

Business Process Meta Model

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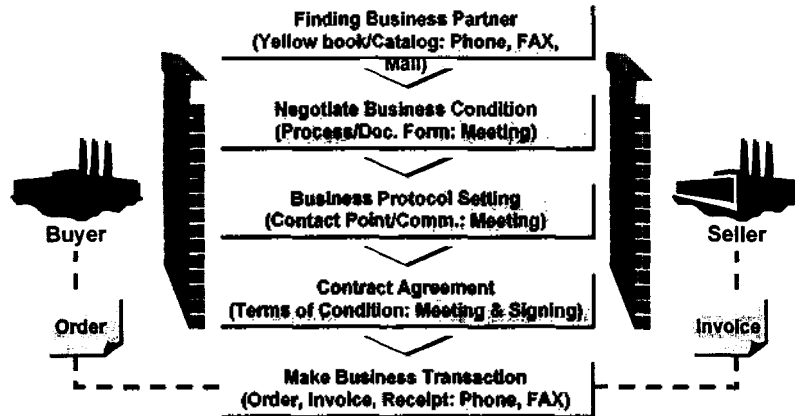
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Agenda

- Introduction
 - Evolutionary Path of Business Transactions
 - Overview of ebXML General Scenario and Infrastructure
 - EC Standardization Efforts in NCA
- Comparison of Various EC Frameworks
- ebXML Business Process Specification Schema Overview
- Key Concepts of the ebXML BPSS
 - Business Transaction and its Business Document Flow
 - (Binary, MultiParty) Collaboration
 - Specifying a Choreography
- ebXML BPSS – DTD
- Example of Business Process Specification – XML Doc. Instance
- Conclusions



Semantics of Business Transactions



Very High Manual Transaction Cost !!!

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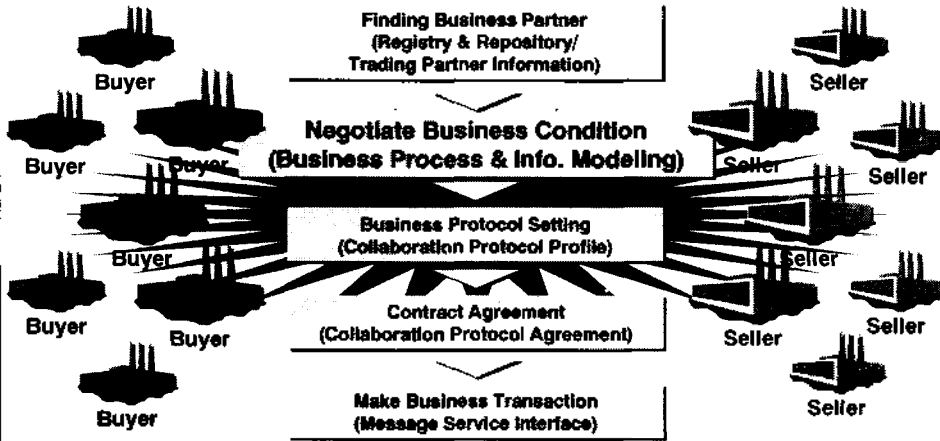
Evolutionary Path of Business Trans.

- The 1st Driver: Electronic Documents
 - EDI via VAN
 - Limited use of electronic processing
- The 2nd Driver: Internet Infrastructure
 - Web/EDI, HTTP, FTP, MIME
 - Open network
- The 3rd Driver: XML
 - Enables the definition of platform-independent protocols for the exchange of data
 - Business Processes and Documents in XML format
 - XML/EDI
 - XML message exchange: SOAP

