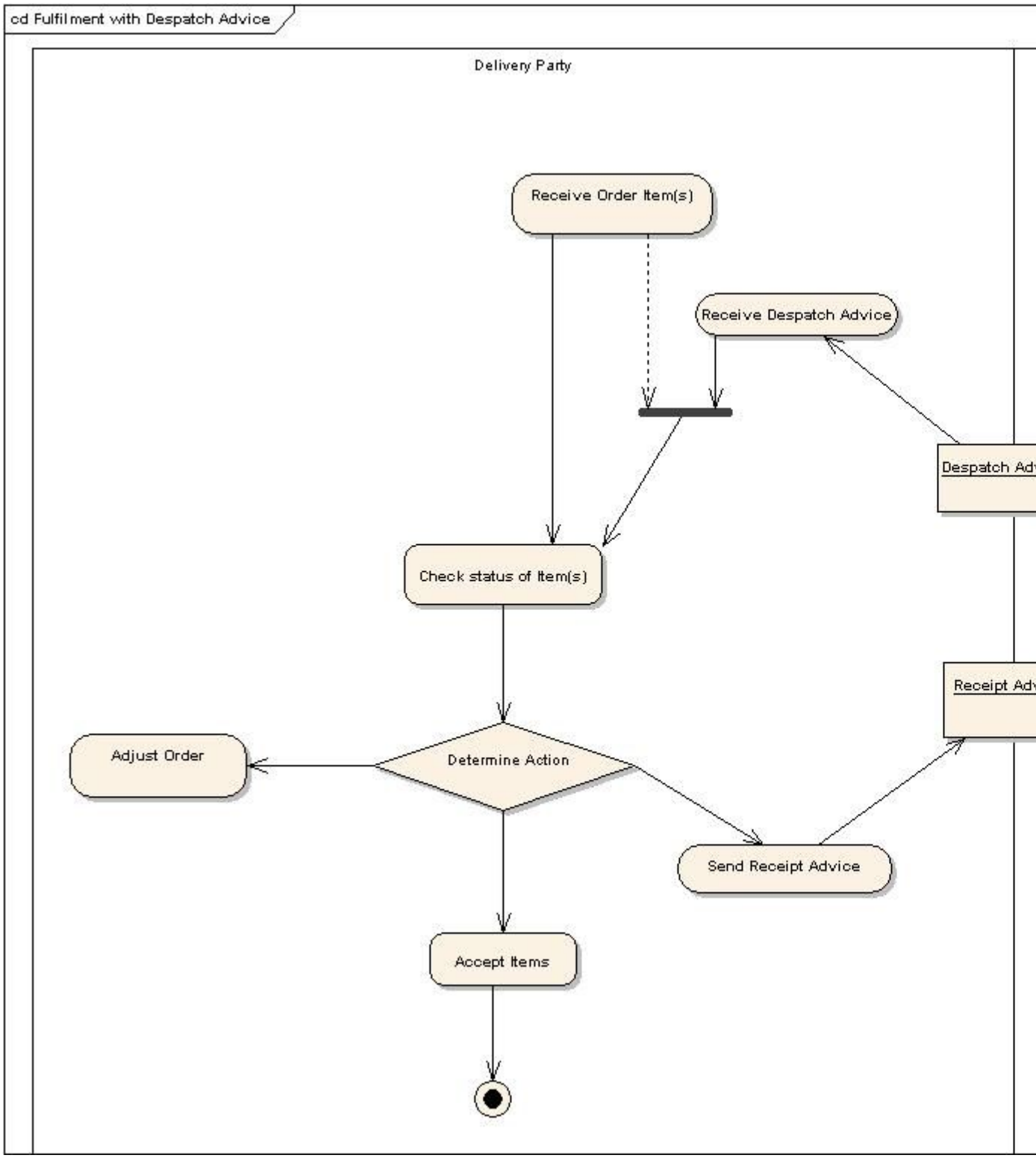
Document types in these processes are Despatch Advice, Receipt Advice, Order Cancellation and Order Change.

In common practice, fulfilment is either supported by a proactive Despatch Advice from the Despatch Party or by a reactive Receipt Advice from the Delivery Party.

If the Customer is not satisfied with the goods or services, they may then cancel or change the order (see Section 4.4, Ordering).

The Seller may have a fulfilment (or customer) service dealing with anomalies.

Figure 9. Fulfilment with Despatch Advice Process



4.5.1. Despatch Advice Business Rules Assumed

The Despatch Advice is sent by the Despatch Party to the Delivery Party to confirm shipment of items.

The Despatch Advice provides for two situations:

- Organization of the delivery set of items by Transport Handling Unit(s) so that the Receiver can check the Transport Handling Unit and then contained items. Quantities of the same item

on the same Order Line may be separated into different Transport Handling Units, and hence appear on separate Despatch Lines within a Transport Handling Unit.

- Organization of the delivery set of items by Despatch Line, annotated by the Transport Handling Unit in which they are placed, to facilitate checking against the Order. For convenience, any Order Line split over multiple Transport Handling Units will result in a Despatch Line for each Transport Handling Unit they are contained in.

Additionally, in either case, the Despatch Advice may advise:

- Full Despatch — advising the Recipient and/or Buyer that all the items on the order will be, or are being, delivered in one complete consignment on a given date.

- Partial Despatch — advising the Recipient and/or Buyer that the items on the order will be, or are being, partially delivered in a consignment on a given date.

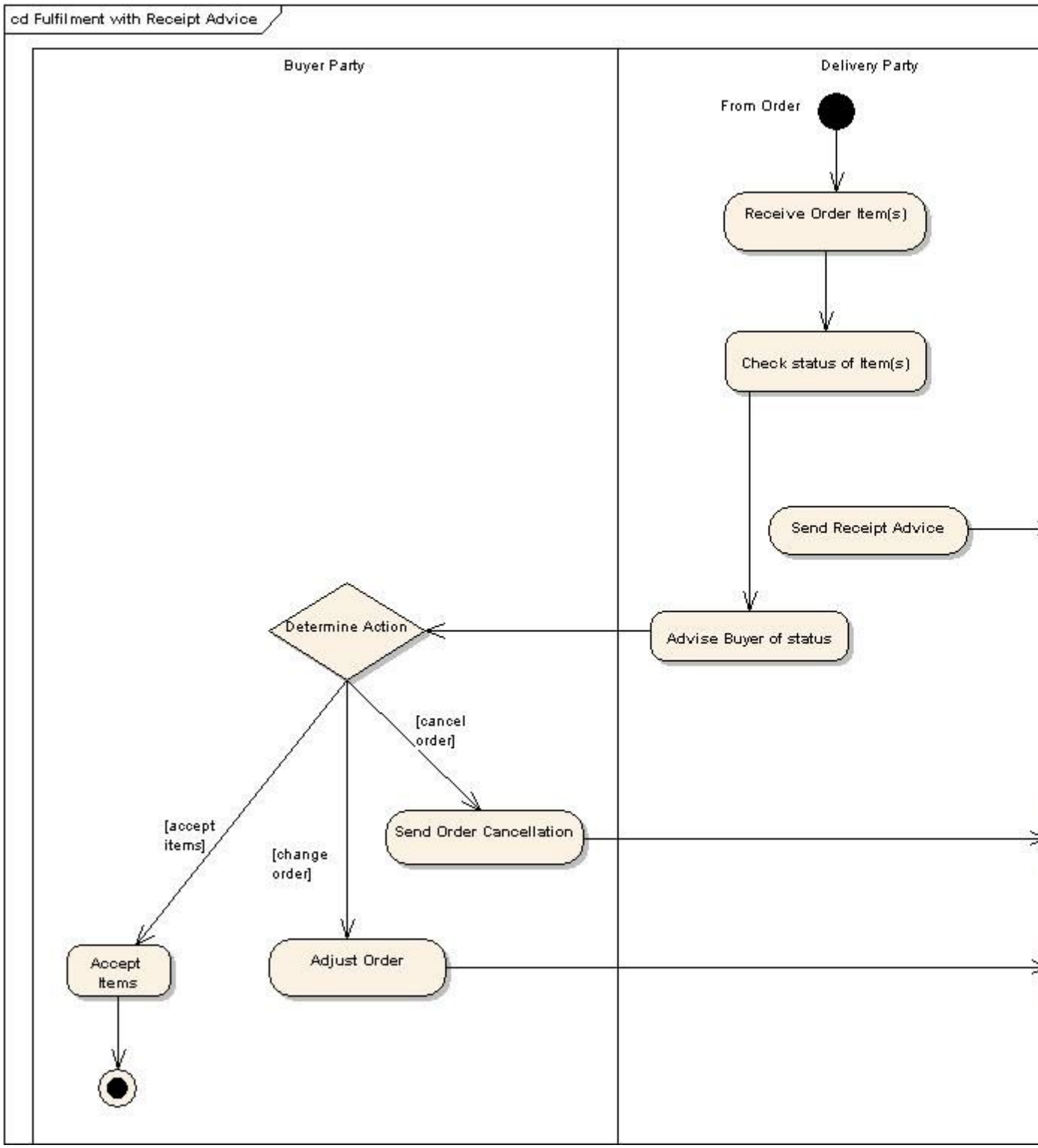
Despatch Lines of the Despatch Advice need not correspond one-to-one with Order Lines, and are linked by a reference. The information structure of the Despatch Advice may result in multiple Despatch Lines from one Order Line. Equally, partial despatch may result in some Order Lines not being matched by any Line in a Despatch Advice.

Within a Despatch Advice, an Item may also indicate the Country of Origin and the Hazardous nature of the Item.

4.5.2. Receipt Advice Business Rules Assumed

The Receipt Advice is sent by the Delivery Party to the Despatch Party to confirm receipt of items and is capable of reporting shortages or damaged items.

Figure 10. Fulfilment with Receipt Advice Process



The Receipt Advice provides for two situations. For ease of processing claimed receipt against claimed delivery, it must be organised in the same way as the corresponding Despatch Advice:

- Indication of receipt by Transport Handling Unit(s) and contained Receipt Lines one-to-one with the Despatch Advice as detailed by the Seller party.
- Indication of receipt by Receipt Lines annotated by Transport Handling Unit, one-to-one with the Despatch Advice as detailed by the Seller party.

The Receipt Advice allows the Delivery Party to state any shortages from the claimed despatch

quantity and to state any quantities rejected for a given reason.

4.6. Billing

In the Billing collaboration, a request is made for payment for goods or services that have been ordered, received, or consumed. In practice, there are several ways in which goods or services may be billed.

Document types in these processes are Invoice, Credit Note, Debit Note, and Application Response.

For UBL 2.0, we assume the following methods:

1. Traditional Billing
    - Using Credit Note
    - Using Debit Note
2. Self Billing (also known as billing on receipt)
    - Using Credit Note
    - Using Self Billed Credit Note

4.6.1. Billing Business Rules Assumed

The Invoice is normally issued on the basis of one despatch event triggering one invoice. An Invoice may also be issued for pre-payment on a whole or partial basis. The possibilities are:

- Prepayment invoice (payment expected)
- Pro-forma invoice (pre advice, payment not expected)
- Normal Invoice, on despatch for despatched items
- Invoice after return of Receipt Advice

The Invoice only contains the information that is necessary for invoicing purposes. It does not reiterate any information already established in the Order, Order Change, Order Response, Despatch Advice, or Receipt Advice that is not necessary when invoicing. If necessary, the Invoice refers to the Order, Despatch Advice, or Receipt Advice by a Reference for those documents.

Taxation on the Invoice allows for compound taxes, the sequence of calculation being implied by the sequence of information repeated in the data stream (e.g., Energy tax, with VAT — Value Added Tax — superimposed). The OASIS TaxML Technical Committee (http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=tax) is developing UBL implementation profiles for various tax regimes, such as those required by the European Community.

Charges may be specified either as a lump sum or by percentage applied to the whole Invoice value prior to calculation of taxes. Such charges cover:

- Packaging
- Delivery/postage
- Freight
- Documentation

Each Invoice Line refers to any related Order Line(s) and may also refer to the Despatch Line and/or Receipt Line.

4.6.2. Traditional Billing

Traditional billing is where the supplier invoices the customer when the goods are delivered or the services provided.

In this case, the invoice may be created at the time of despatch or when the Delivery Party acknowledges that the goods have been received (using a Receipt Advice).

When there are discrepancies between the Despatch Advice, Receipt Advice, and/or the Invoice and the goods actually received, or the goods are rejected for quality reasons, the customer may send an Application Response or a Debit Note to the supplier. The supplier may then issue a Credit Note or another Invoice as required.

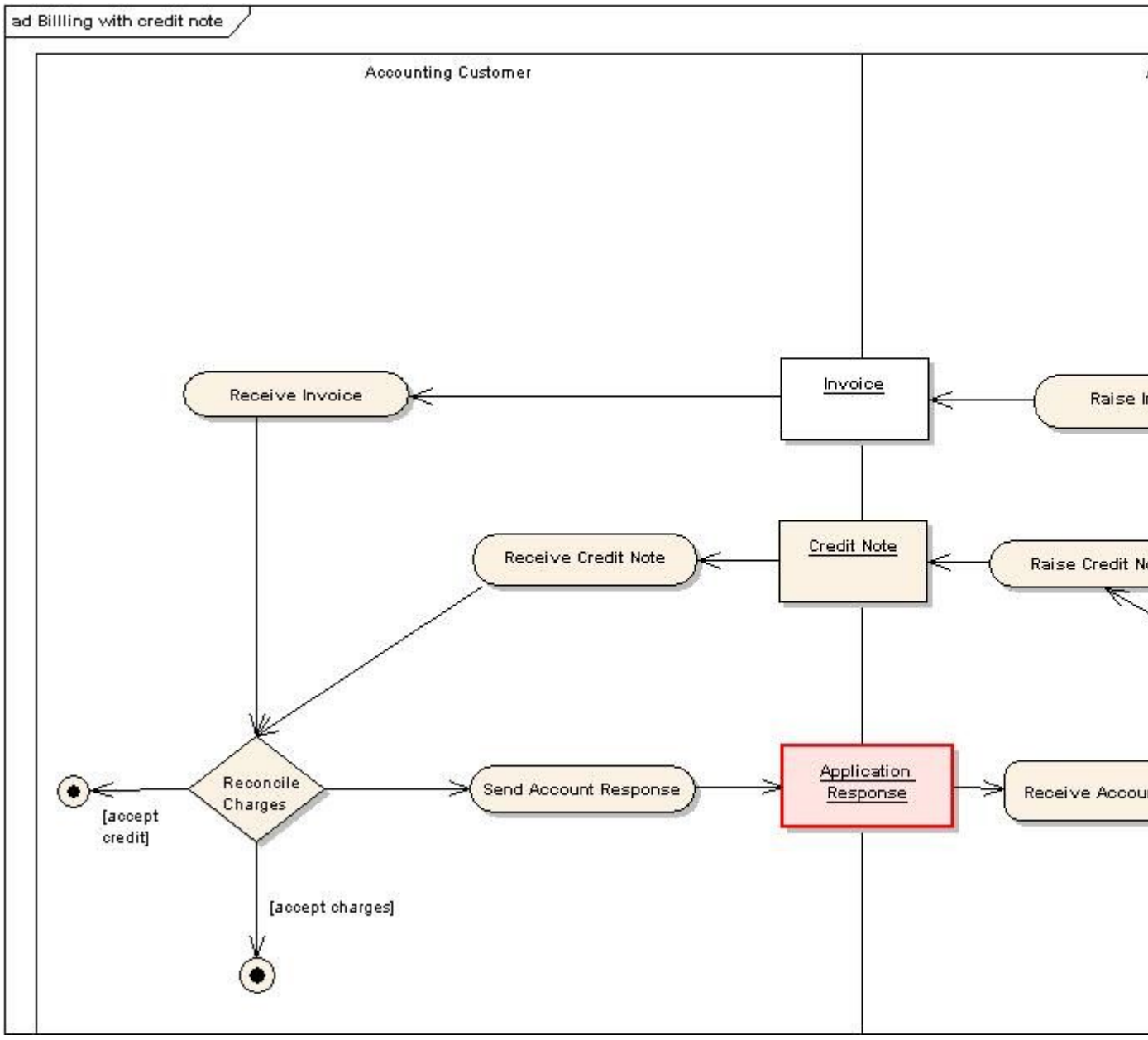
A Credit Note or Debit Note may also be issued in the case of retrospective price change.

Credit Notes or Debit Notes may be also issued after the Billing collaboration (as part of the Payment collaboration).

4.6.2.1. Billing using Credit Notes

Billing using Credit Notes is shown in the following diagram.

Figure 11. Billing with Credit Note Process

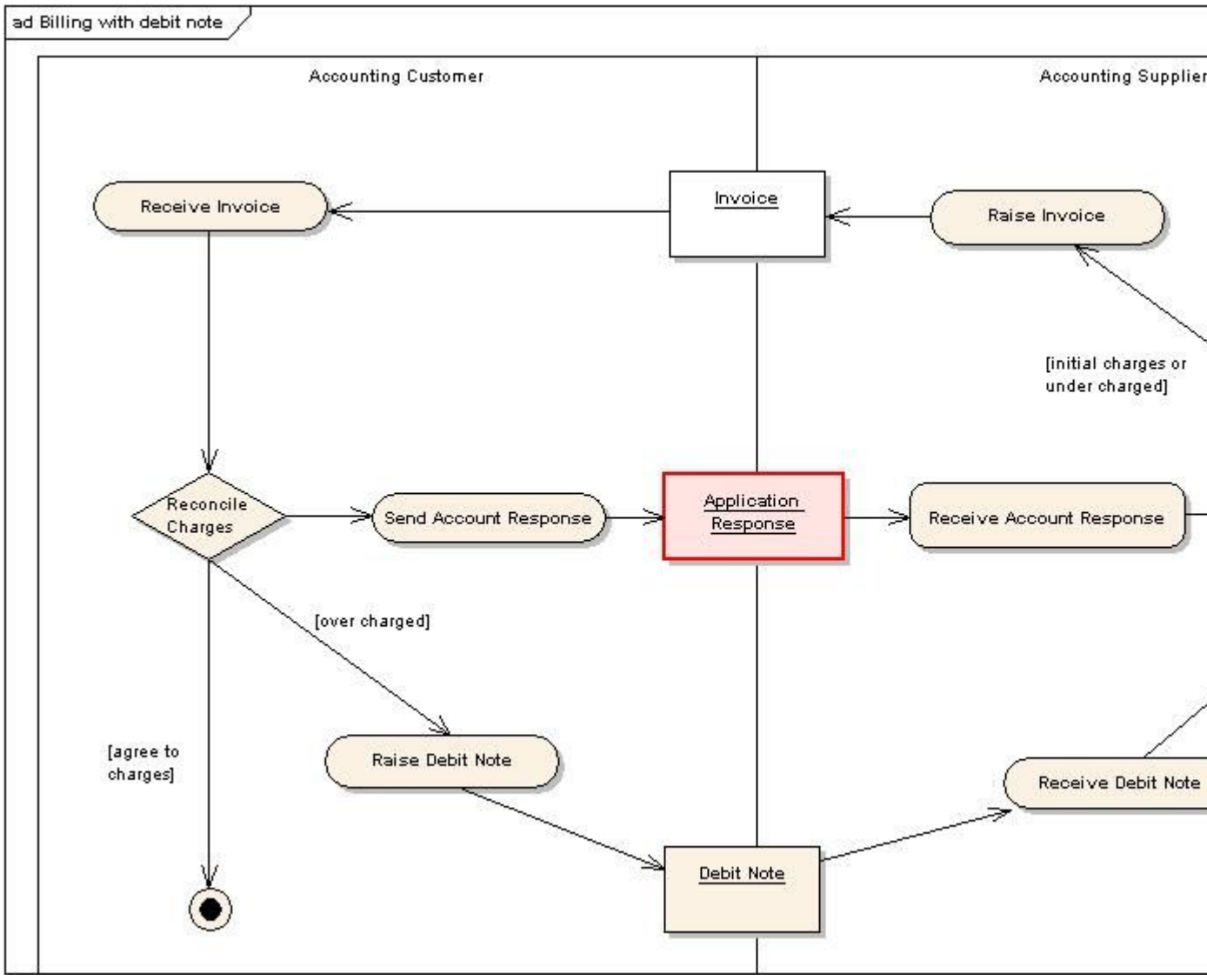


When using Credit Notes, the Supplier (in their Accounting role) is responsible for specifying the tax requirements.

4.6.2.2. Billing Using Debit Notes

Billing using Debit Notes is shown in the following diagram.

Figure 12. Billing with Debit Note Process



When using Debit Notes, both the Supplier (in their Accounting role) and the Customer (in their Accounting role) are responsible for providing taxation information.

