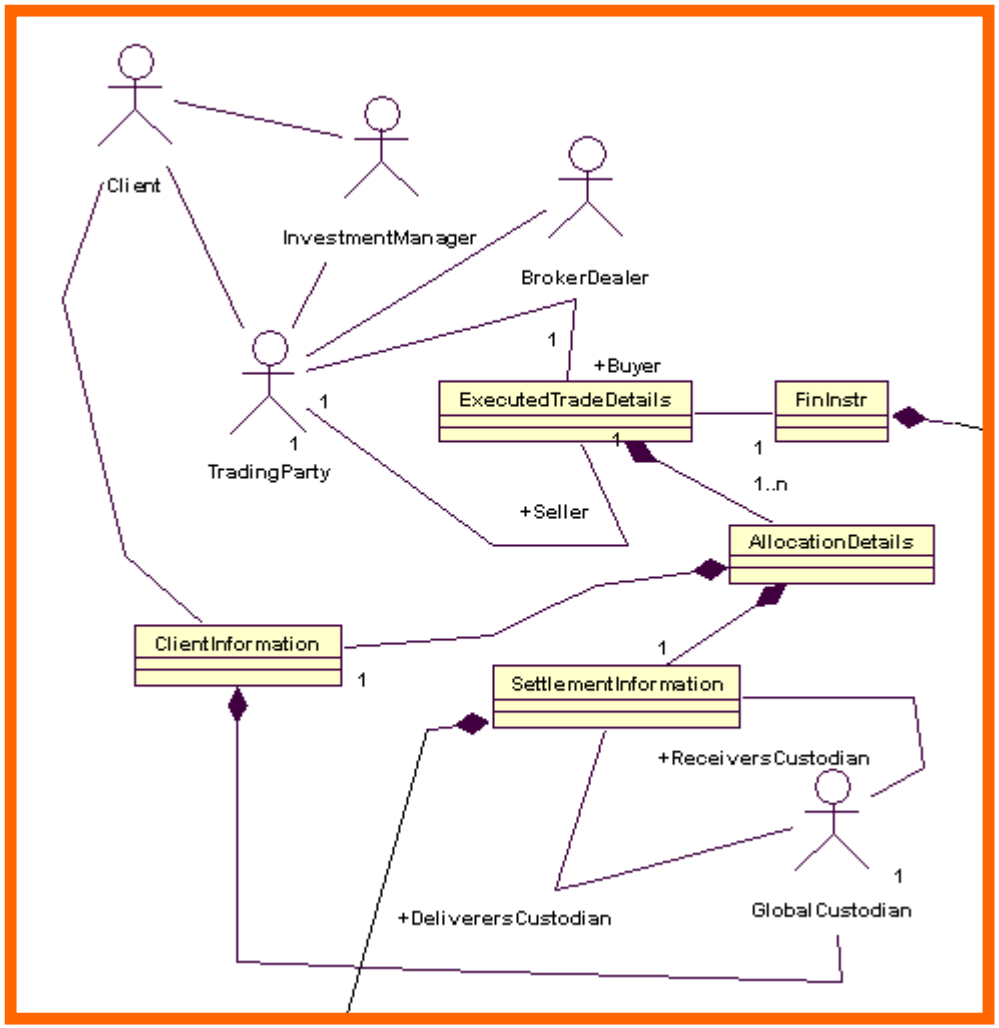
The Goal

from

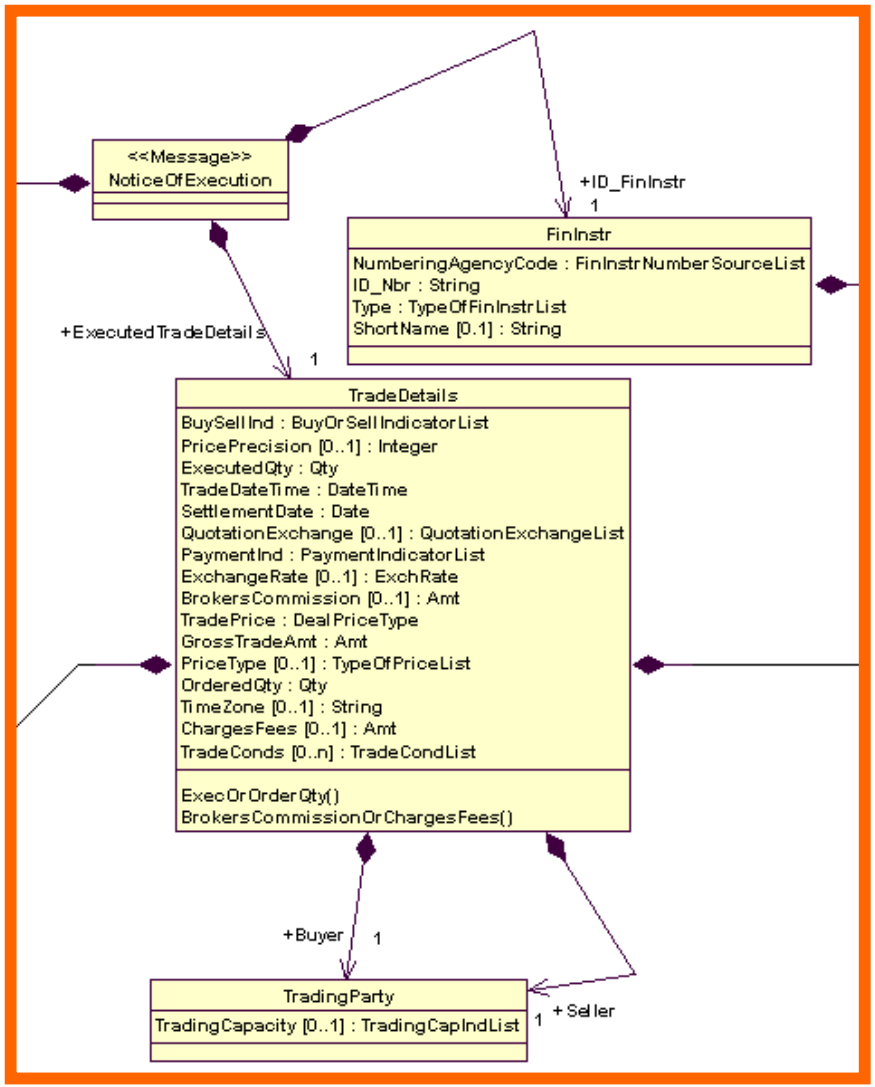


business process model

to...

...information model

from

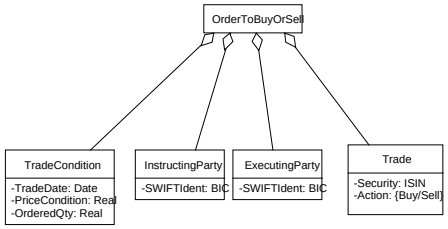


Information model

to...