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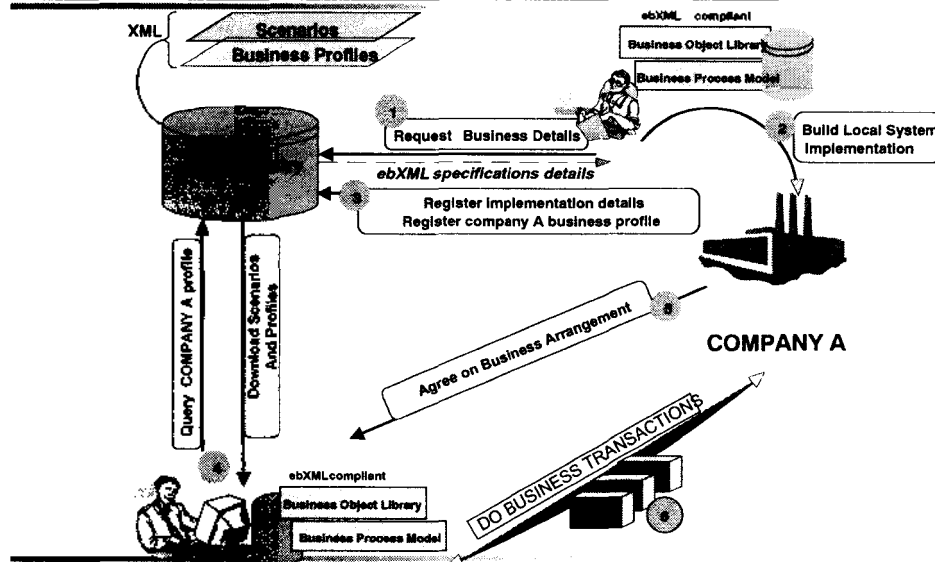
Over the Hurdle: ebXML



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ebXML General Scenario



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ebXML Infrastructure

- Trading Partner Information [CPP and CPA's]
- Business Process and Information Modeling
- Core Components and Core Library Functionality
- Registry Functionality
- Messaging Service Functionality

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EC Standardization Efforts in NCA (1)

e-Business Standard Team, Dept. of e-Business Research

- Support for Standardization Efforts within ECIF
 - Secretarial organization
 - Technology Committee Secretary
 - Operational supports for EC Service Technology Subcommittee
- ECIF: Integrated Forum on Electronic Commerce
 - Standardization roadmap establishment and standards proposal
 - Technology Subcommittee status
 - EC Service Technology Subcommittee
 - EC framework, business process, etc.
 - Electronic Documentation Technology Subcommittee
 - Electronic Catalogue Technology Subcommittee
 - Electronic Payment & Settlement Technology Subcommittee (to be established)

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EC Standardization Efforts in NCA (2)

- Establishment of National Standard for EC
 - Adopt ebXML as a national EC standard framework
 - National standardization based on ebXML framework
 - Standards proposal to TTA(Telecommunication Technology Association)
 - 8 EC related standards including
 - Business Process Meta Model
 - Company Profile Representation Scheme
 - Message Exchange Format
 - Registry Information Model and Service Interface
 - Working group activities within ECIF
 - e-Business study group activities at TTA
 - Review process of the proposed standards

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EC Standardization Efforts in NCA (3)

e-Business Standard Team, Dept. of e-Business Research

- Support for National e-Business Policy Making
 - Establishment and suggestion of EC standardization policy directions
- Follow-up of International Standardization Efforts
 - Standardization org. activities, technology trends
- Making Environments for Nation-wide e-Business Proliferation
 - Publication and distribution of e-Business handbook for SME
 - Cooperation among experts from the academic world, industries and public sectors

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Existing Standards of e-biz Frameworks

- xCBL (<http://www.xcbl.org>)
 - The XML Common Business Library
 - A set of XML building blocks and a document framework that allows the creation of robust, reusable, XML documents to facilitate global trading.
 - xCBL 3.0 Release 2 is now available
 - Having great influence on ebXML CC group
 - No new business process definition function
- RosettaNet (<http://www.rosettanet.org>)
 - Efforts for business processes standardization
 - IT industries and Electronic Components and Semiconductor Manufacturing supply chain
 - PIP(Partner Interface Processes)
 - Business processes between two trading partners
 - PIP meta model
 - PIP creation according to this meta model

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Existing Standards of e-biz Frameworks (2)

