PROCESS MODELING
REFINEMENTS

Why, Where, Which, So What?
Why?

Business Process Specification

Atomic Services Execution

Application-Specific Interfaces
Legacy Constraints

IT INFRASTRUCTURE

Applications
System ABC
Packages
Data

REFINEMENTS
Why?

PROCESS MODEL

COMPONENT BEHAVIORAL MODEL

APPLICATION INFRASTRUCTURE MODEL

APPLICATION PLATFORM MODEL

REFINEMENTS CONSTRUCTS THIS BORDER
Why?

Different concepts and levels of abstraction
Constraints imposed by legacy applications
Non-functional and IT specific requirements
Examples of Component Behavioral Models (CBMs)
CBM 1
CBM 3
PM versus CBM
Hierarchical Inter-Model Consistent Refinements
## Mapping Between PM and CBM

<table>
<thead>
<tr>
<th>TASK</th>
<th>GROUNDED ON</th>
<th>CBM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract External Insurance</td>
<td>Notify Insurance Company</td>
<td>2</td>
</tr>
<tr>
<td>Dismiss Contract</td>
<td>Reject Clauses</td>
<td>2</td>
</tr>
<tr>
<td>Finalize Contract</td>
<td>Generate Contract</td>
<td>1</td>
</tr>
<tr>
<td>Notify Costumer</td>
<td>Send Contract</td>
<td>1</td>
</tr>
<tr>
<td>Inform Committee</td>
<td>Notify Accounting</td>
<td>2</td>
</tr>
<tr>
<td>Offer Credit</td>
<td>Offer Credit</td>
<td>1</td>
</tr>
<tr>
<td>Reserve Provision</td>
<td>Make Provision</td>
<td>2</td>
</tr>
<tr>
<td>Review Signed Contract</td>
<td>Approve Signed Contract</td>
<td>2</td>
</tr>
<tr>
<td>Sign Off Contract</td>
<td>Review Contract</td>
<td>1</td>
</tr>
<tr>
<td>All other tasks</td>
<td>Tasks with the same name</td>
<td>3</td>
</tr>
</tbody>
</table>
A Business Analyst Creates a Process Model

VIOLATION 1: TASK IS NOT GROUNDED
An IT Architect ‘Splits the Task’
An IT Developer ‘Grounds’ All Tasks

VIOLATION 2: TASK DOES NOT OBEY EXECUTION FLOW
Remodeled Process Specification
More Types of Violations

VIOLATION 3: TASK DOES NOT OBEY CBM SEQUENCE
More Types of Violations

VIOLATION 4: MISSING TASK
Inconsistency Summary (so far)

Task is not grounded
Task does not obey the specification flow
Task does not obey the CBM sequence
Task is missing

(Actually this list is certainly larger - these examples are based only on a subset of task workflows)
Refinements Found

Split Task into a Sequence
Split Task into a Block
Add an Exception Handler
Convert a Gateway into a Switch/Case
Convert a Task into a Loop
Add Detail (without modifying the flow)
Reﬁnements Descriptions

NAME – Meaningful, concise

PROBLEM – Intent: goals and objectives

CONTEXT – Preconditions

FORCES – Motivations and trade-offs

SOLUTION – Static relationships, dynamic rules

EXAMPLE – Diagram and textual description
Modeling Refinements
(CBM1 Sequence)

Abstract AtomicService

  seq : int

OfferCredit extends AtomicService

GenerateContract extends AtomicService

  [OfferCredit]

  [GenerateContract.seq > OfferCredit.seq]
What should be updated in the case of deleting, including or renaming a task?
How to define other inter-model relationships like exclusive and parallel flows?