...any representation

via



Technology Specific Rules

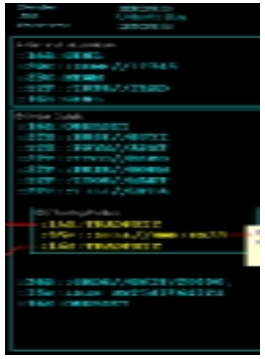
Message specific mapping rules

Generic mapping rules

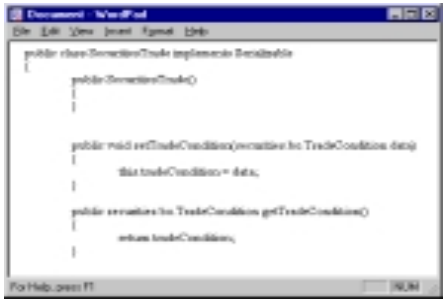
Automatic generation

to…

FIN Message serialization



Business Object + XML serialization



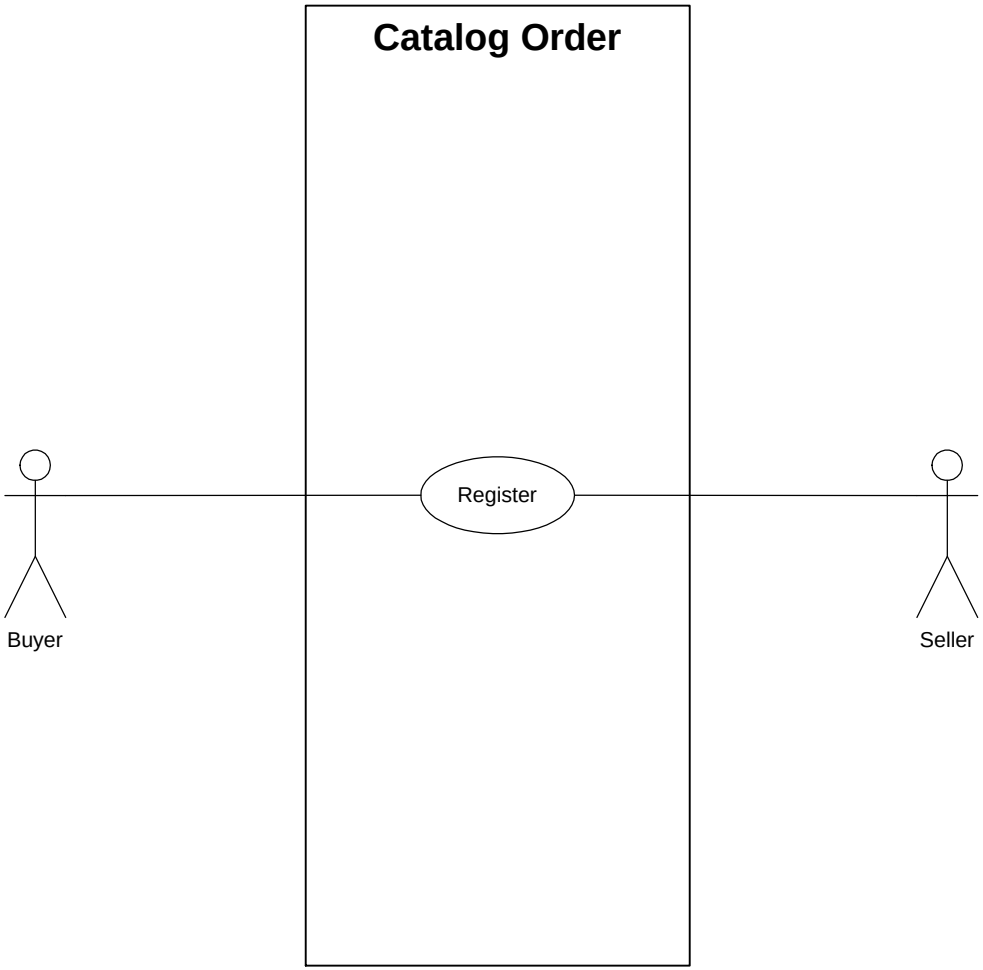
…specific representation

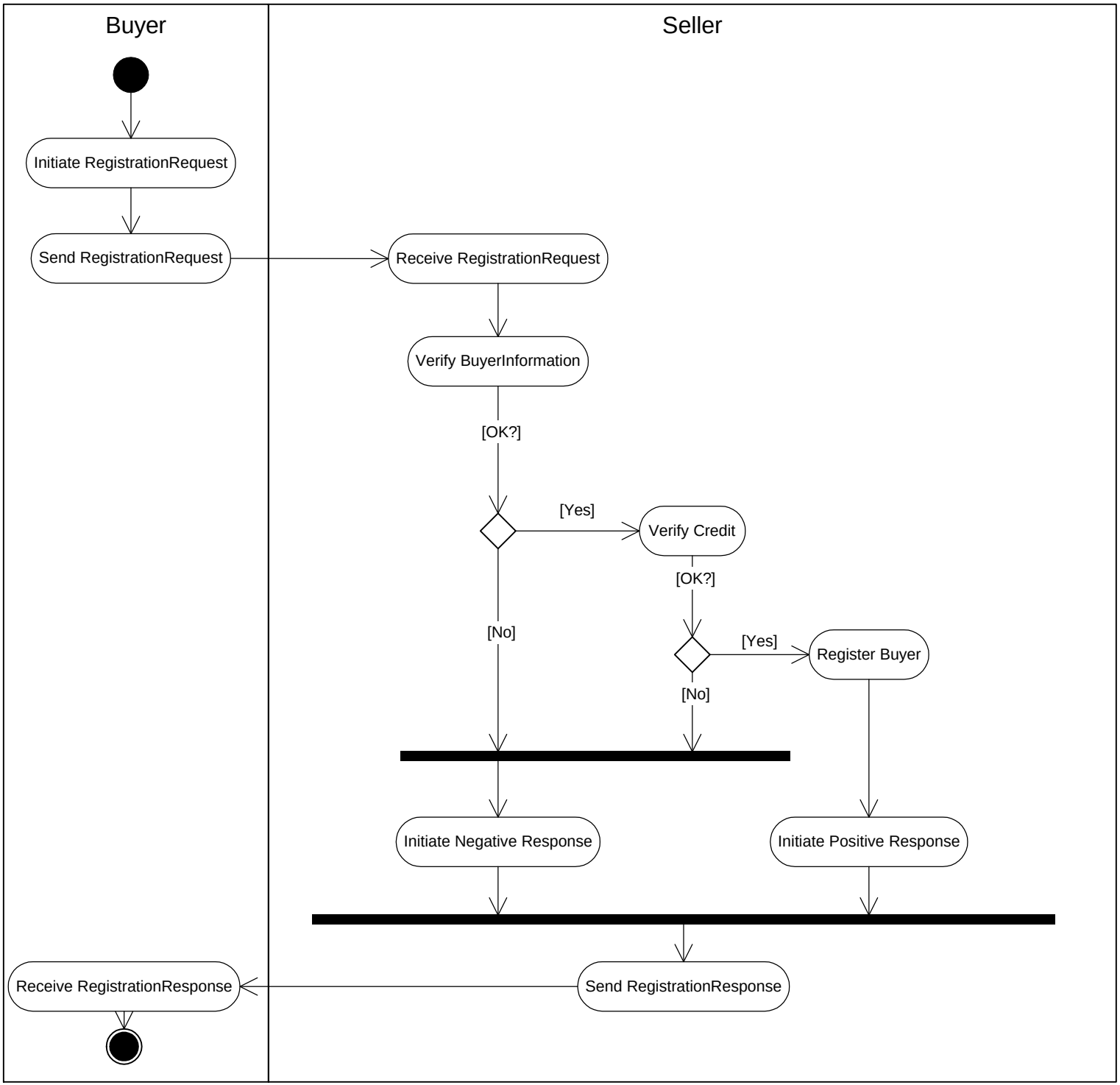
extract of XML message

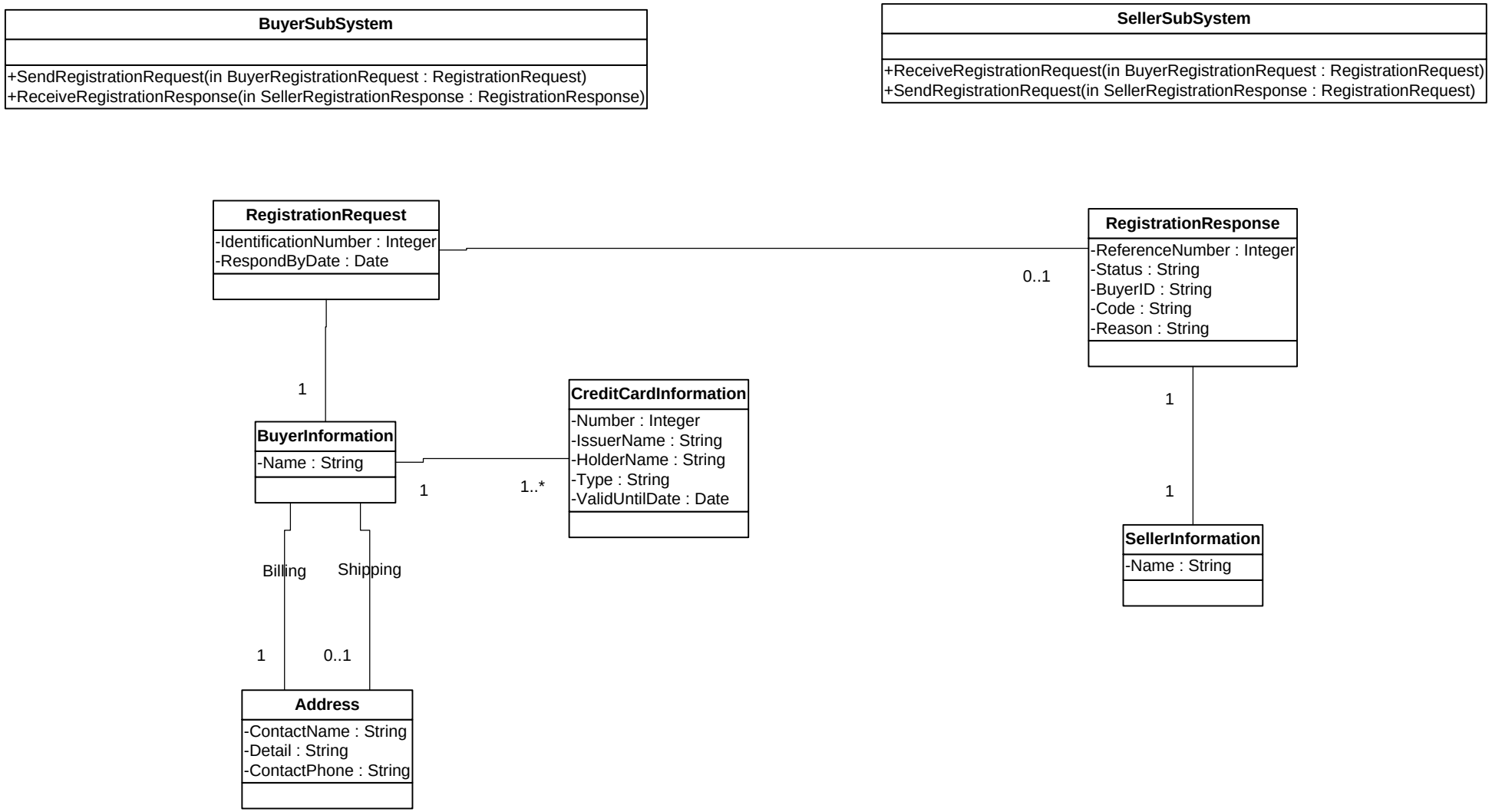
```
<NoticeOfExecution>
  <ExecutedTradeDetails>
    <BuySellInd>SELL</BuySellInd>
    <ExecQty type=UNIT>
          5000