- eCo Framework (<http://eco.commerce.net>)
 - CommerceNet's eCo Working Group
 - Industry independent meta data proposal for EC
 - No clear information about process definition and PDL
 - Tags in XML DTD
- cXML (<http://www.cxml.org>)
 - commerce eXtensible Markup Language: Ariba, Inc.
 - Simplified and standard-based process definition between buyer and seller
 - No new business process creation function
- BizTalk (<http://www.biztalk.org>)
 - XML framework for application integration and electronic commerce – lead by Microsoft.
 - Includes a design framework for implementing an XML schema and a set of XML tags used in messages sent between applications.
 - Biztalk Orchestration Designer
 - Microsoft Visio 2000-based design tool that enables you to create business process drawings that can be compiled and run as XLANG schedules.
 - BizTalk has new business process definition function and process meta model

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Major Features Comparison of existing standards

Supporting Feature	xCBL	R.Net	eCo	cXML	Biz-Talk	ebXML
Process Model	△	○	⊗	△	○	○
Meta Model	⊗	△	⊗	⊗	○	○
	⊗	▲	⊗	⊗	⊗	○

ebXML
fully supports
all features related
business process !!!!!

○	Full support
△	Partial support
⊗	Little support

Legend

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Terminologies Related B.P.

- Business Process
 - The means by which one or more activities are accomplished in operating business practices – by UMM
 - Description in detail how Trading Partners take on roles, relationships and responsibilities to facilitate interaction with other Trading Partners in shared collaborations
- Business Process Meta Model
 - or BUSINESS PROCESS SPECIFICATION SCHEMA
 - Defines the necessary set of elements to specify run-time aspects and configuration parameters to drive the partners' systems used in the collaboration – by ebXML BP Team Terminology
- Process Repository
 - In ebXML, Business Library is provided.
 - A repository of business process specifications and business information objects within an industry, and of common business process specifications and common business information objects that are shared by multiple industries – by ebXML TA Specification Terminology

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Publications related ebXML B.P. – www.ebxml.org

- Technical Specification
 - Business Process Specification Schema v1.01

- Technical Report
 - Business Process and Business Information Analysis Overview v1.0
 - Business Process Analysis Worksheets and Guidelines v1.0
 - E-Commerce Patterns v1.0
 - Catalog of Common Business Processes v1.0

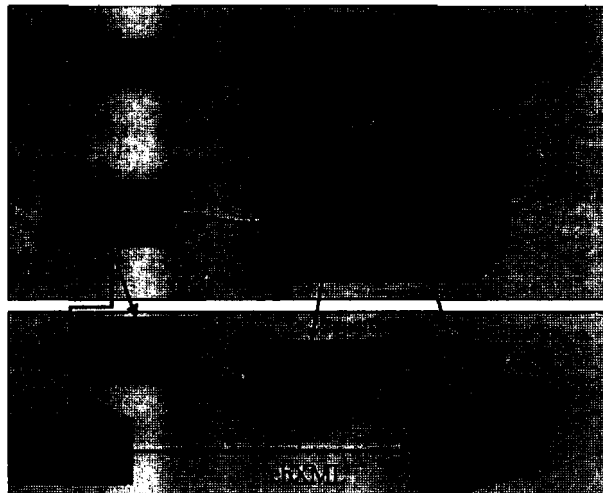
- White Paper
 - Proposed Revisions to Technical Architecture Specification v1.04

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Relationship between ebXML Business Process Specification Schema and UMM

- UN/CEFACT Modeling Methodology
 - A methodology for business process and information modeling