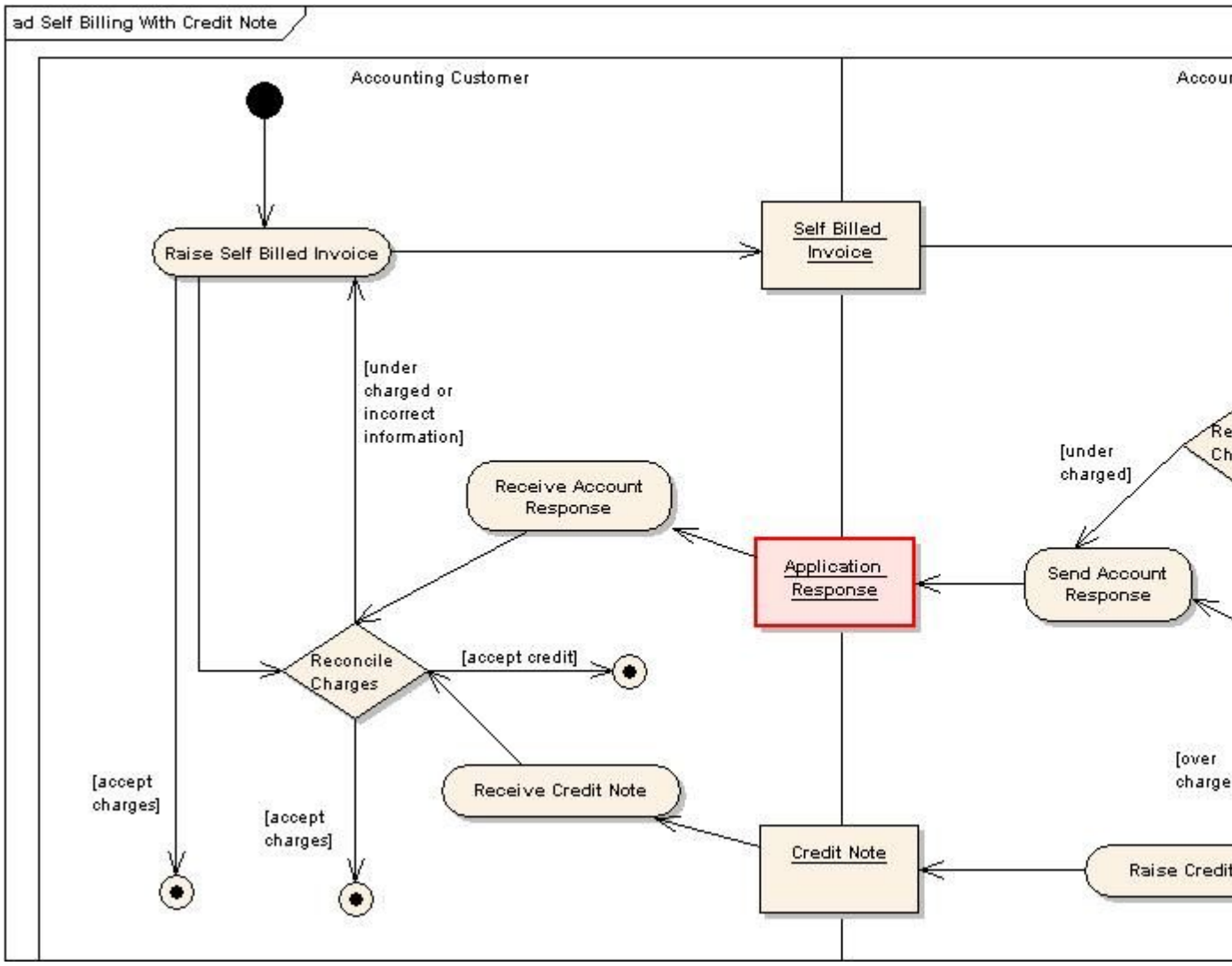
4.6.3. Self Billing

A self billing process is where a Customer "invoices" itself, *in the name and on behalf of* the Supplier, and provides the Supplier with a copy of the self billed invoice.

4.6.3.1. Self Billing Using Credit Notes

Self Billing using Credit Notes is shown in the following diagram.

Figure 13. Self Billing with Credit Note Process

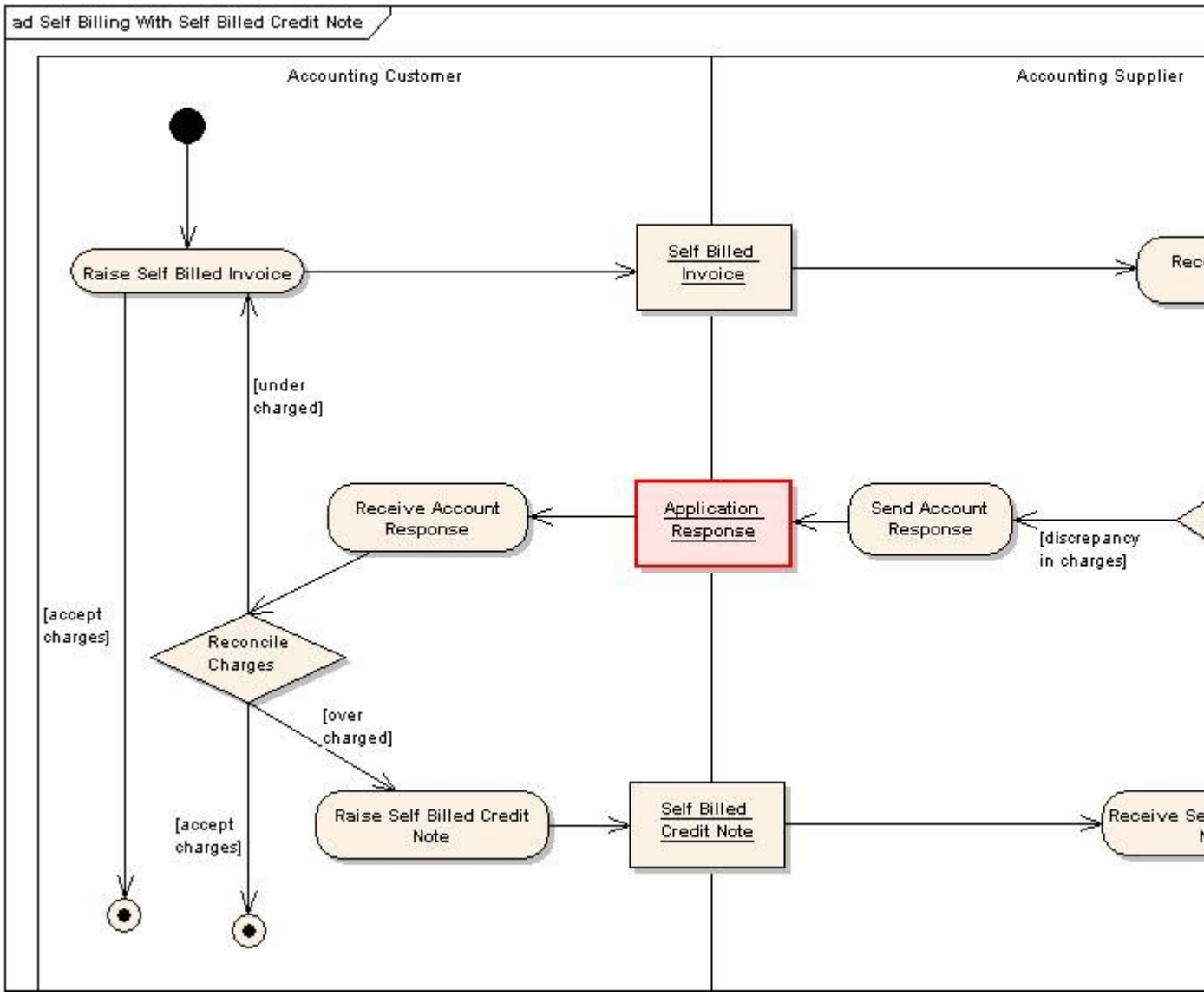


If the Supplier finds that the Self Billed Invoice is incorrect, e.g., wrong quantities or wrong prices, or if the goods have not been invoiced at all, it may send an Application Response or a Credit Note to the Customer. The customer may then verify whether the adjustment is acceptable or not and consequently issue another Self Billed Invoice or a Self Billed Credit Note.

4.6.3.2. Self Billing Using Self Billed Credit Notes

Self Billing using Self Billed Credit Notes is shown in the following diagram.

Figure 14. Self Billing with Self Billed Credit Note Process



When using Self Billed Credit Notes, the Customer is raising the Self Billed Credit Note *in the name and on behalf of* the Supplier. Therefore the Supplier and the Customer are still both responsible for providing taxation information.

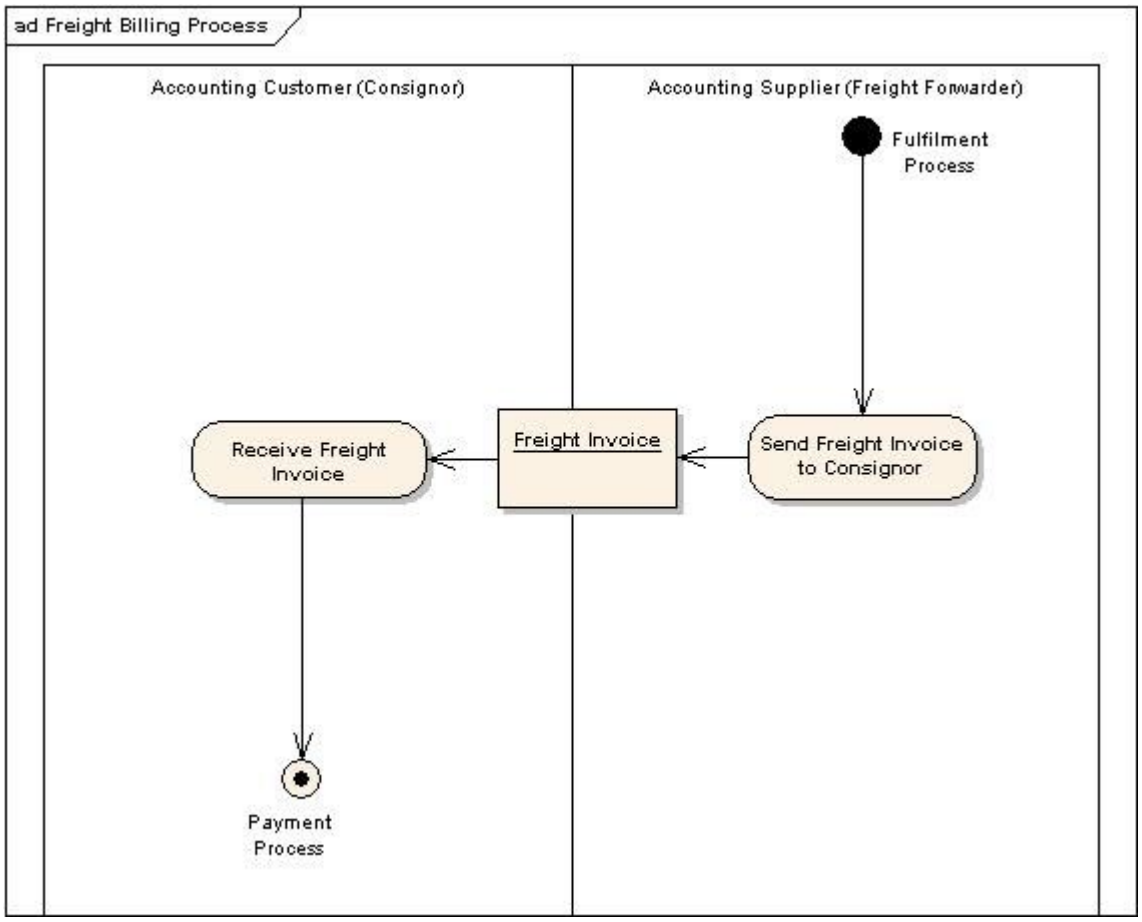
4.6.4. Freight Billing

An extension of the Billing process is that of Freight Billing. This represents the billing process between the Transport Service Buyer and Transport Service Provider through the use of an Invoice for freight charges.

The Transport Service Provider initiates the process of billing the Transport Service Buyer for logistic services.

The Freight Invoice lists the charges incurred in order to fulfill the agreed service.

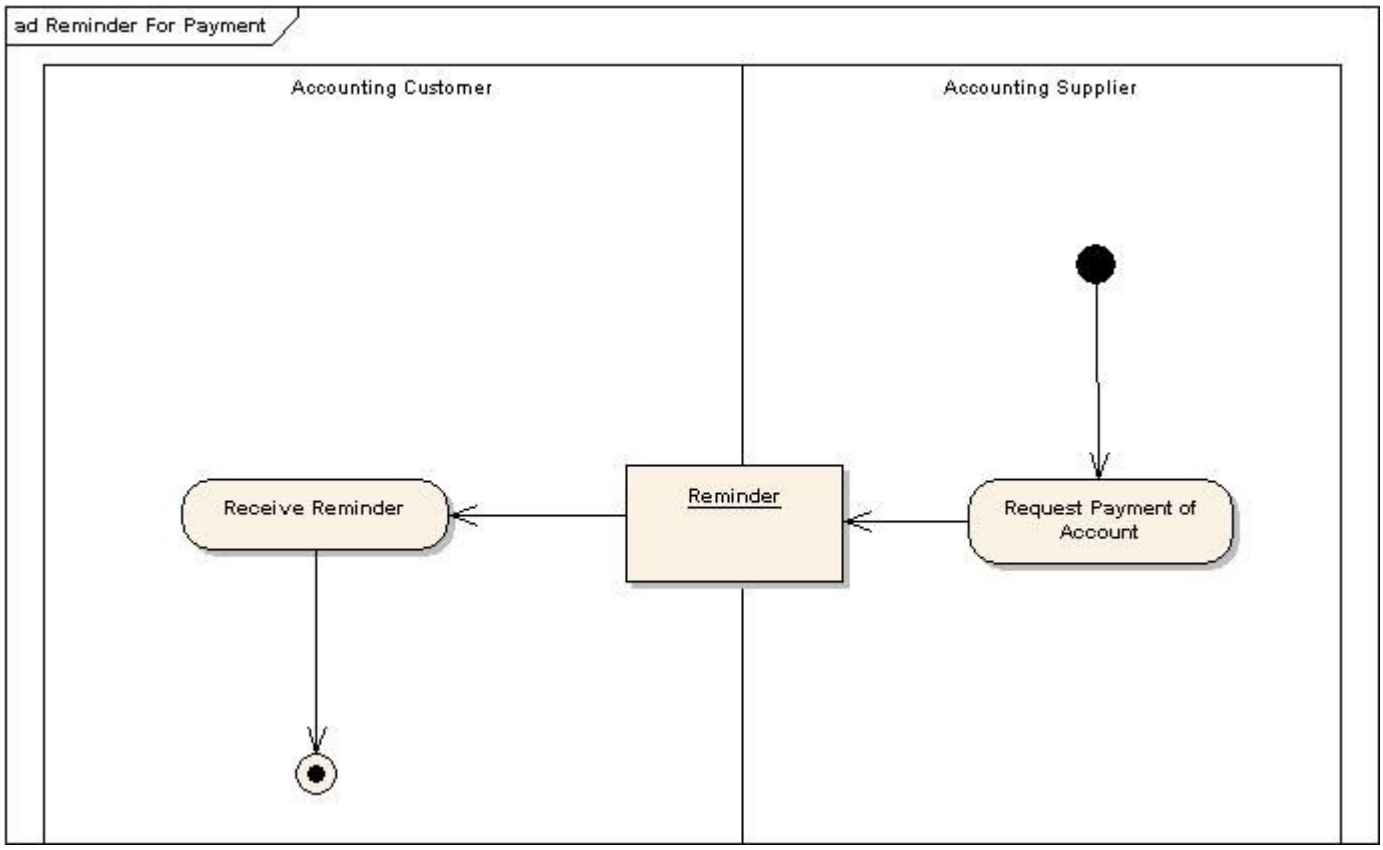
Figure 15. Freight Billing Process



4.6.5. Reminder For Payment

A Reminder may be used to notify the Customer of accounts due to be paid.

Figure 16. Reminder for Payment Process

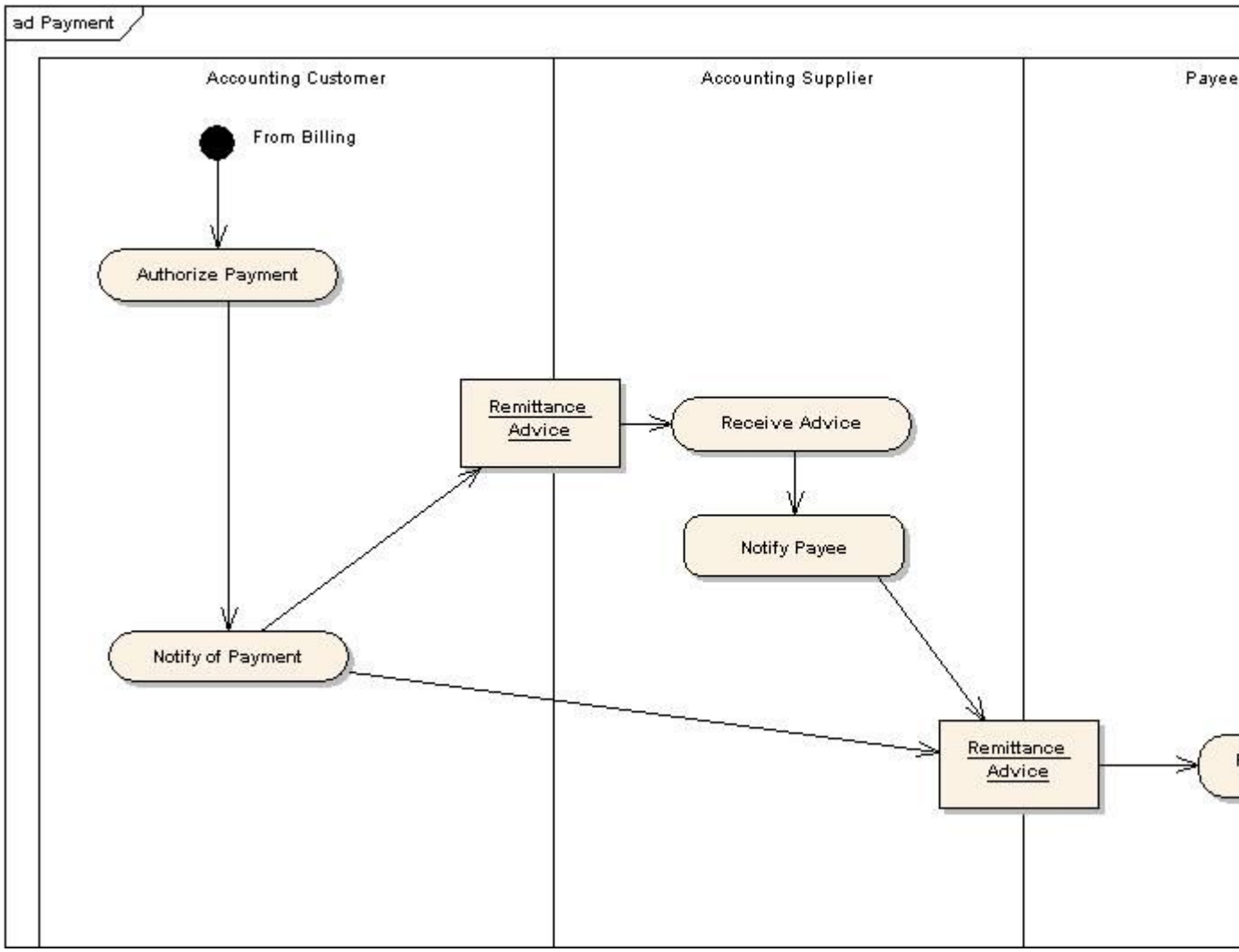


4.7. Payment

In the payment collaboration, the Payee (who is most often the Accounting Customer) is notified of any funds transferred against the account of the Accounting Supplier using a Remittance Advice.

The document type in this process is the Remittance Advice.