    </ExecQty>
    <TradeDate>
      <Date>20000911></Date>
  </TradeDate>
    <SettDate>
       <Date>20000912</Date>
   </SettDate>
     <PaymentInd>APMT</PaymentInd>
    <TradePrice type = ACTU>
     <Ccy>USD</Ccy>
    <Value>60</Value>
   </TradePrice>
<GrossTradeAmt>
   <Ccy>USD<Ccy>
   <Value>300000</Value>
</GrossTradeAmt>
```

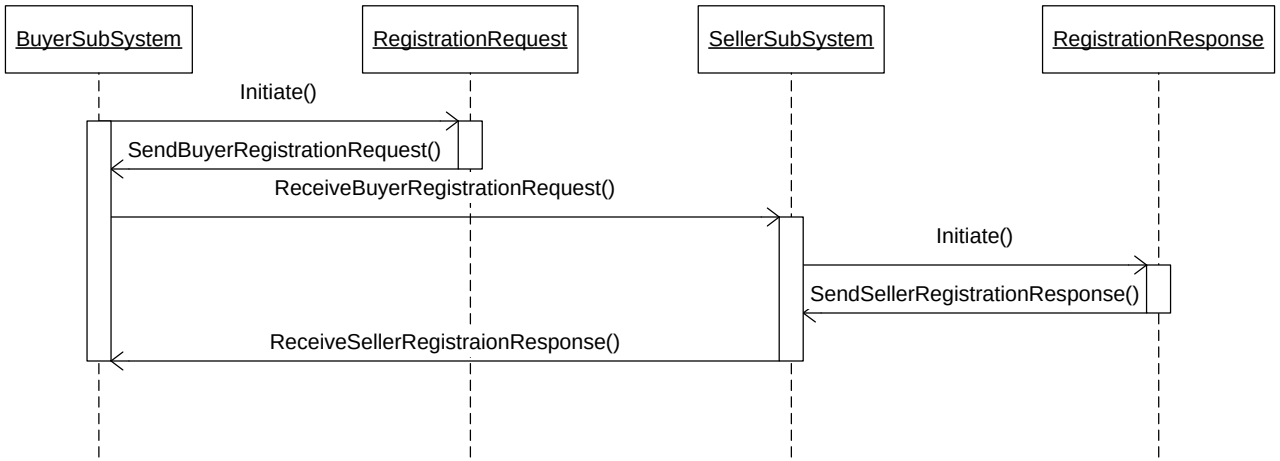
```
<Buyer>
     <Party_ID>
        <BIC>PEFIUS33</BIC>
    </Party_ID>
     </Buyer>
<Seller>
     <Party_ID>
        <BIC>VASTUS33</BIC>
    </Party_ID>
     </Seller>
<ExecutedTradeDetails>
……
```