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Overview of BPSS

Business Process and Information Model



ebXML Business Process Specification



ebXML CPP/CPA

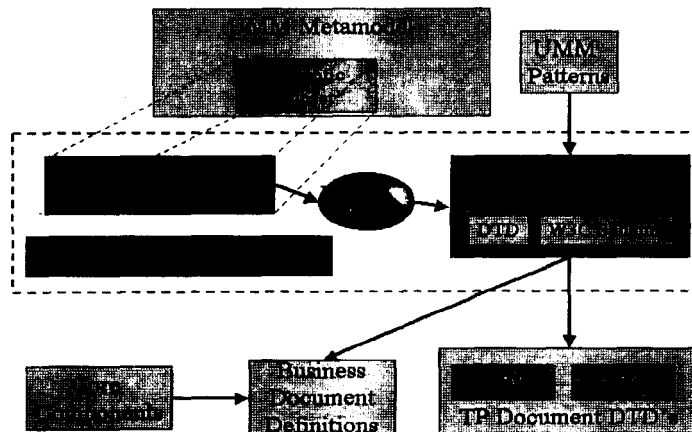


ebXML Business Service Interface Configuration

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Overview of BPSS (2)



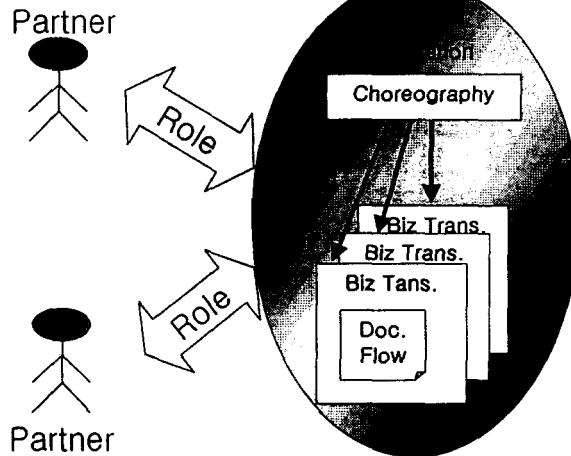
Relationship of *ebXML BPSS* to UMM, CPP/CPA and CC

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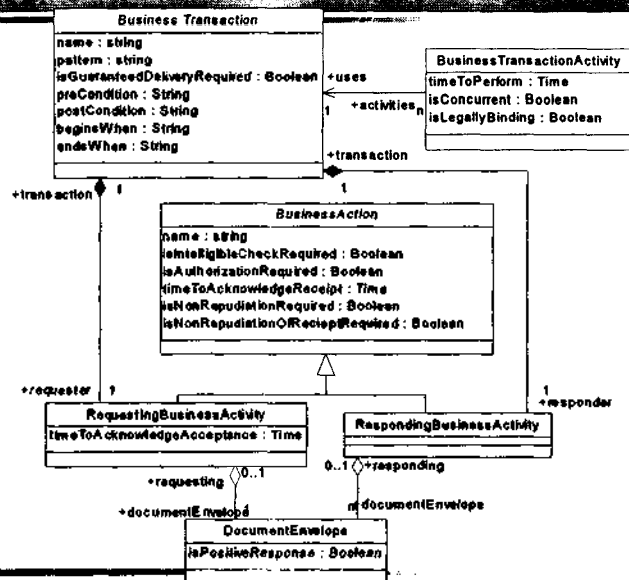
Basic Semantics of a Business Collaboration

- Business Collaboration
- Business Transaction
- Business Document Flows
- Choreography
- Patterns



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UML Diagram of a Business Trans.



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XML Version of Business Trans

```
<ELEMENT BusinessTransaction
(Documentation*,
RequestingBusinessActivity,Respon
dingBusinessActivity)>
```

```
<!ATTLIST BusinessTransaction
name CDATA #REQUIRED
nameID ID #IMPLIED
pattern CDATA #IMPLIED
beginsWhen CDATA #IMPLIED
endsWhen CDATA #IMPLIED
isGuaranteedDeliveryRequired (true
|false) false
preCondition CDATA #IMPLIED
postCondition CDATA #IMPLIED
```

```
>
```

```
.....
```

```
<BusinessTransaction name="Create Order">
```

```
<RequestingBusinessActivity name=""
isNonRepudiationRequired="true"
timeToAcknowledgeReceipt="P2D"
timeToAcknowledgeAcceptance="P3D">
```

```
<DocumentEnvelope
BusinessDocument="Purchase Order"/>
```

```
</RequestingBusinessActivity>
```

```
<RespondingBusinessActivity name=""
isNonRepudiationRequired="true"
timeToAcknowledgeReceipt="P5D">
```

```
<DocumentEnvelope
isPositiveResponse="true"
BusinessDocument="PO
Acknowledgement"/>
```

```
</DocumentEnvelope>
```