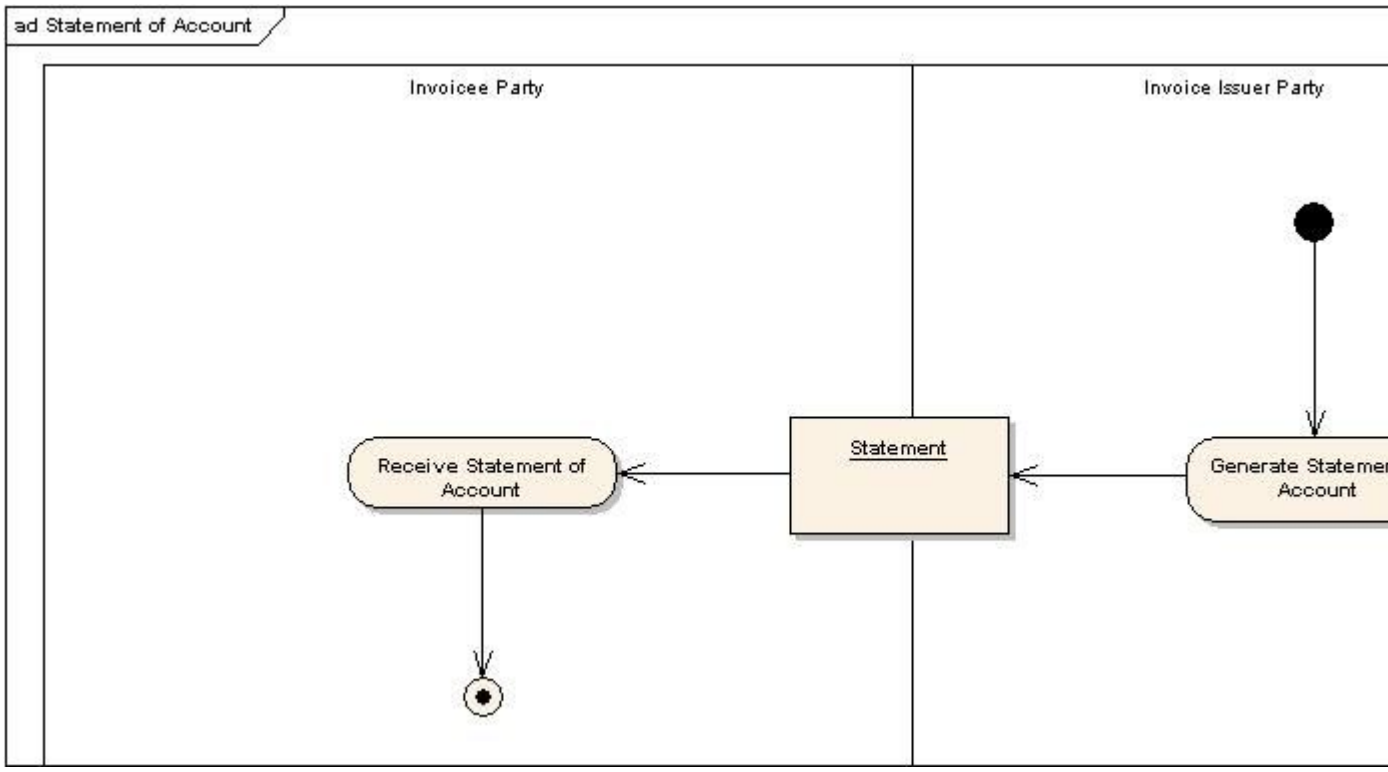
Figure 17. Payment Process



4.7.1. Report State of Accounts

A Statement of Account may be used to notify the Accounting Customer of the status of the billing.

Figure 18. Statement Process



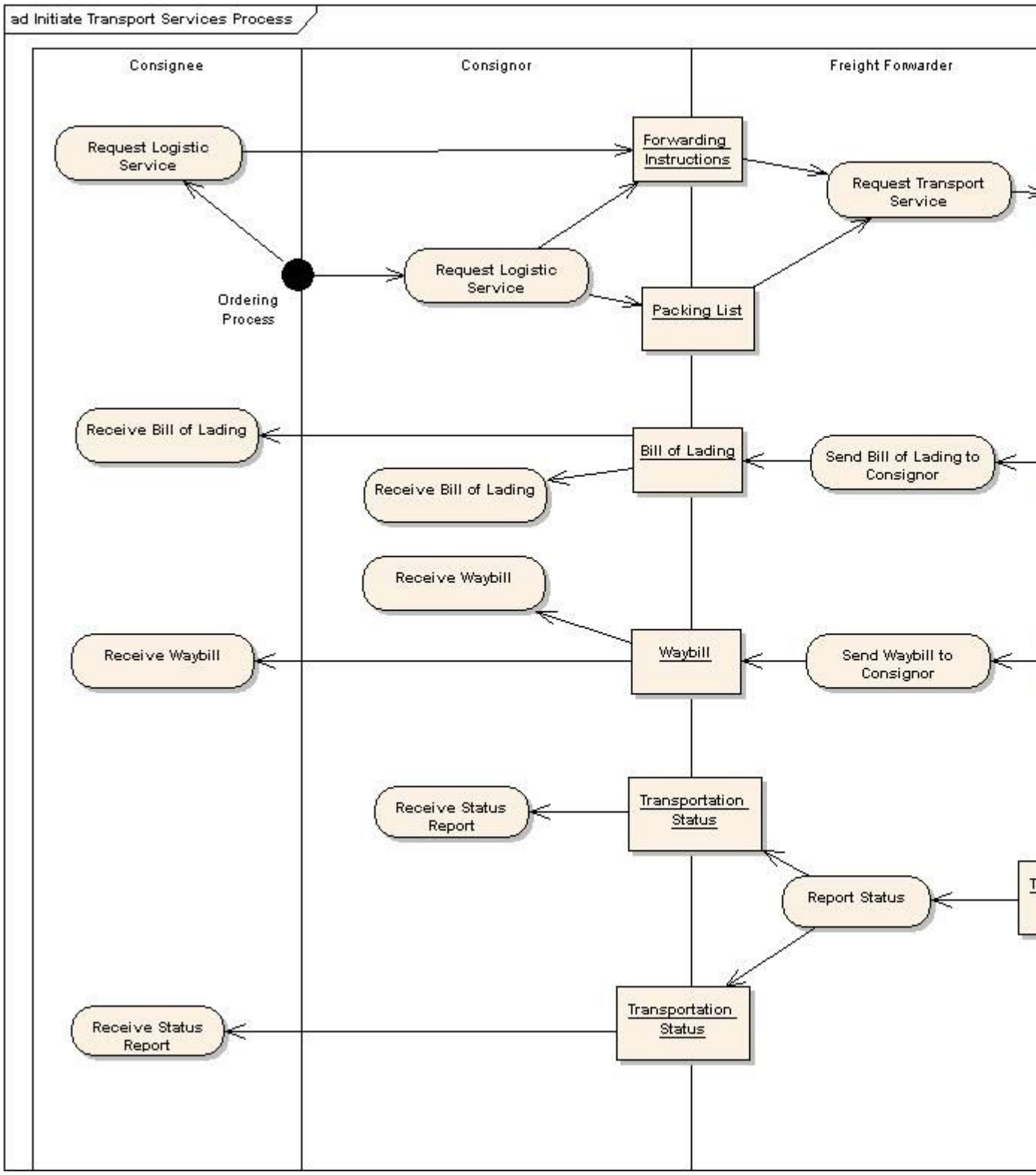
4.8. Initiate Transport Services

These process define the ordering of logistical services for international trade. With receipt of an order and acknowledgement by the Supplier Party that the goods are available and ready to be shipped, the Consignor or Consignee initiates the transportation arrangements. This includes booking the consignment with a Transport Service Provider such as the Freight Forwarder or Carrier and advising the Delivery Party of the arrangements as needed.

Document types in these processes are Forwarding Instructions, Packing List, Waybill, and Bill of Lading.

It should be noted that these processes do not cover regulatory notifications such as Customs declarations or arrangements between carriers, hauliers, and terminal operators for the physical movement of goods.

Figure 19. Initiate Transport Services Process



4.8.1. Forwarding Instructions

Forwarding Instructions are normally used by any party who gives instructions for the transportation services required for a consignment of goods (the Transport Service Buyer) to any party who is contracted to provide the transportation services (called the Transport Service Provider). Forwarding Instructions may also be used by any party who requests a booking of shipment space to be made for the transportation services required for a consignment of goods to any party who will provide the underlying transportation services. The parties who issue this document are commonly referred to as

the shipper, consignee, or consignor, while the parties who receive this document are forwarders, carriers, shipping agents, etc.

Forwarding Instructions may also be issued by a freight forwarder or shipping agent in their capacity as a Transport Service Buyer. This document may be used to arrange for the transportation:

- of different types of goods or cargoes
- whether containerized or non-containerized
- through different modes of transport, and
- from any origin to any destination.

4.8.2. Bill of Lading

A Bill of Lading is issued by the party who provides the physical transportation services (e.g., carrier) to the party who gives instructions for the transportation services (shipper, consignor, etc.) stating the details of the transportation, charges, and terms and conditions under which the transportation service is provided.

It may also be issued by the party who acts as an agent for the carrier or other agents to the party who gives instructions for the transportation services (shipper, consignor, etc.) stating the details of the transportation, charges, and terms and conditions under which the transportation service is provided but does not provide the physical transportation service.

A Bill of Lading corresponds to the information on the Forwarding Instructions. It is used for ocean or river modes of transport.

A Bill of Lading may serve as a contractual document between the parties for the transportation service. The document evidences a contract of carriage by sea and the acceptance of responsibility for the goods by the carrier, by which the carrier undertakes to deliver the goods against surrender of the document. A provision in the document that the goods are to be delivered to the order of a named person, or to order, or to bearer, constitutes such an undertaking.

4.8.3. Waybill

A Waybill is issued by the party who provides the physical transportation services to the party who gives instructions for the transportation services (shipper, consignor, etc.). It states the details of the transportation, charges, and terms and conditions under which the transportation service is provided.

Unlike a Bill of Lading, a Waybill is not negotiable and cannot be assigned to a third party. It is issued as a cargo receipt and is not required to be surrendered at the destination in order to pick up the cargo. This simplifies the documentation procedures between a transport service buyer and a transport service seller.

4.8.4. Packing List

A Packing List is normally issued by the Consignor. It states the distribution of goods in individual packages. Based on this detail, the party who provides the logistic services will make arrangement for

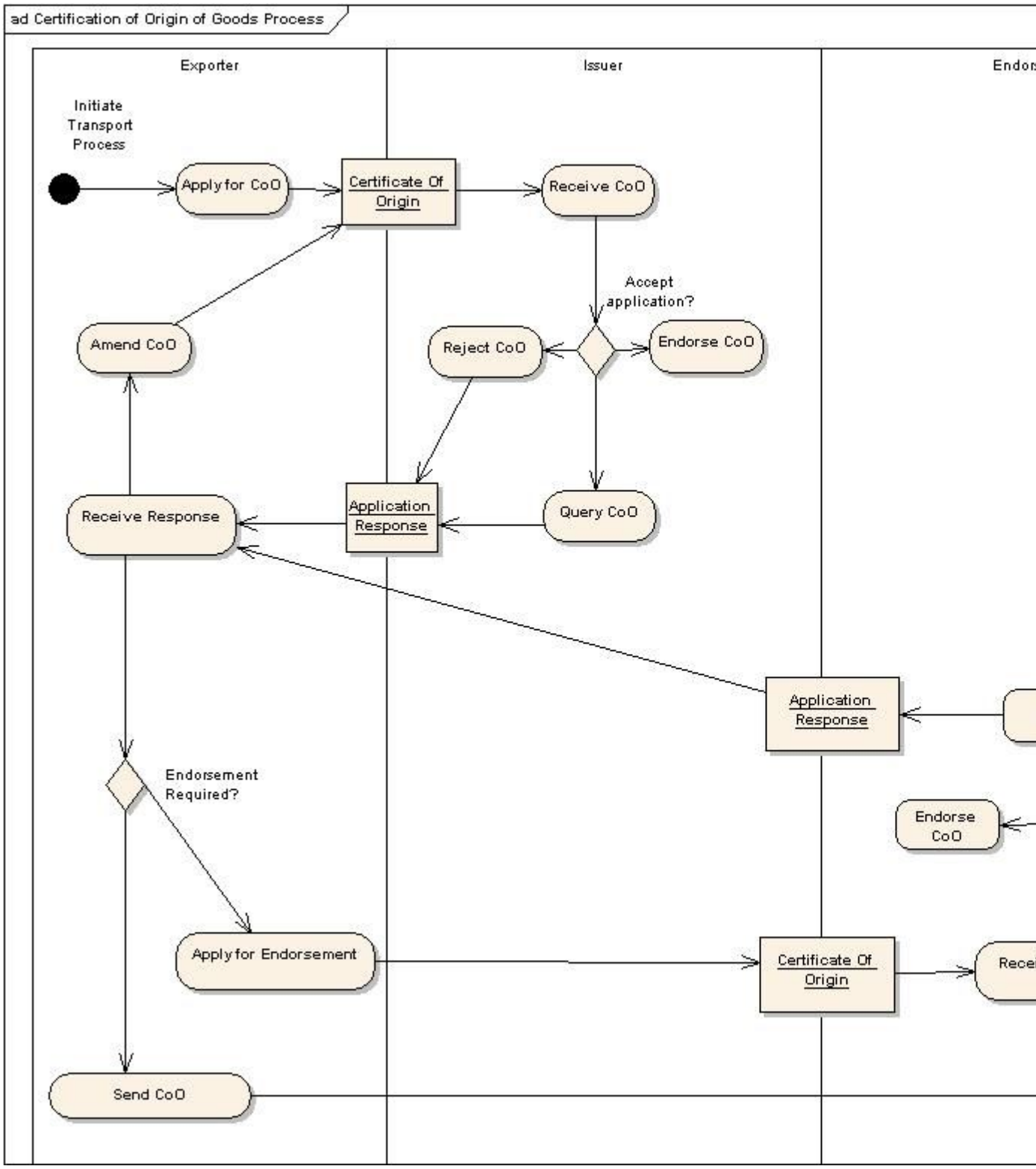
the transportation of the goods.

4.9. Certification of Origin of Goods

A Certificate of Origin is a document required by governments declaring that goods in a particular international shipment are of a certain origin.

It is the responsibility of the Exporter to sign the Certificate of Origin document and submit it to a local chamber of commerce or any designated government agency or board. These parties are the endorser and issuer of the Certificate of Origin. The Endorser must have access to other documents, such as the commercial invoice and Bill of Lading, in order to verify the Exporter's claims that the goods originated in that country. Finally, the issued Certificate of Origin is sent to the Importer.

Figure 20. Certification of Origin of Goods Process



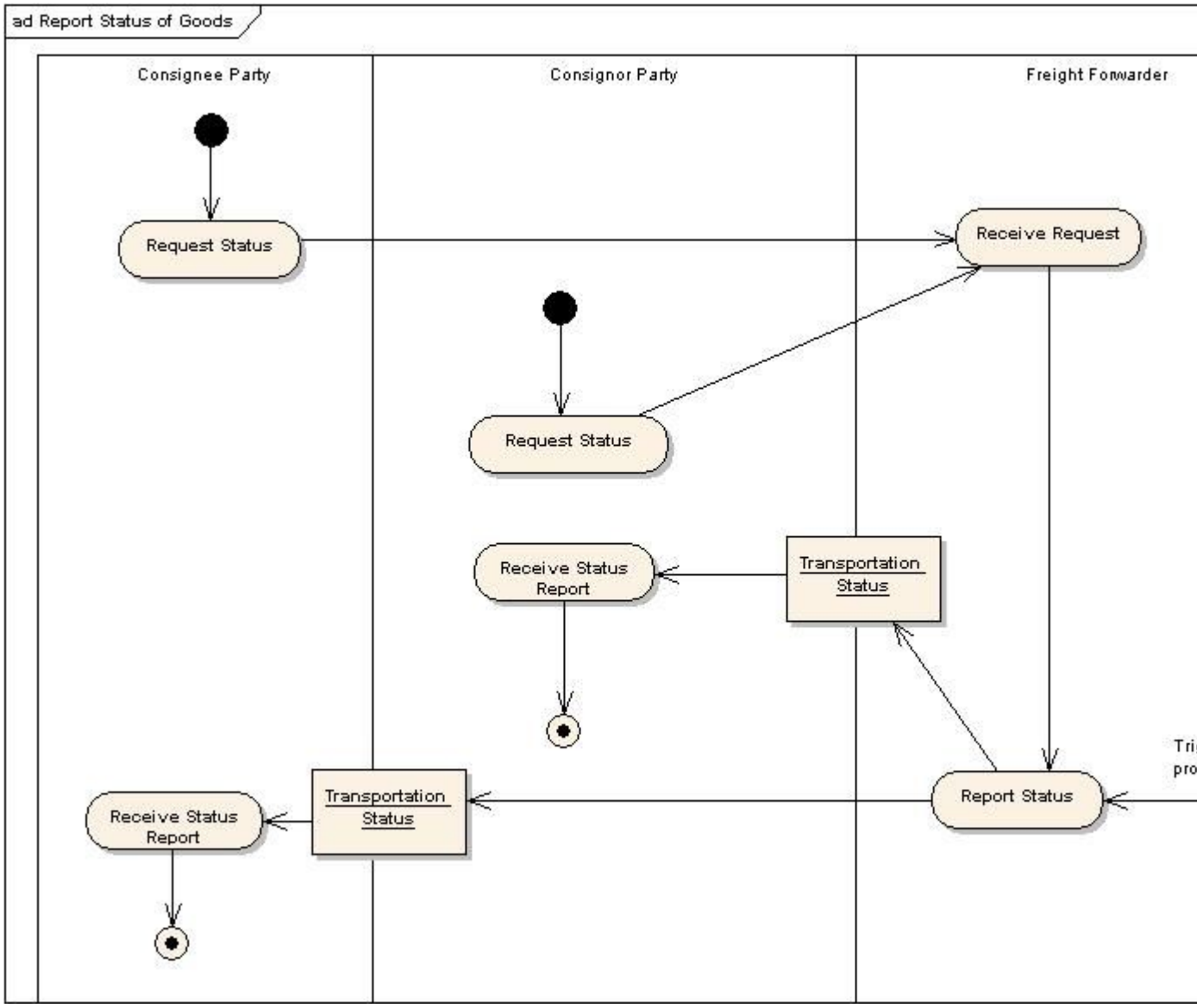
4.10. Report Status of Goods

The Transportation Status document is a means for a Freight Forwarder (also known as the Transport Service Provider) to communicate to the Consignee or Consignor (also known as the Transport Service Buyer) or Notify Party, the status of shipments that are currently under the Freight Forwarder's management.

A Transportation Status document is provided by the Freight Forwarder, either through an individual

specific request or through an agreed status reporting procedure.

Figure 21. Report Status of Goods Process



4.11. Document Types

The following table lists all the UBL 2.0 document types together with their target business processes and roles for parties who would typically submit and receive them.