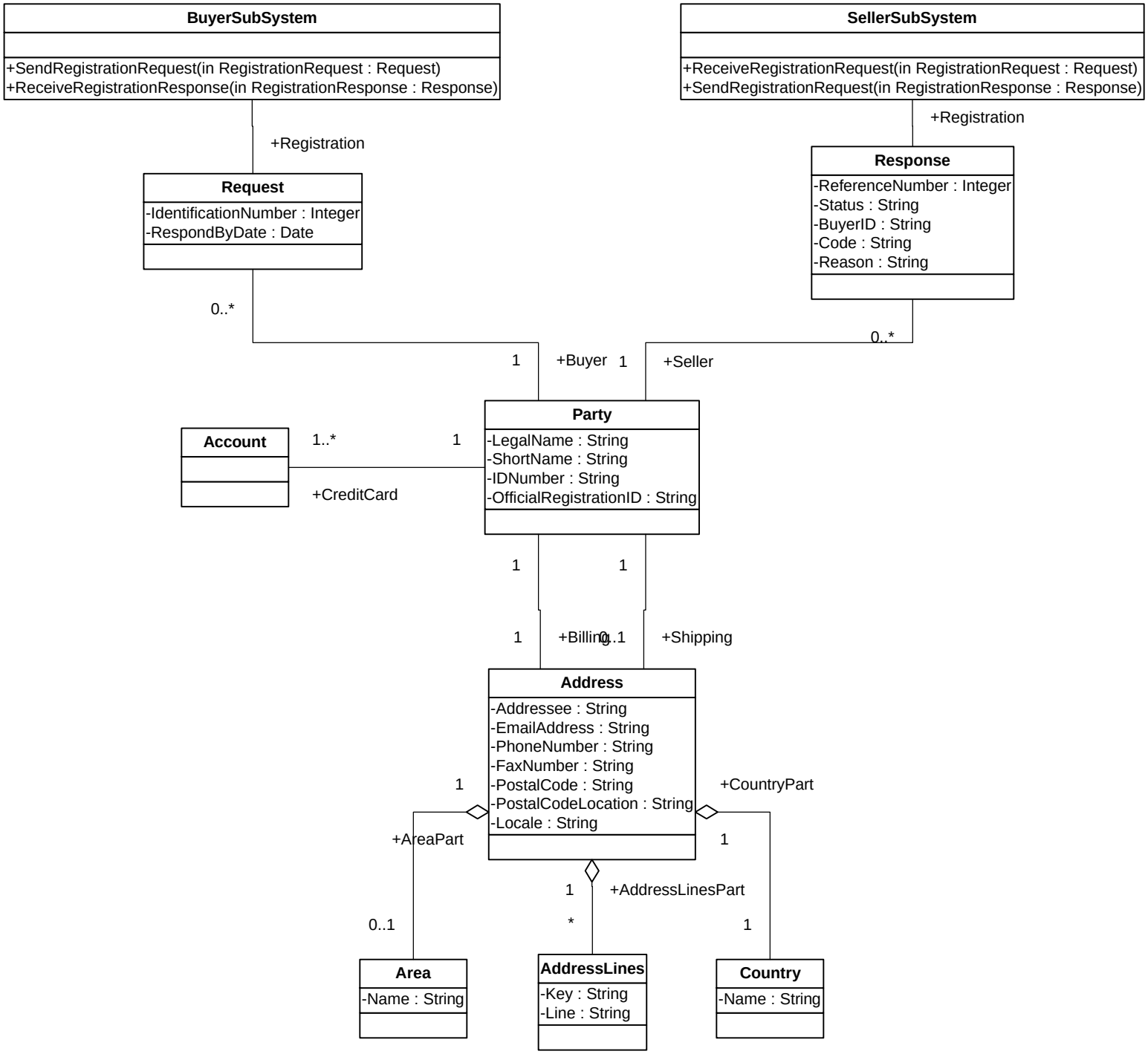
(not syntactically correct)

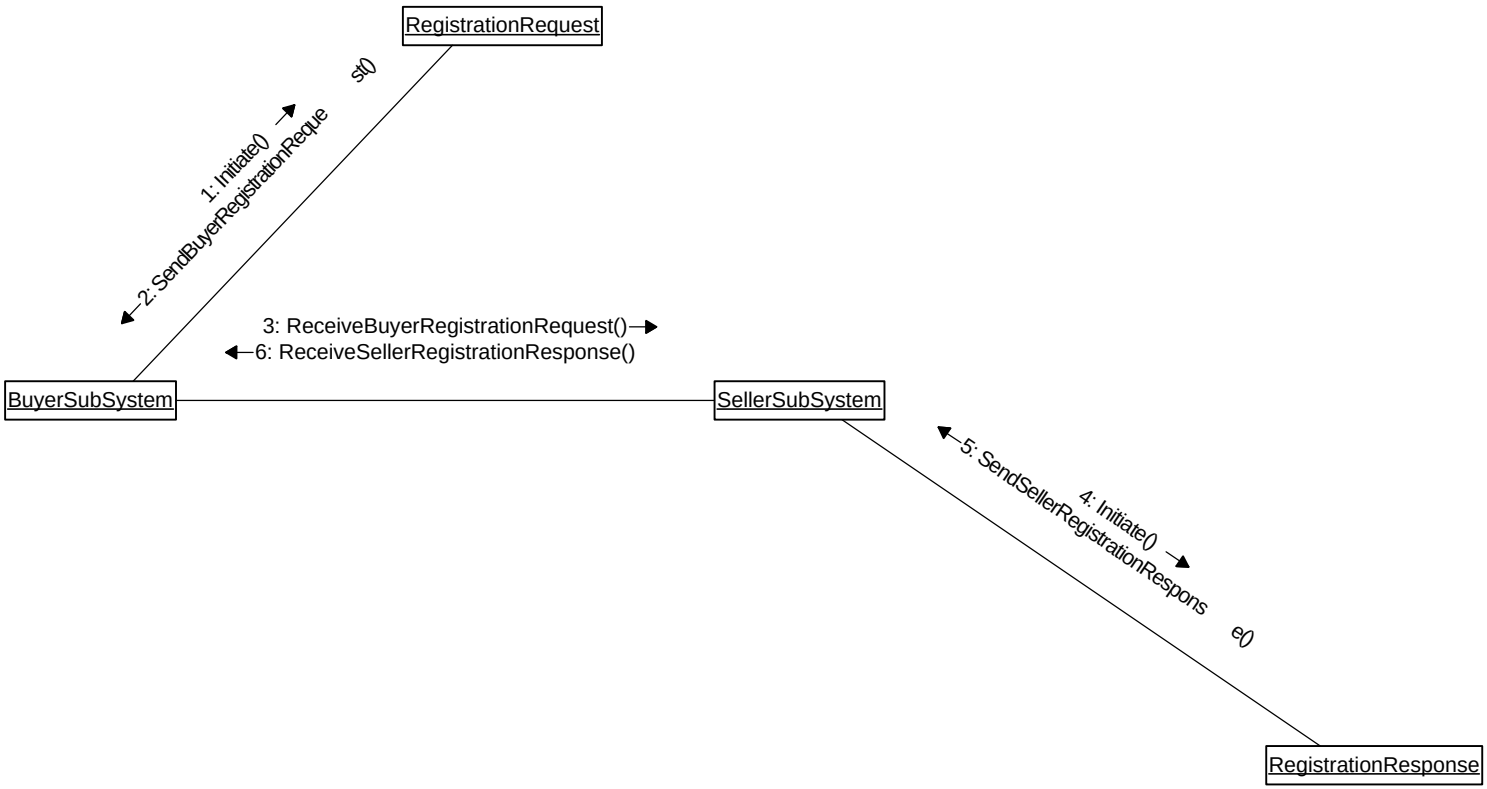

Catalog Order
Register
Buyer
Seller


Buyer
Seller
Initiate RegistrationRequest
Send RegistrationRequest
Receive RegistrationRequest
Verify BuyerInformation
[OK?]
[Yes]
Verify Credit
[OK?]
[No]
[Yes]
Register Buyer
[No]
Initiate Negative Response
Initiate Positive Response
Receive RegistrationResponse
Send RegistrationResponse