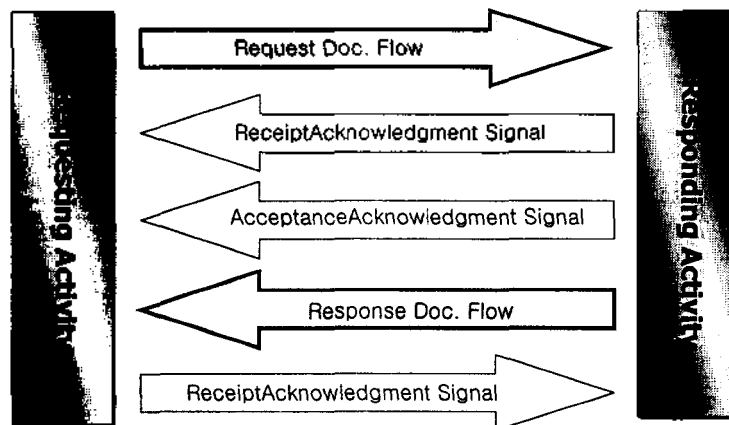
```
</RespondingBusinessActivity>
```

```
</BusinessTransaction>
```

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Possible Doc. Flows & Signals

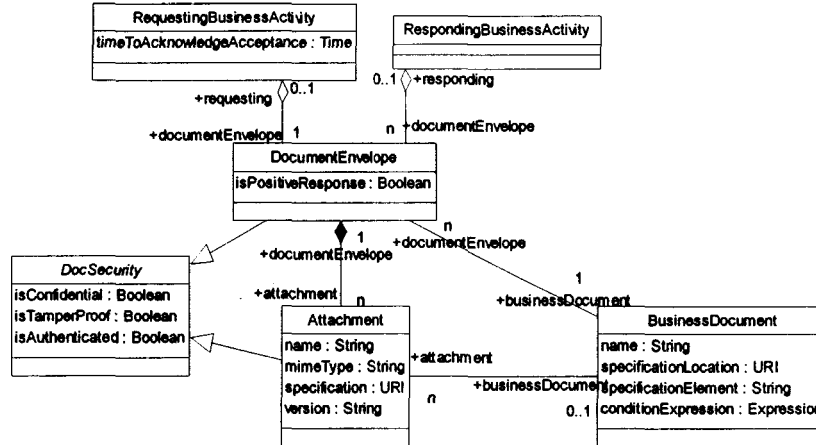


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Specifying Business Doc. Flows

UML Diagram



Specifying Business Doc. Flows (2)

Sample syntax

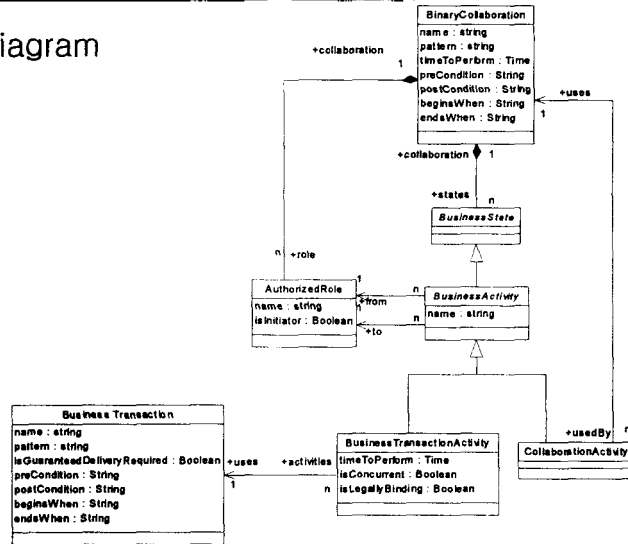
```

<businessTransaction name="Create Order">
  <requestingBusinessActivity name="...">
    <documentEnvelope isPositiveResponse="true">
      <businessDocument ebXML1.0/PO Acknowledgement/>
      <attachment mimeType="DeliveryNotes">
        mimeType="XML" businessDocument="ebXML1.0/DeliveryNotes"
        isConfidential="true" isTamperProof="true"
        isAuthenticated="true"
      </attachment>
    </documentEnvelope>
  </requestingBusinessActivity>
  <respondingBusinessActivity name="...">
    <documentEnvelope businessDocument="ebXML1.0/PO Acknowledgement"/>
    </documentEnvelope>
  </respondingBusinessActivity>
  </businessTransaction>
  </businessTransaction isPositiveResponse="false" businessDocument="ebXML1.0/PO Rejection"/>