Table 2. Summary of UBL 2.0 Document Types

Document Name	Description	Processes Involved	Submitter Role	Receiver Role
Catalogue	A document to request a Catalogue from a seller. May be either an entire	Create Catalo	Contracti	Selle

Document Name	Description	Processes Involved	Submitter Role	Receiver Role
Request	new Catalogue or an update (at the discretion of the Seller).	gue, Update Item Specification, Update Pricing	ng Party	r
Catalogue	A document produced by a party in the procurement chain that describes items and prices. The document typically enables the transmission of information regarding pricing and catalogue details for goods and services offered by a seller to a buyer.	Create Catalogue	Seller	Contracting Party
Catalogue Deletion	A document to cancel an entire Catalogue. All previous Catalogue information becomes obsolete.	Delete Catalogue	Seller	Contracting Party
Catalogue Item Specification Update	A document to update information about Items in an existing Catalogue.	Update Catalogue Item Specification	Seller	Contracting Party
Catalogue Pricing Update	A document to update information about Prices in an existing Catalogue.	Update Catalogue Pricing	Seller	Contracting Party
Request For Quotation	A document to request pricing and availability information about goods or services. The document may requesting a quote on specified goods or services.	Sourcing	Originator	Seller
Quotation	A document to specify pricing and availability information about goods or services. The document which, with a view to concluding a contract, sets out	Sourcing	Seller	Originator

Document Name	Description	Processes Involved	Submitter Role	Receiver Role
	the conditions under which the goods are offered.			
Order	A document that contains information directly relating to the economic event of ordering products. The document by means of which a customer initiates a transaction with a supplier for the supply of goods or services as specified, according to conditions set out in an offer, or otherwise known to the customer.	Ordering	Buyer	Seller
Order Response	A document responding to the customer to indicate detailed responses against a single order already received.	Ordering	Seller	Buyer
Order Response Simple	A document responding to the customer to indicate simple acceptance or rejection of an entire order. The document acknowledging an undertaking to fulfil an order and confirming conditions or acceptance of conditions.	Ordering	Seller	Buyer
Order Change	A document that contains information directly relating to the economic event of changing an order already sent.	Ordering, Fulfilment	Buyer	Seller
Order Cancellation	A document that advises either party of the cancellation of an Order.	Ordering, Fulfilment	Buyer	Seller
Despatch Advice	A document that describes the content of goods shipped. Document/message by means of which the seller or consignor informs the consignee about the despatch of goods.	Fulfilment	Despatch	Delivery
Receipt	A document that advises the goods	Fulfil	Deli	Desp

Document Name	Description	Processes Involved	Submitter Role	Receiver Role
Advice	received and accepted by the buyer. The document acknowledges the receipt of goods and in addition may indicate receiving conditions.	ment	very	atch
Invoice	A document claiming payment for goods or services supplied under conditions agreed between the supplier and the customer. In most cases this document describes the actual financial commitment of goods or services ordered from the supplier.	Billing	Supplier Accounting Party	Customer Accounting Party
Self Billed Invoice	A document provided by a customer, in the name and on behalf of the supplier, describing the claim for payment for goods or services supplied under conditions agreed between the supplier and the customer.	Billing	Customer Accounting Party	Supplier Accounting Party
Credit Note	A document for a supplier to specify a reduced payment. The document for providing credit information to the relevant party.	Billing	Supplier Accounting Party	Customer Accounting Party
Debit Note	A document for a customer to specify a reduced payment. The document for providing debit information to the relevant party.	Billing	Customer Accounting Party	Supplier Accounting Party
Self Billed Credit Note	A document for a customer to specify a reduced payment in a Self Billing environment. The document indicates that the customer is claiming credit in a self billing environment.	Billing	Customer Accounting Part	Supplier Accounting

Document Name	Description	Processes Involved	Submitter Role	Receiver Role
			y	Party
Statement	A document to list the financial transactions between customer and supplier and notify of their status. This is a Statement of Account and not intended as a summary Invoice.	Billing	Supplier Accounting Party	Customer Accounting Party
Reminder	A document used to request payment.	Billing	Supplier Accounting Party and/or Payee	Customer Accounting Party and/or Payee
Remittance Advice	A document to specify that funds have been transferred from the customer to the supplier. The document advising of the remittance of payment.	Payment	Customer Accounting Party and/or Payee	Supplier Accounting Party and/or Payee
Forwarding Instructions	The document used by any party who gives instructions for the transportation services required for a consignment of goods to any party who is contracted to provide the transportation services. The parties who issue this document are commonly referred to as the shipper or consignor while the parties who receive this document are forwarders, carriers, shipping agents, etc. Note that this	Initiate Transport Services	Consignor (or Consignee), Freight Forward	Freight Forwarder, Carrier

Document Name	Description	Processes Involved	Submitter Role	Receiver Role
	document may also be issued by a forwarder or shipping agent in their capacity as a Transport Service Buyer. This document may be used to arrange for the transportation (1) of different types of goods or cargoes; (2) whether containerized or non-containerized; (3) through different modes of transport including multi-modal, and (4) from any origin to any destination. The document issued to a freight forwarder, giving instructions regarding the action to be taken by the forwarder for the forwarding of goods described therein.		er	
Bill of Lading	A document issued by the party who acts as an agent for the carrier or other agents, to the party who gives instructions for the transportation services (shipper, consignor, etc.) stating the details of the transportation, charges, and terms and conditions under which the transportation service is provided. The party issuing this document does not necessarily provide the physical transportation service. It corresponds to the information on the Forwarding Instructions. It is used for any mode of transport. A Bill of Lading may serve as a contractual document between the parties for the transportation service. The document evidences a contract of carriage by sea and the acceptance of responsibility for the goods by the carrier, and by which the carrier undertakes to deliver the goods against surrender of the document. A provision in the document that the goods are to be delivered to the order of a named person, or to order, or to bearer, constitutes such an undertaking. A negotiable document that evidences a contract of carriage by sea and the taking over or loading of goods by carrier, and by which carrier undertakes to deliver goods against	Initiate Transport Services	Freight Forwarder, Carrier	Consignor (or Consignee), Freight Forwarder

Document Name	Description	Processes Involved	Submitter Role	Receiver Role
	surrender of the document.			
Waybill	A document issued by the party who acts as an agent for the carrier or other agents to the party who gives instructions for the transportation services (shipper, consignor, etc.) stating the details of the transportation, charges, and terms and conditions under which the transportation service is provided. The party issuing this document may not provide the physical transportation service. It corresponds to the information on the Forwarding Instructions. It is used for all modes of transport. It may serve as a contractual document between the parties for the transportation service. A Waybill is a non-negotiable document evidencing the contract for the transport of cargo. It provides information similar to Bill of Lading but is not negotiable and cannot be assigned to a third party.	Initiate Transport Services	Freight Forwarder, Carrier	Consignor (or Consignee), Freight Forwarder
Packing List	A document stating the detail of how goods are packed. The document specifies the distribution of goods in individual packages (in trade environment the despatch advice message is used for the packing list).	Initiate Transport Services	Consignor	Freight Forwarder
Freight Invoice	A document issued by a transport operation specifying freight costs and charges incurred for a transport operation and stating conditions of payment.	Freight Billing	Freight Forwarder	Consignor or Consignee
Certificate of Origin	A document required by governments, declaring that goods in a particular international shipment are of a certain origin. Customs offices will use this document to determine whether or not a preferential duty rate applies on the products being imported and whether a	Certification of Origin of Goods	Exporter, Issuer	Issuer, Importer

Document Name	Description	Processes Involved	Submitter Role	Receiver Role
	shipment may be legally imported during a specific quota period. The document identifies which authority or body authorized to issue it certifies expressly that the goods to which the certificate relates originate in a specific country. The word "country" may include a group of countries, a region, or a part of a country. This certificate may also include a declaration by the manufacturer, producer, supplier, exporter, or other competent person.			
Transportation Status	A message to report the transport status and/or change in the transportation status (i.e. event) between agreed parties.	Initiate Transport Services	Freight Forwarder	Consignee, Consignor
Application Response	A document to indicate the application's response to a transaction at the business application level concerning the processing of a document.	All	Sender	Receiver
Attached Document	In effect a 'wrapper' UBL envelope that may contain anything. This allows a referenced document to be included in the package of documents being exchanged.	All	Sender	Receiver

5. UBL 2.0 Schemas

The UBL 2.0 XSD schemas are the only normative representations of the UBL 2.0 document types and library components.

All of the UBL 2.0 XSD schemas are contained in the `xsd` subdirectory of the UBL 2.0 release package (see Appendix A for more information regarding the structure of the 2.0 release package and Section 5.3 for information regarding dependencies among the schema modules). The `xsd` directory is further subdivided into `xsd/maindoc` and `xsd/common` subdirectories.

For convenience in implementing the schemas, a parallel (and technically non-normative) "runtime" set with the annotation elements stripped out is provided in the `xsdrt` directory.

5.1. UBL 2.0 Document Schemas

XSD schemas defining the 31 UBL 2.0 document types are located in the `xsd/maindoc` directory, as listed below.

ApplicationResponse

xsd/maindoc/UBL-ApplicationResponse-2.0.xsd

AttachedDocument

xsd/maindoc/UBL-AttachedDocument-2.0.xsd

BillOfLading

xsd/maindoc/UBL-BillOfLading-2.0.xsd

Catalogue

xsd/maindoc/UBL-Catalogue-2.0.xsd

CatalogueDeletion

xsd/maindoc/UBL-CatalogueDeletion-2.0.xsd

CatalogueItemSpecificationUpdate

xsd/maindoc/UBL-CatalogueItemSpecificationUpdate-2.0.xsd

CataloguePricingUpdate

xsd/maindoc/UBL-CataloguePricingUpdate-2.0.xsd

CatalogueRequest

xsd/maindoc/UBL-CatalogueRequest-2.0.xsd

CertificateOfOrigin

xsd/maindoc/UBL-CertificateOfOrigin-2.0.xsd

CreditNote

xsd/maindoc/UBL-CreditNote-2.0.xsd

DebitNote

xsd/maindoc/UBL-DebitNote-2.0.xsd

DespatchAdvice

xsd/maindoc/UBL-DespatchAdvice-2.0.xsd

ForwardingInstructions

xsd/maindoc/UBL-ForwardingInstructions-2.0.xsd

FreightInvoice

xsd/maindoc/UBL-FreightInvoice-2.0.xsd

Invoice

xsd/maindoc/UBL-Invoice-2.0.xsd

Order

xsd/maindoc/UBL-Order-2.0.xsd

OrderCancellation

xsd/maindoc/UBL-OrderCancellation-2.0.xsd

OrderChange

xsd/maindoc/UBL-OrderChange-2.0.xsd

OrderResponse

xsd/maindoc/UBL-OrderResponse-2.0.xsd

OrderResponseSimple

xsd/maindoc/UBL-OrderResponseSimple-2.0.xsd

PackingList

xsd/maindoc/UBL-PackingList-2.0.xsd

Quotation

xsd/maindoc/UBL-Quotation-2.0.xsd

ReceiptAdvice

xsd/maindoc/UBL-ReceiptAdvice-2.0.xsd

Reminder

xsd/maindoc/UBL-Reminder-2.0.xsd

RemittanceAdvice

xsd/maindoc/UBL-RemittanceAdvice-2.0.xsd

RequestForQuotation

xsd/maindoc/UBL-RequestForQuotation-2.0.xsd

SelfBilledCreditNote

xsd/maindoc/UBL-SelfBilledCreditNote-2.0.xsd

SelfBilledInvoice

xsd/maindoc/UBL-SelfBilledInvoice-2.0.xsd

Statement

xsd/maindoc/UBL-Statement-2.0.xsd

TransportationStatus

xsd/maindoc/UBL-TransportationStatus-2.0.xsd

Waybill

xsd/maindoc/UBL-Waybill-2.0.xsd

5.2. UBL Common Schemas

The `xsd/common` directory contains schemas referenced by the document schemas in `xsd/maindoc`. The name of each schema file together with a brief description of its contents is given below.

5.2.1. Reusable BIE Schemas

CommonBasicComponents

xsd/common/UBL-CommonBasicComponents-2.0.xsd

This schema defines the global Basic Business Information Entities (BBIEs) that are used throughout UBL, serving, in effect, as a "global BBIE type database" for constructing documents. BBIEs are the "leaf nodes" of UBL documents.

CommonAggregateComponents

xsd/common/UBL-CommonAggregateComponents-2.0.xsd

This schema defines the Aggregate Business Information Entities (ABIEs) that are used throughout UBL, serving, in effect, as an "ABIE type database" for constructing the main documents.

5.2.2. Reusable Datatype Schemas

CCTS_CCT_SchemaModule

xsd/common/CCTS_CCT_SchemaModule-2.0.xsd

This schema provides Core Component Types as defined by [CCTS]. These types are used to construct higher-level datatypes in a standardized and consistent manner. This schema is defined by UN/CEFACT and should not be modified. It is provided here as a reference for implementers who wish to extend UBL and create new qualified datatypes in a CCTS-conformant manner.

UnqualifiedDataTypeSchemaModule

xsd/common/UnqualifiedDataTypeSchemaModule-2.0.xsd

This schema defines Unqualified Data Types for primary and secondary representation terms as specified by [CCTS]. Derived from Core Component Types, these XSD complexType structures are the basic data types from which all other data types must derive. This schema is defined by UN/CEFACT and should not be modified.

QualifiedDatatypes

xsd/common/UBL-QualifiedDatatypes-2.0.xsd

This schema describes the Qualified Data Types defined by UBL as specified by [CCTS]. These XSD complexType structures are derived from Unqualified Data Types (see above), primarily to document code lists defined for use with UBL. These Types have been customized for UBL and may be further customized to support additional Data Types required for other business contexts.

5.2.3. Documentation Metadata Schema

CoreComponentParameters

xsd/common/UBL-CoreComponentParameters-2.0.xsd

This schema defines the structure of the annotation/documentation sections that appear in all the other schemas, providing a consistent format for metadata such as object class, representation terms, semantic descriptions, and other supplementary information.

While not required by UBL schemas, this module is provided to encourage consistency of customized extensions.

5.2.4. Imported Code List Schemas

Four standard code list schemas imported for use in UBL 2.0 are included in the `xsd/common` directory. These are defined by UN/CEFACT for use with their Unqualified Data Type schema and should not be modified.

CodeList_CurrencyCode

xsd/common/CodeList_CurrencyCode_ISO_7_04.xsd

CodeList_MIMEMediaTypeCode

xsd/common/CodeList_MIMEMediaTypeCode_IANA_7_04.xsd

CodeList_UnitCode

xsd/common/CodeList_UnitCode_UNECE_7_04.xsd

CodeList_LanguageCode

xsd/common/CodeList_LanguageCode_ISO_7_04.xsd

This code list is not currently used in any UBL 2.0 documents. It is provided here to support customized implementation of textual content in different languages. For example, where a TextType component allows multiple occurrences, each different occurrence may be expressed in a different language. The actual language used may be identified using this code list.

Appendix E contains a description of UBL code list validation and an explanation of the role played by these imported code list schemas.

5.2.5. Extension Content Schemas

See Section B.3.3 for information regarding UBL extension.

CommonExtensionComponents

xsd/common/UBL-CommonExtensionComponents-2.0.xsd

This schema defines the extension structures that are used in all UBL document types, providing metadata regarding the use of an extension embedded in a UBL document instance.

ExtensionContentDatatype

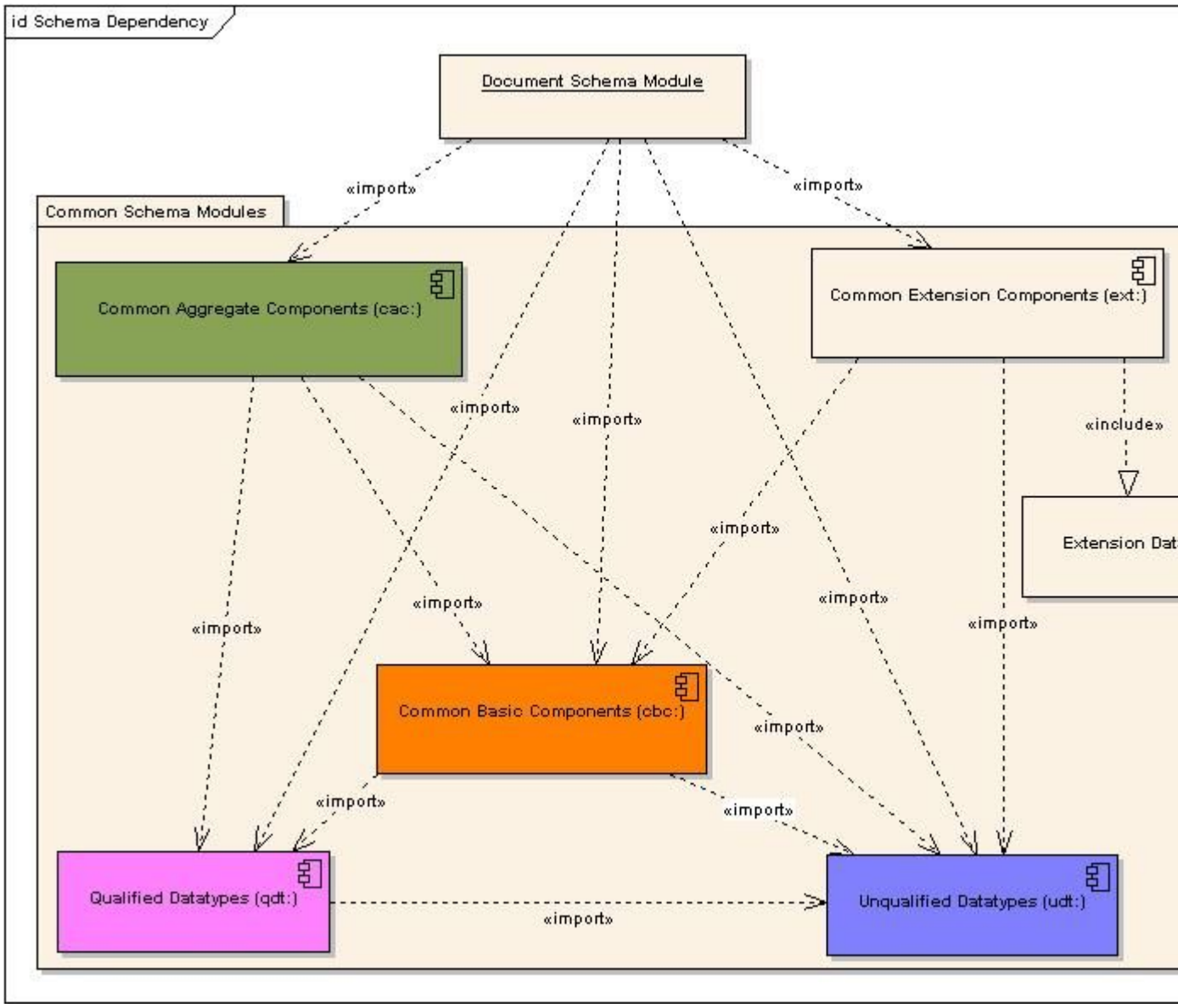
xsd/common/UBL-ExtensionContentDatatype-2.0.xsd

This schema specifies the actual structure of the extension element containing the foreign non-UBL content. This is delivered as an unconstrained element and may be replaced by users to specify the validation of their foreign vocabulary in a customized UBL document.

5.3. Schema Dependencies

The following diagram shows the dependencies among the schema modules comprising a UBL 2.0 document schema.

Figure 22. UBL Schema Dependencies



6. Additional Document Constraints

In addition to the UBL 2.0 document constraints formally expressed in the schemas described in Section 5 above, UBL mandates several other rules governing conformant UBL 2.0 instances that cannot be expressed using W3C Schema. These additional UBL document rules, addressing instance validation, character encoding, and empty elements, are specified below.

Note that these rules first appeared in the OASIS UBL 1.0 and UBL 1.0 NDR Standards. They are listed here because logically they belong with the great majority of UBL instance constraints specified in the schemas. To aid in coordinating references between these various publications, the rules below retain their original “IND” labels. The former IND4 was removed in the revision process leading to UBL 2.0.

6.1. Validation

The UBL library and document schemas are targeted at supporting business information exchanges. Business information exchanges require a high degree of precision to ensure that application

processing and corresponding business cycle actions are reflective of the purpose, intent, and information content agreed to by both trading partners. Schemas provide the necessary mechanism for ensuring that instance documents do in fact support these requirements.

[IND1] All UBL instance documents MUST validate to a corresponding schema.

6.2. Character Encoding

XML supports a wide variety of character encodings. Processors must understand which character encoding is employed in each XML document. XML 1.0 supports a default value of UTF-8 for character encoding, but best practice is to always identify the character encoding being employed.

[IND2] All UBL instance documents MUST identify their character encoding within the XML declaration.

Example:

```
<?xml version="1.0" encoding="UTF-8"?>
```

UBL, as an OASIS TC, is obligated to conform to agreements OASIS has entered into. OASIS is a liaison member of the ISO IEC ITU UN/CEFACT eBusiness Memorandum of Understanding Management Group (MOUMG). Resolution 01/08 (MOU/MG01n83) requires the use of UTF-8.

[IND3] In conformance with ISO IEC ITU UN/CEFACT eBusiness Memorandum of Understanding Management Group (MOUMG) Resolution 01/08 (MOU/MG01n83) as agreed to by OASIS, all UBL XML SHOULD be expressed using UTF-8.

Example:

```
<?xml version="1.0" encoding="UTF-8"?>
```

6.3. Empty Elements

Use of empty elements within XML instance documents is a source of controversy for a variety of reasons. An empty element does not simply represent data that is missing. It may express data that is not applicable for some reason, trigger the expression of an attribute, denote all possible values instead of just one, mark the end of a series of data, or appear as a result of an error in XML file generation. Conversely, missing data elements can also have meaning — data not provided by a trading partner. In information exchange environments, different trading partners may allow, require, or ban empty elements. UBL has determined that empty elements do not provide the level of assurance necessary for business information exchanges and therefore will not be used.

[IND5] UBL conformant instance documents MUST NOT contain an element devoid of content or containing null values, except in the case of extension, where the UBL ExtensionContent element is used.

To ensure that no attempt is made to circumvent rule IND5, UBL also prohibits attempting to convey meaning by not conveying an element.

[IND6] The absence of a construct or data in a UBL instance document MUST NOT carry

meaning.

Appendix A. Release Notes (Informative)

A.1. Availability

Online and downloadable versions of this release are available from the locations specified at the top of this document.

A.2. Package Structure

The UBL 2.0 specification is published as a zip archive named os-UBL-2.0.zip. Unzipping this archive creates a directory named os-UBL-2.0 containing a master DocBook XML file (UBL-2.0.xml), a generated hypertext version of this file (UBL-2.0.html), and a number of subdirectories. The files in these subdirectories, linked to from UBL-2.0.xml and UBL-2.0.html, contain the various normative and informational pieces of the 2.0 release. A description of each subdirectory is given below. Note that while the UBL-2.0.xml file is the “original” of this specification, it may not be viewable in all currently available web browsers.

`art`

Diagrams and illustrations used in this specification

`asn`

ASN.1 UBL 2.0 schema; see Appendix G

`cl`

Code list specification files; see Appendix E

`css`

CSS stylesheets for viewing UBL-2.0.html

`db`

DocBook stylesheets for viewing UBL-2.0.xml

`doc`

Documents included with this release

`etc`

Miscellaneous supporting information

`mod`

Spreadsheet data models; see Appendix D

uml

UML class diagrams of the UBL 2.0 data models; see Appendix D

val

Test harness for demonstrating UBL 2.0 two-phase validation; see Appendix E

xml

Sample UBL 2.0 instances

xsd

XSD schemas; see Section 5

xsdrt

“Runtime” XSD schemas; see Section 5

The UBL 2.0 distribution also contains a PDF file, UBL-2.0.pdf, that is automatically generated from UBL-2.0.html. The UBL-2.0.pdf file is included to comply with a procedural requirement of the current OASIS Technical Committee process; it does not constitute the UBL 2.0 specification (most of which consists of schema files) and is not intended to perform any real function. Please do not submit comments relating to the formatting or any other aspect of the UBL-2.0.pdf file.