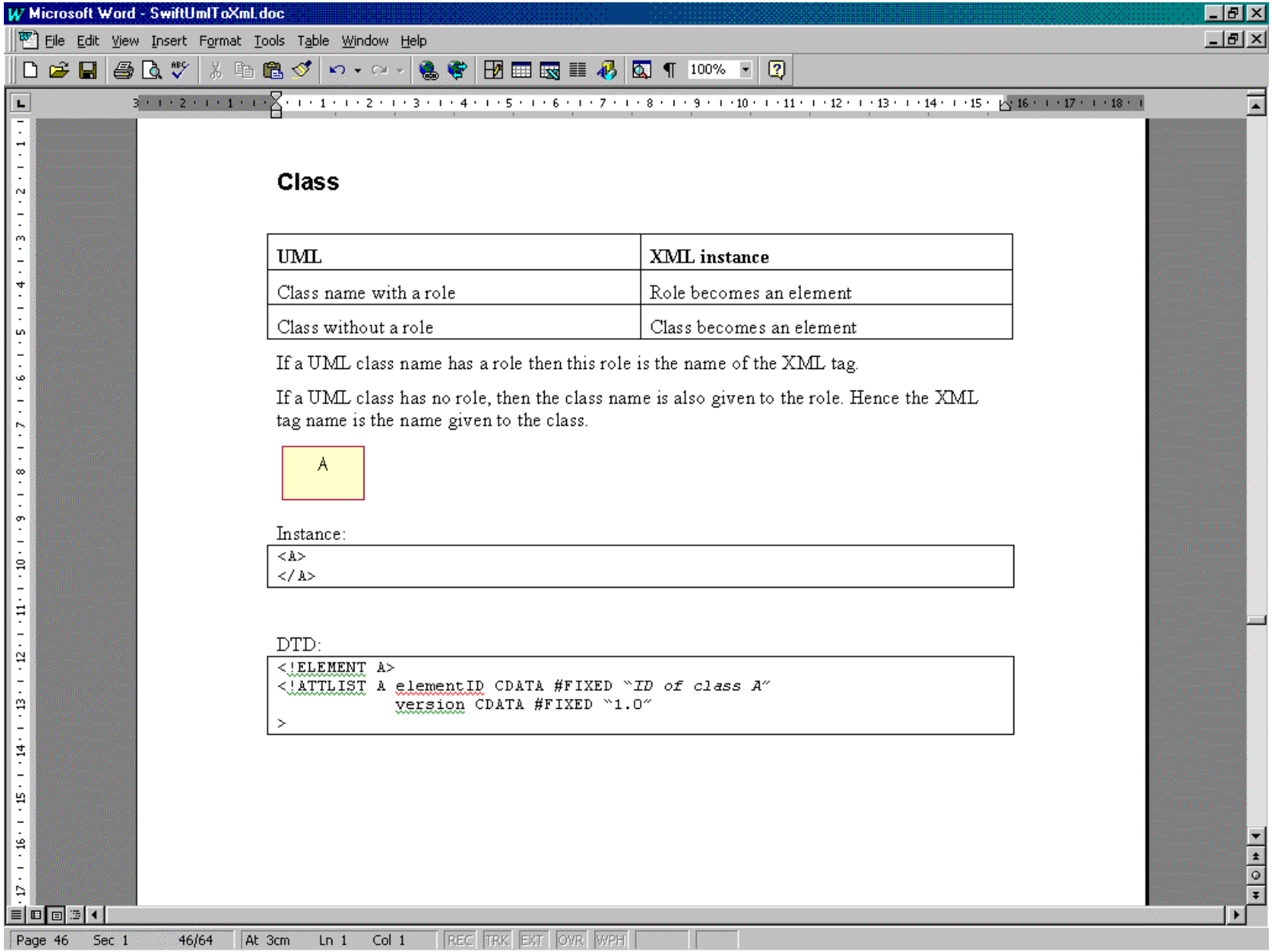

BuyerSubSystem
+SendRegistrationRequest(in BuyerRegistrationRequest : RegistrationRequest)
+ReceiveRegistrationResponse(in SellerRegistrationResponse : RegistrationResponse)
SellerSubSystem
+ReceiveRegistrationRequest(in BuyerRegistrationRequest : RegistrationRequest)
+SendRegistrationRequest(in SellerRegistrationResponse : RegistrationRequest)
RegistrationRequest
-IdentificationNumber : Integer
-RespondByDate : Date
RegistrationResponse
-ReferenceNumber : Integer
-Status : String
-BuyerID : String
-Code : String
-Reason : String
0..1
1
BuyerInformation
-Name : String
CreditCardInformation
-Number : Integer
-IssuerName : String
-HolderName : String
-Type : String
-ValidUntilDate : Date
1
1..*
1
1
SellerInformation
-Name : String
Billing
Shipping
1
0..1
Address
-ContactName : String
-Detail : String
-ContactPhone : String


BuyerSubSystem
RegistrationRequest
SellerSubSystem
RegistrationResponse
Initiate()
SendBuyerRegistrationRequest()
ReceiveBuyerRegistrationRequest()
Initiate()
SendSellerRegistrationResponse()
ReceiveSellerRegistraionResponse()


BuyerSubSystem
+SendRegistrationRequest(in RegistrationRequest : Request)
+ReceiveRegistrationResponse(in RegistrationResponse : Response)
SellerSubSystem
+ReceiveRegistrationRequest(in RegistrationRequest : Request)
+SendRegistrationRequest(in RegistrationResponse : Response)
+Registration
+Registration
Request
-IdentificationNumber : Integer
-RespondByDate : Date
Response
-ReferenceNumber : Integer
-Status : String
-BuyerID : String
-Code : String
-Reason : String
0..*
0..*
1
+Buyer
1
+Seller
Party
-LegalName : String
-ShortName : String
-IDNumber : String
-OfficialRegistrationID : String
Account
1..*
1
+CreditCard
1
1
1
+Billing
0..1
+Shipping
Address
-Addressee : String
-EmailAddress : String
-PhoneNumber : String
-FaxNumber : String
-PostalCode : String
-PostalCodeLocation : String
-Locale : String
1
+CountryPart
+AreaPart
1
1
+AddressLinesPart
0..1
*
1
Area
-Name : String
AddressLines
-Key : String
-Line : String
Country
-Name : String