```

Specifying a Binary Collaboration

UML Diagram



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Specifying a Binary Collaboration (2)

Sample syntax

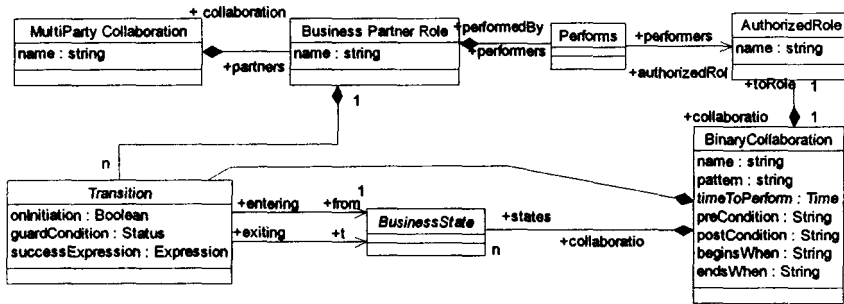
```

<BinaryCollaboration name="Product Fulfillment" timeToPerform="Period: 5 days from started"
  <Documentation>timeToPerform = Period: 5 days from started
</Documentation>
  <InitiatingRole name="buyer"/>
  <RespondingRole name="seller"/>
  <BusinessTransactionActivity name="Create Order"
    businessTransaction="Create Order" fromAuthorizedRole="buyer"
    toAuthorizedRole="seller" isLegallyBinding="true" />
  <BusinessTransactionActivity name="Notify shipment"
    businessTransaction="Notify of advance shipment"
    fromAuthorizedRole="buyer" toAuthorizedRole="seller"/>
  </BusinessTransactionActivity>
</BinaryCollaboration>
  
```

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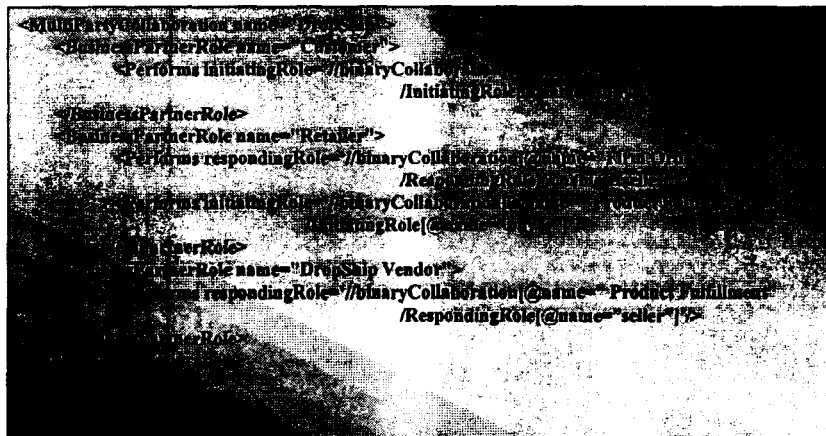
Specifying a Multiparty Collaboration