A.3. Support

UBL is a volunteer project of the international business community. Inquiries regarding UBL may be posted to the public ubl-dev list, archives for which are located at

http://lists.oasis-open.org/archives/ubl-dev/

Subscriptions to ubl-dev can be made through the OASIS list manager at

http://www.oasis-open.org/mlmanage/index.php

A.4. Support Package

As an aid to deployment, the standard XML schemas in UBL 1.0 were accompanied by a large quantity of supporting materials, most of them included in the UBL 1.0 release package as informative appendices and the remainder available from sites referenced in the release package.

Due to the greatly increased scope of UBL 2.0, some of the supporting documents and informative materials corresponding to those in the UBL 1.0 standard are being provided in a separate UBL 2.0 Support Package in order to reduce scheduling dependencies between the normative and informative parts of the specification. The Support Package is being developed in parallel with the UBL 2.0 specification and will be made available shortly after ratification of UBL 2.0 as an OASIS standard.

A.5. Taxation Rules

UBL 2.0 does not provide documents for tax reporting purposes. Instead, it provides structures to support the information on which tax is based. These aim to be generic and not based on any specific tax regime.

To implement specific tax regimes, the OASIS UBL Technical Committee is working with the OASIS TaxXML Technical Committee to provide guidelines for how specific taxation requirements (e.g., Value Added Tax for the European Community) may be implemented using UBL.

A.6. UBL Customization

See the description of the UBLExtensions element in B.3.3 below. Recommendations for the development and implementation of subsets, extensions, and profiles of UBL will be provided as part of the UBL 2.0 Support Package.

Appendix B. Upgrading from UBL 1.0 to UBL 2.0 (Informative)

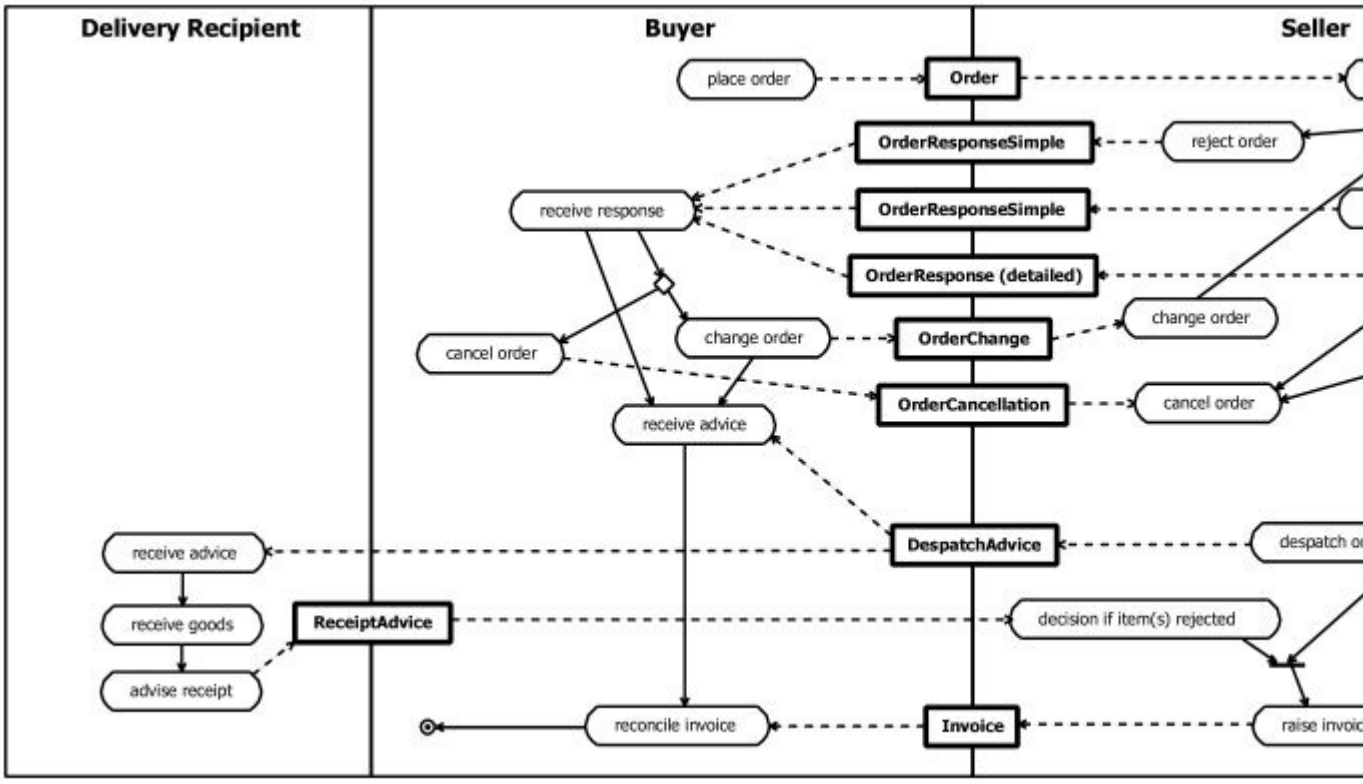
While every effort has been made to keep UBL 2.0 backward-compatible with UBL 1.0, several changes resulting from experience with 1.0 have proven extensive enough to make this a major release instead of a minor version update. This means that compatibility of UBL 1.0 with the UBL 2.0 specification is not assured.

This appendix identifies the areas that have changed or been extended between UBL 1.0 and UBL 2.0. These changes must be considered in upgrading existing UBL-based systems to take advantage of the greatly expanded applicability of UBL 2.0.

B.1. The Original UBL 1.0 Order-to-Invoice Process

UBL 2.0 builds upon the basic procurement process established in UBL 1.0. That process, based on eight basic document types shown in bold outline, is illustrated in the diagram below. (See Section 4 for the Sourcing-to-Payment business process assumed for UBL 2.0.)

Figure B.1. UBL 1.0 Order-to-Invoice Business Process



B.2. New in UBL 2.0

Though apparently limited in scope, the eight document types provided in UBL 1.0 are applicable to a very large number of real-world use cases and have been widely deployed.

Adoption of UBL 1.0 following ratification as an OASIS standard in November 2004 has resulted in major inputs of new content beyond the eight basic order-to-invoice business documents specified in the original release. In particular, contributions from representatives of government procurement, taxation, and transportation agencies in Europe, Asia, and North America have resulted in greatly expanded pre-order and post-invoice capabilities together with the addition of several transport-related document types. These additions have increased the number of UBL document types from eight in UBL 1.0 to 31 in UBL 2.0.

Original UBL 1.0 order-to-invoice document types (updated for UBL 2.0): Order, OrderResponse, OrderResponseSimple, OrderChange, OrderCancellation, DespatchAdvice, ReceiptAdvice, Invoice

New UBL 2.0 document types for sourcing: CatalogueRequest, Catalogue, CatalogueItemSpecificationUpdate, CataloguePricingUpdate, CatalogueDeletion, RequestForQuotation, Quotation

New UBL 2.0 document types for fulfilment: ForwardingInstructions, PackingList, BillOfLading, Waybill, CertificateOfOrigin, TransportationStatus

New UBL 2.0 document types for billing: CreditNote, DebitNote, SelfBilledInvoice, SelfBilledCreditNote, FreightInvoice, Reminder

New UBL 2.0 document types for payment: RemittanceAdvice, Statement

New UBL 2.0 supplementary document types: ApplicationResponse, AttachedDocument

The role of the 23 new UBL 2.0 document types is described in Section 4.

B.3. Other Differences between UBL 1.0 and UBL 2.0

B.3.1. Global Scoping

In UBL 1.0, the great majority of element types were globally scoped, the only exceptions being identifiers and codes. In UBL 2.0, *all* types are globally scoped.

B.3.2. New Approach to Code List Validation

The UBL mechanism for specifying and validating code lists has been completely revamped. A two-phase validaton approach using the power of XSLT [XSLT] (a W3C Recommendation) and Schematron [SCH] (ISO/IEC 19757-3) has been developed to make it easier to modify code lists and perform basic business rule checking. For further details, see Appendix E, UBL 2.0 Code Lists and Two-phase Validation.

B.3.3. New Extension Element

An optional container element named UBLExtensions may now appear as the first child of any UBL 2.0 document. UBLExtensions was provided to meet user demand for an area in which to include non-UBL data elements, in particular, elements containing data whose inclusion is mandated by law for certain business documents in certain regulatory environments. Note that unlike every other data element in UBL, UBLExtensions has no associated business semantics in itself and is therefore not derived from a CCTS data type.

Each ext:UBLExtension child element of the ext:UBLExtensions container element contains the metadata and content associated with a single extension. To accommodate the widest range of possible extensions, the ext:ExtensionContent element is specified in `xsd/common/UBL-ExtensionContentDatatype-2.0.xsd` as having a single child element of type xsd:any with a processContents value of “skip”. This means, in essence, that any well-formed XML element (and all of its children and descendants) from any vocabulary can be the one child of the ext:ExtensionContent element; however, it is not recommended that this child element come from a UBL namespace, because the semantics of such use at this location are undefined. Descendants of the one child of ext:ExtensionContent, on the other hand, may meaningfully include elements from the standard UBL namespace, and this can minimize the creation of nonstandard information items.

The metadata recorded for an extension is part of the UBL vocabulary, specified in `xsd/common/UBL-CommonExtensionComponents-2.0.xsd` as optional elements that are siblings to the ext:ExtensionContent element.

Injudicious use of UBLExtensions will obviously have damaging consequences for interoperability of UBL documents. UBLExtensions should be used with great care and should never be used for data that is properly conveyed in standard UBL elements allowed elsewhere in the document. In general, UBLExtensions should be used only as a last resort for data that cannot be accommodated by the constructs provided in the standard. Practical use of UBLExtensions will require out-of-band agreements among specific trading partner communities together with publication and maintenance

procedures outside the scope of standard UBL.

B.3.4. Changes to Basic Information Entities

A number of Basic Information Entities and the corresponding XML elements have been changed to better reflect business requirements, as shown in the following two tables.

Table B.1. Changes to Library Elements in UBL 2.0

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
Address			
		Added TypeCode	Adopted from UN/CEFACT
		Added FormatCode	Adopted from UN/CEFACT
		Added BlockName	Adopted from UN/CEFACT
		Added MarkAttention	Adopted from UN/CEFACT
		Added MarkCare	Adopted from UN/CEFACT
		Added PlotIdentification	Adopted from UN/CEFACT
		Added CitySubdivisionName	Adopted from UN/CEFACT
	AddressLine	Changed cardinality to 0..n	The number of address lines needed varies from country to country
AddressLine			
	Line	Changed cardinality to 1	Since

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
			AddressLines are optional, each Line should not be optional
AllowanceCharge			
	ReasonCode	Renamed to AllowanceChargeReasonCode	Reason codes may be for more than just allowance charges
		Added AllowanceChargeReason	For textual description of reasons
	CurrencyCode	Removed	Redundant information. Currency is expressed in the Amount type
		Added BaseAmount	The amount to which the MultiplierFactorNumeric is applied to calculate the Allowance Charge
		Added AccountingCostCode	The Buyer's accounting code as applied to the Allowance Charge
		Added AccountingCost	The Buyer's accounting center as applied to the

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
			Allowance Charge
		Added TaxTotal	For taxes applying to the allowance or charge
BasePrice		Renamed to Price	The term Base was ambiguous
	MaximumQuantity	Removed	Quantity is not the only parameter for a price. Could not explain a use fo it
	MinimumQuantity	Removed	Quantity is not the only parameter for a price. Could not explain a use fo it
	MaximumAmount	Removed	Could not explain a use fo it
	MinimumAmount	Removed	Could not explain a use fo it
		Added PriceChangeReason	The reason for the Price chang expressed as tex
		Added PriceTypeCode	The Price type expressed as a code
		Added PriceType	The Price type

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
			expressed as tex
		Added OrderableUnitFactorRate	The factor by which the base price unit can be converted to the orderable unit
BuyerParty		Renamed to CustomerParty	Customer is now the general term for buyer party. Buyer is the one sending the order and doing the purchasing
	BuyerAssignedAccountID	Renamed to CustomerAssignedAccountID	Customer is now the general term for buyer party. Buyer is the one sending the order and doing the purchasing
	SellerAssignedAccountID	Renamed to SupplierAssignedAccountID	Supplier is now the general term for seller party. Seller is the one receiving the order
CommodityClassification			
		Added ItemClassificationCode	The trade commodity classification expressed as a code
Communication			
		Added Channel	The method of

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
			communication expressed as tex
Contact			
		Added Note	A note describing the circumstances i which the Contact can be used such as “Emergency” o “After Hours”
Contract			
		Added IssueTime	The time at which the Contract was issued
		Added ContractType	The type of Contract expressed as tex
Delivery			
	RequestedDeliveryDateTime	Replaced by RequestedDeliveryPeriod	Delivery may b requested over a period of time
	PromisedDeliveryDateTime	Replaced by PromisedDeliveryPeriod	Delivery may b promised for a period of time
	ActualDeliveryDateTime	Replaced by ActualDeliveryDate and Actual DeliveryTime	All DateTimes are now separat Date and Time
		Added LatestDeliveryDate	The latest delivery date allowed by the

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
			Buyer
		Added LatestDeliveryTime	The latest delivery time allowed by the Buyer
		Added TrackingID	The delivery Tracking ID (fo transport tracking)
	DespatchAddress	Replaced by new association to Despatch	Despatch Address is within Despatch
		Added DeliveryLocation	The Location fo a Delivery
		Added EstimatedDeliveryPeriod	The estimated Period for Delivery
		Added DeliveryParty	The party to whom the goods/services are delivered
	OrderLineReference	Removed	Reference not meaningful at this level
DeliveryTerms			
	RelevantLocation	Replaced by DeliveryLocation	Provide structured details of location
DespatchLine			

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
		Added UUID	Universally unique identification of the line within the Despatch note
		Added OutstandingQuantity	The quantity outstanding (which will follow in a later despatch)
		Added OutstandingReason	The reason for the Outstanding Quantity
		Added OversupplyQuantity	The quantity over supplied
	Delivery	Replaced by Shipment	Shipment cover all the details of the movement o goods
	DeliveryTerms	Replaced by Shipment	Shipment cover all the details of the movement o goods
	TransportHandling Unit	Replaced by Shipment	Shipment cover all the details of the movement o goods
		Added DocumentReference	A reference to any other documents
DocumentReference			

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
	GUID	Renamed to UUID	UUID is the standard term
		Added DocumentTypeCode	The document type expressed as a code
		Added DocumentType	The document type expressed as text
		Added Xpath	Refers to another part of the same document instance
FinancialAccount			
		Added PaymentNote	Free-form text applying to the Payment to the owner of this account
HazardousGoodsTransit			
		Added TransportAuthorizationCode	Code specifying the authorisatio for the transportation o hazardous cargo
HazardousItem			
		Added CategoryName	Name of a kind of hazard for a material
		Added CategoryCode	Code specifying

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
			a kind of hazard for a material
		Added UpperOrangeHazardPlacardID	To specify the identity number for the upper part of the orange hazard placard required on the means of transport
		Added LowerOrangeHazardPlacardID	To specify the identity number for the lower part of the orange hazard placard required on the means of transport
		Added MarkingID	To identify the marking of dangerous good
		Added HazardClassID	To identify a hazard class
InvoiceLine			
	LineStatusCode	Removed	Invoice line cannot be updated
		Added UUID	A computer-generated universally unique identifie (UUID) for the Invoice Line instance
		Added TaxPointDtae	The date of the

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
			Invoice Line used to indicate the point at which tax becomes applicable
		Added AccountingCostCode	The Buyer's accounting code applied to the Invoice Line
		Added AccountingCost	The Buyer's accounting cost center applied to the Invoice Line
		Added FreeOfChargeIndicator	Indicates whether the Invoice Line is Free Of Charge (default = False
	BasePrice	Renamed to Price	The term Base was ambiguous
		Added BillingReference	Reference to the billing information
		Added PricingReference	Reference to pricing details
		Added DocumentReference	Reference to other document
		Added OriginatorParty	The party who originated Order (to which the Invoice is related)

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
		Added DeliveryTerms	Delivery terms for the invoice line
		Added ItemInstance	Identifies the specific item instance
Item			
		Added Name	A short name (optionally) given to an item such as a name from a catalogue, as distinct from a description
		Added HazardousRiskIndicator	Indicates whether the item as delivered is hazardous
		Added AdditionalInformation	To provide more details of the item (e.g., URL of a relevant web page)
		Added Keyword	A Seller Party-defined search string for the item. Also could be synonyms
		Added BrandName	The brand name for the item
		Added ModelName	Model name for the item

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
	SalesConditions	Renamed to TransactionConditions	The conditions relates to the transaction not only to the trade
	TaxCategory	Renamed to ClassifiedTaxCategory	A way to classify items independent of their participation in transaction. These are classifications (luxury, essential goods, etc.) rather than rates of tax
	BasePrice	Removed	The price is not dependent on the item
		Added ItemSpecificationDocumentReference	An association to item specification
		AdditionalItemProperty	For additional properties of the item
		ManufacturerParty	The manufacturer's details
		InformationContentProviderParty	The party responsible for providing specifications
		OriginAddress	The origin of the item
		ItemInstance	Identifies a

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
			specific instanc of the item
ItemIdentificati on			
		Added ExtendedID	Identifies the item with specific properties e.g. Item 123 = Chair / Item 12 Ext 45 = brown chair
LegalTotal			
	TaxInclusiveAmou nt	made optional	May not be specified
		Added AllowanceTotalAmount	The total amount of all allowances
		Added ChargeTotalAmount	The total amount of all charges
		Added PrepaidAmount	The total prepaid amount
		Added PayableRoundingAmount	The rounding amount (positiv or negative) added to the calculated Line Extension Total Amount to produce the rounded Line Extension Total Amount

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
		Added PayableAmount (mandatory)	The total amount to be paid
LineItem			
	BuyersID	Renamed to ID	To not violate the rule that every document has an ID, the BuyersID has become the mandatory ID
	SellersID	Renamed to SalesOrderID	Seller has only an ID if it is a SalesOrder
		Added UUID	A computer-generated universally unique identifie (UUID) for the Line Item instance
		Added InspectionMethodCode	Inspection requirements fo a Line Item expressed as a code
		Added PartialDeliveryIndicator	Indicates whether a partia delivery is allowed
		Added BackOrderAllowedIndicator	Indicates whether back order is allowed
		Added	The Buyer's accounting code

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
		AccountingCostCode	applied to the Line Item
		Added AccountingCost	The Buyer's accounting code applied to the Line Item expressed as tex
	DestinationParty	Changed to OriginatorParty	More useful to know who originated the line item
	BasePrice	Renamed as Price	The term Base was ambiguous
LineReference			
		Added UUID	A computer-generated universally unique identifie (UUID) for the referenced document line instance
LotIdentificatio n			
		Added AdditionalItemProperty	To identify an item by its properties
OrderLine			
		Added CatalogueLineReference	Reference to a catalogue
		Added	Reference to a

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
		QuotationLineReference	quote
		Added DocumentReference	Reference to an other document
OrderLineReference			
	BuyersLineID	Renamed to LineID and changed cardinality to 1	According to Lineitem/ID
	SellersLineID	Renamed to SalesOrderLineID	According to Lineitem/SalesOrderID
		Added UUID	A computer-generated universally unique identifie (UUID) for the referenced Orde Line instance
OrderReference			
	BuyersID	Renamed to ID and changed cardinality 10 1	According to Lineitem/ID
	SellersID	Renamed to SalesOrderID	According to Lineitem/SalesOrderID
	GUID	Renamed to UUID	The standard term is UUID
	DocumentStatusCode	Replaced by DocumentReference	More details on documents
		Added IssueTime	References may be required for

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
			time of day
		Added CustomerReference	A reference use [CRI] for tagging purchasing card transactions
Package			
		Added PackageLevelCode	Code specifying a level of packaging
		Added PackagingTypeCode	Code specifying the type of packaging of an item
		Added PackingMaterial	Description of the type of packaging of an item
	ContainedPackage	Changed cardinality to 0..n	A package may contain many other packages
		Added GoodsItem	Reference to goods in the package
		Added MeasurementDimension	For dimensions of the package
		Added DeliveryUnit	To specify the delivery units in each package
Party			

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
		Added WebsiteURI	The Uniform Resource Identifier (URI) of the Party
		Added LogoReferenceID	A Party's logo
		Added EndPointID	Identifies the end point of the routing service, e.g., EAN Location Number, GLN
	PartyName	Changed cardinality to 0..n	A Party may have various names
	Address	Renamed to PostalAddress	Aligning with UN/CEFACT
		Added VisitingAddress	The address for visiting the Party
		Added PartyLegalEntity	For details of corporate registration
		Added Person	Personal details when a person i a type of party
PartyName			
	Name	Changed cardinality to 1	Each PartyNam needs only one Name. A Party may have many PartyNames
PartyTaxSchem			

