

e-Biz World Conference 2005

The next ebXML based on UML 2.0

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Agenda

- Introduction
- Overview of UMM and BPSS
- Workflow based analysis
- Other new features
- Revised BPSS
- Conclusion

ebXML

- To provide an open XML-based infrastructure enabling the global use of electronic business information in an interoperable, secure and consistent manner by all parties
- Delivering a modular set of specifications:

UMM

- UN/CEFACT Modeling Methodology
- Based on UML 1.4
- Defines a UML profile for Business Collaborations

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Business transaction view

- A binary collaboration
 - Define the orchestration between two participants
- A business transaction
 - Define the messaging

Based on UML 1.4.2

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BPSS

- Business Process Specification Schema
- XML-ify the BT of UMM
- Business Process Models refer to the Inter-organizational B2B processes, that define how partners have to interact
- BPSS = Specification of the nominal set of elements necessary to configure a runtime system in order to execute an ebXML collaboration

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How UMM and BPSS model the choreography better?

How UMM and BPSS can model more general choreographies for e-commerce?

How UMM and BPSS can model them more sophisticatedly and concisely?

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What are changed in UML 2.0

- Improvement
 - modeling real time systems and workflow systems
 - supporting for the component based development
 - Activity diagrams
- In activity diagrams
 - state chart based systems → Petri net based systems
 - ◆ improving the modeling of the concurrent system
 - ◆ Introduction of tokens
 - Improve the expression power
 - Introduction of the concept of the level of the activities

Workflow pattern based analysis

by Aalst et al.

20 workflow patterns

XLANG BPSS
XPDL BPE

Workflow patterns that UMM and BPSS already support

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- Using the feature of activity diagram of UML
 - Sequence Parallel split & Decision
 - Multiple choice & Synchronization
 - Simple merge & Synchronizing merge
 - Deferred choice & Cancel case
- Using tagged values
 - Implicit termination MI without synchronization
 - Milestone

Workflow patterns that UML 2.0 newly supports

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- No well-formedness rule of fork and join
 - Arbitrary cycle
 - Multi merge
- Join with the join spec
 - discriminator

Transformation rule from UMM to BPSS

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Workflow patterns related to branching and joining

Discriminator	False	False	Discriminator
Others	True	False	Synchronization
	False	True	Synchronizing merge
	False	True	Simple merge
	False	True	Multi merge

Structured Activities

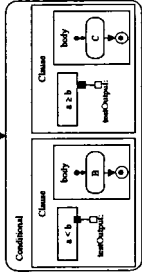
- **Software Crisis**
 - Introduction of the structural programming
- **Structural programming**
 - Sequencings
 - Selections
 - Iterations
- **Graph based code = many "go to" statement**
- **Structural UMM and BPSS**
 - Introduction of the new elements, selections and iterations

Selection

```

<sd element name="Selection">
  <sd complexType>
    <sd sequence>
      <sd element ref="Class" minOccurs="1" maxOccurs="1" use="required"/>
      <sd sequence>
        <sd attribute name="name" type="string" use="required"/>
        <sd element ref="SelectionID" minOccurs="1" maxOccurs="1" use="required"/>
        <sd element ref="Body" minOccurs="1" maxOccurs="1" use="required"/>
        <sd element ref="Method" minOccurs="1" maxOccurs="1" use="required"/>
      </sd>
    </sd>
  </sd>
</sd>
<sd element name="Class">
  <sd complexType>
    <sd sequence>
      <sd element ref="ConditionExpression" minOccurs="1" maxOccurs="1" use="required"/>
      <sd sequence>
        <sd attribute name="name" type="string" use="required"/>
        <sd attribute name="binaryCollaborationIDREF" type="GUIDREF"/>
      </sd>
    </sd>
  </sd>
</sd>
<sd element name="ConditionExpression">
  <sd complexType>
    <sd sequence>
      <sd element ref="ClassID" minOccurs="1" maxOccurs="1" use="required"/>
      <sd element ref="Body" minOccurs="1" maxOccurs="1" use="required"/>
      <sd element ref="Method" minOccurs="1" maxOccurs="1" use="required"/>
    </sd>
  </sd>
</sd>

```

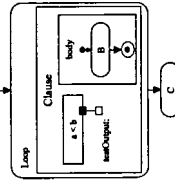


Iteration

```

<sd element name="Iteration">
  <sd complexType>
    <sd sequence>
      <sd element ref="ConditionExpression" minOccurs="1" maxOccurs="1" use="required"/>
      <sd sequence>
        <sd attribute name="name" type="string" use="required"/>
        <sd attribute name="binaryCollaborationIDREF" type="GUIDREF"/>
      </sd>
    </sd>
  </sd>
</sd>
<sd element name="IterationID">
  <sd simpleType>
    <sd valueOf base="string" type="string" use="required"/>
  </sd>
</sd>

```



Extra structured activities

- For supporting the exception handling
- An example that needs an exception handling