UML Diagram

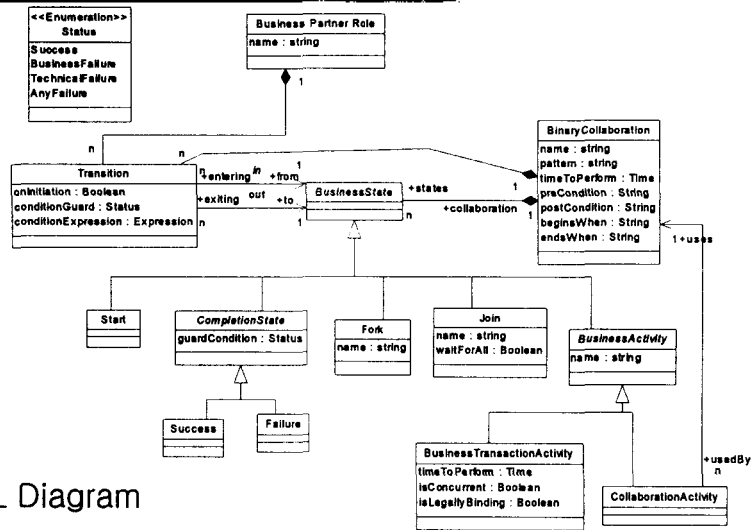


Specifying a Multiparty Collaboration (2)

Sample syntax



Specifying a Choreography



■ UML Diagram

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Specifying a Choreography (2)

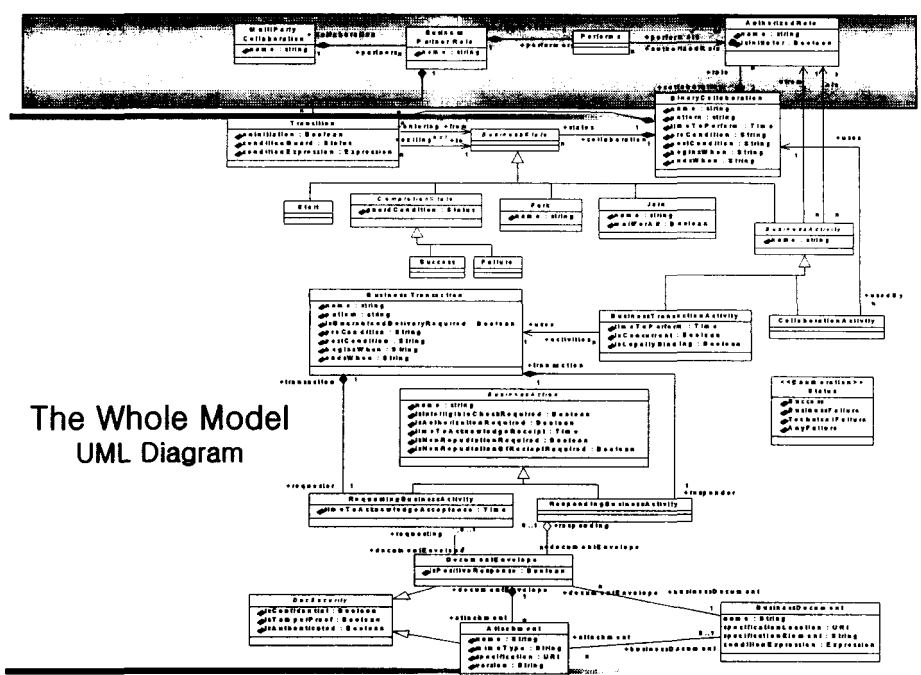
■ Sample syntax

```

<<BinaryCollaboration name="Product Fulfillment" timeToPerform="Period: 5 days"
preCondition="false" postCondition="false" beginWhen="false" endsWhen="false">
  <<Documentation>
  </Documentation>
  <InitiatingRole name="buyer"/>
  <RespondingRole name="seller"/>
  <BusinessTransactionActivity name="Create Order"
  businessTransaction="Create Order" fromAuthorizedRole="buyer"
  toAuthorizedRole="seller"/>
  <BusinessTransactionActivity name="Notify shipment"
  businessTransaction="Notify of advance shipment"
  fromAuthorizedRole="buyer" toAuthorizedRole="seller"/>
  <BusinessState="Create Order"/>
  <BusinessState="Create Order" toBusinessState="Notify shipment"/>
  <BusinessState="Notify shipment" conditionGuard="Success"/>
  <BusinessState="Notify shipment" conditionGuard="BusinessFailure"/>
</BinaryCollaboration>