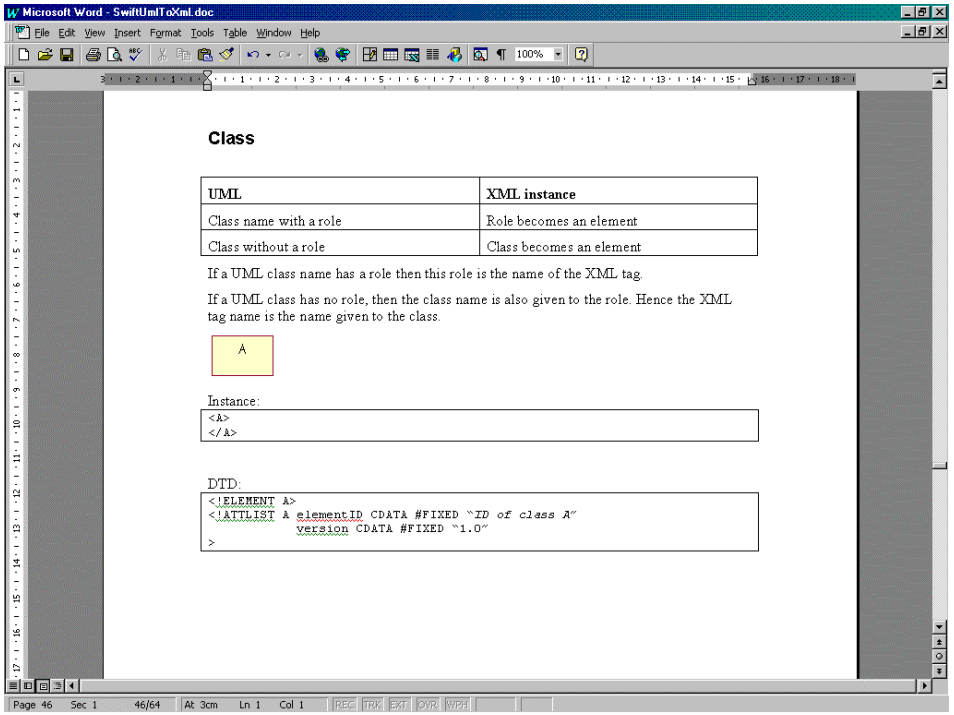

RegistrationRequest
st()
1: Initiate()
2: SendBuyerRegistrationReque
3: ReceiveBuyerRegistrationRequest()
6: ReceiveSellerRegistrationResponse()
BuyerSubSystem
SellerSubSystem
5: SendSellerRegistrationRespons
4: Initiate()
e()
RegistrationResponse

A path from UML to XML



A path from UML to XML

- If a UML class name has a role, then this role is the name of the XML tag;
- If a UML class has no role, then the class name is also given to the class.

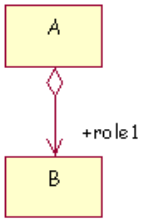


A path from UML to XML

Microsoft Word - SwiftUmlToXml.doc

File Edit View Insert Format Tools Table Window Help

UML	XML instance
Parent class	XML element with class name as tag
Child class	XML element with role name as tag. This element is contained within the parent element



Instance:

```
<A>
   <role1>
   </role1>
</A>
```

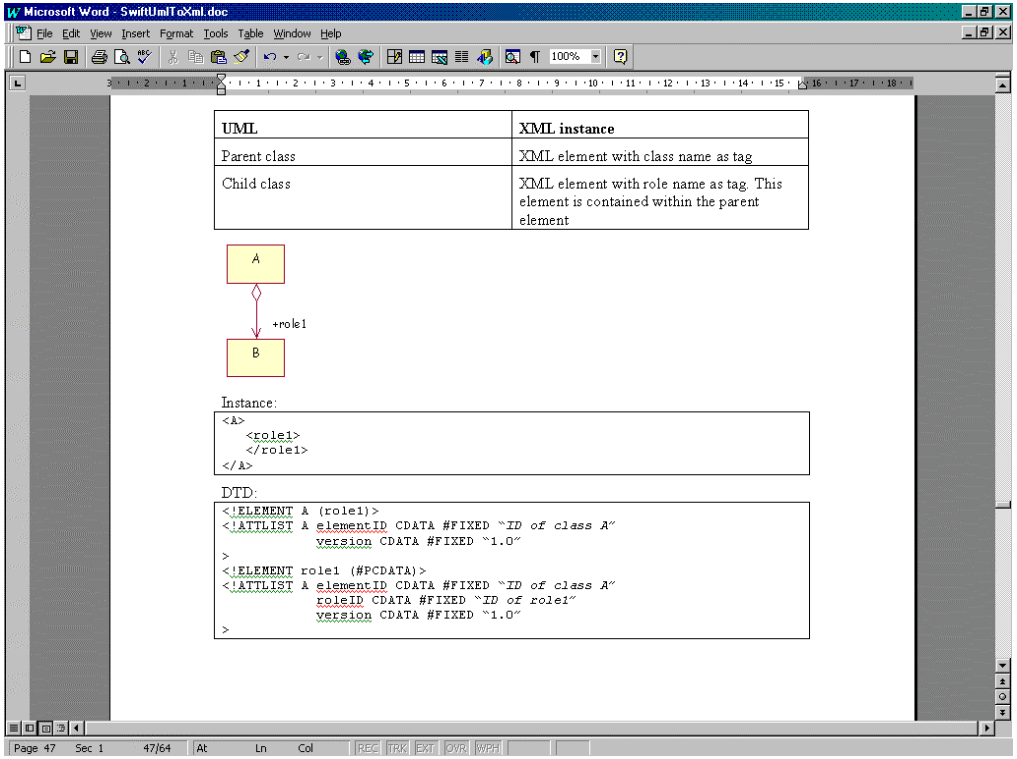
DTD:

```
<!ELEMENT A (role1)>
<!ATTLIST A elementID CDATA #FIXED "ID of class A"
            version CDATA #FIXED "1.0"
>
<!ELEMENT role1 (#PCDATA)>
<!ATTLIST A elementID CDATA #FIXED "ID of class A"
            roleID CDATA #FIXED "ID of role1"
            version CDATA #FIXED "1.0"
>
```

Page 47 Sec 1 47/64 At Ln Col REC TRK EXT OVR WPH

A path from UML to XML

- A parent-child relationship between two classes is expressed by a role;
- The parent-class maps to an XML element with its name as the tag;
- The child-class maps to an XML element with its role as the tag.



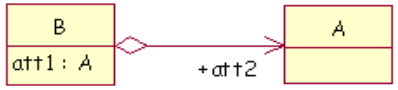
A path from UML to XML

Microsoft Word - SwiftUmlToXml.doc

File Edit View Insert Format Tools Table Window Help

Class attributes

UML	XML instance
Class containing attributes	Attributes become nested XML elements.




```
<B>
  <att1>data</att1>
  <att2>data</att2>
</B>
```