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
e			
		Added ExemptionReasonCode	A reason for a Party's exemption from tax expressed as a code
Payment			
		Added PaidDate	The date at which the Payment was made
		Added PaidTime	The time at which the Payment was made
		Added InstructionID	The identifier for the Payment Instruction
PaymentMeans			
		Added ID	The identifier for the Payment Means
		Added InstructionID	The identifier for the Payment Instruction
		Added InstructionNote	Free-form text applying to the Payment
	Payment	Replaced by PaymentID	The identifier for the Payment(s)

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
PaymentTerms			
		Added PaymentMeansID	The identifier for the applicable Payment Means
		Added PrepaidPaymentReferenceID	An identifier fo prepaid paymen
		Added Amount	The payment amount for the Payment Terms
Period			
	StartDateTime	Changed to StartDate and StartTime	Separated dates and times
	EndDateTime	Chnaged to EndDate and EndTime	Separated dates and times
		Added Description	A description o the Period as text
ReceiptLine			
	LineStatusCode	Removed	A receipt line cannot change status
		Added UUID	A computer-generated universally unique identifie (UUID) for the Receipt Line instance

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
		Added RejectReason	The reason for rejection expressed as a code
		Added OverSupplyQuantity	To indicate fluctuating quantity with regard to ordered/despatched quantity
		Added TimingComplaint	A complaint about the timing of delivery as text
	Delivery	Replaced by Shipment	Shipment cover all the details of the movement o goods
	TransportHandling Unit	Replaced by Shipment	Shipment cover all the details of the movement o goods
	OrderedItemIdentification	Replaced by Item	Allows for more complex description of items
		Added DocumentReference	To reference other document
SalesConditions		Renamed to TransactionConditions	The conditions relates to the transaction not only to the trade
		Added DocumentReference	To reference other document

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
SellerParty		Renamed to SupplierParty	Changed according to the extended procurement process and to match UN/CEFACT terms
	BuyerAssignedAccountID	Renamed to CustomerAssignedAccountID	Buyer term changed to Customer
	SellerAssignedAccountID	Removed	Sellers do not give themselves identifiers
		Added DataSendingCapability	Capability to send invoice data via the Purchase Card provider (VISA/MasterCard/American Express)
	AccountsContact	Renamed to AccountingContact	Consistent with other role name
Shipment			
		Added TotalGoodsItemQuantity	Count of the total number of goods items within a shipment
		Added TotalTransportHandlingUnitQuantity	Count of the number of pieces of transport handling equipment in a

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
			shipment
		Added InsuranceValueAmount	The total sum covered by an insurance for th shipment
		Added DeclaredCustomsValueAmount	Amount declared for customs purposes of those goods in a shipment which are subject to th same customs procedure, and have the same tariff/statistical heading, countr information, an duty regime.
		Added DeclaredForCarriageValueAmount	"Value, declare by the shipper o his agent solely for the purpose of varying the carrier's level o liability from that provided in the contract of carriage, in case of loss or damage to good or delayed delivery."
		Added DeclaredStatisticsValueAmount	Value declared for statistical purposes of those goods in a consignment which have the same statistical heading

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
		Added FreeOnBoardValueAmount	Monetary amount that has to be or has bee paid as calculated unde the applicable trade delivery
		Added SpecialInstructions	Special instructions relating to a shipment
		Added DeliveryInstructions	Delivery instructions relating to a shipment
		Added SplitConsignmentIndicator	Indicates if the consignment ha been split in transit
	TransportEquipmen t	Replaced by TransportHandlingUnit	The Transport Handling Unit contains the Transport Equipment
		Added Consignment	Identifies the details of the consignment
		Added GoodsItem	An association to Goods Item (for Bulk Goods)
		Added OriginAddress	An association to the region in which the goods have been produced or manufactured,

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
			according to criteria laid down for the purposes of application of the Customs tariff, or quantitative restrictions, or of any other measure related to trade
		Added FirstArrivalPortLocation	To identify the first arrival location
		Added LastExitPortLocation	To identify the final exporting location
		Added ExportCountry	To identify the country from which the goods are originally exported withou any commercial transaction take place in intermediate countries
		Added FreightAllowanceCharge	Costs incurred by the shipper i moving goods
ShipmentStage			
		Added PreCarriageIndicator	Indicates whether the stage is before the main carriage of the

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
			shipment
		Added OnCarriageIndicator	Indicates whether the stage is after the main carriage o the shipment
		Added TransportMeans	Describes the means of transport
		Added LoadingPortLocation	Identifies the port of loading
		Added UnloadingPortLocation	Identifies the port of unloading
		Added TransshipPortLocation	Identifies the port of transshipment
TaxCategory			
	ExemptionReason	Removed	Tax exemption is dependent on both the transaction and the party, so exemption is in those ABIEs
		Added Name	The name of the Tax Category
		Added BaseUnitMeasure	Where a tax is applied at a certain rate per unit, the measure of unit on which the ta

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
			calculation is based
		Added PerUnitAmount	Where a tax is applied at a certain rate per unit, the rate pe unit applied
		Added TierRange	Where a tax is tiered, the range of tiers applied in the calculation of the Tax Sub Total for the Ta Category
		Added TierRatePercent	Where a tax is tiered, the rate of tax applied to the range of tier in the calculation of the Tax Sub Total for the Ta Category
TaxScheme			
		Added Name	The name of the Tax Scheme
	JurisdictionAddress	Renamed to JurisdictionRegionAddress	Jurisdictions may be any part of an Address, not just city, state, or country (e.g., certain regions)
TaxSubTotal			

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
		Added CalculationSequenceNumeric	Identifies the numerical order sequence in which taxes are applied when multiple taxes are attracted
		Added TransactionCurrencyTaxAmount	The tax amount expressed in the currency used for invoicing
		Added Percent	The Tax Rate for the category expressed as a percentage
		Added ExemptionReason	The reason for tax being exempted
		Added BaseUnitMeasure	Where a tax is applied at a certain rate per unit, the measure of unit on which the tax calculation is based
		Added PerUnitAmount	Where a tax is applied at a certain rate per unit, the rate per unit applied
		Added TierRange	Where a tax is tiered, the range of tiers applied in the calculation of the Tax Sub Total for the Ta

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
			Category
		Added TierRatePercent	Where a tax is tiered, the rate of tax applied to the range of tier in the calculation of the Tax Sub Total for the Ta Category
TaxTotal			
	TotalTaxAmount	Renamed to TaxAmount	The word "Total" is redundant
		Added RoundingAmount	The rounding amount (positiv or negative) added to the calculated tax total to produce the rounded TotalTaxAmou t
		Added TaxEvidenceIndicator	Indicates whether these totals are recognized as legal evidence for taxation purposes
TransportEquip ment			
		Added ReturnabilityIndicator	Indicates whether a particular item of transport equipment is

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
			returnable
		Added LegalStatusIndicator	Legal status of the transport equipment with respect to the Container Convention cod
	Dimension	Renamed to MeasurementDimension	Clarification
		Added MinimumTemperature	The minimum required operating temperature for the container (e.g., reefer)
		Added MaximumTemperature	The maximum required operating temperature for the container (e.g., reefer)
		Added ProviderParty	The party that provides the Transport Equipment
		Added LoadingProofParty	The authorized party responsible for certifying that the goods were loaded into the transport equipment
		Added LoadingLocation	To identify the location where the goods are loaded into the

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
			transport equipment
TransportEquipmentSeal			
	IssuerTypeCode	Renamed to SealIssuerTypeCode	Clarification
		Added SealingPartyType	Textual description of the role of a sealing party
TransportHandlingUnit			
	UnitTypeCode	Renamed to TransportHandlingUnitTypeCode	Clarification
		Added HandlingCode	The handling required for a Shipment expressed as a code
		Added HandlingInstructions	Free-form text describing Handling Instructions for a Shipment
		Added HazardousRiskIndicator	Indicates whether the shipment contains hazardous materials
		Added	The total number of good

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reason
		TotalGoodsItemQuantity	items in the Transport Handling Unit
		Added TotalPackageQuantity	The total number of packages in the Transport Handling Unit
		Added DamageRemarks	Description of a type of damage
		Added ShippingMarks	Free-form description of the marks and numbers on a transport unit or package
		Added TransportEquipment	Any Transport Equipment used for this THU
		Added HazardousGoodsTransit	Information about the transportation o hazardous good
		Added MeasurementDimension	Dimensions of the THU
		Added MinimumTemperature	The minimum required operating temperature
		Added MaximumTemperature	The maximum required operating temperature

Table B.2. Changes to Document Elements in UBL 2.0

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reaso
ALL			
		UBLVersionID	Added as first BBIE to all document types
		CustomizationID	Added to all document types
		ProfileID	Added to all document types
DespatchAdvice			
	GUID	Renamed to UUID	Standard term i UUID
		Added IssueTime	Allow for time day
	BuyerParty	Renamed to BuyerCustomerParty	Type changed t CustomerType. BuyerParty is now the one wh purchase and sends the order
	SellerParty	Renamed to SellerSupplierParty	Type changed t SupplierType. SellerParty is now the seller and the one wh receives the orc
	FreightForwarderParty	Replaced by Shipment	Alignment with terms in transpo documents
	Delivery	Replaced by Shipment	Alignment with terms in transpo

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reaso
			documents
	DeliveryTerms	Replaced by Shipment	Alignment with terms in transpo documents
	DespatchedTransportHandlingUnit	Replaced by Shipment	Alignment with terms in transpo documents
	ActualShipment	Replaced by Shipment	Alignment with terms in transpo documents
		Added AdditionalDocumentReference	Reference to other document
Invoice			
	GUID	Renamed to UUID	Standard term i UUID
		Added IssueTime	Allow for time day
	InvoiceCurrencyCode	Renamed to DocumentCurrencyCode and changed cardinality to 1	This is the currency the invoice is expressed in
		Added PaymentCurrencyCode	The currency used for payme in the Invoice
		Added PaymentAlternativeCurrencyCode	The alternative currency used f payment in the Invoice
		Added	The Buyer’s

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reaso
		AccountingCostCode	accounting cod applied to the Invoice as a whole
		Added AccountingCost	The Buyer's accounting cost center applied t the Invoice as a whole
	BuyerParty	Renamed to BuyerCustomerParty and changed cardinality to 0..1	Type changed t CustomerType. BuyerParty is now the one wh purchase and sends the order
	SellerParty	Renamed to SellerSupplierParty and changed cardinality to 0..1	Type changed t SupplierType. SellerParty is now the seller and the one wh receives the orc
	PaymentMeans	Changed cardinality to 0..n	Requiment fron sweden more than one PaymentMeans can be used
	ExchangeRate	Renamed to PaymentExchangeRate	Clarification.
		Added BillingReference	Reference to other billing documents
		Added OriginatorDocumentRefe rence	Reference to th originator's documents
		Added	Reference to

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reaso
		ContractDocumentReference	contract documents
		Added Signature	Authorization details
		Added AccountingSupplierParty	The party responsible for the supplier's accounting
		Added AccountingCustomerParty	The party responsible for the customer's accounting
		Added PayeeParty	The party actin as payee
		Added TaxRepresentativeParty	Party responsib for taxation
		Added DeliveryTerms	Terms of delive
		Added PrepaidPayment	Details of any prepayments
		Added TaxExchangeRate	Exchange rate tax exchange currency
		Added PricingExchangeRate	Exchange rate pricing currenc
		Added PaymentAlternativeExchangeRate	Exchange rate alternative payment curren
Order			
	GUID	Renamed to UUID	Standard term i

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reaso
			UUID
		Added IssueTime	Allow for time day
	BuyersID	Renamed to ID and changed cardinality to 1	According to Lineitem/ID
	SellersID	Renamed to SalesOrderID	According to Lineitem/Sales derID
	AcknowledgementResponseCode	Removed	It is assumed th whether a response is needed and wh kind is explaine in the business process definiti
	TransactionCurrencyCode	Renamed to DocumentCurrencyCode and changed cardinality to 1	DocumentCurr cyCode is the important one.
		Added RequestedInvoiceCurrencyCode	The currency requested for amount totals i Invoices relate to this Order
		Added TaxCurrencyCode	The currency requested for ta amounts in Invoices relate to this Order
	EarliestDate	Replaced with ValidityPeriod	Replaced with ValidityPeriod
	ExpiryDate	Replaced with	Replaced with

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reaso
		ValidityPeriod	ValidityPeriod
	ValidityDurationMeasure	Replaced with ValidityPeriod	Replaced with ValidityPeriod
	TaxTotalAmount	Removed	Replaced with TaxTotal
	LineExtensionTotalAmount	Removed	Replaced with LegalTotal
	TotalPackagesQuantity	Removed	Unable to expla the usage of it
	GrossWeightMeasure	Removed	Unable to expla the usage of it
	NetWeightMeasure	Removed	Unable to expla the usage of it
	NetNetWeightMeasure	Removed	Unable to expla the usage of it
	GrossVolumeMeasure	Removed	Unable to expla the usage of it
	NetVolumeMeasure	Removed	Unable to expla the usage of it
		Added CustomerReference	A supplementa reference for th Order
		Added AccountingCostCode	The Buyer's accounting cod applied to the Order as a who
		Added AccountingCost	The Buyer's accounting cost center applied t

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reaso
			the Order as a whole
	ContractDocumentReference	Replaced by Contract	Contract has be extended with this element
	QuoteDocumentReference	Renamed to QuotationDocumentReference	Term Quote changed to Quotation
	BuyerParty	Renamed to BuyerCustomerParty	Type changed t CustomerType. BuyerParty is now the one wh purchase and sends the order
	SellerParty	Renamed to SellerSupplierParty	Type changed t SupplierType. SellerParty is now the seller and the one wh receives the orc
	OriginatorParty	Renamed to OriginatorCustomerParty	Type has changed (it is a customer type)
	SalesConditions	Renamed to TransactionConditions	The conditions relates to the transaction not only to the trad
		Added Signature	Authorization details
		Added AccountingCustomerPart y	The party responsible for the customer's accounting

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reaso
		Added TaxTotal	Tax totals for th Order
		Added LegalTotal	Total amounts the Order
OrderCancellation			
	IssueDateTime	Renamed to IssueDate and changed to Date datatype	The time may b optional
		Added IssueTime	Separate time c day
	GUID	Renamed to UUID	Standard term i UUID
	DocumentStatusCode	Removed	An order cancellation do not change stat
	ResponseRequiredIndicator	Removed	Could not expla the business us of this
	AcceptedIndicator	Removed	An Order response is sen accepted, not a cancellation. It must always be true.
	BuyerParty	Renamed to BuyerCustomerParty	Type changed t CustomerType. BuyerParty is now the one wh purchase and sends the order
	SellerParty	Renamed to	Type changed t

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reaso
		SellerSupplierPArty	SupplierType. SellerParty is now the seller and the one wh receives the orc
		Added OriginatorDocumentRefe rence	Reference to document from the originator
		Added OriginatorCustomerParty	Details of the originating part
		Added Contract	A framework agreement for t order
		Added Signature	Authorization details
OrderChange			
	GUID	Renamed to UUID	Standard term i UUID
		Added IssueTime	Allow for time day
	BuyersID	Renamed to ID	According to Lineitem/ID
	SellersID	Renamed to SalesOrderID	According to Lineitem/Sales derID
	DocumentStatusCode	Removed	An OrderChang cannot be updated
	AcknowledgementRespo	Removed	It is assumed th whether a

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reaso
	nseCode		response is needed and wh kind is explaine in the business process definiti
	TransactionCurrencyCode	Renamed to DocumentCurrencyCode and changed cardinality to 1	DocumentCurr cyCode is the currency of this document
		Added TaxCurrencyCode	The currency requested for amount taxatio amounts
		Added RequestedInvoiceCurrencyCode	The currency requested for amount totals i Invoices relate to this Order
		Added CustomerReference	A supplementa reference for th transaction (eg CRI when usin purchasing car
	EarliestDate	Replaced with ValidityPeriod	Replaced with ValidityPeriod
	ExpiryDate	Replaced with ValidityPeriod	Replaced with ValidityPeriod
	ValidityDurationMeasure	Replaced with ValidityPeriod	Replaced with ValidityPeriod
	TaxTotalAmount	Removed	Replaced with TaxTotal
	LineExtensionTotalAmo	Removed	Replaced with

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reaso
	unt		LegalTotal
	TotalPackagesCountQuantity	Removed	Unable to expla the usage of it
	GrossWeightMeasure	Removed	Unable to expla the usage of it
	NetWeightMeasure	Removed	Unable to expla the usage of it
	NetNetWeightMeasure	Removed	Unable to expla the usage of it
	GrossVolumeMeasure	Removed	Unable to expla the usage of it
	NetVolumeMeasure	Removed	Unable to expla the usage of it
		Added AccountingCostCode	The Buyer's accounting cod applied to the Order as a who
		Added AccountingCost	The Buyer's accounting cost center applied t the Order as a whole
	OrderReference	Changed cardinality to 1	There must be a order before an order change
	ContractDocumentReference	Replaced by Contract	Contract has be extended with this element
	QuoteDocumentReferenc	Renamed to QuotationDocumentRefe	Term Quote changed to

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reaso
	e	rence	Quotation
	BuyerParty	Renamed to BuyerCustomerParty	Type changed t CustomerType. BuyerParty is now the one wh purchase and sends the order
	SellerParty	Renamed to SellerSupplierParty	Type changed t SupplierType. SellerParty is now the seller and the one wh receives the orc
	OriginatorParty	Renamed to OriginatorCustomerParty	Type has changed (it is a customer type)
	SalesConditions	Renamed to TransactionConditions	The conditions relates to the transaction not only to the trad
		Added TaxTotal	Tax totals for th Order
		Added LegalTotal	Total amounts the Order
OrderRespons e			
	BuyersID	Renamed to ID and changed cardinality to 1	According to Lineitem/ID
	SellersID	Renamed to SalesOrderID	According to Lineitem/Sales derID
		Added IssueTime	Separate time c

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reaso
			day
	GUID	Renamed to UUID	Standard term i UUID
	DocumentStatusCode	Removed	An OrderChang can not be updated
	EarliestDate	Removed	It is assumed th whether a response is needed and wha kind is explaine in the business process definiti
	ExpiryDate	Removed	DocumentCurr cyCode is the important one. Do we miss transactionCurr cyCode?
	ValidityDurationMeasure	Removed	Replaced with period
	TaxTotalAmount	Removed	Replaced with period
	LineExtensionTotalAmount	Removed	Replaced with LegalTotal
	TotalPackagesCountQuantity	Renamed to TotalPackagesQuantity	The word “Count” is not needed
		Added CustomerReference	A supplementa reference for th Order
		Added	The Buyer’s

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reaso
		AccountingCostCode	accounting cod applied to the Order as a who
		Added AccountingCost	The Buyer's accounting cost center applied t the Order as a whole
	BuyerParty	Renamed to BuyerCustomerParty	Type changed t CustomerType. BuyerParty is now the one wh purchase and sends the order
	SellerParty	Renamed to SellerSupplierParty	Type changed t SupplierType. SellerParty is now the seller and the one wh receives the orc
	OriginatorParty	Renamed to OriginatorCustomerParty	Type has changed (it is a customer type)
	SalesConditions	Renamed to TransactionConditions	The conditions relates to the transaction not only to the trad
	RespondedOrderLine	Renamed to OrderLine	The qualifier Responded is redundant, this the Order Response document
		Added Contract	A framework agreement for t order

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reaso
		Added Signature	Authorization details
OrderResponseSimple			
		Added IssueTime	Separate time c day
	GUID	Renamed to UUID	Standard term i UUID
	DocumentStatusCode	Removed	OrderResponse mple cannot be updated
		Added CustomerReference	A supplementa reference for th Order
		Added AccountingCostCode	The Buyer's accounting cod applied to the Order as a who
		Added AccountingCost	The Buyer's accounting cost center applied t the Order as a whole
	BuyerParty	Renamed to BuyerCustomerParty	Type changed t CustomerType. BuyerParty is now the one wh purchase and sends the order
	SellerParty	Renamed to SellerSupplierParty	Type changed t SupplierType. SellerParty is now the seller

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reaso
			and the one wh receives the orc
		Added OriginatorCustomerParty	Details of the originator of th Order
		Added AdditionalDocumentRef erence	Reference to other document
		Added Signature	Authorization details
ReceiptAdvic e			
		Added IssueTime	Separate time c day
	GUID	Renamed to UUID	Standard term i UUID
		Added LineCountNumeric	Check number lines on the Receipt Advice
		Added AdditionalDocumentRef erence	Reference to other document
		Added Signature	Authorization details
		Added DeliveryCustomerParty	The party for delivery
		Added DespatchSupplierParty	The party for despatch
	BuyerParty	Renamed to	Type changed t

Aggregate BIE	Basic or Association BIE	Changes for UBL 2.0	Change reaso
		BuyerCustomerParty	CustomerType. BuyerParty is now the one wh purchase and sends the order
	SellerParty	Renamed to SellerSupplierParty	Type changed t SupplierType. SellerParty is now the seller and the one wh receives the orc
	FreightForwarderParty	Replaced by Shipment	Shipment cover all the details o the movement goods
	Delivery	Replaced by Shipment	Shipment cover all the details o the movement goods
	ReceivedTransportHandlingUnit	Replaced by Shipment	Shipment cover all the details o the movement goods

B.3.5. Changes to Attributes

Several attribute names have been changed as a result of adopting UN/CEFACT Core Component Type schemas, as shown in the following table.