```

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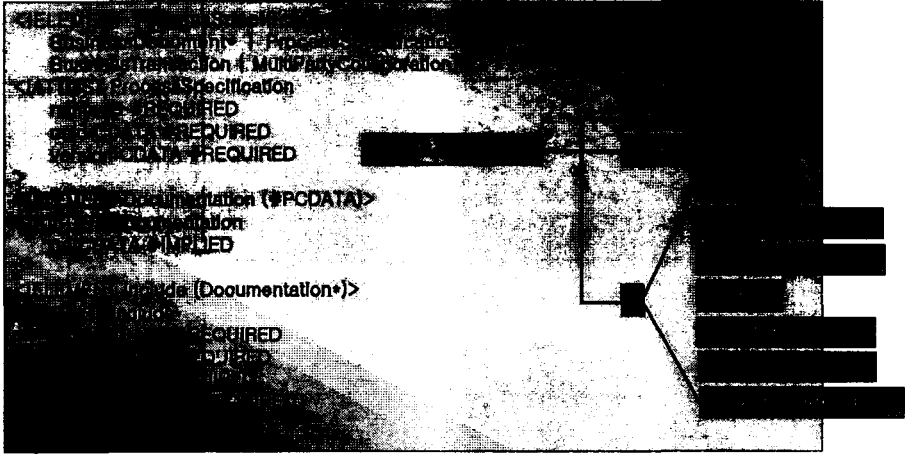


The Whole Model UML Diagram

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Business Process Specification Schema

■ XML DTD



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Example of Business Process Spec.

```
<!DOCTYPE ProcessSpecification SYSTEM
(ProcessSpecification name="Simple" version="1.1" uuid="[1234-5678-901234]">
  <!-- Business Documents -->
  <BusinessDocument name="Catalog Request" />
  <BusinessDocument name="Catalog" />
  <BusinessDocument name="Purchase Order" />
  <BusinessDocument name="PO Acknowledgement" />
  <BusinessDocument name="Credit Request" />
  <BusinessDocument name="Credit Confirm" />
  <BusinessDocument name="ASN" />
  <BusinessDocument name="Credit Advice" />
  <BusinessDocument name="Debit Advice" />
  <BusinessDocument name="Invoice" />
  <BusinessDocument name="Payment" />
  <BusinessDocument name="Inventory Report Request" />
  <BusinessDocument name="Inventory Report" />
  <BusinessDocument name="Inventory Report" />
  <!-- Ordering -->
  <Package name="Ordering">
    <!-- First, the overall MultiParty Collaboration -->
    <MultiPartyCollaboration name="Dropship">
      <!-- Now the Binary Collaborations -->
      <BinaryCollaboration name="Request Catalog"/>
      <BinaryCollaboration name="Firm Order" timeToPerform="P2D"/>
      <BinaryCollaboration name="Product Fulfillment" timeToPerform="P5D"/>
      <BinaryCollaboration name="Inventory Status"/>
    
  

```

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Conclusions

- BPMM Working Group
 - National BPMM standard establishment and proposal is ongoing
 - Participation and contributions are welcomed
 - Open to everyone: <http://www.ecif.or.kr/>
 - Anyone who is willing to participate as a WG member, please contact me via e-mail (kimds@nca.or.kr)
 - Next WG meeting schedule: about the middle of September
- ebXML Phase 2
 - Roles and responsibilities of UN/CEFACT and OASIS
 - Integration ebXML BP/CC and EWG, BPAWG
 - EWG Rotterdam Meeting (September 10~14.)
 - A platform to launch phase 2 of ebXML

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