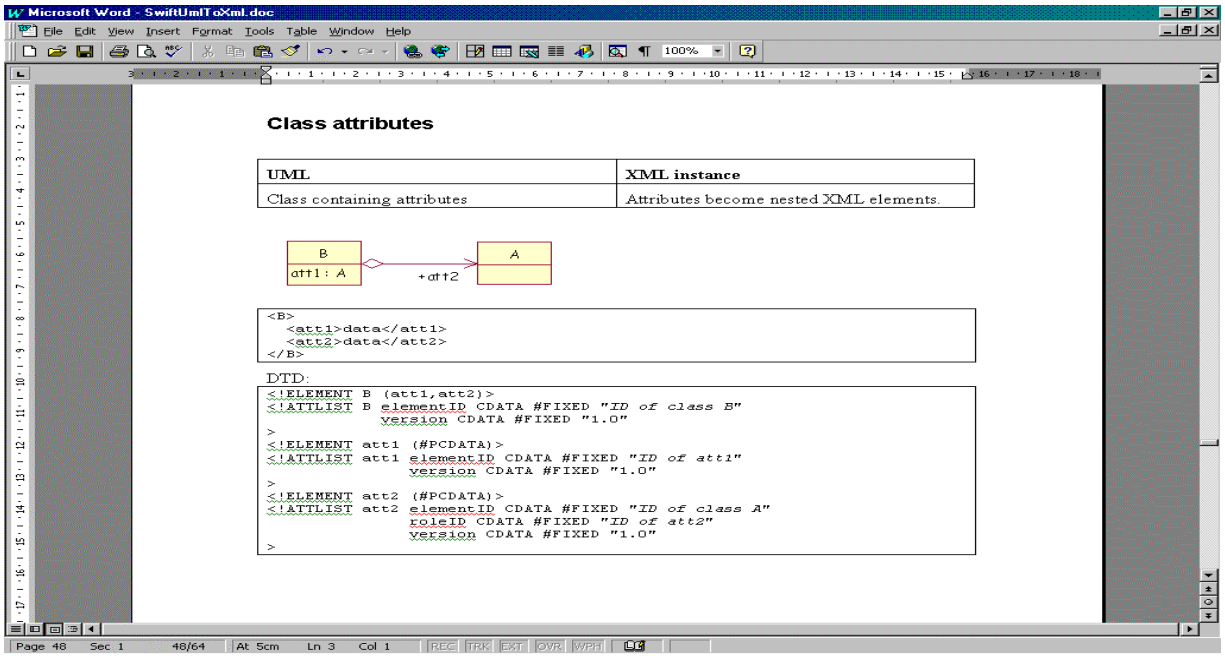
DTD:

```
<!ELEMENT B (att1,att2)>
<!ATTLIST B elementID CDATA #FIXED "ID of class B"
            version CDATA #FIXED "1.0"
>
<!ELEMENT att1 (#PCDATA)>
<!ATTLIST att1 elementID CDATA #FIXED "ID of att1"
               version CDATA #FIXED "1.0"
>
<!ELEMENT att2 (#PCDATA)>
<!ATTLIST att2 elementID CDATA #FIXED "ID of class A"
               roleID CDATA #FIXED "ID of att2"
               version CDATA #FIXED "1.0"
>
```

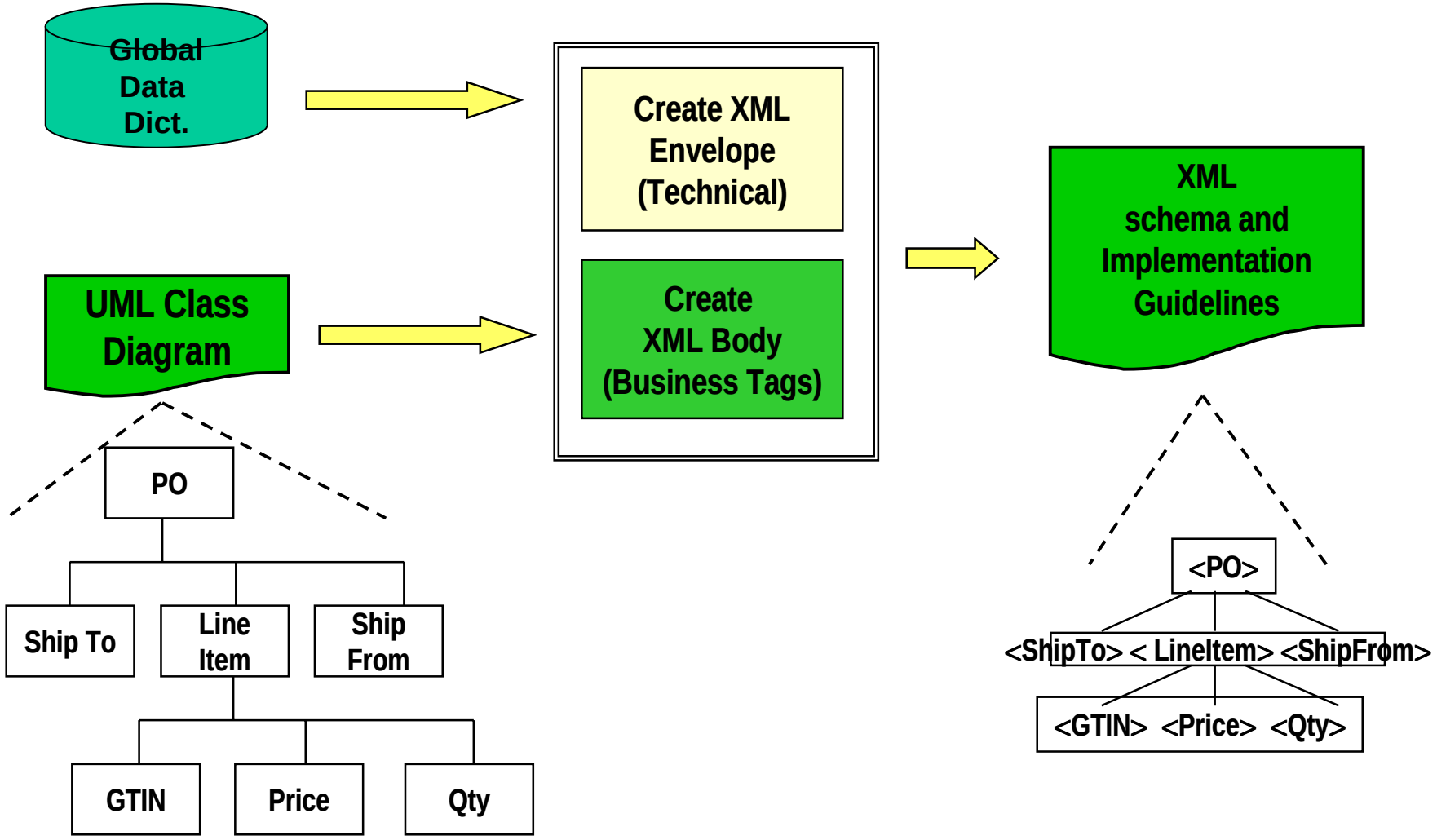
Page 48 Sec 1 48/64 At 5cm Ln 3 Col 1 REC TRK EXT OVR WPH