Table B.3. Changes to Attributes in UBL 2.0

Type	Attribute	Change in UBL 2.0
AmountType		
	amountCurrencyID	Renamed to CurrencyID

Type	Attribute	Change in UBL 2.0
	amountCurrencyCodeListVersionID	Removed
BinaryObjectType		
	format	Added
	mimeCode	Added
	encodingCode	Added
	uri	Added
	filename	Added
GraphicType		
	format	Added
	mimeCode	Added
	encodingCode	Added
	uri	Added
	filename	Added
	characterSetCode	Removed
PictureType		
	format	Added
	mimeCode	Added

Type	Attribute	Change in UBL 2.0
	encodingCode	Added
	uri	Added
	filename	Added
	characterSetCode	Removed
SoundType		
	format	Added
	mimeCode	Added
	encodingCode	Added
	uri	Added
	filename	Added
	characterSetCode	Removed
VideoType		
	format	Added
	mimeCode	Added
	encodingCode	Added
	uri	Added
	filename	Added
	characterSetCode	Removed

Type	Attribute	Change in UBL 2.0
CodeType		
	codeListID	Renamed to listID
	codeListAgencyID	Renamed to listAgencyID
	codeListAgencyName	Renamed to listAgencyName
	codeListName	Renamed to listName
	codeListVersionID	Renamed to listVersionID
	codeListURI	Renamed to listURI
	codeListSchemeURI	Renamed to listSchemeURI
Identifier Type		
	identificationSchemeID	Renamed to schemeID
	identificationSchemeName	Renamed to schemeName
	identificationSchemeAgencyID	Renamed to schemeAgencyID
	identificationSchemeAgencyName	Renamed to schemeAgencyName
	identificationSchemeVersionID	Renamed to schemeVersionID
	identificationSchemeURI	Renamed to schemeURI
	identificationSchemeDataURI	Renamed to schemeDataURI

Type	Attribute	Change in UBL 2.0
MeasureType		
	measureUnitCode	Renamed to unitCode
	measureUnitCodeListVersionID	Renamed to unitCodeListVersionID
QuantityType		
	quantityUnitCode	Renamed to unitCode
	quantityUnitCodeListID	Removed
	quantityUnitCodeListAgencyID	Removed
	quantityUnitCodeListAgencyName	Removed

Appendix C. UBL Development Methodology (Informative)

Based on the principles of the ebXML Core Components Technical Specification [CCTS], UBL has been designed as a reusable library of Business Information Entities (BIEs). BIEs include BBIEs ("basic" individual pieces of information), ABIEs (aggregations of other BIEs), and ASBIEs (associations to other ABIEs).

In accordance with the defined processes and business rules for the UBL context of use (see Section 4), Business Information Entities were identified and aggregated using normalization techniques to maximize re-use and clarify meanings. This resulted in a comprehensive model of all BIEs relevant to the UBL 2.0 context of use.

The design objective has been to provide an 80/20 solution — describing 80 percent of the required components with 20 percent of the complexity. This meant that in some cases, components less commonly used or used only in particular contexts were dropped or given looser cardinality on the understanding that specific implementations may customize UBL to satisfy these requirements.

All UBL document models are assembled from a single conceptual model. Each assembly creates the hierarchical structure necessary to represent an XML document schema.

This model and the resultant assembly models are described in Appendix D, UBL 2.0 Document

Models.

UBL schemas are automatically generated from the models according to the UBL Naming and Design rules. As was the case in UBL 1.0, the UBL 2.0 schemas were generated by the FX software tool from GEFEG. An electronic copy of the UBL 2.0 FX data model will be provided as part of the UBL 2.0 Support Package.

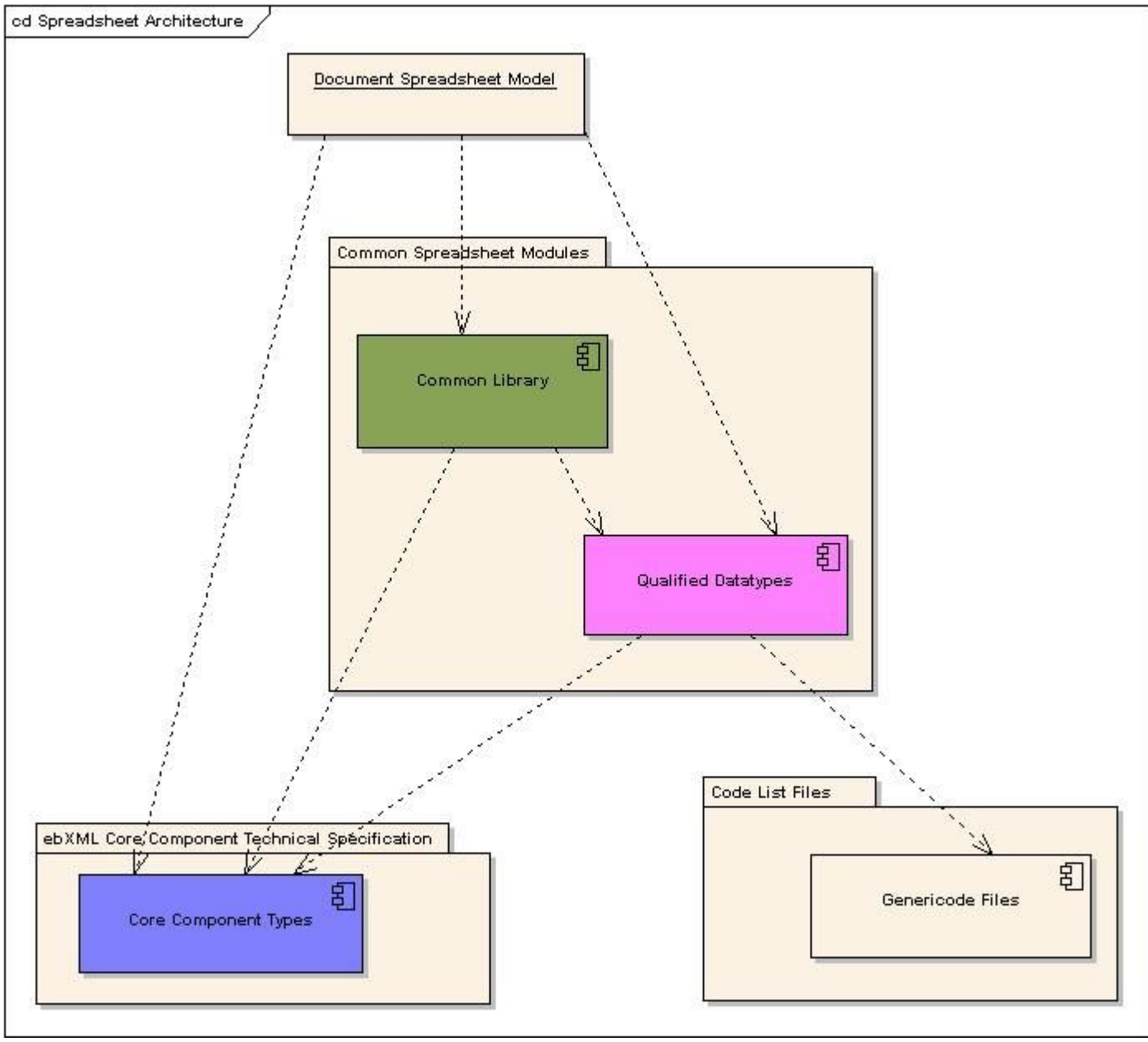
Appendix D. UBL 2.0 Document Models (Informative)

The UBL 2.0 artefacts used to represent the document models are expressed as both UML Class Diagrams and UBL-specific spreadsheets.

Spreadsheets are used to provide the supplementary metadata required by [CCTS]. Their format has been developed by UBL and follows the spreadsheet format used for UBL 1.0. They are provided in OASIS/ISO/IEC Open Document (.ods) format as well as in proprietary Excel (.xls) format. Free software for reading .ods files is available from openoffice.org.

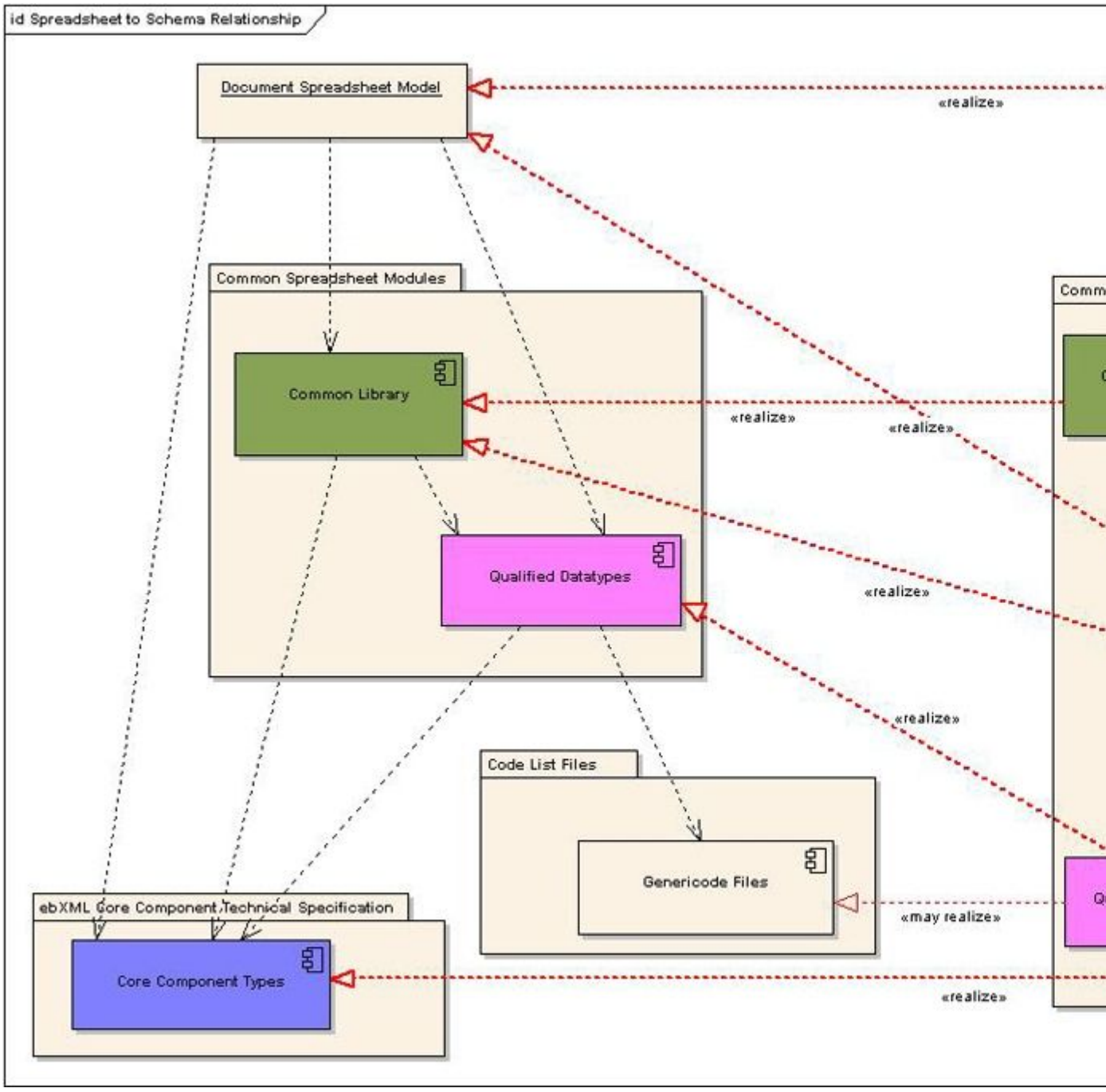
The following diagram shows the dependencies among the spreadsheets used for UBL 2.0.

Figure D.1. UBL Spreadsheet Architecture



The diagram below show how these spreadsheet modules are realized in the UBL 2.0 schema modules.

Figure D.2. UBL Spreadsheet Realization



Class diagrams are also provided as useful graphical guides to the overall UBL library structures.

To assist those migrating from UBL 1.0 to UBL 2.0, these diagrams use pink boxes to represent ABIEs that existed in UBL 1.0 and red lines for ASBIEs that existed in UBL 1.0. BBIEs that existed in UBL 1.0 are marked with a "#" symbol. An electronic copy of the UBL 2.0 UML model will be provided as part of the UBL 2.0 Support Package.

D.1. The Common Library

UBL has been designed as a reusable library of Business Information Entities.

The entire UBL 2.0 library of reusable Business Information Entities is provided as a single spreadsheet.

mod/common/UBL-CommonLibrary-2.0.ods

mod/common/UBL-CommonLibrary-2.0.xls

As an aid to understanding, a cross-reference table of Business Information Entities is also provided.

etc/UBL-ABIE-Reuse-Table-2.0.ods

etc/UBL-ABIE-Reuse-Table-2.0.xls

To aid readability of the UML class diagrams, this library is graphically presented using three views, based on the primary contexts of use for the given business areas.

A **Common Library view** containing ABIEs used throughout the various document types.

uml/UBL-2.0-CommonLibrary.html

A **Procurement view** containing ABIEs used mainly for documents associated with a supply chain.

uml/UBL-2.0-ProcurementLibrary.html

A **Transportation view** containing ABIEs used mainly for documents associated with the commercial aspects of transporting goods.

uml/UBL-2.0-TransportationLibrary.html

Note that these diagrams can be navigated using the  and  arrows.

D.2. Document Assembly Models

A UBL 2.0 document model only needs to define its “root” Aggregate BIE. This may contain several Basic BIEs and Association BIEs. Assembling the components of all Association BIEs from this root creates the hierarchical structure necessary to represent the document type.

As with the UBL Library, the document models are provided as both spreadsheets and as UBL class diagrams that can be navigated using the up and down arrows.

Application Response

Application Response Class Diagram

mod/maindoc/UBL-ApplicationResponse-2.0.ods

mod/maindoc/UBL-ApplicationResponse-2.0.xls

Attached Document

Attached Document Class Diagram

mod/maindoc/UBL-AttachedDocument-2.0.ods

mod/maindoc/UBL-AttachedDocument-2.0.xls

Bill Of Lading

Bill Of Lading Class Diagram

mod/maindoc/UBL-BillOfLading-2.0.ods

mod/maindoc/UBL-BillOfLading-2.0.xls

Catalogue

Catalogue Class Diagram

mod/maindoc/UBL-Catalogue-2.0.ods

mod/maindoc/UBL-Catalogue-2.0.xls

Catalogue Deletion

Catalogue Deletion Class Diagram

mod/maindoc/UBL-CatalogueDeletion-2.0.ods

mod/maindoc/UBL-CatalogueDeletion-2.0.xls

Catalogue Item Specification Update

Catalogue Item Specification Update Class Diagram

mod/maindoc/UBL-CatalogueItemSpecificationUpdate-2.0.ods

mod/maindoc/UBL-CatalogueItemSpecificationUpdate-2.0.xls

Catalogue Pricing Update

Catalogue Pricing Update Class Diagram

mod/maindoc/UBL-CataloguePricingUpdate-2.0.ods

mod/maindoc/UBL-CataloguePricingUpdate-2.0.xls

Catalogue Request

Catalogue Request Class Diagram

mod/maindoc/UBL-CatalogueRequest-2.0.ods

mod/maindoc/UBL-CatalogueRequest-2.0.xls

Certificate Of Origin

Certificate Of Origin Class Diagram

mod/maindoc/UBL-CertificateOfOrigin-2.0.ods

mod/maindoc/UBL-CertificateOfOrigin-2.0.xls

Credit Note

Credit Note Class Diagram

mod/maindoc/UBL-CreditNote-2.0.ods

mod/maindoc/UBL-CreditNote-2.0.xls

Debit Note

Debit Note Class Diagram

mod/maindoc/UBL-DebitNote-2.0.ods

mod/maindoc/UBL-DebitNote-2.0.xls

Despatch Advice

Despatch Advice Class Diagram

mod/maindoc/UBL-DespatchAdvice-2.0.ods

mod/maindoc/UBL-DespatchAdvice-2.0.xls

Forwarding Instructions

Forwarding Instructions Class Diagram

mod/maindoc/UBL-ForwardingInstructions-2.0.ods

mod/maindoc/UBL-ForwardingInstructions-2.0.xls

Freight Invoice

Freight Invoice Class Diagram

mod/maindoc/UBL-FreightInvoice-2.0.ods

mod/maindoc/UBL-FreightInvoice-2.0.xls

Invoice

Invoice Class Diagram

mod/maindoc/UBL-Invoice-2.0.ods

mod/maindoc/UBL-Invoice-2.0.xls

Order

Order Class Diagram

mod/maindoc/UBL-Order-2.0.ods

mod/maindoc/UBL-Order-2.0.xls

Order Cancellation

Order Cancellation Class Diagram

mod/maindoc/UBL-OrderCancellation-2.0.ods

mod/maindoc/UBL-OrderCancellation-2.0.xls

Order Change

Order Change Class Diagram

mod/maindoc/UBL-OrderChange-2.0.ods

mod/maindoc/UBL-OrderChange-2.0.xls

Order Response

Order Response Class Diagram

mod/maindoc/UBL-OrderResponse-2.0.ods

mod/maindoc/UBL-OrderResponse-2.0.xls

Order Response Simple

Order Response Simple Class Diagram

mod/maindoc/UBL-OrderResponseSimple-2.0.ods

mod/maindoc/UBL-OrderResponseSimple-2.0.xls

Packing List

Packing List Class Diagram

mod/maindoc/UBL-PackingList-2.0.ods

mod/maindoc/UBL-PackingList-2.0.xls

Quotation

Quotation Class Diagram

mod/maindoc/UBL-Quotation-2.0.ods

mod/maindoc/UBL-Quotation-2.0.xls

Receipt Advice

Receipt Advice Class Diagram

mod/maindoc/UBL-ReceiptAdvice-2.0.ods

mod/maindoc/UBL-ReceiptAdvice-2.0.xls

Reminder

Reminder Class Diagram

mod/maindoc/UBL-Reminder-2.0.ods

mod/maindoc/UBL-Reminder-2.0.xls

Remittance Advice

Remittance Advice Class Diagram

mod/maindoc/UBL-RemittanceAdvice-2.0.ods

mod/maindoc/UBL-RemittanceAdvice-2.0.xls

Request For Quotation

Request For Quotation Class Diagram

mod/maindoc/UBL-RequestForQuotation-2.0.ods

mod/maindoc/UBL-RequestForQuotation-2.0.xls

Self Billed Credit Note

Self Billed Credit Note Class Diagram

mod/maindoc/UBL-SelfBilledCreditNote-2.0.ods

mod/maindoc/UBL-SelfBilledCreditNote-2.0.xls

Self Billed Invoice

Self Billed Invoice Class Diagram

mod/maindoc/UBL-SelfBilledInvoice-2.0.ods

mod/maindoc/UBL-SelfBilledInvoice-2.0.xls

Statement

Statement Class Diagram

mod/maindoc/UBL-Statement-2.0.ods

mod/maindoc/UBL-Statement-2.0.xls

Transportation Status

Transportation Status Class Diagram

mod/maindoc/UBL-TransportationStatus-2.0.ods

mod/maindoc/UBL-TransportationStatus-2.0.xls

Waybill

Waybill Class Diagram

mod/maindoc/UBL-Waybill-2.0.ods

mod/maindoc/UBL-Waybill-2.0.xls

D.3. Qualified Datatypes

[CCTS] permits the definition of Qualified Datatypes as derivations from CCTS-specified Unqualified Datatypes. UBL uses this facility primarily to describe code lists. These Datatypes are provided as a single spreadsheet.

mod/common/UBL-qDT-2.0.ods

mod/common/UBL-qDT-2.0.xls

Appendix E. UBL 2.0 Code Lists and Two-phase Validation (Informative)

E.1. Introduction

Code lists — the sets of codes such as “FR” and “USD” that are used to specify countries, currencies, and so on — play an important role in UBL, just as they do in all electronic business messaging schemes. By default, UBL uses several lists of standard codes published by agencies such as ISO and UN/CEFACT, as well as various codes that are specific to UBL.

In UBL 1.0 (2004), standard and default code list values are specified directly in the UBL schemas as enum (enumeration) constraints. This allows all UBL 1.0 instances to be validated in a single pass using generic XML XSD (W3C Schema) processors. However, the specification of the default values directly in the schemas also makes it difficult to modify the code lists to suit individual trading partner relationships and impossible to extend the list of allowable code list values while still using the standard UBL schemas as published by OASIS.