A path from UML to XML

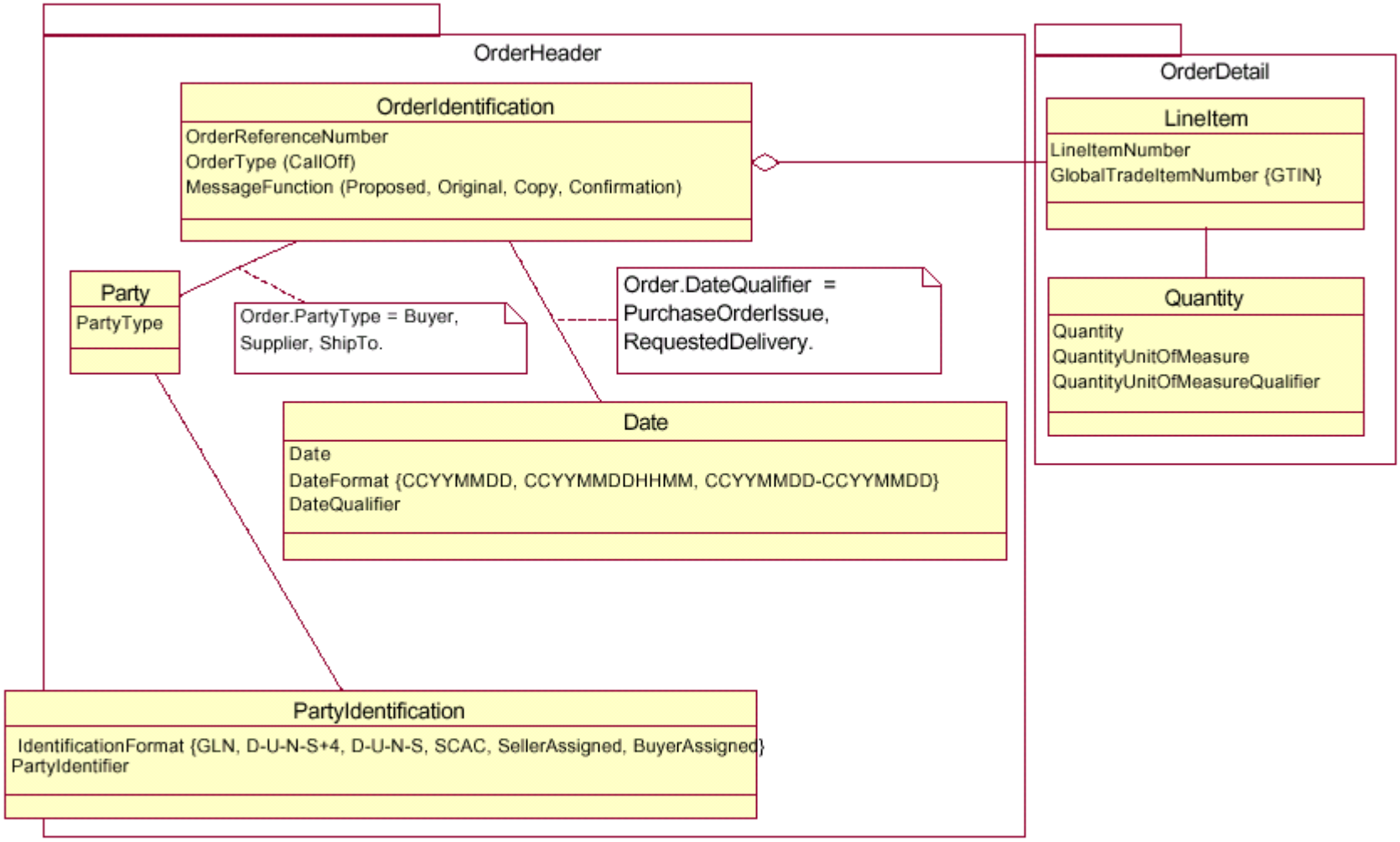
- A class can also contain attributes
- A class attribute is described using a name and a type;
- The derived XML instances considers roles and attributes as equivalent;
- The first XML child elements within its parents are the attributes, followed by the roles.



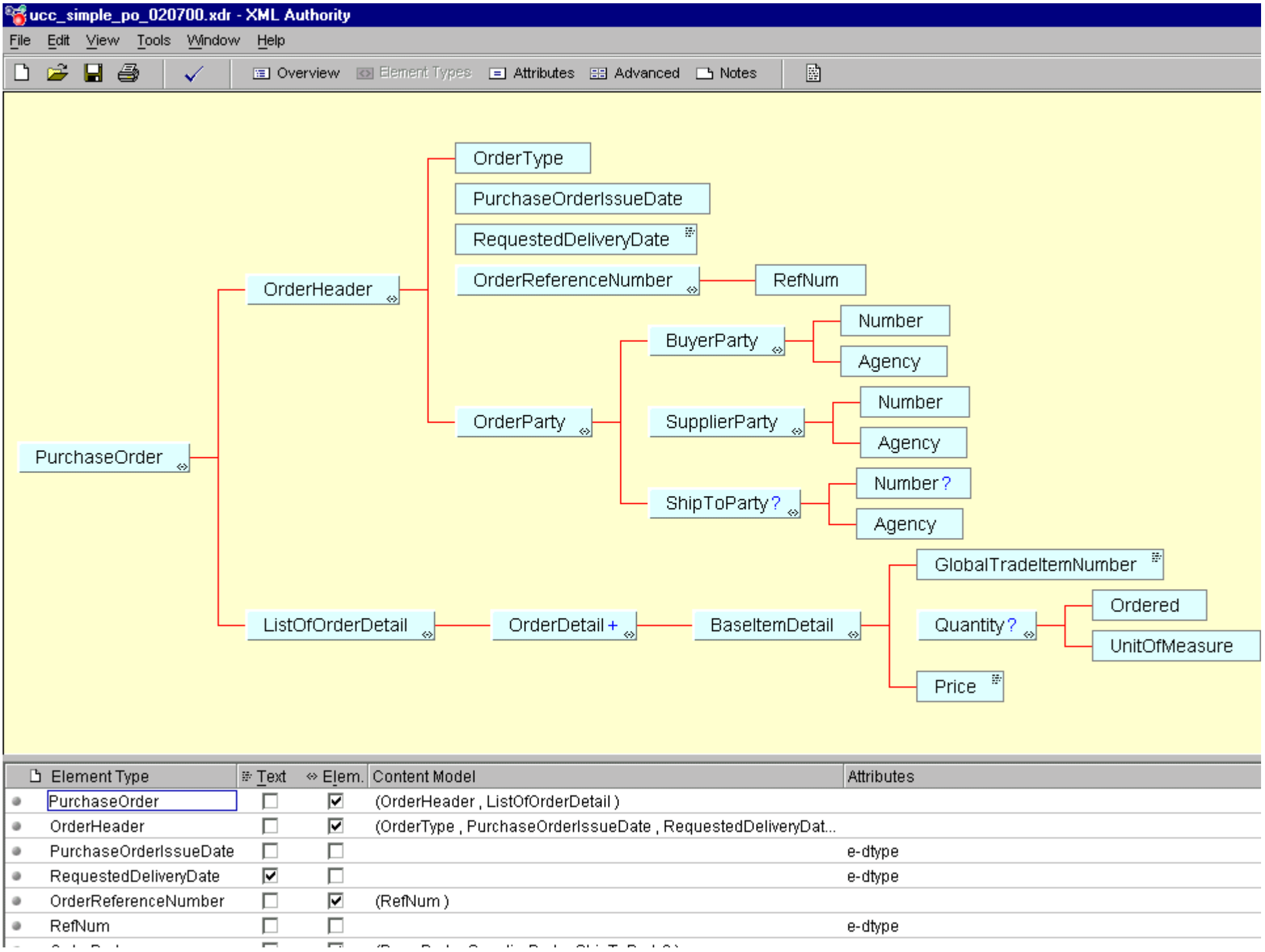
Create XML Schema Process



Class Diagram



DRAFT



Element Type	Text	Elem.	Content Model	Attributes
PurchaseOrder	☐	☑	(OrderHeader , ListOfOrderDetail)	
OrderHeader	☐	☑	(OrderType , PurchaseOrderIssueDate , RequestedDeliveryDat...	
PurchaseOrderIssueDate	☐	☐		e-dtype
RequestedDeliveryDate	☑	☐		e-dtype
OrderReferenceNumber	☐	☑	(RefNum)	
RefNum	☐	☐		e-dtype