To give users maximum flexibility in configuring and updating UBL code lists without changing the standard UBL schemas, UBL 2.0 assumes a two-phase validation model. In the first validation phase, the UBL instance is checked for structure and vocabulary against a standard UBL 2.0 XSD schema using a generic XSD validator (or custom-built software performing the same function). This is exactly the same procedure used in UBL 1.0, except that the UBL 2.0 schemas (with a few exceptions noted later in this appendix) do not contain default code list values. In the second validation phase, new in UBL 2.0, code list values in the instance are checked against values obtained from external code list configuration files using an XSLT 1.0 processor driven by an XSLT 1.0 stylesheet. The default values assumed by the UBL 2.0 specification are incorporated into a file named `defaultCodeList.xsl` located in the `val` directory, as described in more detail below.

The separation of structural and vocabulary checking from code value checking allows trading partners to easily and precisely specify code list subsets and extensions and to apply them not just to individual UBL document types but also to particular elements and subtrees within UBL document instances. Another way to say this is that the the UBL code list methodology allows different versions of the same code list to be used in different document contexts. Thus, for example, a business in Canada might agree with a business in the United States to use a set of code list configuration files that allow the Buyer to be associated with either a U.S. state or a Canadian province but restrict the Seller to just U.S. states — that is, to apply a code list subset containing state and province codes in one place in a document instance and a different code list subset containing just state codes in another place in the instance.

The process for creating custom XSLT code list files to enable this context-specific functionality is described in a separate specification called the UBL Code List Value Validation Methodology, a copy of which can be obtained from the UBL TC web site at OASIS. A set of support files to aid implementers in creating custom XSLT code list files will be included in the UBL 2.0 Support Package from the same site.

E.2. Default Validation Setup

To facilitate the processing of UBL 2.0 instances using the two-phase method, an “out-of-the-box” collection of open-source software that can be used to perform default validation of UBL 2.0

documents is included in the `val` directory of this release package. The default validation assumes a Linux or Windows XP system with no currently installed XML or XSLT processing software.

The Java Runtime Environment (JRE) 1.5 or later is required to use the programs in the `val` directory; JRE versions below 1.5 will throw an error from the `xjparse.jar` module used to invoke the xerces schema parser. If necessary, download and install the latest JRE from the following location before continuing:

http://www.java.com/en/download/manual.jsp

To test UBL 2.0 default validation:

1. Change to the `val` directory.

2. From within that directory, enter the test command

   `test.bat` (XP)

   or

   `./test.sh` (Linux)

   The output, which is explained in the next section, should resemble the following (the spacing has been adjusted to make this easier to read):

```
############################################################
Validating order-test-good.xml
############################################################
============== Phase 1: XSD schema validation ==============
No schema validation errors.
============ Phase 2: XSLT code list validation ============
No code list validation errors.

############################################################
Validating order-test-bad1.xml
############################################################
============== Phase 1: XSD schema validation ==============
Attempting validating, namespace-aware parse
Error:file:///c:/d/ubl/2/val/order-test-bad1.xml:48:23:cvc-complex-
type.2.4.a:
Invalid content was found starting with element 'cbc:ChannelCod'.
One of
'{"urn:oasis:names:specification:ubl:schema:xsd:CommonBasicComponents-
2":ChannelCode,
"urn:oasis:names:specification:ubl:schema:xsd:CommonBasicComponents-
2":Channel,
"urn:oasis:names:specification:ubl:schema:xsd:CommonBasicComponents-
2":Value}' is expected.
Parse succeeded (0.822) with 1 error and no warnings.

############################################################
Validating order-test-bad2.xml
############################################################
============== Phase 1: XSD schema validation ==============
No schema validation errors.
============ Phase 2: XSLT code list validation ============
Value supplied ' LA ' is unacceptable for codes identified by
'ChannelCodeType'
```

```
in the context: cbc:ChannelCode
Processing terminated by xsl:message at line 18
```

3. From within the `val` directory, you can now validate any UBL document against the UBL 2.0 schemas by executing commands of the form

   `validate <appropriate-schema> <ubl-document>`

   where `<ubl-document>` is the path of a document to be validated and `<appropriate-schema>` is the UBL 2.0 schema for that document type (Order, Invoice, etc.). For example, the scripts `val/testsamples.bat` and `val/testsamples.sh` show this process being used to validate the sample XML instances in the `xml` directory.

E.3. Discussion of the Default Validation Test

The test output displayed above in E.2 demonstrates the default validation process with three test files: a valid UBL Order (`order-test-good.xml`); a UBL Order containing a bad (misspelled) element (`order-test-bad1.xml`); and a UBL Order that is schema-valid but contains an illegal code list value (`order-test-bad2.xml`). The file `test.bat` (XP) or `test.sh` (Linux) is used to run the script `validate.bat` or `validate.sh` against each of the test files.

The first run using `order-test-good.xml` demonstrates both phases of the default validation process running normally. In the first phase, a standard W3C Schema (XSD) validator, xerces, is invoked from `w3cschema.bat` (or `w3cschema.sh`) to validate the specified UBL document (`.xml`) against the specified UBL 2.0 runtime schema (`.xsd`). Since the input is a valid UBL Order, the output of the first phase simply indicates that the file is valid against the given Order schema.

The second phase of validation uses a standard XSLT 1.0 engine, saxon, to verify that the values of various codes used in the UBL document to be tested (country codes, currency codes, etc.) are valid in terms of the default UBL 2.0 code list values specified in `defaultCodeList.xsl`. Here the output line “No code list validation errors” from the `validate` script indicates that the saxon run (invoked from `xslt.bat` or `xslt.sh`) finds no illegal code values in the document.

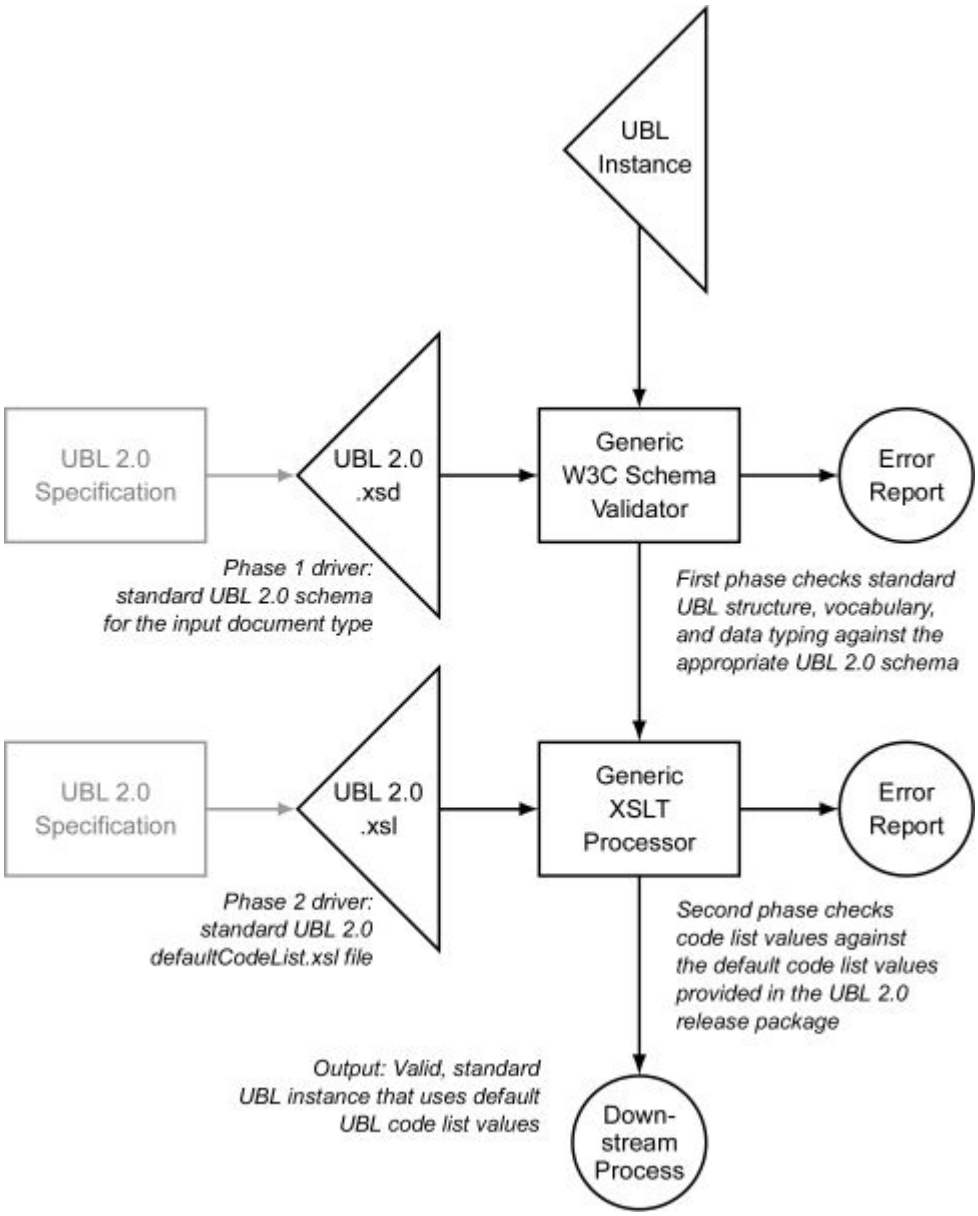
The second run shows what happens when the input document (`order-test-bad1.xml`) contains an actual structure or vocabulary error, in this case due to omission of the trailing “e” from the element named `cbc:ChannelCode`. When the xerces parser encounters the malformed element name, it emits the error message shown in the example, and the `validate` script reacts to a non-zero status code from `w3cschema.bat` (or `w3cschema.sh`) by terminating the validation process.

In the third run, the input document `order-test-bad2.xml` is structurally valid according to the Order schema, but it contains an illegal code list value (the ChannelCode “AL” for cell phone has been mistyped as “LA”). Thus it passes the first phase when tested against the schema but fails the second phase when tested against `defaultCodeList.xsl`.

To summarize, input documents are checked in the first validation phase for correctness of structure and vocabulary, using the constraints expressed in the appropriate UBL schema, and then they are checked in the second phase for correctness of default code list values, using the default constraints expressed in the XSLT file `defaultCodeList.xsl`. This process is illustrated in the following

diagram.

Figure E.1. Two-phase Default UBL 2.0 Validation



It should be clear from the foregoing that the second phase of the default validation process can safely be omitted if it is considered unnecessary to check code list values. However, the reverse is not true. The second phase depends for correct operation on a prior check for structural validity, and therefore it will not give reliable results if run in the absence of the first (schema) validation phase.

E.4. Customizing the Default XSLT file

The validation framework provided in the `val` directory can be used to implement code list changes, define variant code lists to fit specific trading partner agreements, associate different versions of the same code list with different parts of the same UBL document, and even perform fairly sophisticated business rule checking, simply by building additional logic into the XSLT file that drives the second validation phase — and without changing the standard UBL 2.0 schemas. Schematron-based techniques for creating a custom XSLT file to take the place of `defaultCodeList.xsl` are explained in the UBL Code List Value Validation Methodology, the latest draft of which is available

from the UBL TC web site. Using these techniques, the business analyst can offload a large proportion of input filtering from the backend business application to a simpler input processing area. And, of course, additional XSLT scripts can be added to extract logical subtrees of incoming UBL documents for allocation to different downstream processes and to perform even more sophisticated front-end processing.

E.5. Sources for the Default Validation Framework

Components of several freely available software distributions were used to create the `val` directory. Sources are given below so that these components can be updated as later releases become available.

- The files resolver.jar and xercesImpl.jar are taken from the xerces-j 2.8.0 binary distribution at

  http://archive.apache.org/dist/xml/xerces-j/Xerces-J-bin.2.8.0.zip

- The file xjparse.jar (renamed from xjparse-1.0.jar) is taken from the xjparse 1.0 distribution at

  http://nwalsh.com/java/xjparse/

- The file saxon.jar is taken from the saxon 6.5.5 distribution at

  http://prdownloads.sourceforge.net/saxon/saxon6-5-5.zip

E.6. Code List Documentation

While the `defaultCodeList.xsl` file is what actually drives the second validation phase where the code list values get checked, it doesn't function well as documentation of those values. For listings of the default codes, it's better to consult the separate code list files from which `defaultCodeList.xsl` was compiled.

These files, which can be found in the `cl/gc` directory, use an XML format called genericode that is specially designed to represent code lists. The version of genericode adopted for this release is an early draft that is now being worked on by another OASIS technical committee. While still unfinished, this version provides all of the functionality needed for UBL and is the one intended for use in the UBL 2.0 Code List Support Package.

The genericode files are separated into three subdirectories as follows:

E.6.1. cl/gc/default

These code lists contain most of the default codes represented in `defaultCodeList.xsl`. Note that the majority of these code lists are "placebos" or placeholders included to provide extension points for users wishing to assign their own code values when generating custom XSLT files. The files in this directory that contain actual default code values are:

cl/gc/default/AllowanceChargeReasonCode-2.0.gc

cl/gc/default/ChannelCode-2.0.gc

cl/gc/default/ChipCode-2.0.gc

cl/gc/default/CountryIdentificationCode-2.0.gc

cl/gc/default/DocumentStatusCode-2.0.gc

cl/gc/default/LatitudeDirectionCode-2.0.gc

cl/gc/default/LineStatusCode-2.0.gc

cl/gc/default/LongitudeDirectionCode-2.0.gc

cl/gc/default/OperatorCode-2.0.gc

cl/gc/default/PackagingTypeCode-2.0.gc

cl/gc/default/PaymentMeansCode-2.0.gc

cl/gc/default/SubstitutionStatusCode-2.0.gc

cl/gc/default/TransportationStatusCode-2.0.gc

cl/gc/default/TransportEquipmentTypeCode-2.0.gc

cl/gc/default/TransportModeCode-2.0.gc

The other genericode files in the `cl/gc/default` directory — the ones that do *not* contain default code values defined by the UBL Technical Committee — contain sufficient metadata for properly specifying custom code lists. For convenience, an XML comment embedded in each file illustrates the method by which coded values are added. This comment surrounds a SimpleCodeList element defining a sample set of values. A custom genericode code list is defined by removing the comment delimiters and associated text, then replacing the sample values with the desired actual values. As noted above, the scripts required to generate a new XSLT driver file from custom code lists will be found in the UBL 2.0 Support Package.

E.6.2. cl/gc/cefact

This directory contains genericode versions of four standard code lists (currency codes, unit codes, MIME content codes, and language codes) specified by UN/CEFACT (United Nations Centre for Trade Facilitation and Electronic Business).

cl/gc/cefact/BinaryObjectMimeCode-2.0.gc

cl/gc/cefact/CurrencyCode-2.0.gc

cl/gc/cefact/LanguageCode-2.0.gc

cl/gc/cefact/UnitOfMeasureCode-2.0.gc

These genericode files correspond to the four schema modules listed in Section 5.2.4. As noted there, the language codes are not currently used in the document schemas included in the UBL 2.0 release.

Unlike all other code values in UBL 2.0, the UN/CEFACT code values are "hardwired" into the UBL schemas as a result of UBL's adoption of the UN/CEFACT unqualifed data type (UDT) module. Consequently, these values are actually checked twice — once during the first validation phase against the code values bound into the UBL schemas via the UDT module, and then once again against the same values compiled into `defaultCodeList.xsl`. Of course, any nonstandard value used for one of these codes will end the validation in the first phase.

The practical result of this is that code values can be removed from any of these UN/CEFACT code lists (for example, the set of acceptable currencies could be narrowed down to just the currencies used by a company's trading partners), but no values can be added. This is because customizing the `defaultCodeList.xsl` file so that a given code list has *fewer* values will trap the omitted values in the second validation phase, but customizing the same file to give the code list *additional* values will have no effect, because an occurrence of one of the new values will be trapped in the first validation phase before the second phase can be applied.

In summary: the code lists in the `cl/cefact` directory can only be subsetted; they cannot be extended. As in the case of the default UBL code lists, the genericode files containing the UN/CEFACT code lists also serve as documentation of the code values. The schema modules from which these "hardwired" values are actually imported into the UBL document schemas can be found in the `xsd/common` directory in files whose names begin `CodeList_`.

E.6.3. cl/gc/special-purpose

This directory contains genericode versions of two code lists that are used only in certain application contexts. Due to the large size of these lists, they are not included in `defaultCodeList.xsl`, but are provided here so that they can be incorporated into custom XSLT scripts.

The files in this directory are:

cl/gc/special-purpose/ContainerSizeTypeCode-2.0.gc

cl/gc/special-purpose/PortCode-2.0.gc

E.6.4. cl/xsdcl

This directory contains two directories of XSD schema fragments expressing enumeration constraints mirroring the coded values in the genericode files described in sections E.6.1 and E.6.3. These are provided here only as a convenience for users who may wish to modify their schema expressions to incorporate enumeration constraints. These files do not comprise part of standard UBL.

Appendix F. UBL 2.0 Naming and Design Rules (Informative)

The XML Naming and Design Rules (NDRs) used in creating the UBL schemas in this draft specification are given in the checklist at doc/ndr/NDR-checklist.pdf. The entire NDR document (including explanatory prose) will be released following publication of UBL 2.0.

Appendix G. ASN.1 Specification (Informative)

The UBL ASN.1 specification referenced below provides an alternative schema definition for UBL documents in accordance with ITU-T X.680-X.693 [ASN.1]. The UBL ASN.1 specification defines the same UBL documents as the UBL XSD schemas in Section 5 that constitute the normative definitions of valid UBL documents. The UBL ASN.1 XML specification enables ASN.1 tools to be used for UBL transfers, and in conjunction with the ASN.1 Packed Encoding Rules, it provides a specification for an efficient binary encoding of UBL messages.

UBL 2.0 ASN.1 Specification

asn/ASN.1-UBL-2.0.html

The ASN.1 modules constituting the UBL ASN.1 specification were created using a tool from OSS Nokalva (http://www.oss.com/) that conforms to ITU-T Recommendation X.694 | ISO/IEC 8825-5 for converting XSD Schema to ASN.1. After conversion, the generated ASN.1 was formatted by the PrettyPrint tool at the ASN.1 Information Site (http://asn1.elibel.tm.fr) to produce the HTML file included in this package.

The UBL ASN.1 modules themselves are provided in a zip archive for use by ASN.1 implementers.

UBL 2.0 ASN.1 Modules

asn/ASN.1-UBL-2.0-modules.zip

References

Normative

[ASN.1] ITU-T X.680-X.683: Abstract Syntax Notation One (ASN.1); ITU-T X.690-X.693: ASN.1 encoding rules *http://www.itu.int/ITU-T/studygroups/com17/languages/X.680-X.693-0207w.zip* , *http://www.oasis-open.org/committees/download.php/6320/X.680-X.693-0207w.zip*

[CCTS] ISO/TS 15000-5:2005 Electronic Business Extensible Markup Language (ebXML) — Part 5: ebXML Core Components Technical Specification, Version 2.01 (identical to Part 8 of the ebXML Framework) *http://www.oasis-open.org/committees/download.php/6232/CEFACT-CCTS-Version-2pt01.zip*

[ISO11179] ISO/IEC 11179-1:1999 Information technology — Specification and standardization of data elements — Part 1: Framework for the specification and standardization of data elements *http://www.oasis-open.org/committees/download.php/6233/c002349_ISO_IEC_11179-1_1999%28E%29.pdf*

[RFC2119] Key words for use in RFCs to Indicate Requirement Levels *http://www.faqs.org/rfcs/rfc2119.html* , *http://www.oasis-open.org/committees/download.php/6244/rfc2119.txt.pdf*

[SCH] Document Schema Definition Languages (DSDL) - Part 3: Rule-based validation (Schematron) *http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=40833* , *http://www.schematron.com*

[UML] Unified Modeling Language Version 1.5 (formal/03-03-01) *http://www.omg.org/docs/formal/03-03-01.pdf* , *http://www.oasis-open.org/committees/download.php/6240/03-03-01.zip*

[XML] Extensible Markup Language (XML) 1.0 (Second Edition), W3C Recommendation 6 October 2000 *http://www.w3.org/TR/2000/REC-xml-20001006* , *http://www.oasis-open.org/committees/download.php/6241/REC-xml-20001006.pdf*

[XSD1] XML Schema Part 1: Structures. Second Edition. W3C Recommendation 28 October 2004 *http://www.w3.org/TR/2004/REC-xmlschema-1-20041028/* , *http://www.oasis-open.org/committees/download.php/19816/xsd1.html*

[XSD2] XML Schema Part 2: Datatypes. Second Edition. W3C Recommendation 28 October 2004 *http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/* , *http://www.oasis-open.org/committees/download.php/19817/xsd2.html*

[XSLT] XSL Transformations (XSLT) Version 1.0, W3C Recommendation 16 November 1999 *http://www.w3.org/TR/1999/REC-xslt-19991116* , *http://www.oasis-open.org/committees/download.php/18891/REC-xslt-19991116.html*